

500 invest for 36% CAGR

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Now using the 500 or so investible stock assets constituting index BSE500 , the [author](#) explores the possibility of generating a target return consistent with 36% CAGR. - Some of the data from Yahoo Finance had NAs or was missing for some durations. - TBD M4 failure for ESmodified. Chose Gaussian. Then chart failed.

```
date()
```

```
## [1] "Fri Jan 01 22:49:58 2021"
```

```
# Initialize globals before source():
cMyPath <- "F:/pf4pf/toDo/"
cFileIndex <- "BSE500stocks2020Dec22-0735"
cDateRange <- "2012-07/2020-12-18" # coz "2010-07/" is missing Yahoo Finance data
source(paste0(cMyPath, ".../gettingStarted.R")) # (gIx["2014/2016-05","CGCL"]) not
```

```
## Warning: package 'DEoptim' was built under R version 3.6.3
```

```
## Loading required package: parallel
```

```
##
```

```
## DEoptim package
## Differential Evolution algorithm in R
## Authors: D. Ardia, K. Mullen, B. Peterson and J. Ulrich
```

```
## Warning: package 'ROI' was built under R version 3.6.3
```

```
## ROI: R Optimization Infrastructure
```

```
## Registered solver plugins: nlminb, glpk, quadprog.
```

```
## Default solver: auto.
```

```
## Warning: package 'ROI.plugin.glpk' was built under R version 3.6.3

## Warning: package 'ROI.plugin.quadprog' was built under R version 3.6.3

## Warning: package 'PortfolioAnalytics' was built under R version 3.6.3

## Loading required package: zoo

##
## Attaching package: 'zoo'

## The following objects are masked from 'package:base':
##       as.Date, as.Date.numeric

## Loading required package: xts

## Loading required package: foreach

## Loading required package: PerformanceAnalytics

##
## Attaching package: 'PerformanceAnalytics'

## The following object is masked from 'package:graphics':
##       legend

## Registered S3 method overwritten by 'PortfolioAnalytics':
##   method      from
##   print.constraint ROI

##
## Attaching package: 'PortfolioAnalytics'

## The following objects are masked from 'package:ROI':
##       is.constraint, objective

## Warning in eval(ei, envir): gIx must drop CGCL. Fix ESCORTS ALOKTEXT

## Daily periodicity from 2012-07-02 05:30:00 to 2020-12-18 05:30:00
## [1] 2089 500

## Warning in myAssetsWithReturnsOverCompletePeriod(argIsLogReturns, argix = gIx,
## Presuming arithmetic= and log= for log return as per wantLogReturn=FALSE
```

```
## [1] 440 385
## [1] "TATACHEM" "NBCC"      "AVANTI"
## An 'xts' object on 2012-07-20 05:30:00/2020-12-18 05:30:00 containing:
##   Data: num [1:440, 1:382] 0.00543 -0.00311 0.03123 0.0527 0.04226 ...
##   - attr(*, "dimnames")=List of 2
##     ..$ : NULL
##     ..$ : chr [1:382] "RELIANCE" "HDFCBANK" "ICICIBANK" "HDFC" ...
##   Indexed by objects of class: [POSIXct,POSIXt] TZ:
##   xts Attributes:
##   NULL
##   NULL
## [1] "You must set Rfree to a relevant risk-free rate."
## [1] "You must set Rmarket to a relevant market benchmark."

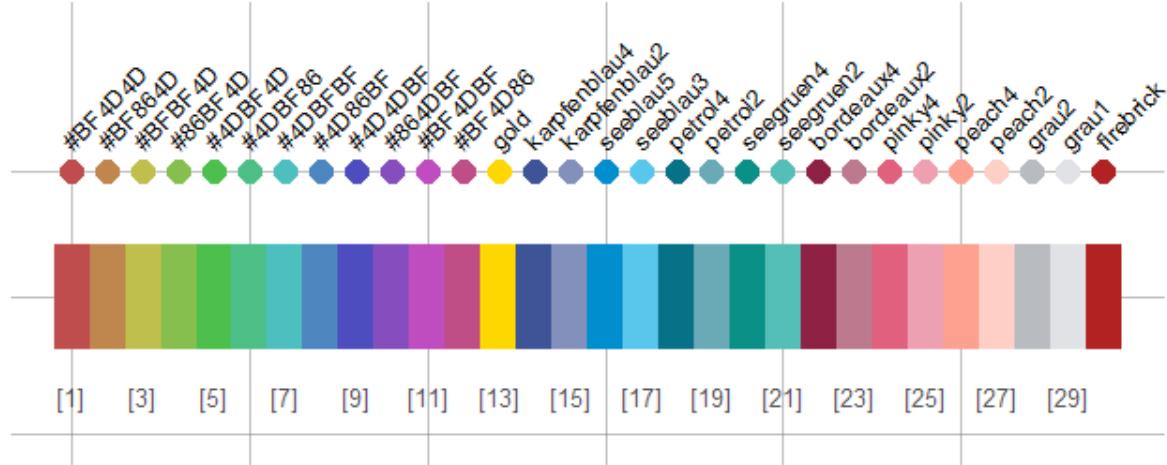
## Loading required package: unikn

## Warning: package 'unikn' was built under R version 3.6.3

## Welcome to unikn (v0.3.0)!

## unikn.guide() opens user guides.
```

See custom color palette



```
setwd(paste0(cMyPath, "..."))
```

Target Return and Rebalancing on [6.5 Minimize expected tail loss with ROI]

This also adapts [Vignette: Portfolio Optimization with CVaR budgets in PortfolioAnalytics 2010] for targeting (mean weekly) return equivalent to 36% CAGR while also minimizing risk as measured by (Expected Shortfall) `ES`, possibly also budgeting for (a) a component risk (as a percentage range) or (b) concentration (as equal budget). These variants of portfolio specification are iterated through ahead.

Static Optimization Now (Leading to Dynamic Rebalancing)

```
require(Rglpk)

## Loading required package: Rglpk

## Loading required package: slam

## Using the GLPK callable library version 4.47

require(quadprog)

## Loading required package: quadprog

mustRebalance <- FALSE # TRUE
cESpValue <- 0.925 # Was: 0.925. default 0.95 or higher might result in too few ex
# outliers esp. for smaller training/rolling windows such as 36. Warnings such a
# [Initial scale 0 because more than 'h' (=36) observations are identical.Return
```

```
# data; unable to clean data due to error: Lapack routine dgesv: system is exact
cReturnTargetCwGR <- ifelse(wantLogReturn, log(1 + CaGRtoCwGR(0.36)), CaGRtoCwGR(0
  # Consider target 36% (or 24%) CAGR.
cHHIconcAversion <- c(0, 0.01, 0.06, 0.10, 1e6)[1] # coz can't seem to get ROI to
# warning("risk-budgeting/lim needs max return maybe without target.")
# [The conc_aversion parameter controls how much concentration is
# penalized. The portfolio concentration is defined as the Herfindahl Hirschman
# conc_aversion=1e6 with min-var objective [High conc_aversion values should res
# [For optimization problems solved with the global numeric optimizers, the portfo
# using conc_aversion value as the multiplier. For quadratic utility problems wi
# objective using the ROI solver, this is implemented as a penalty to the object
# [... retrieve the objectives to minimize, these should either be "var" and/or "
# we can either minimize variance or maximize quadratic utility (we will be min
warning("minES etc only singletons, for now. ES() crashes on clean=boudt!!"); ESar
```

```
## Warning: minES etc only singletons, for now. ES() crashes on clean=boudt!!
```

```
# c(2,3) changed 2020Dec26. Was: c(FALSE) # c(FALSE, TRUE)
pfESplus.ix.opts <- c(2:3) # Beware: not c(1,2) for now.
minESv3.ix.opts <- c(1:4) # c(3,1) coz 2 prisk= seems variable "industry standard"
cRebalSpec.ix.opts <- c(9:11, 12:13, 14) # Was: c(14). c(9:11, 12:13) # c(9, 10)

for(cRebalSpec.ix in cRebalSpec.ix.opts){
  for(ESargs.ix in ESargs.opts){
    for(pfESplus.ix in pfESplus.ix.opts){
      ES.args <- switch(ESargs.ix, # Note: ES args are passed in as a named list.
        list(p=cESpValue, clean="boudt"), # for robustness/ stability.
        list(p=cESpValue, clean="none"), # for conservative (investor) estimates.
        list(p=cESpValue, clean="none", method="gaussian"), # portfolio_method="single
          # method="gaussian" added 2020Dec26 coz "modified" fails (and "historical" d
          # as it depends on a Kurtosis estimate that exceedingly demands RAM etc. for
        list(p=cESpValue, clean="none", method="gaussian", portfolio_method="component
      )
      for(minESv3.ix in minESv3.ix.opts){
        pfPreES <- switch(pfESplus.ix,
          init.portFL,
          add.objective(portfolio=init.portFL, type="return", name="mean", target=cRet
          add.objective(portfolio=init.portFL, type="return", name="mean") # without a
        )

        etlv2 <- add.objective(portfolio=pfPreES, type="risk", name="ES", arguments=ES
        etlv2.RB <- add.objective(portfolio=etlv2, type="risk_budget", name="ES", argu
          min_prisk=0, max_prisk=0.6) # limits on component risk contribution.
        etlv2.eqRB <- add.objective(portfolio=etlv2, type="risk_budget", name="ES", ar
          min_concentration=TRUE) # objective with equal component risk contribution.
```

```
pfESplus.preConcAversion <- minESv3 <- list(etlv2, etlv2.RB, etlv2.eqRB, pfPre
if(cHHIconcAversion > 0){
  if(minESv3.ix != 4){
    warning(paste0("conc_aversion=", cHHIconcAversion,
      " other than mean xor var seems unsupported by ROI. So, it is ignored."))
    pfESplus <- pfESplus.preConcAversion
  } else {
    pfESplus <- add.objective(portfolio=pfESplus.preConcAversion, type="weight",
      name="HHI", conc_aversion=cHHIconcAversion)
  }
} else {
  pfESplus <- pfESplus.preConcAversion
}

tmp5.filePrefix <- paste0("opt_pfESplus", "-ESarg", ESargs.ix, # Was: "-clean"
  "Retarg", pfESplus.ix, "ES", minESv3.ix, tStamp()); print(paste0("Starting "
opt_pfESplus <- optimize.portfolio(R=R, portfolio=pfESplus, optimize_method="R
  momentFUN=cRebalSpec$momentFUN[cRebalSpec.ix], # Added 2020Dec23
  trace=TRUE)
saveRDS(opt_pfESplus, file=paste0(paste0(results.dir, "/"), tmp5.filePrefix, "
print(opt_pfESplus)
charTitle <- tmp5.filePrefix
  # paste0("ETL Optimization", "-ESarg", ESargs.ix, "-targRet", pfESplus.ix, "
chart.Weights(opt_pfESplus, main=charTitle)
if(FALSE){
  warning("Following plot() crashes the R session for 380+ assets! Manually r
  plot(opt_pfESplus, risk.col="ES", return.col="mean", main=charTitle) # , cha
} # else continue.

if(mustRebalance){
  btopt_pfESplus <- optimize.portfolio.rebalancing(R=R, portfolio=pfESplus,
    optimize_method="ROI", trace=TRUE,
    momentFUN=cRebalSpec$momentFUN[cRebalSpec.ix], # Added 2020Dec23
    rebalance_on=cRebalSpec$rebalance_on[cRebalSpec.ix], # Was: "quarters",
    training_period=cRebalSpec$training_period[cRebalSpec.ix], # Was: 36
    rolling_window=cRebalSpec$rolling_window[cRebalSpec.ix])
  saveRDS(btopt_pfESplus, file=paste0(paste0(results.dir, "/"),
    paste0("bt-rebal", cRebalSpec.ix, tmp5.filePrefix), tStamp(), ".rds"))
  print(btopt_pfESplus)
  if(FALSE){ # to avoid possible crashing due to large set of assets.
    btpfRets <- summary(btopt_pfESplus)$portfolio_returns
    rebalWts <- mychart.Weights(btopt_pfESplus, main=paste0("Weights", charTit
    # chart.Weights(btopt_pfESplus, main=paste0("Weights", charTitle),
    #   cex.legend=0.8/2) # , col=my_colors) # ylim=c(1.2),
    # # col=my_colors # bluemono)
    charts.PerformanceSummary(btpfRets, main=paste0("performance ", charTitle)
```

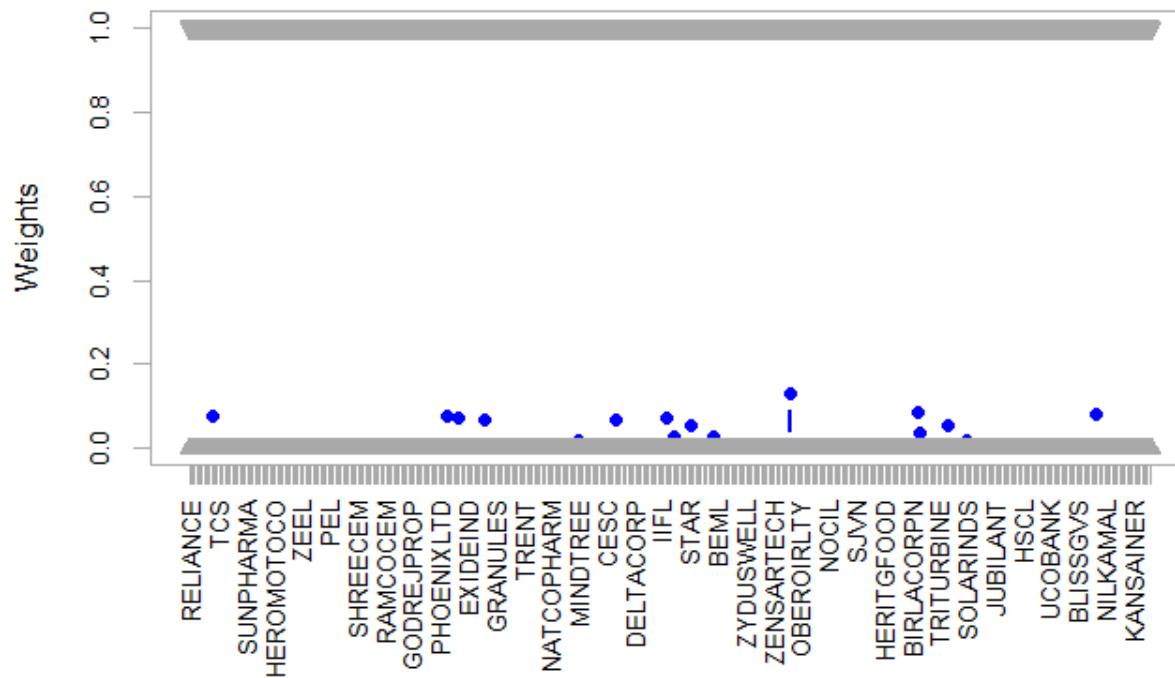
```
        # , col=my_colors)
    } # else continue
} # else continue
}
}
}
}

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES1-202101012250"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK     HDFC      ITC  AXISBANK     SBIN
##   0.0000    0.0000   0.0000    0.0000   0.0000    0.0000    0.0000
##   LT BAJFINANCE INFY BHARTIARTL      TCS      M.M KOTAKBANK
##   0.0000    0.0000   0.0791    0.0000   0.0000    0.0000    0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##   0.0000    0.0000   0.0000    0.0000   0.0000    0.0000    0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##   0.0000    0.0000   0.0000    0.0000   0.0000    0.0000    0.0000
## BPCL ASIANPAINT TITAN DRREDDY      GAIL HEROMOTOCO COALINDIA
##   0.0000    0.0000   0.0000    0.0000   0.0000    0.0000    0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##   0.0000    0.0000   0.0000    0.0000   0.0000    0.0000    0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##   0.0000    0.0000   0.0000    0.0106   0.0000    0.0000    0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##   0.0000    0.0000   0.0000    0.0000   0.0000    0.0000    0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##   0.0000    0.0000   0.0000    0.0000   0.0000    0.0000    0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORG SRF
##   0.0000    0.0046   0.0000    0.0000   0.0000    0.0000    0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##   0.0064    0.0000   0.0000    0.0000   0.0000    0.0000    0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##   0.0000    0.0000   0.0000    0.0000   0.0000    0.0000    0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##   0.0000    0.0000   0.0000    0.0000   0.0000    0.0000    0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##   0.0000    0.0000   0.0000    0.0000   0.0000    0.0000    0.0000
```

##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO

```
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## ORIENTREF      DCAL CHENNPETRO    SKFINDIA FINOLEXIND CENTURYPLY      SCI
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      GDL GREAVESCOT HERITGFOOD SHOPERSTOP    BOMDYEING    KNRCON HAWKINCOOK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VENKYS JINDALSAW    JK PAPER ESABINDIA MAHABANK SCHAEFFLER BIRLACORPN
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## BALMLAWRIE      MFSL PGHH MINDAIND VGUARD LINDEINDIA JCHAC
##      0.0000    0.0000    0.0839    0.0371    0.0000    0.0000    0.0000    0.0000
##      KSCL LAOPALA TATACOFFEE TRITURBINE DEEPAKFERT ASTRazen JKLAKSHMI
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGBL SUPRAJIT    GMM IFBIND IDBI FORCEMOT THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS BLUEDART    NESCO JAMNAAUTO JSL DHANUKA TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI TTKPRESTIG SUNTECK CAPPL NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK HSCL GMDCLTD PFIZER MHRIL NAVNETEDUL RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## IOB TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP BLISSGVs WABCOINDIA OMAXE HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg2ES1-202101012250



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES2-202101012251"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE   HDFCBANK   ICICIBANK      HDFC       ITC   AXISBANK      SBIN
##    0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000
##          LT  BAJFINANCE      INFY BHARTIARTL      TCS      M.M  KOTAKBANK
##    0.0000     0.0000     0.0791     0.0000     0.0000     0.0000     0.0000
## INDUSINDBK      ONGC      NTPC  TATAMOTORS  TATASTEEL    MARUTI DIVISLAB
##    0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000
## HINDALCO  SUNPHARMA      VEDL HINDUNILVR  HCLTECH BAJAJFINSV POWERGRID
##    0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000
##      BPCL ASIANPAINT      TITAN DRREDDY        GAIL  HEROMOTOCO COALINDIA
##    0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000
##      IOC  TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS    GRASIM WIPRO
##    0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000
##      UPL JSWSTEEL        ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

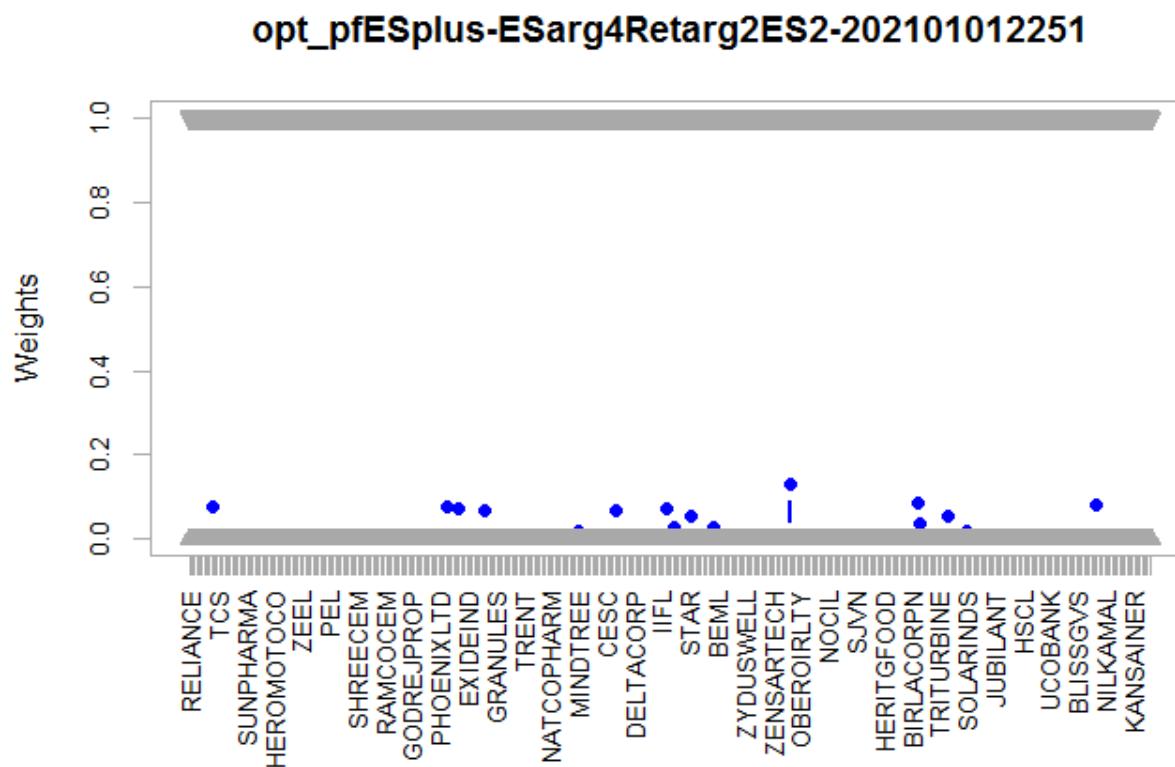
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES3-202101012251"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

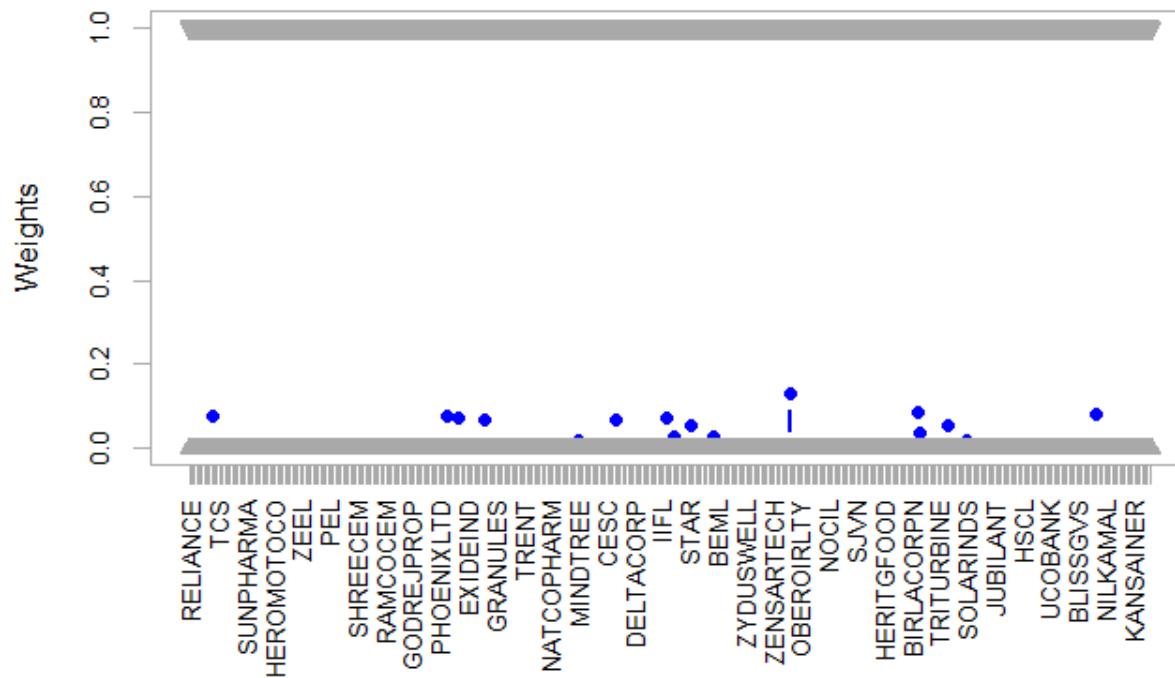
```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0.0000	0.0000	0.0791	0.0000	0.0000	0.0000	0.0000
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOC	TECHM	ULTRACEMCO	BAAJA.J.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLY	FDC	GODFRYRHP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```
## J.KBANK HSCL GMDCLTD PFIZER MHRIL NAVNETEDUL RCF
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOB TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK GEPIL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg2ES3-202101012251



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES4-202101012251"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0000	0.0000	0.5053	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

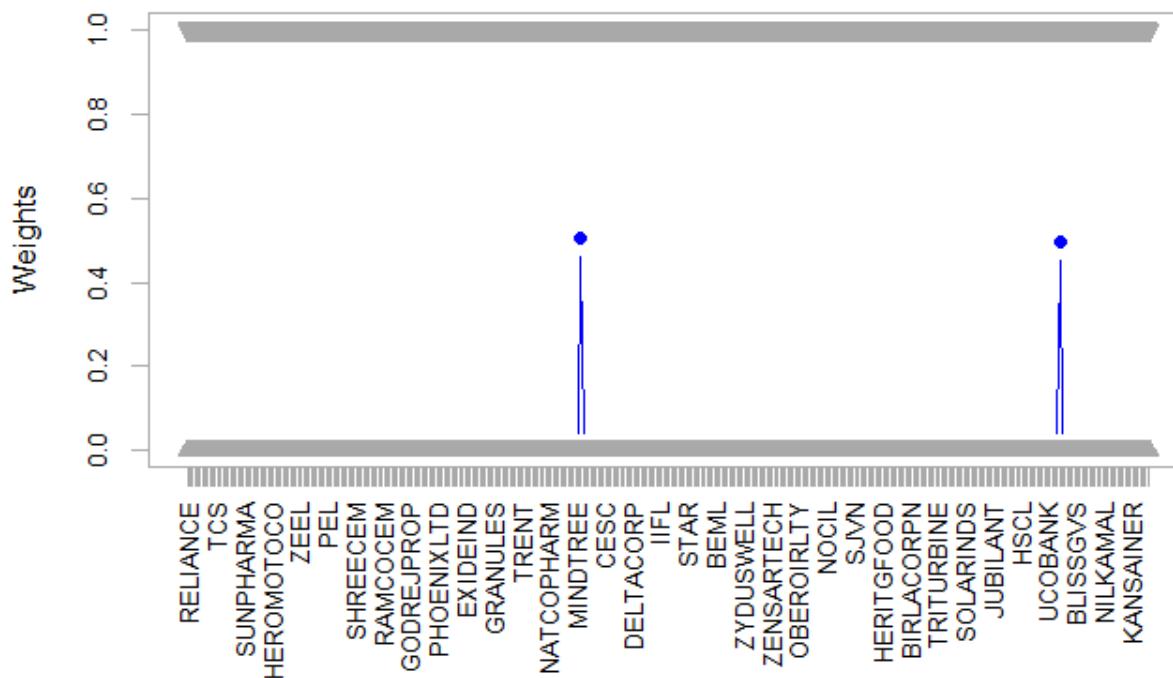
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.4947	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.005931

```

opt_pfESplus-ESarg4Retarg2ES4-202101012251



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES1-202101012251"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##      RELIANCE HDFCBANK ICICIBANK HDFC      ITC      AXISBANK      SBIN
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      LT BAJFINANCE INFY BHARTIARTL      TCS      M.M KOTAKBANK
##      0.0000    0.0000    0.0791    0.0000    0.0000    0.0000    0.0000

```

## INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
## 0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
## BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
## 0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
## PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
## 0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
## 0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
## MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
## 0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
## CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
## CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## APLAPOLLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
## 0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
## 0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
## ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD

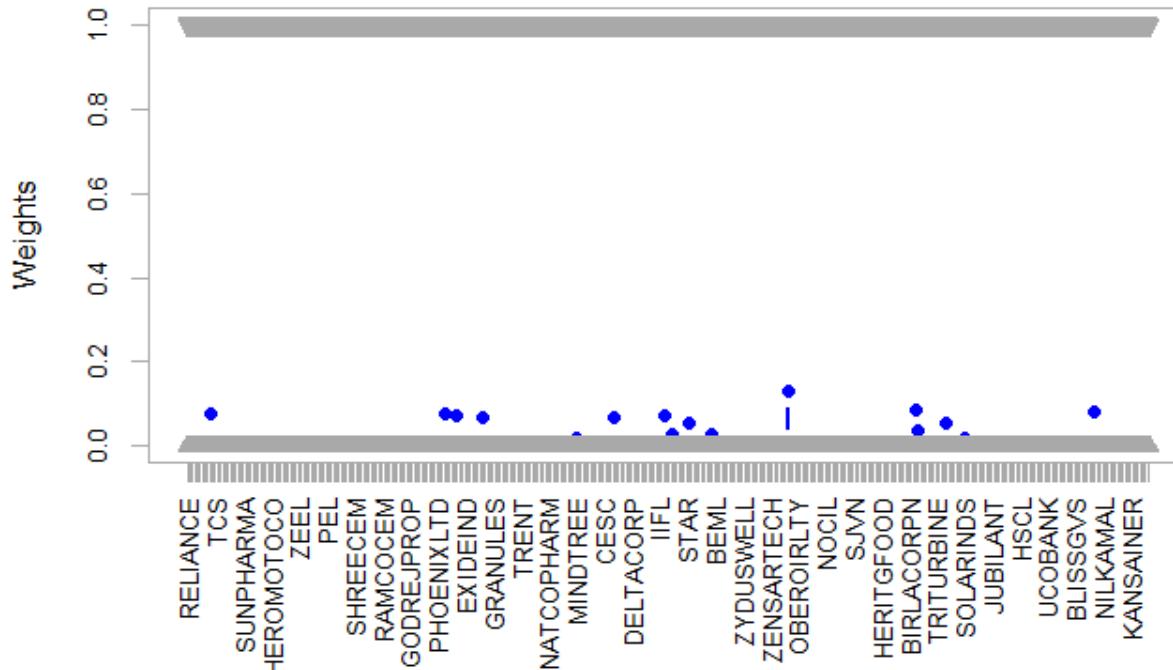
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINEERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNA AUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```

##  FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268

```

opt_pfESplus-ESarg4Retarg3ES1-202101012251



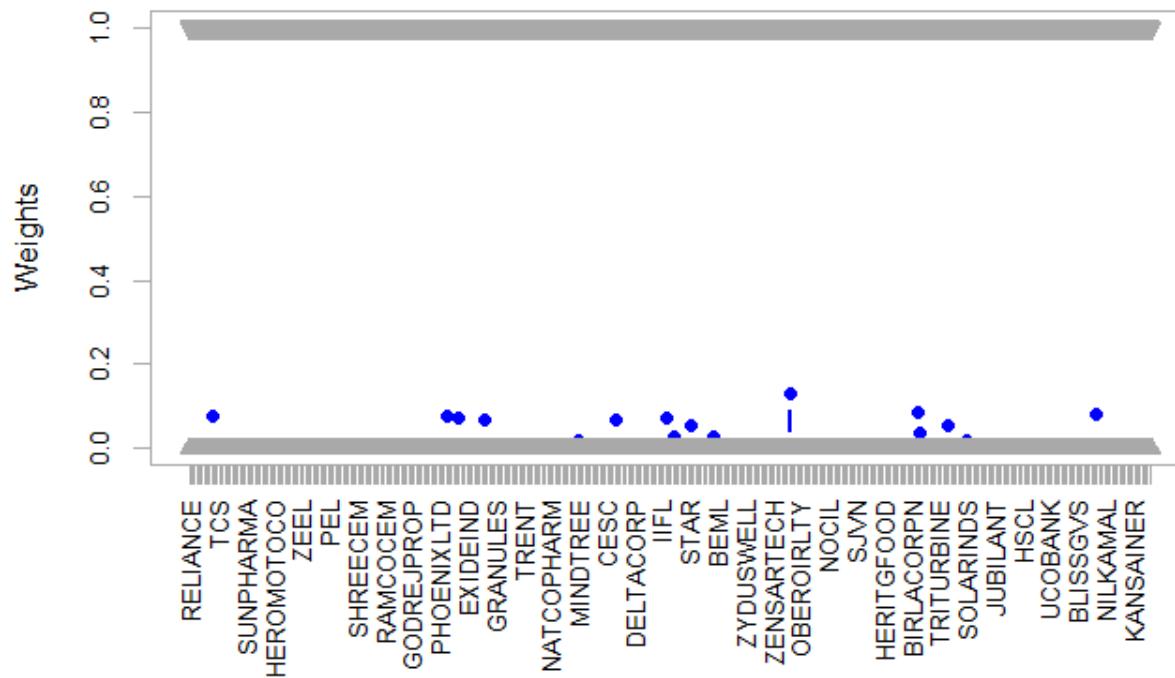
```
## [1] "Starting opt_pfESplus-ESarg4Retarg3ES2-202101012251"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
##    LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000   0.0000   0.0000   0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106   0.0000   0.0000   0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000   0.0000   0.0000   0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000   0.0763   0.0000   0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707   0.0000   0.0000   0.0000   0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0693   0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC  SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg3ES2-202101012251



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES3-202101012252"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

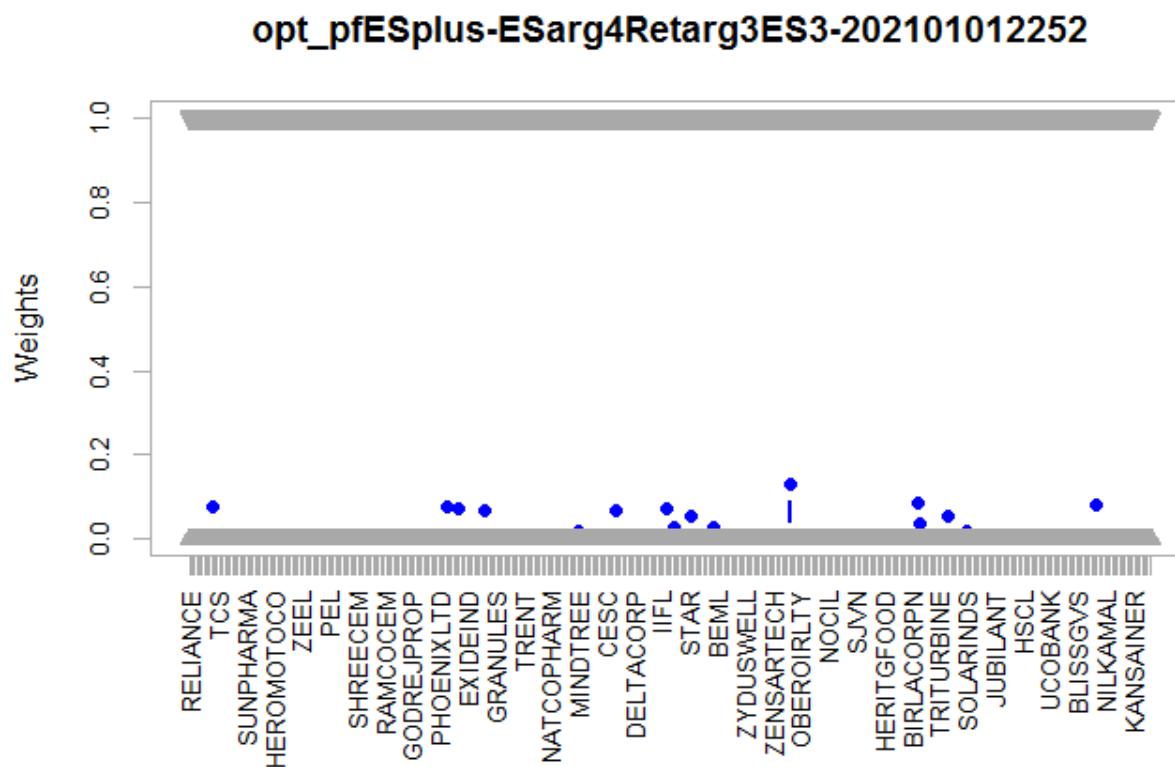
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES4-202101012252"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0	0	0	0	0	0	0
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0	0	0	0	0	0	0
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0	0	0	0	0	0	0
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0	0	0	0	0	0	0
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0	0	0	0	0	0	0
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0	0	0	0	0	0	0
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0	0	0	0	0	0	0
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0	0	0	0	0	0	0
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0	0	0	0	0	0	0
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0	0	0	0	0	0	0
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0	0	0	0	0	0	0
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSFIN	MANAPPURAM
##	0	0	0	0	0	0	0
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0	0	0	0	0	0	0
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0	0	0	0	0	0	0
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0	0	0	0	0	0	0
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0	0	0	0	0	0	0
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0	0	0	0	0	0	0
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0	0	0	0	0	0	0
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0	0	0	0	0	0	0
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0	0	0	0	0	0	0
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0	0	0	0	0	0	0
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0	0	0	0	0	0	0
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0	0	1	0	0	0	0
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

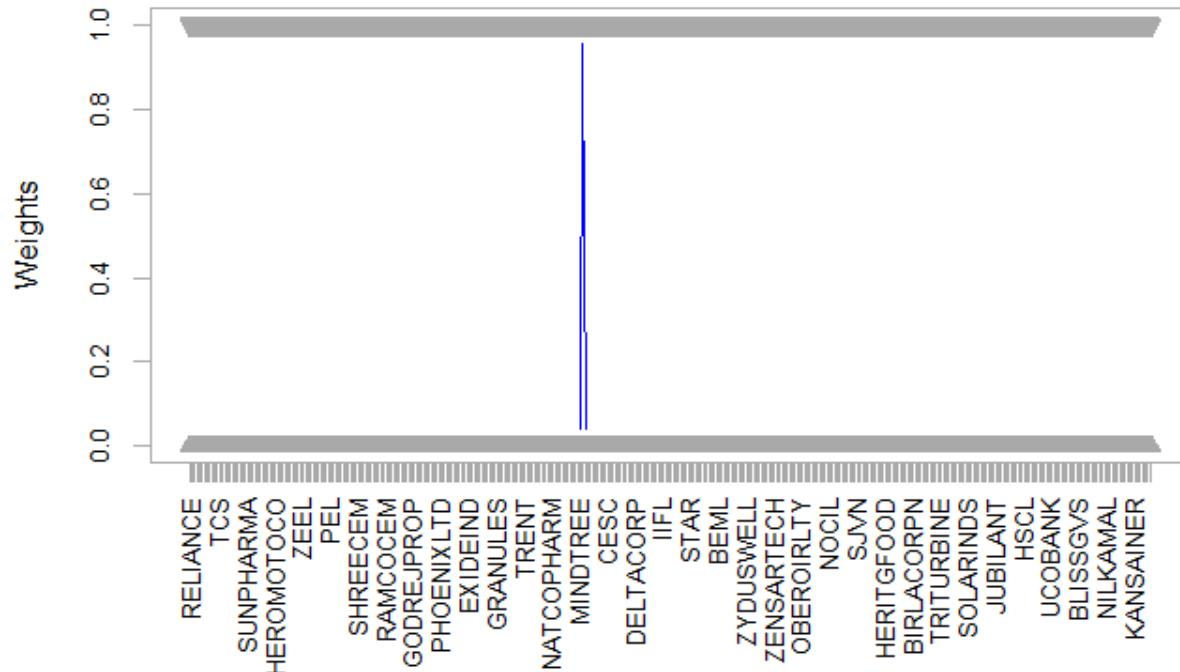
##	0	0	0	0	0	0	0	0
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGEET	UNIONBANK	DCMSHRIRAM	WELCORP	
##	0	0	0	0	0	0	0	0
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD	
##	0	0	0	0	0	0	0	0
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS	
##	0	0	0	0	0	0	0	0
##	RELAXO		KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0	0	0	0	0	0	0	0
##	KALPATPOWR	HINDCOPPER		STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0	0	0	0	0	0	0	0
##	BAJAJELEC	ENGINERSIN		GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0	0	0	0	0	0	0	0
##	IRB	UFLEX		BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0	0	0	0	0	0	0	0
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV	
##	0	0	0	0	0	0	0	0
##	CARBORUNIV		HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0	0	0	0	0	0	0	0
##	ZENSARTECH		SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0	0	0	0	0	0	0	0
##	ALKYLAMINE	BANKINDIA	SUDARSCHM		IPCALAB	OBEROIRLTY	FDC	GODFRY PHLP
##	0	0	0	0	0	0	0	0
##	SHILPAMED	PHILIPCARB		MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0	0	0	0	0	0	0	0
##	MAHSCOOTER		NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0	0	0	0	0	0	0	0
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL		SJVN	ALLCARGO
##	0	0	0	0	0	0	0	0
##	ORIENTREF		DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0	0	0	0	0	0	0	0
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING		KNRCON	HAWKINCOOK
##	0	0	0	0	0	0	0	0
##	VENKYS	JINDALSAW		JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0	0	0	0	0	0	0	0
##	BALMLAWRIE		MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0	0	0	0	0	0	0	0
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI	
##	0	0	0	0	0	0	0	0
##	VAIBHAVGBL	SUPRAJIT		GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0	0	0	0	0	0	0	0
##	SOLARINDS	BLUEDART		NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0	0	0	0	0	0	0	0
##	TATAMETALI		MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0	0	0	0	0	0	0	0
##	KEI	TTKPRESTIG		SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0	0	0	0	0	0	0	0

```

##   J.KBANK      HSCL     GMDCLTD      PFIZER      MHRIL  NAVNETEDUL      RCF
##      0          0          0          0          0          0          0          0
##    IOB      TVTODAY  SCHNEIDER  RATNAMANI  JKTYRE  UCOBANK      GEPIL
##      0          0          0          0          0          0          0          0
##  FCONSUMER  TIMETECHNO    JAGRAN      MMTC      SANOFI      CCL SWANENERGY
##      0          0          0          0          0          0          0          0
## JAICORPLTD    DBCORP    BLISSGVIS WABCOINDIA      OMAXE      HATHWAY MAHINDCIE
##      0          0          0          0          0          0          0          0
## MAHLIFE       ITI EMAMILTD      ASTRAL      SYMPHONY INDOCO  NILKAMAL
##      0          0          0          0          0          0          0          0
## SUZLON        IFCI      ITDC      CRISIL      BRIGADE  BLUESTARCO MAHSEAMLES
##      0          0          0          0          0          0          0          0
## HEIDELBERG    POLYMED    GRINDWELL KANSAINER      AIAENG      TASTYBIT PERSISTENT
##      0          0          0          0          0          0          0          0
## JKCEMENT      MPHASIS    HONAUT      HINDPETRO
##      0          0          0          0
##
## Objective Measure:
##   mean
## 0.01533

```

opt_pfESplus-ESarg4Retarg3ES4-202101012252



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES1-202101012252"

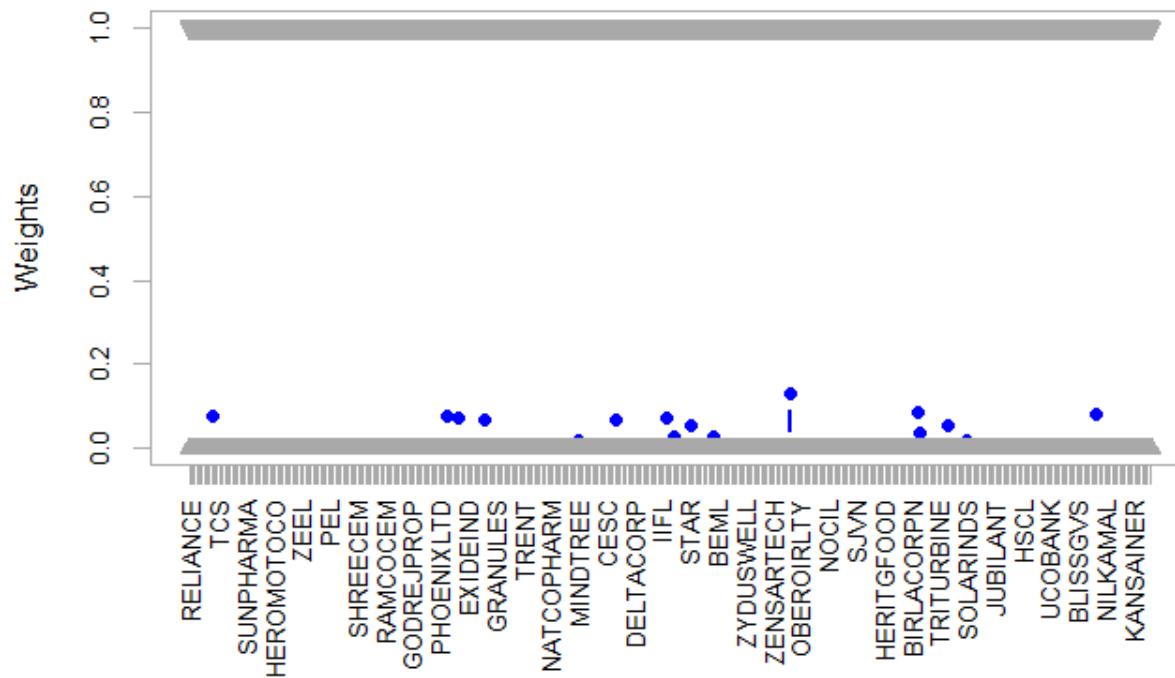
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
##    LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000   0.0000   0.0000   0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106   0.0000   0.0000   0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000   0.0000   0.0000   0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000   0.0763   0.0000   0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707   0.0000   0.0000   0.0000   0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0693   0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC  SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg2ES1-202101012252



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES2-202101012252"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

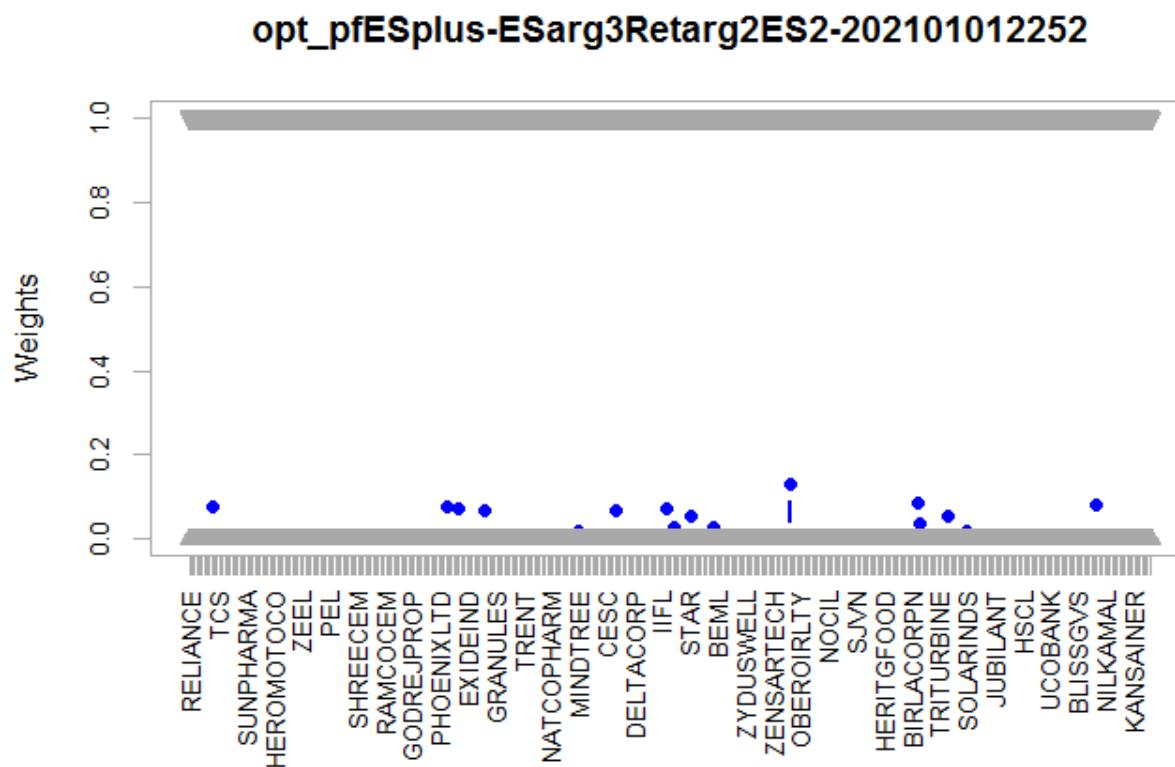
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES3-202101012252"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

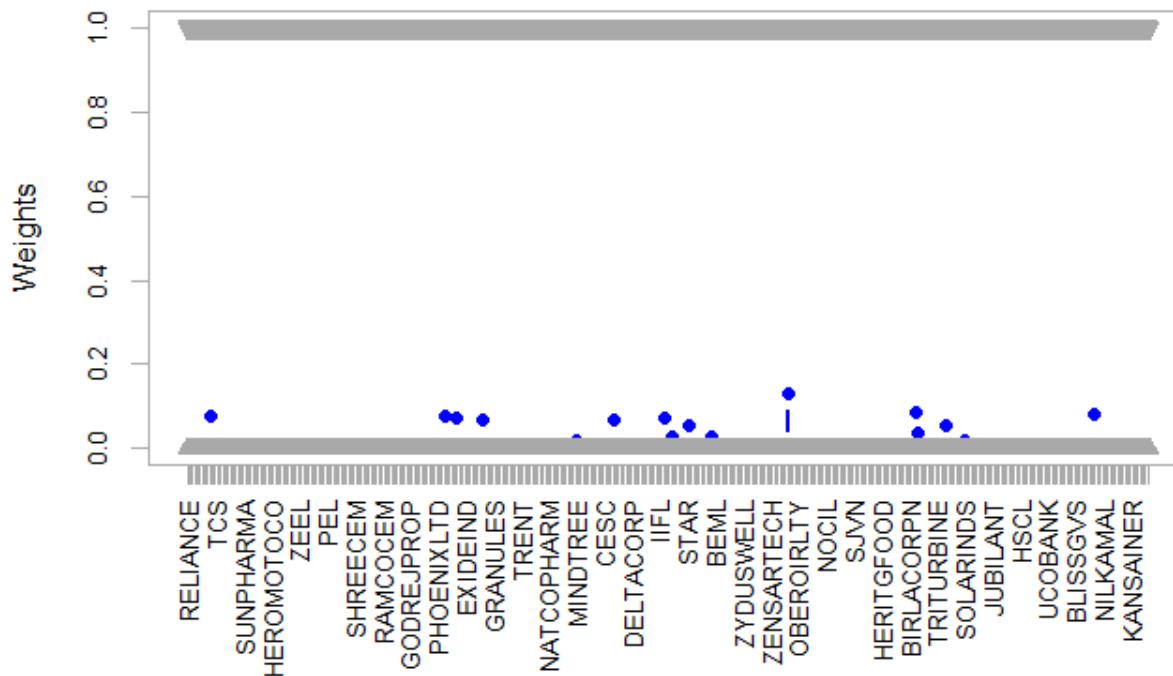
```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0.0000	0.0000	0.0791	0.0000	0.0000	0.0000	0.0000
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLY	FDC	GODFRYRHP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```
## J.KBANK HSCL GMDCLTD PFIZER MHRIL NAVNETEDUL RCF
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOB TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK GEPIL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg2ES3-202101012252



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES4-202101012253"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0000	0.0000	0.5053	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

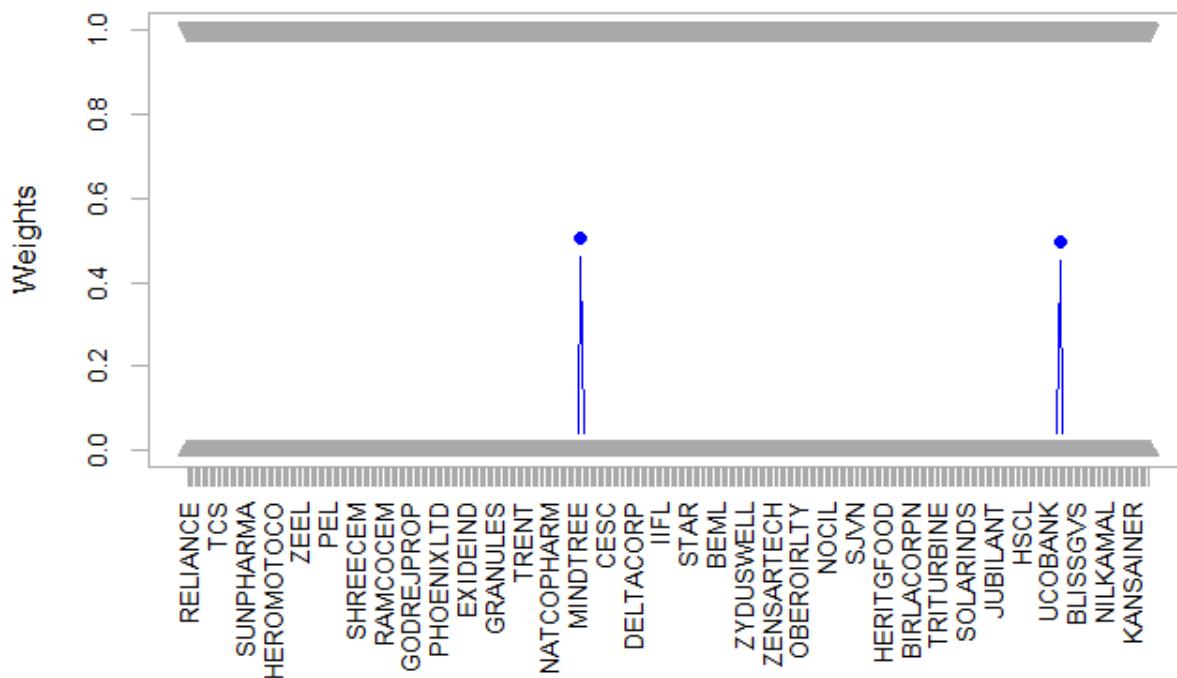
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRHP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.4947	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.005931

```

opt_pfESplus-ESarg3Retarg2ES4-202101012253



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES1-202101012253"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##      RELIANCE HDFCBANK ICICIBANK HDFC      ITC      AXISBANK      SBIN
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      LT BAJFINANCE INFY BHARTIARTL      TCS      M.M KOTAKBANK
##      0.0000    0.0000    0.0791    0.0000    0.0000    0.0000    0.0000

```

## INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
## 0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
## BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
## 0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
## PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
## 0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
## 0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
## MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
## 0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
## CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
## CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## APLAPOLLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
## 0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
## 0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
## ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD

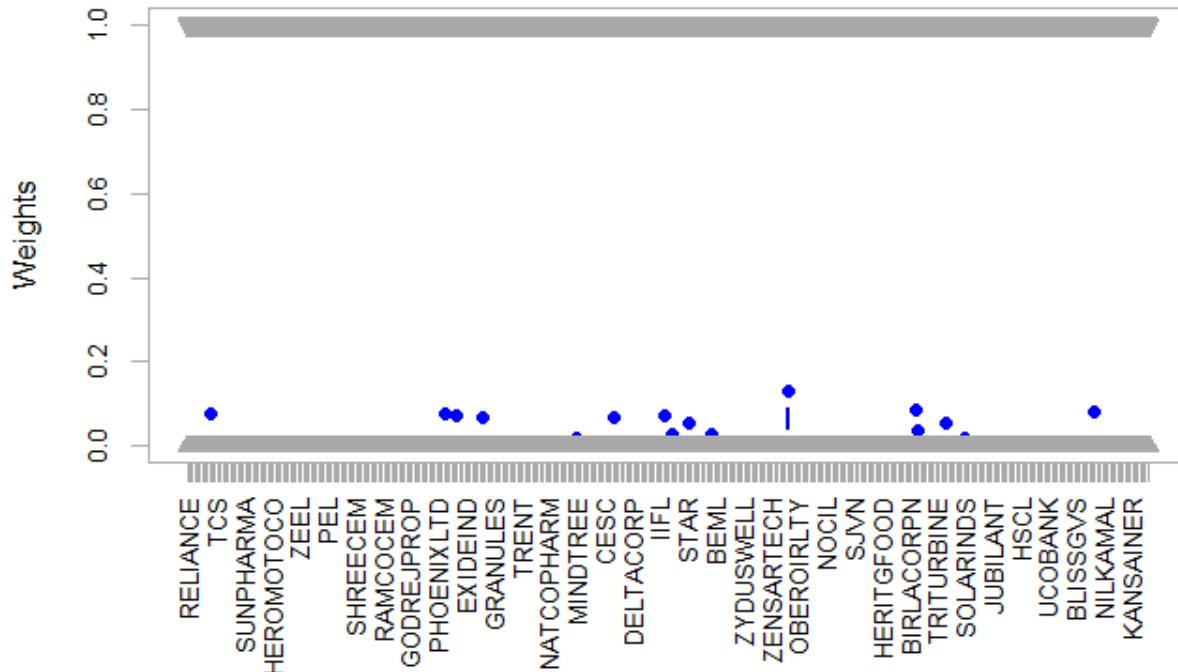
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINEERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNA AUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```

##  FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268

```

opt_pfESplus-ESarg3Retarg3ES1-202101012253



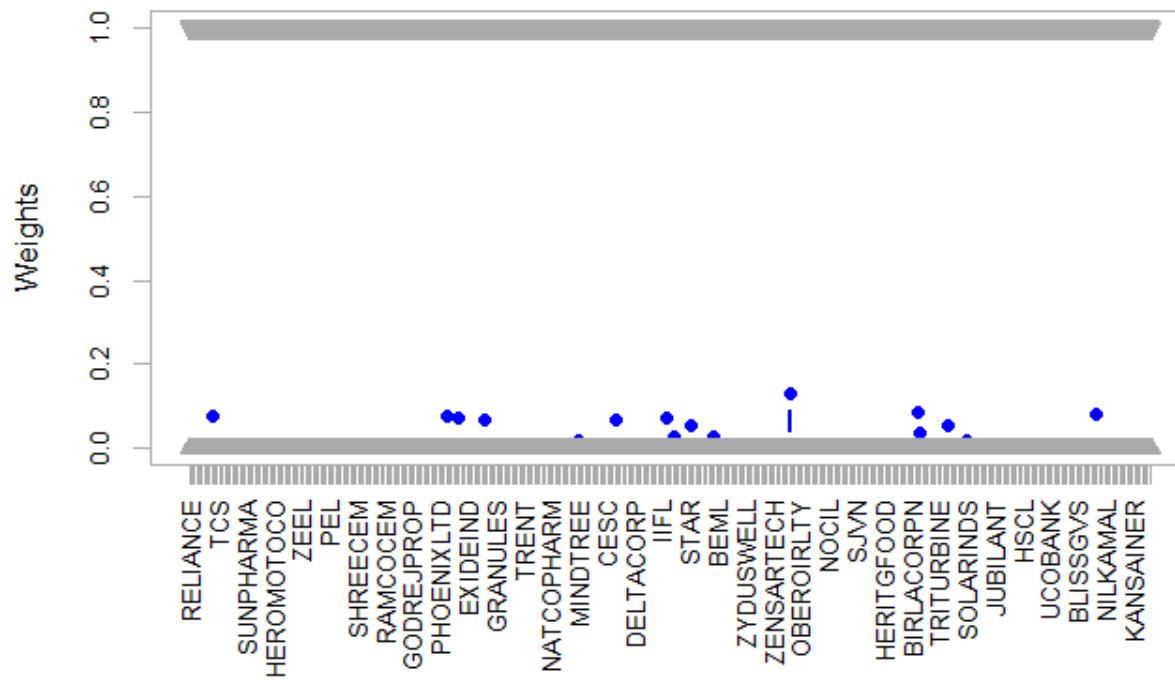
```
## [1] "Starting opt_pfESplus-ESarg3Retarg3ES2-202101012253"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000 0.0000 0.0791 0.0000 0.0000 0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
## 0.0000 0.0000 0.0000 0.0106 0.0000 0.0000 0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
## 0.0000 0.0046 0.0000 0.0000 0.0000 0.0000 0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
## 0.0064 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
## 0.0000 0.0000 0.0000 0.0000 0.0763 0.0000 0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
## 0.0000 0.0000 0.0707 0.0000 0.0000 0.0000 0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0693 0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC  SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg3ES2-202101012253



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES3-202101012253"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000   0.0000   0.0791   0.0000 0.0000   0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

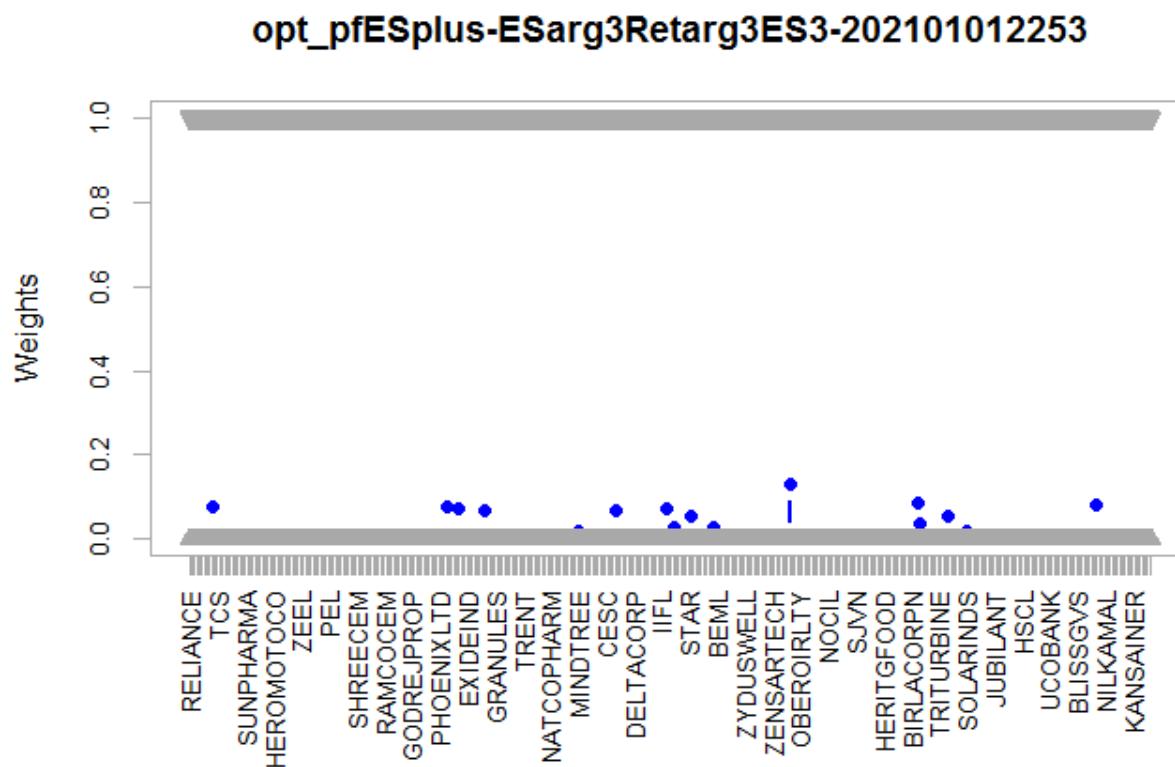
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES4-202101012253"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0	0	0	0	0	0	0
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0	0	0	0	0	0	0
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0	0	0	0	0	0	0
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0	0	0	0	0	0	0
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0	0	0	0	0	0	0
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0	0	0	0	0	0	0
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0	0	0	0	0	0	0
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0	0	0	0	0	0	0
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0	0	0	0	0	0	0
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0	0	0	0	0	0	0
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0	0	0	0	0	0	0
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0	0	0	0	0	0	0
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0	0	0	0	0	0	0
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0	0	0	0	0	0	0
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0	0	0	0	0	0	0
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0	0	0	0	0	0	0
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0	0	0	0	0	0	0
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0	0	0	0	0	0	0
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0	0	0	0	0	0	0
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0	0	0	0	0	0	0
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0	0	0	0	0	0	0
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0	0	0	0	0	0	0
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0	0	1	0	0	0	0
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

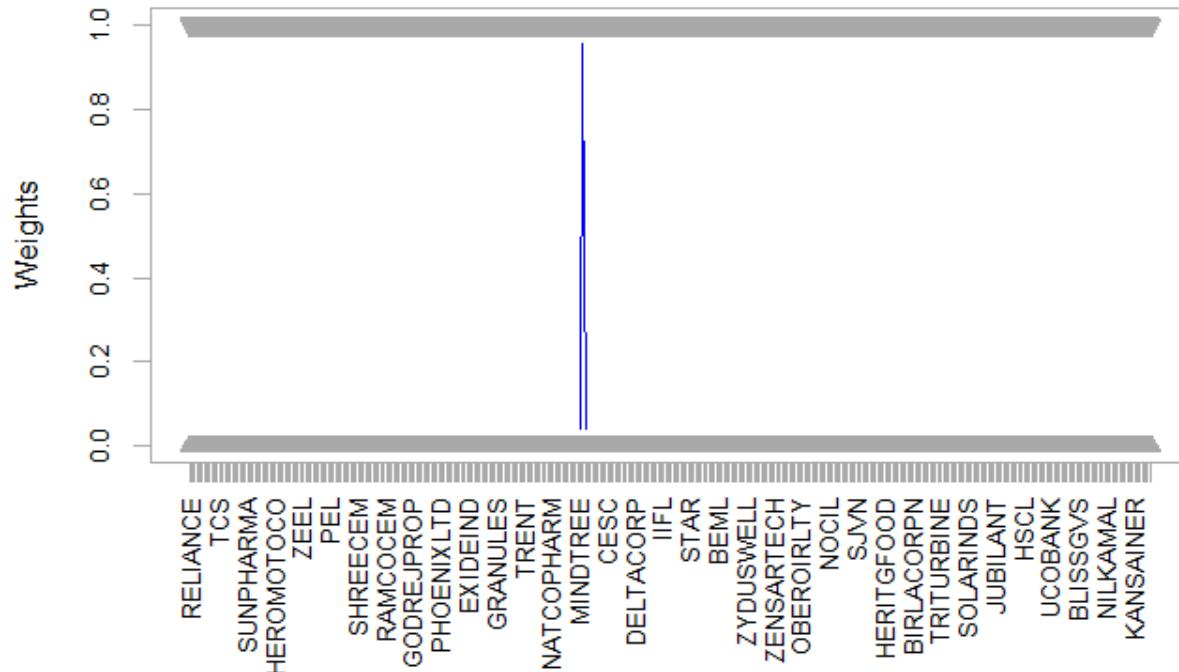
##	0	0	0	0	0	0	0	0
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGEET	UNIONBANK	DCMSHRIRAM	WELCORP	
##	0	0	0	0	0	0	0	0
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD	
##	0	0	0	0	0	0	0	0
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS	
##	0	0	0	0	0	0	0	0
##	RELAXO		KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0	0	0	0	0	0	0	0
##	KALPATPOWR	HINDCOPPER		STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0	0	0	0	0	0	0	0
##	BAJAJELEC	ENGINERSIN		GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0	0	0	0	0	0	0	0
##	IRB	UFLEX		BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0	0	0	0	0	0	0	0
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV	
##	0	0	0	0	0	0	0	0
##	CARBORUNIV		HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0	0	0	0	0	0	0	0
##	ZENSARTECH		SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0	0	0	0	0	0	0	0
##	ALKYLAMINE	BANKINDIA	SUDARSCHM		IPCALAB	OBEROIRLTY	FDC	GODFRY PHLP
##	0	0	0	0	0	0	0	0
##	SHILPAMED	PHILIPCARB		MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0	0	0	0	0	0	0	0
##	MAHSCOOTER		NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0	0	0	0	0	0	0	0
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL		SJVN	ALLCARGO
##	0	0	0	0	0	0	0	0
##	ORIENTREF		DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0	0	0	0	0	0	0	0
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING		KNRCON	HAWKINCOOK
##	0	0	0	0	0	0	0	0
##	VENKYS	JINDALSAW		JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0	0	0	0	0	0	0	0
##	BALMLAWRIE		MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0	0	0	0	0	0	0	0
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI	
##	0	0	0	0	0	0	0	0
##	VAIBHAVGBL	SUPRAJIT		GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0	0	0	0	0	0	0	0
##	SOLARINDS	BLUEDART		NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0	0	0	0	0	0	0	0
##	TATAMETALI		MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0	0	0	0	0	0	0	0
##	KEI	TTKPRESTIG		SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0	0	0	0	0	0	0	0

```

##   J.KBANK      HSCL     GMDCLTD      PFIZER      MHRIL  NAVNETEDUL      RCF
##      0          0          0          0          0          0          0          0
##    IOB      TVTODAY  SCHNEIDER  RATNAMANI  JKTYRE  UCOBANK      GEPIL
##      0          0          0          0          0          0          0          0
##  FCONSUMER  TIMETECHNO    JAGRAN      MMTC      SANOFI      CCL SWANENERGY
##      0          0          0          0          0          0          0          0
## JAICORPLTD    DBCORP    BLISSGVIS WABCOINDIA      OMAXE      HATHWAY MAHINDCIE
##      0          0          0          0          0          0          0          0
## MAHLIFE       ITI EMAMILTD      ASTRAL      SYMPHONY INDOCO  NILKAMAL
##      0          0          0          0          0          0          0          0
## SUZLON        IFCI      ITDC      CRISIL      BRIGADE  BLUESTARCO MAHSEAMLES
##      0          0          0          0          0          0          0          0
## HEIDELBERG    POLYMED    GRINDWELL KANSAINER      AIAENG      TASTYBIT PERSISTENT
##      0          0          0          0          0          0          0          0
## JKCEMENT    MPHASIS      HONAUT HINDPETRO
##      0          0          0          0
##
## Objective Measure:
##   mean
## 0.01533

```

opt_pfESplus-ESarg3Retarg3ES4-202101012253



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES1-202101012253"

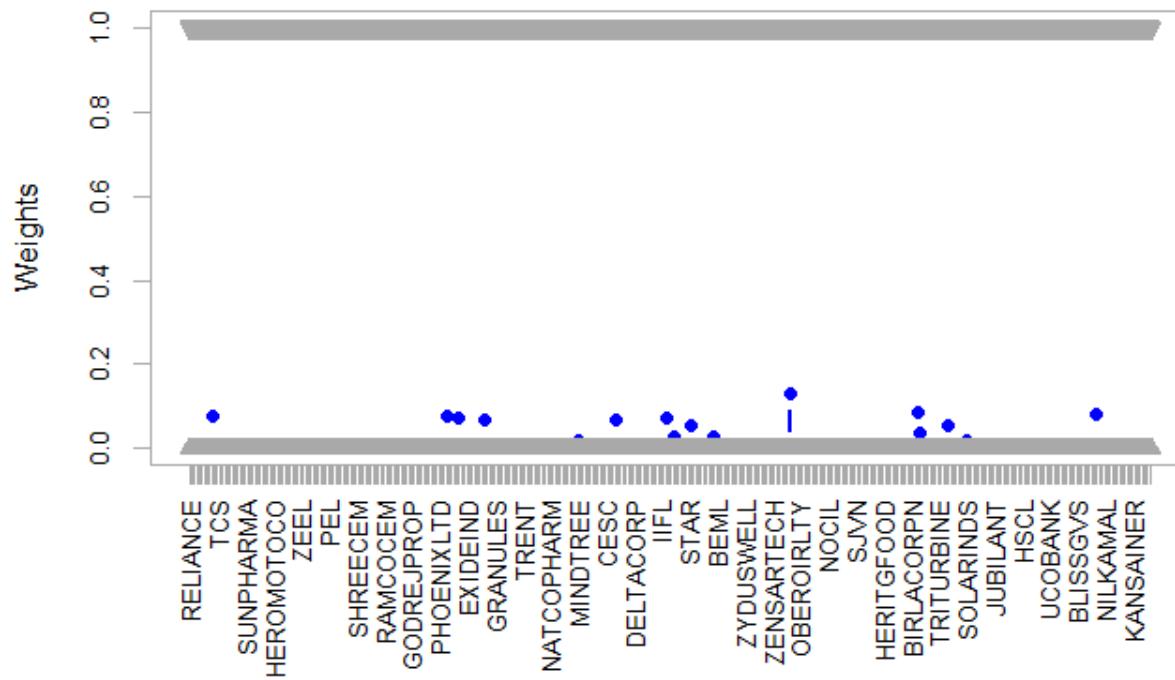
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000 0.0000 0.0791 0.0000 0.0000 0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
## 0.0000 0.0000 0.0000 0.0106 0.0000 0.0000 0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
## 0.0000 0.0046 0.0000 0.0000 0.0000 0.0000 0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
## 0.0064 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
## 0.0000 0.0000 0.0000 0.0000 0.0763 0.0000 0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
## 0.0000 0.0000 0.0707 0.0000 0.0000 0.0000 0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0693 0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT      GMM      IFBIND     IDBI   FORCEMOT   THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART     NESCO   JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI MRPL NBVENTURES BAJAJHLDNG JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI TTKPRESTIG SUNTECK     CAPPL   NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      JK.BANK HSCL GMDCLTD    PFIZER   MHRIL  NAVNETEDUL RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE  UCOBANK  GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER TIMETECHNO JAGRAN      MMTC   SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVIS WABCOINDIA OMAXE  HATHWAY  MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE    ITI  EMAMILTD ASTRAL   SYMPHONY INDOCO  NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON     IFCI   ITDC   CRISIL   BRIGADE  BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG  TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT   MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg2ES1-202101012253



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES2-202101012254"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

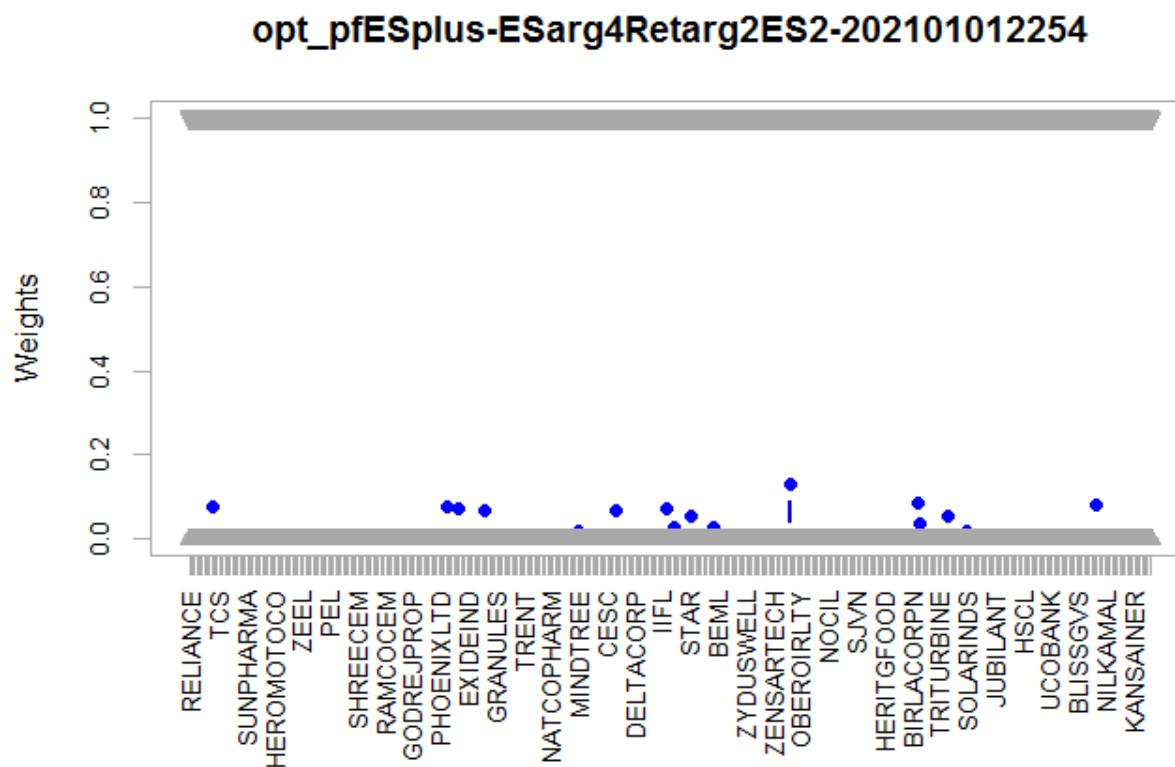
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES3-202101012254"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

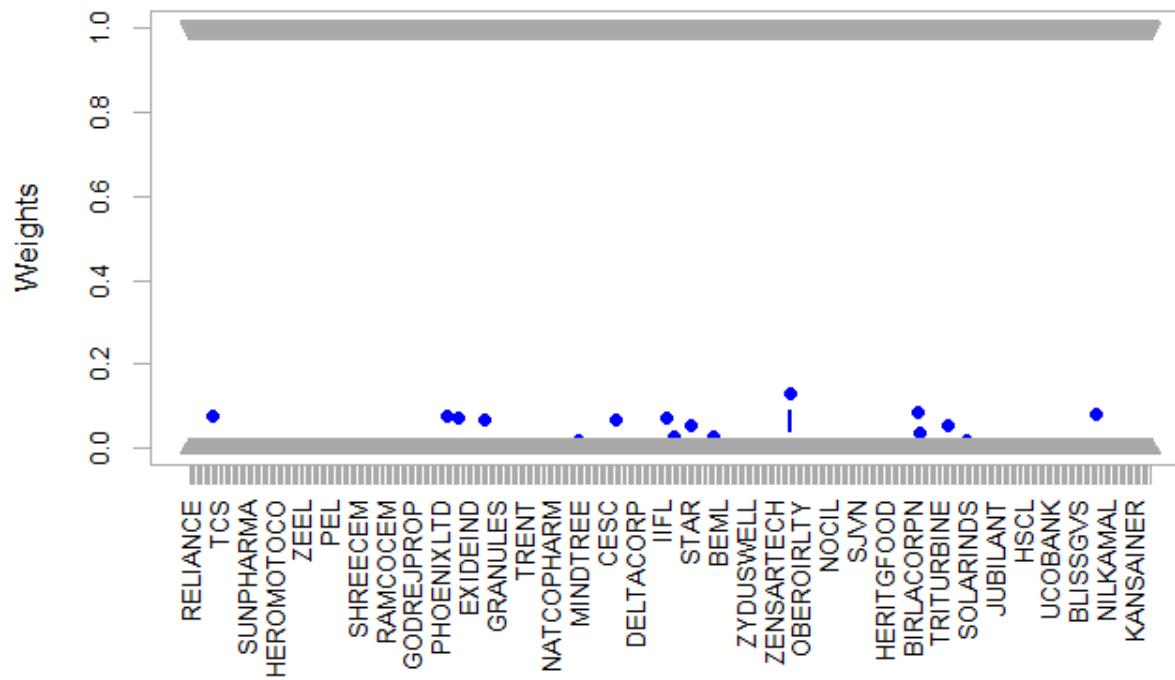
```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0.0000	0.0000	0.0791	0.0000	0.0000	0.0000	0.0000
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOC	TECHM	ULTRACEMCO	BAAJA.J.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLY	FDC	GODFRYRHP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```
## J.KBANK HSCL GMDCLTD PFIZER MHRIL NAVNETEDUL RCF
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOB TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK GEPIL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg2ES3-202101012254



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES4-202101012254"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0000	0.0000	0.5053	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

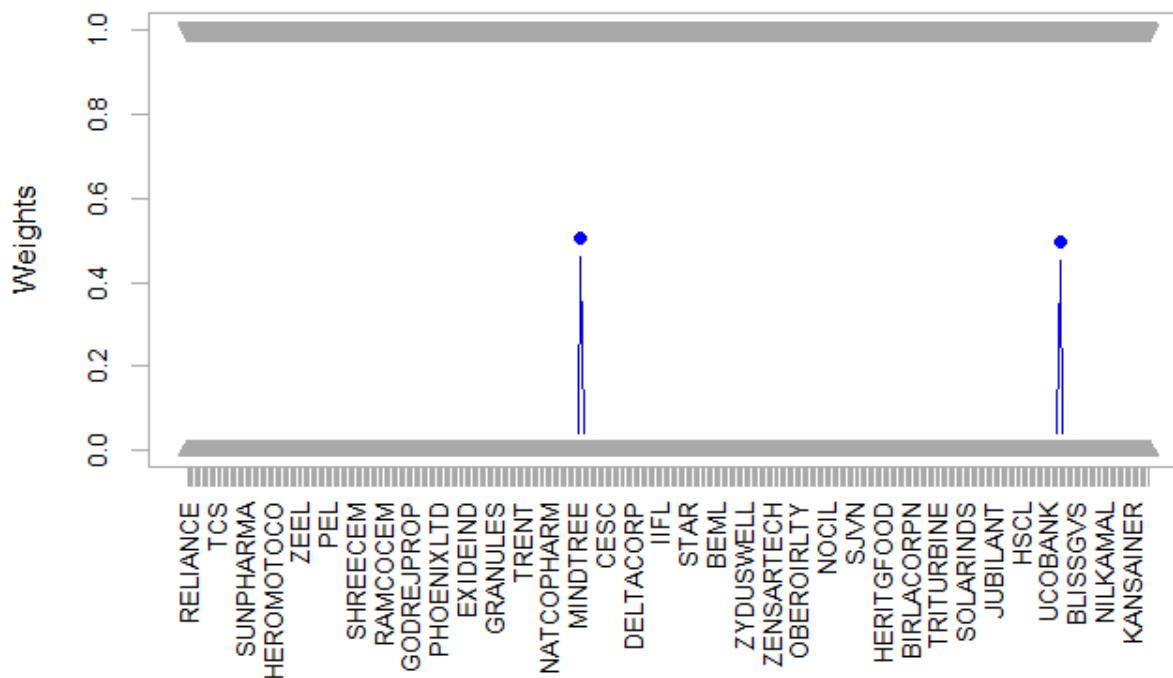
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.4947	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.005931

```

opt_pfESplus-ESarg4Retarg2ES4-202101012254



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES1-202101012254"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##      RELIANCE HDFCBANK ICICIBANK HDFC      ITC      AXISBANK      SBIN
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      LT BAJFINANCE INFY BHARTIARTL      TCS      M.M KOTAKBANK
##      0.0000    0.0000    0.0791    0.0000    0.0000    0.0000    0.0000

```

## INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
## 0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
## BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
## 0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
## PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
## 0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
## 0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
## MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
## 0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
## CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
## CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## APLAPOLLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
## 0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
## 0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
## ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD

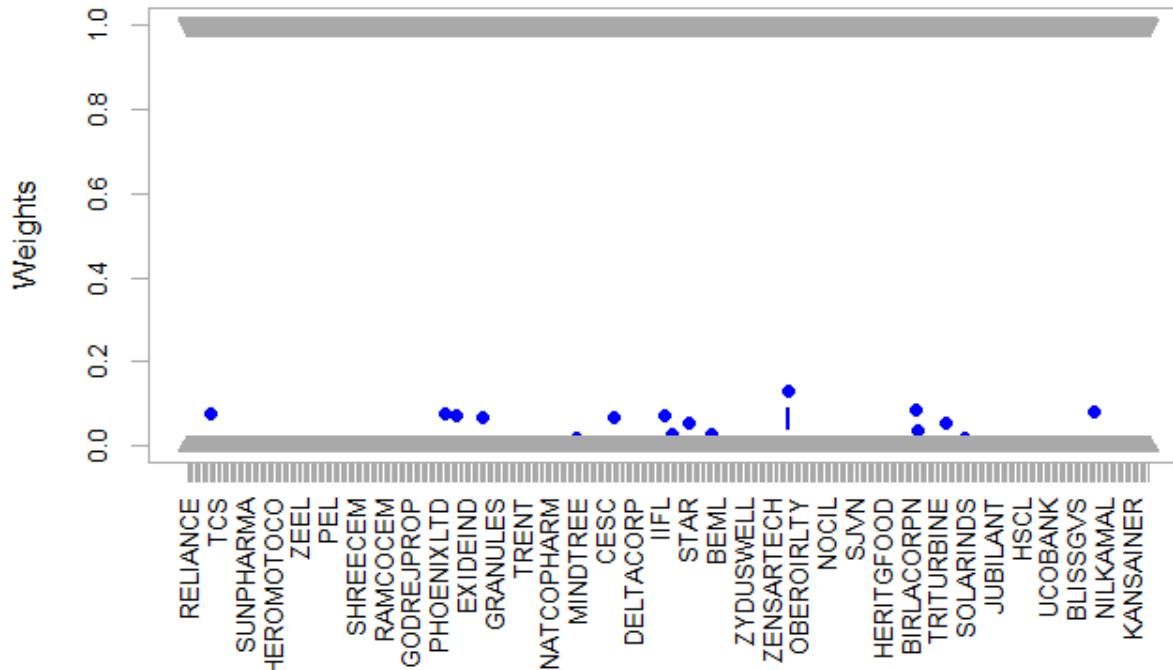
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINEERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNA AUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```

##  FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268

```

opt_pfESplus-ESarg4Retarg3ES1-202101012254



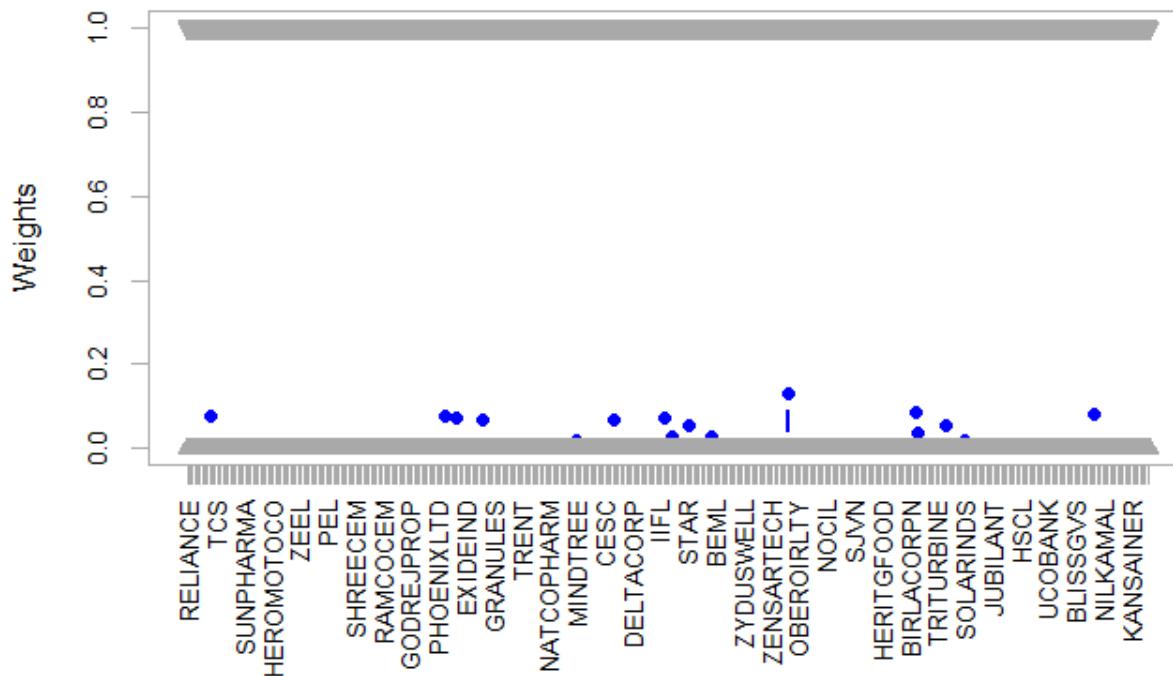
```
## [1] "Starting opt_pfESplus-ESarg4Retarg3ES2-202101012254"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
##    LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000   0.0000   0.0000   0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106   0.0000   0.0000   0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000   0.0000   0.0000   0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000   0.0763   0.0000   0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707   0.0000   0.0000   0.0000   0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0693   0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE  UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC  SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE  HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL  SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL  BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT  HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg3ES2-202101012254



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES3-202101012255"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

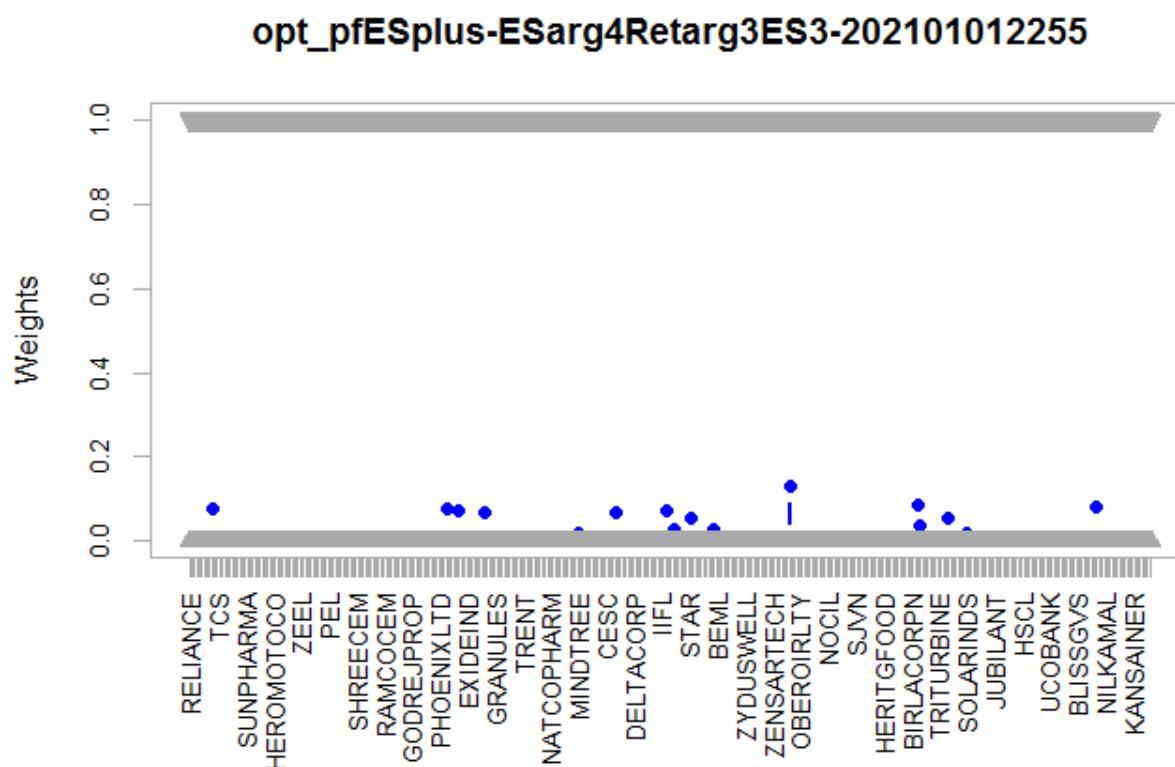
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES4-202101012255"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0	0	0	0	0	0	0
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0	0	0	0	0	0	0
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0	0	0	0	0	0	0
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0	0	0	0	0	0	0
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0	0	0	0	0	0	0
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0	0	0	0	0	0	0
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0	0	0	0	0	0	0
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0	0	0	0	0	0	0
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0	0	0	0	0	0	0
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0	0	0	0	0	0	0
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0	0	0	0	0	0	0
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0	0	0	0	0	0	0
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0	0	0	0	0	0	0
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0	0	0	0	0	0	0
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0	0	0	0	0	0	0
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0	0	0	0	0	0	0
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0	0	0	0	0	0	0
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0	0	0	0	0	0	0
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0	0	0	0	0	0	0
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0	0	0	0	0	0	0
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0	0	0	0	0	0	0
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0	0	0	0	0	0	0
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0	0	1	0	0	0	0
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

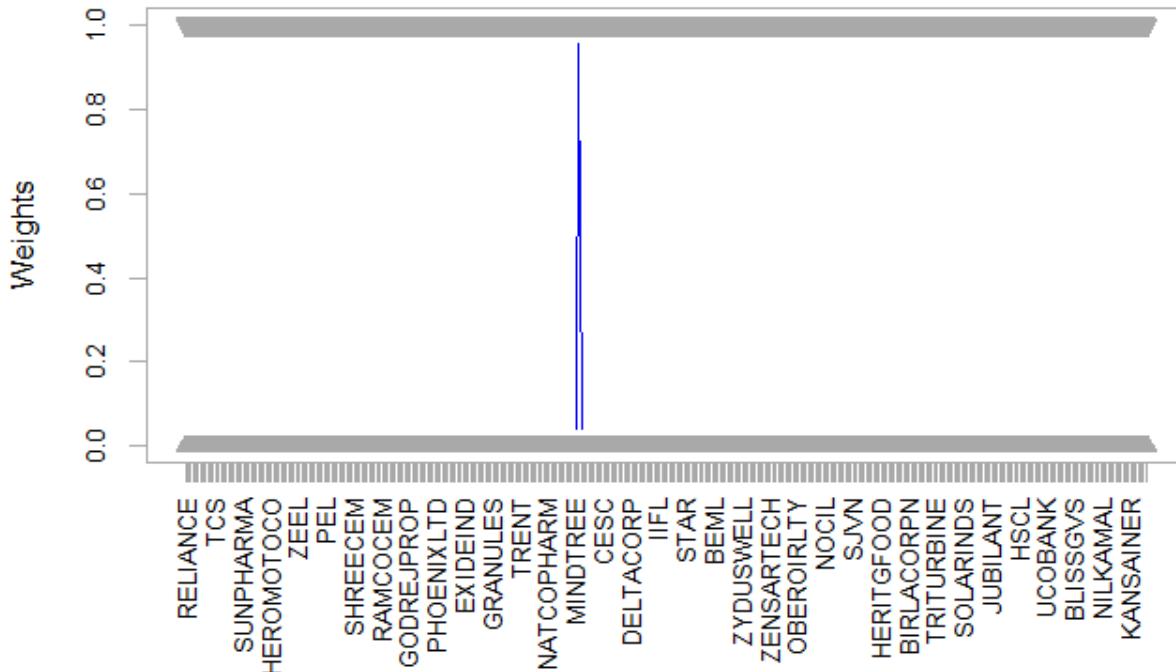
##	0	0	0	0	0	0	0	0
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGEET	UNIONBANK	DCMSHRIRAM	WELCORP	
##	0	0	0	0	0	0	0	0
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD	
##	0	0	0	0	0	0	0	0
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS	
##	0	0	0	0	0	0	0	0
##	RELAXO		KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0	0	0	0	0	0	0	0
##	KALPATPOWR	HINDCOPPER		STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0	0		0	0	0	0	0
##	BAJAJELEC	ENGINERSIN		GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0	0		0	0	0	0	0
##	IRB	UFLEX		BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0	0		0	0	0	0	0
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV	
##	0	0		0	0	0	0	0
##	CARBORUNIV		HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0	0		0	0	0	0	0
##	ZENSARTECH		SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0	0		0	0	0	0	0
##	ALKYLAMINE	BANKINDIA	SUDARSCHM		IPCALAB	OBEROIRLTY	FDC	GODFRY PHLP
##	0	0		0	0	0	0	0
##	SHILPAMED	PHILIPCARB		MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0	0		0	0	0	0	0
##	MAHSCOOTER		NOCIL	INOXLEISUR		GHCL	TATAINVEST	NLCINDIA
##	0	0		0	0	0	0	0
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS		KRBL	SJVN	ALLCARGO
##	0	0		0	0	0	0	0
##	ORIENTREF		DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0	0		0	0	0	0	0
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING		KNRCON	HAWKINCOOK
##	0	0		0	0	0	0	0
##	VENKYS	JINDALSAW		JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0	0		0	0	0	0	0
##	BALMLAWRIE		MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0	0		0	0	0	0	0
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI	
##	0	0		0	0	0	0	0
##	VAIBHAVGBL	SUPRAJIT		GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0	0		0	0	0	0	0
##	SOLARINDS	BLUEDART		NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0	0		0	0	0	0	0
##	TATAMETALI		MRPL	NBVENTURES	BAJA JHLNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0	0		0	0	0	0	0
##	KEI	TTKPRESTIG		SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0	0		0	0	0	0	0

```

##   J.KBANK      HSCL     GMDCLTD      PFIZER      MHRIL  NAVNETEDUL      RCF
##      0          0          0          0          0          0          0          0
##    IOB      TVTODAY  SCHNEIDER  RATNAMANI  JKTYRE  UCOBANK      GEPIL
##      0          0          0          0          0          0          0          0
##  FCONSUMER  TIMETECHNO    JAGRAN      MMTC      SANOFI      CCL SWANENERGY
##      0          0          0          0          0          0          0          0
## JAICORPLTD    DBCORP    BLISSGVIS WABCOINDIA      OMAXE      HATHWAY MAHINDCIE
##      0          0          0          0          0          0          0          0
## MAHLIFE       ITI  EMAMILTD      ASTRAL      SYMPHONY  INDOCO  NILKAMAL
##      0          0          0          0          0          0          0          0
## SUZLON        IFCI      ITDC      CRISIL      BRIGADE  BLUESTARCO MAHSEAMLES
##      0          0          0          0          0          0          0          0
## HEIDELBERG    POLYMED    GRINDWELL KANSAINER      AIAENG      TASTYBIT PERSISTENT
##      0          0          0          0          0          0          0          0
## JKCEMENT    MPHASIS      HONAUT HINDPETRO
##      0          0          0          0
##
## Objective Measure:
##   mean
## 0.01533

```

opt_pfESplus-ESarg4Retarg3ES4-202101012255



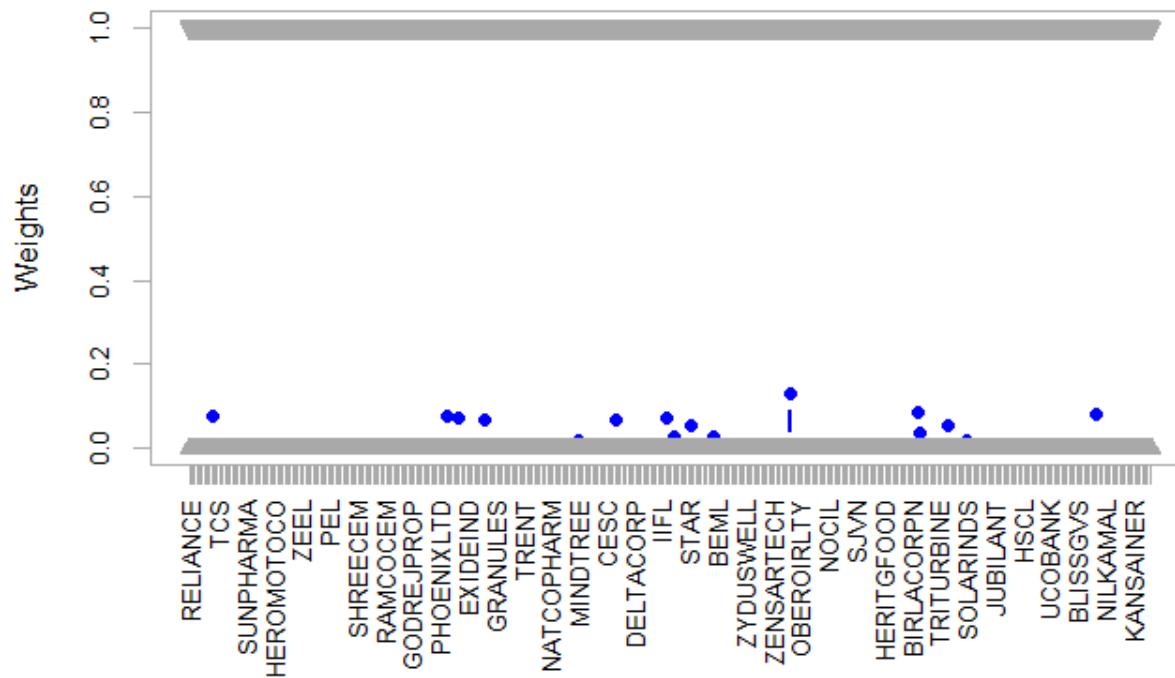
```
## [1] "Starting opt_pfESplus-ESarg3Retarg2ES1-202101012255"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
##    LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000   0.0000   0.0000   0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106   0.0000   0.0000   0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000   0.0000   0.0000   0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000   0.0763   0.0000   0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707   0.0000   0.0000   0.0000   0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0693   0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT      GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART     NESCO   JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI MRPL NBVENTURES BAJAJHLDNG JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI TTKPRESTIG SUNTECK      CAPPL   NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      JK.BANK HSCL GMDCLTD PFIZER      MHRIL  NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE   UCOBANK   GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER TIMETECHNO JAGRAN      MMTC   SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE   HATHWAY   MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE   ITI  EMAMILTD ASTRAL   SYMPHONY INDOCO   NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON     IFCI   ITDC   CRISIL   BRIGADE  BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG   TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT   MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg2ES1-202101012255



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES2-202101012255"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
##   INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

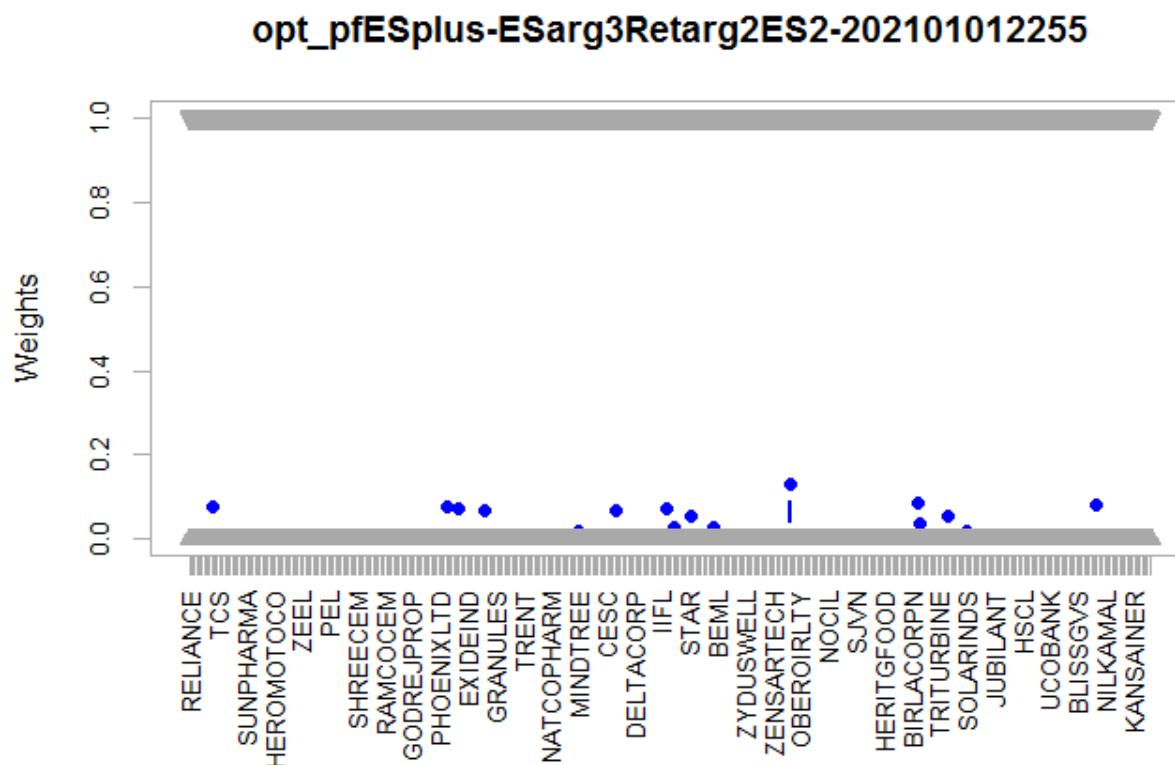
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES3-202101012255"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

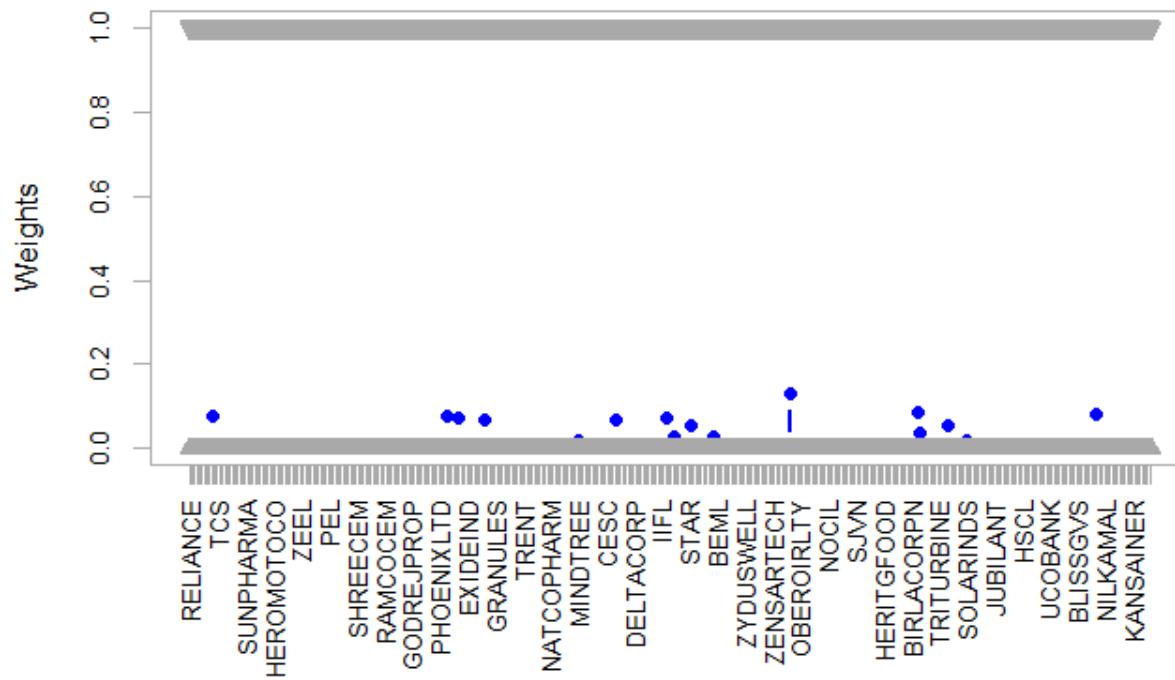
```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0.0000	0.0000	0.0791	0.0000	0.0000	0.0000	0.0000
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLY	FDC	GODFRYRHP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```
## J.KBANK HSCL GMDCLTD PFIZER MHRIL NAVNETEDUL RCF
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOB TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK GEPIL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg2ES3-202101012255



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES4-202101012256"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0000	0.0000	0.5053	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

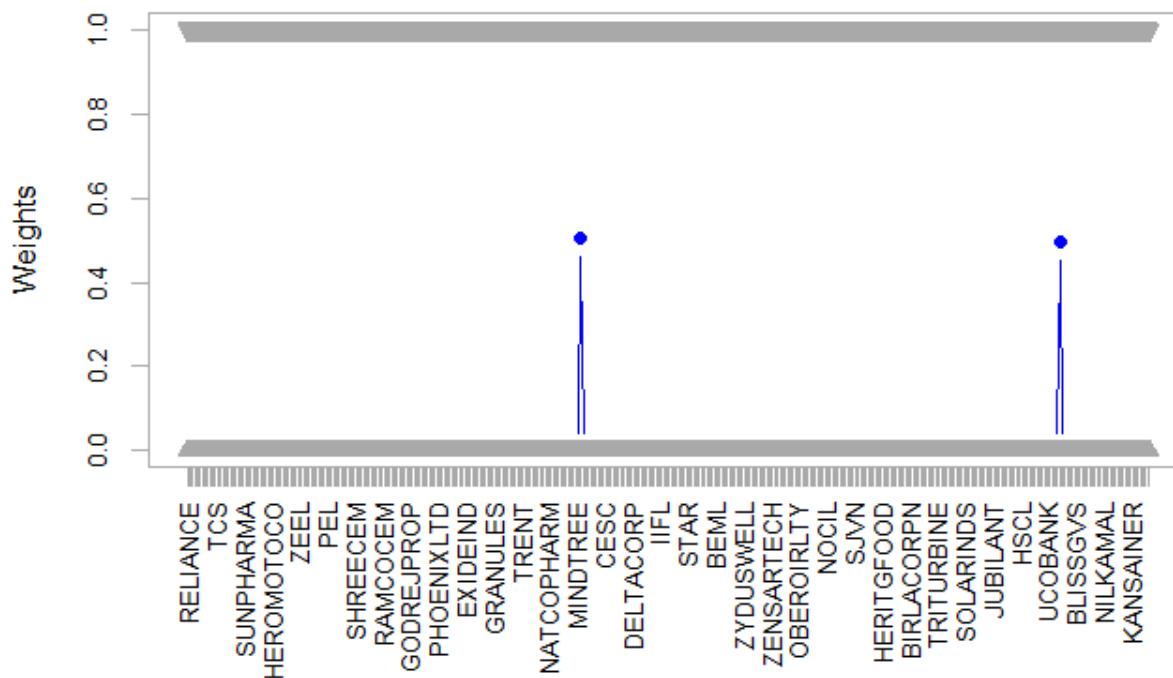
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.4947	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.005931

```

opt_pfESplus-ESarg3Retarg2ES4-202101012256



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES1-202101012256"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##      RELIANCE HDFCBANK ICICIBANK HDFC      ITC      AXISBANK      SBIN
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      LT BAJFINANCE INFY BHARTIARTL      TCS      M.M KOTAKBANK
##      0.0000    0.0000    0.0791    0.0000    0.0000    0.0000    0.0000

```

## INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
## 0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
## BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
## 0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
## PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
## 0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
## 0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
## MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
## 0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
## CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
## CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## APLAPOLLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
## 0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
## 0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
## ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD

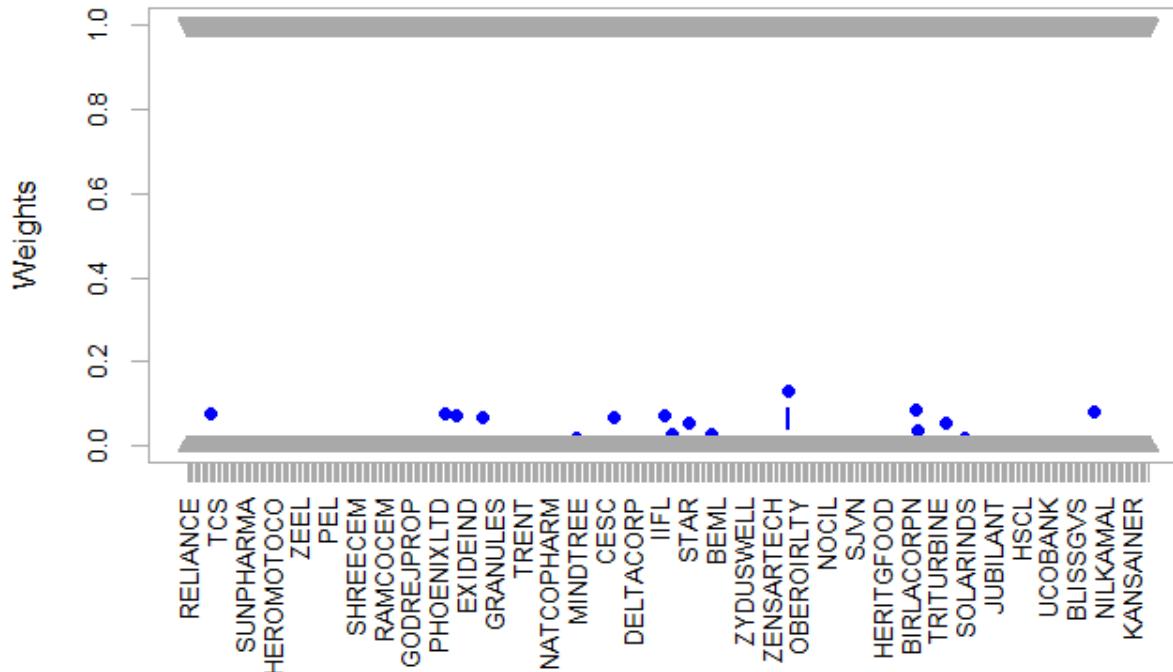
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINEERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNA AUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```

##  FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268

```

opt_pfESplus-ESarg3Retarg3ES1-202101012256



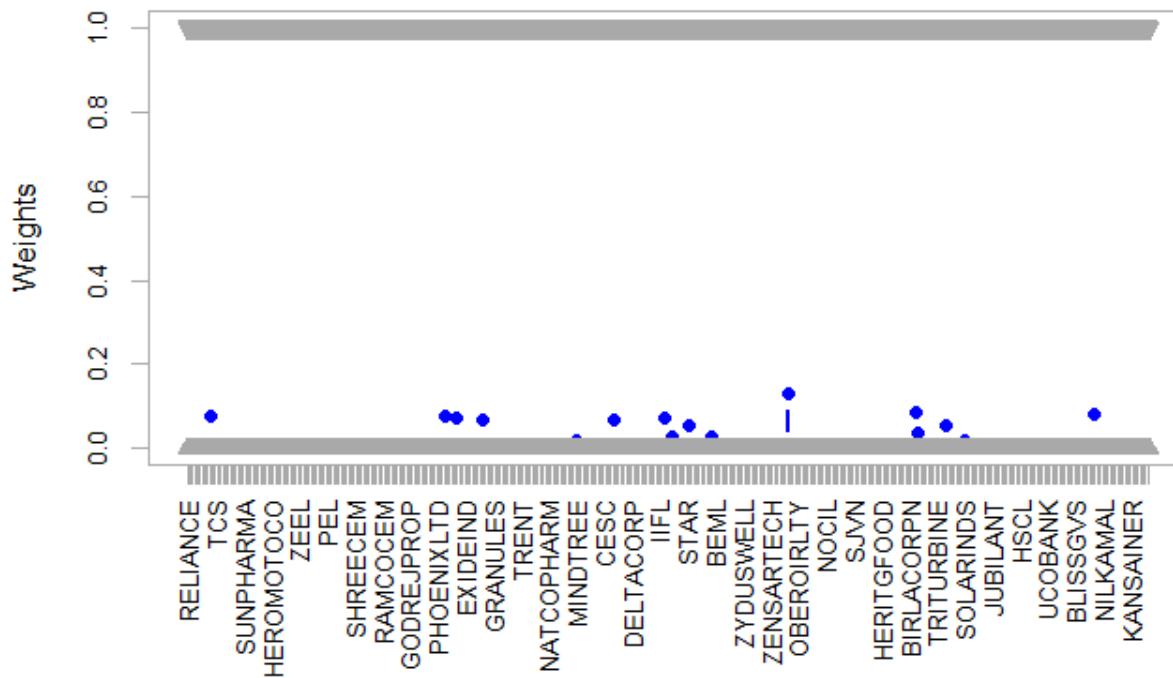
```
## [1] "Starting opt_pfESplus-ESarg3Retarg3ES2-202101012256"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000 0.0000 0.0791 0.0000 0.0000 0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
## 0.0000 0.0000 0.0000 0.0106 0.0000 0.0000 0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
## 0.0000 0.0046 0.0000 0.0000 0.0000 0.0000 0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
## 0.0064 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
## 0.0000 0.0000 0.0000 0.0000 0.0763 0.0000 0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
## 0.0000 0.0000 0.0707 0.0000 0.0000 0.0000 0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0693 0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE  UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC   SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE  HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL  SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL  BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT  HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg3ES2-202101012256



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES3-202101012256"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000   0.0000   0.0791   0.0000 0.0000   0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

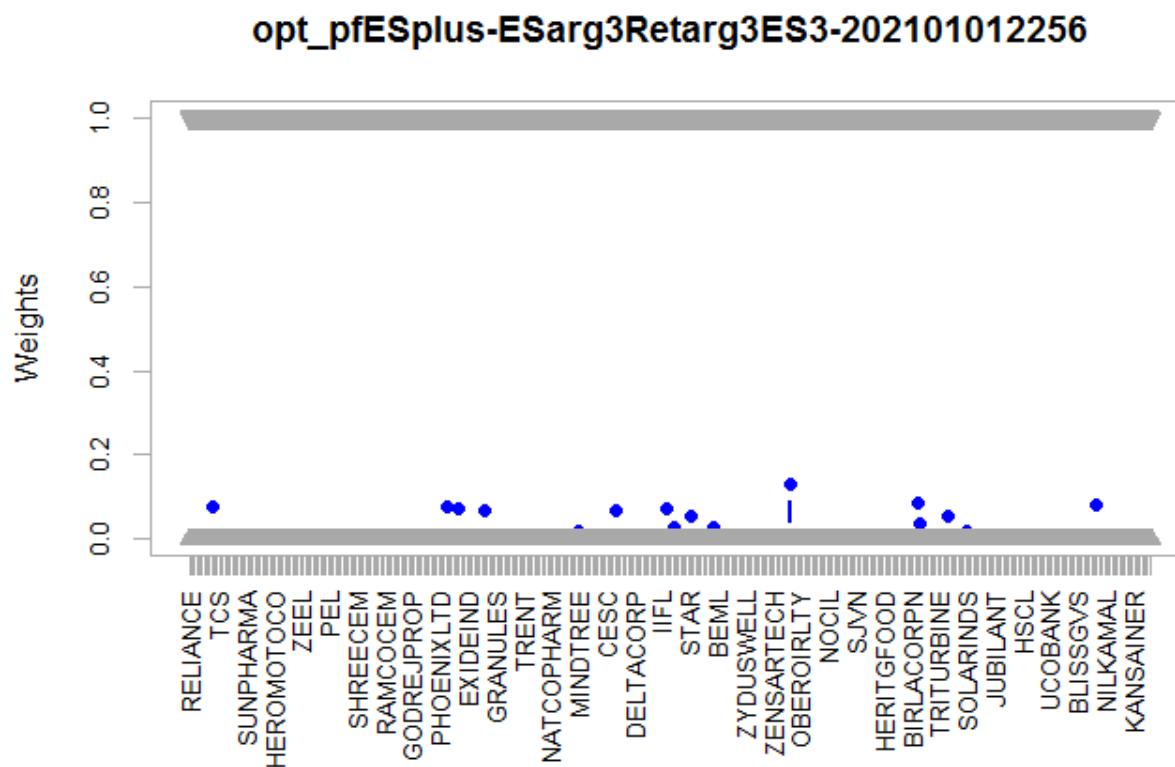
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES4-202101012256"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0	0	0	0	0	0	0
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0	0	0	0	0	0	0
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0	0	0	0	0	0	0
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0	0	0	0	0	0	0
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0	0	0	0	0	0	0
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0	0	0	0	0	0	0
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0	0	0	0	0	0	0
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0	0	0	0	0	0	0
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0	0	0	0	0	0	0
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0	0	0	0	0	0	0
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0	0	0	0	0	0	0
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0	0	0	0	0	0	0
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0	0	0	0	0	0	0
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0	0	0	0	0	0	0
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0	0	0	0	0	0	0
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0	0	0	0	0	0	0
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0	0	0	0	0	0	0
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0	0	0	0	0	0	0
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0	0	0	0	0	0	0
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0	0	0	0	0	0	0
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0	0	0	0	0	0	0
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0	0	0	0	0	0	0
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0	0	1	0	0	0	0
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

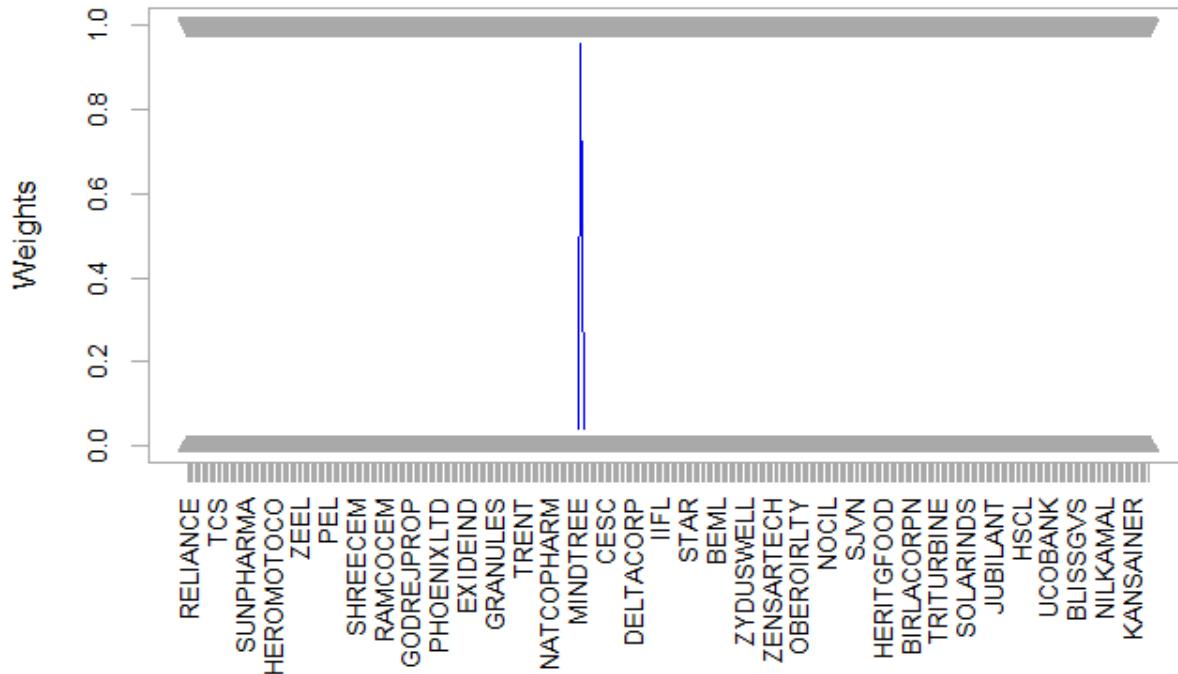
##	0	0	0	0	0	0	0	0
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGEET	UNIONBANK	DCMSHRIRAM	WELCORP	
##	0	0	0	0	0	0	0	0
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD	
##	0	0	0	0	0	0	0	0
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS	
##	0	0	0	0	0	0	0	0
##	RELAXO		KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0	0	0	0	0	0	0	0
##	KALPATPOWR	HINDCOPPER		STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0	0		0	0	0	0	0
##	BAJAJELEC	ENGINERSIN		GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0	0		0	0	0	0	0
##	IRB	UFLEX		BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0	0		0	0	0	0	0
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV	
##	0	0		0	0	0	0	0
##	CARBORUNIV		HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0	0		0	0	0	0	0
##	ZENSARTECH		SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0	0		0	0	0	0	0
##	ALKYLAMINE	BANKINDIA	SUDARSCHM		IPCALAB	OBEROIRLTY	FDC	GODFRY PHLP
##	0	0		0	0	0	0	0
##	SHILPAMED	PHILIPCARB		MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0	0		0	0	0	0	0
##	MAHSCOOTER		NOCIL	INOXLEISUR		GHCL	TATAINVEST	NLCINDIA
##	0	0		0	0	0	0	0
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS		KRBL	SJVN	ALLCARGO
##	0	0		0	0	0	0	0
##	ORIENTREF		DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0	0		0	0	0	0	0
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING		KNRCON	HAWKINCOOK
##	0	0		0	0	0	0	0
##	VENKYS	JINDALSAW		JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0	0		0	0	0	0	0
##	BALMLAWRIE		MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0	0		0	0	0	0	0
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI	
##	0	0		0	0	0	0	0
##	VAIBHAVGBL	SUPRAJIT		GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0	0		0	0	0	0	0
##	SOLARINDS	BLUEDART		NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0	0		0	0	0	0	0
##	TATAMETALI		MRPL	NBVENTURES	BAJA JHLNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0	0		0	0	0	0	0
##	KEI	TTKPRESTIG		SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0	0		0	0	0	0	0

```

##   J.KBANK      HSCL     GMDCLTD      PFIZER      MHRIL  NAVNETEDUL      RCF
##      0          0          0          0          0          0          0          0
##    IOB      TVTODAY  SCHNEIDER  RATNAMANI  JKTYRE  UCOBANK      GEPIL
##      0          0          0          0          0          0          0          0
##  FCONSUMER  TIMETECHNO    JAGRAN      MMTC      SANOFI      CCL SWANENERGY
##      0          0          0          0          0          0          0          0
## JAICORPLTD    DBCORP    BLISSGVIS WABCOINDIA      OMAXE      HATHWAY MAHINDCIE
##      0          0          0          0          0          0          0          0
## MAHLIFE       ITI EMAMILTD      ASTRAL      SYMPHONY INDOCO  NILKAMAL
##      0          0          0          0          0          0          0          0
## SUZLON        IFCI      ITDC      CRISIL      BRIGADE  BLUESTARCO MAHSEAMLES
##      0          0          0          0          0          0          0          0
## HEIDELBERG    POLYMED    GRINDWELL KANSAINER      AIAENG      TASTYBIT PERSISTENT
##      0          0          0          0          0          0          0          0
## JKCEMENT    MPHASIS      HONAUT HINDPETRO
##      0          0          0          0
##
## Objective Measure:
##   mean
## 0.01533

```

opt_pfESplus-ESarg3Retarg3ES4-202101012256



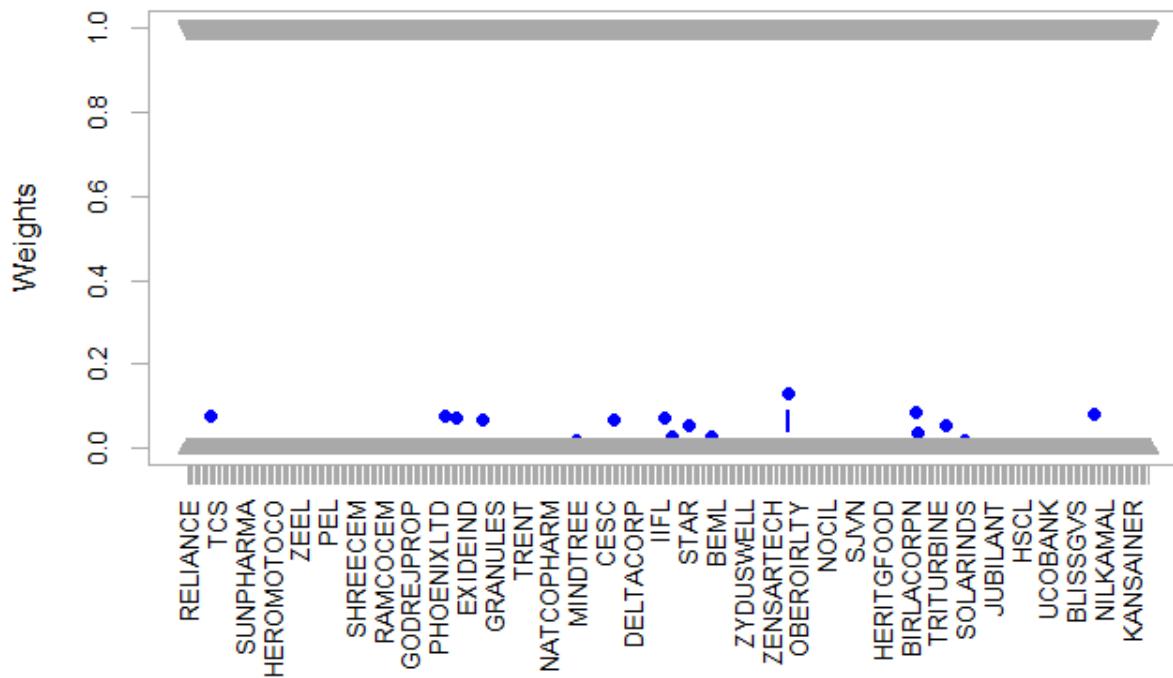
```
## [1] "Starting opt_pfESplus-ESarg4Retarg2ES1-202101012256"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
##    LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000   0.0000   0.0000   0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106   0.0000   0.0000   0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000   0.0000   0.0000   0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000   0.0763   0.0000   0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707   0.0000   0.0000   0.0000   0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0693   0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE  UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC   SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE  HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL  SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL  BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT  HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg2ES1-202101012256



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES2-202101012257"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

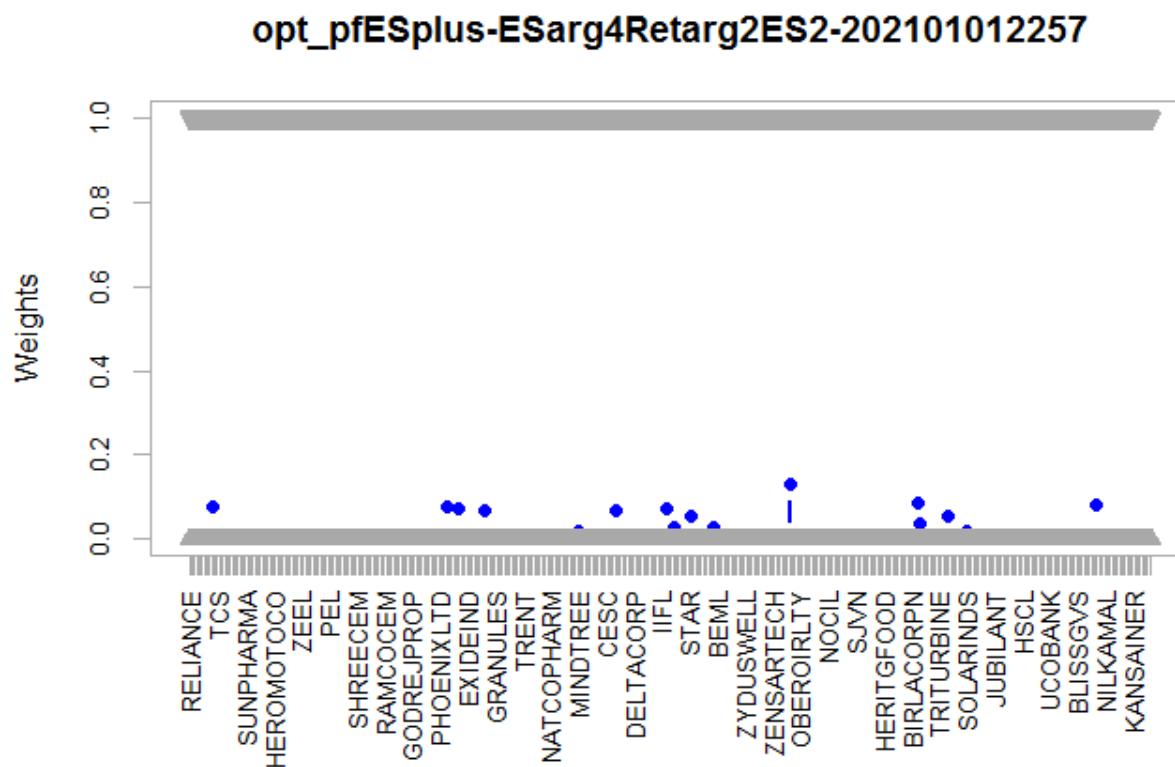
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES3-202101012257"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

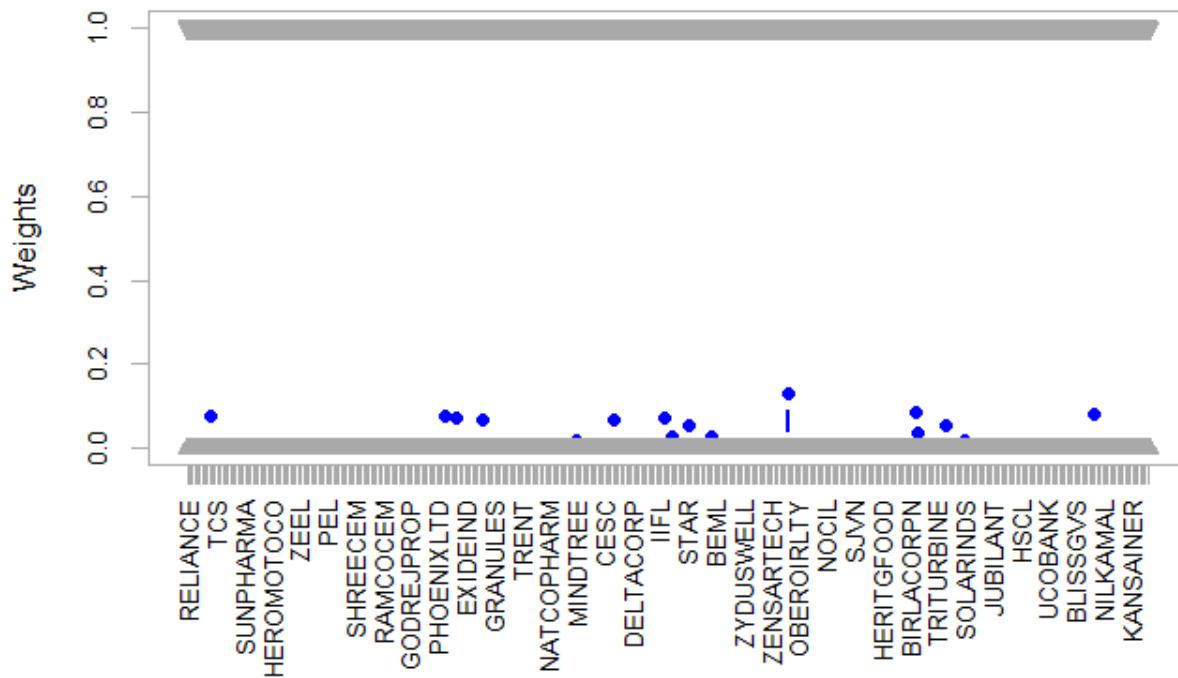
```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0.0000	0.0000	0.0791	0.0000	0.0000	0.0000	0.0000
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOC	TECHM	ULTRACEMCO	BAAJA.J.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLY	FDC	GODFRYRHP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```
## J.KBANK HSCL GMDCLTD PFIZER MHRIL NAVNETEDUL RCF
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOB TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK GEPIL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg2ES3-202101012257



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES4-202101012257"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0000	0.0000	0.5053	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

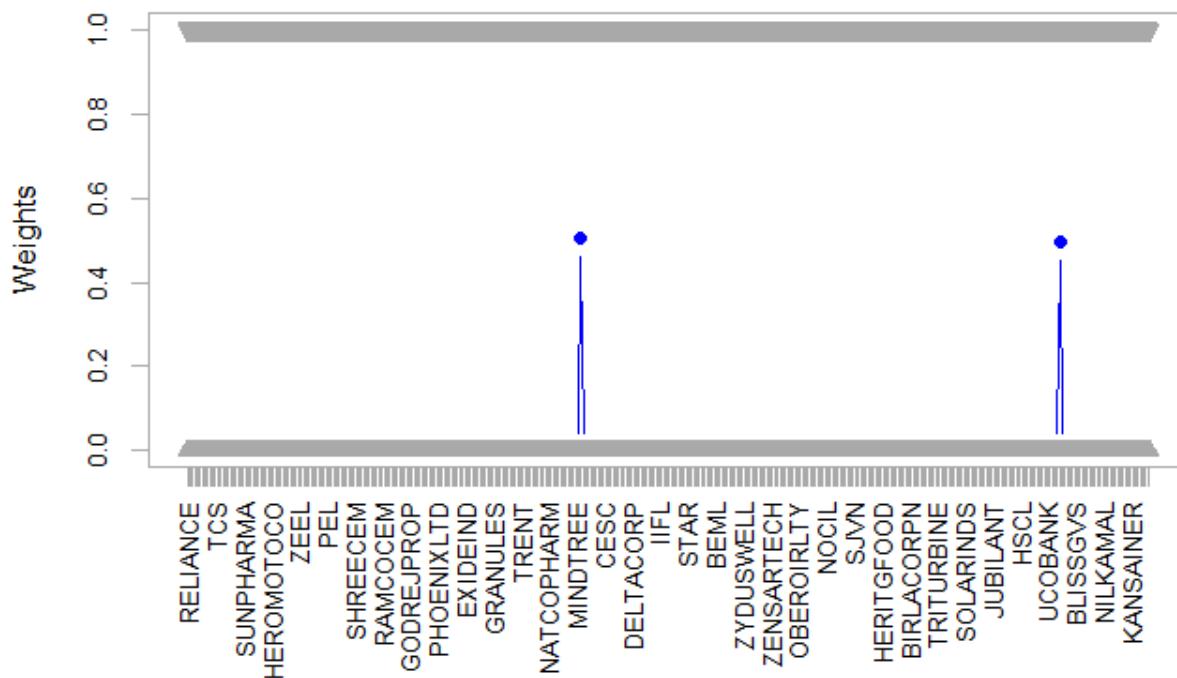
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.4947	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.005931

```

opt_pfESplus-ESarg4Retarg2ES4-202101012257



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES1-202101012257"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##      RELIANCE HDFCBANK ICICIBANK HDFC      ITC      AXISBANK      SBIN
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      LT BAJFINANCE INFY BHARTIARTL      TCS      M.M KOTAKBANK
##      0.0000    0.0000    0.0791    0.0000    0.0000    0.0000    0.0000

```

## INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
## 0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
## BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
## 0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
## PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
## 0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
## 0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
## MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
## 0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
## CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
## CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## APLAPOLLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
## 0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
## 0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
## ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD

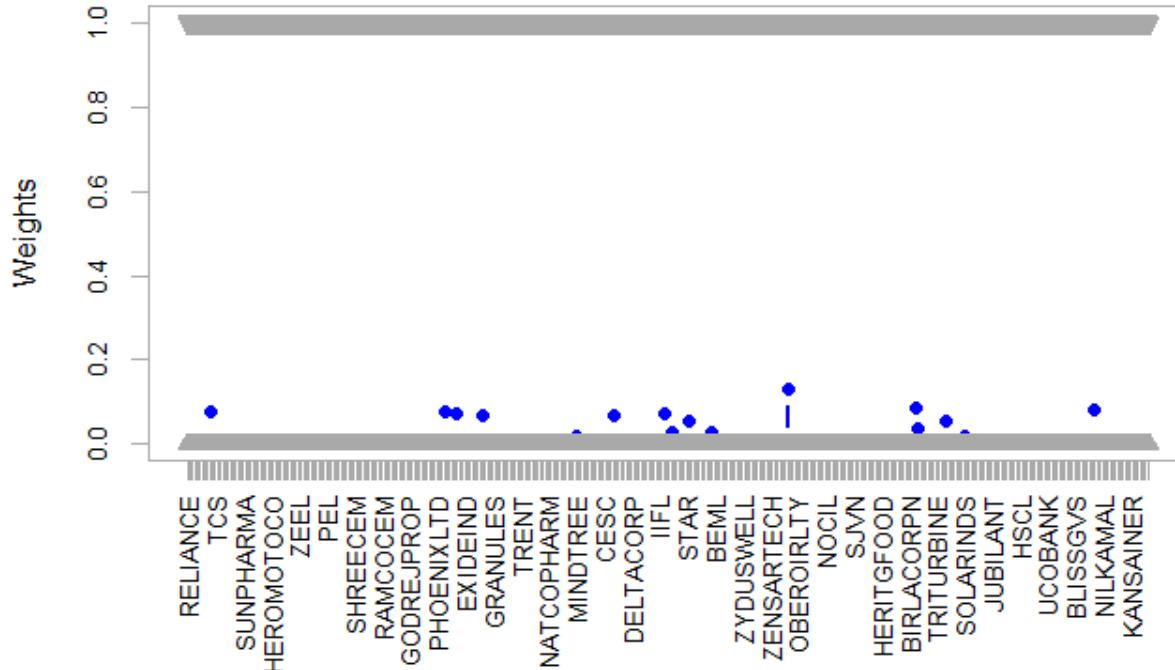
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINEERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNA AUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```

## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268

```

opt_pfESplus-ESarg4Retarg3ES1-202101012257



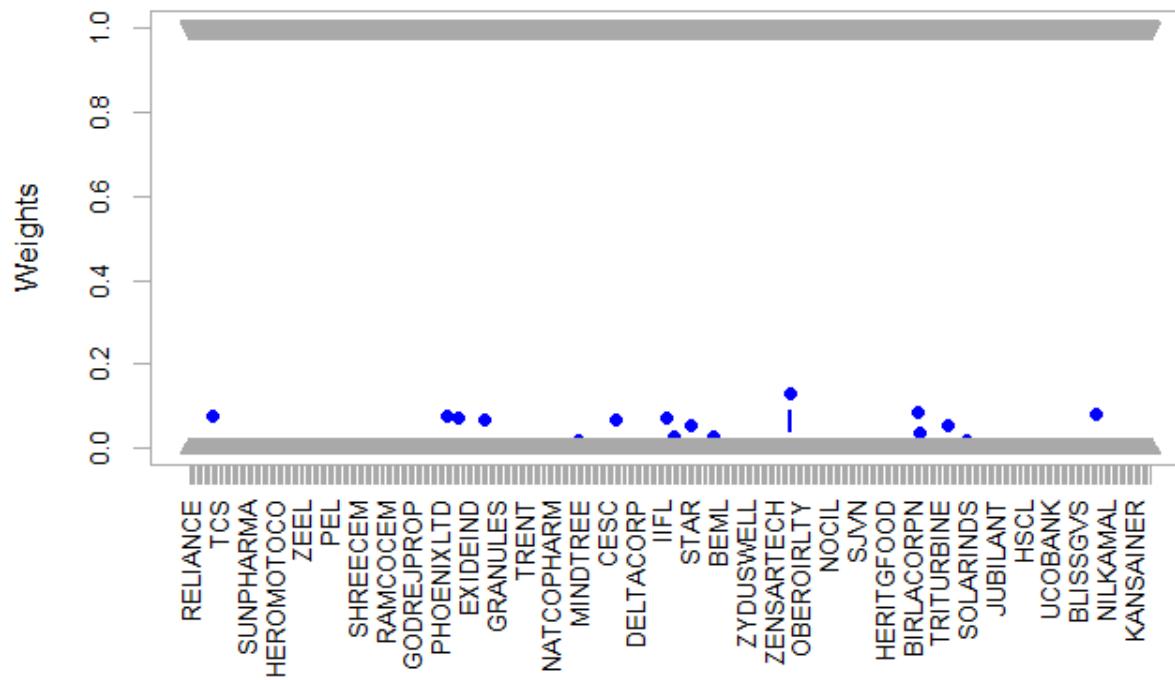
```
## [1] "Starting opt_pfESplus-ESarg4Retarg3ES2-202101012257"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000 0.0000 0.0791 0.0000 0.0000 0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
## 0.0000 0.0000 0.0000 0.0106 0.0000 0.0000 0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
## 0.0000 0.0046 0.0000 0.0000 0.0000 0.0000 0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
## 0.0064 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
## 0.0000 0.0000 0.0000 0.0000 0.0763 0.0000 0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
## 0.0000 0.0000 0.0707 0.0000 0.0000 0.0000 0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0693 0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC  SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg3ES2-202101012257



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES3-202101012258"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

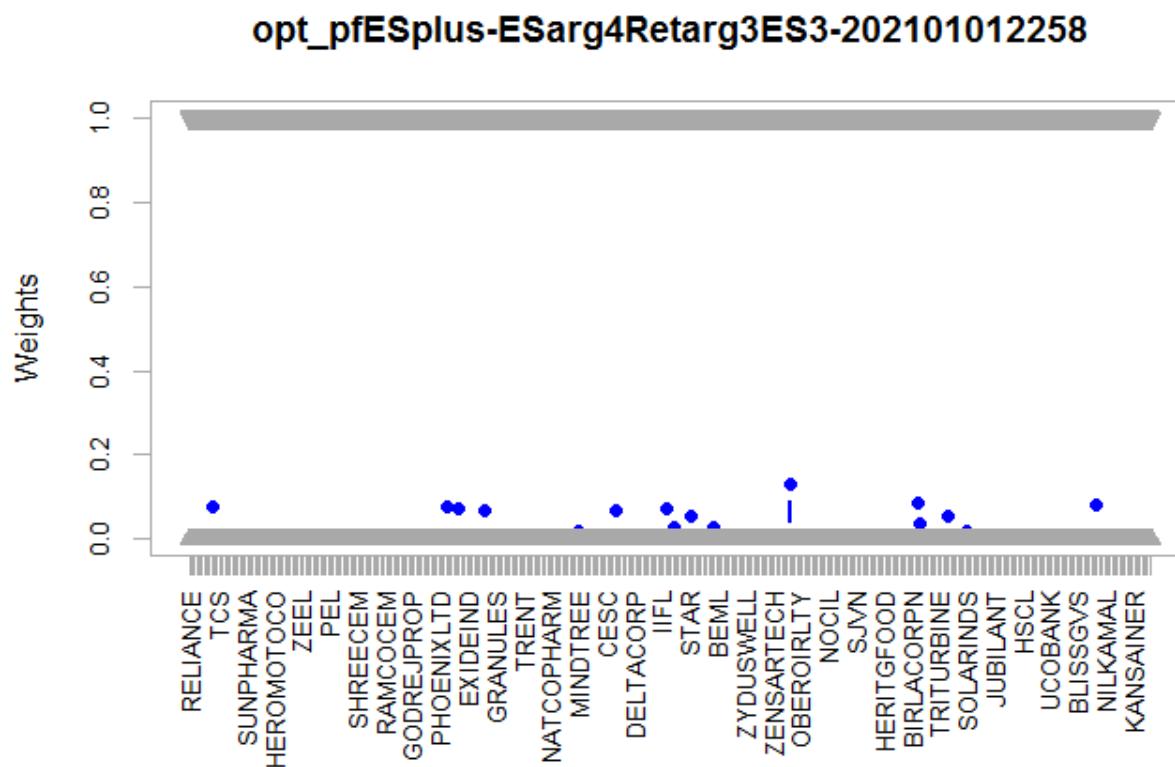
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES4-202101012258"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0	0	0	0	0	0	0
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0	0	0	0	0	0	0
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0	0	0	0	0	0	0
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0	0	0	0	0	0	0
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0	0	0	0	0	0	0
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0	0	0	0	0	0	0
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0	0	0	0	0	0	0
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0	0	0	0	0	0	0
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0	0	0	0	0	0	0
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0	0	0	0	0	0	0
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0	0	0	0	0	0	0
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0	0	0	0	0	0	0
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0	0	0	0	0	0	0
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0	0	0	0	0	0	0
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0	0	0	0	0	0	0
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0	0	0	0	0	0	0
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0	0	0	0	0	0	0
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0	0	0	0	0	0	0
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0	0	0	0	0	0	0
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0	0	0	0	0	0	0
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0	0	0	0	0	0	0
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0	0	0	0	0	0	0
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0	0	1	0	0	0	0
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

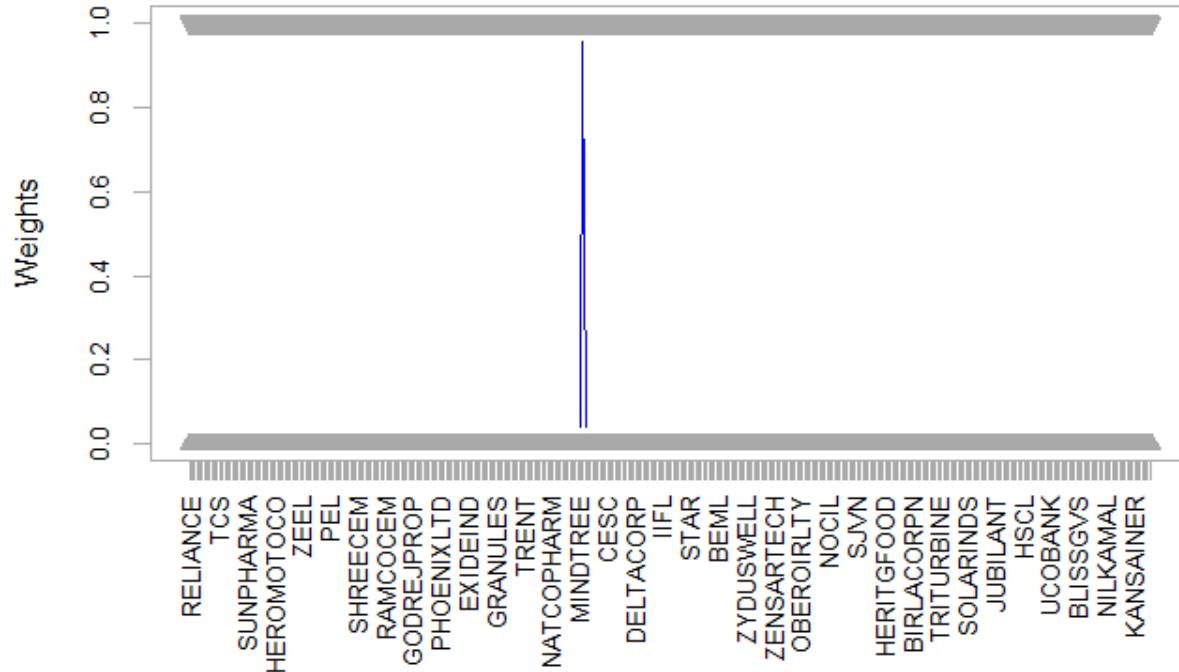
##	0	0	0	0	0	0	0	0
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGEET	UNIONBANK	DCMSHRIRAM	WELCORP	
##	0	0	0	0	0	0	0	0
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD	
##	0	0	0	0	0	0	0	0
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS	
##	0	0	0	0	0	0	0	0
##	RELAXO		KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0	0	0	0	0	0	0	0
##	KALPATPOWR	HINDCOPPER		STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0	0	0	0	0	0	0	0
##	BAJAJELEC	ENGINERSIN		GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0	0	0	0	0	0	0	0
##	IRB	UFLEX		BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0	0	0	0	0	0	0	0
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV	
##	0	0	0	0	0	0	0	0
##	CARBORUNIV		HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0	0	0	0	0	0	0	0
##	ZENSARTECH		SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0	0	0	0	0	0	0	0
##	ALKYLAMINE	BANKINDIA	SUDARSCHM		IPCALAB	OBEROIRLTY	FDC	GODFRY PHLP
##	0	0	0	0	0	0	0	0
##	SHILPAMED	PHILIPCARB		MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0	0	0	0	0	0	0	0
##	MAHSCOOTER		NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0	0	0	0	0	0	0	0
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL		SJVN	ALLCARGO
##	0	0	0	0	0	0	0	0
##	ORIENTREF		DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0	0	0	0	0	0	0	0
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING		KNRCON	HAWKINCOOK
##	0	0	0	0	0	0	0	0
##	VENKYS	JINDALSAW		JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0	0	0	0	0	0	0	0
##	BALMLAWRIE		MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0	0	0	0	0	0	0	0
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI	
##	0	0	0	0	0	0	0	0
##	VAIBHAVGBL	SUPRAJIT		GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0	0	0	0	0	0	0	0
##	SOLARINDS	BLUEDART		NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0	0	0	0	0	0	0	0
##	TATAMETALI		MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0	0	0	0	0	0	0	0
##	KEI	TTKPRESTIG		SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0	0	0	0	0	0	0	0

```

##   J.KBANK      HSCL     GMDCLTD      PFIZER      MHRIL  NAVNETEDUL      RCF
##      0          0          0          0          0          0          0          0
##    IOB      TVTODAY  SCHNEIDER  RATNAMANI  JKTYRE  UCOBANK      GEPIL
##      0          0          0          0          0          0          0          0
##  FCONSUMER  TIMETECHNO    JAGRAN      MMTC      SANOFI      CCL SWANENERGY
##      0          0          0          0          0          0          0          0
## JAICORPLTD    DBCORP    BLISSGVIS WABCOINDIA      OMAXE      HATHWAY MAHINDCIE
##      0          0          0          0          0          0          0          0
## MAHLIFE       ITI EMAMILTD      ASTRAL      SYMPHONY INDOCO  NILKAMAL
##      0          0          0          0          0          0          0          0
## SUZLON        IFCI      ITDC      CRISIL      BRIGADE  BLUESTARCO MAHSEAMLES
##      0          0          0          0          0          0          0          0
## HEIDELBERG    POLYMED    GRINDWELL KANSAINER      AIAENG      TASTYBIT PERSISTENT
##      0          0          0          0          0          0          0          0
## JKCEMENT    MPHASIS      HONAUT HINDPETRO
##      0          0          0          0
##
## Objective Measure:
##   mean
## 0.01533

```

opt_pfESplus-ESarg4Retarg3ES4-202101012258



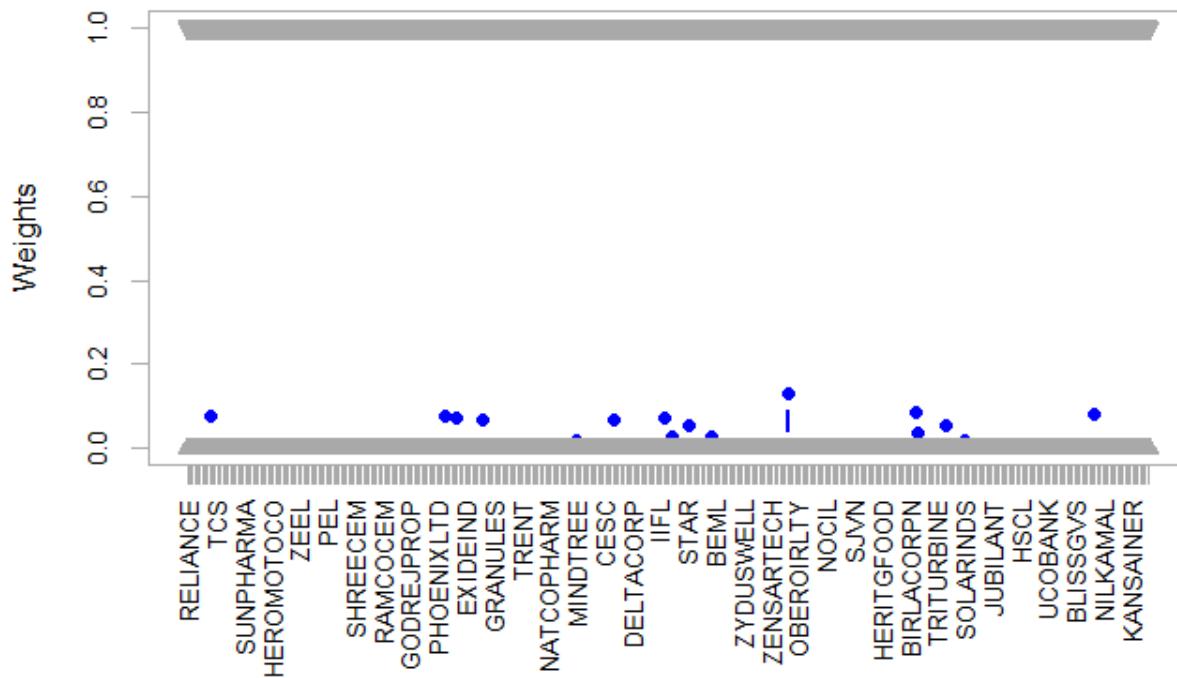
```
## [1] "Starting opt_pfESplus-ESarg3Retarg2ES1-202101012258"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000 0.0000 0.0791 0.0000 0.0000 0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
## 0.0000 0.0000 0.0000 0.0106 0.0000 0.0000 0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
## 0.0000 0.0046 0.0000 0.0000 0.0000 0.0000 0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
## 0.0064 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
## 0.0000 0.0000 0.0000 0.0000 0.0763 0.0000 0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
## 0.0000 0.0000 0.0707 0.0000 0.0000 0.0000 0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0693 0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE  UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC   SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE  HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL  SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL  BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT  HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg2ES1-202101012258



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES2-202101012258"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

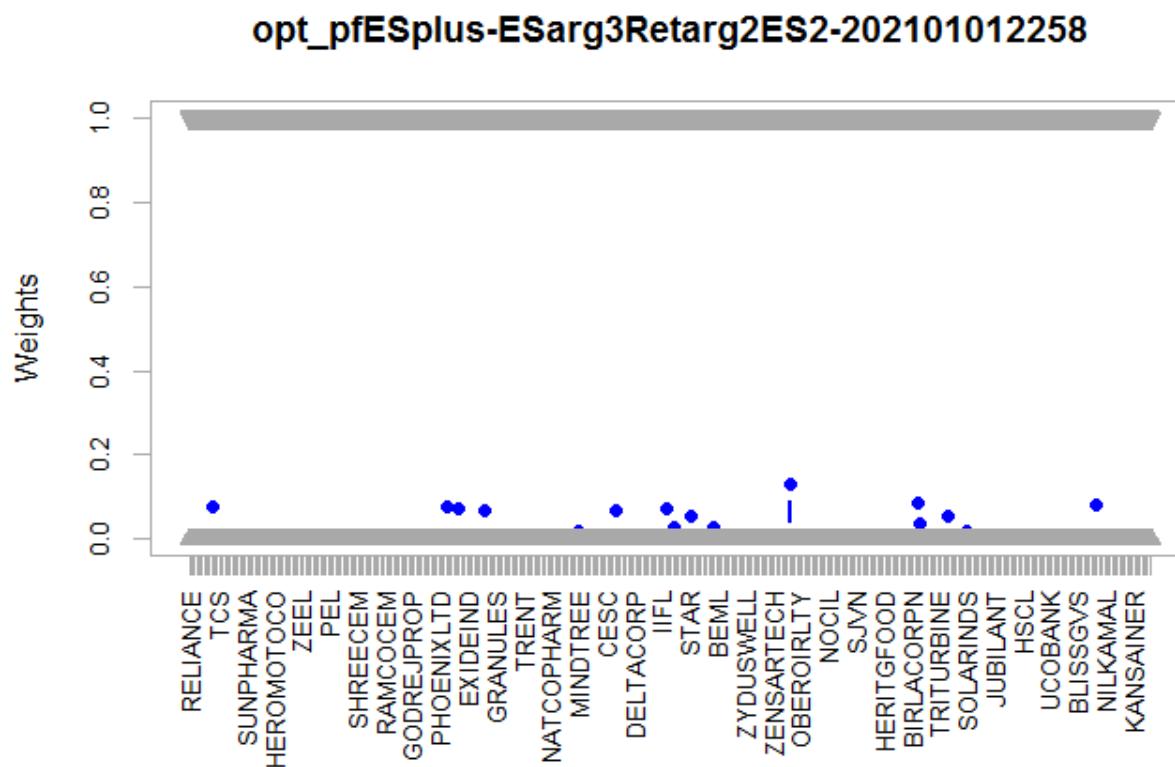
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES3-202101012258"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

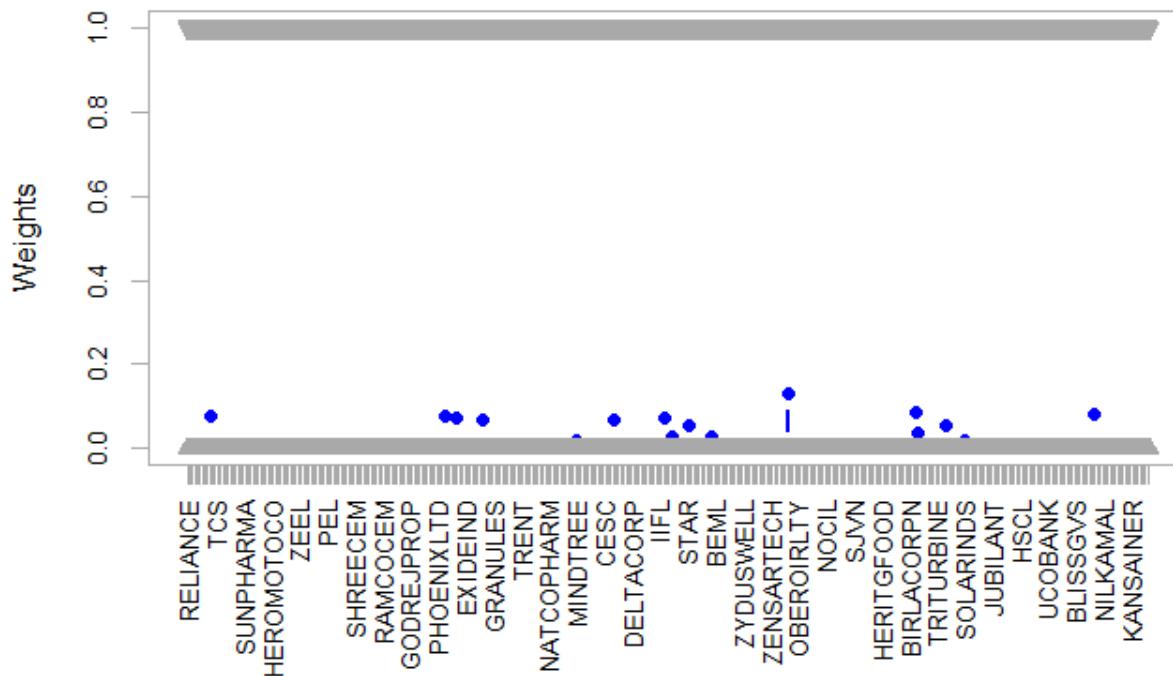
```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0.0000	0.0000	0.0791	0.0000	0.0000	0.0000	0.0000
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLY	FDC	GODFRYRHP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```
## J.KBANK HSCL GMDCLTD PFIZER MHRIL NAVNETEDUL RCF
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOB TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK GEPIL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg2ES3-202101012258



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES4-202101012259"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0000	0.0000	0.5053	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

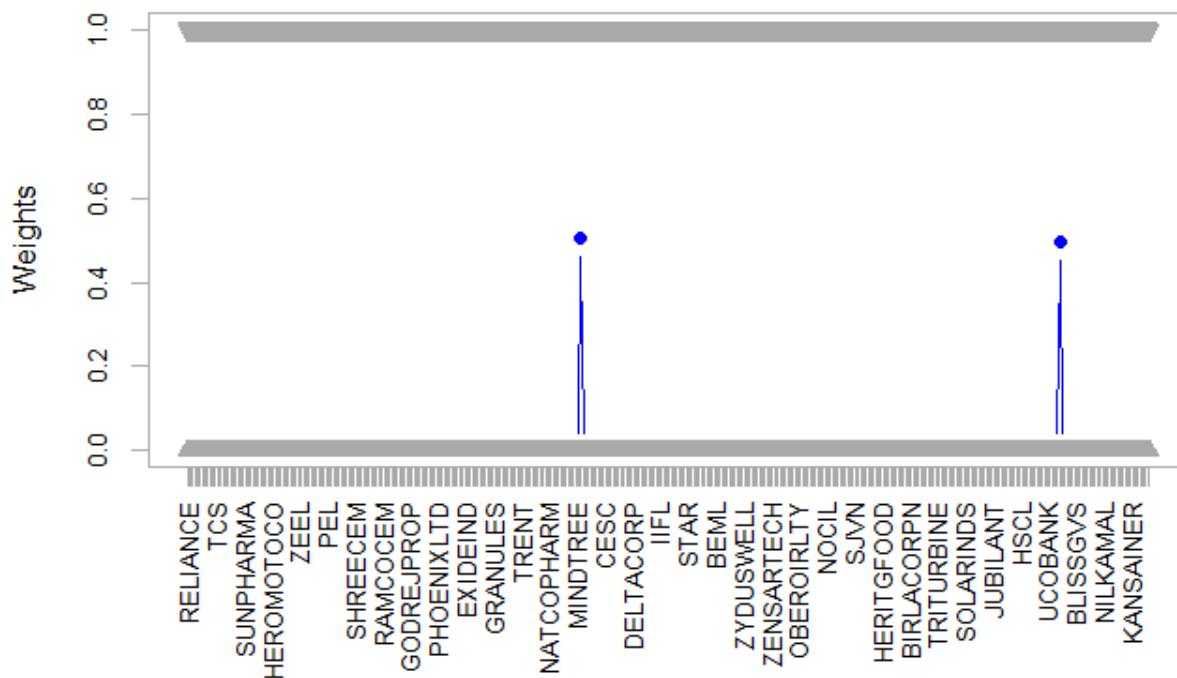
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.4947	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.005931

```

opt_pfESplus-ESarg3Retarg2ES4-202101012259



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES1-202101012259"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##      RELIANCE HDFCBANK ICICIBANK HDFC      ITC      AXISBANK      SBIN
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      LT BAJFINANCE INFY BHARTIARTL      TCS      M.M KOTAKBANK
##      0.0000    0.0000    0.0791    0.0000    0.0000    0.0000    0.0000

```

## INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
## 0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
## BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
## 0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
## PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
## 0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
## 0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
## MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
## 0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
## CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
## CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## APLAPOLLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
## 0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
## 0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
## ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD

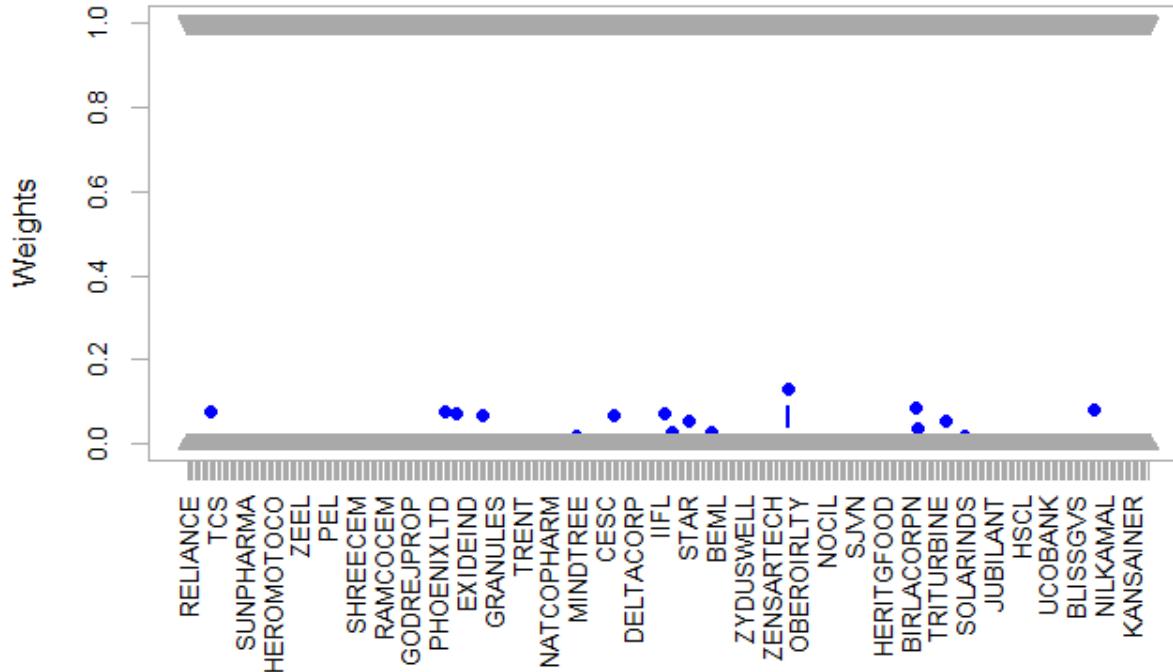
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINEERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNA AUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```

##  FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268

```

opt_pfESplus-ESarg3Retarg3ES1-202101012259



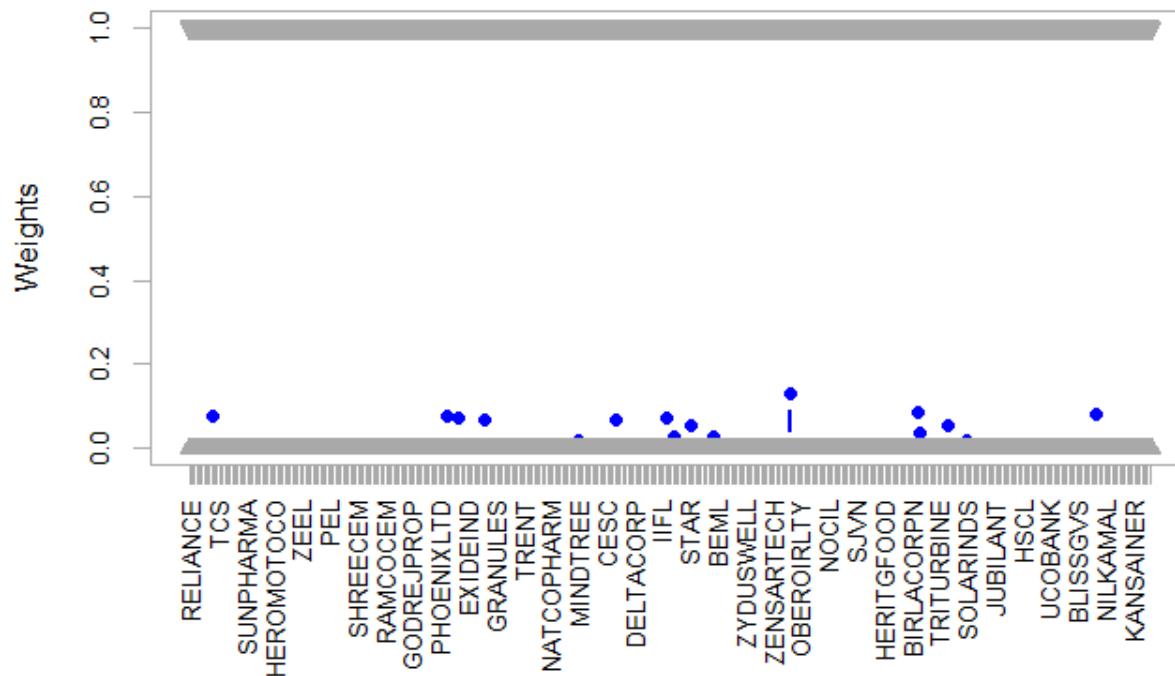
```
## [1] "Starting opt_pfESplus-ESarg3Retarg3ES2-202101012259"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
##    LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000   0.0000   0.0000   0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106   0.0000   0.0000   0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000   0.0000   0.0000   0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000   0.0763   0.0000   0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707   0.0000   0.0000   0.0000   0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0693   0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE  UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC   SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE  HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL  SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI      ITDC  CRISIL  BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg3ES2-202101012259



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES3-202101012259"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000   0.0000   0.0791   0.0000 0.0000   0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

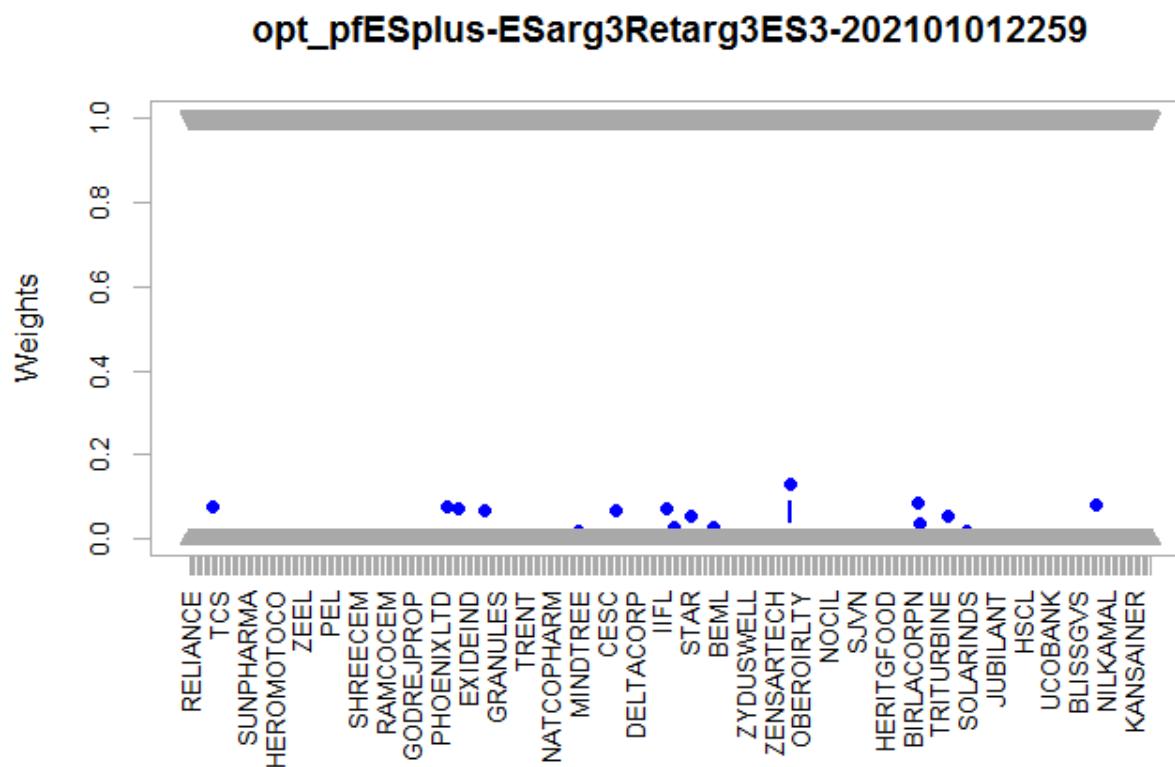
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES4-202101012300"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0	0	0	0	0	0	0
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0	0	0	0	0	0	0
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0	0	0	0	0	0	0
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0	0	0	0	0	0	0
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0	0	0	0	0	0	0
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0	0	0	0	0	0	0
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0	0	0	0	0	0	0
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0	0	0	0	0	0	0
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0	0	0	0	0	0	0
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0	0	0	0	0	0	0
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0	0	0	0	0	0	0
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0	0	0	0	0	0	0
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0	0	0	0	0	0	0
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0	0	0	0	0	0	0
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0	0	0	0	0	0	0
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0	0	0	0	0	0	0
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0	0	0	0	0	0	0
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0	0	0	0	0	0	0
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0	0	0	0	0	0	0
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0	0	0	0	0	0	0
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0	0	0	0	0	0	0
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0	0	0	0	0	0	0
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0	0	1	0	0	0	0
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

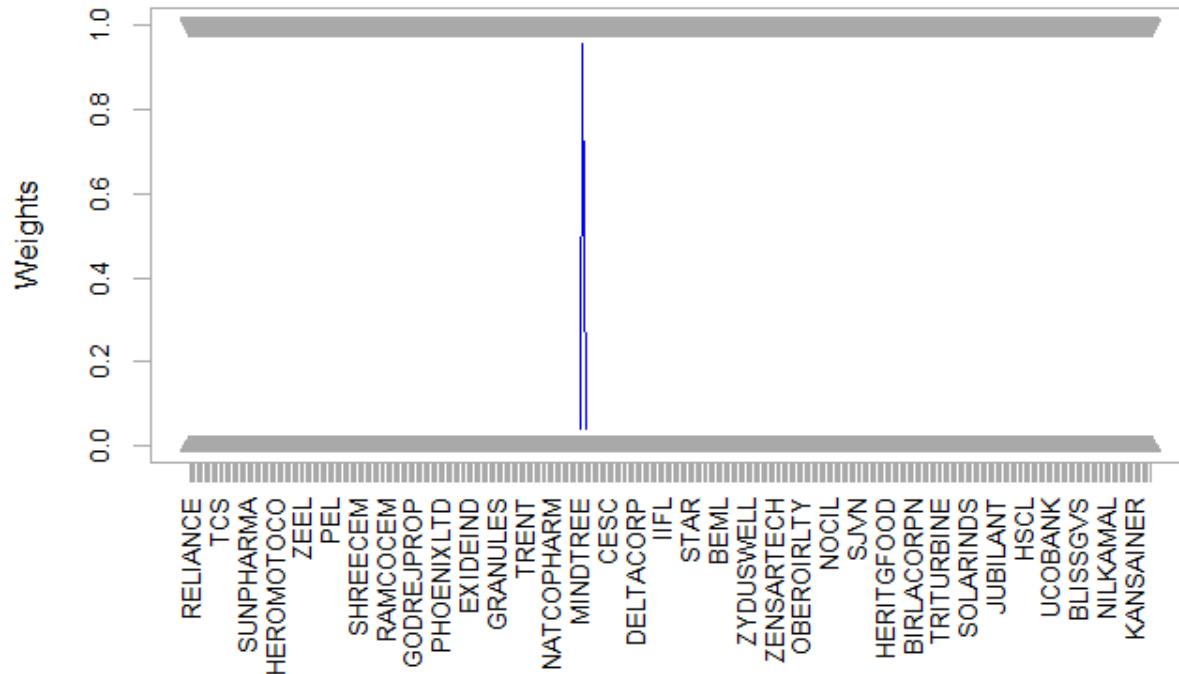
##	0	0	0	0	0	0	0	0
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGEET	UNIONBANK	DCMSHRIRAM	WELCORP	
##	0	0	0	0	0	0	0	0
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD	
##	0	0	0	0	0	0	0	0
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS	
##	0	0	0	0	0	0	0	0
##	RELAXO		KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0	0	0	0	0	0	0	0
##	KALPATPOWR	HINDCOPPER		STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0	0	0	0	0	0	0	0
##	BAJAJELEC	ENGINERSIN		GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0	0	0	0	0	0	0	0
##	IRB	UFLEX		BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0	0	0	0	0	0	0	0
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV	
##	0	0	0	0	0	0	0	0
##	CARBORUNIV		HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0	0	0	0	0	0	0	0
##	ZENSARTECH		SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0	0	0	0	0	0	0	0
##	ALKYLAMINE	BANKINDIA	SUDARSCHM		IPCALAB	OBEROIRLTY	FDC	GODFRY PHLP
##	0	0	0	0	0	0	0	0
##	SHILPAMED	PHILIPCARB		MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0	0	0	0	0	0	0	0
##	MAHSCOOTER		NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0	0	0	0	0	0	0	0
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL		SJVN	ALLCARGO
##	0	0	0	0	0	0	0	0
##	ORIENTREF		DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0	0	0	0	0	0	0	0
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING		KNRCON	HAWKINCOOK
##	0	0	0	0	0	0	0	0
##	VENKYS	JINDALSAW		JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0	0	0	0	0	0	0	0
##	BALMLAWRIE		MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0	0	0	0	0	0	0	0
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI	
##	0	0	0	0	0	0	0	0
##	VAIBHAVGBL	SUPRAJIT		GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0	0	0	0	0	0	0	0
##	SOLARINDS	BLUEDART		NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0	0	0	0	0	0	0	0
##	TATAMETALI		MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0	0	0	0	0	0	0	0
##	KEI	TTKPRESTIG		SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0	0	0	0	0	0	0	0

```

##   J.KBANK      HSCL     GMDCLTD      PFIZER      MHRIL  NAVNETEDUL      RCF
##      0          0          0          0          0          0          0          0
##    IOB      TVTODAY  SCHNEIDER  RATNAMANI  JKTYRE  UCOBANK      GEPIL
##      0          0          0          0          0          0          0          0
##  FCONSUMER  TIMETECHNO    JAGRAN      MMTC  SANOFI      CCL SWANENERGY
##      0          0          0          0          0          0          0          0
## JAICORPLTD    DBCORP  BLISSGVIS WABCOINDIA      OMAXE      HATHWAY MAHINDCIE
##      0          0          0          0          0          0          0          0
## MAHLIFE       ITI  EMAMILTD      ASTRAL  SYMPHONY  INDOCO  NILKAMAL
##      0          0          0          0          0          0          0          0
## SUZLON        IFCI      ITDC      CRISIL  BRIGADE  BLUESTARCO MAHSEAMLES
##      0          0          0          0          0          0          0          0
## HEIDELBERG    POLYMED  GRINDWELL KANSAINER      AIAENG  TASTYBIT PERSISTENT
##      0          0          0          0          0          0          0          0
## JKCEMENT  MPHASIS      HONAUT  HINDPETRO
##      0          0          0          0
##
## Objective Measure:
##   mean
## 0.01533

```

opt_pfESplus-ESarg3Retarg3ES4-202101012300



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES1-202101012300"

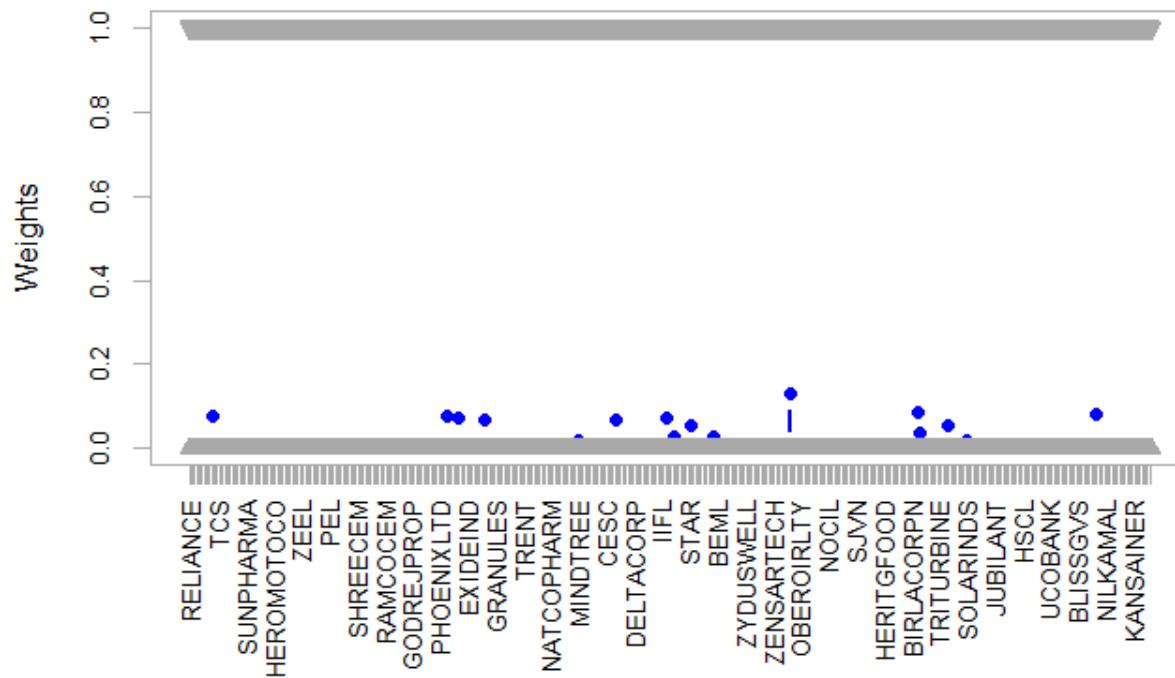
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
##    LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000   0.0000   0.0000   0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106   0.0000   0.0000   0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000   0.0000   0.0000   0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000   0.0763   0.0000   0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707   0.0000   0.0000   0.0000   0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0693   0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM       IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      JK.BANK      HSCL  GMDCLTD  PFIZER    MHRIL  NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY  SCHNEIDER RATNAMANI  JKTYRE  UCOBANK    GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO  JAGRAN      MMTC   SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD  DBCORP  BLISSGVS WABCOINDIA  OMAXE  HATHWAY  MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD  ASTRAL  SYMPHONY INDOCO  NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI   ITDC   CRISIL  BRIGADE  BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG  POLYMED GRINDWELL KANSAINER  AIAENG  TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg2ES1-202101012300



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES2-202101012300"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

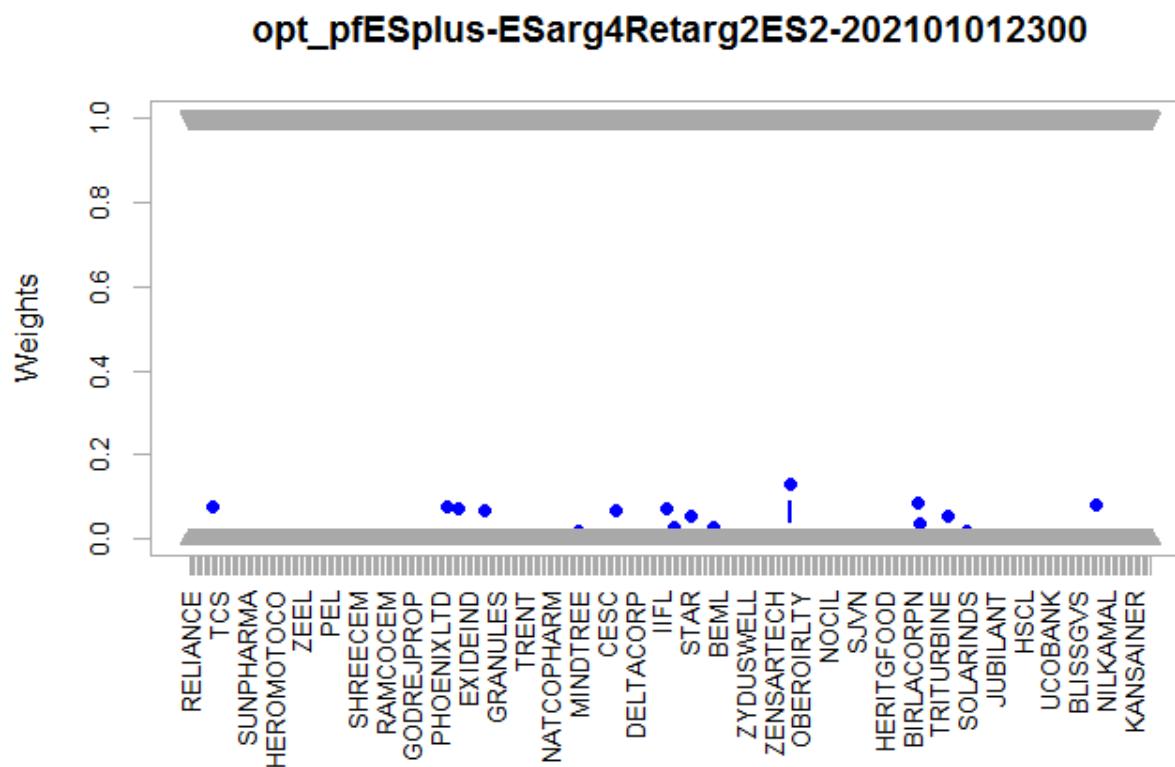
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES3-202101012300"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

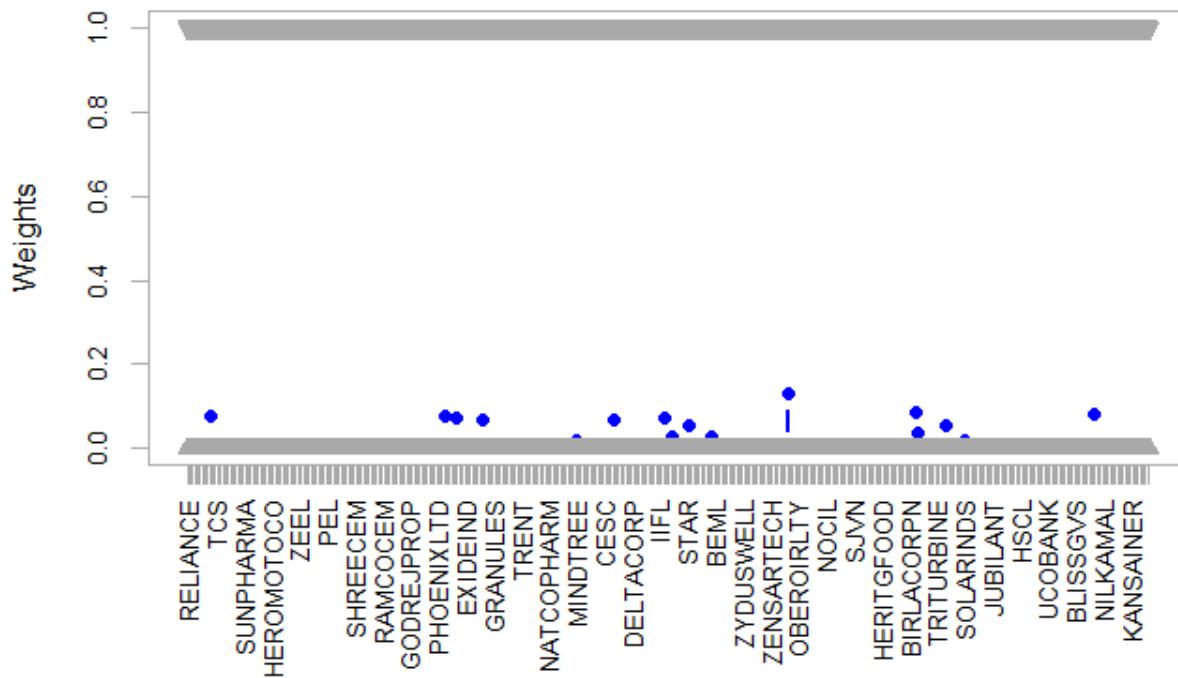
```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0.0000	0.0000	0.0791	0.0000	0.0000	0.0000	0.0000
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLY	FDC	GODFRYRHP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```
## J.KBANK HSCL GMDCLTD PFIZER MHRIL NAVNETEDUL RCF
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOB TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK GEPIL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg2ES3-202101012300



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES4-202101012300"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0000	0.0000	0.5053	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

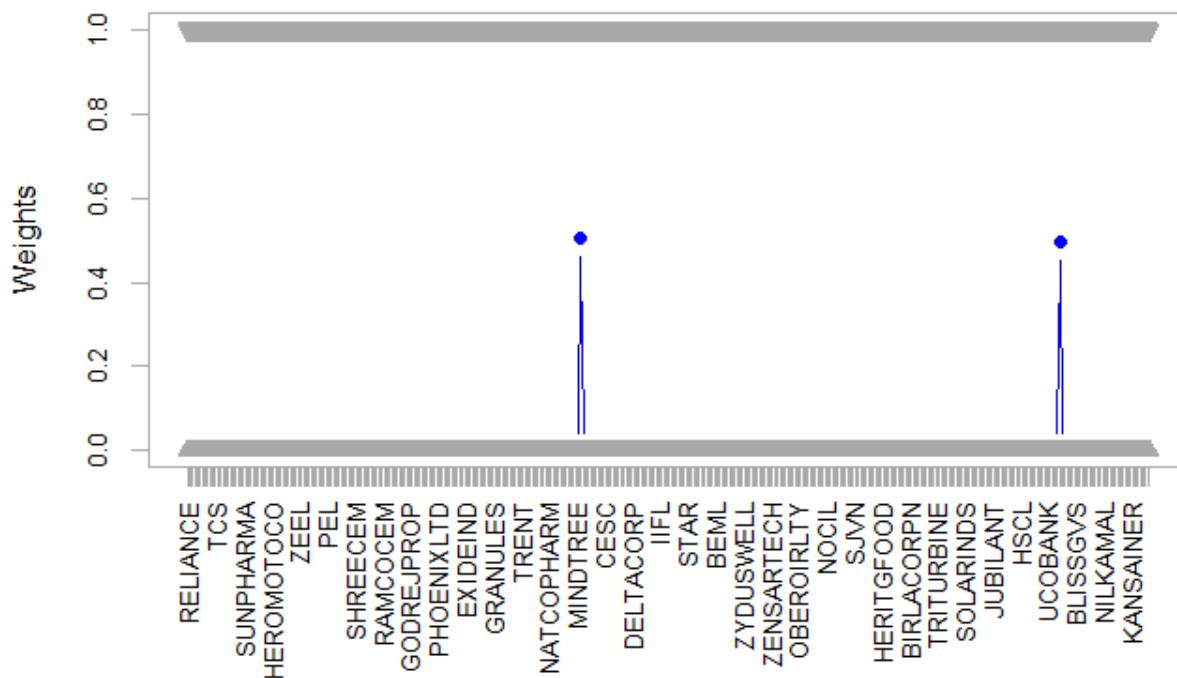
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.4947	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.005931

```

opt_pfESplus-ESarg4Retarg2ES4-202101012300



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES1-202101012300"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##      RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##      0.0000    0.0000    0.0791    0.0000    0.0000    0.0000    0.0000

```

## INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
## 0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
## BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
## 0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
## PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
## 0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
## 0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
## MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
## 0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
## CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
## CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## APLAPOLLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
## 0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
## 0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
## ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD

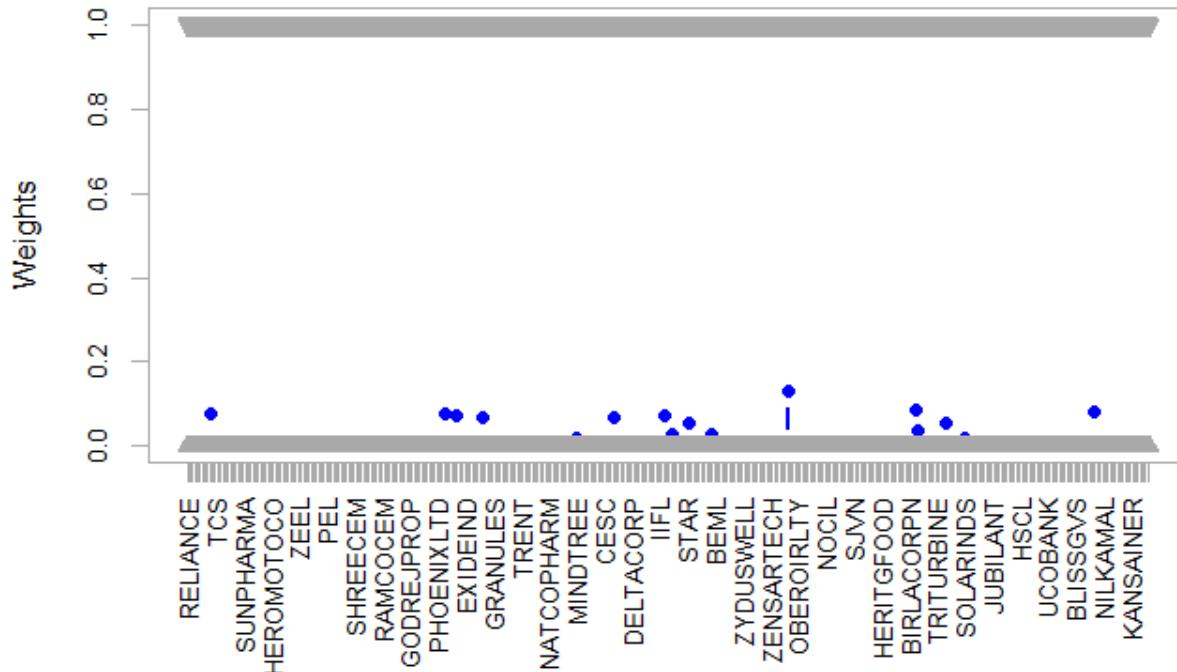
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINEERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNA AUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```

##  FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268

```

opt_pfESplus-ESarg4Retarg3ES1-202101012300



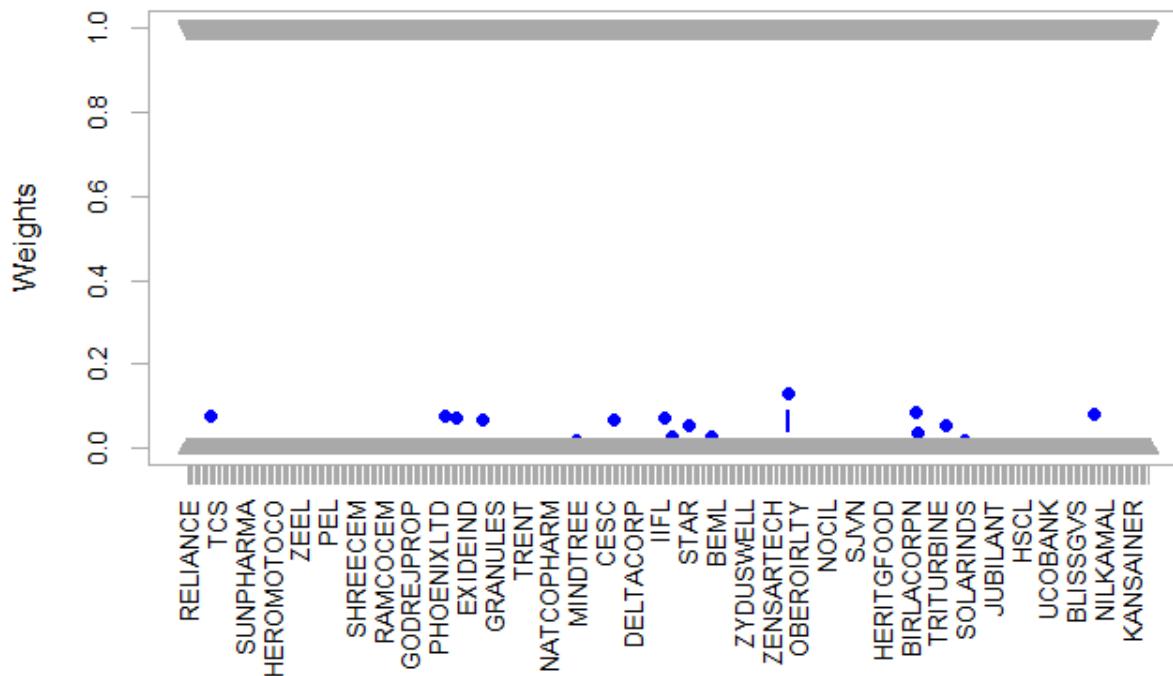
```
## [1] "Starting opt_pfESplus-ESarg4Retarg3ES2-202101012301"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
##    LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000   0.0000   0.0000   0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106   0.0000   0.0000   0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000   0.0000   0.0000   0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000   0.0763   0.0000   0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707   0.0000   0.0000   0.0000   0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0693   0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE  UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC  SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE  HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL  SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL  BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT  HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg3ES2-202101012301



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES3-202101012301"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

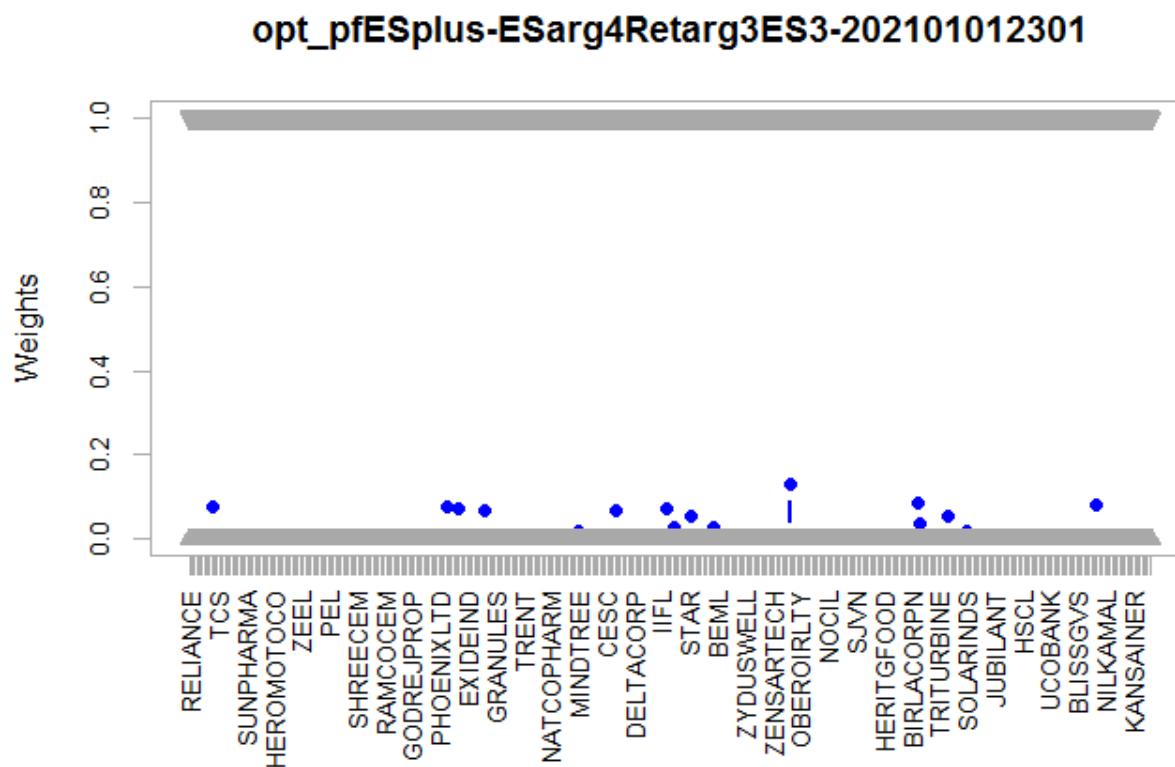
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES4-202101012301"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0	0	0	0	0	0	0
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0	0	0	0	0	0	0
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0	0	0	0	0	0	0
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0	0	0	0	0	0	0
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0	0	0	0	0	0	0
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0	0	0	0	0	0	0
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0	0	0	0	0	0	0
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0	0	0	0	0	0	0
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0	0	0	0	0	0	0
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0	0	0	0	0	0	0
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0	0	0	0	0	0	0
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0	0	0	0	0	0	0
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0	0	0	0	0	0	0
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0	0	0	0	0	0	0
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0	0	0	0	0	0	0
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0	0	0	0	0	0	0
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0	0	0	0	0	0	0
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0	0	0	0	0	0	0
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0	0	0	0	0	0	0
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0	0	0	0	0	0	0
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0	0	0	0	0	0	0
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0	0	0	0	0	0	0
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0	0	1	0	0	0	0
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

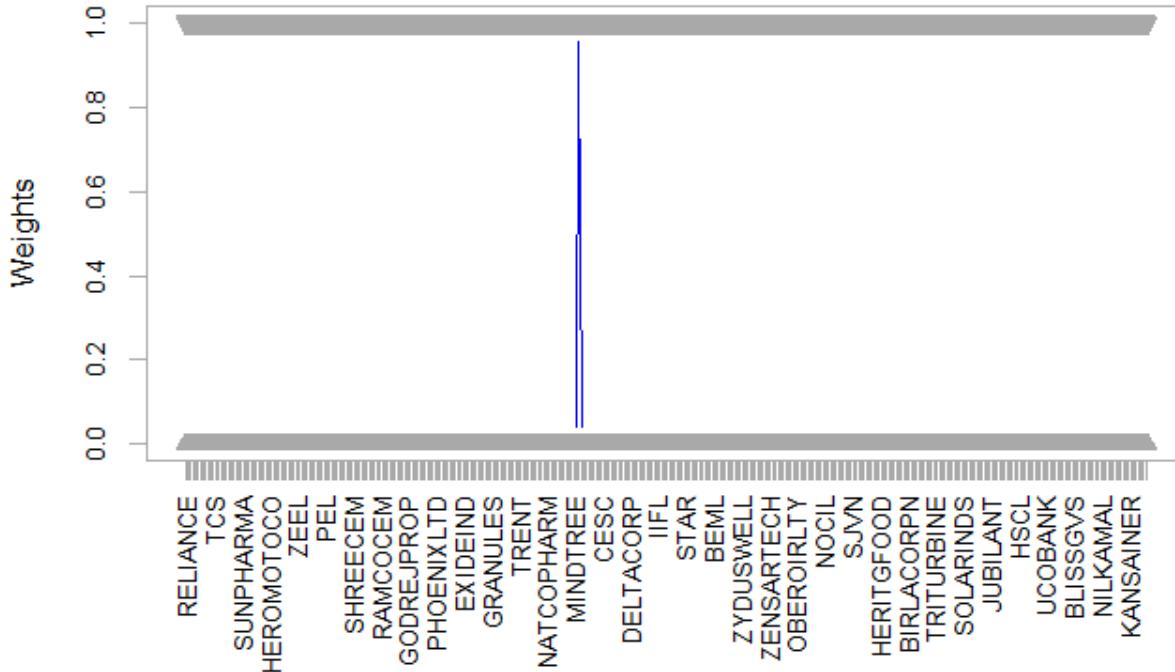
##	0	0	0	0	0	0	0	0
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGEET	UNIONBANK	DCMSHRIRAM	WELCORP	
##	0	0	0	0	0	0	0	0
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD	
##	0	0	0	0	0	0	0	0
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS	
##	0	0	0	0	0	0	0	0
##	RELAXO		KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0	0	0	0	0	0	0	0
##	KALPATPOWR	HINDCOPPER		STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0	0		0	0	0	0	0
##	BAJAJELEC	ENGINERSIN		GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0	0		0	0	0	0	0
##	IRB	UFLEX		BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0	0		0	0	0	0	0
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV	
##	0	0		0	0	0	0	0
##	CARBORUNIV		HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0	0		0	0	0	0	0
##	ZENSARTECH		SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0	0		0	0	0	0	0
##	ALKYLAMINE	BANKINDIA	SUDARSCHM		IPCALAB	OBEROIRLTY	FDC	GODFRY PHLP
##	0	0		0	0	0	0	0
##	SHILPAMED	PHILIPCARB		MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0	0		0	0	0	0	0
##	MAHSCOOTER		NOCIL	INOXLEISUR		GHCL	TATAINVEST	NLCINDIA
##	0	0		0	0	0	0	0
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS		KRBL	SJVN	ALLCARGO
##	0	0		0	0	0	0	0
##	ORIENTREF		DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0	0		0	0	0	0	0
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING		KNRCON	HAWKINCOOK
##	0	0		0	0	0	0	0
##	VENKYS	JINDALSAW		JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0	0		0	0	0	0	0
##	BALMLAWRIE		MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0	0		0	0	0	0	0
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI	
##	0	0		0	0	0	0	0
##	VAIBHAVGBL	SUPRAJIT		GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0	0		0	0	0	0	0
##	SOLARINDS	BLUEDART		NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0	0		0	0	0	0	0
##	TATAMETALI		MRPL	NBVENTURES	BAJA JHLNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0	0		0	0	0	0	0
##	KEI	TTKPRESTIG		SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0	0		0	0	0	0	0

```

##   J.KBANK      HSCL     GMDCLTD      PFIZER      MHRIL  NAVNETEDUL      RCF
##      0          0          0          0          0          0          0          0
##    IOB      TVTODAY  SCHNEIDER  RATNAMANI  JKTYRE  UCOBANK      GEPIL
##      0          0          0          0          0          0          0          0
##  FCONSUMER  TIMETECHNO    JAGRAN      MMTC      SANOFI      CCL SWANENERGY
##      0          0          0          0          0          0          0          0
## JAICORPLTD    DBCORP    BLISSGVIS WABCOINDIA      OMAXE      HATHWAY MAHINDCIE
##      0          0          0          0          0          0          0          0
## MAHLIFE       ITI EMAMILTD      ASTRAL      SYMPHONY INDOCO  NILKAMAL
##      0          0          0          0          0          0          0          0
## SUZLON        IFCI      ITDC      CRISIL      BRIGADE  BLUESTARCO MAHSEAMLES
##      0          0          0          0          0          0          0          0
## HEIDELBERG    POLYMED    GRINDWELL KANSAINER      AIAENG      TASTYBIT PERSISTENT
##      0          0          0          0          0          0          0          0
## JKCEMENT    MPHASIS      HONAUT HINDPETRO
##      0          0          0          0
##
## Objective Measure:
##   mean
## 0.01533

```

opt_pfESplus-ESarg4Retarg3ES4-202101012301



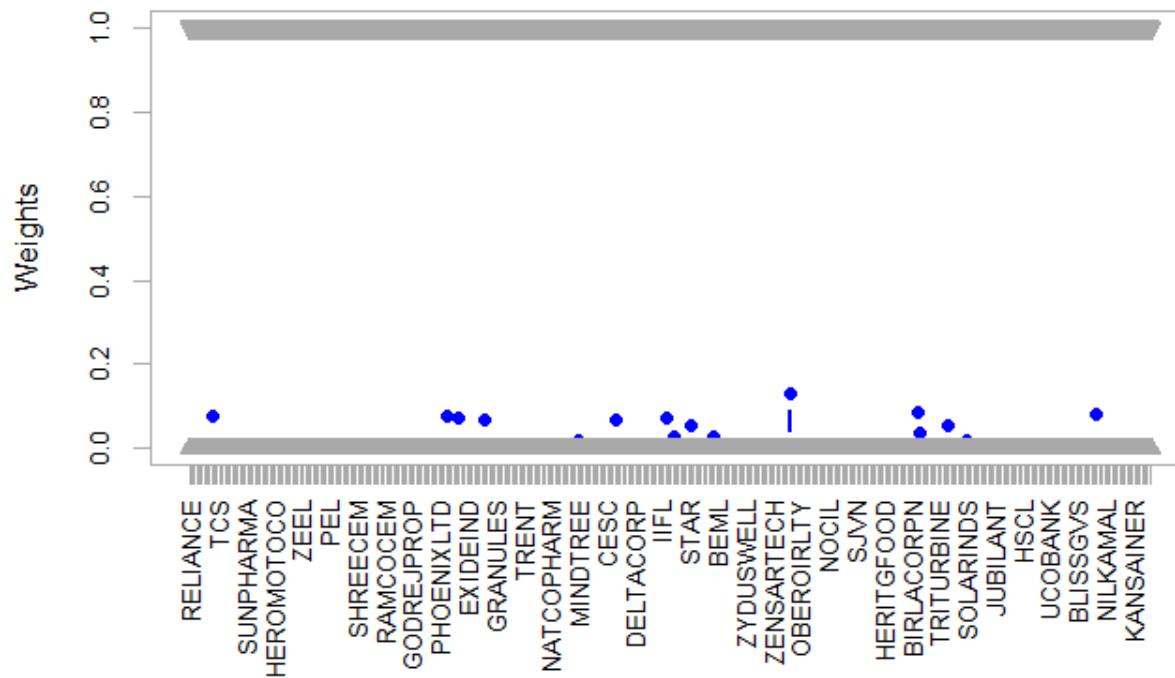
```
## [1] "Starting opt_pfESplus-ESarg3Retarg2ES1-202101012301"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000 0.0000 0.0791 0.0000 0.0000 0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
## 0.0000 0.0000 0.0000 0.0106 0.0000 0.0000 0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
## 0.0000 0.0046 0.0000 0.0000 0.0000 0.0000 0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
## 0.0064 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
## 0.0000 0.0000 0.0000 0.0000 0.0763 0.0000 0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
## 0.0000 0.0000 0.0707 0.0000 0.0000 0.0000 0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0693 0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC  SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg2ES1-202101012301



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES2-202101012301"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000   0.0000   0.0791   0.0000 0.0000   0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

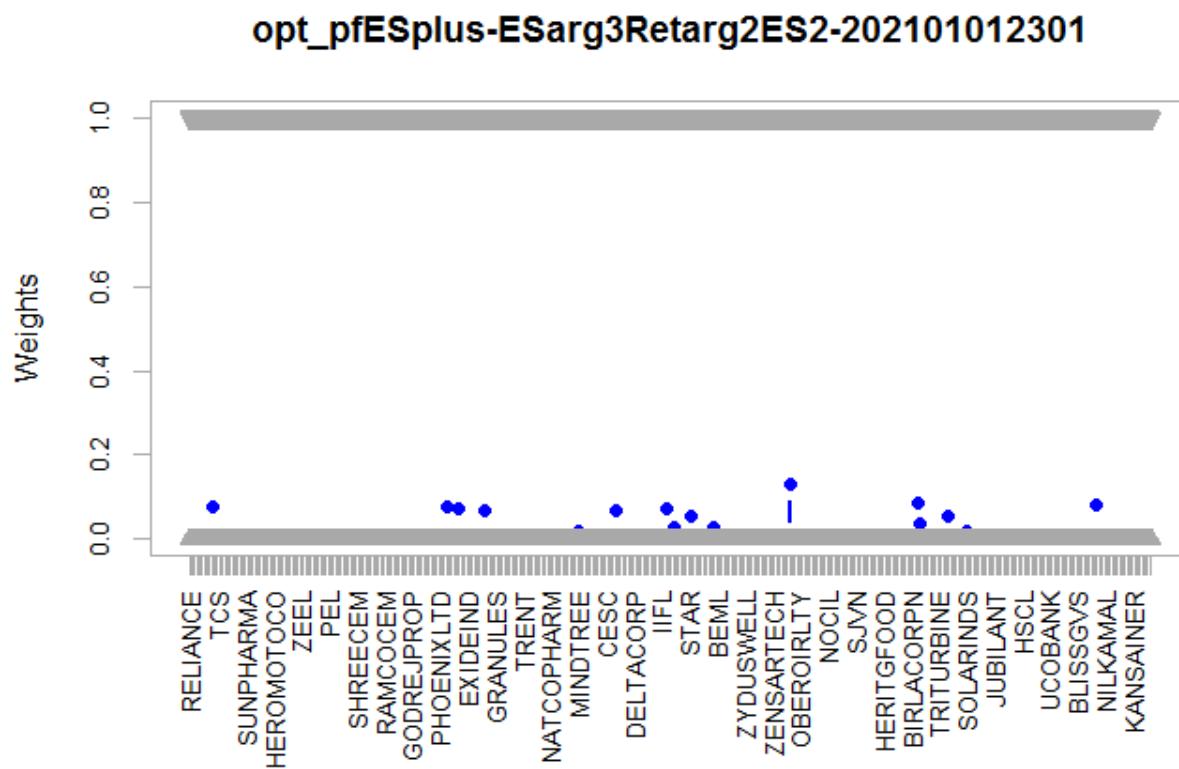
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRHP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES3-202101012302"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

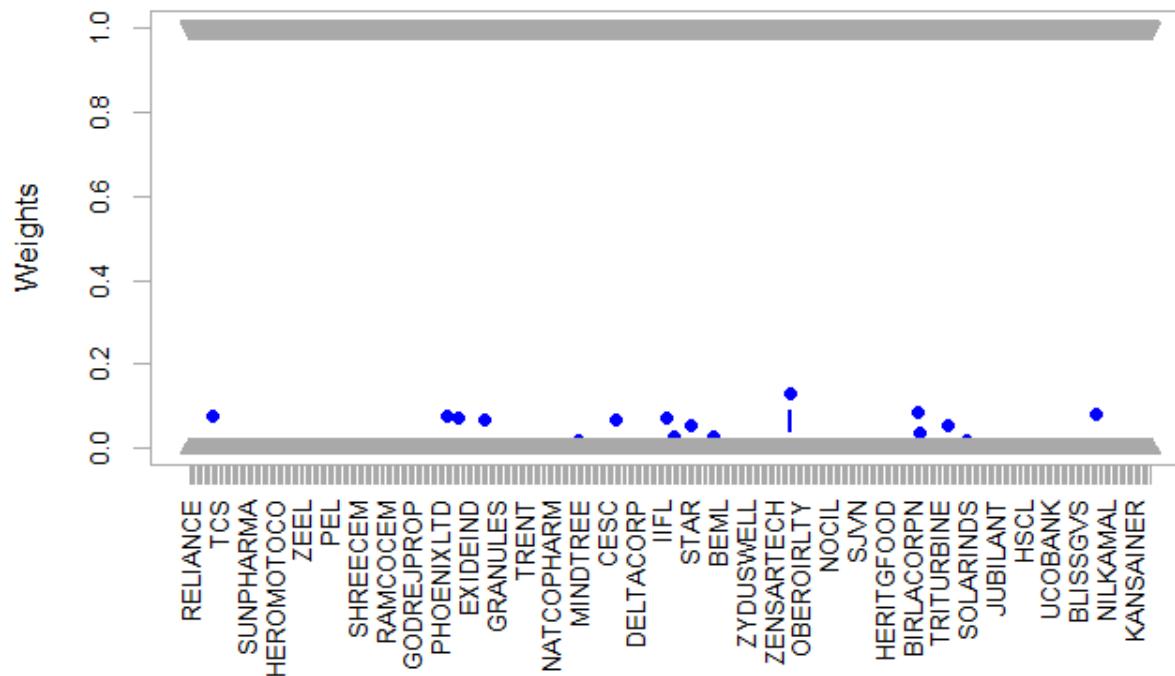
```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0.0000	0.0000	0.0791	0.0000	0.0000	0.0000	0.0000
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOC	TECHM	ULTRACEMCO	BAAJA.J.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLY	FDC	GODFRYRHP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```
## J.KBANK HSCL GMDCLTD PFIZER MHRIL NAVNETEDUL RCF
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOB TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK GEPIL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg2ES3-202101012302



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES4-202101012302"
## ****
## PortfolioAnalytics Optimization
## ****
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0000	0.0000	0.5053	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

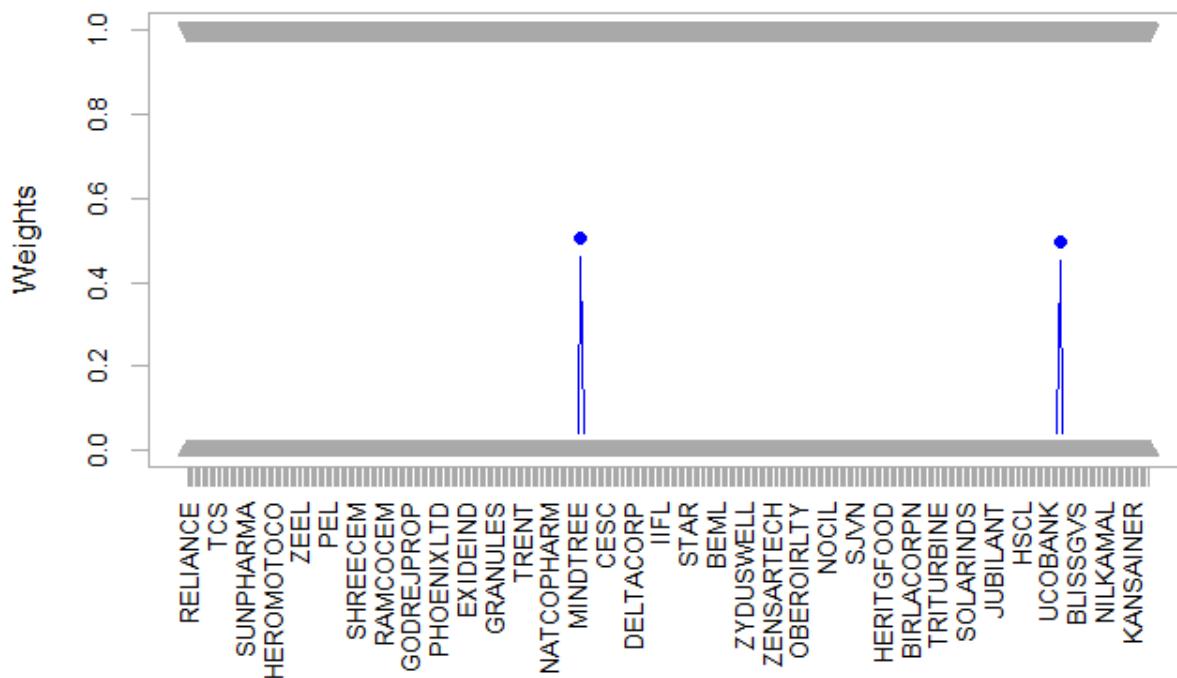
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.4947	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.005931

```

opt_pfESplus-ESarg3Retarg2ES4-202101012302



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES1-202101012302"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##      RELIANCE HDFCBANK ICICIBANK HDFC      ITC      AXISBANK      SBIN
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      LT BAJFINANCE INFY BHARTIARTL      TCS      M.M KOTAKBANK
##      0.0000    0.0000    0.0791    0.0000    0.0000    0.0000    0.0000

```

## INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
## 0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
## BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
## 0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
## PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
## 0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
## 0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
## MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
## 0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
## CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
## CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## APLAPOLLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
## 0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
## 0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
## ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD

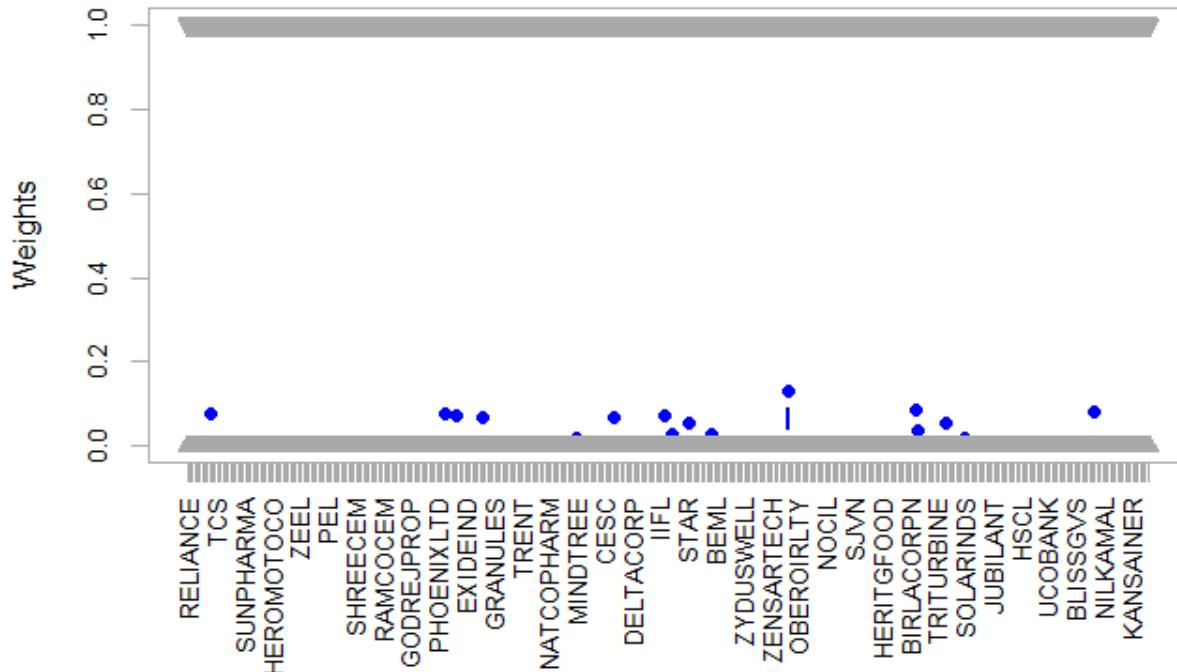
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINEERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNA AUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```

##  FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268

```

opt_pfESplus-ESarg3Retarg3ES1-202101012302



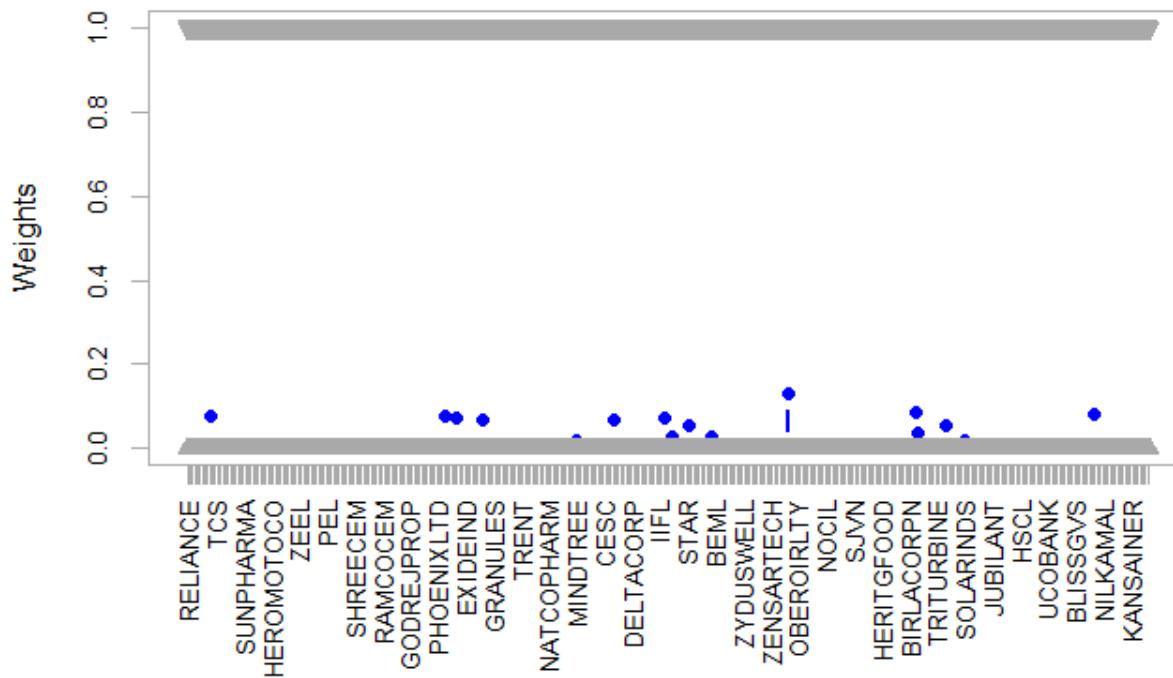
```
## [1] "Starting opt_pfESplus-ESarg3Retarg3ES2-202101012302"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000  0.0000   0.0000  0.0000
##          LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000  0.0000   0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000  0.0000   0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000  0.0000   0.0000  0.0000
##          BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000  0.0000   0.0000  0.0000
##          IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000  0.0000   0.0000  0.0000
##          UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106  0.0000   0.0000  0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000  0.0000   0.0000  0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000  0.0000   0.0000  0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000  0.0000   0.0000  0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000  0.0000   0.0000  0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000  0.0000   0.0000  0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000  0.0000   0.0000  0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000  0.0000   0.0000  0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000  0.0763   0.0000  0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707  0.0000  0.0000   0.0000  0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000  0.0000   0.0693  0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000  0.0000   0.0000  0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000  0.0000   0.0000  0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT      GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART     NESCO   JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI MRPL NBVENTURES BAJAJHLDNG JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI TTKPRESTIG SUNTECK     CAPPL   NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      JK.BANK HSCL GMDCLTD    PFIZER   MHRIL  NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE   UCOBANK   GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER TIMETECHNO JAGRAN      MMTC   SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE   HATHWAY   MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE    ITI  EMAMILTD ASTRAL   SYMPHONY INDOCO   NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON     IFCI   ITDC   CRISIL   BRIGADE  BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG   TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT   MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg3ES2-202101012302



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES3-202101012302"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000   0.0000   0.0791   0.0000 0.0000   0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

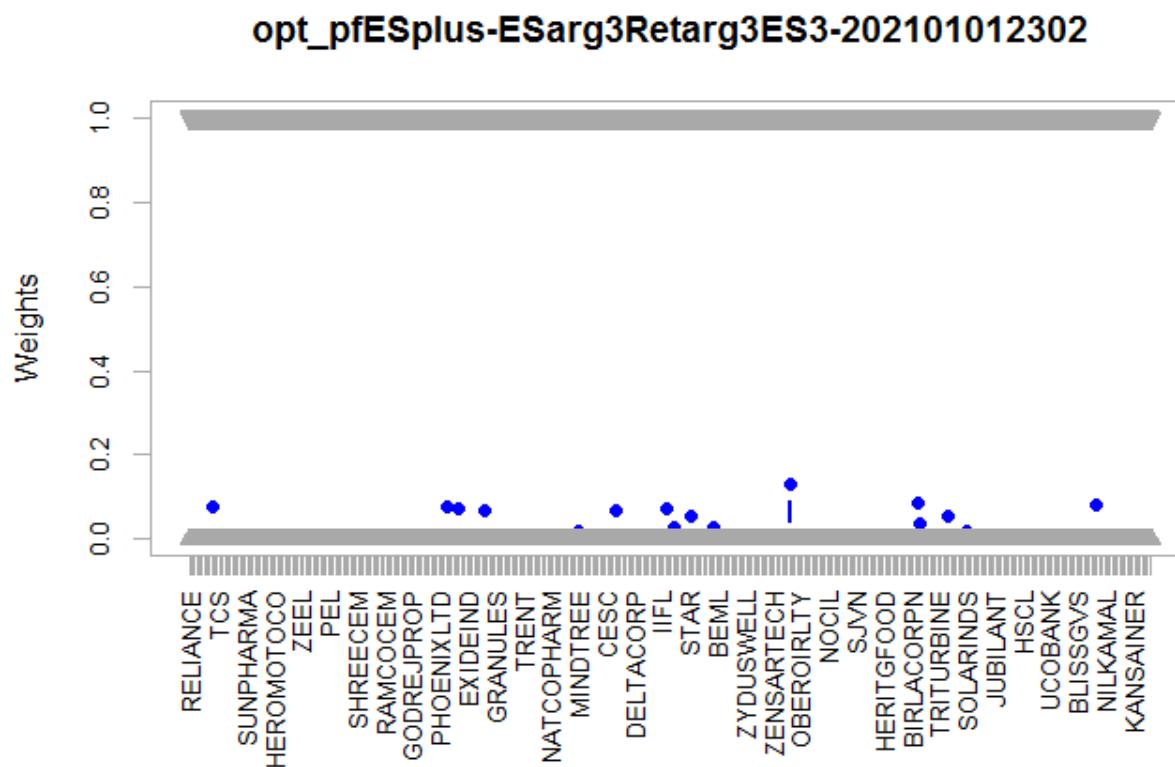
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES4-202101012303"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0	0	0	0	0	0	0
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0	0	0	0	0	0	0
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0	0	0	0	0	0	0
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0	0	0	0	0	0	0
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0	0	0	0	0	0	0
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0	0	0	0	0	0	0
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0	0	0	0	0	0	0
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0	0	0	0	0	0	0
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0	0	0	0	0	0	0
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0	0	0	0	0	0	0
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0	0	0	0	0	0	0
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0	0	0	0	0	0	0
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0	0	0	0	0	0	0
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0	0	0	0	0	0	0
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0	0	0	0	0	0	0
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0	0	0	0	0	0	0
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0	0	0	0	0	0	0
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0	0	0	0	0	0	0
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0	0	0	0	0	0	0
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0	0	0	0	0	0	0
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0	0	0	0	0	0	0
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0	0	0	0	0	0	0
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0	0	1	0	0	0	0
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

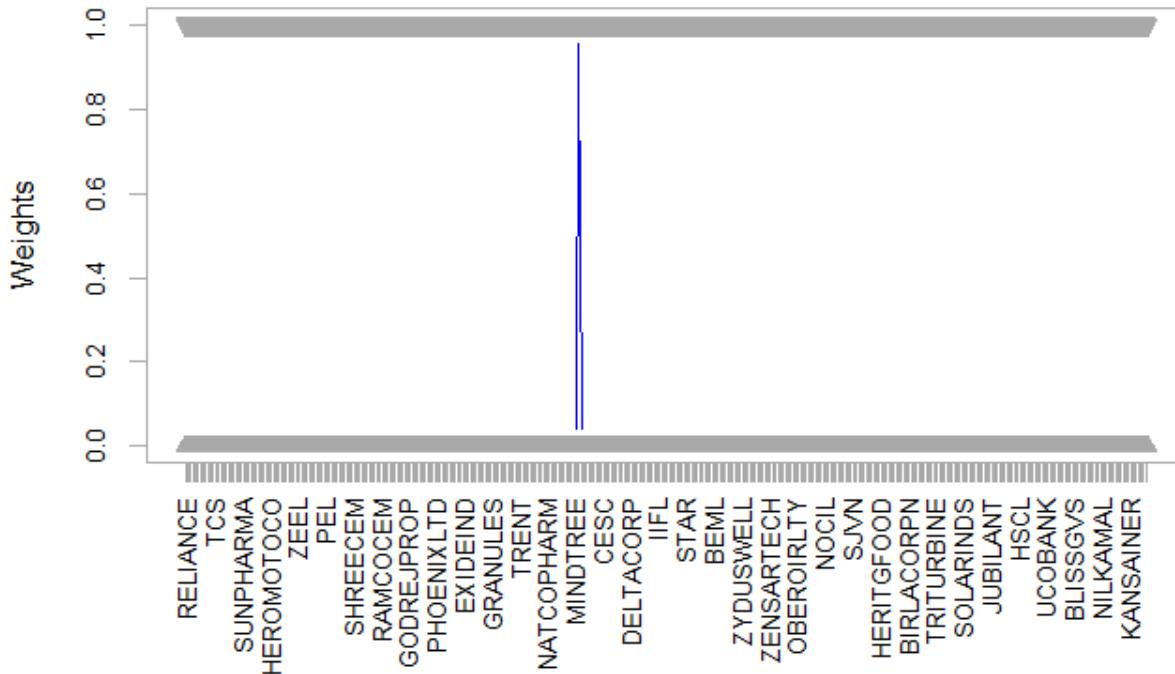
##	0	0	0	0	0	0	0	0
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGEET	UNIONBANK	DCMSHRIRAM	WELCORP	
##	0	0	0	0	0	0	0	0
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD	
##	0	0	0	0	0	0	0	0
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS	
##	0	0	0	0	0	0	0	0
##	RELAXO		KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0	0	0	0	0	0	0	0
##	KALPATPOWR	HINDCOPPER		STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0	0		0	0	0	0	0
##	BAJAJELEC	ENGINERSIN		GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0	0		0	0	0	0	0
##	IRB	UFLEX		BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0	0		0	0	0	0	0
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV	
##	0	0		0	0	0	0	0
##	CARBORUNIV		HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0	0		0	0	0	0	0
##	ZENSARTECH		SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0	0		0	0	0	0	0
##	ALKYLAMINE	BANKINDIA	SUDARSCHM		IPCALAB	OBEROIRLTY	FDC	GODFRY PHLP
##	0	0		0	0	0	0	0
##	SHILPAMED	PHILIPCARB		MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0	0		0	0	0	0	0
##	MAHSCOOTER		NOCIL	INOXLEISUR		GHCL	TATAINVEST	NLCINDIA
##	0	0		0	0	0	0	0
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS		KRBL	SJVN	ALLCARGO
##	0	0		0	0	0	0	0
##	ORIENTREF		DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0	0		0	0	0	0	0
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING		KNRCON	HAWKINCOOK
##	0	0		0	0	0	0	0
##	VENKYS	JINDALSAW		JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0	0		0	0	0	0	0
##	BALMLAWRIE		MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0	0		0	0	0	0	0
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI	
##	0	0		0	0	0	0	0
##	VAIBHAVGBL	SUPRAJIT		GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0	0		0	0	0	0	0
##	SOLARINDS	BLUEDART		NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0	0		0	0	0	0	0
##	TATAMETALI		MRPL	NBVENTURES	BAJA JHLNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0	0		0	0	0	0	0
##	KEI	TTKPRESTIG		SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0	0		0	0	0	0	0

```

##   J.KBANK      HSCL     GMDCLTD      PFIZER      MHRIL  NAVNETEDUL      RCF
##      0          0          0          0          0          0          0          0
##    IOB      TVTODAY  SCHNEIDER  RATNAMANI  JKTYRE  UCOBANK      GEPIL
##      0          0          0          0          0          0          0          0
##  FCONSUMER  TIMETECHNO    JAGRAN      MMTC      SANOFI      CCL SWANENERGY
##      0          0          0          0          0          0          0          0
## JAICORPLTD    DBCORP    BLISSGVIS WABCOINDIA      OMAXE      HATHWAY MAHINDCIE
##      0          0          0          0          0          0          0          0
## MAHLIFE       ITI  EMAMILTD      ASTRAL      SYMPHONY  INDOCO  NILKAMAL
##      0          0          0          0          0          0          0          0
## SUZLON        IFCI      ITDC      CRISIL      BRIGADE  BLUESTARCO MAHSEAMLES
##      0          0          0          0          0          0          0          0
## HEIDELBERG    POLYMED    GRINDWELL KANSAINER      AIAENG      TASTYBIT PERSISTENT
##      0          0          0          0          0          0          0          0
## JKCEMENT    MPHASIS      HONAUT HINDPETRO
##      0          0          0          0
##
## Objective Measure:
##   mean
## 0.01533

```

opt_pfESplus-ESarg3Retarg3ES4-202101012303



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES1-202101012303"

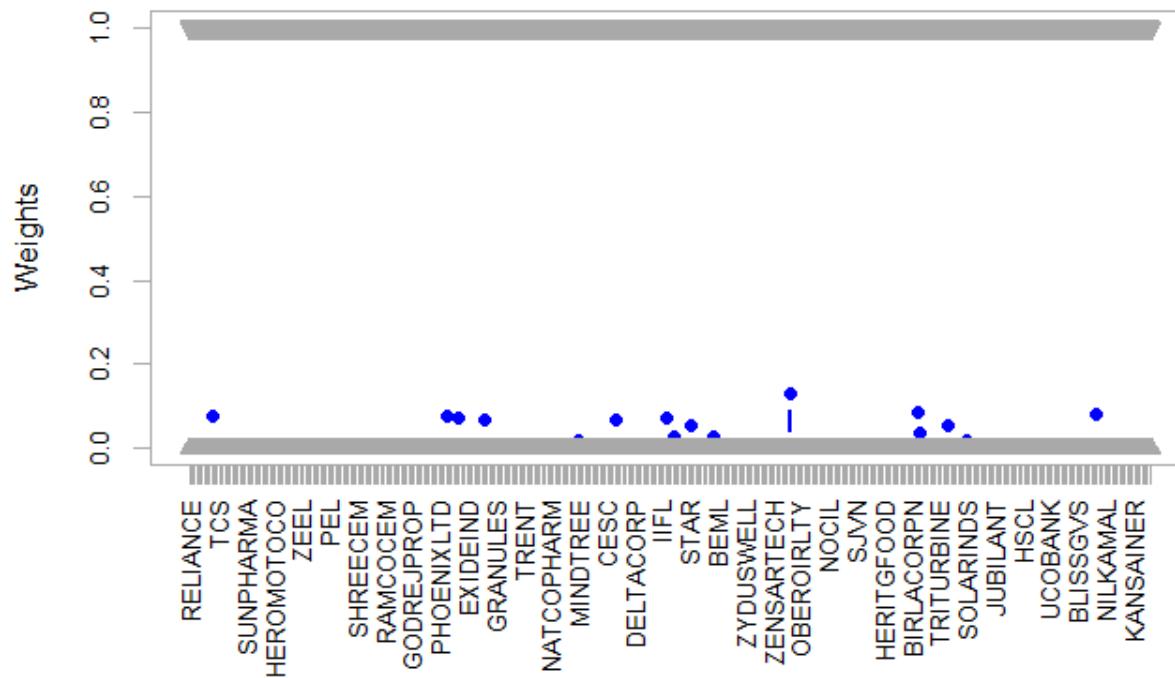
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
##    LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000   0.0000   0.0000   0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106   0.0000   0.0000   0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000   0.0000   0.0000   0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000   0.0763   0.0000   0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707   0.0000   0.0000   0.0000   0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0693   0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC  SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg2ES1-202101012303



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES2-202101012303"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

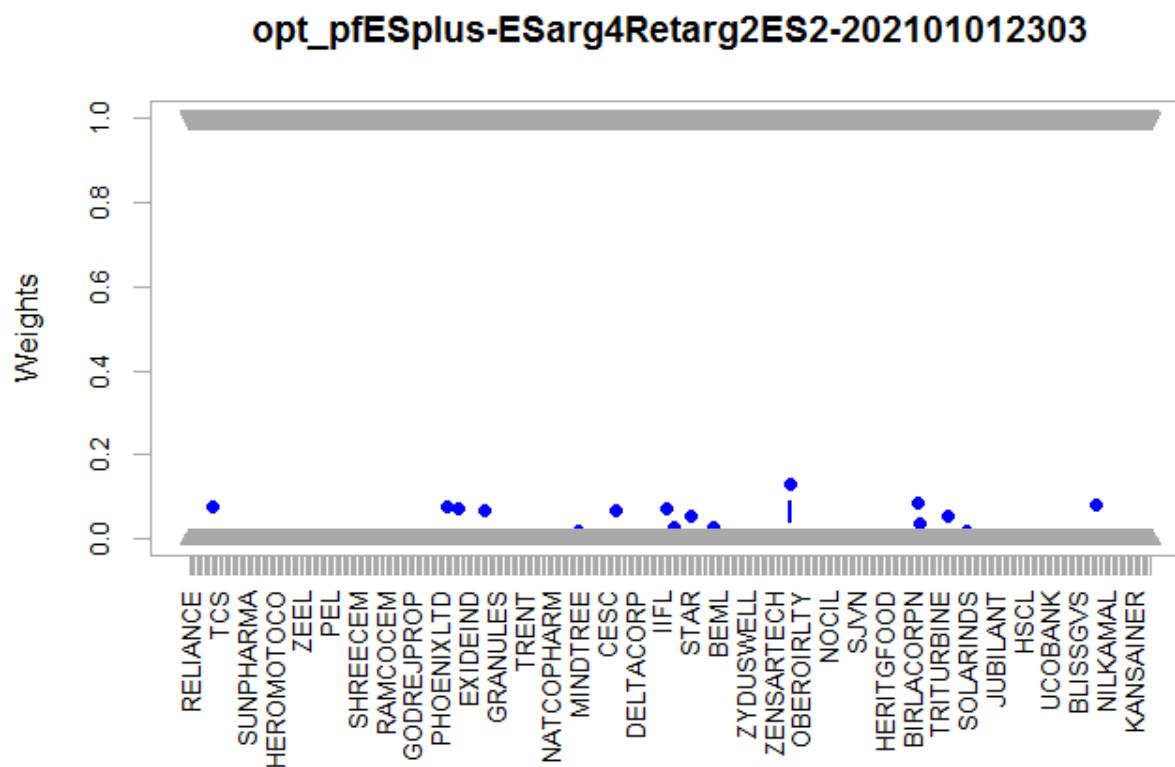
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES3-202101012303"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

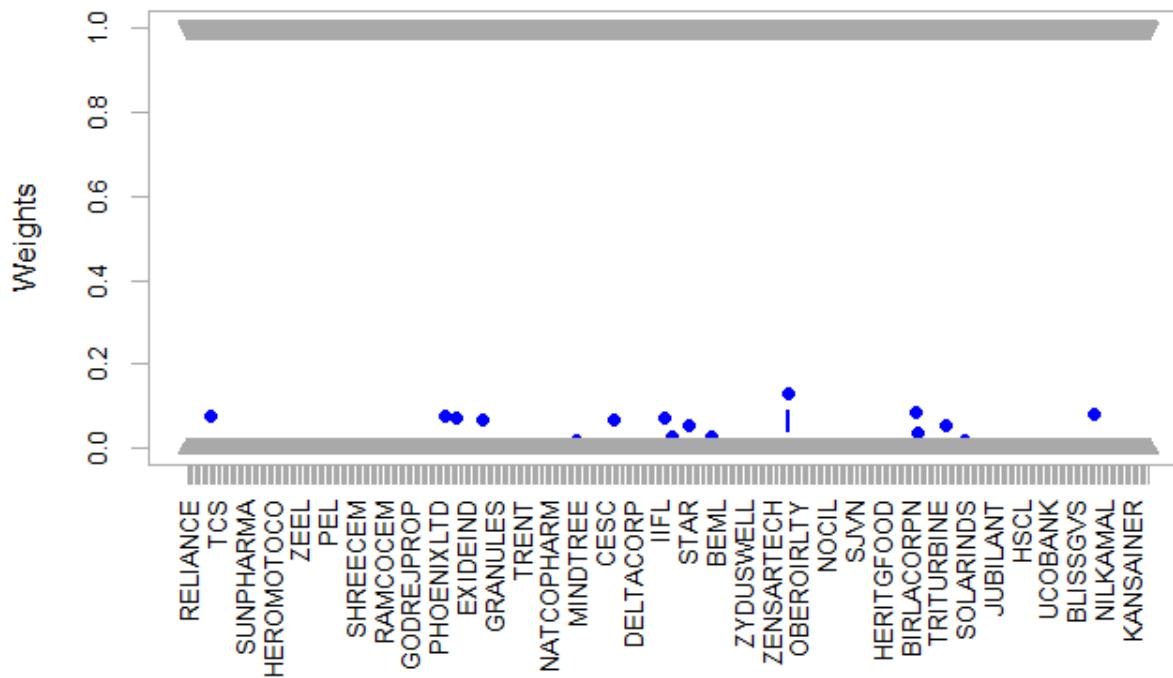
```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0.0000	0.0000	0.0791	0.0000	0.0000	0.0000	0.0000
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOC	TECHM	ULTRACEMCO	BAAJA.J.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLY	FDC	GODFRYRHP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```
## J.KBANK HSCL GMDCLTD PFIZER MHRIL NAVNETEDUL RCF
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOB TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK GEPIL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg2ES3-202101012303



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES4-202101012303"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0000	0.0000	0.5053	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

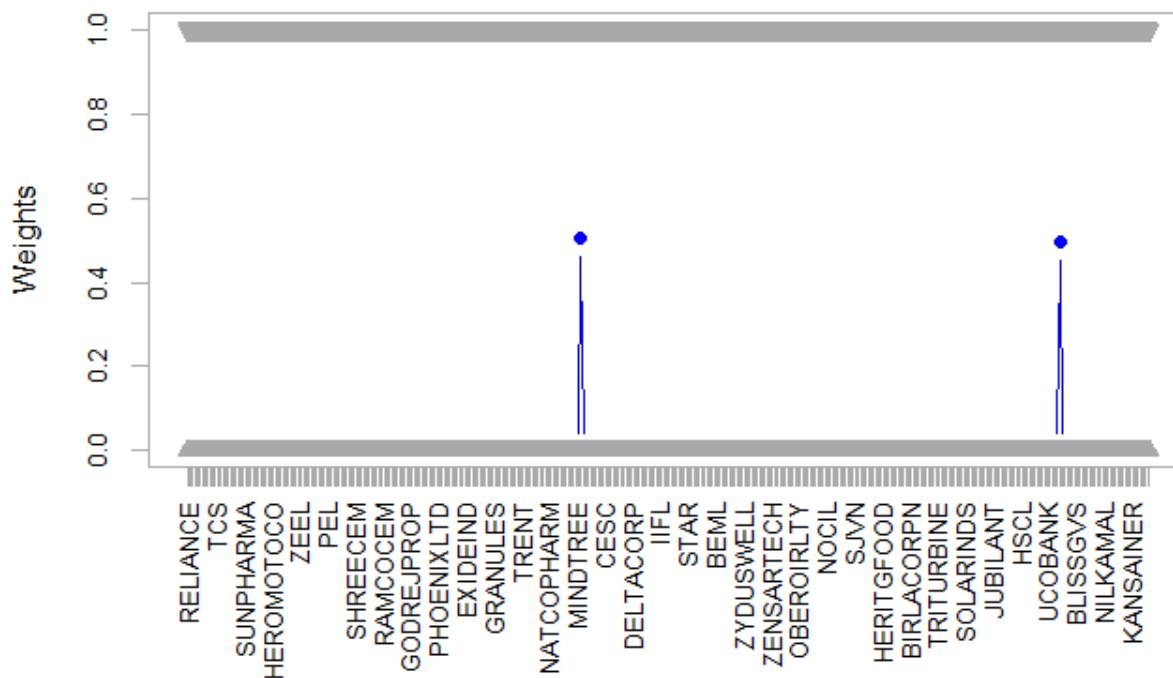
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.4947	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.005931

```

opt_pfESplus-ESarg4Retarg2ES4-202101012303



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES1-202101012303"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##      RELIANCE HDFCBANK ICICIBANK HDFC      ITC      AXISBANK      SBIN
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      LT BAJFINANCE INFY BHARTIARTL      TCS      M.M KOTAKBANK
##      0.0000    0.0000    0.0791    0.0000    0.0000    0.0000    0.0000

```

## INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
## 0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
## BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
## 0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
## PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
## 0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
## 0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
## MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
## 0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
## CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
## CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## APLAPOLLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
## 0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
## 0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
## ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD

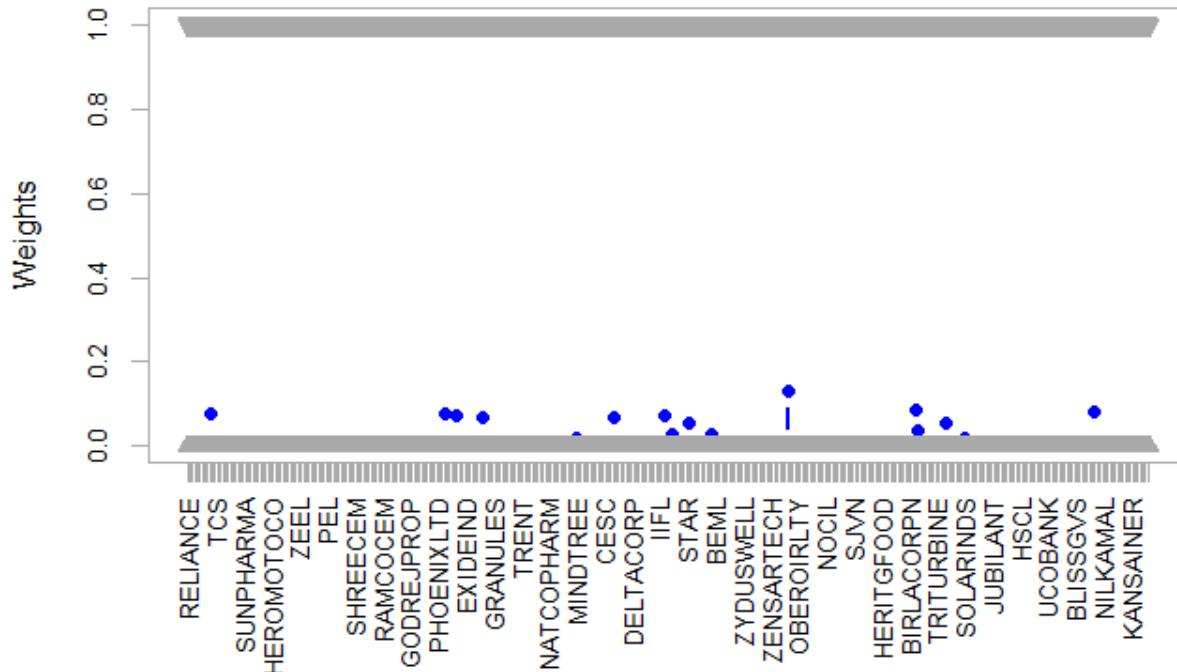
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINEERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNA AUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```

##  FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268

```

opt_pfESplus-ESarg4Retarg3ES1-202101012303



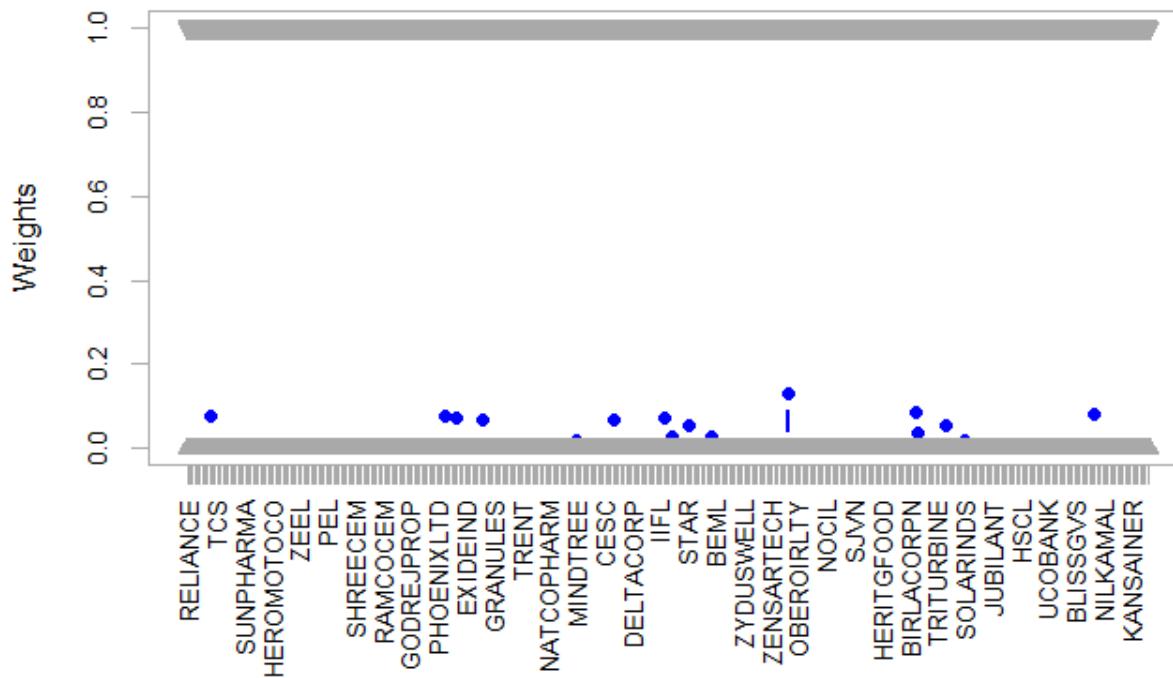
```
## [1] "Starting opt_pfESplus-ESarg4Retarg3ES2-202101012304"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000 0.0000 0.0791 0.0000 0.0000 0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
## 0.0000 0.0000 0.0000 0.0106 0.0000 0.0000 0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
## 0.0000 0.0046 0.0000 0.0000 0.0000 0.0000 0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
## 0.0064 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
## 0.0000 0.0000 0.0000 0.0000 0.0763 0.0000 0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
## 0.0000 0.0000 0.0707 0.0000 0.0000 0.0000 0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0693 0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      JK.BANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI  JKTYRE   UCOBANK    GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO  JAGRAN      MMTC   SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA  OMAXE   HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL  SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI      ITDC  CRISIL  BRIGADE  BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER  AIAENG  TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT  HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg3ES2-202101012304



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES3-202101012304"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000   0.0000   0.0791   0.0000 0.0000   0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

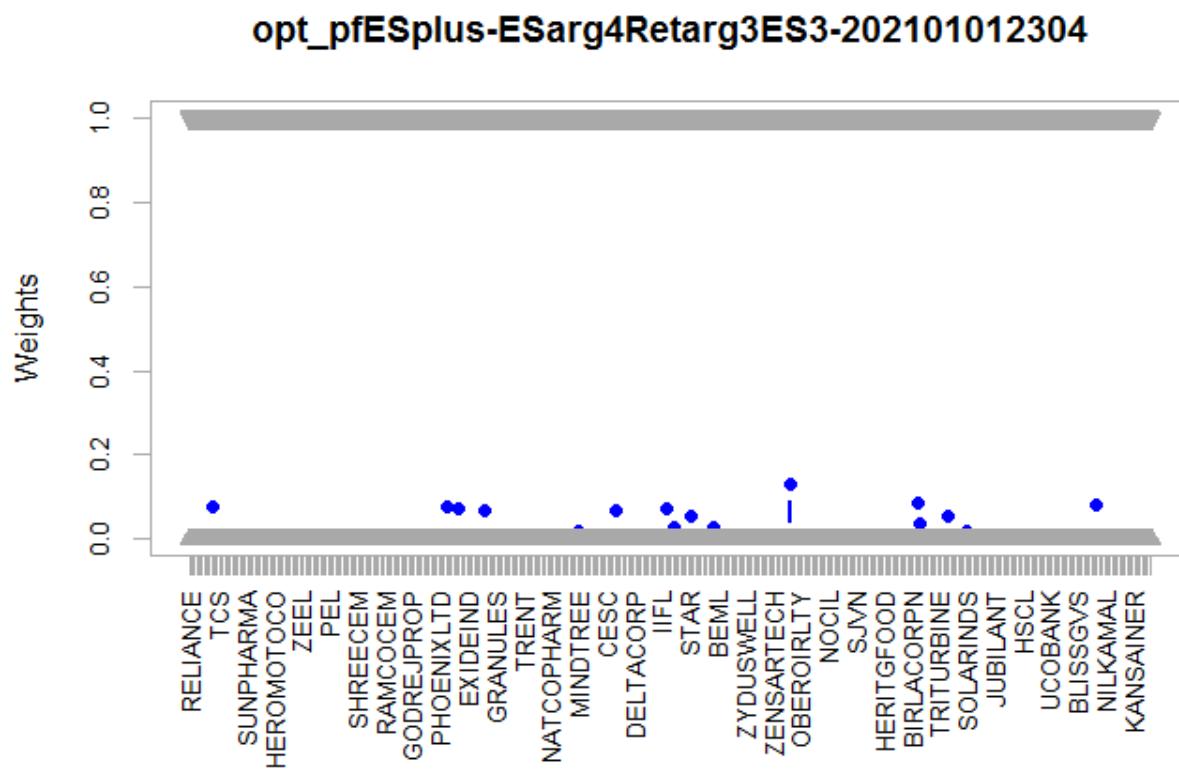
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES4-202101012304"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0	0	0	0	0	0	0
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0	0	0	0	0	0	0
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0	0	0	0	0	0	0
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0	0	0	0	0	0	0
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0	0	0	0	0	0	0
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0	0	0	0	0	0	0
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0	0	0	0	0	0	0
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0	0	0	0	0	0	0
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0	0	0	0	0	0	0
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0	0	0	0	0	0	0
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0	0	0	0	0	0	0
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0	0	0	0	0	0	0
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0	0	0	0	0	0	0
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0	0	0	0	0	0	0
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0	0	0	0	0	0	0
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0	0	0	0	0	0	0
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0	0	0	0	0	0	0
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0	0	0	0	0	0	0
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0	0	0	0	0	0	0
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0	0	0	0	0	0	0
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0	0	0	0	0	0	0
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0	0	0	0	0	0	0
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0	0	1	0	0	0	0
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

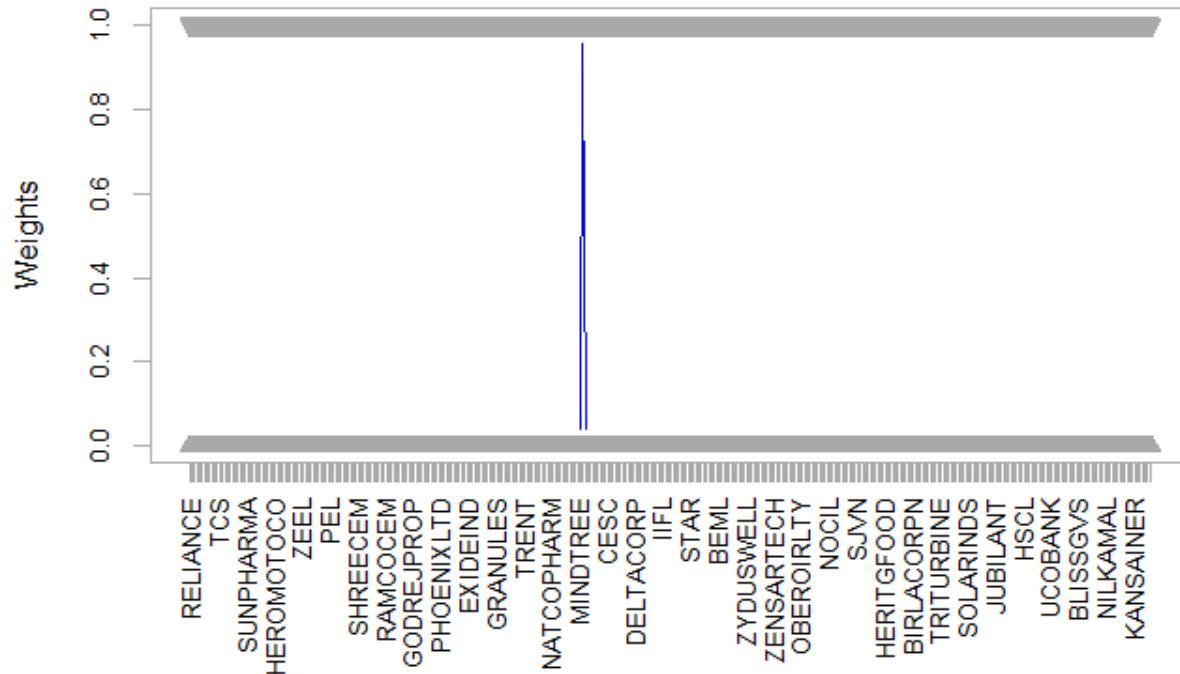
##	0	0	0	0	0	0	0	0
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGEET	UNIONBANK	DCMSHRIRAM	WELCORP	
##	0	0	0	0	0	0	0	0
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD	
##	0	0	0	0	0	0	0	0
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS	
##	0	0	0	0	0	0	0	0
##	RELAXO		KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0	0	0	0	0	0	0	0
##	KALPATPOWR	HINDCOPPER		STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0	0		0	0	0	0	0
##	BAJAJELEC	ENGINERSIN		GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0	0		0	0	0	0	0
##	IRB	UFLEX		BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0	0		0	0	0	0	0
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV	
##	0	0		0	0	0	0	0
##	CARBORUNIV		HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0	0		0	0	0	0	0
##	ZENSARTECH		SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0	0		0	0	0	0	0
##	ALKYLAMINE	BANKINDIA	SUDARSCHM		IPCALAB	OBEROIRLTY	FDC	GODFRY PHLP
##	0	0		0	0	0	0	0
##	SHILPAMED	PHILIPCARB		MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0	0		0	0	0	0	0
##	MAHSCOOTER		NOCIL	INOXLEISUR		GHCL	TATAINVEST	NLCINDIA
##	0	0		0	0	0	0	0
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS		KRBL	SJVN	ALLCARGO
##	0	0		0	0	0	0	0
##	ORIENTREF		DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0	0		0	0	0	0	0
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING		KNRCON	HAWKINCOOK
##	0	0		0	0	0	0	0
##	VENKYS	JINDALSAW		JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0	0		0	0	0	0	0
##	BALMLAWRIE		MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0	0		0	0	0	0	0
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI	
##	0	0		0	0	0	0	0
##	VAIBHAVGBL	SUPRAJIT		GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0	0		0	0	0	0	0
##	SOLARINDS	BLUEDART		NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0	0		0	0	0	0	0
##	TATAMETALI		MRPL	NBVENTURES	BAJA JHLNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0	0		0	0	0	0	0
##	KEI	TTKPRESTIG		SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0	0		0	0	0	0	0

```

##   J.KBANK      HSCL     GMDCLTD      PFIZER      MHRIL  NAVNETEDUL      RCF
##      0          0          0          0          0          0          0          0
##    IOB      TVTODAY  SCHNEIDER  RATNAMANI  JKTYRE  UCOBANK      GEPIL
##      0          0          0          0          0          0          0          0
##  FCONSUMER  TIMETECHNO    JAGRAN      MMTC      SANOFI      CCL SWANENERGY
##      0          0          0          0          0          0          0          0
## JAICORPLTD    DBCORP    BLISSGVIS WABCOINDIA      OMAXE      HATHWAY MAHINDCIE
##      0          0          0          0          0          0          0          0
## MAHLIFE       ITI EMAMILTD      ASTRAL      SYMPHONY INDOCO  NILKAMAL
##      0          0          0          0          0          0          0          0
## SUZLON        IFCI      ITDC      CRISIL      BRIGADE  BLUESTARCO MAHSEAMLES
##      0          0          0          0          0          0          0          0
## HEIDELBERG    POLYMED    GRINDWELL KANSAINER      AIAENG      TASTYBIT PERSISTENT
##      0          0          0          0          0          0          0          0
## JKCEMENT    MPHASIS      HONAUT HINDPETRO
##      0          0          0          0
##
## Objective Measure:
##   mean
## 0.01533

```

opt_pfESplus-ESarg4Retarg3ES4-202101012304



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES1-202101012304"

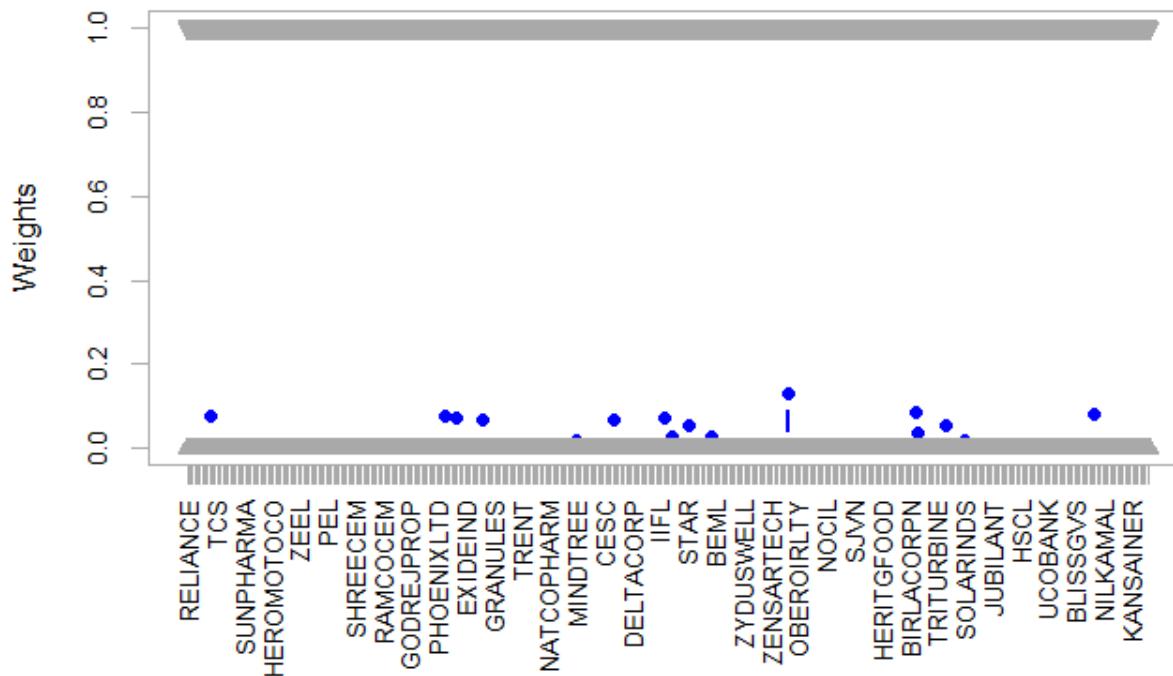
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
##    LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000   0.0000   0.0000   0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106   0.0000   0.0000   0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000   0.0000   0.0000   0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000   0.0763   0.0000   0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707   0.0000   0.0000   0.0000   0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0693   0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE  UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC   SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE  HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL  SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL  BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT  HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg2ES1-202101012304



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES2-202101012304"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

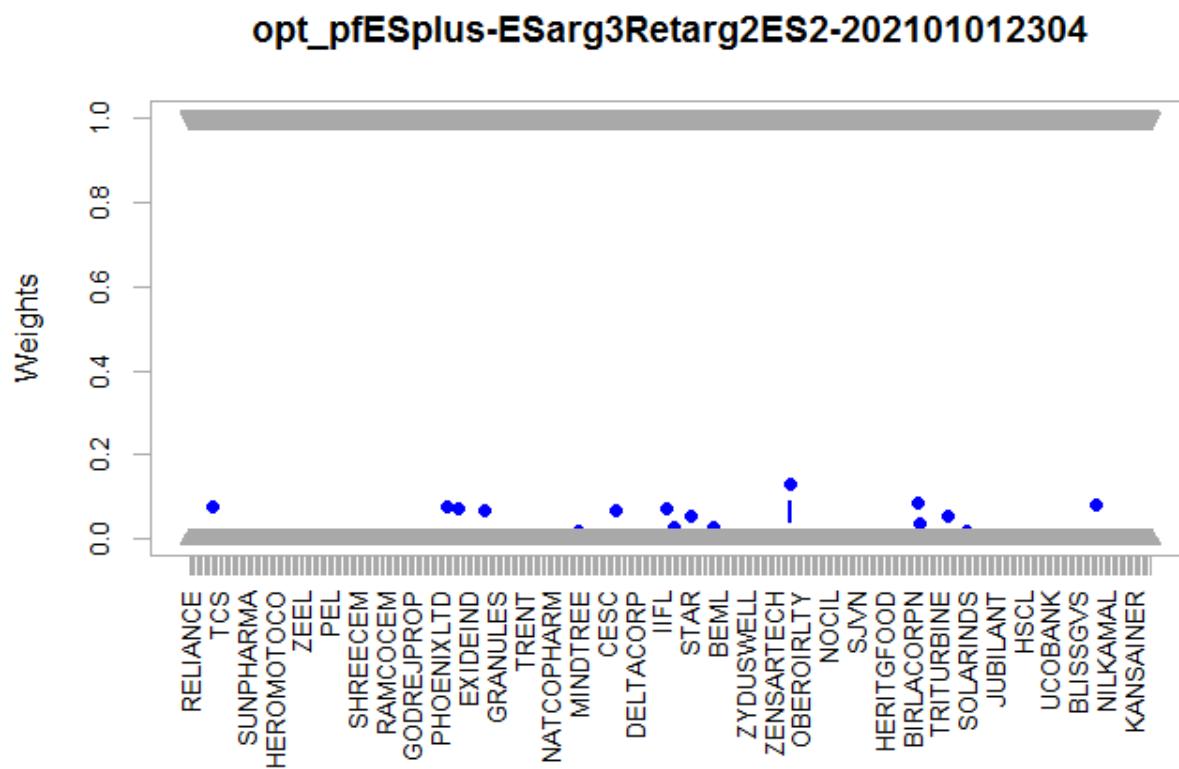
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES3-202101012305"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

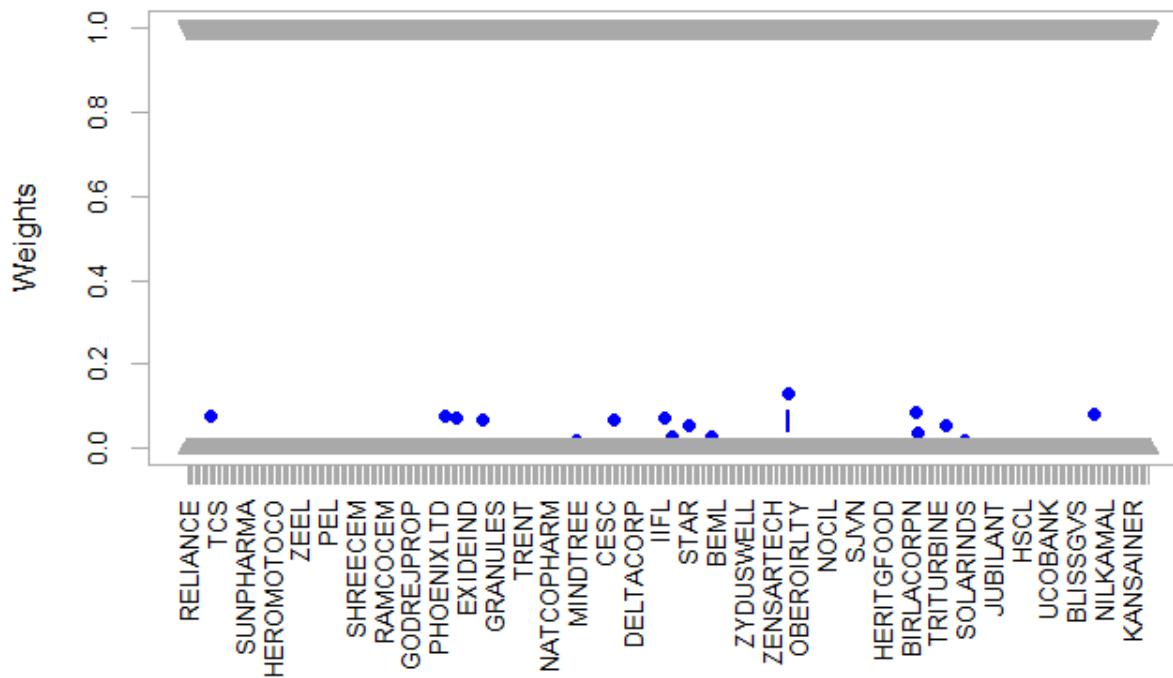
```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0.0000	0.0000	0.0791	0.0000	0.0000	0.0000	0.0000
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLY	FDC	GODFRYRHP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```
## J.KBANK HSCL GMDCLTD PFIZER MHRIL NAVNETEDUL RCF
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOB TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK GEPIL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg2ES3-202101012305



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES4-202101012305"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

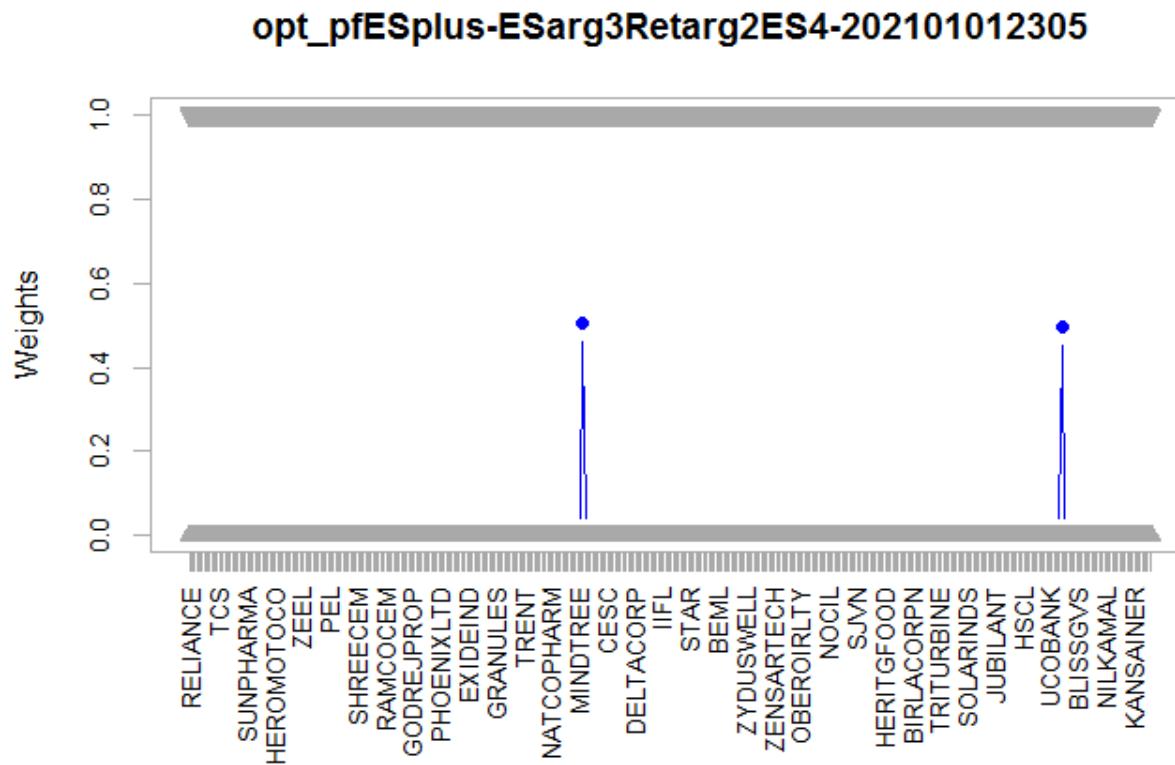
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0000	0.0000	0.5053	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.4947	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.005931

```



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES1-202101012305"
## ****
## PortfolioAnalytics Optimization
## ****
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:
##      RELIANCE HDFCBANK ICICIBANK HDFC      ITC      AXISBANK      SBIN
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      LT BAJFINANCE INFY BHARTIARTL      TCS      M.M KOTAKBANK
##      0.0000    0.0000    0.0791    0.0000    0.0000    0.0000    0.0000

```

## INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
## 0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
## BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
## 0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
## PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
## 0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
## 0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
## MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
## 0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
## CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
## CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## APLAPOLLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
## 0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
## 0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
## ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD

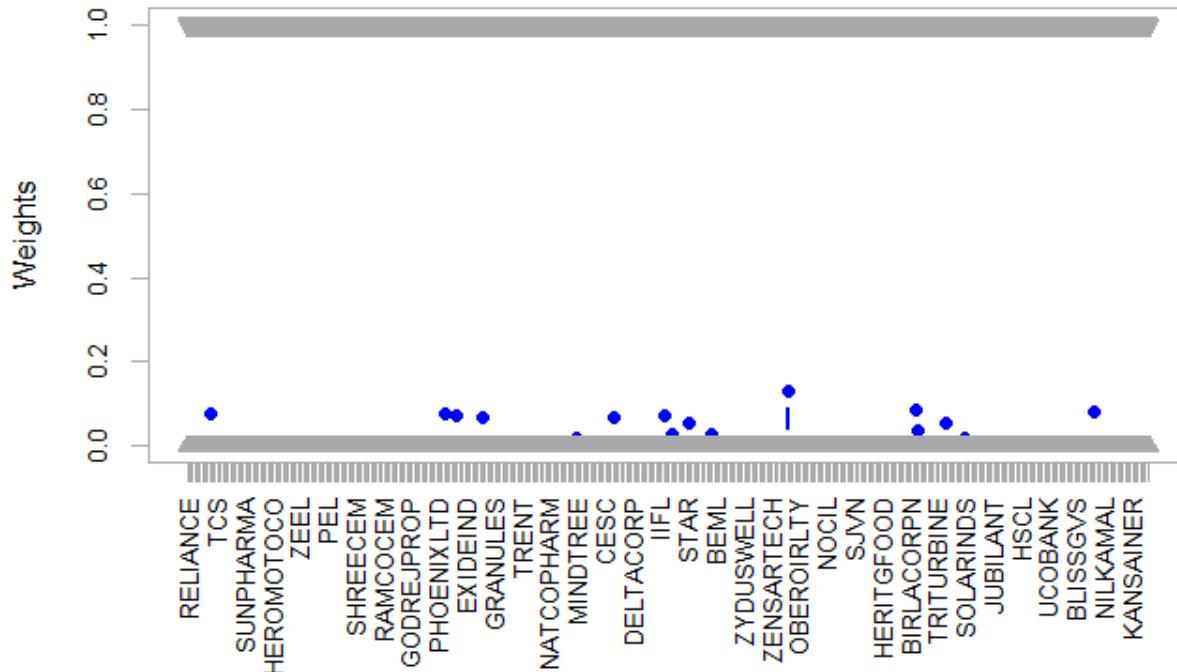
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINEERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNA AUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```

##  FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268

```

opt_pfESplus-ESarg3Retarg3ES1-202101012305



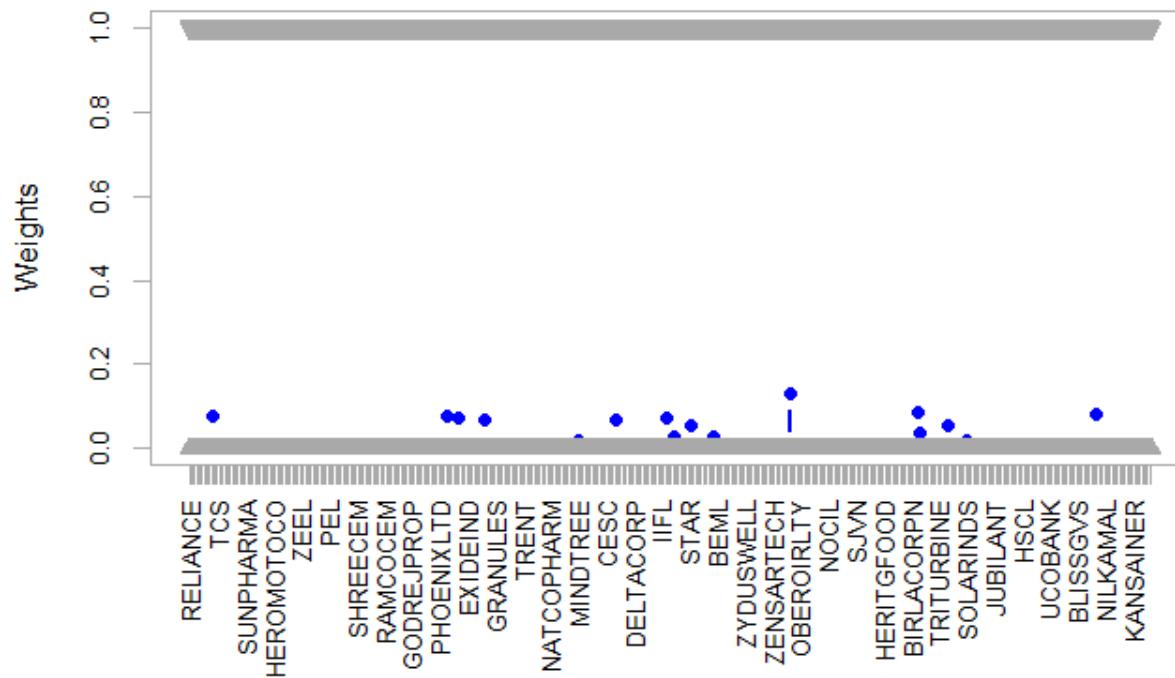
```
## [1] "Starting opt_pfESplus-ESarg3Retarg3ES2-202101012305"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
##    LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000   0.0000   0.0000   0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106   0.0000   0.0000   0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000   0.0000   0.0000   0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000   0.0763   0.0000   0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707   0.0000   0.0000   0.0000   0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0693   0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      JK.BANK      HSCL  GMDCLTD  PFIZER    MHRIL  NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY  SCHNEIDER RATNAMANI JKTYRE    UCOBANK    GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC    SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE    HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL  SYMPHONY INDOCO  NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI      ITDC  CRISIL    BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG  TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT  HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg3ES2-202101012305



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES3-202101012306"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

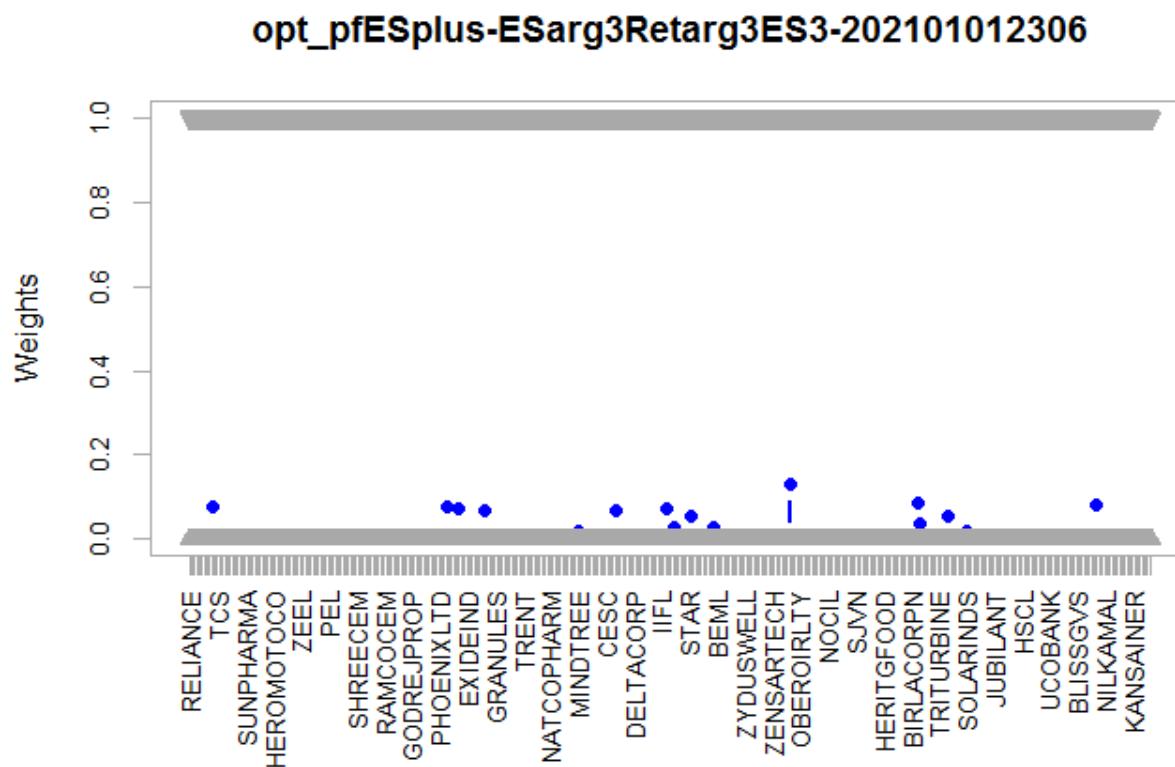
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES4-202101012306"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##       trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0	0	0	0	0	0	0
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0	0	0	0	0	0	0
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0	0	0	0	0	0	0
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0	0	0	0	0	0	0
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0	0	0	0	0	0	0
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0	0	0	0	0	0	0
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0	0	0	0	0	0	0
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0	0	0	0	0	0	0
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0	0	0	0	0	0	0
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0	0	0	0	0	0	0
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0	0	0	0	0	0	0
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0	0	0	0	0	0	0
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0	0	0	0	0	0	0
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0	0	0	0	0	0	0
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0	0	0	0	0	0	0
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0	0	0	0	0	0	0
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0	0	0	0	0	0	0
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0	0	0	0	0	0	0
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0	0	0	0	0	0	0
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0	0	0	0	0	0	0
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0	0	0	0	0	0	0
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0	0	0	0	0	0	0
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0	0	1	0	0	0	0
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

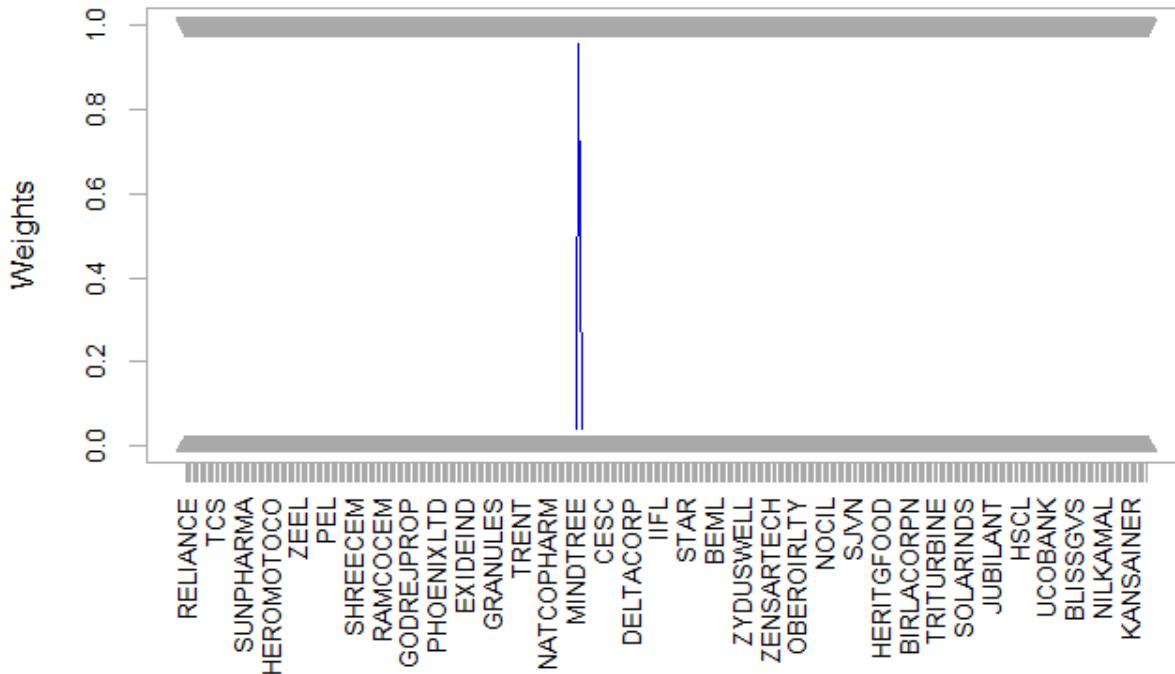
##	0	0	0	0	0	0	0	0
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGEET	UNIONBANK	DCMSHRIRAM	WELCORP	
##	0	0	0	0	0	0	0	0
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD	
##	0	0	0	0	0	0	0	0
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS	
##	0	0	0	0	0	0	0	0
##	RELAXO		KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0	0	0	0	0	0	0	0
##	KALPATPOWR	HINDCOPPER		STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0	0		0	0	0	0	0
##	BAJAJELEC	ENGINERSIN		GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0	0		0	0	0	0	0
##	IRB	UFLEX		BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0	0		0	0	0	0	0
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV	
##	0	0		0	0	0	0	0
##	CARBORUNIV		HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0	0		0	0	0	0	0
##	ZENSARTECH		SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0	0		0	0	0	0	0
##	ALKYLAMINE	BANKINDIA	SUDARSCHM		IPCALAB	OBEROIRLTY	FDC	GODFRY PHLP
##	0	0		0	0	0	0	0
##	SHILPAMED	PHILIPCARB		MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0	0		0	0	0	0	0
##	MAHSCOOTER		NOCIL	INOXLEISUR		GHCL	TATAINVEST	NLCINDIA
##	0	0		0	0	0	0	0
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS		KRBL	SJVN	ALLCARGO
##	0	0		0	0	0	0	0
##	ORIENTREF		DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0	0		0	0	0	0	0
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING		KNRCON	HAWKINCOOK
##	0	0		0	0	0	0	0
##	VENKYS	JINDALSAW		JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0	0		0	0	0	0	0
##	BALMLAWRIE		MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0	0		0	0	0	0	0
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI	
##	0	0		0	0	0	0	0
##	VAIBHAVGBL	SUPRAJIT		GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0	0		0	0	0	0	0
##	SOLARINDS	BLUEDART		NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0	0		0	0	0	0	0
##	TATAMETALI		MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0	0		0	0	0	0	0
##	KEI	TTKPRESTIG		SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0	0		0	0	0	0	0

```

##   J.KBANK      HSCL     GMDCLTD      PFIZER      MHRIL  NAVNETEDUL      RCF
##      0          0          0          0          0          0          0          0
##    IOB      TVTODAY  SCHNEIDER  RATNAMANI  JKTYRE  UCOBANK      GEPIL
##      0          0          0          0          0          0          0          0
##  FCONSUMER  TIMETECHNO    JAGRAN      MMTC      SANOFI      CCL SWANENERGY
##      0          0          0          0          0          0          0          0
## JAICORPLTD    DBCORP    BLISSGVIS WABCOINDIA      OMAXE      HATHWAY MAHINDCIE
##      0          0          0          0          0          0          0          0
## MAHLIFE       ITI EMAMILTD      ASTRAL      SYMPHONY INDOCO  NILKAMAL
##      0          0          0          0          0          0          0          0
## SUZLON        IFCI      ITDC      CRISIL      BRIGADE  BLUESTARCO MAHSEAMLES
##      0          0          0          0          0          0          0          0
## HEIDELBERG    POLYMED    GRINDWELL KANSAINER      AIAENG      TASTYBIT PERSISTENT
##      0          0          0          0          0          0          0          0
## JKCEMENT    MPHASIS      HONAUT HINDPETRO
##      0          0          0          0
##
## Objective Measure:
##   mean
## 0.01533

```

opt_pfESplus-ESarg3Retarg3ES4-202101012306



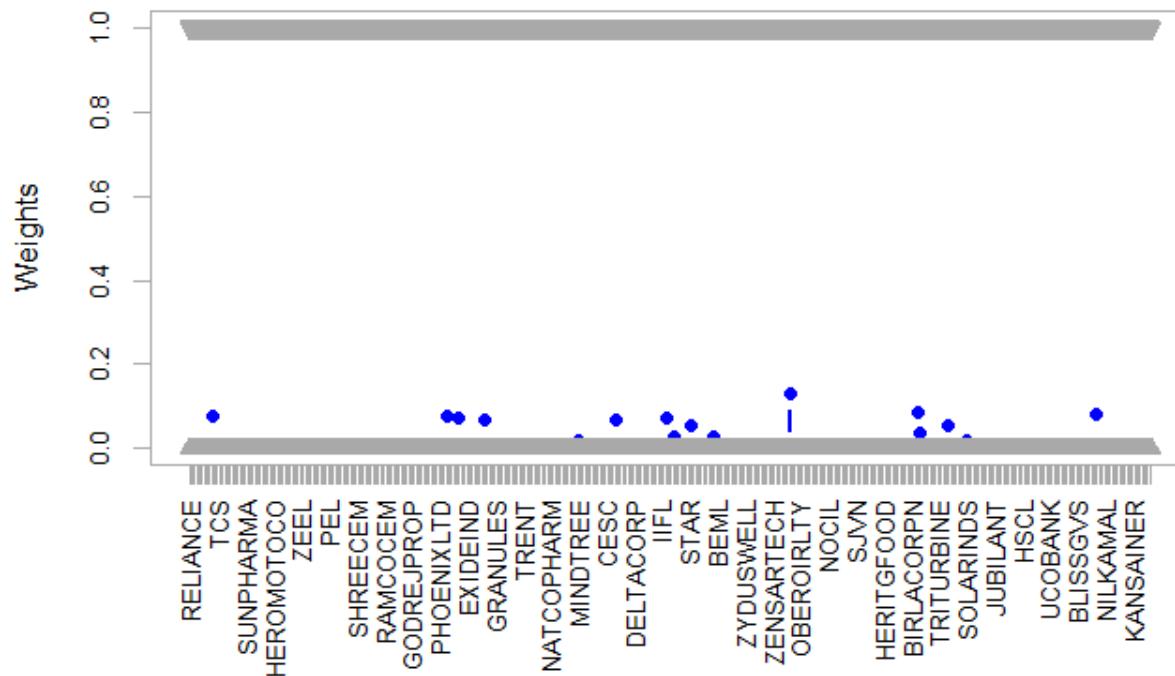
```
## [1] "Starting opt_pfESplus-ESarg4Retarg2ES1-202101012306"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000 0.0000 0.0791 0.0000 0.0000 0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
## 0.0000 0.0000 0.0000 0.0106 0.0000 0.0000 0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
## 0.0000 0.0046 0.0000 0.0000 0.0000 0.0000 0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
## 0.0064 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
## 0.0000 0.0000 0.0000 0.0000 0.0763 0.0000 0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
## 0.0000 0.0000 0.0707 0.0000 0.0000 0.0000 0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0693 0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT      GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART     NESCO   JAMNAAUTO     JSL    DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI MRPL NBVENTURES BAJAJHLDNG JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI TTKPRESTIG SUNTECK     CAPPL   NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      JK.BANK HSCL GMDCLTD    PFIZER   MHRIL  NAVNETEDUL     RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE  UCOBANK    GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER TIMETECHNO JAGRAN      MMTC    SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE  HATHWAY  MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE    ITI  EMAMILTD ASTRAL   SYMPHONY INDOCO  NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON     IFCI   ITDC   CRISIL   BRIGADE  BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG  TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT   MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg2ES1-202101012306



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES2-202101012306"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

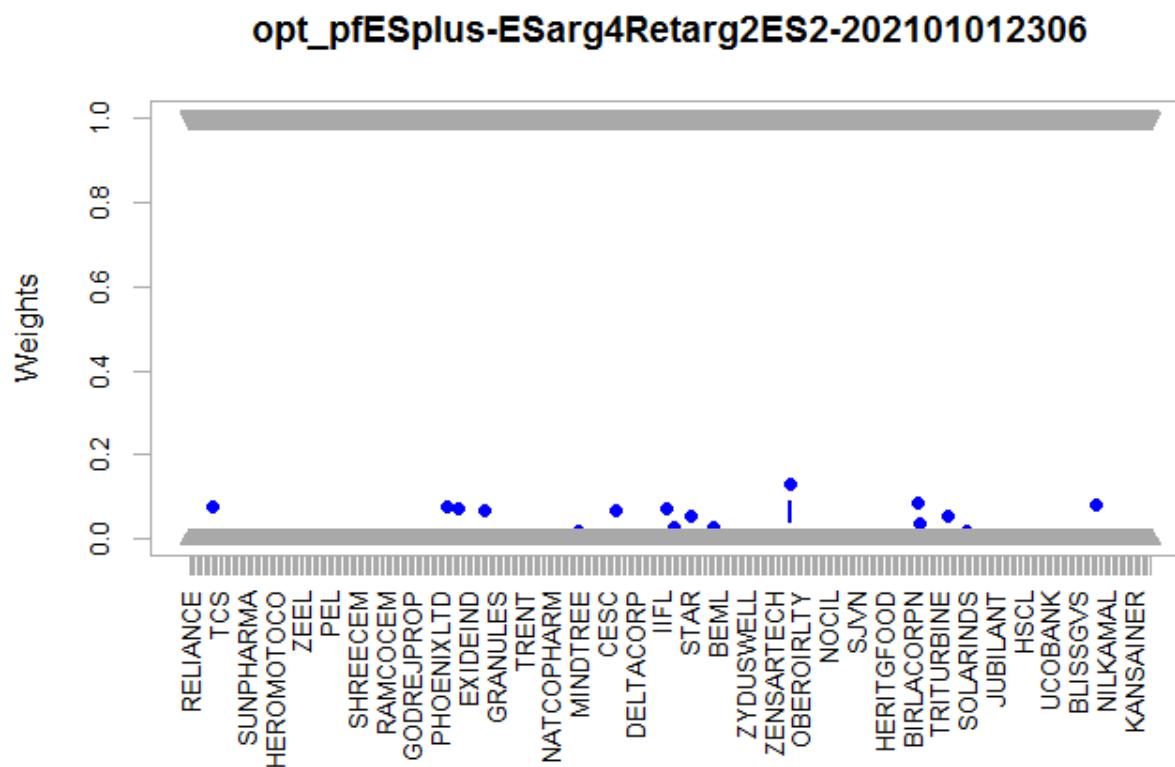
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES3-202101012306"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

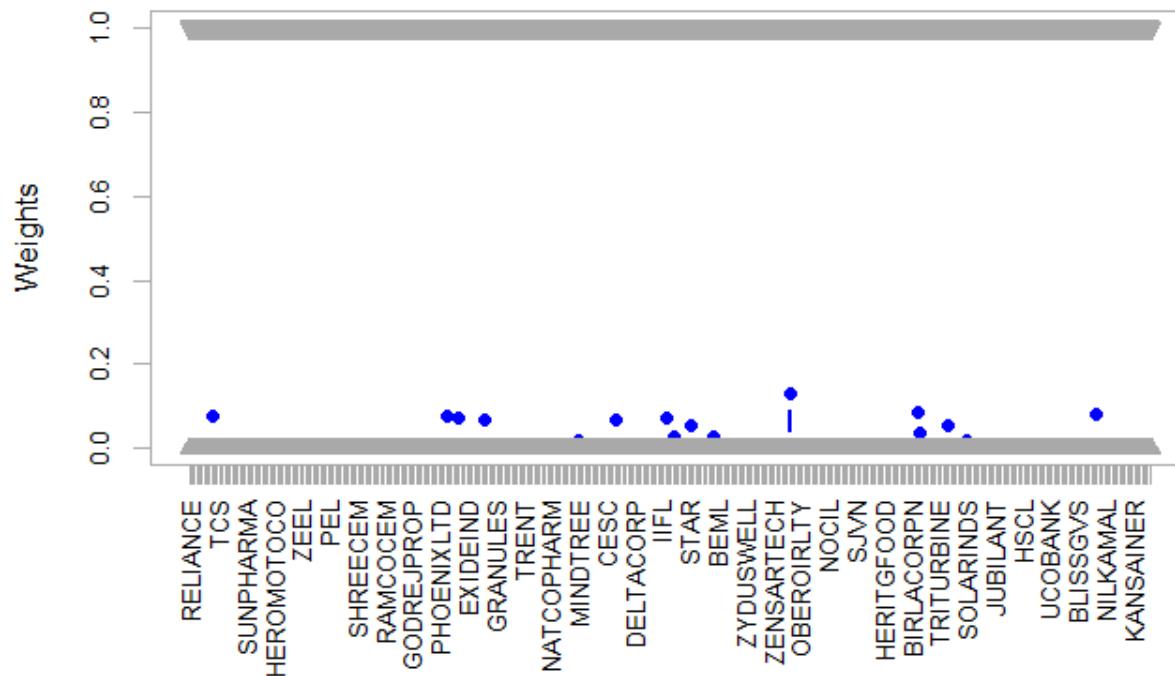
```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0.0000	0.0000	0.0791	0.0000	0.0000	0.0000	0.0000
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOC	TECHM	ULTRACEMCO	BAAJA.J.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLY	FDC	GODFRYRHP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```
## J.KBANK HSCL GMDCLTD PFIZER MHRIL NAVNETEDUL RCF
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOB TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK GEPIL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg2ES3-202101012306



```

## [1] "Starting opt_pfESplus-ESarg4Retarg2ES4-202101012307"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0000	0.0000	0.5053	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

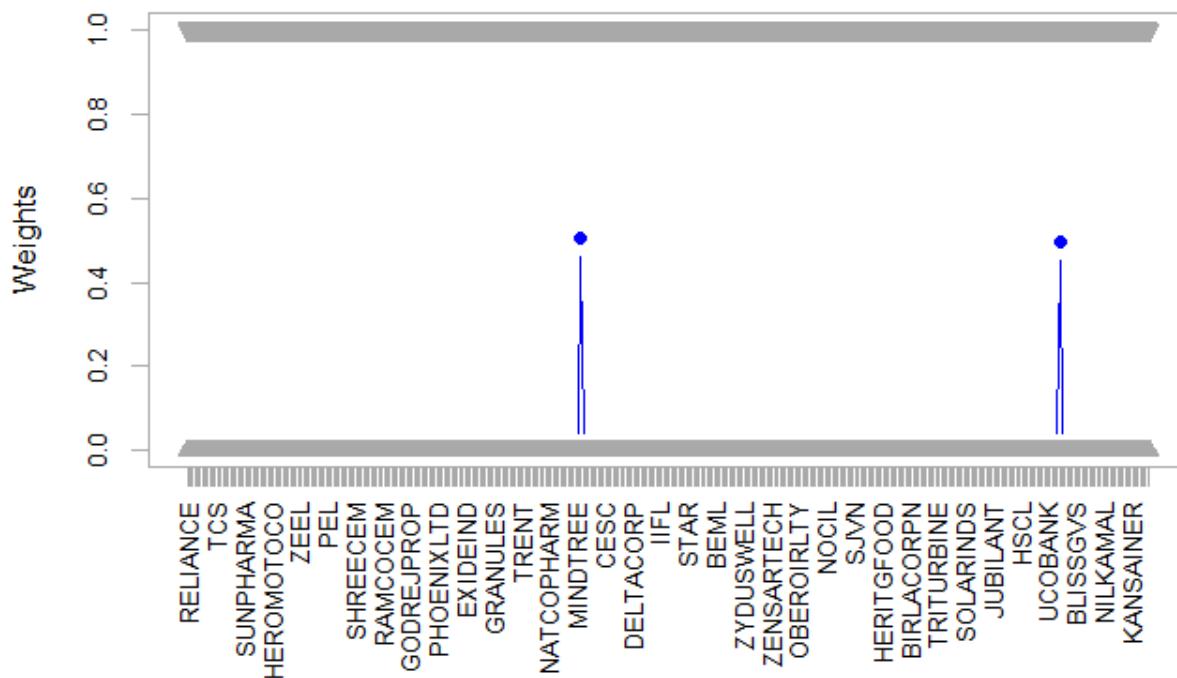
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.4947	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.005931

```

opt_pfESplus-ESarg4Retarg2ES4-202101012307



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES1-202101012307"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##      RELIANCE HDFCBANK ICICIBANK HDFC      ITC      AXISBANK      SBIN
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      LT BAJFINANCE INFY BHARTIARTL      TCS      M.M KOTAKBANK
##      0.0000    0.0000    0.0791    0.0000    0.0000    0.0000    0.0000

```

## INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
## 0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
## BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
## 0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
## PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
## 0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
## 0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
## MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
## 0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
## CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
## CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## APLAPOLLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
## 0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
## 0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
## ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD

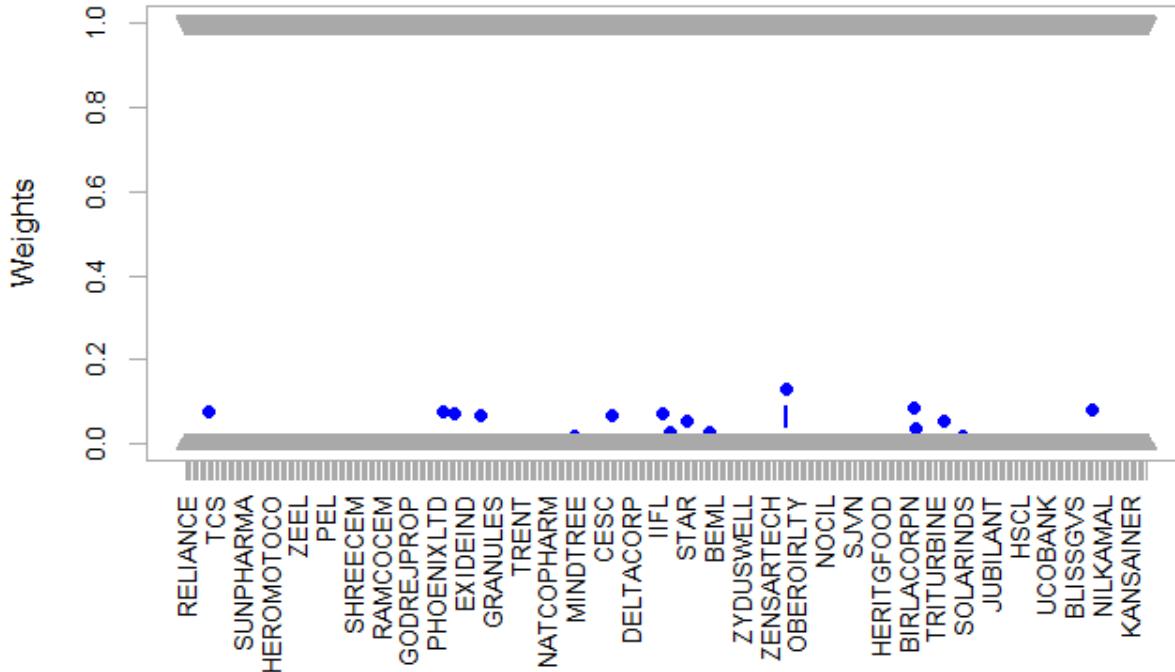
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINEERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNA AUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```

##  FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268

```

opt_pfESplus-ESarg4Retarg3ES1-202101012307



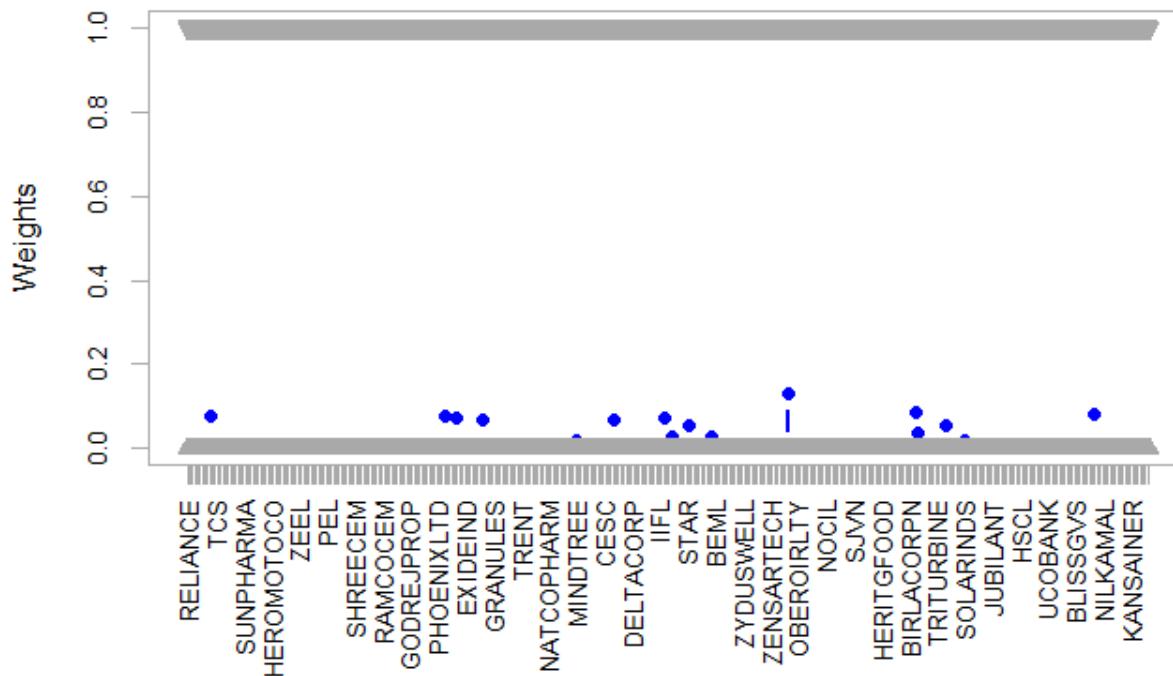
```
## [1] "Starting opt_pfESplus-ESarg4Retarg3ES2-202101012307"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
##    LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000   0.0000   0.0000   0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106   0.0000   0.0000   0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000   0.0000   0.0000   0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000   0.0763   0.0000   0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707   0.0000   0.0000   0.0000   0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0693   0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE  UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC   SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE  HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL  SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL  BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT  HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg4Retarg3ES2-202101012307



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES3-202101012307"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

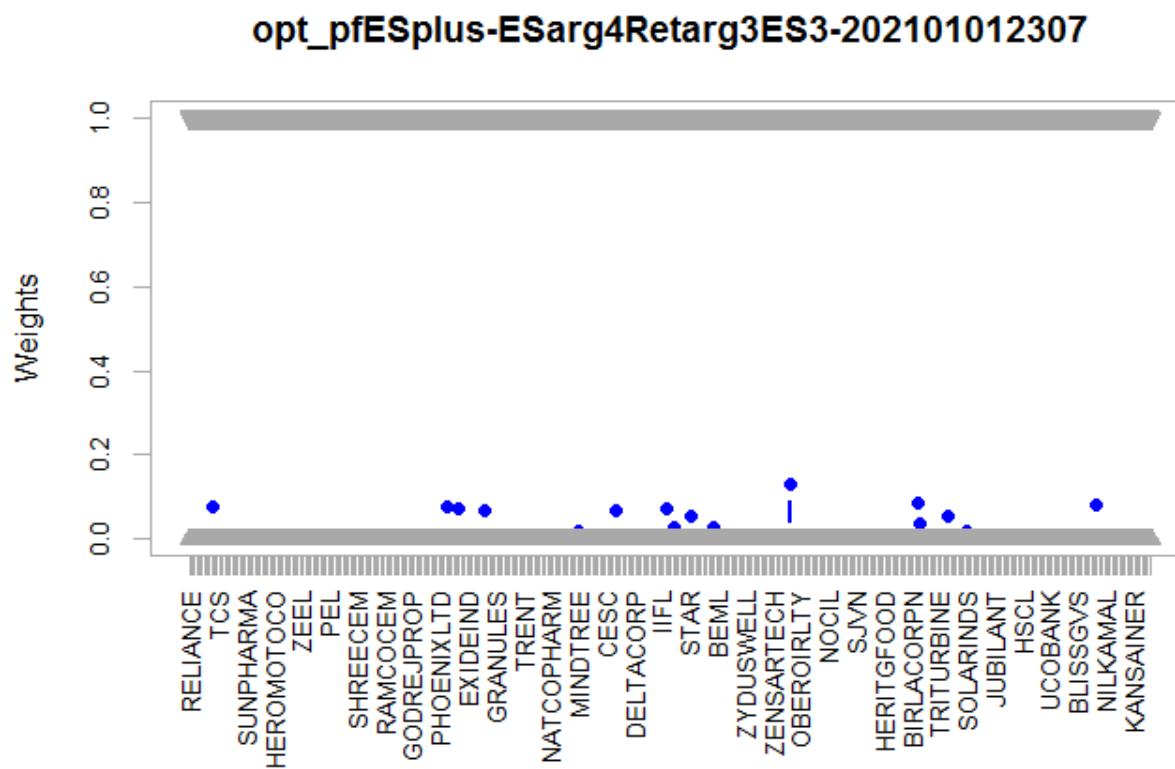
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg4Retarg3ES4-202101012307"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0	0	0	0	0	0	0
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0	0	0	0	0	0	0
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0	0	0	0	0	0	0
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0	0	0	0	0	0	0
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0	0	0	0	0	0	0
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0	0	0	0	0	0	0
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0	0	0	0	0	0	0
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0	0	0	0	0	0	0
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0	0	0	0	0	0	0
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0	0	0	0	0	0	0
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0	0	0	0	0	0	0
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSFIN	MANAPPURAM
##	0	0	0	0	0	0	0
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0	0	0	0	0	0	0
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0	0	0	0	0	0	0
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0	0	0	0	0	0	0
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0	0	0	0	0	0	0
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0	0	0	0	0	0	0
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0	0	0	0	0	0	0
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0	0	0	0	0	0	0
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0	0	0	0	0	0	0
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0	0	0	0	0	0	0
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0	0	0	0	0	0	0
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0	0	1	0	0	0	0
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

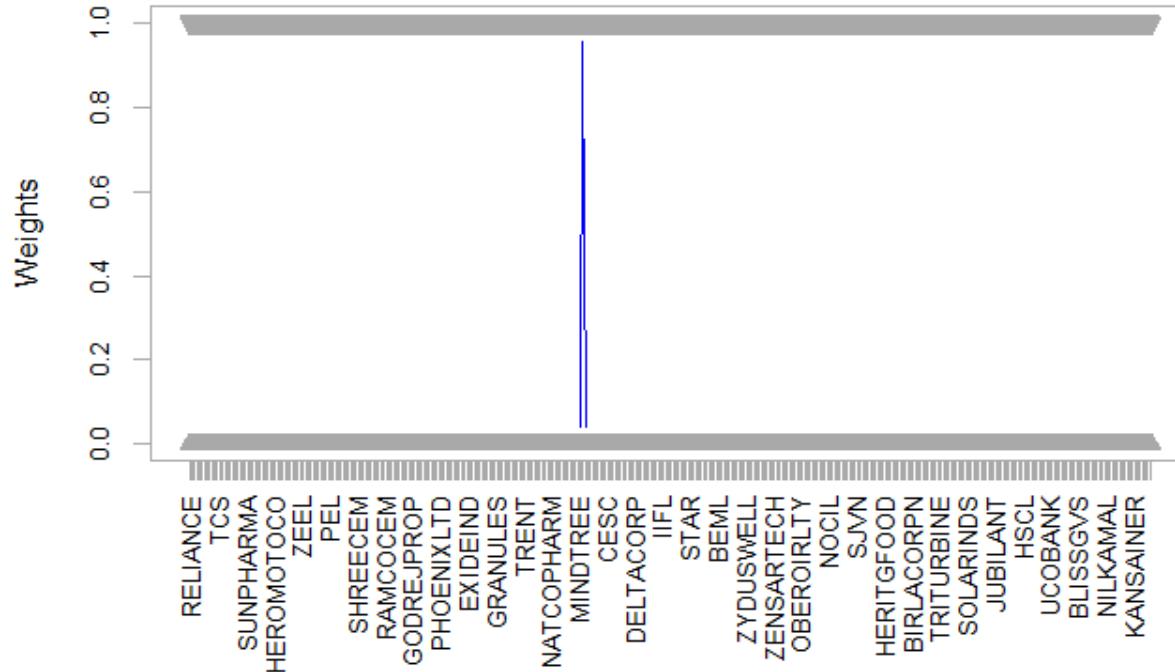
##	0	0	0	0	0	0	0	0
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGEET	UNIONBANK	DCMSHIRAM	WELCORP	
##	0	0	0	0	0	0	0	0
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD	
##	0	0	0	0	0	0	0	0
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS	
##	0	0	0	0	0	0	0	0
##	RELAXO		KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0	0	0	0	0	0	0	0
##	KALPATPOWR	HINDCOPPER		STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0	0	0	0	0	0	0	0
##	BAJAJELEC	ENGINERSIN		GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0	0	0	0	0	0	0	0
##	IRB	UFLEX		BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0	0	0	0	0	0	0	0
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV	
##	0	0	0	0	0	0	0	0
##	CARBORUNIV		HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0	0	0	0	0	0	0	0
##	ZENSARTECH		SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0	0	0	0	0	0	0	0
##	ALKYLAMINE	BANKINDIA	SUDARSCHM		IPCALAB	OBEROIRLTY	FDC	GODFRY PHLP
##	0	0	0	0	0	0	0	0
##	SHILPAMED	PHILIPCARB		MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0	0	0	0	0	0	0	0
##	MAHSCOOTER		NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0	0	0	0	0	0	0	0
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL		SJVN	ALLCARGO
##	0	0	0	0	0	0	0	0
##	ORIENTREF		DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0	0	0	0	0	0	0	0
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING		KNRCON	HAWKINCOOK
##	0	0	0	0	0	0	0	0
##	VENKYS	JINDALSAW		JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0	0	0	0	0	0	0	0
##	BALMLAWRIE		MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0	0	0	0	0	0	0	0
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI	
##	0	0	0	0	0	0	0	0
##	VAIBHAVGBL	SUPRAJIT		GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0	0	0	0	0	0	0	0
##	SOLARINDS	BLUEDART		NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0	0	0	0	0	0	0	0
##	TATAMETALI		MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0	0	0	0	0	0	0	0
##	KEI	TTKPRESTIG		SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0	0	0	0	0	0	0	0

```

##   J.KBANK      HSCL     GMDCLTD      PFIZER      MHRIL  NAVNETEDUL      RCF
##      0          0          0          0          0          0          0          0
##    IOB      TVTODAY  SCHNEIDER  RATNAMANI  JKTYRE  UCOBANK      GEPIL
##      0          0          0          0          0          0          0          0
##  FCONSUMER  TIMETECHNO    JAGRAN      MMTC      SANOFI      CCL SWANENERGY
##      0          0          0          0          0          0          0          0
## JAICORPLTD    DBCORP    BLISSGVS  WABCOINDIA      OMAXE      HATHWAY  MAHINDCIE
##      0          0          0          0          0          0          0          0
## MAHLIFE       ITI  EMAMILTD      ASTRAL      SYMPHONY  INDOCO  NILKAMAL
##      0          0          0          0          0          0          0          0
## SUZLON        IFCI      ITDC      CRISIL      BRIGADE  BLUESTARCO  MAHSEAMLES
##      0          0          0          0          0          0          0          0
## HEIDELBERG    POLYMED    GRINDWELL  KANSAINER      AIAENG  TASTYBIT PERSISTENT
##      0          0          0          0          0          0          0          0
## JKCEMENT    MPHASIS      HONAUT  HINDPETRO
##      0          0          0          0
##
## Objective Measure:
##   mean
## 0.01533

```

opt_pfESplus-ESarg4Retarg3ES4-202101012307



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES1-202101012307"

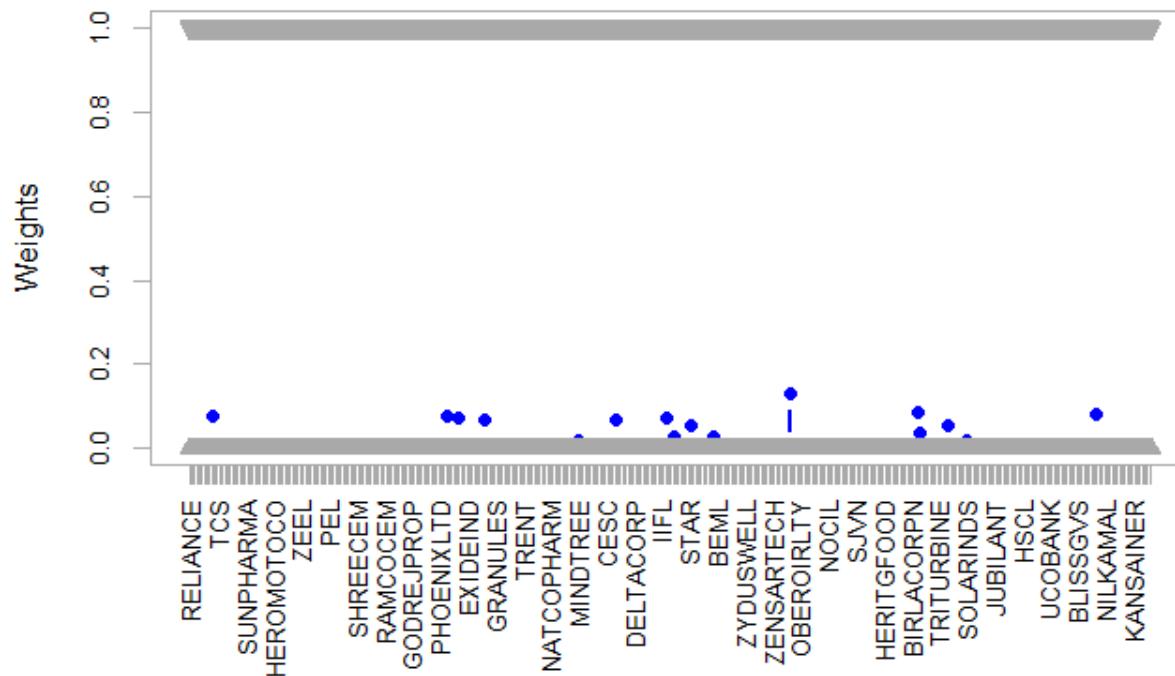
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##    RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
##    LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##    0.0000   0.0000   0.0791   0.0000   0.0000   0.0000   0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
##    0.0000   0.0000   0.0000   0.0106   0.0000   0.0000   0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
##    0.0000   0.0046   0.0000   0.0000   0.0000   0.0000   0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
##    0.0064   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
##    0.0000   0.0000   0.0000   0.0000   0.0763   0.0000   0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
##    0.0000   0.0000   0.0707   0.0000   0.0000   0.0000   0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0693   0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
##    0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## J.KBANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      IOB  TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK      GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC  SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL BRIGADE BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg2ES1-202101012307



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES2-202101012308"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0791  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

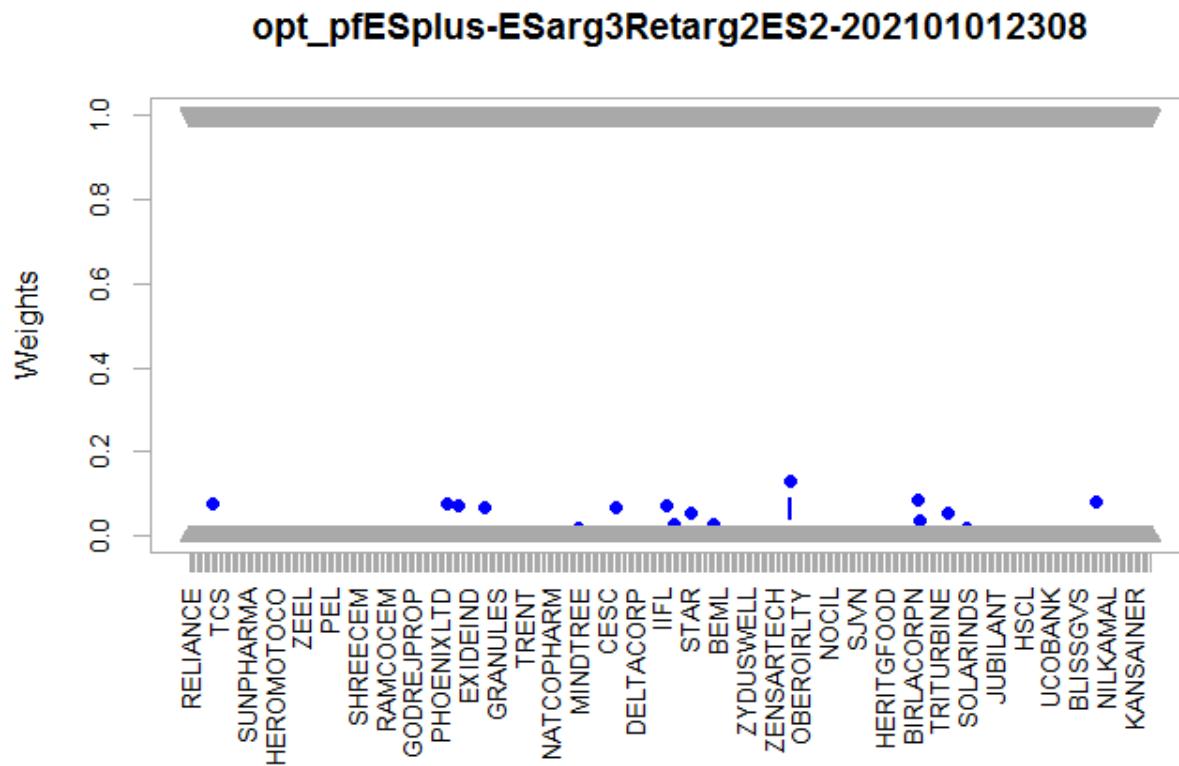
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYRPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES3-202101012308"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

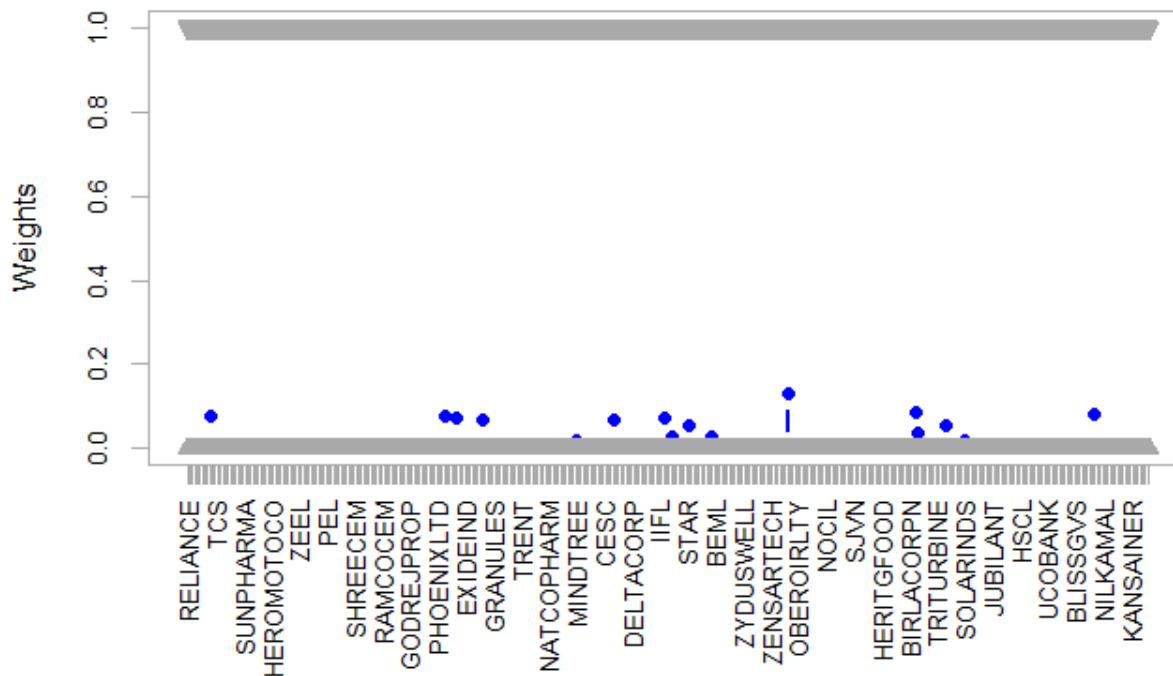
```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0.0000	0.0000	0.0791	0.0000	0.0000	0.0000	0.0000
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLY	FDC	GODFRYRHP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAAJAHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```
## J.KBANK HSCL GMDCLTD PFIZER MHRIL NAVNETEDUL RCF
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOB TVTODAY SCHNEIDER RATNAMANI JKTYRE UCOBANK GEPIL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg2ES3-202101012308



```

## [1] "Starting opt_pfESplus-ESarg3Retarg2ES4-202101012308"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000  0.0000  0.0000  0.0000  0.0000  0.0000  0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0000	0.0000	0.5053	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

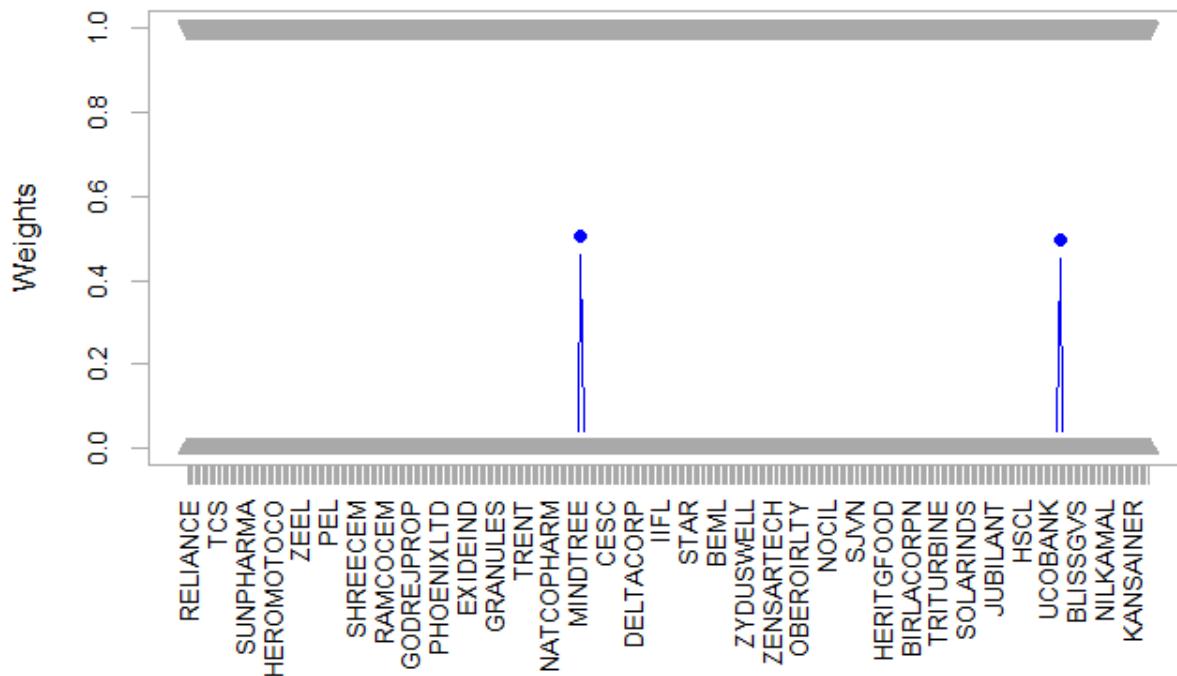
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.4947	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.005931

```

opt_pfESplus-ESarg3Retarg2ES4-202101012308



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES1-202101012308"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:
##      RELIANCE HDFCBANK ICICIBANK HDFC      ITC      AXISBANK      SBIN
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      LT BAJFINANCE INFY BHARTIARTL      TCS      M.M KOTAKBANK
##      0.0000    0.0000    0.0791    0.0000    0.0000    0.0000    0.0000

```

## INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAJAJFINSV	POWERGRID
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
## 0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
## BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
## 0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
## PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
## 0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
## 0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
## MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
## 0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
## CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
## CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## APLAPOLLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
## 0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
## 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
## GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
## 0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
## ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD

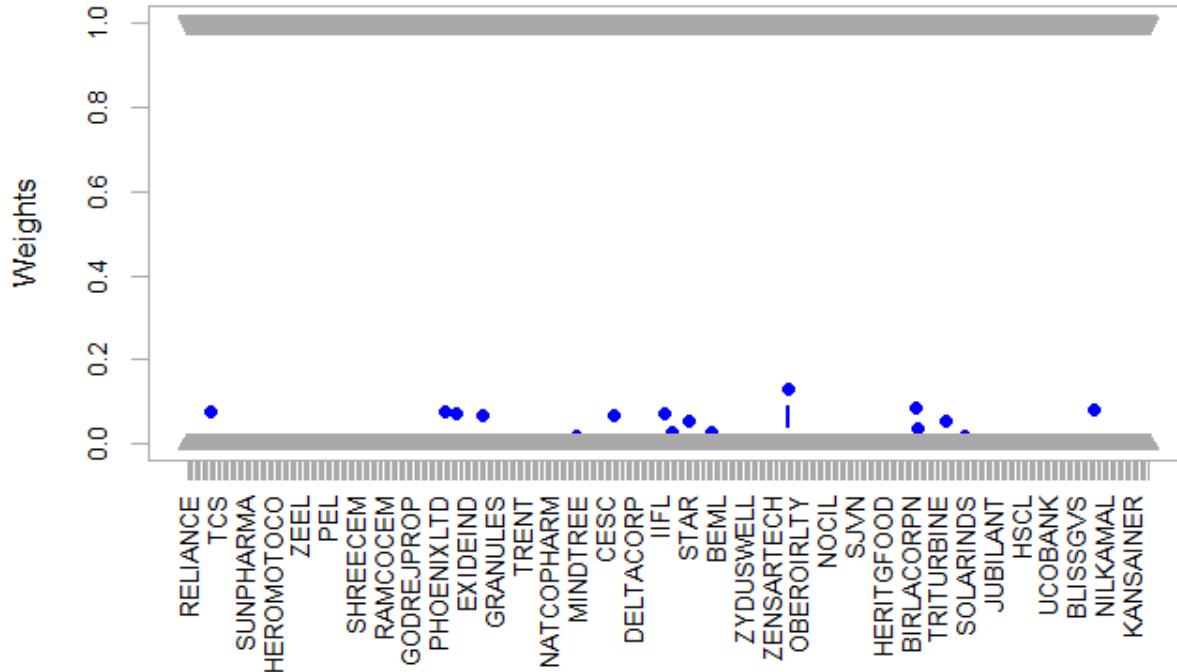
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINEERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNA AUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

```

##  FCONSUMER TIMETECHNO JAGRAN MMTC SANOFI CCL SWANENERGY
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JAICORPLTD DBCORP BLISSGVS WABCOINDIA OMAXE HATHWAY MAHINDCIE
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## MAHLIFE ITI EMAMILTD ASTRAL SYMPHONY INDOCO NILKAMAL
## 0.0000 0.0000 0.0000 0.0827 0.0000 0.0000 0.0000 0.0000
## SUZLON IFCI ITDC CRISIL BRIGADE BLUESTARCO MAHSEAMLES
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER AIAENG TASTYBIT PERSISTENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
## 0.0000 0.0000 0.0000 0.0000
##
## Objective Measure:
## mean
## 0.009028
##
##
## ES
## 0.03268

```

opt_pfESplus-ESarg3Retarg3ES1-202101012308



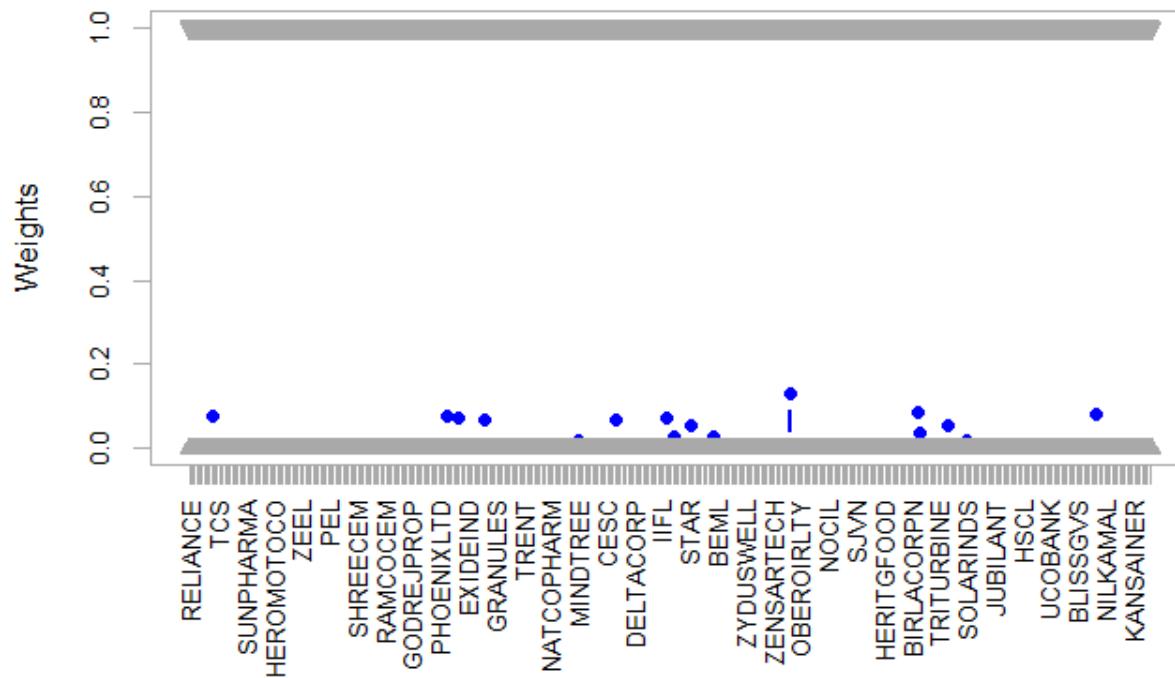
```
## [1] "Starting opt_pfESplus-ESarg3Retarg3ES2-202101012308"
```

```
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000 0.0000 0.0791 0.0000 0.0000 0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER
## 0.0000 0.0000 0.0000 0.0106 0.0000 0.0000 0.0000
## BRITANNIA AMBUJACEM EICHERMOT AUROPHARMA SRTRANSFIN BEL PEL
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## PETRONET DLF LUPIN VOLTAS HAVELLS BIOCON PFC
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## ASHOKLEY CHOLAFIN CIPLA SHREECEM COLPAL BHARATFORGE SRF
## 0.0000 0.0046 0.0000 0.0000 0.0000 0.0000 0.0000
## PIDILITIND JINDALSTEL ADANIENT RECLTD CONCOR ESCORTS ACC
## 0.0064 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## RAMCOCEM MARICO M.MFIN GODREJCP NESTLEIND LICHSGFIN MANAPPURAM
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## BALKRISIND CADILAHC PIIND BOSCHLTD GODREJPROP NMDC BANKBARODA
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## INDHOTEL SIEMENS APOLLOHOSP TORNTPHARM TVSMOTOR JUBLFOOD CUMMINSIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## IDEA PHOENIXLTD GMRINFRA MRF IGL BATAINDIA APOLLOTYRE
## 0.0000 0.0000 0.0000 0.0000 0.0763 0.0000 0.0000
## MUTHOOTFIN SUNDRMFAST APLLTD BHEL L.TFH EXIDEIND NATIONALUM
## 0.0000 0.0000 0.0707 0.0000 0.0000 0.0000 0.0000
## CUB GLENMARK AMARAJABAT PVR SUPREMEIND NAVINFLUOR TORNTPOWER
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0693 0.0000
## CANBK DEEPAKNI GRANULES PAGEIND TATAMTRDVR BERGEPAINT AARTIIND
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
## APLAPOLLO PNB UBL DABUR WHIRLPOOL GSPL TRENT
## 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
```

##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHRIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTHBANK	GPPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000
##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSHEM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHL
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNTPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI

```
##      0.0000    0.0050    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## VAIBHAVGLB SUPRAJIT        GMM      IFBIND     IDBI   FORCEMOT    THERMAX
##      0.0557    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## SOLARINDS  BLUEDART      NESCO  JAMNAAUTO      JSL   DHANUKA  TVSSRICHAK
##      0.0175    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## TATAMETALI      MRPL NBVENTURES BAJAJHLDNG  JUBILANT JBCHEPHARM CHAMBLFERT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
##      KEI  TTKPRESTIG  SUNTECK      CAPPL  NETWORK18 GUJALKALI CENTRALBK
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JK.BANK      HSCL  GMDCLTD  PFIZER      MHRIL NAVNETEDUL      RCF
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## IOB  TVTODAY  SCHNEIDER RATNAMANI  JKTYRE   UCOBANK   GEPIL
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## FCONSUMER  TIMETECHNO JAGRAN      MMTC   SANOFI      CCL SWANENERGY
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JAICORPLTD DBCORP  BLISSGVS WABCOINDIA  OMAXE   HATHWAY  MAHINDCIE
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## MAHLIFE      ITI  EMAMILTD ASTRAL  SYMPHONY INDOCO  NILKAMAL
##      0.0000    0.0000    0.0000    0.0827    0.0000    0.0000    0.0000    0.0000
## SUZLON      IFCI  ITDC      CRISIL  BRIGADE  BLUESTARCO MAHSEAMLES
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## HEIDELBERG POLYMED GRINDWELL KANSAINER  AIAENG  TASTYBIT PERSISTENT
##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT  MPHASIS  HONAUT  HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
##
##
##      ES
## 0.03268
```

opt_pfESplus-ESarg3Retarg3ES2-202101012308



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES3-202101012309"
## ****
## PortfolioAnalytics Optimization
## ****
##
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
## trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
##
## Optimal Weights:
##   RELIANCE HDFCBANK ICICIBANK HDFC ITC AXISBANK SBIN
##   0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
##   LT BAJFINANCE INFY BHARTIARTL TCS M.M KOTAKBANK
##   0.0000   0.0000   0.0791   0.0000 0.0000   0.0000 0.0000
## INDUSINDBK ONGC NTPC TATAMOTORS TATASTEEL MARUTI DIVISLAB
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## HINDALCO SUNPHARMA VEDL HINDUNILVR HCLTECH BAJAJFINSV POWERGRID
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## BPCL ASIANPAINT TITAN DRREDDY GAIL HEROMOTOCO COALINDIA
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## IOC TECHM ULTRACEMCO BAJAJ.AUTO ADANIPORTS GRASIM WIPRO
## 0.0000   0.0000   0.0000   0.0000 0.0000   0.0000 0.0000
## UPL JSWSTEEL ZEEL NAUKRI FEDERALBNK MOTHERSUMI TATAPOWER

```

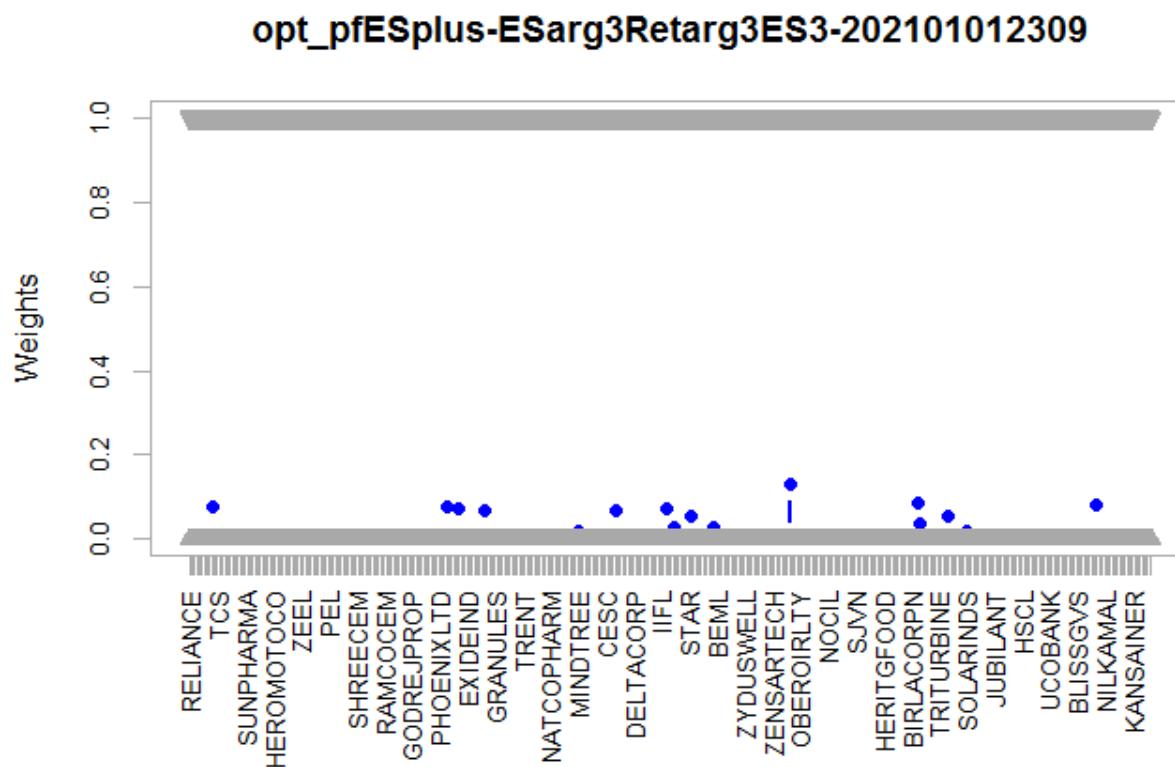
##	0.0000	0.0000	0.0000	0.0106	0.0000	0.0000	0.0000
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORGE	SRF
##	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0.0000	0.0000	0.0000	0.0000	0.0763	0.0000	0.0000
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0.0000	0.0000	0.0707	0.0000	0.0000	0.0000	0.0000
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0693	0.0000
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	APLAPOLO	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGE	UNIONBANK	DCMSHIRAM	WELCORP
##	0.0000	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	RELAXO	KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPL
##	0.0709	0.0000	0.0000	0.0277	0.0000	0.0000	0.0000
##	KALPATPOWR	HINDCOPPER	STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0.0000	0.0000	0.0000	0.0552	0.0000	0.0000	0.0000
##	BAJAJELEC	ENGINERSIN	GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0283	0.0000

##	IRB	UFLEX	BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	CARBORUNIV	HEG	PTC	VINATIORG	TIMKEN	HFCL	VTL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ZENSARTECH	SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ALKYLAMINE	BANKINDIA	SUDARSCHM	IPCALAB	OBEROIRLTY	FDC	GODFRYPHLP
##	0.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SHILPAMED	PHILIPCARB	MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHSCOOTER	NOCIL	INOXLEISUR	GHCL	TATAINVEST	NLCINDIA	JYOTHYLAB
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS	KRBL	SJVN	ALLCARGO
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	ORIENTREF	DCAL	CHENNPETRO	SKFINDIA	FINOLEXIND	CENTURYPLY	SCI
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING	KNRCON	HAWKINCOOK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	VENKYS	JINDALSAW	JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	BALMLAWRIE	MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0.0000	0.0000	0.0839	0.0371	0.0000	0.0000	0.0000
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI
##	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000
##	VAIBHAVGBL	SUPRAJIT	GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	SOLARINDS	BLUEDART	NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	TATAMETALI	MRPL	NBVENTURES	BAJAJHLDNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	KEI	TTKPRESTIG	SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	J.KBANK	HSCL	GMDCLTD	PFIZER	MHRIL	NAVNETEDUL	RCF
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	IOB	TVTODAY	SCHNEIDER	RATNAMANI	JKTYRE	UCOBANK	GEPIL
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	FCONSUMER	TIMETECHNO	JAGRAN	MMTC	SANOFI	CCL	SWANENERGY
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	JAICORPLTD	DBCORP	BLISSGV	WABCOINDIA	OMAXE	HATHWAY	MAHINDCIE
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	MAHLIFE	ITI	EMAMILTD	ASTRAL	SYMPHONY	INDOCO	NILKAMAL
##	0.0000	0.0000	0.0000	0.0827	0.0000	0.0000	0.0000
##	SUZLON	IFCI	ITDC	CRISIL	BRIGADE	BLUESTARCO	MAHSEAMLES
##	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
##	HEIDELBERG	POLYMED	GRINDWELL	KANSAINER	AIAENG	TASTYBIT	PERSISTENT

```

##      0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
## JKCEMENT MPHASIS HONAUT HINDPETRO
##      0.0000    0.0000    0.0000    0.0000
##
## Objective Measure:
##      mean
## 0.009028
## 
## 
##      ES
## 0.03268

```



```

## [1] "Starting opt_pfESplus-ESarg3Retarg3ES4-202101012309"
## ****
## PortfolioAnalytics Optimization
## ****
## 
## Call:
## optimize.portfolio(R = R, portfolio = pfESplus, optimize_method = "ROI",
##   trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix])
## 
## Optimal Weights:

```

##	RELIANCE	HDFCBANK	ICICIBANK	HDFC	ITC	AXISBANK	SBIN
##	0	0	0	0	0	0	0
##	LT	BAJFINANCE	INFY	BHARTIARTL	TCS	M.M	KOTAKBANK
##	0	0	0	0	0	0	0
##	INDUSINDBK	ONGC	NTPC	TATAMOTORS	TATASTEEL	MARUTI	DIVISLAB
##	0	0	0	0	0	0	0
##	HINDALCO	SUNPHARMA	VEDL	HINDUNILVR	HCLTECH	BAAJAFINSV	POWERGRID
##	0	0	0	0	0	0	0
##	BPCL	ASIANPAINT	TITAN	DRREDDY	GAIL	HEROMOTOCO	COALINDIA
##	0	0	0	0	0	0	0
##	IOC	TECHM	ULTRACEMCO	BAJAJ.AUTO	ADANIPORTS	GRASIM	WIPRO
##	0	0	0	0	0	0	0
##	UPL	JSWSTEEL	ZEEL	NAUKRI	FEDERALBNK	MOTHERSUMI	TATAPOWER
##	0	0	0	0	0	0	0
##	BRITANNIA	AMBUJACEM	EICHERMOT	AUROPHARMA	SRTRANSFIN	BEL	PEL
##	0	0	0	0	0	0	0
##	PETRONET	DLF	LUPIN	VOLTAS	HAVELLS	BIOCON	PFC
##	0	0	0	0	0	0	0
##	ASHOKLEY	CHOLAFIN	CIPLA	SHREECEM	COLPAL	BHARATFORG	SRF
##	0	0	0	0	0	0	0
##	PIDILITIND	JINDALSTEL	ADANIENT	RECLTD	CONCOR	ESCORTS	ACC
##	0	0	0	0	0	0	0
##	RAMCOCEM	MARICO	M.MFIN	GODREJCP	NESTLEIND	LICHSGFIN	MANAPPURAM
##	0	0	0	0	0	0	0
##	BALKRISIND	CADILAHC	PIIND	BOSCHLTD	GODREJPROP	NMDC	BANKBARODA
##	0	0	0	0	0	0	0
##	INDHOTEL	SIEMENS	APOLLOHOSP	TORNTPHARM	TVSMOTOR	JUBLFOOD	CUMMINSIND
##	0	0	0	0	0	0	0
##	IDEA	PHOENIXLTD	GMRINFRA	MRF	IGL	BATAINDIA	APOLLOTYRE
##	0	0	0	0	0	0	0
##	MUTHOOTFIN	SUNDRMFAST	APLLTD	BHEL	L.TFH	EXIDEIND	NATIONALUM
##	0	0	0	0	0	0	0
##	CUB	GLENMARK	AMARAJABAT	PVR	SUPREMEIND	NAVINFLUOR	TORNTPOWER
##	0	0	0	0	0	0	0
##	CANBK	DEEPAKNI	GRANULES	PAGEIND	TATAMTRDVR	BERGEPAINT	AARTIIND
##	0	0	0	0	0	0	0
##	APLApollo	PNB	UBL	DABUR	WHIRLPOOL	GSPL	TRENT
##	0	0	0	0	0	0	0
##	FORTIS	DCBBANK	TATACOMM	NCC	TATAELXSI	CYIENT	IDFC
##	0	0	0	0	0	0	0
##	GLAXO	OIL	JMFINANCIL	NATCOPHARM	CANFINHOME	RAIN	ATUL
##	0	0	0	0	0	0	0
##	RAJESHEXPO	SAIL	SPICEJET	NHPC	MCX	SUNTV	REDINGTON
##	0	0	0	0	0	0	0
##	MINDTREE	X3MINDIA	TANLA	EIDPARRY	GRAPHITE	GODREJIND	EDELWEISS
##	0	0	1	0	0	0	0
##	LAXMIMACH	GESHIP	HINDZINC	CASTROLIND	CESC	INDIACEM	FSL

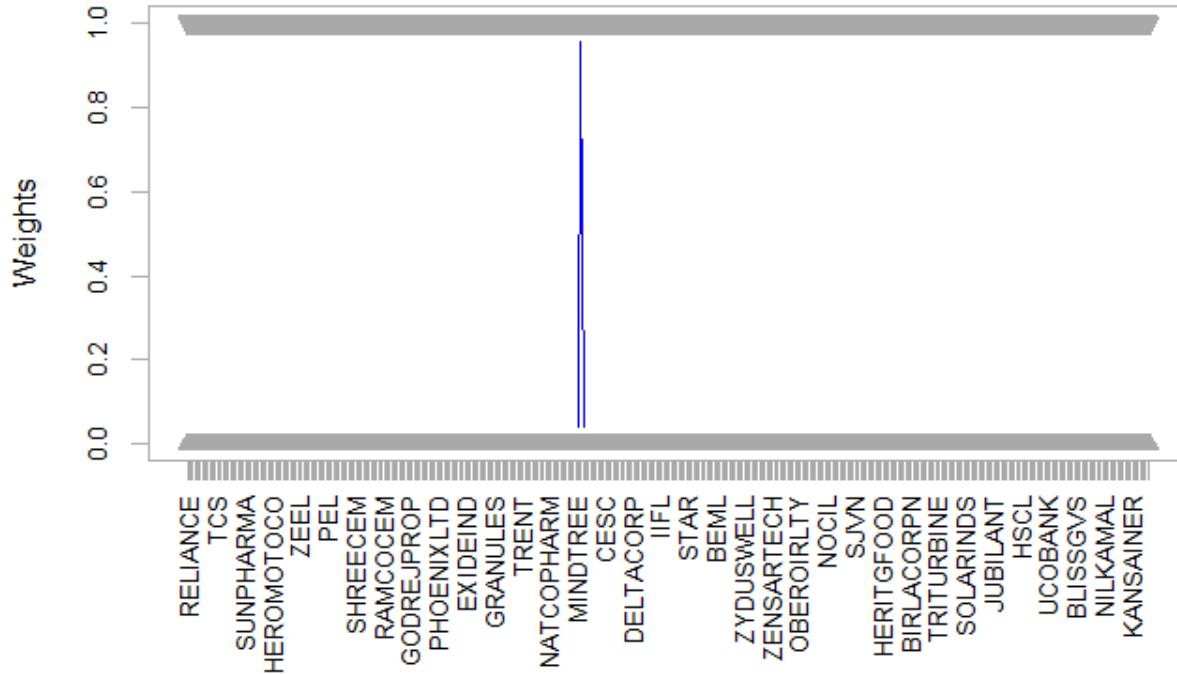
##	0	0	0	0	0	0	0	0
##	GNFC	ABBOTINDIA	ADANIPOWER	VAKRANGEET	UNIONBANK	DCMSHRIRAM	WELCORP	
##	0	0	0	0	0	0	0	0
##	ALOKTEXT	DELTACORP	IBREAEST	KPRMILL	ABB	FINCABLES	CEATLTD	
##	0	0	0	0	0	0	0	0
##	VIPIND	KTKBANK	RALLIS	CENTURYTEX	BALRAMCHIN	IIFL	OFSS	
##	0	0	0	0	0	0	0	0
##	RELAXO		KEC	AJANTPHARM	WESTLIFE	TV18BRDCST	SOUTH BANK	GPPL
##	0	0	0	0	0	0	0	0
##	KALPATPOWR	HINDCOPPER		STAR	AARTIDRUGS	SHRIRAMCIT	CERA	WOCKPHARMA
##	0	0		0	0	0	0	0
##	BAJAJELEC	ENGINERSIN		GSFC	COROMANDEL	AEGISLOG	IOLCP	BEML
##	0	0		0	0	0	0	0
##	IRB	UFLEX		BASF	INDIANB	AKZOINDIA	BBTC	SONATSOFTW
##	0	0		0	0	0	0	0
##	SEQUENT	EIHOTEL	BAYERCROP	ZYDUSWELL	JSWENERGY	WELSPUNIND	DISHTV	
##	0	0		0	0	0	0	0
##	CARBORUNIV		HEG	PTC	VINATI ORGA	TIMKEN	HFCL	VTL
##	0	0		0	0	0	0	0
##	ZENSARTECH		SPARC	ECLERX	RAYMOND	TRIDENT	ASHOKA	RADICO
##	0	0		0	0	0	0	0
##	ALKYLAMINE	BANKINDIA	SUDARSCHM		IPCALAB	OBEROIRLTY	FDC	GODFRY PHLP
##	0	0		0	0	0	0	0
##	SHILPAMED	PHILIPCARB		MOIL	SOBHA	MEGH	PRESTIGE	VSTIND
##	0	0		0	0	0	0	0
##	MAHSCOOTER		NOCIL	INOXLEISUR		GHCL	TATAINVEST	NLCINDIA
##	0	0		0	0	0	0	0
##	KAJARIACER	GILLETTE	RESPONIND	MOTILALOFS		KRBL	SJVN	ALLCARGO
##	0	0		0	0	0	0	0
##	ORIENTREF		DCAL	CHENNPETRO	SKFININD	FINOLEXIND	CENTURYPLY	SCI
##	0	0		0	0	0	0	0
##	GDL	GREAVESCOT	HERITGFOOD	SHOPERSTOP	BOMDYEING		KNRCON	HAWKINCOOK
##	0	0		0	0	0	0	0
##	VENKYS	JINDALSAW		JKPAPER	ESABINDIA	MAHABANK	SCHAEFFLER	BIRLACORPN
##	0	0		0	0	0	0	0
##	BALMLAWRIE		MFSL	PGHH	MINDAIND	VGUARD	LINDEINDIA	JCHAC
##	0	0		0	0	0	0	0
##	KSCL	LAOPALA	TATACOFFEE	TRITURBINE	DEEPAKFERT	ASTRAZEN	JKLAKSHMI	
##	0	0		0	0	0	0	0
##	VAIBHAVGBL	SUPRAJIT		GMM	IFBIND	IDBI	FORCEMOT	THERMAX
##	0	0		0	0	0	0	0
##	SOLARINDS	BLUEDART		NESCO	JAMNAAUTO	JSL	DHANUKA	TVSSRICHAK
##	0	0		0	0	0	0	0
##	TATAMETALI		MRPL	NBVENTURES	BAJA JHLNG	JUBILANT	JBCHEPHARM	CHAMBLFERT
##	0	0		0	0	0	0	0
##	KEI	TTKPRESTIG		SUNTECK	CAPPL	NETWORK18	GUJALKALI	CENTRALBK
##	0	0		0	0	0	0	0

```

##   J.KBANK      HSCL     GMDCLTD      PFIZER      MHRIL  NAVNETEDUL      RCF
##      0          0          0          0          0          0          0          0
##    IOB      TVTODAY  SCHNEIDER  RATNAMANI  JKTYRE  UCOBANK      GEPIL
##      0          0          0          0          0          0          0          0
##  FCONSUMER  TIMETECHNO    JAGRAN      MMTC      SANOFI      CCL SWANENERGY
##      0          0          0          0          0          0          0          0
## JAICORPLTD    DBCORP    BLISSGVS  WABCOINDIA      OMAXE      HATHWAY  MAHINDCIE
##      0          0          0          0          0          0          0          0
## MAHLIFE       ITI  EMAMILTD      ASTRAL      SYMPHONY  INDOCO  NILKAMAL
##      0          0          0          0          0          0          0          0
## SUZLON        IFCI      ITDC      CRISIL      BRIGADE  BLUESTARCO  MAHSEAMLES
##      0          0          0          0          0          0          0          0
## HEIDELBERG    POLYMED    GRINDWELL  KANSAINER      AIAENG  TASTYBIT PERSISTENT
##      0          0          0          0          0          0          0          0
## JKCEMENT    MPHASIS      HONAUT  HINDPETRO
##      0          0          0          0
##
## Objective Measure:
##   mean
## 0.01533

```

opt_pfESplus-ESarg3Retarg3ES4-202101012309



The reader can see that the last three portfolio specifications show similar (static) Reward-Risk trade-off charts and portfolio weights, as tabulated ahead in descending

order of (statically-optimized) weights:

BIOCON.BO	TSLA	MERV	BPCL.BO	NZ50	SUVENadj	GOLDBE
0.3297	0.2900	0.1204	0.1063	0.1020	0.0379	0.01

The first three portfolio specifications show optimal portfolios (marked by a blue dot on the Reward-Risk chart) located similar to asset N10GS (India's NIFTY 10-year benchmark G-Sec Index) though weights of only 40.6% are allocated to N10GS and the rest are allocated to UUP and other assets.

Rebalancing Optimization Performance with Rolling Windows

Looking at the Rebalancing performance ahead of the last three portfolio specifications, the reader can see Annualized Portfolio Rebalancing Return being reported as

0.2212168 ; this is log return , which is equal to $\exp(0.2212168)-1 = 0.2475939 = 24.8\%$ CAGR. That is during 34 (quarterly) Rebalancing dates till 2020-Nov. Rebalancing code 9 referred to makes the optimizer use "rolling windows" of 52*2 weeks (2 years) to train on when it rebalances, and that Rebalancing is repeated each quarter. The reader might also note that quarterly Rebalancing can change weights, resulting in transaction costs and taxation for short-term capital gains. These have not been penalized in the portfolio Objectives, and so, the reader has to consider that separately.

```

warning("Ensure correct files list in flist via DOS cmd: > dir /b /o-d bt* > flist

## Warning: Ensure correct files list in flist via DOS cmd: > dir /b /o-d bt* >
## flist.txt

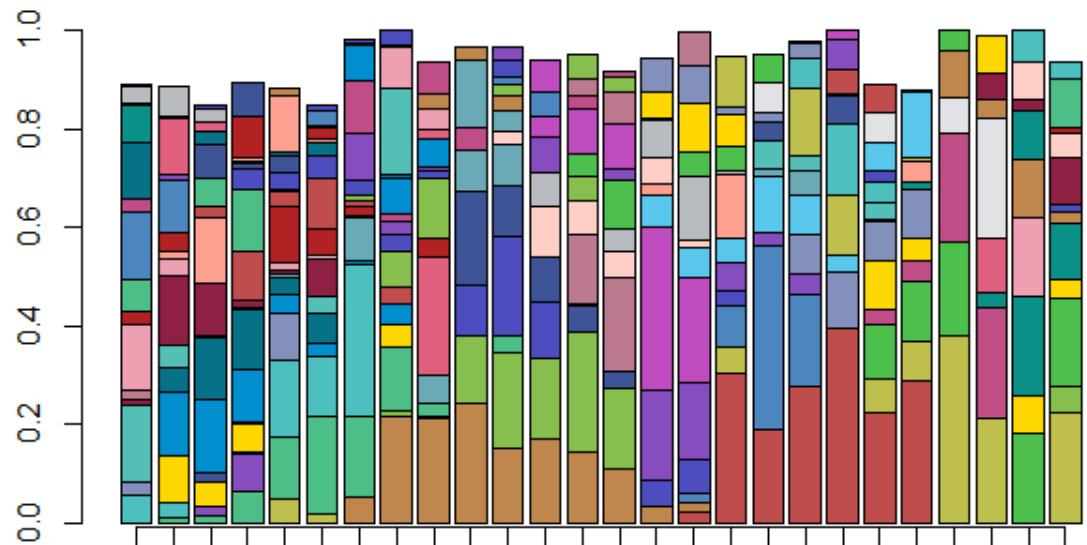
flist <- read.csv(file=paste0(results.dir, "/flist2021Jan011229.txt"), stringsAsFactors=FALSE)
# flist <- read.csv(file=paste0(results.dir, "/flist2020Dec311957.txt"), stringsAsFactors=FALSE)
# flist <- read.csv(file=paste0(results.dir, "/flist2020Dec292200.txt"), stringsAsFactors=FALSE)
flist <- c(flist[,1])

flist.invest500CAGR36.20201228 <- paste0(c(
  "bt-rebal11opt_pfESplus-ESarg3Retarg2ES3-202012282103-202012282103",
  "bt-rebal11opt_pfESplus-ESarg3Retarg2ES2-202012282103-202012282103",
  "bt-rebal11opt_pfESplus-ESarg3Retarg2ES1-202012282103-202012282103",
  "bt-rebal11opt_pfESplus-ESarg3Retarg2ES0-202012282103-202012282103"))

```

```
"bt-rebal11opt_pfESplus-ESarg3Retarg2ES1-202012282102-202012282103",  
"bt-rebal10opt_pfESplus-ESarg3Retarg2ES3-202012281932-202012281933",  
"bt-rebal10opt_pfESplus-ESarg3Retarg2ES2-202012281931-202012281932",  
"bt-rebal10opt_pfESplus-ESarg3Retarg2ES1-202012281929-202012281930",  
"bt-rebal9opt_pfESplus-ESarg3Retarg2ES3-202012281928-202012281929",  
"bt-rebal9opt_pfESplus-ESarg3Retarg2ES2-202012281927-202012281928",  
"bt-rebal9opt_pfESplus-ESarg3Retarg2ES1-202012281926-202012281927"  
, ".rds"  
)  
flist.invest500CAGR36.20201227 <- paste0(c(  
"bt-rebal9opt_pfESplus-ESarg3-targRet2ES3-202012270813-202012270814",  
"bt-rebal9opt_pfESplus-ESarg3-targRet2ES2-202012270812-202012270813",  
"bt-rebal9opt_pfESplus-ESarg3-targRet2ES1-202012270811-202012270812"  
, ".rds")  
)  
flist.momentObjectives <- c(  
"bt-rebal9opt_pfESplus-cleanT-targRet2ES3-202012191820-202012191847.rds",  
"bt-rebal9opt_pfESplus-cleanT-targRet2ES2-202012191749-202012191816.rds",  
"bt-rebal9opt_pfESplus-cleanT-targRet2ES1-202012191727-202012191745.rds",  
"bt-rebal9opt_pfESplus-cleanF-targRet2ES3-202012191724-202012191724.rds",  
"bt-rebal9opt_pfESplus-cleanF-targRet2ES2-202012191723-202012191723.rds",  
"bt-rebal9opt_pfESplus-cleanF-targRet2ES1-202012191722-202012191723.rds")  
)  
  
flist <- rev(flist) # reverse into the order of execution of rebalancing optimizat  
btouts <- list()  
btouts.rets <- list()  
rebalWts <- list()  
for(ix in 1:length(flist)){ # Was: 6:1  
  btouts[[ix]] <- readRDS(file=paste0(results.dir, "/", flist[ix]))  
  bout <- btouts[[ix]]  
  # stop("copied into earlier chunk")  
  btouts.rets[[ix]] <- summary(bout)$portfolio_returns # takes few mins for BSE50  
  names(btouts.rets)[[ix]] <- paste0("bt", ix)  
  # duh5 <- summary(bout)$portfolio_returns; colnames(duh5) <- paste0("bt", ix)  
  # print(bout)  
  rebalWts[[ix]] <- mychart.Weights(bout, main=paste0("Weights for ", names(bout)  
    print(tail(round(rebalWts[[ix]], 3), 6)))  
  # chart.Weights(bout, main=paste0("Weights for ", names(btouts.rets)[[ix]]), #  
  #   cex.legend=0.8/2, colorset=my_colors) # ylim=c(1.2),  
  #   # col=my_colors # bluemono)  
}  
}
```

Weights for bt1

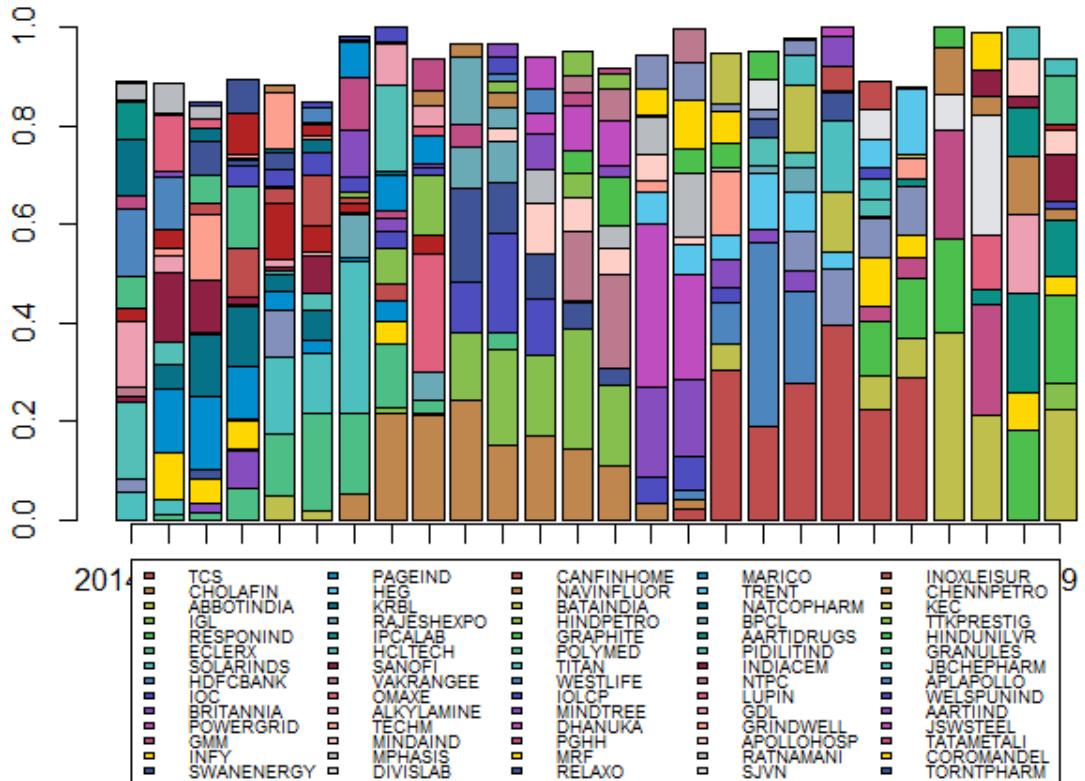


##	TCS	CHOLAFIN	ABBOTINDIA	IGL	RESPONIND	ECLERX	SOLARINDS	
## 2019-09-27 05:30:00	0.223	0	0.070	0.000	0.109	0	0	
## 2019-12-27 05:30:00	0.286	0	0.082	0.000	0.124	0	0	
## 2020-03-27 05:30:00	0.000	0	0.381	0.000	0.190	0	0	
## 2020-06-26 05:30:00	0.000	0	0.211	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0.000	0	0.000	0.000	0.181	0	0	
## 2020-12-18 05:30:00	0.000	0	0.225	0.053	0.178	0	0	
##	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEE	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0	0	0.000	

## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE	
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0.062		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		

```
##          WELSPUNIND AARTIIND JSWSTEEL TATAMETALI COROMANDEL
## 2019-09-27 05:30:00      0      0      0      0      0.000
## 2019-12-27 05:30:00      0      0      0      0      0.000
## 2020-03-27 05:30:00      0      0      0      0      0.000
## 2020-06-26 05:30:00      0      0      0      0      0.076
## 2020-09-25 05:30:00      0      0      0      0      0.000
## 2020-12-18 05:30:00      0      0      0      0      0.000
##          TORNTPHARM
## 2019-09-27 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-03-27 05:30:00      0
## 2020-06-26 05:30:00      0
## 2020-09-25 05:30:00      0
## 2020-12-18 05:30:00      0
```

Weights for bt2

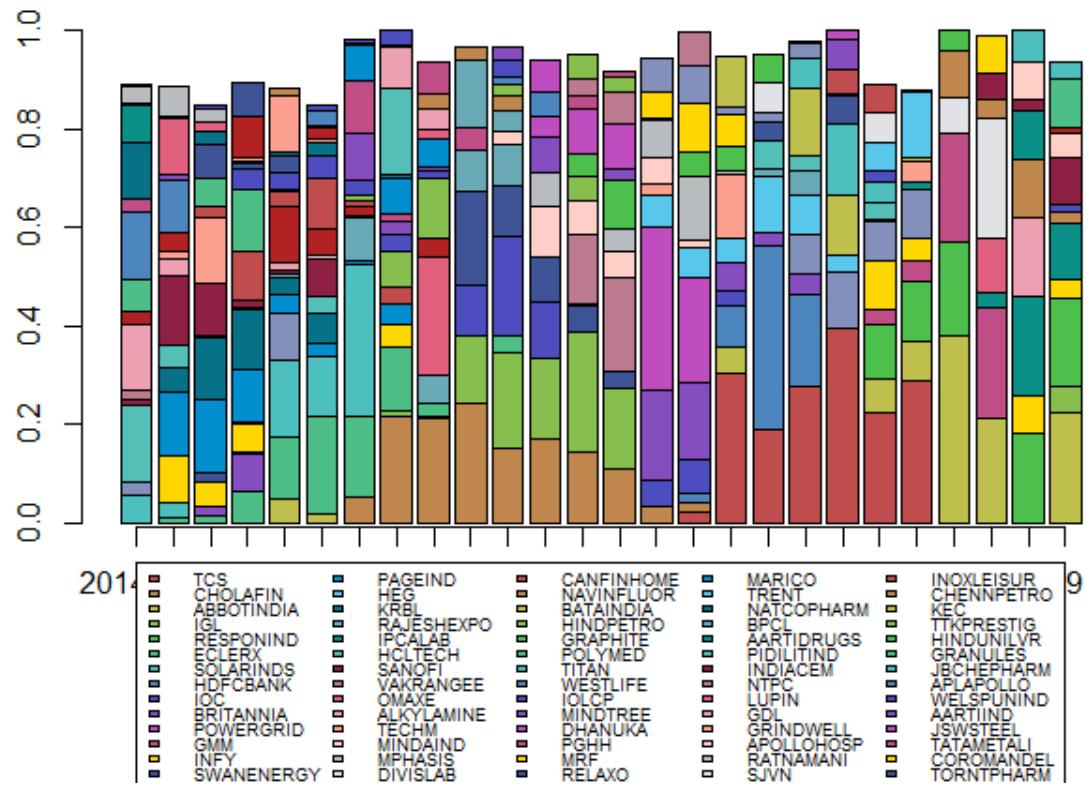


```
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLERX SOLARINDS
## 2019-09-27 05:30:00 0.223      0     0.070 0.000    0.109      0      0
## 2019-12-27 05:30:00 0.286      0     0.082 0.000    0.124      0      0
## 2020-03-27 05:30:00 0.000      0     0.381 0.000    0.190      0      0
## 2020-06-26 05:30:00 0.000      0     0.211 0.000    0.000      0      0
## 2020-09-25 05:30:00 0.000      0     0.000 0.000    0.181      0      0
## 2020-12-18 05:30:00 0.000      0     0.225 0.053    0.178      0      0
```

	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEET	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069	
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245	
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000	
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE		
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0	
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0	
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0	
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0	
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0	
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0	
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH	MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS	
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0	
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0	
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1	
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0	
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP	
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000	

## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.062	0		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		
##	WELSPUNIND	AARTIIND	JSWSTEEL	TATAMETALI	COROMANDEL		
## 2019-09-27 05:30:00	0	0	0	0	0.000		
## 2019-12-27 05:30:00	0	0	0	0	0.000		
## 2020-03-27 05:30:00	0	0	0	0	0.000		
## 2020-06-26 05:30:00	0	0	0	0	0.076		
## 2020-09-25 05:30:00	0	0	0	0	0.000		
## 2020-12-18 05:30:00	0	0	0	0	0.000		
##	TORNTPHARM						
## 2019-09-27 05:30:00	0						
## 2019-12-27 05:30:00	0						
## 2020-03-27 05:30:00	0						
## 2020-06-26 05:30:00	0						
## 2020-09-25 05:30:00	0						
## 2020-12-18 05:30:00	0						

Weights for bt3

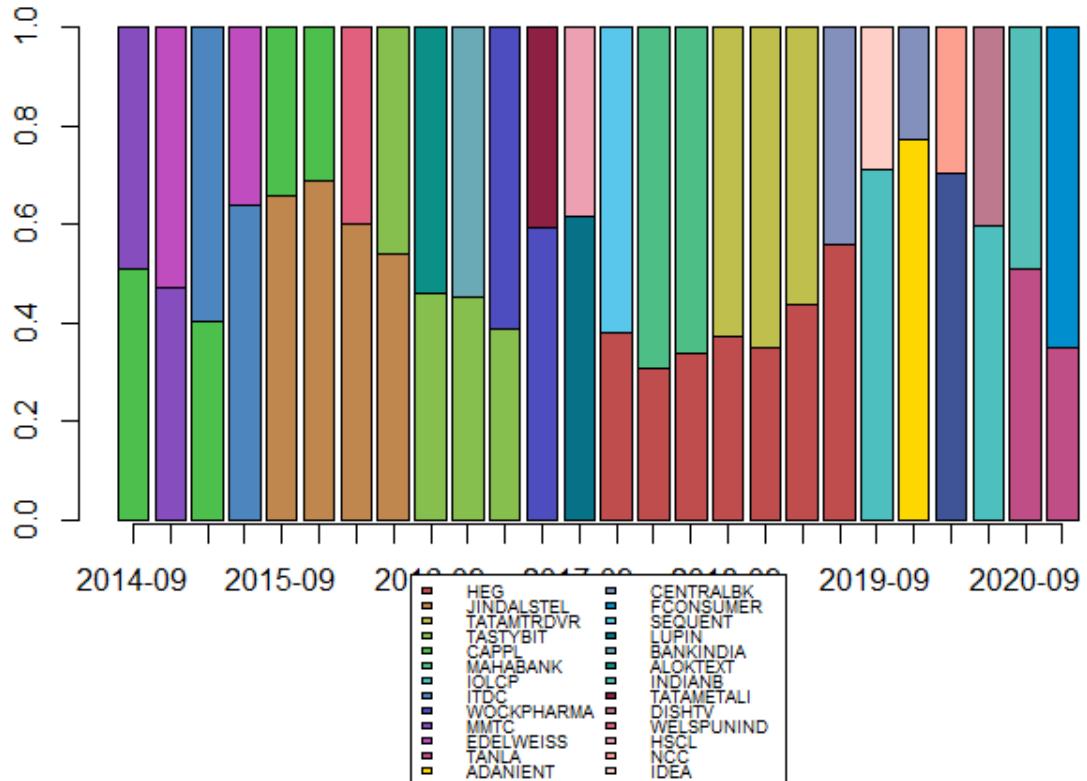


##	TCS	CHOLAFIN	ABBOTINDIA	IGL	RESPONIND	ECLERX	SOLARINDS	
## 2019-09-27 05:30:00	0.223	0	0.070	0.000	0.109	0	0	
## 2019-12-27 05:30:00	0.286	0	0.082	0.000	0.124	0	0	
## 2020-03-27 05:30:00	0.000	0	0.381	0.000	0.190	0	0	
## 2020-06-26 05:30:00	0.000	0	0.211	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0.000	0	0.000	0.000	0.181	0	0	
## 2020-12-18 05:30:00	0.000	0	0.225	0.053	0.178	0	0	
##	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEE	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0	0	0.000	

## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE	
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0.062		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		

```
##          WELSPUNIND AARTIIND JSWSTEEL TATAMETALI COROMANDEL
## 2019-09-27 05:30:00      0      0      0      0      0.000
## 2019-12-27 05:30:00      0      0      0      0      0.000
## 2020-03-27 05:30:00      0      0      0      0      0.000
## 2020-06-26 05:30:00      0      0      0      0      0.076
## 2020-09-25 05:30:00      0      0      0      0      0.000
## 2020-12-18 05:30:00      0      0      0      0      0.000
##          TORNTPHARM
## 2019-09-27 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-03-27 05:30:00      0
## 2020-06-26 05:30:00      0
## 2020-09-25 05:30:00      0
## 2020-12-18 05:30:00      0
```

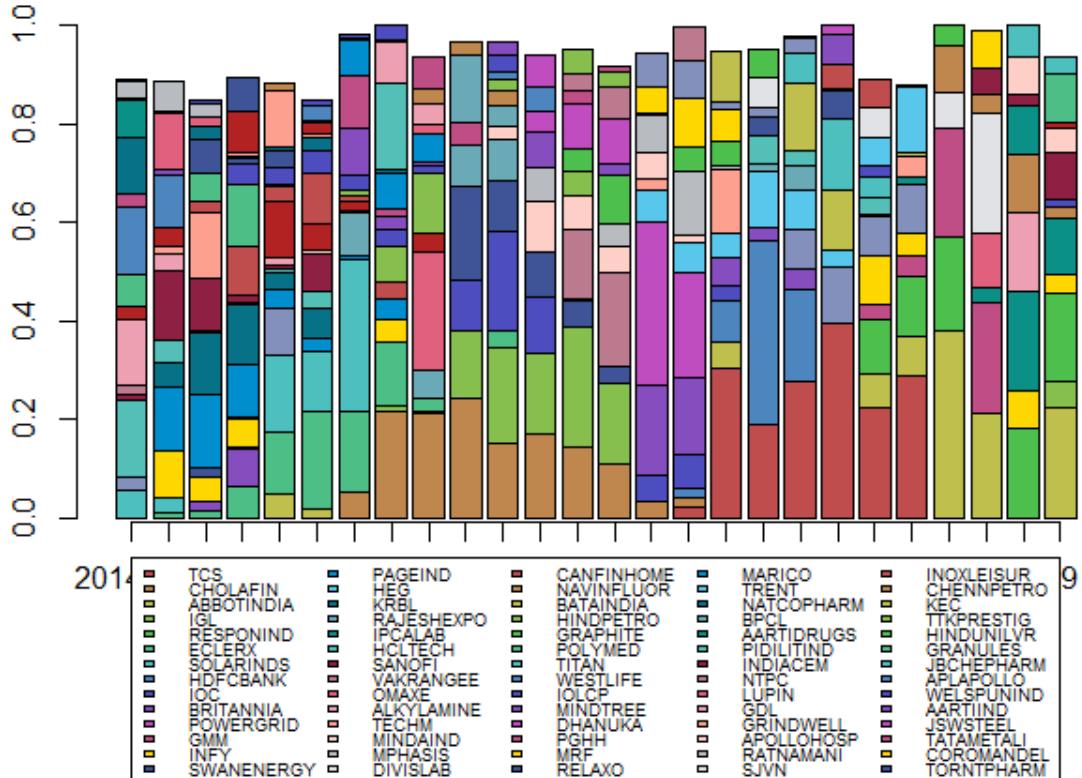
Weights for bt4



```
##          HEG JINDALSTEL TATAMTRDVR TASTYBIT CAPPL MAHABANK IOLCP
## 2019-09-27 05:30:00  0      0      0      0      0      0  0.711
## 2019-12-27 05:30:00  0      0      0      0      0      0  0.000
## 2020-03-27 05:30:00  0      0      0      0      0      0  0.000
## 2020-06-26 05:30:00  0      0      0      0      0      0  0.598
## 2020-09-25 05:30:00  0      0      0      0      0      0  0.000
## 2020-12-18 05:30:00  0      0      0      0      0      0  0.000
```

```
##          ITDC WOCKPHARMA MMTC EDELWEISS TANLA ADANIENT GMM
## 2019-09-27 05:30:00    0      0      0      0 0.000 0.000 0.000
## 2019-12-27 05:30:00    0      0      0      0 0.000 0.774 0.000
## 2020-03-27 05:30:00    0      0      0      0 0.000 0.000 0.704
## 2020-06-26 05:30:00    0      0      0      0 0.000 0.000 0.000
## 2020-09-25 05:30:00    0      0      0      0 0.509 0.000 0.000
## 2020-12-18 05:30:00    0      0      0      0 0.350 0.000 0.000
##          CENTRALBK FCONSUMER SEQUENT LUPIN BANKINDIA ALOKTEXT
## 2019-09-27 05:30:00 0.000 0.00 0 0 0 0
## 2019-12-27 05:30:00 0.226 0.00 0 0 0 0
## 2020-03-27 05:30:00 0.000 0.00 0 0 0 0
## 2020-06-26 05:30:00 0.000 0.00 0 0 0 0
## 2020-09-25 05:30:00 0.000 0.00 0 0 0 0
## 2020-12-18 05:30:00 0.000 0.65 0 0 0 0
##          INDIANB TATAMETALI DISHTV WELSPUNIND HSCL NCC IDEA
## 2019-09-27 05:30:00 0.000 0 0.000 0 0 0.000 0.289
## 2019-12-27 05:30:00 0.000 0 0.000 0 0 0.000 0.000
## 2020-03-27 05:30:00 0.000 0 0.000 0 0 0.296 0.000
## 2020-06-26 05:30:00 0.000 0 0.402 0 0 0.000 0.000
## 2020-09-25 05:30:00 0.491 0 0.000 0 0 0.000 0.000
## 2020-12-18 05:30:00 0.000 0 0.000 0 0 0.000 0.000
```

Weights for bt5

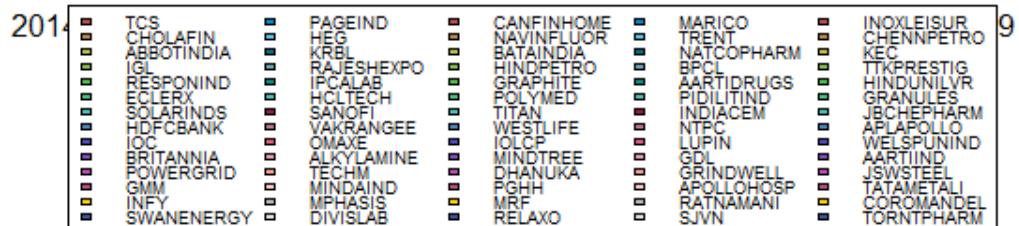
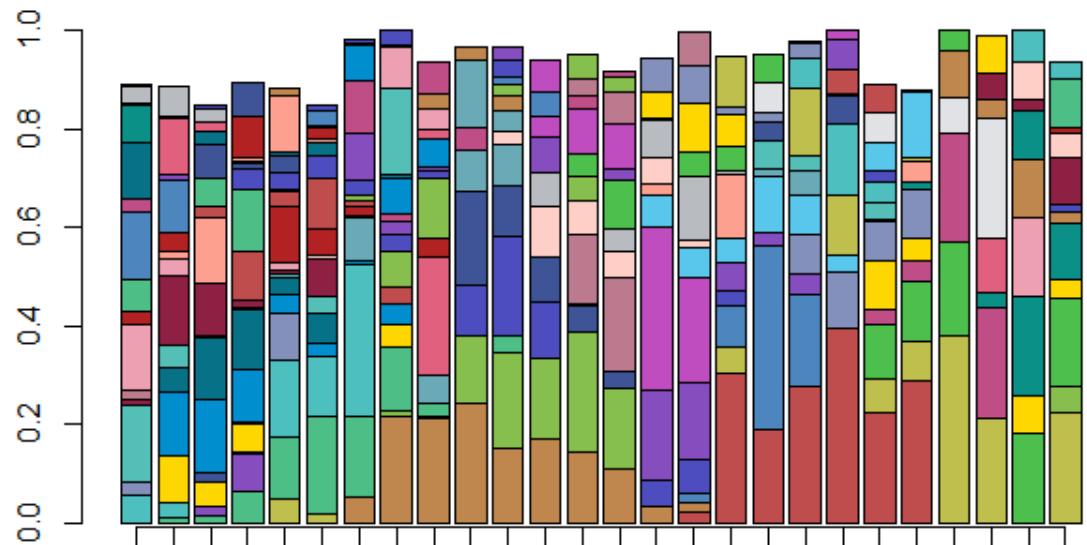


```
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLRX SOLARINDS
```

## 2019-09-27 05:30:00 0.223	0	0.070	0.000	0.109	0	0
## 2019-12-27 05:30:00 0.286	0	0.082	0.000	0.124	0	0
## 2020-03-27 05:30:00 0.000	0	0.381	0.000	0.190	0	0
## 2020-06-26 05:30:00 0.000	0	0.211	0.000	0.000	0	0
## 2020-09-25 05:30:00 0.000	0	0.000	0.000	0.181	0	0
## 2020-12-18 05:30:00 0.000	0	0.225	0.053	0.178	0	0
##	HDFCBANK IOC BRITANNIA POWERGRID GMM INFY SWANENERGY					
## 2019-09-27 05:30:00	0 0	0	0 0.032	0.098	0	
## 2019-12-27 05:30:00	0 0	0	0 0.040	0.047	0	
## 2020-03-27 05:30:00	0 0	0	0 0.221	0.000	0	
## 2020-06-26 05:30:00	0 0	0	0 0.225	0.000	0	
## 2020-09-25 05:30:00	0 0	0	0 0.000	0.075	0	
## 2020-12-18 05:30:00	0 0	0	0 0.000	0.037	0	
##	NAUKRI PAGEIND HEG KRBL RAJESHEXPO IPCALAB HCLTECH SANOFI					
## 2019-09-27 05:30:00 0.082	0 0 0	0	0 0.001	0.037	0	
## 2019-12-27 05:30:00 0.096	0 0 0	0	0 0.015	0.000	0	
## 2020-03-27 05:30:00 0.000	0 0 0	0	0 0.000	0.000	0	
## 2020-06-26 05:30:00 0.000	0 0 0	0	0 0.033	0.000	0	
## 2020-09-25 05:30:00 0.000	0 0 0	0	0 0.204	0.000	0	
## 2020-12-18 05:30:00 0.000	0 0 0	0	0 0.116	0.000	0	
##	VAKRANGE OMAXE ALKYLAMINE TECHM MINDAIND MPHASIS DIVISLAB					
## 2019-09-27 05:30:00	0 0.000	0.000 0.000	0	0 0	0.000	
## 2019-12-27 05:30:00	0 0.000	0.000 0.042	0	0 0	0.000	
## 2020-03-27 05:30:00	0 0.000	0.000 0.000	0	0 0	0.069	
## 2020-06-26 05:30:00	0 0.108	0.000 0.000	0	0 0	0.245	
## 2020-09-25 05:30:00	0 0.000	0.158 0.000	0	0 0	0.000	
## 2020-12-18 05:30:00	0 0.000	0.000 0.000	0	0 0	0.000	
##	JCHAC CANFINHOME NAVINFLUOR BATAINDIA HINDPETRO GRAPHITE					
## 2019-09-27 05:30:00 0	0 0	0.000 0.000	0	0 0	0	
## 2019-12-27 05:30:00 0	0 0	0.000 0.008	0	0 0	0	
## 2020-03-27 05:30:00 0	0 0	0.097 0.000	0	0 0	0	
## 2020-06-26 05:30:00 0	0 0	0.040 0.000	0	0 0	0	
## 2020-09-25 05:30:00 0	0 0	0.118 0.000	0	0 0	0	
## 2020-12-18 05:30:00 0	0 0	0.021 0.000	0	0 0	0	
##	POLYMED TITAN WESTLIFE IOLCP MINDTREE DHANUKA PGHH MRF					
## 2019-09-27 05:30:00 0 0.04	0 0.023	0 0	0 0	0 0	0	
## 2019-12-27 05:30:00 0 0.00	0 0.000	0 0	0 0	0 0	0	
## 2020-03-27 05:30:00 0 0.00	0 0.000	0 0	0 0	0 0	0	
## 2020-06-26 05:30:00 0 0.00	0 0.000	0 0	0 0	0 0	0	
## 2020-09-25 05:30:00 0 0.00	0 0.000	0 0	0 0	0 0	0	
## 2020-12-18 05:30:00 0 0.00	0 0.016	0 0	0 0	0 0	0	
##	RELAXO PHOENIXLTD MARICO TRENT NATCOPHARM BPCL AARTIDRUGS					
## 2019-09-27 05:30:00 0	0 0	0 0.060	0 0	0 0	0.0	
## 2019-12-27 05:30:00 0	0 0	0 0.134	0 0	0 0	0.0	
## 2020-03-27 05:30:00 0	0 0	0 0.000	0 0	0 0	0.0	
## 2020-06-26 05:30:00 0	0 0	0 0.000	0 0	0 0	0.0	
## 2020-09-25 05:30:00 0	0 0	0 0.000	0 0	0 0	0.1	

	## 2020-12-18 05:30:00	0	0	0 0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.062	0		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		
##	WELSPUNIND	AARTIIND	JSWSTEEL	TATAMETALI	COROMANDEL		
## 2019-09-27 05:30:00	0	0	0	0	0.000		
## 2019-12-27 05:30:00	0	0	0	0	0.000		
## 2020-03-27 05:30:00	0	0	0	0	0.000		
## 2020-06-26 05:30:00	0	0	0	0	0.076		
## 2020-09-25 05:30:00	0	0	0	0	0.000		
## 2020-12-18 05:30:00	0	0	0	0	0.000		
##	TORNTPHARM						
## 2019-09-27 05:30:00	0						
## 2019-12-27 05:30:00	0						
## 2020-03-27 05:30:00	0						
## 2020-06-26 05:30:00	0						
## 2020-09-25 05:30:00	0						
## 2020-12-18 05:30:00	0						

Weights for bt6

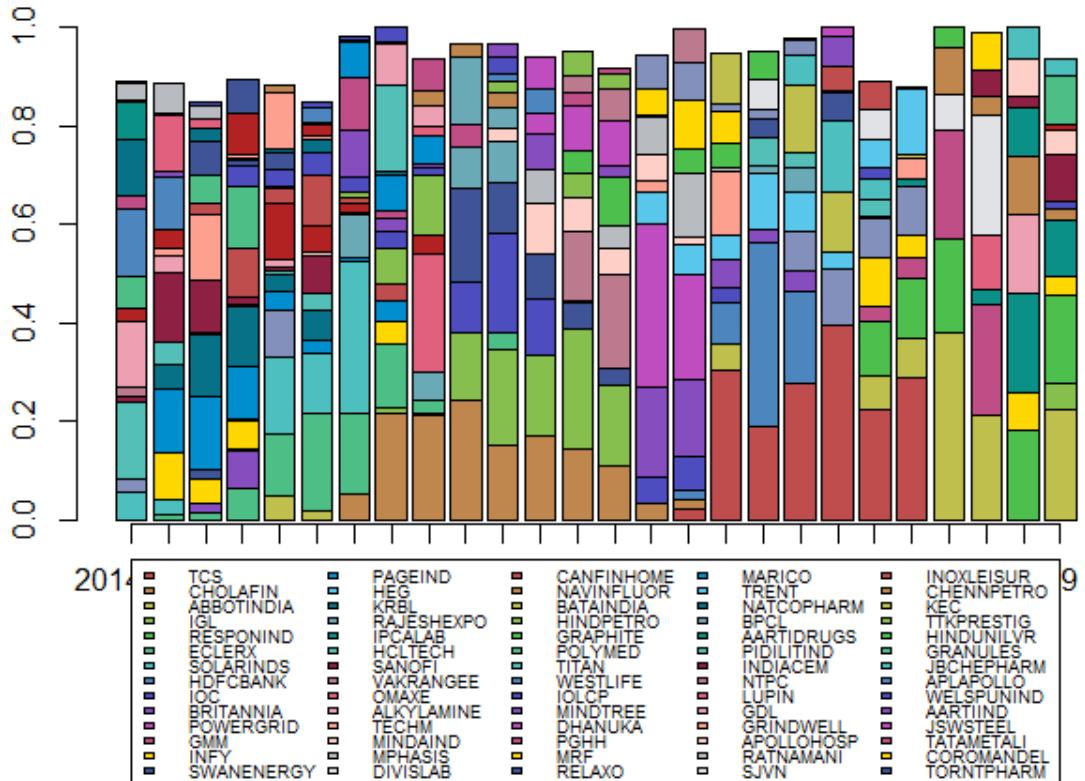


```
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLERX SOLARINDS
## 2019-09-27 05:30:00 0.223      0 0.070 0.000 0.109 0 0
## 2019-12-27 05:30:00 0.286      0 0.082 0.000 0.124 0 0
## 2020-03-27 05:30:00 0.000      0 0.381 0.000 0.190 0 0
## 2020-06-26 05:30:00 0.000      0 0.211 0.000 0.000 0 0
## 2020-09-25 05:30:00 0.000      0 0.000 0.000 0.181 0 0
## 2020-12-18 05:30:00 0.000      0 0.225 0.053 0.178 0 0
##          HDFCBANK IOC BRITANNIA POWERGRID GMM INFY SWANENERGY
## 2019-09-27 05:30:00 0 0 0 0 0.032 0.098 0
## 2019-12-27 05:30:00 0 0 0 0 0.040 0.047 0
## 2020-03-27 05:30:00 0 0 0 0 0.221 0.000 0
## 2020-06-26 05:30:00 0 0 0 0 0.225 0.000 0
## 2020-09-25 05:30:00 0 0 0 0 0.000 0.075 0
## 2020-12-18 05:30:00 0 0 0 0 0.000 0.037 0
##          NAUKRI PAGEIND HEG KRBL RAJESHEXPO IPCALAB HCLTECH SANOFI
## 2019-09-27 05:30:00 0.082 0 0 0 0 0.001 0.037 0
## 2019-12-27 05:30:00 0.096 0 0 0 0 0.015 0.000 0
## 2020-03-27 05:30:00 0.000 0 0 0 0 0.000 0.000 0
## 2020-06-26 05:30:00 0.000 0 0 0 0 0.033 0.000 0
## 2020-09-25 05:30:00 0.000 0 0 0 0 0.204 0.000 0
## 2020-12-18 05:30:00 0.000 0 0 0 0 0.116 0.000 0
##          VAKRANGEE OMAXE ALKYLAMINE TECHM MINDAIND MPHASIS DIVISLAB
## 2019-09-27 05:30:00 0 0.000 0.000 0.000 0 0 0.000
```

## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE	
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0.062		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		

```
##          WELSPUNIND AARTIIND JSWSTEEL TATAMETALI COROMANDEL
## 2019-09-27 05:30:00      0      0      0      0      0.000
## 2019-12-27 05:30:00      0      0      0      0      0.000
## 2020-03-27 05:30:00      0      0      0      0      0.000
## 2020-06-26 05:30:00      0      0      0      0      0.076
## 2020-09-25 05:30:00      0      0      0      0      0.000
## 2020-12-18 05:30:00      0      0      0      0      0.000
##          TORNTPHARM
## 2019-09-27 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-03-27 05:30:00      0
## 2020-06-26 05:30:00      0
## 2020-09-25 05:30:00      0
## 2020-12-18 05:30:00      0
```

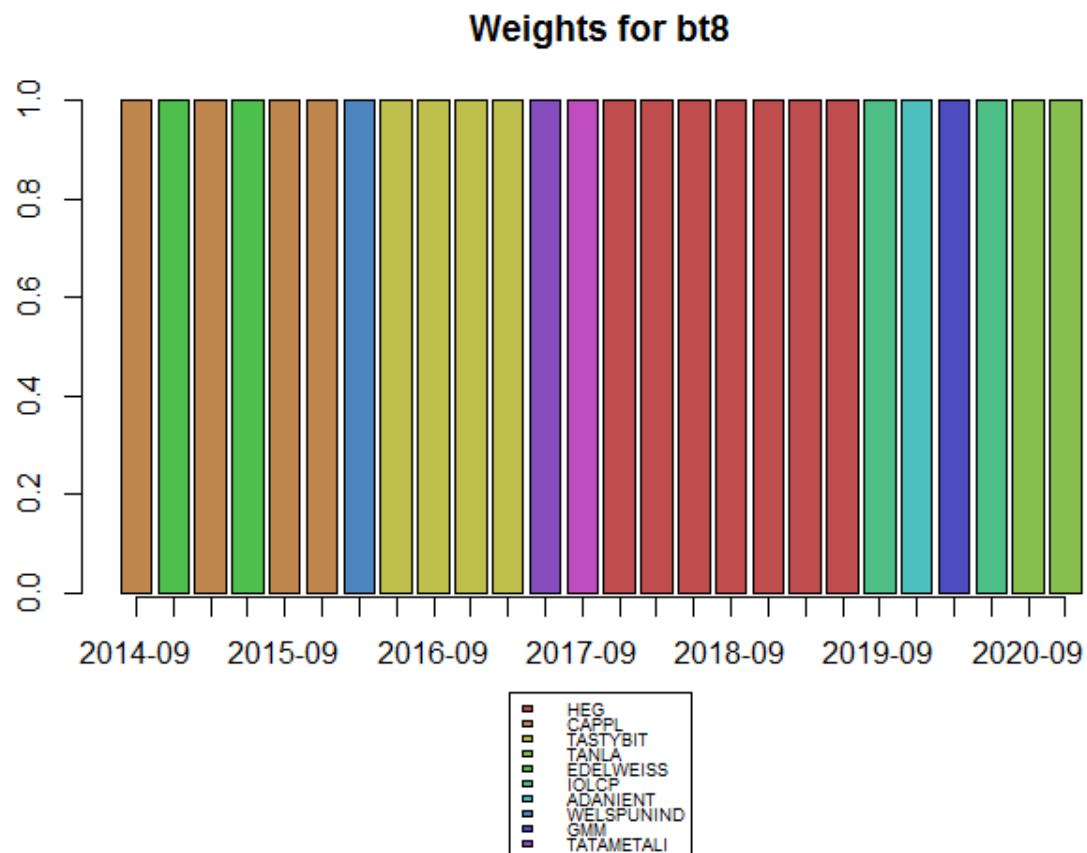
Weights for bt7



```
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLERX SOLARINDS
## 2019-09-27 05:30:00 0.223      0     0.070 0.000    0.109      0      0
## 2019-12-27 05:30:00 0.286      0     0.082 0.000    0.124      0      0
## 2020-03-27 05:30:00 0.000      0     0.381 0.000    0.190      0      0
## 2020-06-26 05:30:00 0.000      0     0.211 0.000    0.000      0      0
## 2020-09-25 05:30:00 0.000      0     0.000 0.000    0.181      0      0
## 2020-12-18 05:30:00 0.000      0     0.225 0.053    0.178      0      0
```

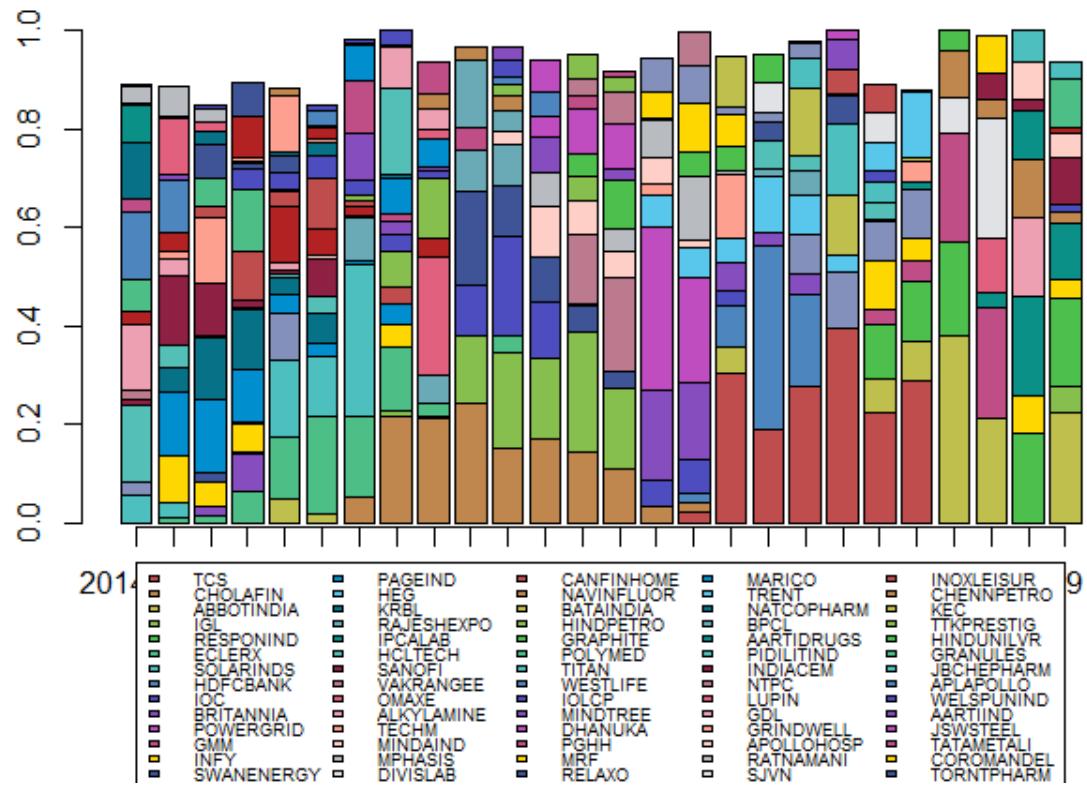
	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEET	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069	
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245	
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000	
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE		
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0	
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0	
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0	
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0	
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0	
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0	
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH	MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS	
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0	
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0	
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1	
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0	
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP	
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000	

## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.062	0		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		
##	WELSPUNIND	AARTIIND	JSWSTEEL	TATAMETALI	COROMANDEL		
## 2019-09-27 05:30:00	0	0	0	0	0.000		
## 2019-12-27 05:30:00	0	0	0	0	0.000		
## 2020-03-27 05:30:00	0	0	0	0	0.000		
## 2020-06-26 05:30:00	0	0	0	0	0.076		
## 2020-09-25 05:30:00	0	0	0	0	0.000		
## 2020-12-18 05:30:00	0	0	0	0	0.000		
##	TORNTPHARM						
## 2019-09-27 05:30:00	0						
## 2019-12-27 05:30:00	0						
## 2020-03-27 05:30:00	0						
## 2020-06-26 05:30:00	0						
## 2020-09-25 05:30:00	0						
## 2020-12-18 05:30:00	0						



```
##          HEG CAPPL TASTYBIT TANLA EDELWEISS IOLCP ADANIENT
## 2019-09-27 05:30:00  0    0      0    0      0     1      0
## 2019-12-27 05:30:00  0    0      0    0      0     0      1
## 2020-03-27 05:30:00  0    0      0    0      0     0      0
## 2020-06-26 05:30:00  0    0      0    0      0     1      0
## 2020-09-25 05:30:00  0    0      0    1      0     0      0
## 2020-12-18 05:30:00  0    0      0    1      0     0      0
##          WELSPUNIND GMM TATAMETALI HSCL
## 2019-09-27 05:30:00   0    0      0    0
## 2019-12-27 05:30:00   0    0      0    0
## 2020-03-27 05:30:00   0    1      0    0
## 2020-06-26 05:30:00   0    0      0    0
## 2020-09-25 05:30:00   0    0      0    0
## 2020-12-18 05:30:00   0    0      0    0
```

Weights for bt9

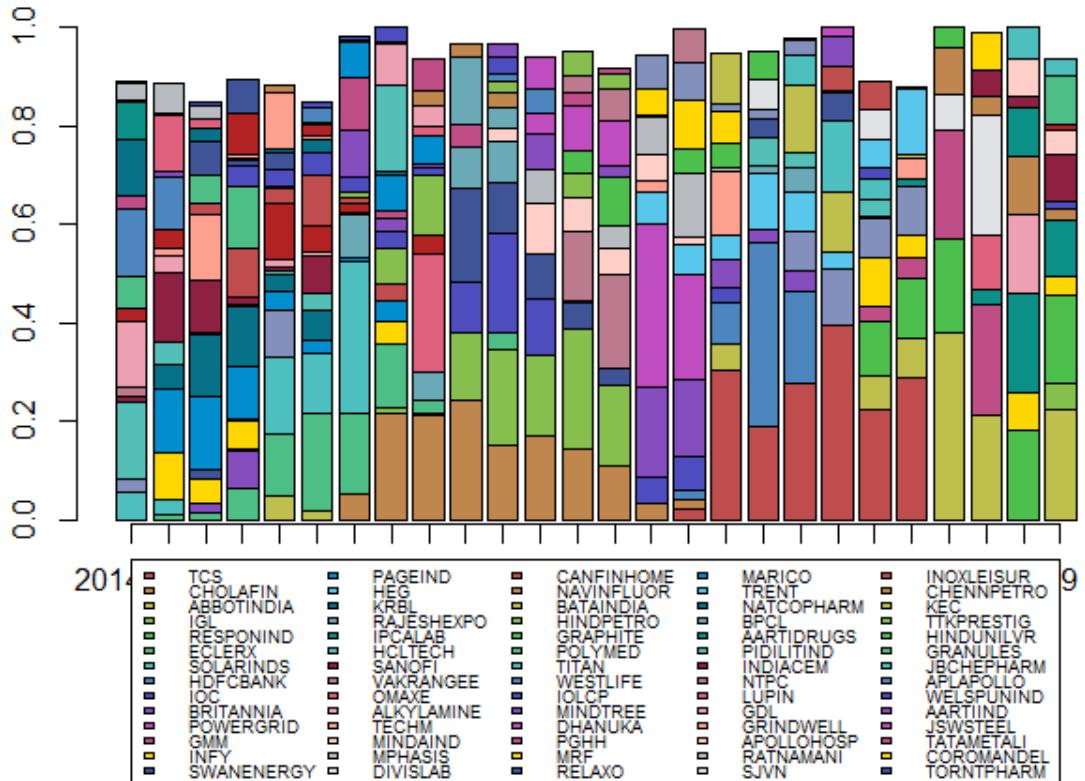


##	TCS	CHOLAFIN	ABBOTINDIA	IGL	RESPONIND	ECLERX	SOLARINDS	
## 2019-09-27 05:30:00	0.223	0	0.070	0.000	0.109	0	0	
## 2019-12-27 05:30:00	0.286	0	0.082	0.000	0.124	0	0	
## 2020-03-27 05:30:00	0.000	0	0.381	0.000	0.190	0	0	
## 2020-06-26 05:30:00	0.000	0	0.211	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0.000	0	0.000	0.000	0.181	0	0	
## 2020-12-18 05:30:00	0.000	0	0.225	0.053	0.178	0	0	
##	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEE	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0	0	0.000	

## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE	
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0.062		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		

```
##          WELSPUNIND AARTIIND JSWSTEEL TATAMETALI COROMANDEL
## 2019-09-27 05:30:00      0      0      0      0     0.000
## 2019-12-27 05:30:00      0      0      0      0     0.000
## 2020-03-27 05:30:00      0      0      0      0     0.000
## 2020-06-26 05:30:00      0      0      0      0     0.076
## 2020-09-25 05:30:00      0      0      0      0     0.000
## 2020-12-18 05:30:00      0      0      0      0     0.000
##          TORNTPHARM
## 2019-09-27 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-03-27 05:30:00      0
## 2020-06-26 05:30:00      0
## 2020-09-25 05:30:00      0
## 2020-12-18 05:30:00      0
```

Weights for bt10

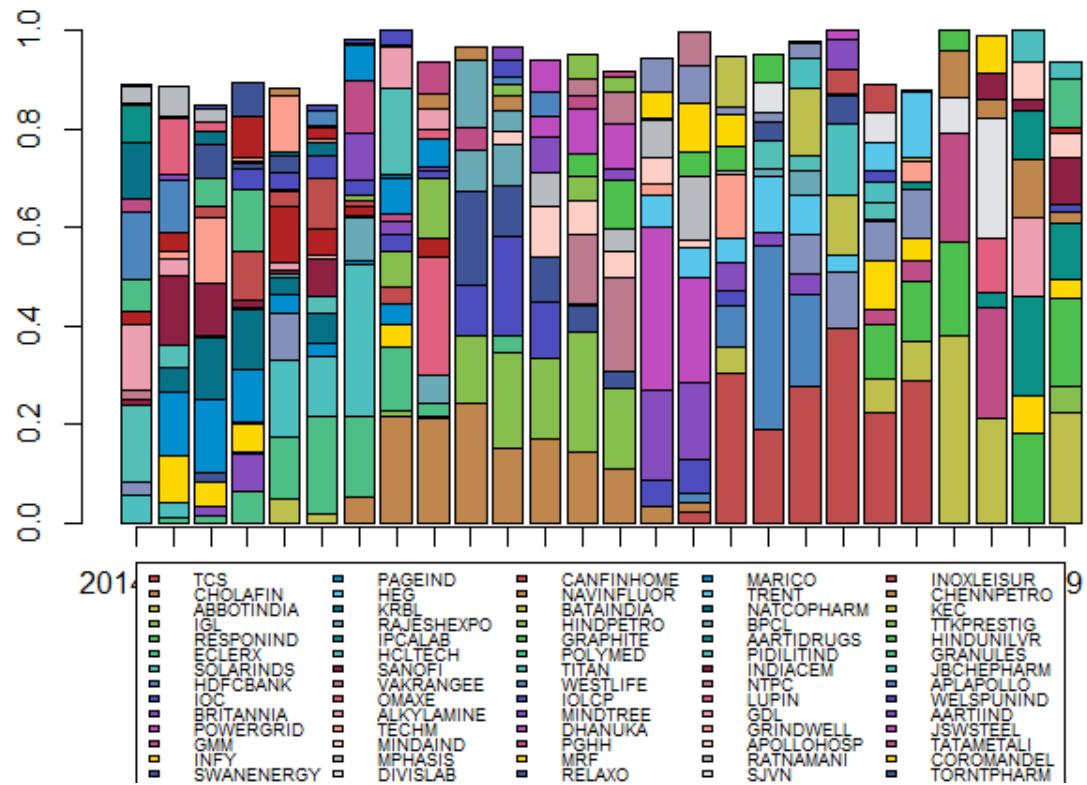


```
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLERX SOLARINDS
## 2019-09-27 05:30:00 0.223      0    0.070 0.000    0.109      0      0
## 2019-12-27 05:30:00 0.286      0    0.082 0.000    0.124      0      0
## 2020-03-27 05:30:00 0.000      0    0.381 0.000    0.190      0      0
## 2020-06-26 05:30:00 0.000      0    0.211 0.000    0.000      0      0
## 2020-09-25 05:30:00 0.000      0    0.000 0.000    0.181      0      0
## 2020-12-18 05:30:00 0.000      0    0.225 0.053    0.178      0      0
```

	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEET	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069	
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245	
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000	
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE		
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0	
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0	
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0	
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0	
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0	
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0	
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH	MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS	
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0	
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0	
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1	
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0	
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP	
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000	

## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.062	0		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		
##	WELSPUNIND	AARTIIND	JSWSTEEL	TATAMETALI	COROMANDEL		
## 2019-09-27 05:30:00	0	0	0	0	0.000		
## 2019-12-27 05:30:00	0	0	0	0	0.000		
## 2020-03-27 05:30:00	0	0	0	0	0.000		
## 2020-06-26 05:30:00	0	0	0	0	0.076		
## 2020-09-25 05:30:00	0	0	0	0	0.000		
## 2020-12-18 05:30:00	0	0	0	0	0.000		
##	TORNTPHARM						
## 2019-09-27 05:30:00	0						
## 2019-12-27 05:30:00	0						
## 2020-03-27 05:30:00	0						
## 2020-06-26 05:30:00	0						
## 2020-09-25 05:30:00	0						
## 2020-12-18 05:30:00	0						

Weights for bt11



```

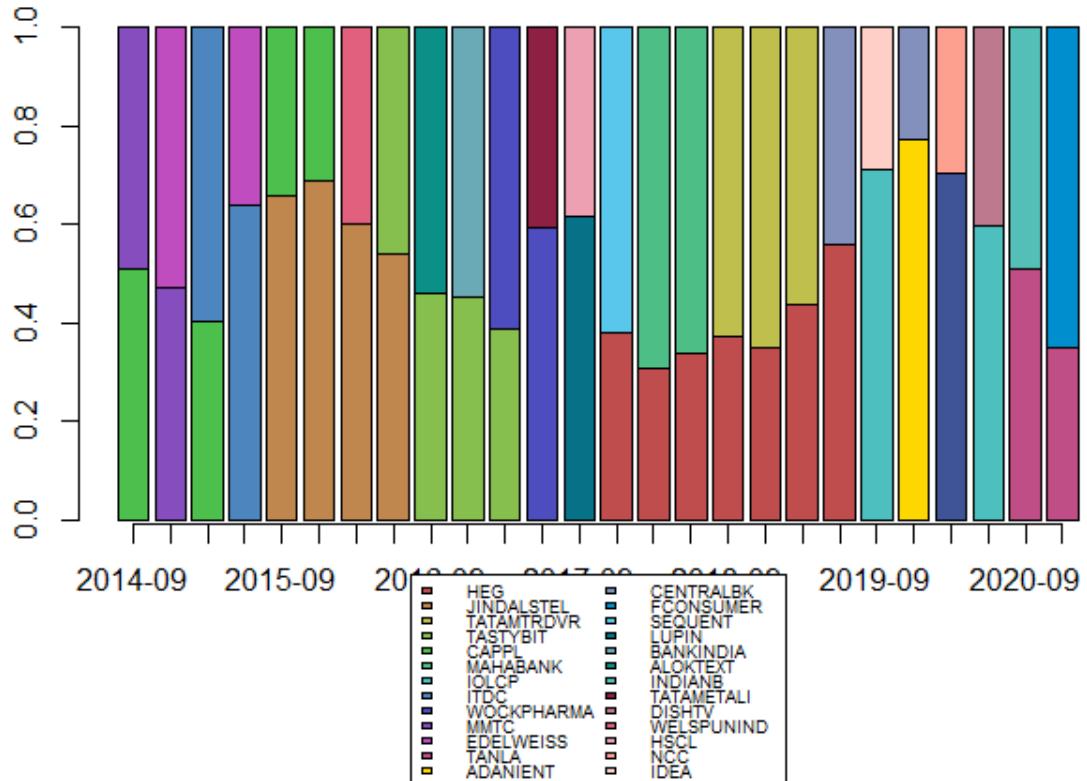
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLERX SOLARINDS
## 2019-09-27 05:30:00 0.223      0 0.070 0.000 0.109 0 0
## 2019-12-27 05:30:00 0.286      0 0.082 0.000 0.124 0 0
## 2020-03-27 05:30:00 0.000      0 0.381 0.000 0.190 0 0
## 2020-06-26 05:30:00 0.000      0 0.211 0.000 0.000 0 0
## 2020-09-25 05:30:00 0.000      0 0.000 0.000 0.181 0 0
## 2020-12-18 05:30:00 0.000      0 0.225 0.053 0.178 0 0
##          HDFCBANK IOC BRITANNIA POWERGRID GMM INFY SWANENERGY
## 2019-09-27 05:30:00 0 0 0 0 0.032 0.098 0
## 2019-12-27 05:30:00 0 0 0 0 0.040 0.047 0
## 2020-03-27 05:30:00 0 0 0 0 0.221 0.000 0
## 2020-06-26 05:30:00 0 0 0 0 0.225 0.000 0
## 2020-09-25 05:30:00 0 0 0 0 0.000 0.075 0
## 2020-12-18 05:30:00 0 0 0 0 0.000 0.037 0
##          NAUKRI PAGEIND HEG KRBL RAJESHEXPO IPCALAB HCLTECH SANOFI
## 2019-09-27 05:30:00 0.082 0 0 0 0 0.001 0.037 0
## 2019-12-27 05:30:00 0.096 0 0 0 0 0.015 0.000 0
## 2020-03-27 05:30:00 0.000 0 0 0 0 0.000 0.000 0
## 2020-06-26 05:30:00 0.000 0 0 0 0 0.033 0.000 0
## 2020-09-25 05:30:00 0.000 0 0 0 0 0.204 0.000 0
## 2020-12-18 05:30:00 0.000 0 0 0 0 0.116 0.000 0
##          VAKRANGEET OMAXE ALKYLAMINE TECHM MINDAIND MPHASIS DIVISLAB
## 2019-09-27 05:30:00 0 0.000 0.000 0.000 0 0 0.000

```

## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE	
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0.062		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		

```
##          WELSPUNIND AARTIIND JSWSTEEL TATAMETALI COROMANDEL
## 2019-09-27 05:30:00      0      0      0      0      0.000
## 2019-12-27 05:30:00      0      0      0      0      0.000
## 2020-03-27 05:30:00      0      0      0      0      0.000
## 2020-06-26 05:30:00      0      0      0      0      0.076
## 2020-09-25 05:30:00      0      0      0      0      0.000
## 2020-12-18 05:30:00      0      0      0      0      0.000
##          TORNTPHARM
## 2019-09-27 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-03-27 05:30:00      0
## 2020-06-26 05:30:00      0
## 2020-09-25 05:30:00      0
## 2020-12-18 05:30:00      0
```

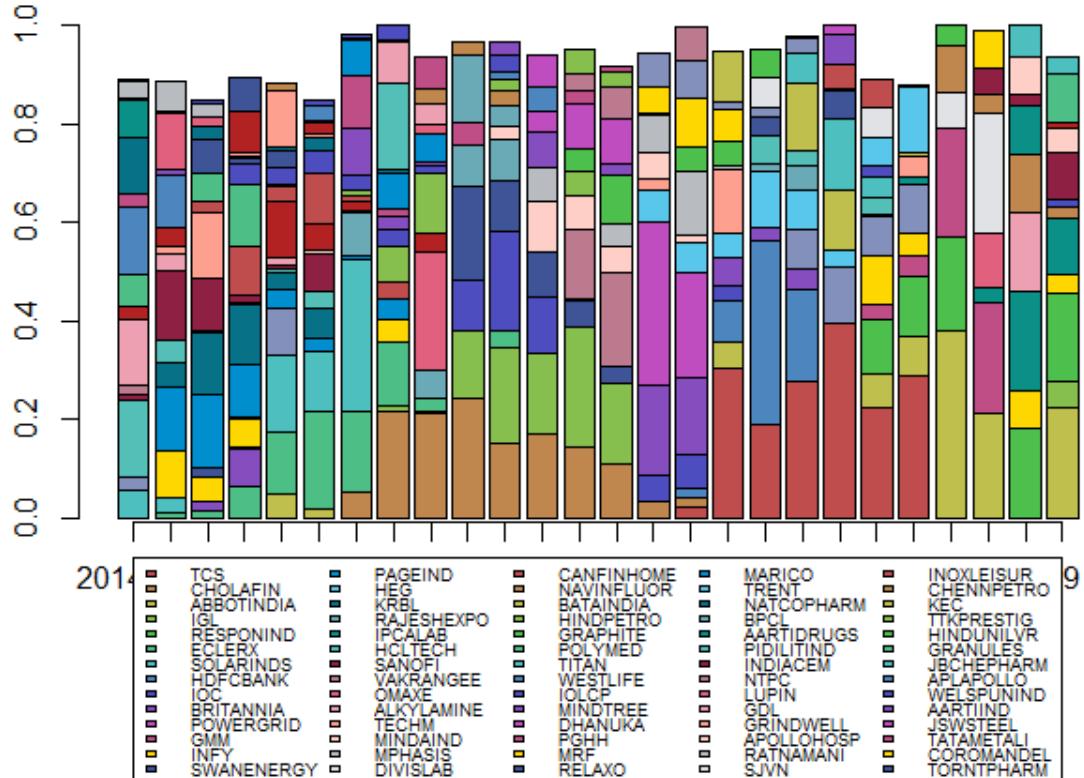
Weights for bt12



```
##          HEG JINDALSTEL TATAMTRDVR TASTYBIT CAPPL MAHABANK IOLCP
## 2019-09-27 05:30:00  0      0      0      0      0      0  0.711
## 2019-12-27 05:30:00  0      0      0      0      0      0  0.000
## 2020-03-27 05:30:00  0      0      0      0      0      0  0.000
## 2020-06-26 05:30:00  0      0      0      0      0      0  0.598
## 2020-09-25 05:30:00  0      0      0      0      0      0  0.000
## 2020-12-18 05:30:00  0      0      0      0      0      0  0.000
```

```
##          ITDC WOCKPHARMA MMTC EDELWEISS TANLA ADANIENT GMM
## 2019-09-27 05:30:00    0      0      0      0 0.000 0.000 0.000
## 2019-12-27 05:30:00    0      0      0      0 0.000 0.774 0.000
## 2020-03-27 05:30:00    0      0      0      0 0.000 0.000 0.704
## 2020-06-26 05:30:00    0      0      0      0 0.000 0.000 0.000
## 2020-09-25 05:30:00    0      0      0      0 0.509 0.000 0.000
## 2020-12-18 05:30:00    0      0      0      0 0.350 0.000 0.000
##          CENTRALBK FCONSUMER SEQUENT LUPIN BANKINDIA ALOKTEXT
## 2019-09-27 05:30:00 0.000 0.00 0 0 0 0
## 2019-12-27 05:30:00 0.226 0.00 0 0 0 0
## 2020-03-27 05:30:00 0.000 0.00 0 0 0 0
## 2020-06-26 05:30:00 0.000 0.00 0 0 0 0
## 2020-09-25 05:30:00 0.000 0.00 0 0 0 0
## 2020-12-18 05:30:00 0.000 0.65 0 0 0 0
##          INDIANB TATAMETALI DISHTV WELSPUNIND HSCL NCC IDEA
## 2019-09-27 05:30:00 0.000 0 0.000 0 0 0.000 0.289
## 2019-12-27 05:30:00 0.000 0 0.000 0 0 0.000 0.000
## 2020-03-27 05:30:00 0.000 0 0.000 0 0 0.296 0.000
## 2020-06-26 05:30:00 0.000 0 0.402 0 0 0.000 0.000
## 2020-09-25 05:30:00 0.491 0 0.000 0 0 0.000 0.000
## 2020-12-18 05:30:00 0.000 0 0.000 0 0 0.000 0.000
```

Weights for bt13

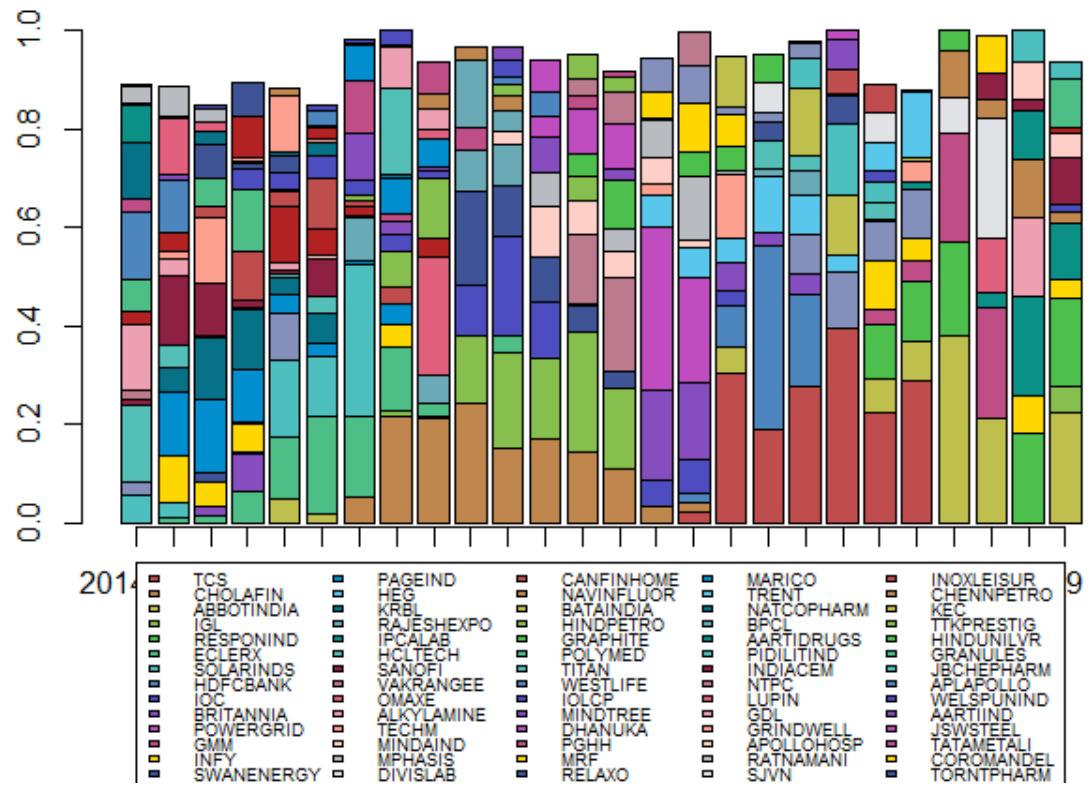


```
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLERX SOLARINDS
```

## 2019-09-27 05:30:00 0.223	0	0.070	0.000	0.109	0	0
## 2019-12-27 05:30:00 0.286	0	0.082	0.000	0.124	0	0
## 2020-03-27 05:30:00 0.000	0	0.381	0.000	0.190	0	0
## 2020-06-26 05:30:00 0.000	0	0.211	0.000	0.000	0	0
## 2020-09-25 05:30:00 0.000	0	0.000	0.000	0.181	0	0
## 2020-12-18 05:30:00 0.000	0	0.225	0.053	0.178	0	0
##	HDFCBANK IOC BRITANNIA POWERGRID GMM INFY SWANENERGY					
## 2019-09-27 05:30:00	0 0	0	0 0.032	0.098	0	
## 2019-12-27 05:30:00	0 0	0	0 0.040	0.047	0	
## 2020-03-27 05:30:00	0 0	0	0 0.221	0.000	0	
## 2020-06-26 05:30:00	0 0	0	0 0.225	0.000	0	
## 2020-09-25 05:30:00	0 0	0	0 0.000	0.075	0	
## 2020-12-18 05:30:00	0 0	0	0 0.000	0.037	0	
##	NAUKRI PAGEIND HEG KRBL RAJESHEXPO IPCALAB HCLTECH SANOFI					
## 2019-09-27 05:30:00 0.082	0 0 0	0	0 0.001	0.037	0	
## 2019-12-27 05:30:00 0.096	0 0 0	0	0 0.015	0.000	0	
## 2020-03-27 05:30:00 0.000	0 0 0	0	0 0.000	0.000	0	
## 2020-06-26 05:30:00 0.000	0 0 0	0	0 0.033	0.000	0	
## 2020-09-25 05:30:00 0.000	0 0 0	0	0 0.204	0.000	0	
## 2020-12-18 05:30:00 0.000	0 0 0	0	0 0.116	0.000	0	
##	VAKRANGE OMAXE ALKYLAMINE TECHM MINDAIND MPHASIS DIVISLAB					
## 2019-09-27 05:30:00	0 0.000	0.000 0.000	0	0 0	0.000	
## 2019-12-27 05:30:00	0 0.000	0.000 0.042	0	0 0	0.000	
## 2020-03-27 05:30:00	0 0.000	0.000 0.000	0	0 0	0.069	
## 2020-06-26 05:30:00	0 0.108	0.000 0.000	0	0 0	0.245	
## 2020-09-25 05:30:00	0 0.000	0.158 0.000	0	0 0	0.000	
## 2020-12-18 05:30:00	0 0.000	0.000 0.000	0	0 0	0.000	
##	JCHAC CANFINHOME NAVINFLUOR BATAINDIA HINDPETRO GRAPHITE					
## 2019-09-27 05:30:00 0	0 0	0.000 0.000	0	0 0	0	
## 2019-12-27 05:30:00 0	0 0	0.000 0.008	0	0 0	0	
## 2020-03-27 05:30:00 0	0 0	0.097 0.000	0	0 0	0	
## 2020-06-26 05:30:00 0	0 0	0.040 0.000	0	0 0	0	
## 2020-09-25 05:30:00 0	0 0	0.118 0.000	0	0 0	0	
## 2020-12-18 05:30:00 0	0 0	0.021 0.000	0	0 0	0	
##	POLYMED TITAN WESTLIFE IOLCP MINDTREE DHANUKA PGHH MRF					
## 2019-09-27 05:30:00 0 0.04	0 0.023	0 0	0 0	0 0	0	
## 2019-12-27 05:30:00 0 0.00	0 0.000	0 0	0 0	0 0	0	
## 2020-03-27 05:30:00 0 0.00	0 0.000	0 0	0 0	0 0	0	
## 2020-06-26 05:30:00 0 0.00	0 0.000	0 0	0 0	0 0	0	
## 2020-09-25 05:30:00 0 0.00	0 0.000	0 0	0 0	0 0	0	
## 2020-12-18 05:30:00 0 0.00	0 0.016	0 0	0 0	0 0	0	
##	RELAXO PHOENIXLTD MARICO TRENT NATCOPHARM BPCL AARTIDRUGS					
## 2019-09-27 05:30:00 0 0	0 0.060	0 0	0 0	0 0	0.0	
## 2019-12-27 05:30:00 0 0	0 0.134	0 0	0 0	0 0	0.0	
## 2020-03-27 05:30:00 0 0	0 0.000	0 0	0 0	0 0	0.0	
## 2020-06-26 05:30:00 0 0	0 0.000	0 0	0 0	0 0	0.0	
## 2020-09-25 05:30:00 0 0	0 0.000	0 0	0 0	0 0	0.1	

	## 2020-12-18 05:30:00	0	0	0 0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.062	0		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		
##	WELSPUNIND	AARTIIND	JSWSTEEL	TATAMETALI	COROMANDEL		
## 2019-09-27 05:30:00	0	0	0	0	0.000		
## 2019-12-27 05:30:00	0	0	0	0	0.000		
## 2020-03-27 05:30:00	0	0	0	0	0.000		
## 2020-06-26 05:30:00	0	0	0	0	0.076		
## 2020-09-25 05:30:00	0	0	0	0	0.000		
## 2020-12-18 05:30:00	0	0	0	0	0.000		
##	TORNTPHARM						
## 2019-09-27 05:30:00	0						
## 2019-12-27 05:30:00	0						
## 2020-03-27 05:30:00	0						
## 2020-06-26 05:30:00	0						
## 2020-09-25 05:30:00	0						
## 2020-12-18 05:30:00	0						

Weights for bt14



```

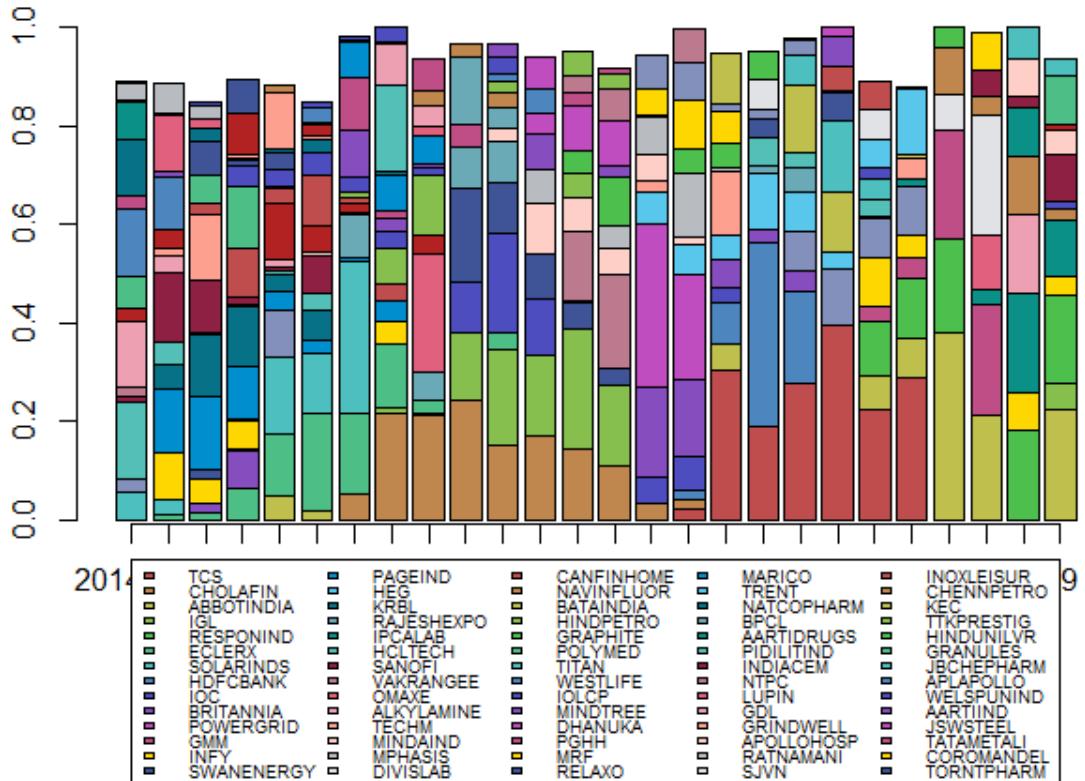
##          TCS CHOLAFIN ABBOTINDIA   IGL RESPONIND ECLERX SOLARINDS
## 2019-09-27 05:30:00 0.223      0 0.070 0.000 0.109      0      0
## 2019-12-27 05:30:00 0.286      0 0.082 0.000 0.124      0      0
## 2020-03-27 05:30:00 0.000      0 0.381 0.000 0.190      0      0
## 2020-06-26 05:30:00 0.000      0 0.211 0.000 0.000      0      0
## 2020-09-25 05:30:00 0.000      0 0.000 0.000 0.181      0      0
## 2020-12-18 05:30:00 0.000      0 0.225 0.053 0.178      0      0
##          HDFCBANK IOC BRITANNIA POWERGRID GMM INFY SWANENERGY
## 2019-09-27 05:30:00 0 0 0 0 0.032 0.098      0
## 2019-12-27 05:30:00 0 0 0 0 0.040 0.047      0
## 2020-03-27 05:30:00 0 0 0 0 0.221 0.000      0
## 2020-06-26 05:30:00 0 0 0 0 0.225 0.000      0
## 2020-09-25 05:30:00 0 0 0 0 0.000 0.075      0
## 2020-12-18 05:30:00 0 0 0 0 0.000 0.037      0
##          NAUKRI PAGEIND HEG KRBL RAJESHEXPO IPCALAB HCLTECH SANOFI
## 2019-09-27 05:30:00 0.082 0 0 0 0 0.001 0.037 0
## 2019-12-27 05:30:00 0.096 0 0 0 0 0.015 0.000 0
## 2020-03-27 05:30:00 0.000 0 0 0 0 0.000 0.000 0
## 2020-06-26 05:30:00 0.000 0 0 0 0 0.033 0.000 0
## 2020-09-25 05:30:00 0.000 0 0 0 0 0.204 0.000 0
## 2020-12-18 05:30:00 0.000 0 0 0 0 0.116 0.000 0
##          VAKRANGEET OMAXE ALKYLAMINE TECHM MINDAIND MPHASIS DIVISLAB
## 2019-09-27 05:30:00 0 0.000 0.000 0.000 0 0 0.000

```

## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE	
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0.062		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		

```
##          WELSPUNIND AARTIIND JSWSTEEL TATAMETALI COROMANDEL
## 2019-09-27 05:30:00      0      0      0      0      0.000
## 2019-12-27 05:30:00      0      0      0      0      0.000
## 2020-03-27 05:30:00      0      0      0      0      0.000
## 2020-06-26 05:30:00      0      0      0      0      0.076
## 2020-09-25 05:30:00      0      0      0      0      0.000
## 2020-12-18 05:30:00      0      0      0      0      0.000
##          TORNTPHARM
## 2019-09-27 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-03-27 05:30:00      0
## 2020-06-26 05:30:00      0
## 2020-09-25 05:30:00      0
## 2020-12-18 05:30:00      0
```

Weights for bt15

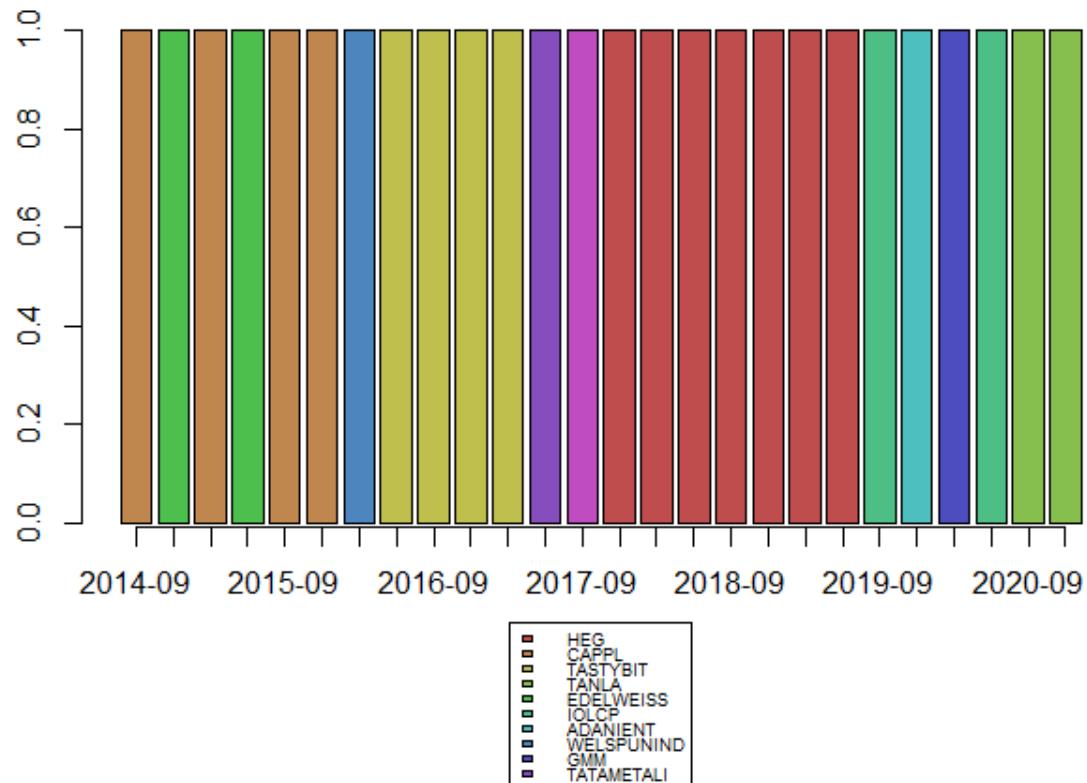


```
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLERX SOLARINDS
## 2019-09-27 05:30:00 0.223      0     0.070 0.000    0.109      0      0
## 2019-12-27 05:30:00 0.286      0     0.082 0.000    0.124      0      0
## 2020-03-27 05:30:00 0.000      0     0.381 0.000    0.190      0      0
## 2020-06-26 05:30:00 0.000      0     0.211 0.000    0.000      0      0
## 2020-09-25 05:30:00 0.000      0     0.000 0.000    0.181      0      0
## 2020-12-18 05:30:00 0.000      0     0.225 0.053    0.178      0      0
```

	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEET	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069	
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245	
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000	
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE		
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0	
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0	
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0	
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0	
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0	
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0	
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH	MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS	
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0	
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0	
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1	
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0	
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP	
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000	

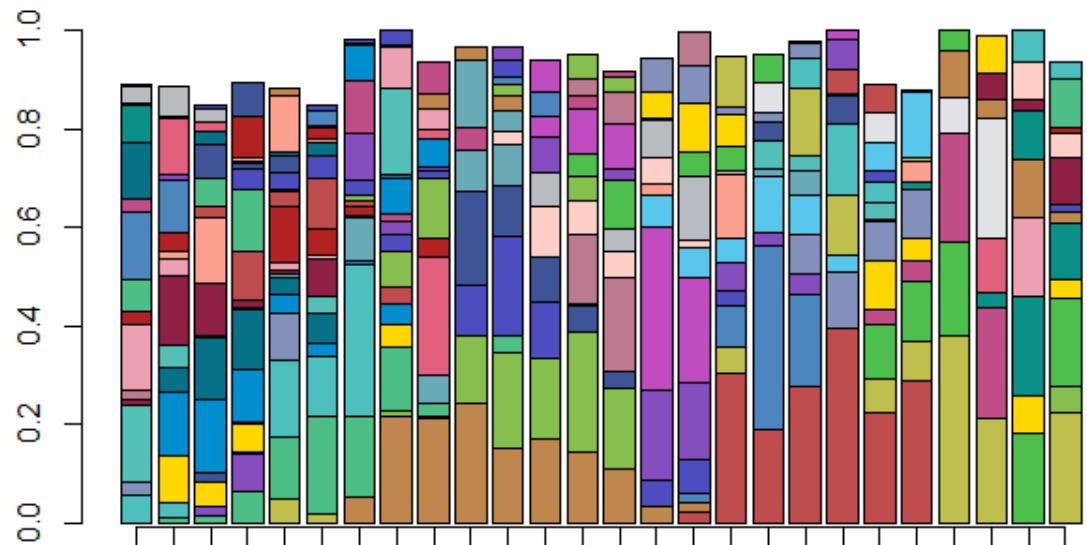
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.062	0		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		
##	WELSPUNIND	AARTIIND	JSWSTEEL	TATAMETALI	COROMANDEL		
## 2019-09-27 05:30:00	0	0	0	0	0.000		
## 2019-12-27 05:30:00	0	0	0	0	0.000		
## 2020-03-27 05:30:00	0	0	0	0	0.000		
## 2020-06-26 05:30:00	0	0	0	0	0.076		
## 2020-09-25 05:30:00	0	0	0	0	0.000		
## 2020-12-18 05:30:00	0	0	0	0	0.000		
##	TORNTPHARM						
## 2019-09-27 05:30:00	0						
## 2019-12-27 05:30:00	0						
## 2020-03-27 05:30:00	0						
## 2020-06-26 05:30:00	0						
## 2020-09-25 05:30:00	0						
## 2020-12-18 05:30:00	0						

Weights for bt16



```
##          HEG CAPPL TASTYBIT TANLA EDELWEISS IOLCP ADANIENT
## 2019-09-27 05:30:00  0    0      0    0      0     1      0
## 2019-12-27 05:30:00  0    0      0    0      0     0      1
## 2020-03-27 05:30:00  0    0      0    0      0     0      0
## 2020-06-26 05:30:00  0    0      0    0      0     1      0
## 2020-09-25 05:30:00  0    0      0    1      0     0      0
## 2020-12-18 05:30:00  0    0      0    1      0     0      0
##          WELSPUNIND GMM TATAMETALI HSCL
## 2019-09-27 05:30:00   0    0      0    0
## 2019-12-27 05:30:00   0    0      0    0
## 2020-03-27 05:30:00   0    1      0    0
## 2020-06-26 05:30:00   0    0      0    0
## 2020-09-25 05:30:00   0    0      0    0
## 2020-12-18 05:30:00   0    0      0    0
```

Weights for bt17

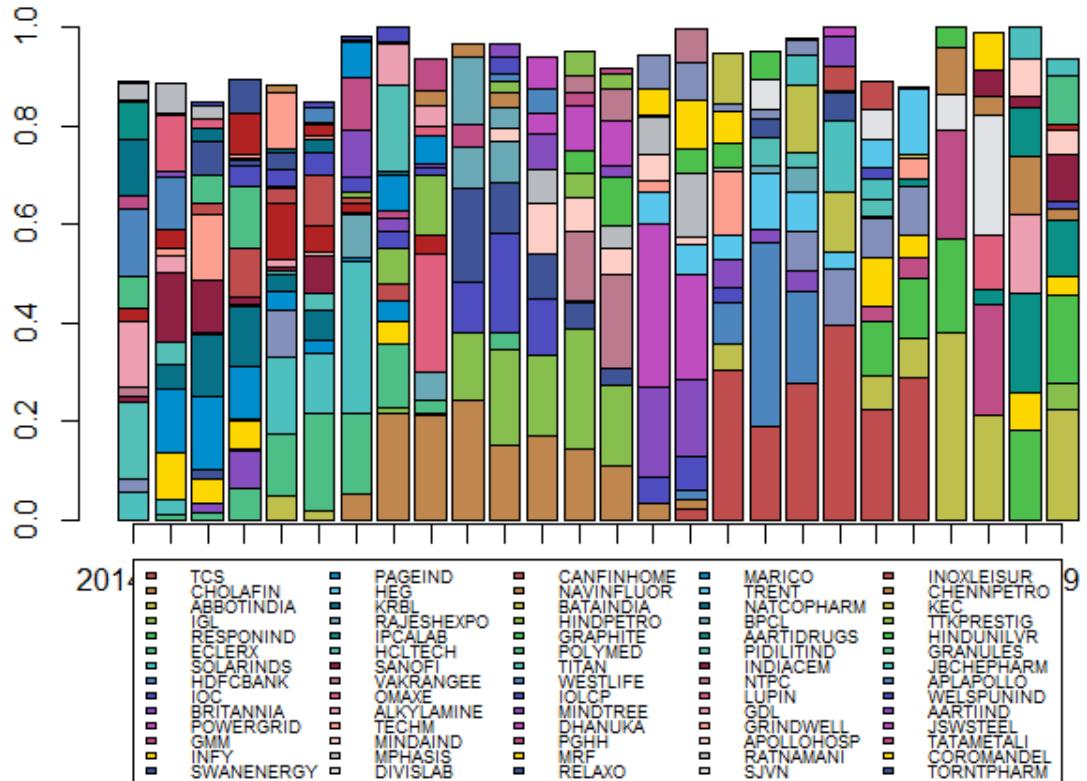


##	TCS	CHOLAFIN	ABBOTINDIA	IGL	RESPONIND	ECLERX	SOLARINDS	
## 2019-09-27 05:30:00	0.223	0	0.070	0.000	0.109	0	0	
## 2019-12-27 05:30:00	0.286	0	0.082	0.000	0.124	0	0	
## 2020-03-27 05:30:00	0.000	0	0.381	0.000	0.190	0	0	
## 2020-06-26 05:30:00	0.000	0	0.211	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0.000	0	0.000	0.000	0.181	0	0	
## 2020-12-18 05:30:00	0.000	0	0.225	0.053	0.178	0	0	
##	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEE	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0	0.000	0.000	0	0.000	

## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE	
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0.062		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		

```
##          WELSPUNIND AARTIIND JSWSTEEL TATAMETALI COROMANDEL
## 2019-09-27 05:30:00      0      0      0      0      0.000
## 2019-12-27 05:30:00      0      0      0      0      0.000
## 2020-03-27 05:30:00      0      0      0      0      0.000
## 2020-06-26 05:30:00      0      0      0      0      0.076
## 2020-09-25 05:30:00      0      0      0      0      0.000
## 2020-12-18 05:30:00      0      0      0      0      0.000
##          TORNTPHARM
## 2019-09-27 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-03-27 05:30:00      0
## 2020-06-26 05:30:00      0
## 2020-09-25 05:30:00      0
## 2020-12-18 05:30:00      0
```

Weights for bt18

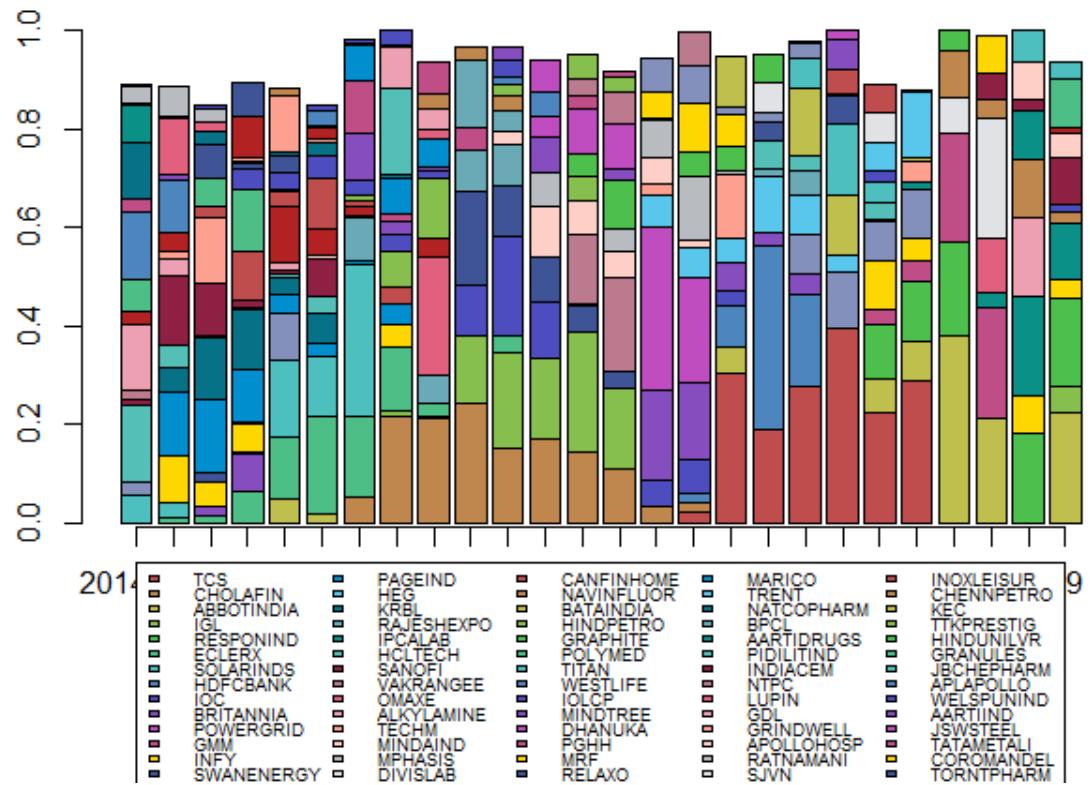


```
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLERX SOLARINDS
## 2019-09-27 05:30:00 0.223      0     0.070 0.000    0.109      0      0
## 2019-12-27 05:30:00 0.286      0     0.082 0.000    0.124      0      0
## 2020-03-27 05:30:00 0.000      0     0.381 0.000    0.190      0      0
## 2020-06-26 05:30:00 0.000      0     0.211 0.000    0.000      0      0
## 2020-09-25 05:30:00 0.000      0     0.000 0.000    0.181      0      0
## 2020-12-18 05:30:00 0.000      0     0.225 0.053    0.178      0      0
```

	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEET	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069	
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245	
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000	
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE		
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0	
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0	
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0	
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0	
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0	
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0	
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH	MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS	
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0	
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0	
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1	
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0	
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP	
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000	

## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.062	0		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		
##	WELSPUNIND	AARTIIND	JSWSTEEL	TATAMETALI	COROMANDEL		
## 2019-09-27 05:30:00	0	0	0	0	0.000		
## 2019-12-27 05:30:00	0	0	0	0	0.000		
## 2020-03-27 05:30:00	0	0	0	0	0.000		
## 2020-06-26 05:30:00	0	0	0	0	0.076		
## 2020-09-25 05:30:00	0	0	0	0	0.000		
## 2020-12-18 05:30:00	0	0	0	0	0.000		
##	TORNTPHARM						
## 2019-09-27 05:30:00	0						
## 2019-12-27 05:30:00	0						
## 2020-03-27 05:30:00	0						
## 2020-06-26 05:30:00	0						
## 2020-09-25 05:30:00	0						
## 2020-12-18 05:30:00	0						

Weights for bt19

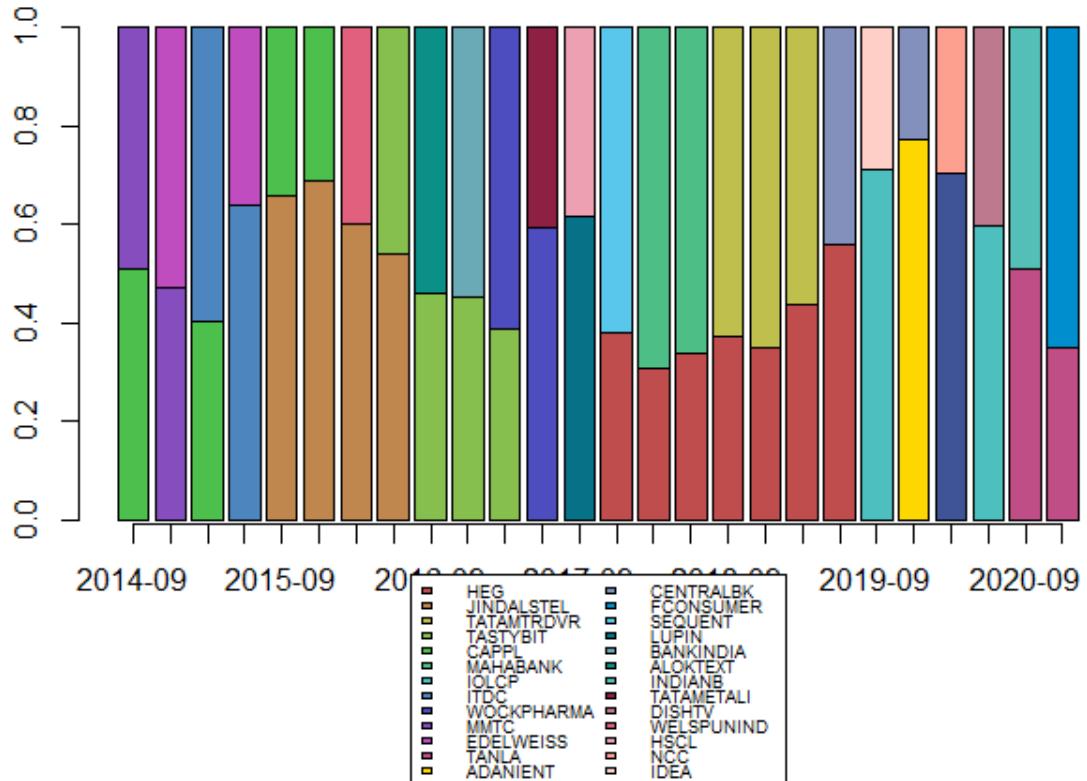


##	TCS	CHOLAFIN	ABBOTINDIA	IGL	RESPONIND	ECLERX	SOLARINDS	
## 2019-09-27 05:30:00	0.223	0	0.070	0.000	0.109	0	0	
## 2019-12-27 05:30:00	0.286	0	0.082	0.000	0.124	0	0	
## 2020-03-27 05:30:00	0.000	0	0.381	0.000	0.190	0	0	
## 2020-06-26 05:30:00	0.000	0	0.211	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0.000	0	0.000	0.000	0.181	0	0	
## 2020-12-18 05:30:00	0.000	0	0.225	0.053	0.178	0	0	
##	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEE	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0	0	0.000	

## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE	
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0.062		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		

```
##          WELSPUNIND AARTIIND JSWSTEEL TATAMETALI COROMANDEL
## 2019-09-27 05:30:00      0      0      0      0      0.000
## 2019-12-27 05:30:00      0      0      0      0      0.000
## 2020-03-27 05:30:00      0      0      0      0      0.000
## 2020-06-26 05:30:00      0      0      0      0      0.076
## 2020-09-25 05:30:00      0      0      0      0      0.000
## 2020-12-18 05:30:00      0      0      0      0      0.000
##          TORNTPHARM
## 2019-09-27 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-03-27 05:30:00      0
## 2020-06-26 05:30:00      0
## 2020-09-25 05:30:00      0
## 2020-12-18 05:30:00      0
```

Weights for bt20



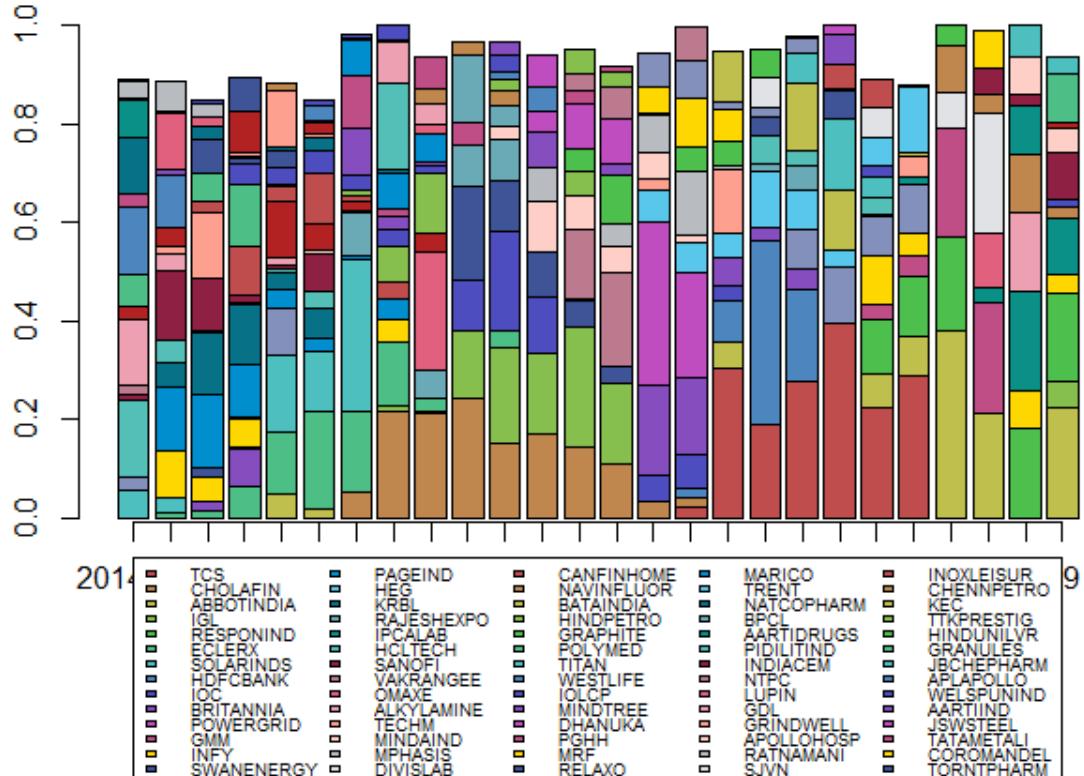
```
##          HEG JINDALSTEL TATAMTRDVR TASTYBIT CAPPL MAHABANK IOLCP
## 2019-09-27 05:30:00  0      0      0      0      0      0      0.711
## 2019-12-27 05:30:00  0      0      0      0      0      0      0.000
## 2020-03-27 05:30:00  0      0      0      0      0      0      0.000
## 2020-06-26 05:30:00  0      0      0      0      0      0      0.598
## 2020-09-25 05:30:00  0      0      0      0      0      0      0.000
## 2020-12-18 05:30:00  0      0      0      0      0      0      0.000
```

```

##          ITDC WOCKPHARMA MMTC EDELWEISS TANLA ADANIENT GMM
## 2019-09-27 05:30:00    0      0      0      0  0.000  0.000 0.000
## 2019-12-27 05:30:00    0      0      0      0  0.000  0.774 0.000
## 2020-03-27 05:30:00    0      0      0      0  0.000  0.000 0.704
## 2020-06-26 05:30:00    0      0      0      0  0.000  0.000 0.000
## 2020-09-25 05:30:00    0      0      0      0  0.509  0.000 0.000
## 2020-12-18 05:30:00    0      0      0      0  0.350  0.000 0.000
##          CENTRALBK FCONSUMER SEQUENT LUPIN BANKINDIA ALOKTEXT
## 2019-09-27 05:30:00  0.000  0.00  0  0  0  0
## 2019-12-27 05:30:00  0.226  0.00  0  0  0  0
## 2020-03-27 05:30:00  0.000  0.00  0  0  0  0
## 2020-06-26 05:30:00  0.000  0.00  0  0  0  0
## 2020-09-25 05:30:00  0.000  0.00  0  0  0  0
## 2020-12-18 05:30:00  0.000  0.65  0  0  0  0
##          INDIANB TATAMETALI DISHTV WELSPUNIND HSCL NCC IDEA
## 2019-09-27 05:30:00  0.000  0  0.000  0  0  0  0.289
## 2019-12-27 05:30:00  0.000  0  0.000  0  0  0  0.000
## 2020-03-27 05:30:00  0.000  0  0.000  0  0  0  0.296
## 2020-06-26 05:30:00  0.000  0  0.402  0  0  0  0.000
## 2020-09-25 05:30:00  0.491  0  0.000  0  0  0  0.000
## 2020-12-18 05:30:00  0.000  0  0.000  0  0  0  0.000

```

Weights for bt21



```

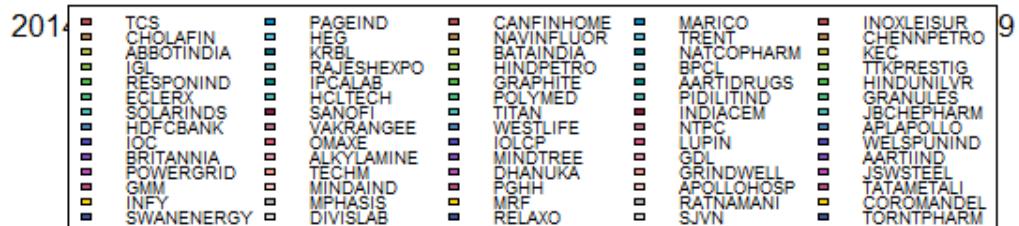
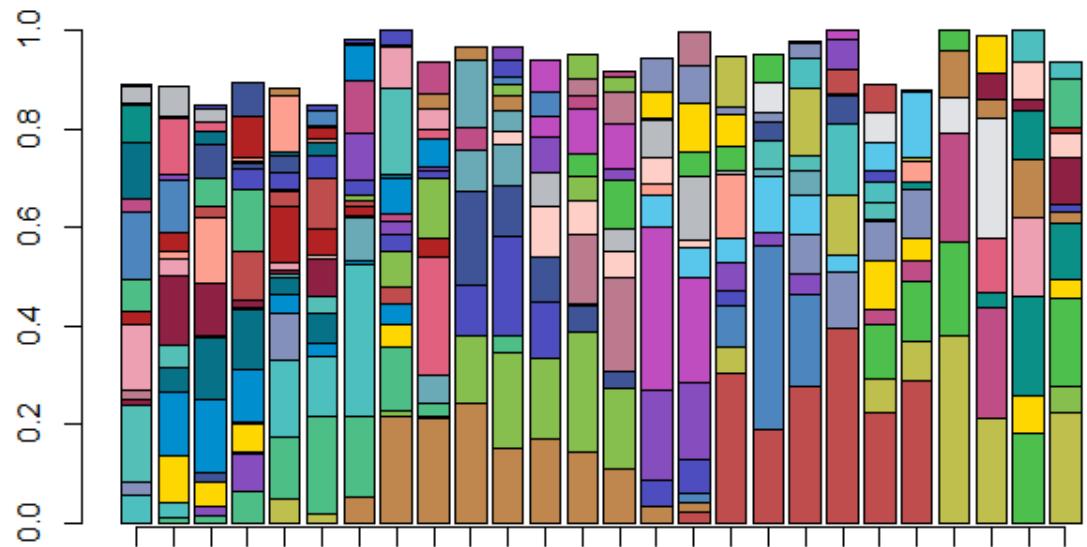
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLRX SOLARINDS

```

## 2019-09-27 05:30:00 0.223	0	0.070	0.000	0.109	0	0
## 2019-12-27 05:30:00 0.286	0	0.082	0.000	0.124	0	0
## 2020-03-27 05:30:00 0.000	0	0.381	0.000	0.190	0	0
## 2020-06-26 05:30:00 0.000	0	0.211	0.000	0.000	0	0
## 2020-09-25 05:30:00 0.000	0	0.000	0.000	0.181	0	0
## 2020-12-18 05:30:00 0.000	0	0.225	0.053	0.178	0	0
##	HDFCBANK IOC BRITANNIA POWERGRID GMM INFY SWANENERGY					
## 2019-09-27 05:30:00	0 0	0	0 0.032	0.098	0	
## 2019-12-27 05:30:00	0 0	0	0 0.040	0.047	0	
## 2020-03-27 05:30:00	0 0	0	0 0.221	0.000	0	
## 2020-06-26 05:30:00	0 0	0	0 0.225	0.000	0	
## 2020-09-25 05:30:00	0 0	0	0 0.000	0.075	0	
## 2020-12-18 05:30:00	0 0	0	0 0.000	0.037	0	
##	NAUKRI PAGEIND HEG KRBL RAJESHEXPO IPCALAB HCLTECH SANOFI					
## 2019-09-27 05:30:00	0.082	0 0	0 0	0 0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0 0	0 0	0 0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0 0	0 0	0 0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0 0	0 0	0 0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0 0	0 0	0 0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0 0	0 0	0 0.116	0.000	0
##	VAKRANGE OMAXE ALKYLAMINE TECHM MINDAIND MPHASIS DIVISLAB					
## 2019-09-27 05:30:00	0 0.000	0.000 0.000	0	0 0	0.000	
## 2019-12-27 05:30:00	0 0.000	0.000 0.042	0	0 0	0.000	
## 2020-03-27 05:30:00	0 0.000	0.000 0.000	0	0 0	0.069	
## 2020-06-26 05:30:00	0 0.108	0.000 0.000	0	0 0	0.245	
## 2020-09-25 05:30:00	0 0.000	0.158 0.000	0	0 0	0.000	
## 2020-12-18 05:30:00	0 0.000	0.000 0.000	0	0 0	0.000	
##	JCHAC CANFINHOME NAVINFLUOR BATAINDIA HINDPETRO GRAPHITE					
## 2019-09-27 05:30:00	0 0	0.000 0.000	0 0	0 0	0	
## 2019-12-27 05:30:00	0 0	0.000 0.008	0 0	0 0	0	
## 2020-03-27 05:30:00	0 0	0.097 0.000	0 0	0 0	0	
## 2020-06-26 05:30:00	0 0	0.040 0.000	0 0	0 0	0	
## 2020-09-25 05:30:00	0 0	0.118 0.000	0 0	0 0	0	
## 2020-12-18 05:30:00	0 0	0.021 0.000	0 0	0 0	0	
##	POLYMED TITAN WESTLIFE IOLCP MINDTREE DHANUKA PGHH MRF					
## 2019-09-27 05:30:00	0 0.04	0 0.023	0 0	0 0	0 0	0
## 2019-12-27 05:30:00	0 0.00	0 0.000	0 0	0 0	0 0	0
## 2020-03-27 05:30:00	0 0.00	0 0.000	0 0	0 0	0 0	0
## 2020-06-26 05:30:00	0 0.00	0 0.000	0 0	0 0	0 0	0
## 2020-09-25 05:30:00	0 0.00	0 0.000	0 0	0 0	0 0	0
## 2020-12-18 05:30:00	0 0.00	0 0.016	0 0	0 0	0 0	0
##	RELAXO PHOENIXLTD MARICO TRENT NATCOPHARM BPCL AARTIDRUGS					
## 2019-09-27 05:30:00	0 0	0 0.060	0 0	0 0	0.0	
## 2019-12-27 05:30:00	0 0	0 0.134	0 0	0 0	0.0	
## 2020-03-27 05:30:00	0 0	0 0.000	0 0	0 0	0.0	
## 2020-06-26 05:30:00	0 0	0 0.000	0 0	0 0	0.0	
## 2020-09-25 05:30:00	0 0	0 0.000	0 0	0 0	0.1	

	## 2020-12-18 05:30:00	0	0	0 0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.062	0		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		
##	WELSPUNIND	AARTIIND	JSWSTEEL	TATAMETALI	COROMANDEL		
## 2019-09-27 05:30:00	0	0	0	0	0.000		
## 2019-12-27 05:30:00	0	0	0	0	0.000		
## 2020-03-27 05:30:00	0	0	0	0	0.000		
## 2020-06-26 05:30:00	0	0	0	0	0.076		
## 2020-09-25 05:30:00	0	0	0	0	0.000		
## 2020-12-18 05:30:00	0	0	0	0	0.000		
##	TORNTPHARM						
## 2019-09-27 05:30:00	0						
## 2019-12-27 05:30:00	0						
## 2020-03-27 05:30:00	0						
## 2020-06-26 05:30:00	0						
## 2020-09-25 05:30:00	0						
## 2020-12-18 05:30:00	0						

Weights for bt22

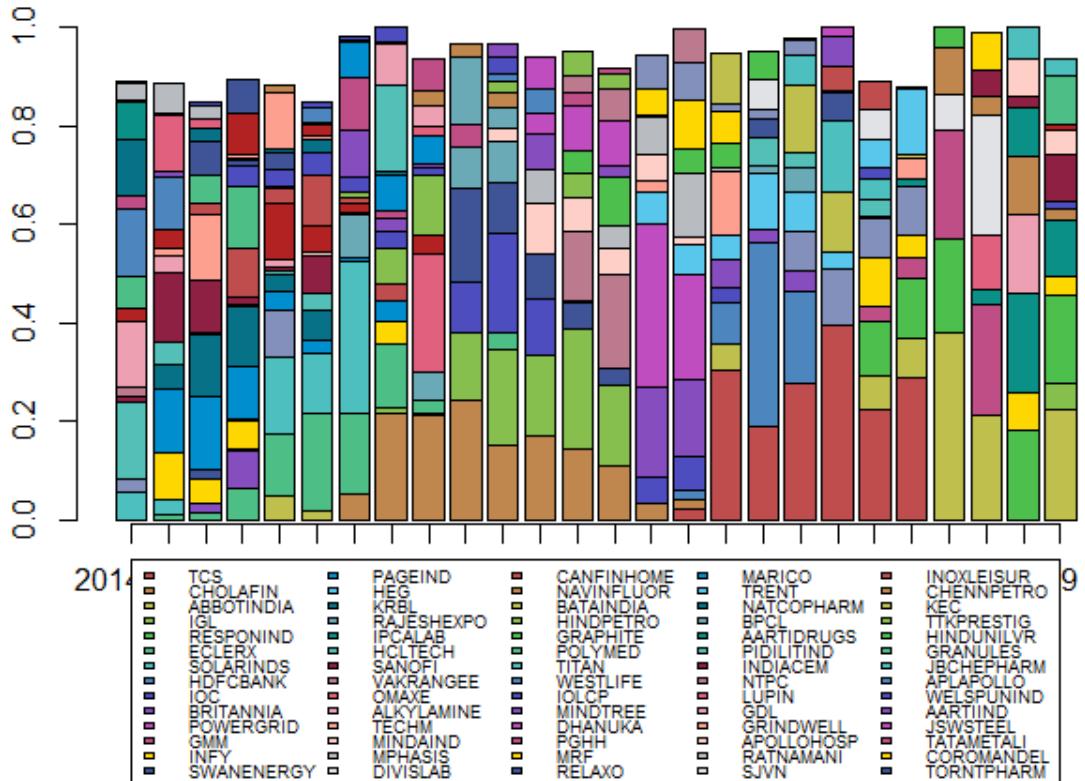


##	TCS	CHOLAFIN	ABBOTINDIA	IGL	RESPONIND	ECLERX	SOLARINDS	
## 2019-09-27 05:30:00	0.223	0	0.070	0.000	0.109	0	0	
## 2019-12-27 05:30:00	0.286	0	0.082	0.000	0.124	0	0	
## 2020-03-27 05:30:00	0.000	0	0.381	0.000	0.190	0	0	
## 2020-06-26 05:30:00	0.000	0	0.211	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0.000	0	0.000	0.000	0.181	0	0	
## 2020-12-18 05:30:00	0.000	0	0.225	0.053	0.178	0	0	
##	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEE	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0	0.000	0.000	0	0.000	

## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE	
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0.062		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		

```
##          WELSPUNIND AARTIIND JSWSTEEL TATAMETALI COROMANDEL
## 2019-09-27 05:30:00      0      0      0      0      0.000
## 2019-12-27 05:30:00      0      0      0      0      0.000
## 2020-03-27 05:30:00      0      0      0      0      0.000
## 2020-06-26 05:30:00      0      0      0      0      0.076
## 2020-09-25 05:30:00      0      0      0      0      0.000
## 2020-12-18 05:30:00      0      0      0      0      0.000
##          TORNTPHARM
## 2019-09-27 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-03-27 05:30:00      0
## 2020-06-26 05:30:00      0
## 2020-09-25 05:30:00      0
## 2020-12-18 05:30:00      0
```

Weights for bt23

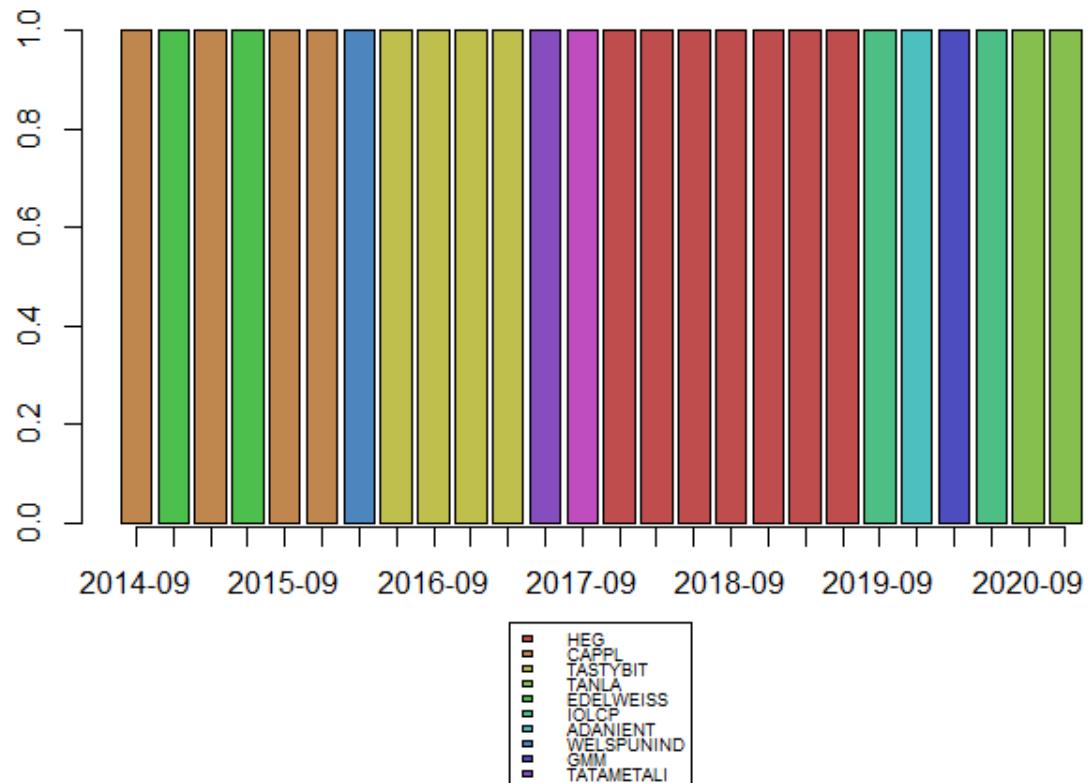


```
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLERX SOLARINDS
## 2019-09-27 05:30:00 0.223      0     0.070 0.000    0.109      0      0
## 2019-12-27 05:30:00 0.286      0     0.082 0.000    0.124      0      0
## 2020-03-27 05:30:00 0.000      0     0.381 0.000    0.190      0      0
## 2020-06-26 05:30:00 0.000      0     0.211 0.000    0.000      0      0
## 2020-09-25 05:30:00 0.000      0     0.000 0.000    0.181      0      0
## 2020-12-18 05:30:00 0.000      0     0.225 0.053    0.178      0      0
```

	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEET	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069	
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245	
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000	
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE		
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0	
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0	
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0	
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0	
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0	
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0	
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH	MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS	
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0	
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0	
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1	
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0	
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP	
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000	

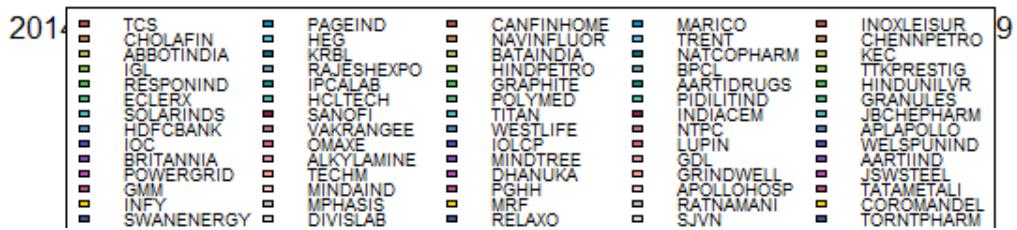
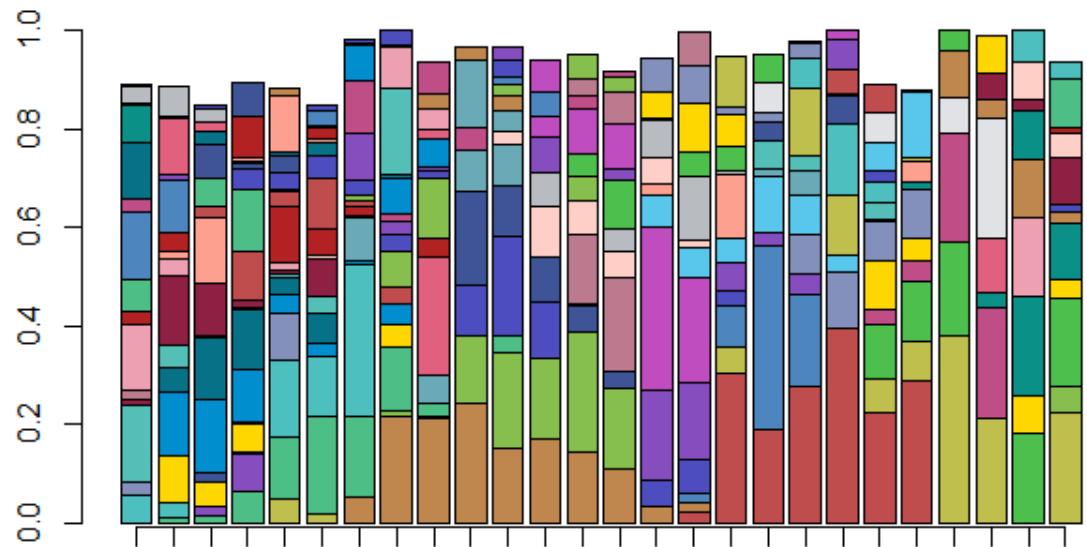
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.062	0		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		
##	WELSPUNIND	AARTIIND	JSWSTEEL	TATAMETALI	COROMANDEL		
## 2019-09-27 05:30:00	0	0	0	0	0.000		
## 2019-12-27 05:30:00	0	0	0	0	0.000		
## 2020-03-27 05:30:00	0	0	0	0	0.000		
## 2020-06-26 05:30:00	0	0	0	0	0.076		
## 2020-09-25 05:30:00	0	0	0	0	0.000		
## 2020-12-18 05:30:00	0	0	0	0	0.000		
##	TORNTPHARM						
## 2019-09-27 05:30:00	0						
## 2019-12-27 05:30:00	0						
## 2020-03-27 05:30:00	0						
## 2020-06-26 05:30:00	0						
## 2020-09-25 05:30:00	0						
## 2020-12-18 05:30:00	0						

Weights for bt24



```
##          HEG CAPPL TASTYBIT TANLA EDELWEISS IOLCP ADANIENT
## 2019-09-27 05:30:00  0    0      0    0      0     1      0
## 2019-12-27 05:30:00  0    0      0    0      0     0      1
## 2020-03-27 05:30:00  0    0      0    0      0     0      0
## 2020-06-26 05:30:00  0    0      0    0      0     1      0
## 2020-09-25 05:30:00  0    0      0    1      0     0      0
## 2020-12-18 05:30:00  0    0      0    1      0     0      0
##          WELSPUNIND GMM TATAMETALI HSCL
## 2019-09-27 05:30:00   0    0      0    0
## 2019-12-27 05:30:00   0    0      0    0
## 2020-03-27 05:30:00   0    1      0    0
## 2020-06-26 05:30:00   0    0      0    0
## 2020-09-25 05:30:00   0    0      0    0
## 2020-12-18 05:30:00   0    0      0    0
```

Weights for bt25

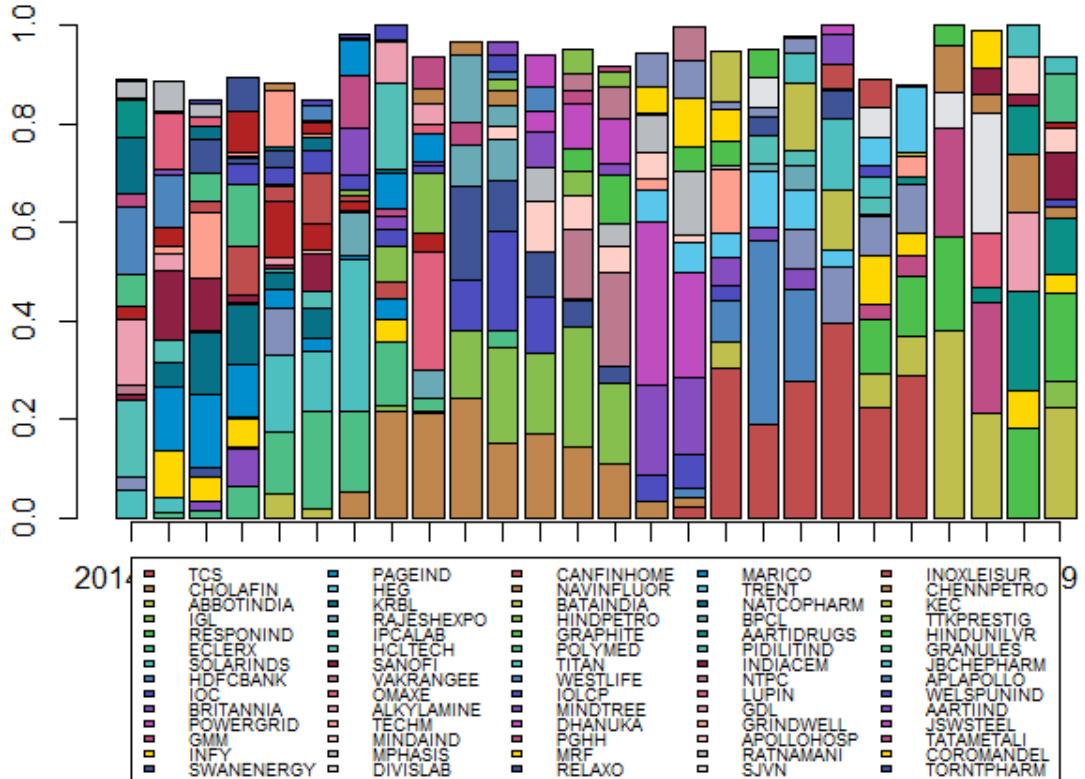


```
##          TCS CHOLAFIN ABBOTINDIA      IGL RESPONIND ECLERX SOLARINDS
## 2019-09-27 05:30:00 0.223      0 0.070 0.000 0.109      0      0
## 2019-12-27 05:30:00 0.286      0 0.082 0.000 0.124      0      0
## 2020-03-27 05:30:00 0.000      0 0.381 0.000 0.190      0      0
## 2020-06-26 05:30:00 0.000      0 0.211 0.000 0.000      0      0
## 2020-09-25 05:30:00 0.000      0 0.000 0.000 0.181      0      0
## 2020-12-18 05:30:00 0.000      0 0.225 0.053 0.178      0      0
##          HDFCBANK IOC BRITANNIA POWERGRID      GMM INFY SWANENERGY
## 2019-09-27 05:30:00 0 0 0 0 0.032 0.098      0
## 2019-12-27 05:30:00 0 0 0 0 0.040 0.047      0
## 2020-03-27 05:30:00 0 0 0 0 0.221 0.000      0
## 2020-06-26 05:30:00 0 0 0 0 0.225 0.000      0
## 2020-09-25 05:30:00 0 0 0 0 0.000 0.075      0
## 2020-12-18 05:30:00 0 0 0 0 0.000 0.037      0
##          NAUKRI PAGEIND HEG KRBL RAJESHEXPO IPCALAB HCLTECH SANOFI
## 2019-09-27 05:30:00 0.082 0 0 0 0 0.001 0.037 0
## 2019-12-27 05:30:00 0.096 0 0 0 0 0.015 0.000 0
## 2020-03-27 05:30:00 0.000 0 0 0 0 0.000 0.000 0
## 2020-06-26 05:30:00 0.000 0 0 0 0 0.033 0.000 0
## 2020-09-25 05:30:00 0.000 0 0 0 0 0.204 0.000 0
## 2020-12-18 05:30:00 0.000 0 0 0 0 0.116 0.000 0
##          VAKRANGEE OMAXE ALKYLAMINE TECHM MINDAIND MPHASIS DIVISLAB
## 2019-09-27 05:30:00 0 0.000 0.000 0.000 0 0 0.000
```

## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE	
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0.062		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		

```
##          WELSPUNIND AARTIIND JSWSTEEL TATAMETALI COROMANDEL
## 2019-09-27 05:30:00      0      0      0      0      0.000
## 2019-12-27 05:30:00      0      0      0      0      0.000
## 2020-03-27 05:30:00      0      0      0      0      0.000
## 2020-06-26 05:30:00      0      0      0      0      0.076
## 2020-09-25 05:30:00      0      0      0      0      0.000
## 2020-12-18 05:30:00      0      0      0      0      0.000
##          TORNTPHARM
## 2019-09-27 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-03-27 05:30:00      0
## 2020-06-26 05:30:00      0
## 2020-09-25 05:30:00      0
## 2020-12-18 05:30:00      0
```

Weights for bt26

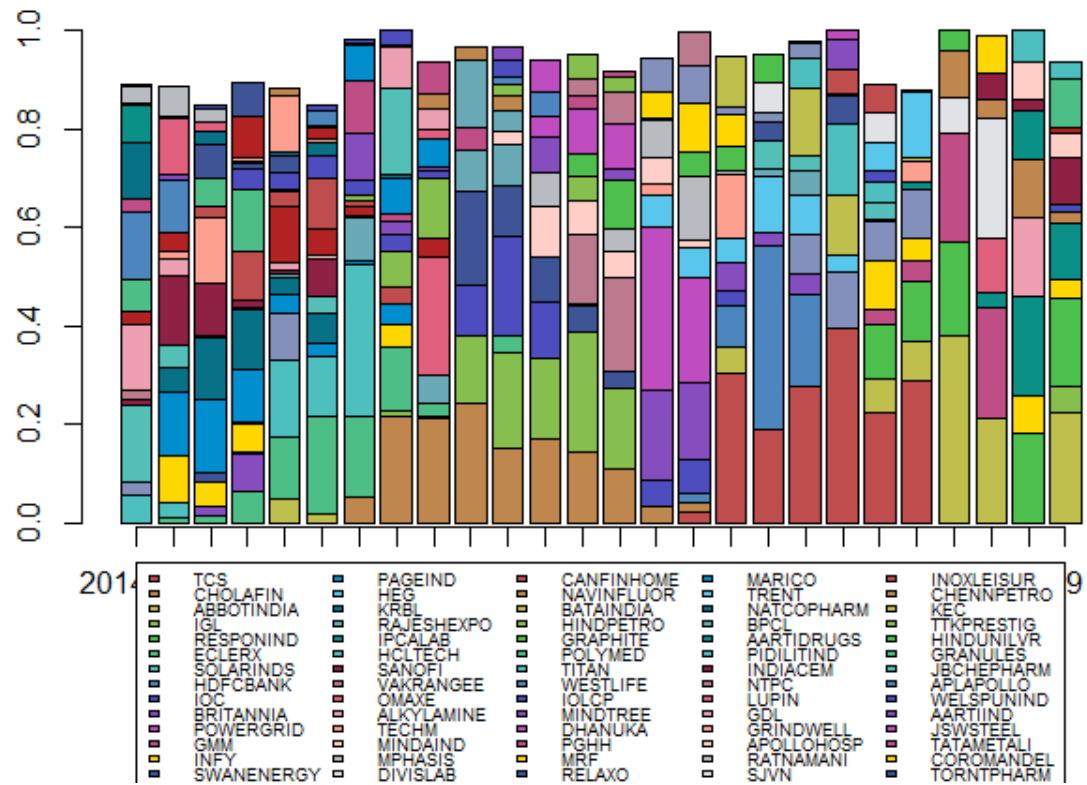


```
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLERX SOLARINDS
## 2019-09-27 05:30:00 0.223      0      0.070 0.000      0.109      0      0
## 2019-12-27 05:30:00 0.286      0      0.082 0.000      0.124      0      0
## 2020-03-27 05:30:00 0.000      0      0.381 0.000      0.190      0      0
## 2020-06-26 05:30:00 0.000      0      0.211 0.000      0.000      0      0
## 2020-09-25 05:30:00 0.000      0      0.000 0.000      0.181      0      0
## 2020-12-18 05:30:00 0.000      0      0.225 0.053      0.178      0      0
```

	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEET	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069	
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245	
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000	
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE		
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0	
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0	
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0	
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0	
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0	
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0	
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH	MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS	
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0	
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0	
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1	
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0	
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP	
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000	

## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.062	0		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		
##	WELSPUNIND	AARTIIND	JSWSTEEL	TATAMETALI	COROMANDEL		
## 2019-09-27 05:30:00	0	0	0	0	0.000		
## 2019-12-27 05:30:00	0	0	0	0	0.000		
## 2020-03-27 05:30:00	0	0	0	0	0.000		
## 2020-06-26 05:30:00	0	0	0	0	0.076		
## 2020-09-25 05:30:00	0	0	0	0	0.000		
## 2020-12-18 05:30:00	0	0	0	0	0.000		
##	TORNTPHARM						
## 2019-09-27 05:30:00	0						
## 2019-12-27 05:30:00	0						
## 2020-03-27 05:30:00	0						
## 2020-06-26 05:30:00	0						
## 2020-09-25 05:30:00	0						
## 2020-12-18 05:30:00	0						

Weights for bt27



```

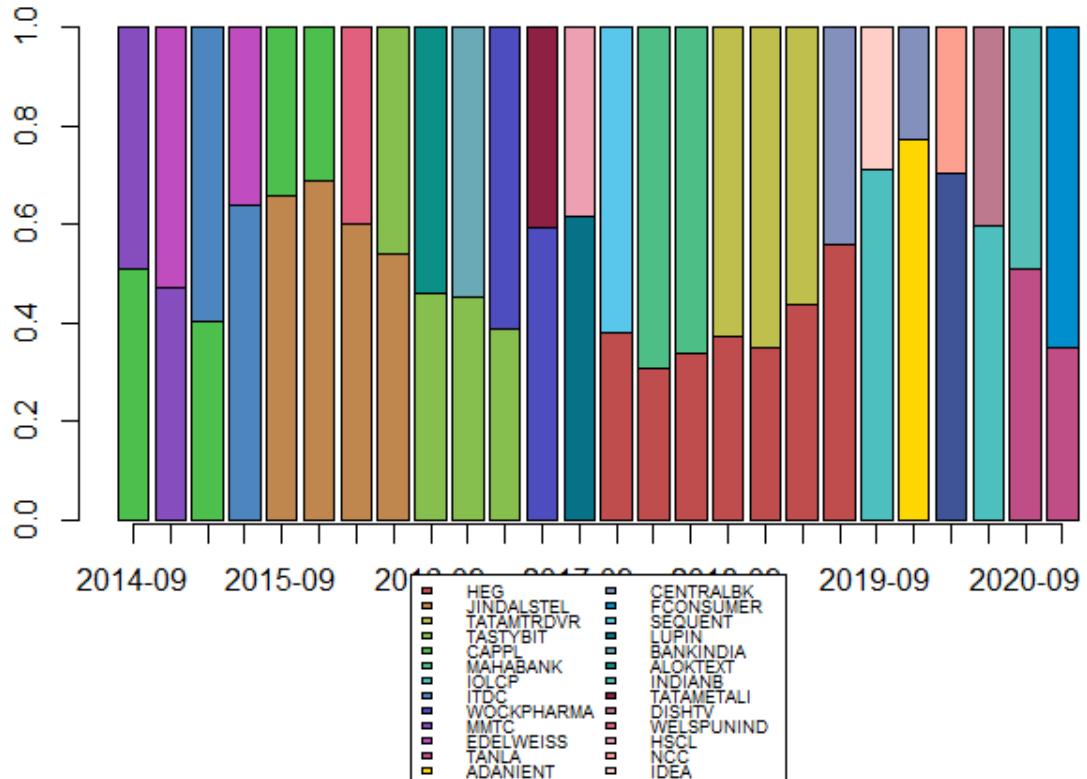
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLERX SOLARINDS
## 2019-09-27 05:30:00 0.223      0 0.070 0.000 0.109 0 0
## 2019-12-27 05:30:00 0.286      0 0.082 0.000 0.124 0 0
## 2020-03-27 05:30:00 0.000      0 0.381 0.000 0.190 0 0
## 2020-06-26 05:30:00 0.000      0 0.211 0.000 0.000 0 0
## 2020-09-25 05:30:00 0.000      0 0.000 0.000 0.181 0 0
## 2020-12-18 05:30:00 0.000      0 0.225 0.053 0.178 0 0
##          HDFCBANK IOC BRITANNIA POWERGRID GMM INFY SWANENERGY
## 2019-09-27 05:30:00 0 0 0 0 0.032 0.098 0
## 2019-12-27 05:30:00 0 0 0 0 0.040 0.047 0
## 2020-03-27 05:30:00 0 0 0 0 0.221 0.000 0
## 2020-06-26 05:30:00 0 0 0 0 0.225 0.000 0
## 2020-09-25 05:30:00 0 0 0 0 0.000 0.075 0
## 2020-12-18 05:30:00 0 0 0 0 0.000 0.037 0
##          NAUKRI PAGEIND HEG KRBL RAJESHEXPO IPCALAB HCLTECH SANOFI
## 2019-09-27 05:30:00 0.082 0 0 0 0 0.001 0.037 0
## 2019-12-27 05:30:00 0.096 0 0 0 0 0.015 0.000 0
## 2020-03-27 05:30:00 0.000 0 0 0 0 0.000 0.000 0
## 2020-06-26 05:30:00 0.000 0 0 0 0 0.033 0.000 0
## 2020-09-25 05:30:00 0.000 0 0 0 0 0.204 0.000 0
## 2020-12-18 05:30:00 0.000 0 0 0 0 0.116 0.000 0
##          VAKRANGEET OMAXE ALKYLAMINE TECHM MINDAIND MPHASIS DIVISLAB
## 2019-09-27 05:30:00 0 0.000 0.000 0.000 0 0 0.000

```

## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE	
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0.062		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		

```
##          WELSPUNIND AARTIIND JSWSTEEL TATAMETALI COROMANDEL
## 2019-09-27 05:30:00      0      0      0      0      0.000
## 2019-12-27 05:30:00      0      0      0      0      0.000
## 2020-03-27 05:30:00      0      0      0      0      0.000
## 2020-06-26 05:30:00      0      0      0      0      0.076
## 2020-09-25 05:30:00      0      0      0      0      0.000
## 2020-12-18 05:30:00      0      0      0      0      0.000
##          TORNTPHARM
## 2019-09-27 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-03-27 05:30:00      0
## 2020-06-26 05:30:00      0
## 2020-09-25 05:30:00      0
## 2020-12-18 05:30:00      0
```

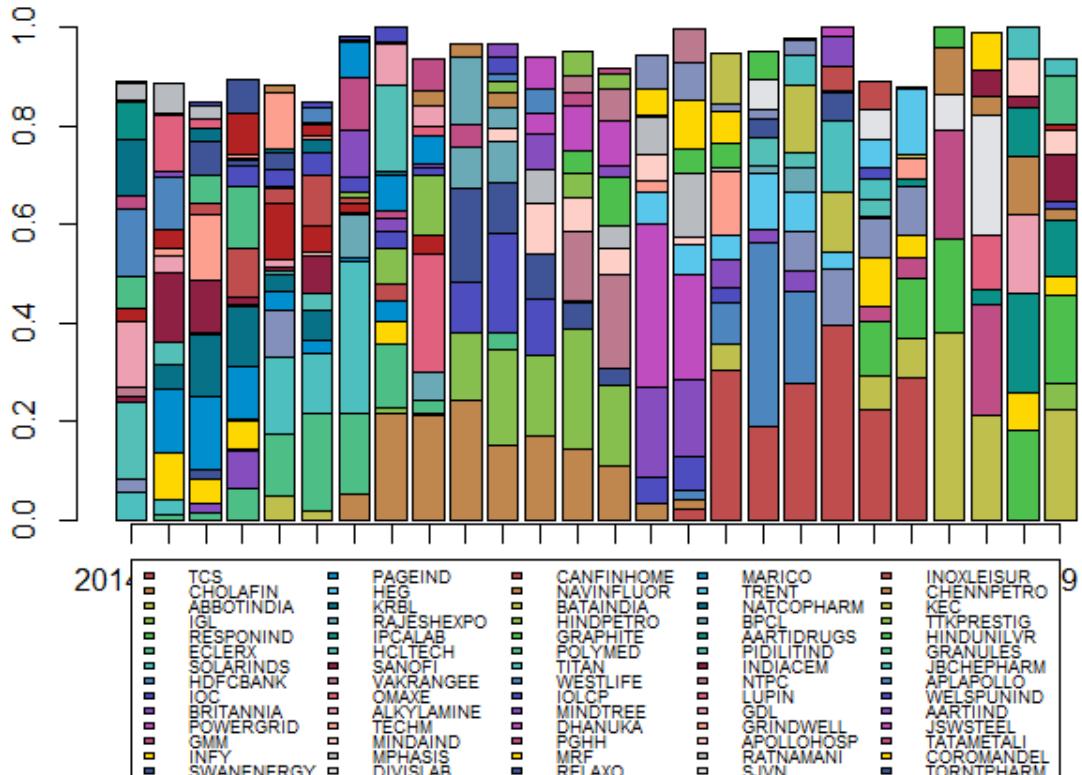
Weights for bt28



```
##          HEG JINDALSTEL TATAMTRDVR TASTYBIT CAPPL MAHABANK IOLCP
## 2019-09-27 05:30:00    0      0      0      0      0      0  0.711
## 2019-12-27 05:30:00    0      0      0      0      0      0  0.000
## 2020-03-27 05:30:00    0      0      0      0      0      0  0.000
## 2020-06-26 05:30:00    0      0      0      0      0      0  0.598
## 2020-09-25 05:30:00    0      0      0      0      0      0  0.000
## 2020-12-18 05:30:00    0      0      0      0      0      0  0.000
```

```
##          ITDC WOCKPHARMA MMTC EDELWEISS TANLA ADANIENT GMM
## 2019-09-27 05:30:00    0      0      0      0 0.000 0.000 0.000
## 2019-12-27 05:30:00    0      0      0      0 0.000 0.774 0.000
## 2020-03-27 05:30:00    0      0      0      0 0.000 0.000 0.704
## 2020-06-26 05:30:00    0      0      0      0 0.000 0.000 0.000
## 2020-09-25 05:30:00    0      0      0      0 0.509 0.000 0.000
## 2020-12-18 05:30:00    0      0      0      0 0.350 0.000 0.000
##          CENTRALBK FCONSUMER SEQUENT LUPIN BANKINDIA ALOKTEXT
## 2019-09-27 05:30:00 0.000 0.00 0 0 0 0
## 2019-12-27 05:30:00 0.226 0.00 0 0 0 0
## 2020-03-27 05:30:00 0.000 0.00 0 0 0 0
## 2020-06-26 05:30:00 0.000 0.00 0 0 0 0
## 2020-09-25 05:30:00 0.000 0.00 0 0 0 0
## 2020-12-18 05:30:00 0.000 0.65 0 0 0 0
##          INDIANB TATAMETALI DISHTV WELSPUNIND HSCL NCC IDEA
## 2019-09-27 05:30:00 0.000 0 0.000 0 0 0.000 0.289
## 2019-12-27 05:30:00 0.000 0 0.000 0 0 0.000 0.000
## 2020-03-27 05:30:00 0.000 0 0.000 0 0 0.296 0.000
## 2020-06-26 05:30:00 0.000 0 0.402 0 0 0.000 0.000
## 2020-09-25 05:30:00 0.491 0 0.000 0 0 0.000 0.000
## 2020-12-18 05:30:00 0.000 0 0.000 0 0 0.000 0.000
```

Weights for bt29

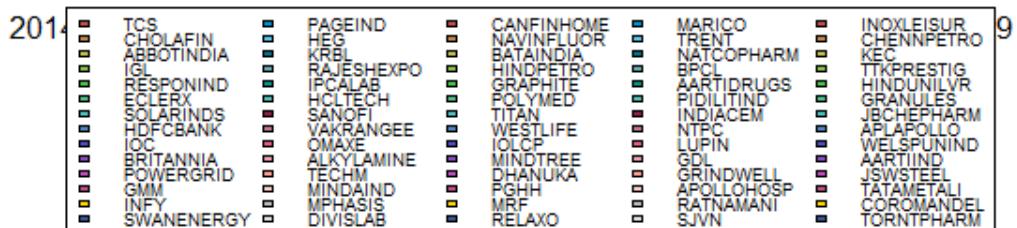
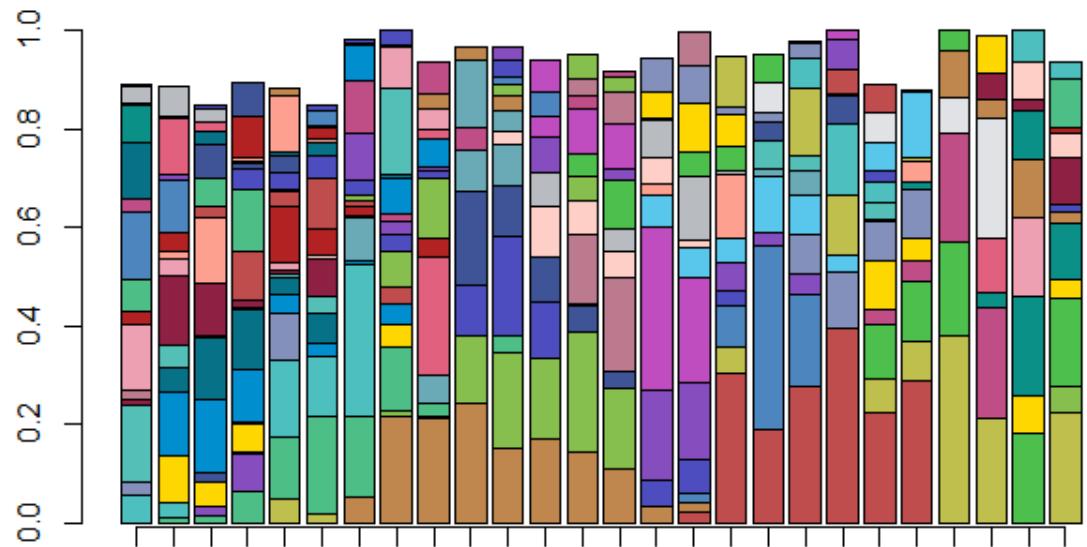


```
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLERX SOLARINDS
```

## 2019-09-27 05:30:00 0.223	0	0.070	0.000	0.109	0	0
## 2019-12-27 05:30:00 0.286	0	0.082	0.000	0.124	0	0
## 2020-03-27 05:30:00 0.000	0	0.381	0.000	0.190	0	0
## 2020-06-26 05:30:00 0.000	0	0.211	0.000	0.000	0	0
## 2020-09-25 05:30:00 0.000	0	0.000	0.000	0.181	0	0
## 2020-12-18 05:30:00 0.000	0	0.225	0.053	0.178	0	0
##	HDFCBANK IOC BRITANNIA POWERGRID GMM INFY SWANENERGY					
## 2019-09-27 05:30:00	0 0	0	0 0.032	0.098	0	
## 2019-12-27 05:30:00	0 0	0	0 0.040	0.047	0	
## 2020-03-27 05:30:00	0 0	0	0 0.221	0.000	0	
## 2020-06-26 05:30:00	0 0	0	0 0.225	0.000	0	
## 2020-09-25 05:30:00	0 0	0	0 0.000	0.075	0	
## 2020-12-18 05:30:00	0 0	0	0 0.000	0.037	0	
##	NAUKRI PAGEIND HEG KRBL RAJESHEXPO IPCALAB HCLTECH SANOFI					
## 2019-09-27 05:30:00	0.082	0 0	0 0	0 0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0 0	0 0	0 0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0 0	0 0	0 0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0 0	0 0	0 0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0 0	0 0	0 0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0 0	0 0	0 0.116	0.000	0
##	VAKRANGE OMAXE ALKYLAMINE TECHM MINDAIND MPHASIS DIVISLAB					
## 2019-09-27 05:30:00	0 0.000	0.000 0.000	0	0 0	0.000	
## 2019-12-27 05:30:00	0 0.000	0.000 0.042	0	0 0	0.000	
## 2020-03-27 05:30:00	0 0.000	0.000 0.000	0	0 0	0.069	
## 2020-06-26 05:30:00	0 0.108	0.000 0.000	0	0 0	0.245	
## 2020-09-25 05:30:00	0 0.000	0.158 0.000	0	0 0	0.000	
## 2020-12-18 05:30:00	0 0.000	0.000 0.000	0	0 0	0.000	
##	JCHAC CANFINHOME NAVINFLUOR BATAINDIA HINDPETRO GRAPHITE					
## 2019-09-27 05:30:00	0 0	0.000 0.000	0 0	0 0	0	
## 2019-12-27 05:30:00	0 0	0.000 0.008	0 0	0 0	0	
## 2020-03-27 05:30:00	0 0	0.097 0.000	0 0	0 0	0	
## 2020-06-26 05:30:00	0 0	0.040 0.000	0 0	0 0	0	
## 2020-09-25 05:30:00	0 0	0.118 0.000	0 0	0 0	0	
## 2020-12-18 05:30:00	0 0	0.021 0.000	0 0	0 0	0	
##	POLYMED TITAN WESTLIFE IOLCP MINDTREE DHANUKA PGHH MRF					
## 2019-09-27 05:30:00	0 0.04	0 0.023	0 0	0 0	0 0	
## 2019-12-27 05:30:00	0 0.00	0 0.000	0 0	0 0	0 0	
## 2020-03-27 05:30:00	0 0.00	0 0.000	0 0	0 0	0 0	
## 2020-06-26 05:30:00	0 0.00	0 0.000	0 0	0 0	0 0	
## 2020-09-25 05:30:00	0 0.00	0 0.000	0 0	0 0	0 0	
## 2020-12-18 05:30:00	0 0.00	0 0.016	0 0	0 0	0 0	
##	RELAXO PHOENIXLTD MARICO TRENT NATCOPHARM BPCL AARTIDRUGS					
## 2019-09-27 05:30:00	0 0	0 0.060	0 0	0 0	0.0	
## 2019-12-27 05:30:00	0 0	0 0.134	0 0	0 0	0.0	
## 2020-03-27 05:30:00	0 0	0 0.000	0 0	0 0	0.0	
## 2020-06-26 05:30:00	0 0	0 0.000	0 0	0 0	0.0	
## 2020-09-25 05:30:00	0 0	0 0.000	0 0	0 0	0.1	

	## 2020-12-18 05:30:00	0	0	0 0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.062	0		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		
##	WELSPUNIND	AARTIIND	JSWSTEEL	TATAMETALI	COROMANDEL		
## 2019-09-27 05:30:00	0	0	0	0	0.000		
## 2019-12-27 05:30:00	0	0	0	0	0.000		
## 2020-03-27 05:30:00	0	0	0	0	0.000		
## 2020-06-26 05:30:00	0	0	0	0	0.076		
## 2020-09-25 05:30:00	0	0	0	0	0.000		
## 2020-12-18 05:30:00	0	0	0	0	0.000		
##	TORNTPHARM						
## 2019-09-27 05:30:00	0						
## 2019-12-27 05:30:00	0						
## 2020-03-27 05:30:00	0						
## 2020-06-26 05:30:00	0						
## 2020-09-25 05:30:00	0						
## 2020-12-18 05:30:00	0						

Weights for bt30

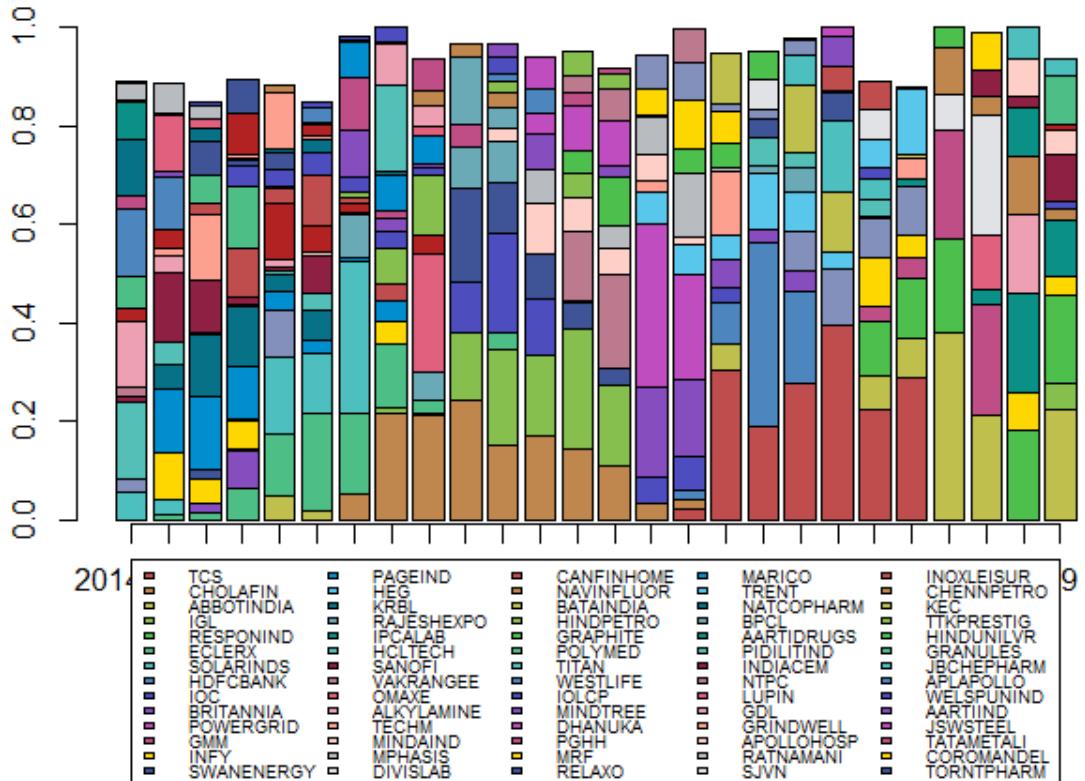


##	TCS	CHOLAFIN	ABBOTINDIA	IGL	RESPONIND	ECLERX	SOLARINDS	
## 2019-09-27 05:30:00	0.223	0	0.070	0.000	0.109	0	0	
## 2019-12-27 05:30:00	0.286	0	0.082	0.000	0.124	0	0	
## 2020-03-27 05:30:00	0.000	0	0.381	0.000	0.190	0	0	
## 2020-06-26 05:30:00	0.000	0	0.211	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0.000	0	0.000	0.000	0.181	0	0	
## 2020-12-18 05:30:00	0.000	0	0.225	0.053	0.178	0	0	
##	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEE	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0	0.000	0.000	0	0.000	

## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE	
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0.062		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		

```
##          WELSPUNIND AARTIIND JSWSTEEL TATAMETALI COROMANDEL
## 2019-09-27 05:30:00      0      0      0      0      0.000
## 2019-12-27 05:30:00      0      0      0      0      0.000
## 2020-03-27 05:30:00      0      0      0      0      0.000
## 2020-06-26 05:30:00      0      0      0      0      0.076
## 2020-09-25 05:30:00      0      0      0      0      0.000
## 2020-12-18 05:30:00      0      0      0      0      0.000
##          TORNTPHARM
## 2019-09-27 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-03-27 05:30:00      0
## 2020-06-26 05:30:00      0
## 2020-09-25 05:30:00      0
## 2020-12-18 05:30:00      0
```

Weights for bt31

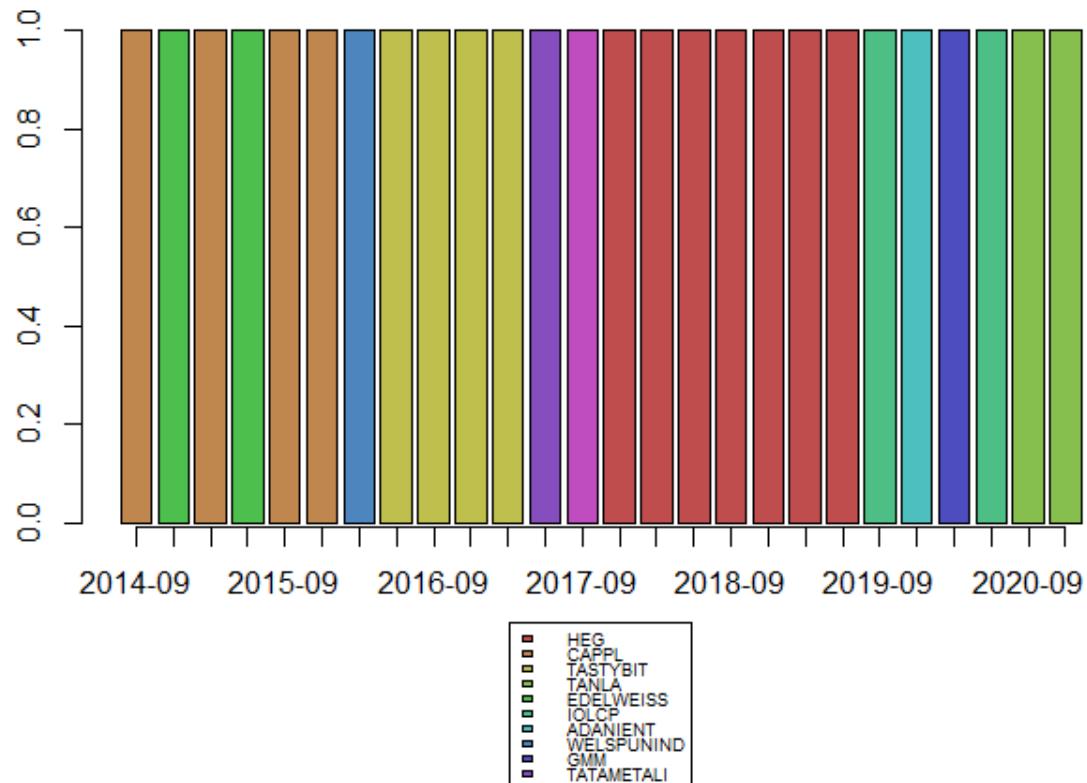


```
##          TCS CHOLAFIN ABBOTINDIA IGL RESPONIND ECLERX SOLARINDS
## 2019-09-27 05:30:00 0.223      0     0.070 0.000    0.109      0      0
## 2019-12-27 05:30:00 0.286      0     0.082 0.000    0.124      0      0
## 2020-03-27 05:30:00 0.000      0     0.381 0.000    0.190      0      0
## 2020-06-26 05:30:00 0.000      0     0.211 0.000    0.000      0      0
## 2020-09-25 05:30:00 0.000      0     0.000 0.000    0.181      0      0
## 2020-12-18 05:30:00 0.000      0     0.225 0.053    0.178      0      0
```

	HDFCBANK	IOC	BRITANNIA	POWERGRID	GMM	INFY	SWANENERGY	
## 2019-09-27 05:30:00	0	0	0	0	0.032	0.098	0	
## 2019-12-27 05:30:00	0	0	0	0	0.040	0.047	0	
## 2020-03-27 05:30:00	0	0	0	0	0.221	0.000	0	
## 2020-06-26 05:30:00	0	0	0	0	0.225	0.000	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0.075	0	
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.037	0	
##	NAUKRI	PAGEIND	HEG	KRBL	RAJESHEXPO	IPCALAB	HCLTECH	SANOFI
## 2019-09-27 05:30:00	0.082	0	0	0	0	0.001	0.037	0
## 2019-12-27 05:30:00	0.096	0	0	0	0	0.015	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0.000	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.033	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.204	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.116	0.000	0
##	VAKRANGEET	OMAXE	ALKYLAMINE	TECHM	MINDAIND	MPHASIS	DIVISLAB	
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	0.069	
## 2020-06-26 05:30:00	0	0.108	0.000	0.000	0	0	0.245	
## 2020-09-25 05:30:00	0	0.000	0.158	0.000	0	0	0.000	
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0	0	0.000	
##	JCHAC	CANFINHOME	NAVINFLUOR	BATAINDIA	HINDPETRO	GRAPHITE		
## 2019-09-27 05:30:00	0	0	0.000	0.000	0	0	0	
## 2019-12-27 05:30:00	0	0	0.000	0.008	0	0	0	
## 2020-03-27 05:30:00	0	0	0.097	0.000	0	0	0	
## 2020-06-26 05:30:00	0	0	0.040	0.000	0	0	0	
## 2020-09-25 05:30:00	0	0	0.118	0.000	0	0	0	
## 2020-12-18 05:30:00	0	0	0.021	0.000	0	0	0	
##	POLYMED	TITAN	WESTLIFE	IOLCP	MINDTREE	DHANUKA	PGHH	MRF
## 2019-09-27 05:30:00	0	0.04	0	0.023	0	0	0	0
## 2019-12-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-03-27 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-06-26 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-09-25 05:30:00	0	0.00	0	0.000	0	0	0	0
## 2020-12-18 05:30:00	0	0.00	0	0.016	0	0	0	0
##	RELAXO	PHOENIXLTD	MARICO	TRENT	NATCOPHARM	BPCL	AARTIDRUGS	
## 2019-09-27 05:30:00	0	0	0	0.060	0	0	0.0	
## 2019-12-27 05:30:00	0	0	0	0.134	0	0	0.0	
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0.0	
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0.1	
## 2020-12-18 05:30:00	0	0	0	0.000	0	0	0.0	
##	PIDILITIND	INDIACEM	NTPC	LUPIN	GDL	GRINDWELL	APOLLOHOSP	
## 2019-09-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-03-27 05:30:00	0	0.000	0	0	0	0	0.000	
## 2020-06-26 05:30:00	0	0.051	0	0	0	0	0.000	

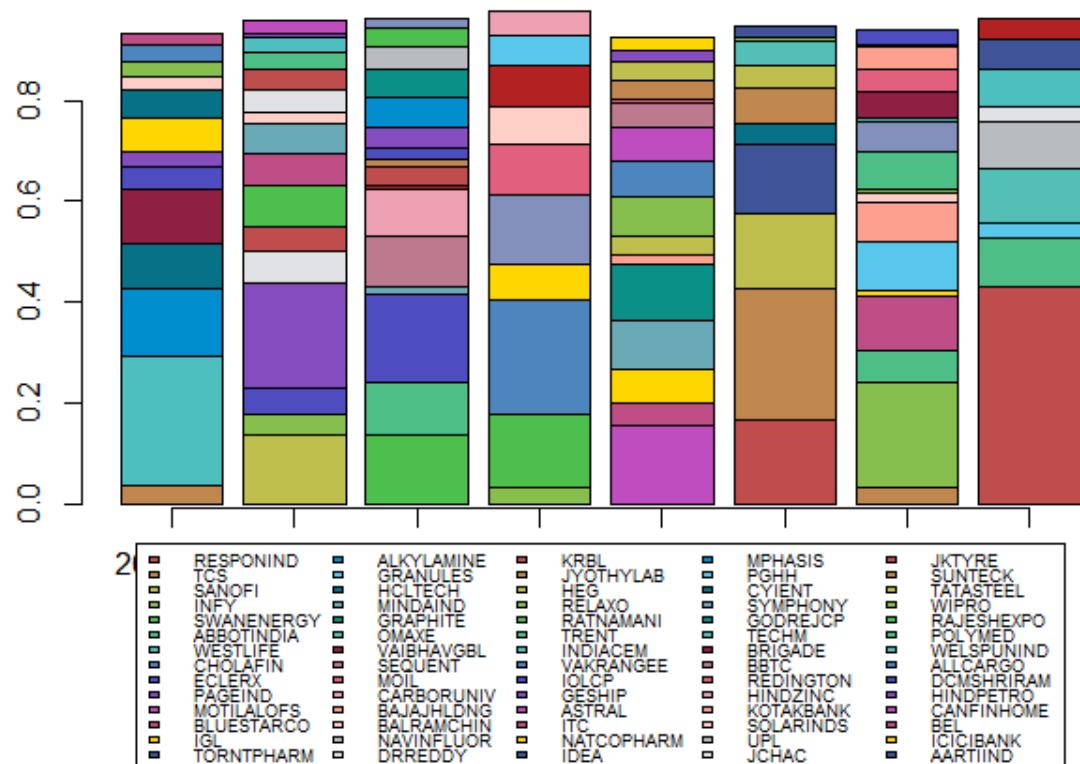
## 2020-09-25 05:30:00	0	0.023	0	0	0	0	0.078
## 2020-12-18 05:30:00	0	0.095	0	0	0	0	0.052
##	RATNAMANI	SJVN	ASTRAZEN	INOXLEISUR	CHENNPETRO	KEC	
## 2019-09-27 05:30:00	0	0.060	0.000	0.055	0	0	
## 2019-12-27 05:30:00	0	0.003	0.000	0.000	0	0	
## 2020-03-27 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0.000	0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0.000	0.011	0.000	0	0	
##	TTKPRESTIG	HINDUNILVR	GRANULES	JBCHEPHARM	APLAPOLO		
## 2019-09-27 05:30:00	0	0.000	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0		
## 2020-03-27 05:30:00	0	0.041	0.000	0.000	0		
## 2020-06-26 05:30:00	0	0.000	0.000	0.000	0		
## 2020-09-25 05:30:00	0	0.000	0.000	0.062	0		
## 2020-12-18 05:30:00	0	0.000	0.097	0.033	0		
##	WELSPUNIND	AARTIIND	JSWSTEEL	TATAMETALI	COROMANDEL		
## 2019-09-27 05:30:00	0	0	0	0	0.000		
## 2019-12-27 05:30:00	0	0	0	0	0.000		
## 2020-03-27 05:30:00	0	0	0	0	0.000		
## 2020-06-26 05:30:00	0	0	0	0	0.076		
## 2020-09-25 05:30:00	0	0	0	0	0.000		
## 2020-12-18 05:30:00	0	0	0	0	0.000		
##	TORNTPHARM						
## 2019-09-27 05:30:00	0						
## 2019-12-27 05:30:00	0						
## 2020-03-27 05:30:00	0						
## 2020-06-26 05:30:00	0						
## 2020-09-25 05:30:00	0						
## 2020-12-18 05:30:00	0						

Weights for bt32



```
##          HEG CAPPL TASTYBIT TANLA EDELWEISS IOLCP ADANIENT
## 2019-09-27 05:30:00  0    0      0    0      0    1      0
## 2019-12-27 05:30:00  0    0      0    0      0    0      1
## 2020-03-27 05:30:00  0    0      0    0      0    0      0
## 2020-06-26 05:30:00  0    0      0    0      0    1      0
## 2020-09-25 05:30:00  0    0      0    1      0    0      0
## 2020-12-18 05:30:00  0    0      0    1      0    0      0
##          WELSPUNIND GMM TATAMETALI HSCL
## 2019-09-27 05:30:00   0    0      0    0
## 2019-12-27 05:30:00   0    0      0    0
## 2020-03-27 05:30:00   0    1      0    0
## 2020-06-26 05:30:00   0    0      0    0
## 2020-09-25 05:30:00   0    0      0    0
## 2020-12-18 05:30:00   0    0      0    0
```

Weights for bt33

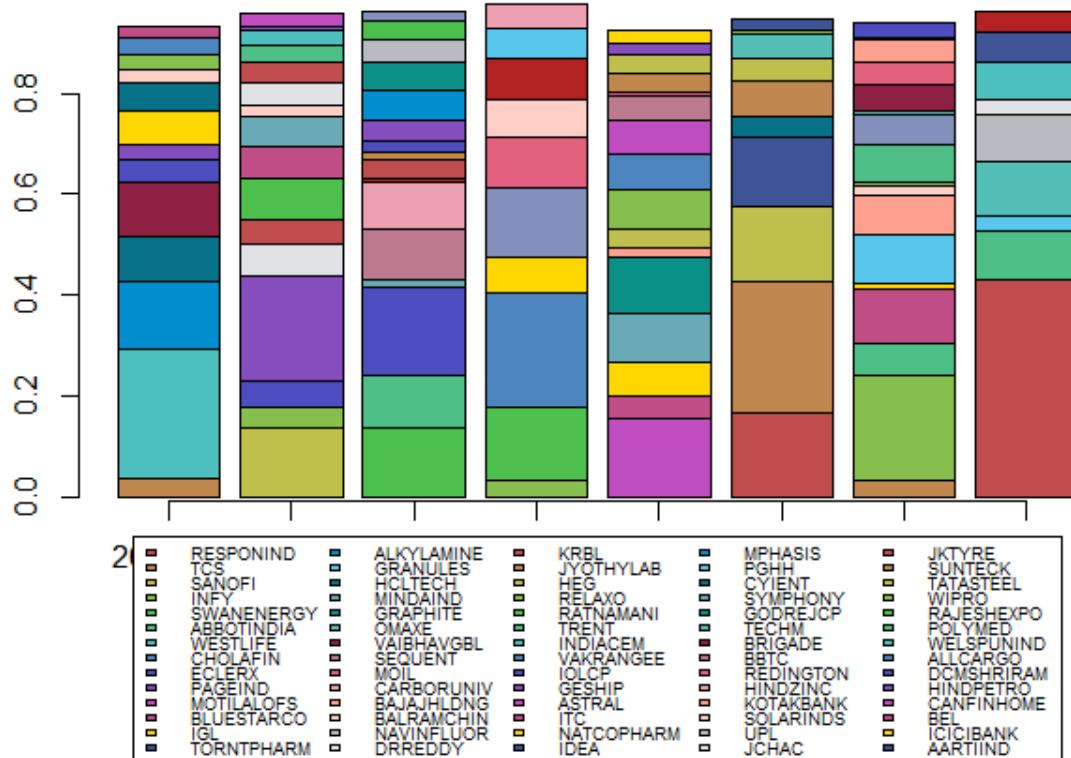


##	RESPONIND	TCS	SANOFI	INFY	SWANENERGY	ABBOTINDIA	WESTLIFE
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.137	0.103	0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.034	0.144	0.000	0
## 2017-12-29 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.166	0.259	0.149	0.000	0.000	0.000	0
## 2019-12-27 05:30:00	0.000	0.032	0.000	0.208	0.000	0.063	0
## 2020-12-18 05:30:00	0.431	0.000	0.000	0.000	0.000	0.098	0
##	CHOLAFIN	ECLERX	PAGEIND	MOTILALOFS	BLUESTARCO	IGL	
## 2015-12-24 05:30:00	0.000	0.174	0	0.000	0.000	0.000	0.000
## 2016-12-30 05:30:00	0.228	0.000	0	0.000	0.000	0.069	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0.154	0.045	0.068	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.109	0.011	0.000
## 2020-12-18 05:30:00	0.000	0.000	0	0.000	0.000	0.000	0.000
##	TORNTPHARM	DHANUKA	ALKYLAMINE	GRANULES	HCLTECH	MINDAIND	
## 2015-12-24 05:30:00	0.000	0.00	0	0.000	0.000	0.015	
## 2016-12-30 05:30:00	0.000	0.14	0	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.00	0	0.000	0.000	0.097	
## 2018-12-28 05:30:00	0.141	0.00	0	0.000	0.038	0.000	
## 2019-12-27 05:30:00	0.000	0.00	0	0.099	0.000	0.000	
## 2020-12-18 05:30:00	0.000	0.00	0	0.028	0.000	0.000	
##	GRAPHITE	OMAXE	VAIBHAVGBL	SEQUENT	MOIL	CARBORUNIV	
## 2015-12-24 05:30:00	0.000	0.000	0	0.101	0.0	0.094	

## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0.1	0.000
## 2017-12-29 05:30:00	0.111	0.000	0	0.000	0.0	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.0	0.000
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.0	0.000
## 2020-12-18 05:30:00	0.000	0.109	0	0.001	0.0	0.000
##	BAJAJHLDNG	BALRAMCHIN	NAVINFLUOR	DRREDDY	BPCL	KRBL
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.005	0.038
## 2016-12-30 05:30:00	0.000	0.073	0.000	0.000	0.083	0.000
## 2017-12-29 05:30:00	0.019	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00	0.075	0.020	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0.000	0.000	0.092	0.028	0.000	0.000
##	JYOTHYLAB	HEG	RELAXO	RATNAMANI	TRENT	INDIACEM
## 2015-12-24 05:30:00	0.016	0.000	0.000	0	0.000	0.000
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.039	0.075	0	0.000	0.000
## 2018-12-28 05:30:00	0.072	0.044	0.000	0	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.000	0.006	0	0.077	0.000
## 2020-12-18 05:30:00	0.000	0.000	0.000	0	0.000	0.075
##	IOLCP	GESHIP	ASTRAL	ITC	NATCOPHARM	IDEA
## 2015-12-24 05:30:00	0.022	0.04	0.000	0	0.000	0.000
## 2016-12-30 05:30:00	0.000	0.00	0.000	0	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.00	0.067	0	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.00	0.000	0	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.00	0.000	0	0.000	0.061
## 2020-12-18 05:30:00	0.000	0.00	0.000	0	0.061	0.000
##	PGHH	CYIENT	SYMPHONY	GODREJCP	TECHM	BRIGADE
## 2015-12-24 05:30:00	0.000	0	0	0.057	0.000	0.000
## 2016-12-30 05:30:00	0.058	0	0	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0	0	0.000	0.000	0.051
## 2018-12-28 05:30:00	0.000	0	0	0.000	0.049	0.000
## 2019-12-27 05:30:00	0.000	0	0	0.000	0.006	0.052
## 2020-12-18 05:30:00	0.000	0	0	0.000	0.000	0.000
##	REDINGTON	HINDZINC	KOTAKBANK	SOLARINDS	UPL	JCHAC
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.046	0
## 2016-12-30 05:30:00	0.000	0.048	0.000	0	0.000	0
## 2017-12-29 05:30:00	0.006	0.000	0.000	0	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000	0
## 2019-12-27 05:30:00	0.043	0.000	0.047	0	0.000	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0	0.000	0
##	PERSISTENT	JKTYRE	SUNTECK	TATASTEEL	WIPRO	RAJESHEXPO
## 2015-12-24 05:30:00	0.000	0	0.000	0.000	0.000	0.035
## 2016-12-30 05:30:00	0.000	0	0.000	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0	0.039	0.037	0.000	0.000
## 2018-12-28 05:30:00	0.000	0	0.000	0.000	0.006	0.000
## 2019-12-27 05:30:00	0.003	0	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0.040	0	0.000	0.000	0.000	0.000

```
##          POLYMED WELSPUNIND ALLCARGO DCMSHIRRAM HINDPETRO CANFINHOME
## 2015-12-24 05:30:00      0       0       0      0.00     0.000      0
## 2016-12-30 05:30:00      0       0       0      0.00     0.000      0
## 2017-12-29 05:30:00      0       0       0      0.00     0.022      0
## 2018-12-28 05:30:00      0       0       0      0.00     0.000      0
## 2019-12-27 05:30:00      0       0       0      0.03     0.000      0
## 2020-12-18 05:30:00      0       0       0      0.00     0.000      0
##          BEL ICICIBANK AARTIIND DCAL
## 2015-12-24 05:30:00      0     0.000    0.000  0.021
## 2016-12-30 05:30:00      0     0.000    0.000  0.000
## 2017-12-29 05:30:00      0     0.024    0.000  0.000
## 2018-12-28 05:30:00      0     0.000    0.023  0.000
## 2019-12-27 05:30:00      0     0.000    0.000  0.000
## 2020-12-18 05:30:00      0     0.000    0.000  0.000
```

Weights for bt34

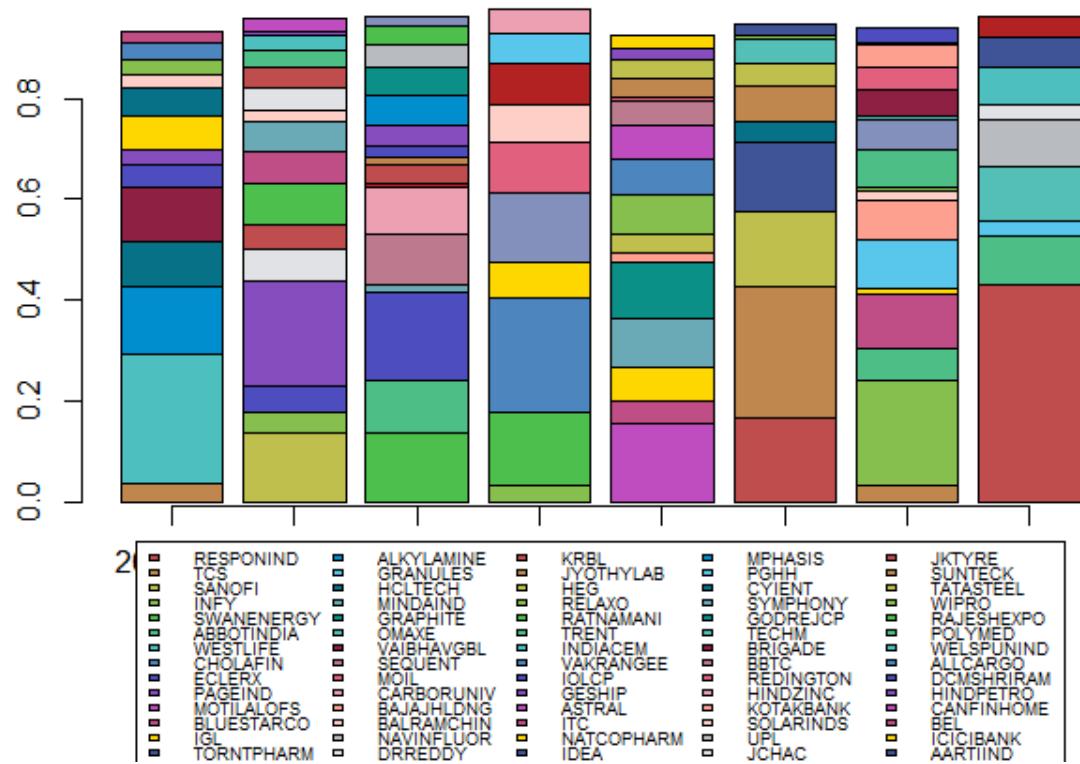


```
##          RESPONIND TCS SANOFI INFY SWANENERGY ABBOTINDIA WESTLIFE
## 2015-12-24 05:30:00 0.000 0.000 0.000 0.000    0.137    0.103      0
## 2016-12-30 05:30:00 0.000 0.000 0.000 0.034    0.144    0.000      0
## 2017-12-29 05:30:00 0.000 0.000 0.000 0.000    0.000    0.000      0
## 2018-12-28 05:30:00 0.166 0.259 0.149 0.000    0.000    0.000      0
## 2019-12-27 05:30:00 0.000 0.032 0.000 0.208    0.000    0.063      0
## 2020-12-18 05:30:00 0.431 0.000 0.000 0.000    0.000    0.098      0
```

	CHOLAFIN	ECLERX	PAGEIND	MOTILALOFS	BLUESTARCO	IGL		
## 2015-12-24 05:30:00	0.000	0.174	0	0.000	0.000	0.000		
## 2016-12-30 05:30:00	0.228	0.000	0	0.000	0.000	0.069		
## 2017-12-29 05:30:00	0.000	0.000	0	0.154	0.045	0.068		
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.000	0.000		
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.109	0.011		
## 2020-12-18 05:30:00	0.000	0.000	0	0.000	0.000	0.000		
##	TORNTPHARM	DHANUKA	ALKYLAMINE	GRANULES	HCLTECH	MINDAIND		
## 2015-12-24 05:30:00	0.000	0.00	0	0.000	0.000	0.015		
## 2016-12-30 05:30:00	0.000	0.14	0	0.000	0.000	0.000		
## 2017-12-29 05:30:00	0.000	0.00	0	0.000	0.000	0.097		
## 2018-12-28 05:30:00	0.141	0.00	0	0.000	0.038	0.000		
## 2019-12-27 05:30:00	0.000	0.00	0	0.099	0.000	0.000		
## 2020-12-18 05:30:00	0.000	0.00	0	0.028	0.000	0.000		
##	GRAPHITE	OMAXE	VAIBHAVGBL	SEQUENT	MOIL	CARBORUNIV		
## 2015-12-24 05:30:00	0.000	0.000	0	0.101	0.0	0.094		
## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0.1	0.000		
## 2017-12-29 05:30:00	0.111	0.000	0	0.000	0.0	0.000		
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.0	0.000		
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.0	0.000		
## 2020-12-18 05:30:00	0.000	0.109	0	0.001	0.0	0.000		
##	BAJAJHLDNG	BALRAMCHIN	NAVINFLUOR	DRREDDY	BPCL	KRBL		
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.005	0.038		
## 2016-12-30 05:30:00	0.000	0.073	0.000	0.000	0.083	0.000		
## 2017-12-29 05:30:00	0.019	0.000	0.000	0.000	0.000	0.000		
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000		
## 2019-12-27 05:30:00	0.075	0.020	0.000	0.000	0.000	0.000		
## 2020-12-18 05:30:00	0.000	0.000	0.092	0.028	0.000	0.000		
##	JYOTHYLAB	HEG	RELAXO	RATNAMANI	TRENT	INDIACEM	VAKRANGE	
## 2015-12-24 05:30:00	0.016	0.000	0.000	0	0.000	0.000	0.000	
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.039	0.075	0	0.000	0.000	0.071	
## 2018-12-28 05:30:00	0.072	0.044	0.000	0	0.000	0.000	0.000	
## 2019-12-27 05:30:00	0.000	0.000	0.006	0	0.077	0.000	0.000	
## 2020-12-18 05:30:00	0.000	0.000	0.000	0	0.000	0.075	0.000	
##	IOLCP	GESHIP	ASTRAL	ITC	NATCOPHARM	IDEA	IPCALAB	MPHASIS
## 2015-12-24 05:30:00	0.022	0.04	0.000	0	0	0.000	0.000	0.059
## 2016-12-30 05:30:00	0.000	0.00	0.000	0	0	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.00	0.067	0	0	0.000	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.00	0.000	0	0	0.000	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.00	0.000	0	0	0.000	0.061	0.000
## 2020-12-18 05:30:00	0.000	0.00	0.000	0	0	0.061	0.000	0.000
##	PGHH	CYIENT	SYMPHONY	GODREJCP	TECHM	BRIGADE	BBTC	
## 2015-12-24 05:30:00	0.000	0	0	0.057	0.000	0.000	0.000	
## 2016-12-30 05:30:00	0.058	0	0	0.000	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0	0	0.000	0.000	0.000	0.051	
## 2018-12-28 05:30:00	0.000	0	0	0.000	0.049	0.000	0.000	

```
## 2019-12-27 05:30:00 0.000      0      0  0.000 0.006  0.052 0.000
## 2020-12-18 05:30:00 0.000      0      0  0.000 0.000  0.000 0.000
##          REDINGTON HINDZINC KOTAKBANK SOLARINDS   UPL JCHAC
## 2015-12-24 05:30:00    0.000    0.000    0.000      0 0.046    0
## 2016-12-30 05:30:00    0.000    0.048    0.000      0 0.000    0
## 2017-12-29 05:30:00    0.006    0.000    0.000      0 0.000    0
## 2018-12-28 05:30:00    0.000    0.000    0.000      0 0.000    0
## 2019-12-27 05:30:00    0.043    0.000    0.047      0 0.000    0
## 2020-12-18 05:30:00    0.000    0.000    0.000      0 0.000    0
##          PERSISTENT JKTYRE SUNTECK TATASTEEL WIPRO RAJESHEXPO
## 2015-12-24 05:30:00    0.000    0  0.000  0.000 0.000  0.035
## 2016-12-30 05:30:00    0.000    0  0.000  0.000 0.000  0.000
## 2017-12-29 05:30:00    0.000    0  0.039  0.037 0.000  0.000
## 2018-12-28 05:30:00    0.000    0  0.000  0.000 0.006  0.000
## 2019-12-27 05:30:00    0.003    0  0.000  0.000 0.000  0.000
## 2020-12-18 05:30:00    0.040    0  0.000  0.000 0.000  0.000
##          POLYMED WELSPUNIND ALLCARGO DCMSHRIRAM HINDPETRO CANFINHOME
## 2015-12-24 05:30:00    0      0      0    0.00 0.000    0
## 2016-12-30 05:30:00    0      0      0    0.00 0.000    0
## 2017-12-29 05:30:00    0      0      0    0.00 0.022    0
## 2018-12-28 05:30:00    0      0      0    0.00 0.000    0
## 2019-12-27 05:30:00    0      0      0    0.03 0.000    0
## 2020-12-18 05:30:00    0      0      0    0.00 0.000    0
##          BEL ICICIBANK AARTIIND DCAL
## 2015-12-24 05:30:00    0    0.000  0.000 0.021
## 2016-12-30 05:30:00    0    0.000  0.000 0.000
## 2017-12-29 05:30:00    0    0.024  0.000 0.000
## 2018-12-28 05:30:00    0    0.000  0.023 0.000
## 2019-12-27 05:30:00    0    0.000  0.000 0.000
## 2020-12-18 05:30:00    0    0.000  0.000 0.000
```

Weights for bt35

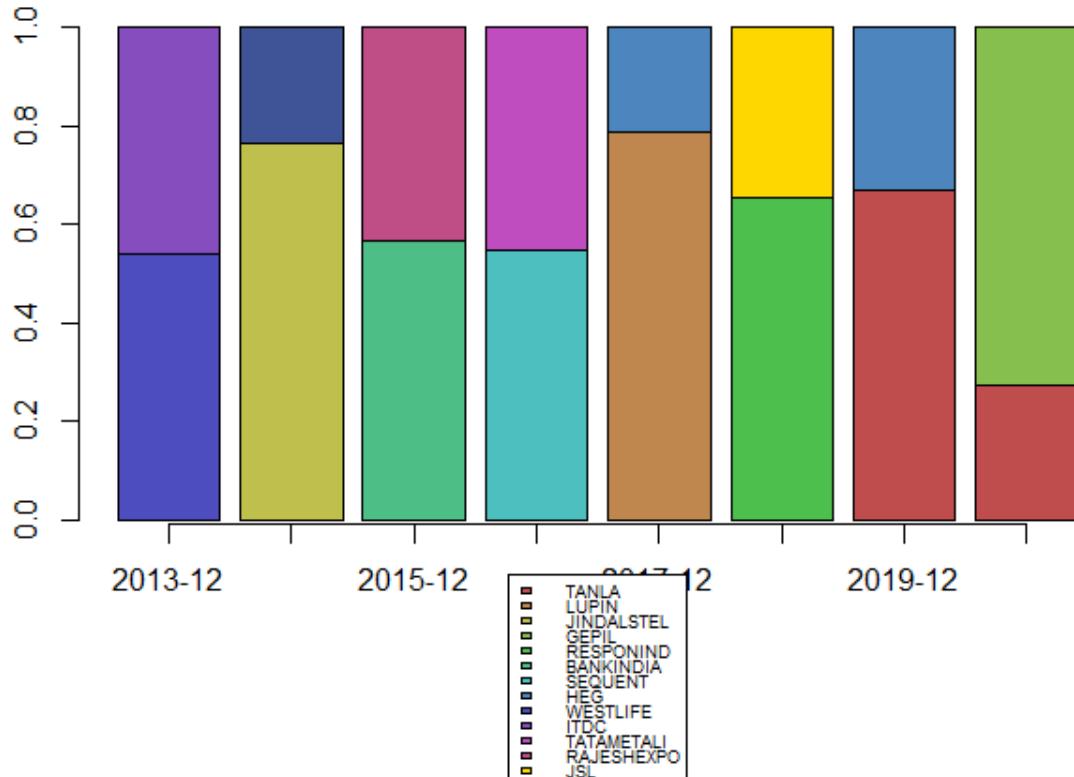


##	RESPONIND	TCS	SANOFI	INFY	SWANENERGY	ABBOTINDIA	WESTLIFE
## 2015-12-24 05:30:00		0.000	0.000	0.000	0.000	0.137	0.103
## 2016-12-30 05:30:00		0.000	0.000	0.000	0.034	0.144	0.000
## 2017-12-29 05:30:00		0.000	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00		0.166	0.259	0.149	0.000	0.000	0.000
## 2019-12-27 05:30:00		0.000	0.032	0.000	0.208	0.000	0.063
## 2020-12-18 05:30:00		0.431	0.000	0.000	0.000	0.000	0.098
##	CHOLAFIN	ECLERX	PAGEIND	MOTILALOFS	BLUESTARCO	IGL	
## 2015-12-24 05:30:00	0.000	0.174	0	0.000	0.000	0.000	0.000
## 2016-12-30 05:30:00	0.228	0.000	0	0.000	0.000	0.069	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0.154	0.045	0.068	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.109	0.011	0.000
## 2020-12-18 05:30:00	0.000	0.000	0	0.000	0.000	0.000	0.000
##	TORNTPHARM	DHANUKA	ALKYLAMINE	GRANULES	HCLTECH	MINDAIND	
## 2015-12-24 05:30:00	0.000	0.00	0	0.000	0.000	0.015	
## 2016-12-30 05:30:00	0.000	0.14	0	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.00	0	0.000	0.000	0.097	
## 2018-12-28 05:30:00	0.141	0.00	0	0.000	0.038	0.000	
## 2019-12-27 05:30:00	0.000	0.00	0	0.099	0.000	0.000	
## 2020-12-18 05:30:00	0.000	0.00	0	0.028	0.000	0.000	
##	GRAPHITE	OMAXE	VAIBHAVGBL	SEQUENT	MOIL	CARBORUNIV	
## 2015-12-24 05:30:00	0.000	0.000	0	0.101	0.0	0.094	

## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0.1	0.000
## 2017-12-29 05:30:00	0.111	0.000	0	0.000	0.0	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.0	0.000
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.0	0.000
## 2020-12-18 05:30:00	0.000	0.109	0	0.001	0.0	0.000
##	BAJAJHLDNG	BALRAMCHIN	NAVINFLUOR	DRREDDY	BPCL	KRBL
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.005	0.038
## 2016-12-30 05:30:00	0.000	0.073	0.000	0.000	0.083	0.000
## 2017-12-29 05:30:00	0.019	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00	0.075	0.020	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0.000	0.000	0.092	0.028	0.000	0.000
##	JYOTHYLAB	HEG	RELAXO	RATNAMANI	TRENT	INDIACEM
## 2015-12-24 05:30:00	0.016	0.000	0.000	0	0.000	0.000
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.039	0.075	0	0.000	0.000
## 2018-12-28 05:30:00	0.072	0.044	0.000	0	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.000	0.006	0	0.077	0.000
## 2020-12-18 05:30:00	0.000	0.000	0.000	0	0.000	0.075
##	IOLCP	GESHIP	ASTRAL	ITC	NATCOPHARM	IDEA
## 2015-12-24 05:30:00	0.022	0.04	0.000	0	0.000	0.000
## 2016-12-30 05:30:00	0.000	0.00	0.000	0	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.00	0.067	0	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.00	0.000	0	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.00	0.000	0	0.000	0.061
## 2020-12-18 05:30:00	0.000	0.00	0.000	0	0.061	0.000
##	PGHH	CYIENT	SYMPHONY	GODREJCP	TECHM	BRIGADE
## 2015-12-24 05:30:00	0.000	0	0	0.057	0.000	0.000
## 2016-12-30 05:30:00	0.058	0	0	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0	0	0.000	0.000	0.051
## 2018-12-28 05:30:00	0.000	0	0	0.000	0.049	0.000
## 2019-12-27 05:30:00	0.000	0	0	0.000	0.006	0.052
## 2020-12-18 05:30:00	0.000	0	0	0.000	0.000	0.000
##	REDINGTON	HINDZINC	KOTAKBANK	SOLARINDS	UPL	JCHAC
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.046	0
## 2016-12-30 05:30:00	0.000	0.048	0.000	0	0.000	0
## 2017-12-29 05:30:00	0.006	0.000	0.000	0	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000	0
## 2019-12-27 05:30:00	0.043	0.000	0.047	0	0.000	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0	0.000	0
##	PERSISTENT	JKTYRE	SUNTECK	TATASTEEL	WIPRO	RAJESHEXPO
## 2015-12-24 05:30:00	0.000	0	0.000	0.000	0.000	0.035
## 2016-12-30 05:30:00	0.000	0	0.000	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0	0.039	0.037	0.000	0.000
## 2018-12-28 05:30:00	0.000	0	0.000	0.000	0.006	0.000
## 2019-12-27 05:30:00	0.003	0	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0.040	0	0.000	0.000	0.000	0.000

```
##          POLYMED WELSPUNIND ALLCARGO DCMSHRIRAM HINDPETRO CANFINHOME
## 2015-12-24 05:30:00      0       0       0      0.00     0.000      0
## 2016-12-30 05:30:00      0       0       0      0.00     0.000      0
## 2017-12-29 05:30:00      0       0       0      0.00     0.022      0
## 2018-12-28 05:30:00      0       0       0      0.00     0.000      0
## 2019-12-27 05:30:00      0       0       0      0.03     0.000      0
## 2020-12-18 05:30:00      0       0       0      0.00     0.000      0
##          BEL ICICIBANK AARTIIND DCAL
## 2015-12-24 05:30:00      0    0.000    0.000 0.021
## 2016-12-30 05:30:00      0    0.000    0.000 0.000
## 2017-12-29 05:30:00      0    0.024    0.000 0.000
## 2018-12-28 05:30:00      0    0.000    0.023 0.000
## 2019-12-27 05:30:00      0    0.000    0.000 0.000
## 2020-12-18 05:30:00      0    0.000    0.000 0.000
```

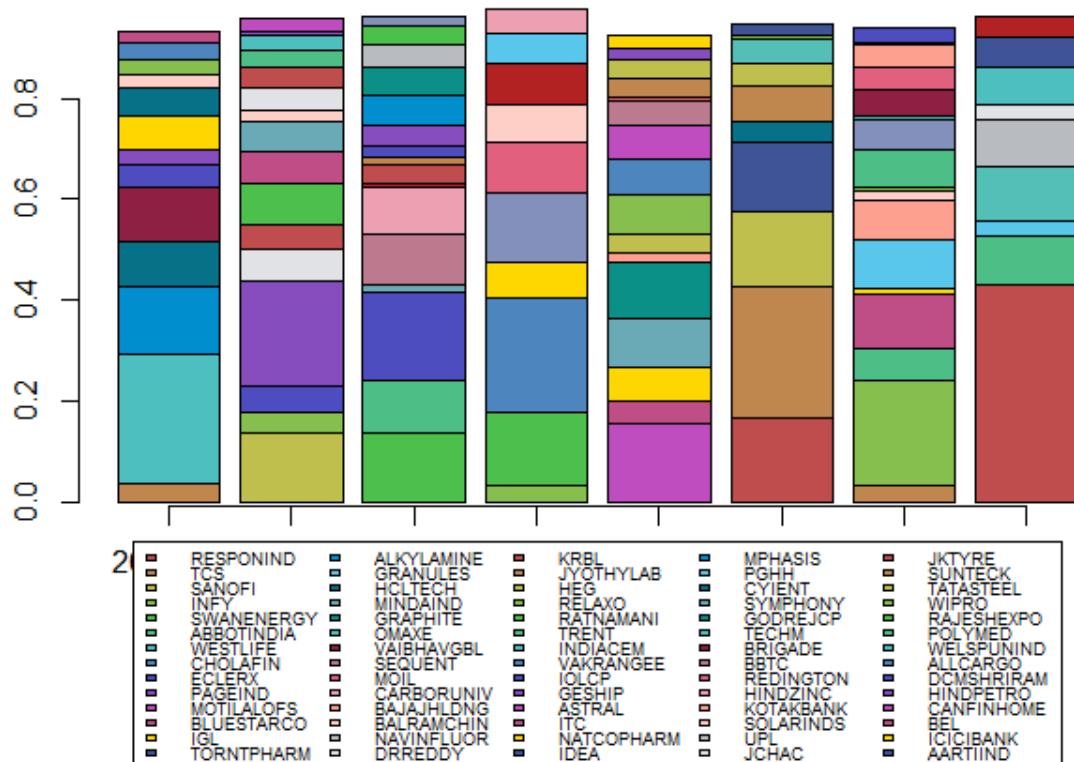
Weights for bt36



```
##          TANLA LUPIN JINDALSTEL GEPIL RESPONIND BANKINDIA SEQUENT
## 2015-12-24 05:30:00 0.000 0.000      0 0.000    0.000    0.568 0.000
## 2016-12-30 05:30:00 0.000 0.000      0 0.000    0.000    0.000 0.546
## 2017-12-29 05:30:00 0.000 0.787      0 0.000    0.000    0.000 0.000
## 2018-12-28 05:30:00 0.000 0.000      0 0.000    0.656    0.000 0.000
## 2019-12-27 05:30:00 0.670 0.000      0 0.000    0.000    0.000 0.000
## 2020-12-18 05:30:00 0.273 0.000      0 0.727    0.000    0.000 0.000
```

```
##          HEG WESTLIFE ITDC TATAMETALI RAJESHEXPO    JSL EDELWEISS
## 2015-12-24 05:30:00 0.000      0  0     0.000      0.432 0.000      0
## 2016-12-30 05:30:00 0.000      0  0     0.454      0.000 0.000      0
## 2017-12-29 05:30:00 0.213      0  0     0.000      0.000 0.000      0
## 2018-12-28 05:30:00 0.000      0  0     0.000      0.000 0.344      0
## 2019-12-27 05:30:00 0.330      0  0     0.000      0.000 0.000      0
## 2020-12-18 05:30:00 0.000      0  0     0.000      0.000 0.000      0
```

Weights for bt37



```
##          RESPONIND TCS SANOFI INFY SWANENERGY ABBOTINDIA WESTLIFE
## 2015-12-24 05:30:00 0.000 0.000 0.000 0.000      0.137 0.103      0
## 2016-12-30 05:30:00 0.000 0.000 0.000 0.034      0.144 0.000      0
## 2017-12-29 05:30:00 0.000 0.000 0.000 0.000      0.000 0.000      0
## 2018-12-28 05:30:00 0.166 0.259 0.149 0.000      0.000 0.000      0
## 2019-12-27 05:30:00 0.000 0.032 0.000 0.208      0.000 0.063      0
## 2020-12-18 05:30:00 0.431 0.000 0.000 0.000      0.000 0.098      0
##          CHOLAFIN ECLERX PAGEIND MOTILALOFS BLUESTARCO IGL
## 2015-12-24 05:30:00 0.000 0.174      0 0.000 0.000 0.000
## 2016-12-30 05:30:00 0.228 0.000      0 0.000 0.000 0.069
## 2017-12-29 05:30:00 0.000 0.000      0 0.154 0.045 0.068
## 2018-12-28 05:30:00 0.000 0.000      0 0.000 0.000 0.000
## 2019-12-27 05:30:00 0.000 0.000      0 0.000 0.109 0.011
## 2020-12-18 05:30:00 0.000 0.000      0 0.000 0.000 0.000
```

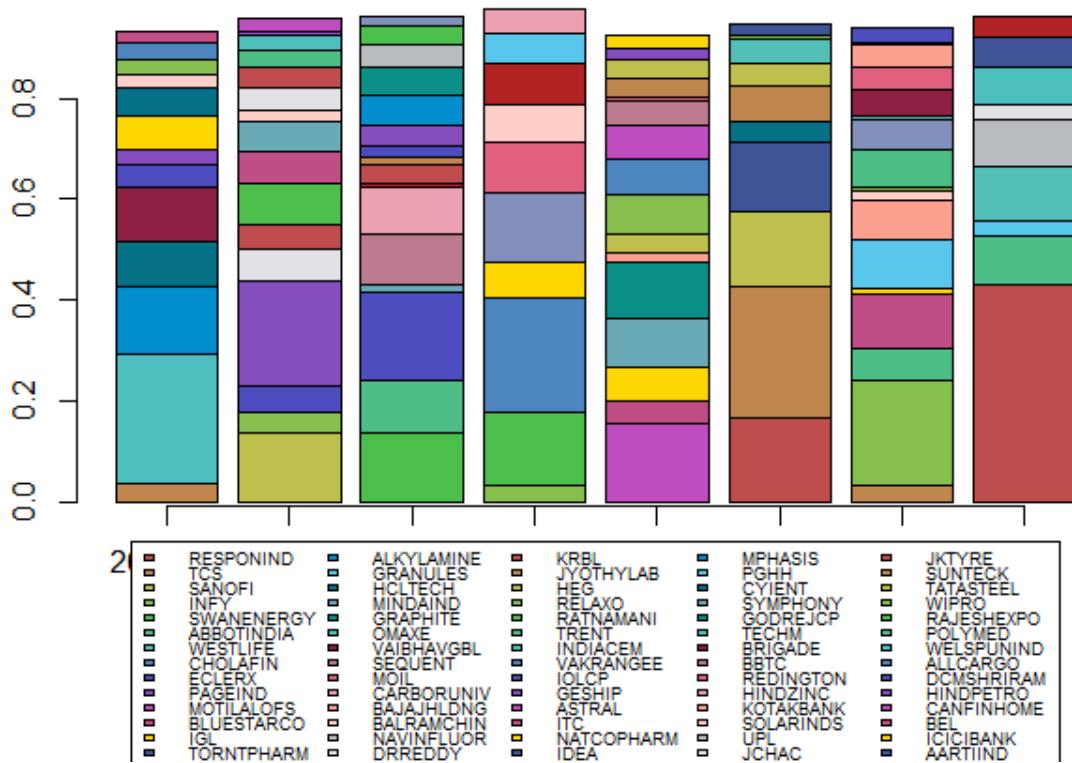
	TORNTPHARM	DHANUKA	ALKYLAMINE	GRANULES	HCLTECH	MINDAIND		
## 2015-12-24 05:30:00	0.000	0.00	0	0.000	0.000	0.015		
## 2016-12-30 05:30:00	0.000	0.14	0	0.000	0.000	0.000		
## 2017-12-29 05:30:00	0.000	0.00	0	0.000	0.000	0.097		
## 2018-12-28 05:30:00	0.141	0.00	0	0.000	0.038	0.000		
## 2019-12-27 05:30:00	0.000	0.00	0	0.099	0.000	0.000		
## 2020-12-18 05:30:00	0.000	0.00	0	0.028	0.000	0.000		
##	GRAPHITE	OMAXE	VAIBHAVGBL	SEQUENT	MOIL	CARBORUNIV		
## 2015-12-24 05:30:00	0.000	0.000	0	0.101	0.0	0.094		
## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0.1	0.000		
## 2017-12-29 05:30:00	0.111	0.000	0	0.000	0.0	0.000		
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.0	0.000		
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.0	0.000		
## 2020-12-18 05:30:00	0.000	0.109	0	0.001	0.0	0.000		
##	BAJAJHLDNG	BALRAMCHIN	NAVINFLUOR	DRREDDY	BPCL	KRBL		
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.005	0.038		
## 2016-12-30 05:30:00	0.000	0.073	0.000	0.000	0.083	0.000		
## 2017-12-29 05:30:00	0.019	0.000	0.000	0.000	0.000	0.000		
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000		
## 2019-12-27 05:30:00	0.075	0.020	0.000	0.000	0.000	0.000		
## 2020-12-18 05:30:00	0.000	0.000	0.092	0.028	0.000	0.000		
##	JYOTHYLAB	HEG	RELAXO	RATNAMANI	TRENT	INDIACEM	VAKRANGE	
## 2015-12-24 05:30:00	0.016	0.000	0.000	0	0.000	0.000	0.000	
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.039	0.075	0	0.000	0.000	0.071	
## 2018-12-28 05:30:00	0.072	0.044	0.000	0	0.000	0.000	0.000	
## 2019-12-27 05:30:00	0.000	0.000	0.006	0	0.077	0.000	0.000	
## 2020-12-18 05:30:00	0.000	0.000	0.000	0	0.000	0.075	0.000	
##	IOLCP	GESHIP	ASTRAL	ITC	NATCOPHARM	IDEA	IPCALAB	MPHASIS
## 2015-12-24 05:30:00	0.022	0.04	0.000	0	0	0.000	0.000	0.059
## 2016-12-30 05:30:00	0.000	0.00	0.000	0	0	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.00	0.067	0	0	0.000	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.00	0.000	0	0	0.000	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.00	0.000	0	0	0.000	0.061	0.000
## 2020-12-18 05:30:00	0.000	0.00	0.000	0	0	0.061	0.000	0.000
##	PGHH	CYIENT	SYMPHONY	GODREJCP	TECHM	BRIGADE	BBTC	
## 2015-12-24 05:30:00	0.000	0	0	0.057	0.000	0.000	0.000	
## 2016-12-30 05:30:00	0.058	0	0	0.000	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0	0	0.000	0.000	0.000	0.051	
## 2018-12-28 05:30:00	0.000	0	0	0.000	0.049	0.000	0.000	
## 2019-12-27 05:30:00	0.000	0	0	0.000	0.006	0.052	0.000	
## 2020-12-18 05:30:00	0.000	0	0	0.000	0.000	0.000	0.000	
##	REDINGTON	HINDZINC	KOTAKBANK	SOLARINDS	UPL	JCHAC		
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.046	0		
## 2016-12-30 05:30:00	0.000	0.048	0.000	0	0.000	0		
## 2017-12-29 05:30:00	0.006	0.000	0.000	0	0.000	0		
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000	0		

```

## 2019-12-27 05:30:00      0.043    0.000    0.047      0 0.000    0
## 2020-12-18 05:30:00      0.000    0.000    0.000      0 0.000    0
##          PERSISTENT JKTYRE SUNTECK TATASTEEL WIPRO RAJESHEXPO
## 2015-12-24 05:30:00      0.000    0 0.000    0.000 0.000    0.035
## 2016-12-30 05:30:00      0.000    0 0.000    0.000 0.000    0.000
## 2017-12-29 05:30:00      0.000    0 0.039    0.037 0.000    0.000
## 2018-12-28 05:30:00      0.000    0 0.000    0.000 0.006    0.000
## 2019-12-27 05:30:00      0.003    0 0.000    0.000 0.000    0.000
## 2020-12-18 05:30:00      0.040    0 0.000    0.000 0.000    0.000
##          POLYMED WELSPUNIND ALLCARGO DCMSHIRAM HINDPETRO CANFINHOME
## 2015-12-24 05:30:00      0        0 0        0.00 0.000    0
## 2016-12-30 05:30:00      0        0 0        0.00 0.000    0
## 2017-12-29 05:30:00      0        0 0        0.00 0.022    0
## 2018-12-28 05:30:00      0        0 0        0.00 0.000    0
## 2019-12-27 05:30:00      0        0 0        0.03 0.000    0
## 2020-12-18 05:30:00      0        0 0        0.00 0.000    0
##          BEL ICICIBANK AARTIIND DCAL
## 2015-12-24 05:30:00      0 0.000 0.000 0.021
## 2016-12-30 05:30:00      0 0.000 0.000 0.000
## 2017-12-29 05:30:00      0 0.024 0.000 0.000
## 2018-12-28 05:30:00      0 0.000 0.023 0.000
## 2019-12-27 05:30:00      0 0.000 0.000 0.000
## 2020-12-18 05:30:00      0 0.000 0.000 0.000

```

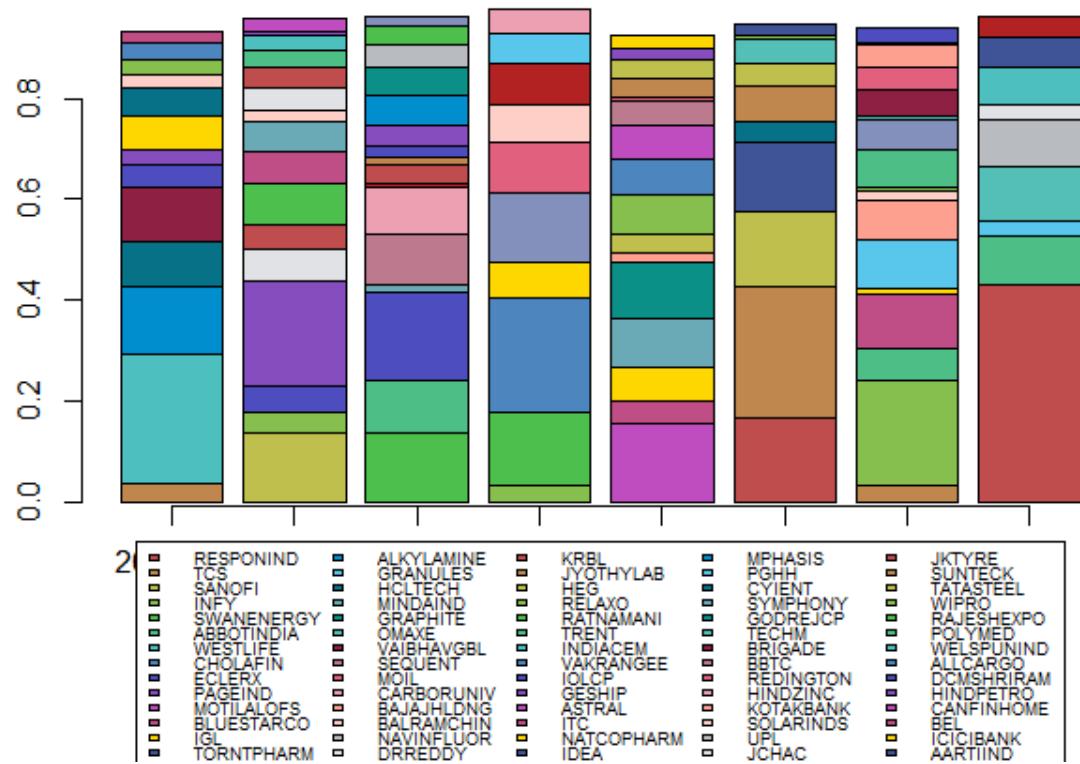
Weights for bt38



##	RESPONIND	TCS	SANOFI	INFY	SWANENERGY	ABBOTINDIA	WESTLIFE	
## 2015-12-24 05:30:00		0.000	0.000	0.000	0.000	0.137	0.103	0
## 2016-12-30 05:30:00		0.000	0.000	0.000	0.034	0.144	0.000	0
## 2017-12-29 05:30:00		0.000	0.000	0.000	0.000	0.000	0.000	0
## 2018-12-28 05:30:00		0.166	0.259	0.149	0.000	0.000	0.000	0
## 2019-12-27 05:30:00		0.000	0.032	0.000	0.208	0.000	0.063	0
## 2020-12-18 05:30:00		0.431	0.000	0.000	0.000	0.000	0.098	0
##	CHOLAFIN	ECLERX	PAGEIND	MOTILALOFS	BLUESTARCO	IGL		
## 2015-12-24 05:30:00		0.000	0.174	0	0.000	0.000	0.000	0.000
## 2016-12-30 05:30:00		0.228	0.000	0	0.000	0.000	0.069	0
## 2017-12-29 05:30:00		0.000	0.000	0	0.154	0.045	0.068	0
## 2018-12-28 05:30:00		0.000	0.000	0	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00		0.000	0.000	0	0.000	0.109	0.011	0
## 2020-12-18 05:30:00		0.000	0.000	0	0.000	0.000	0.000	0.000
##	TORNTPHARM	DHANUKA	ALKYLLAMINE	GRANULES	HCLTECH	MINDAIND		
## 2015-12-24 05:30:00		0.000	0.00	0	0.000	0.000	0.015	0
## 2016-12-30 05:30:00		0.000	0.14	0	0.000	0.000	0.000	0.000
## 2017-12-29 05:30:00		0.000	0.00	0	0.000	0.000	0.097	0
## 2018-12-28 05:30:00		0.141	0.00	0	0.000	0.038	0.000	0
## 2019-12-27 05:30:00		0.000	0.00	0	0.099	0.000	0.000	0
## 2020-12-18 05:30:00		0.000	0.00	0	0.028	0.000	0.000	0
##	GRAPHITE	OMAXE	VAIBHAVGBL	SEQUENT	MOIL	CARBORUNIV		
## 2015-12-24 05:30:00		0.000	0.000	0	0.101	0.0	0.094	0
## 2016-12-30 05:30:00		0.000	0.000	0	0.000	0.1	0.000	0
## 2017-12-29 05:30:00		0.111	0.000	0	0.000	0.0	0.000	0
## 2018-12-28 05:30:00		0.000	0.000	0	0.000	0.0	0.000	0
## 2019-12-27 05:30:00		0.000	0.000	0	0.000	0.0	0.000	0
## 2020-12-18 05:30:00		0.000	0.109	0	0.001	0.0	0.000	0
##	BAJAJHLDNG	BALRAMCHIN	NAVINFLUOR	DRREDDY	BPCL	KRBL		
## 2015-12-24 05:30:00		0.000	0.000	0.000	0.000	0.005	0.038	0
## 2016-12-30 05:30:00		0.000	0.073	0.000	0.000	0.083	0.000	0
## 2017-12-29 05:30:00		0.019	0.000	0.000	0.000	0.000	0.000	0
## 2018-12-28 05:30:00		0.000	0.000	0.000	0.000	0.000	0.000	0
## 2019-12-27 05:30:00		0.075	0.020	0.000	0.000	0.000	0.000	0
## 2020-12-18 05:30:00		0.000	0.000	0.092	0.028	0.000	0.000	0
##	JYOTHYLAB	HEG	RELAXO	RATNAMANI	TRENT	INDIACEM	VAKRANGE	
## 2015-12-24 05:30:00		0.016	0.000	0.000	0	0.000	0.000	0.000
## 2016-12-30 05:30:00		0.000	0.000	0.000	0	0.000	0.000	0.000
## 2017-12-29 05:30:00		0.000	0.039	0.075	0	0.000	0.000	0.071
## 2018-12-28 05:30:00		0.072	0.044	0.000	0	0.000	0.000	0.000
## 2019-12-27 05:30:00		0.000	0.000	0.006	0	0.077	0.000	0.000
## 2020-12-18 05:30:00		0.000	0.000	0.000	0	0.000	0.075	0.000
##	IOLCP	GESHIP	ASTRAL	ITC	NATCOPHARM	IDEA	IPCALAB	MPHASIS
## 2015-12-24 05:30:00	0.022	0.04	0.000	0		0	0.000	0.059
## 2016-12-30 05:30:00	0.000	0.00	0.000	0		0	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.00	0.067	0		0	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.00	0.000	0		0	0.000	0.000

```
## 2019-12-27 05:30:00 0.000 0.00 0.000 0 0 0.000 0.061 0.000
## 2020-12-18 05:30:00 0.000 0.00 0.000 0 0 0.061 0.000 0.000
## PGHH CYIENT SYMPHONY GODREJCP TECHM BRIGADE BBTC
## 2015-12-24 05:30:00 0.000 0 0.057 0.000 0.000 0.000
## 2016-12-30 05:30:00 0.058 0 0 0.000 0.000 0.000 0.000
## 2017-12-29 05:30:00 0.000 0 0 0.000 0.000 0.000 0.051
## 2018-12-28 05:30:00 0.000 0 0 0.000 0.049 0.000 0.000
## 2019-12-27 05:30:00 0.000 0 0 0.000 0.006 0.052 0.000
## 2020-12-18 05:30:00 0.000 0 0 0.000 0.000 0.000 0.000
## REDINGTON HINDZINC KOTAKBANK SOLARINDS UPL JCHAC
## 2015-12-24 05:30:00 0.000 0.000 0.000 0 0.046 0
## 2016-12-30 05:30:00 0.000 0.048 0.000 0 0.000 0
## 2017-12-29 05:30:00 0.006 0.000 0.000 0 0.000 0
## 2018-12-28 05:30:00 0.000 0.000 0.000 0 0.000 0
## 2019-12-27 05:30:00 0.043 0.000 0.047 0 0.000 0
## 2020-12-18 05:30:00 0.000 0.000 0.000 0 0.000 0
## PERSISTENT JKTYRE SUNTECK TATASTEEL WIPRO RAJESHEXPO
## 2015-12-24 05:30:00 0.000 0 0.000 0.000 0.000 0.035
## 2016-12-30 05:30:00 0.000 0 0.000 0.000 0.000 0.000
## 2017-12-29 05:30:00 0.000 0 0.039 0.037 0.000 0.000
## 2018-12-28 05:30:00 0.000 0 0.000 0.000 0.006 0.000
## 2019-12-27 05:30:00 0.003 0 0.000 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.040 0 0.000 0.000 0.000 0.000
## POLYMED WELSPUNIND ALLCARGO DCMSHRIRAM HINDPETRO CANFINHOME
## 2015-12-24 05:30:00 0 0 0 0.00 0.000 0
## 2016-12-30 05:30:00 0 0 0 0.00 0.000 0
## 2017-12-29 05:30:00 0 0 0 0.00 0.022 0
## 2018-12-28 05:30:00 0 0 0 0.00 0.000 0
## 2019-12-27 05:30:00 0 0 0 0.03 0.000 0
## 2020-12-18 05:30:00 0 0 0 0.00 0.000 0
## BEL ICICIBANK AARTIIND DCAL
## 2015-12-24 05:30:00 0 0.000 0.000 0.021
## 2016-12-30 05:30:00 0 0.000 0.000 0.000
## 2017-12-29 05:30:00 0 0.024 0.000 0.000
## 2018-12-28 05:30:00 0 0.000 0.023 0.000
## 2019-12-27 05:30:00 0 0.000 0.000 0.000
## 2020-12-18 05:30:00 0 0.000 0.000 0.000
```

Weights for bt39

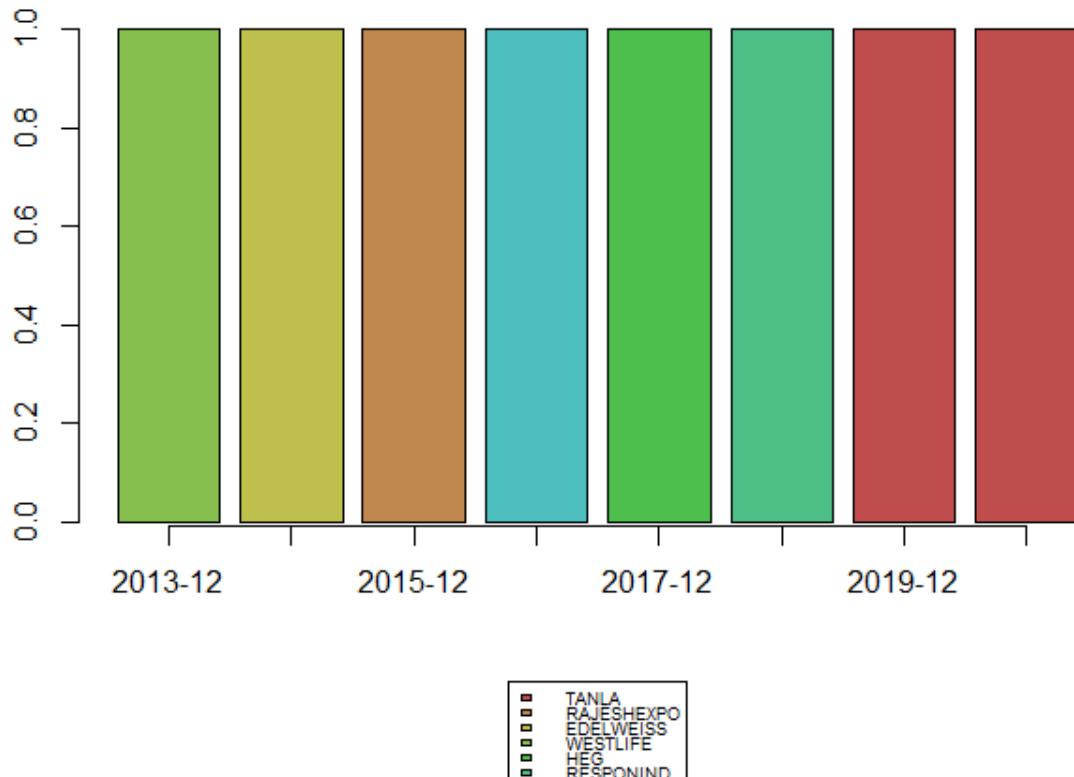


##	RESPONIND	TCS	SANOFI	INFY	SWANENERGY	ABBOTINDIA	WESTLIFE
## 2015-12-24 05:30:00		0.000	0.000	0.000	0.000	0.137	0.103
## 2016-12-30 05:30:00		0.000	0.000	0.000	0.034	0.144	0.000
## 2017-12-29 05:30:00		0.000	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00		0.166	0.259	0.149	0.000	0.000	0.000
## 2019-12-27 05:30:00		0.000	0.032	0.000	0.208	0.000	0.063
## 2020-12-18 05:30:00		0.431	0.000	0.000	0.000	0.000	0.098
##	CHOLAFIN	ECLERX	PAGEIND	MOTILALOFS	BLUESTARCO	IGL	
## 2015-12-24 05:30:00	0.000	0.174	0	0.000	0.000	0.000	0.000
## 2016-12-30 05:30:00	0.228	0.000	0	0.000	0.000	0.069	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0.154	0.045	0.068	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.109	0.011	0.000
## 2020-12-18 05:30:00	0.000	0.000	0	0.000	0.000	0.000	0.000
##	TORNTPHARM	DHANUKA	ALKYLAMINE	GRANULES	HCLTECH	MINDAIND	
## 2015-12-24 05:30:00	0.000	0.00	0	0.000	0.000	0.015	
## 2016-12-30 05:30:00	0.000	0.14	0	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.00	0	0.000	0.000	0.097	
## 2018-12-28 05:30:00	0.141	0.00	0	0.000	0.038	0.000	
## 2019-12-27 05:30:00	0.000	0.00	0	0.099	0.000	0.000	
## 2020-12-18 05:30:00	0.000	0.00	0	0.028	0.000	0.000	
##	GRAPHITE	OMAXE	VAIBHAVGBL	SEQUENT	MOIL	CARBORUNIV	
## 2015-12-24 05:30:00	0.000	0.000	0	0.101	0.0	0.094	

2016-12-30 05:30:00 0.000 0.000 0 0.000 0.1 0.000
2017-12-29 05:30:00 0.111 0.000 0 0.000 0.0 0.000
2018-12-28 05:30:00 0.000 0.000 0 0.000 0.0 0.000
2019-12-27 05:30:00 0.000 0.000 0 0.000 0.0 0.000
2020-12-18 05:30:00 0.000 0.109 0 0.001 0.0 0.000
BAJAJHLDNG BALRAMCHIN NAVINFLUOR DRREDDY BPCL KRBL
2015-12-24 05:30:00 0.000 0.000 0.000 0.000 0.005 0.038
2016-12-30 05:30:00 0.000 0.073 0.000 0.000 0.083 0.000
2017-12-29 05:30:00 0.019 0.000 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.075 0.020 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0.092 0.028 0.000 0.000
JYOTHYLAB HEG RELAXO RATNAMANI TRENT INDIACEM VAKRANGE
2015-12-24 05:30:00 0.016 0.000 0.000 0 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.039 0.075 0 0.000 0.000 0.071
2018-12-28 05:30:00 0.072 0.044 0.000 0 0.000 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.006 0 0.077 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0.000 0 0.000 0.075 0.000
IOLCP GESHIP ASTRAL ITC NATCOPHARM IDEA IPCALAB MPHASIS
2015-12-24 05:30:00 0.022 0.04 0.000 0 0 0.000 0.000 0.059
2016-12-30 05:30:00 0.000 0.00 0.000 0 0 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.00 0.067 0 0 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.00 0.000 0 0 0.000 0.000 0.000
2019-12-27 05:30:00 0.000 0.00 0.000 0 0 0.000 0.061 0.000
2020-12-18 05:30:00 0.000 0.00 0.000 0 0 0.061 0.000 0.000
PGHH CYIENT SYMPHONY GODREJCP TECHM BRIGADE BBTC
2015-12-24 05:30:00 0.000 0 0.057 0.000 0.000 0.000
2016-12-30 05:30:00 0.058 0 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0 0 0.000 0.000 0.000 0.051
2018-12-28 05:30:00 0.000 0 0 0.000 0.049 0.000 0.000
2019-12-27 05:30:00 0.000 0 0 0.000 0.006 0.052 0.000
2020-12-18 05:30:00 0.000 0 0 0.000 0.000 0.000 0.000
REDINGTON HINDZINC KOTAKBANK SOLARINDS UPL JCHAC
2015-12-24 05:30:00 0.000 0.000 0.000 0 0.046 0
2016-12-30 05:30:00 0.000 0.048 0.000 0 0.000 0
2017-12-29 05:30:00 0.006 0.000 0.000 0 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.000 0 0.000 0
2019-12-27 05:30:00 0.043 0.000 0.047 0 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0 0.000 0
PERSISTENT JKTYRE SUNTECK TATASTEEL WIPRO RAJESHEXPO
2015-12-24 05:30:00 0.000 0 0.000 0.000 0.000 0.035
2016-12-30 05:30:00 0.000 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0 0.039 0.037 0.000 0.000
2018-12-28 05:30:00 0.000 0 0.000 0.000 0.006 0.000
2019-12-27 05:30:00 0.003 0 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.040 0 0.000 0.000 0.000 0.000

```
##          POLYMED WELSPUNIND ALLCARGO DCMSHIRAM HINDPETRO CANFINHOME
## 2015-12-24 05:30:00      0        0        0       0.00     0.000      0
## 2016-12-30 05:30:00      0        0        0       0.00     0.000      0
## 2017-12-29 05:30:00      0        0        0       0.00     0.022      0
## 2018-12-28 05:30:00      0        0        0       0.00     0.000      0
## 2019-12-27 05:30:00      0        0        0       0.03     0.000      0
## 2020-12-18 05:30:00      0        0        0       0.00     0.000      0
##          BEL ICICIBANK AARTIIND DCAL
## 2015-12-24 05:30:00      0     0.000    0.000 0.021
## 2016-12-30 05:30:00      0     0.000    0.000 0.000
## 2017-12-29 05:30:00      0     0.024    0.000 0.000
## 2018-12-28 05:30:00      0     0.000    0.023 0.000
## 2019-12-27 05:30:00      0     0.000    0.000 0.000
## 2020-12-18 05:30:00      0     0.000    0.000 0.000
```

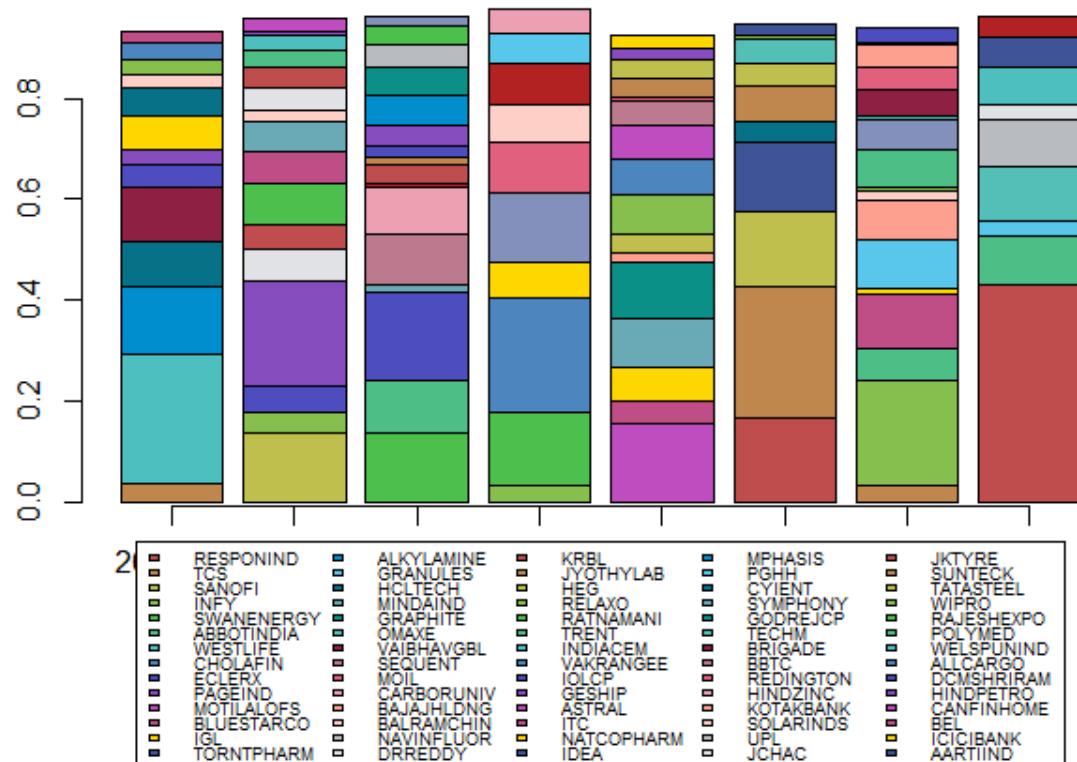
Weights for bt40



```
##          TANLA RAJESHEXPO EDELWEISS WESTLIFE HEG RESPONIND
## 2015-12-24 05:30:00      0        1        0       0  0     0
## 2016-12-30 05:30:00      0        0        0       0  0     0
## 2017-12-29 05:30:00      0        0        0       0  1     0
## 2018-12-28 05:30:00      0        0        0       0  0     1
## 2019-12-27 05:30:00      1        0        0       0  0     0
## 2020-12-18 05:30:00      1        0        0       0  0     0
```

```
##          TATAMETALI
## 2015-12-24 05:30:00      0
## 2016-12-30 05:30:00      1
## 2017-12-29 05:30:00      0
## 2018-12-28 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-12-18 05:30:00      0
```

Weights for bt41



```
##          RESPONIND TCS SANOFI INFY SWANENERGY ABBOTINDIA WESTLIFE
## 2015-12-24 05:30:00 0.000 0.000 0.000 0.000 0.137 0.103 0
## 2016-12-30 05:30:00 0.000 0.000 0.000 0.034 0.144 0.000 0
## 2017-12-29 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0
## 2018-12-28 05:30:00 0.166 0.259 0.149 0.000 0.000 0.000 0
## 2019-12-27 05:30:00 0.000 0.032 0.000 0.208 0.000 0.063 0
## 2020-12-18 05:30:00 0.431 0.000 0.000 0.000 0.000 0.098 0
##          CHOLAFIN ECLERX PAGEIND MOTILALOFS BLUESTARCO IGL
## 2015-12-24 05:30:00 0.000 0.174 0 0.000 0.000 0.000
## 2016-12-30 05:30:00 0.228 0.000 0 0.000 0.000 0.069
## 2017-12-29 05:30:00 0.000 0.000 0 0.154 0.045 0.068
## 2018-12-28 05:30:00 0.000 0.000 0 0.000 0.000 0.000
## 2019-12-27 05:30:00 0.000 0.000 0 0.000 0.109 0.011
## 2020-12-18 05:30:00 0.000 0.000 0 0.000 0.000 0.000
```

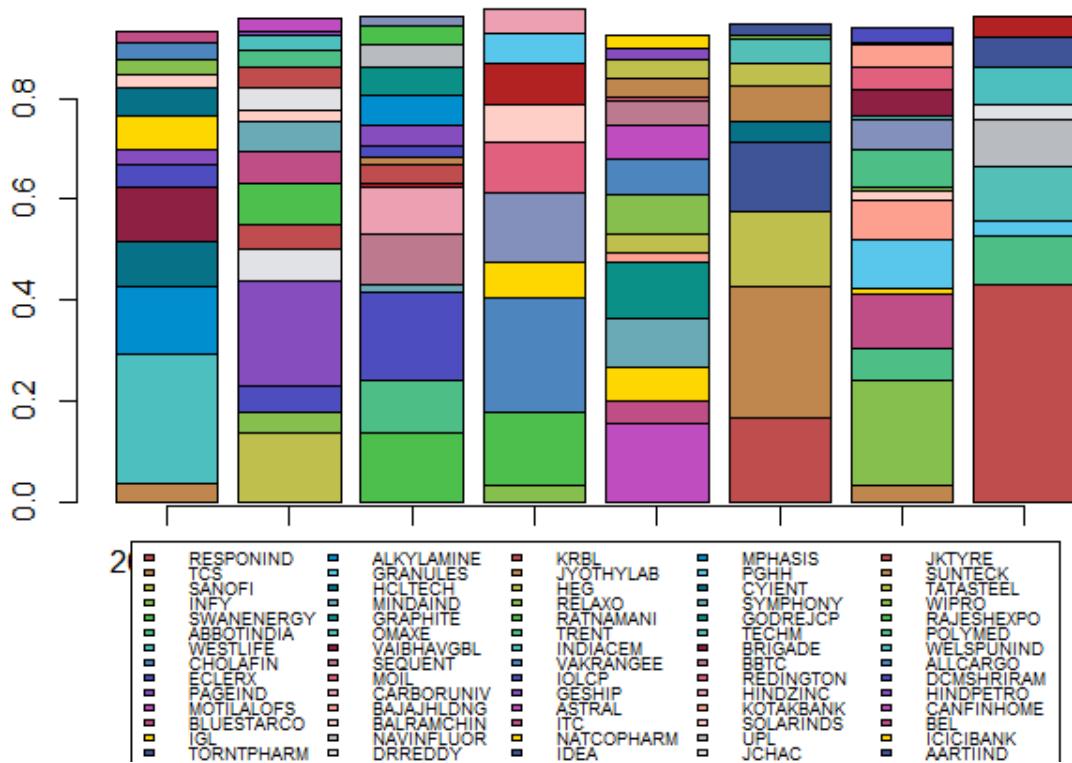
	TORNTPHARM	DHANUKA	ALKYLAMINE	GRANULES	HCLTECH	MINDAIND		
## 2015-12-24 05:30:00	0.000	0.00	0	0.000	0.000	0.015		
## 2016-12-30 05:30:00	0.000	0.14	0	0.000	0.000	0.000		
## 2017-12-29 05:30:00	0.000	0.00	0	0.000	0.000	0.097		
## 2018-12-28 05:30:00	0.141	0.00	0	0.000	0.038	0.000		
## 2019-12-27 05:30:00	0.000	0.00	0	0.099	0.000	0.000		
## 2020-12-18 05:30:00	0.000	0.00	0	0.028	0.000	0.000		
##	GRAPHITE	OMAXE	VAIBHAVGBL	SEQUENT	MOIL	CARBORUNIV		
## 2015-12-24 05:30:00	0.000	0.000	0	0.101	0.0	0.094		
## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0.1	0.000		
## 2017-12-29 05:30:00	0.111	0.000	0	0.000	0.0	0.000		
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.0	0.000		
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.0	0.000		
## 2020-12-18 05:30:00	0.000	0.109	0	0.001	0.0	0.000		
##	BAJAJHLDNG	BALRAMCHIN	NAVINFLUOR	DRREDDY	BPCL	KRBL		
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.005	0.038		
## 2016-12-30 05:30:00	0.000	0.073	0.000	0.000	0.083	0.000		
## 2017-12-29 05:30:00	0.019	0.000	0.000	0.000	0.000	0.000		
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000		
## 2019-12-27 05:30:00	0.075	0.020	0.000	0.000	0.000	0.000		
## 2020-12-18 05:30:00	0.000	0.000	0.092	0.028	0.000	0.000		
##	JYOTHYLAB	HEG	RELAXO	RATNAMANI	TRENT	INDIACEM	VAKRANGE	
## 2015-12-24 05:30:00	0.016	0.000	0.000	0	0.000	0.000	0.000	
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.039	0.075	0	0.000	0.000	0.071	
## 2018-12-28 05:30:00	0.072	0.044	0.000	0	0.000	0.000	0.000	
## 2019-12-27 05:30:00	0.000	0.000	0.006	0	0.077	0.000	0.000	
## 2020-12-18 05:30:00	0.000	0.000	0.000	0	0.000	0.075	0.000	
##	IOLCP	GESHIP	ASTRAL	ITC	NATCOPHARM	IDEA	IPCALAB	MPHASIS
## 2015-12-24 05:30:00	0.022	0.04	0.000	0	0	0.000	0.000	0.059
## 2016-12-30 05:30:00	0.000	0.00	0.000	0	0	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.00	0.067	0	0	0.000	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.00	0.000	0	0	0.000	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.00	0.000	0	0	0.000	0.061	0.000
## 2020-12-18 05:30:00	0.000	0.00	0.000	0	0	0.061	0.000	0.000
##	PGHH	CYIENT	SYMPHONY	GODREJCP	TECHM	BRIGADE	BBTC	
## 2015-12-24 05:30:00	0.000	0	0	0.057	0.000	0.000	0.000	
## 2016-12-30 05:30:00	0.058	0	0	0.000	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0	0	0.000	0.000	0.000	0.051	
## 2018-12-28 05:30:00	0.000	0	0	0.000	0.049	0.000	0.000	
## 2019-12-27 05:30:00	0.000	0	0	0.000	0.006	0.052	0.000	
## 2020-12-18 05:30:00	0.000	0	0	0.000	0.000	0.000	0.000	
##	REDINGTON	HINDZINC	KOTAKBANK	SOLARINDS	UPL	JCHAC		
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.046	0		
## 2016-12-30 05:30:00	0.000	0.048	0.000	0	0.000	0		
## 2017-12-29 05:30:00	0.006	0.000	0.000	0	0.000	0		
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000	0		

```

## 2019-12-27 05:30:00      0.043    0.000    0.047      0 0.000    0
## 2020-12-18 05:30:00      0.000    0.000    0.000      0 0.000    0
##          PERSISTENT JKTYRE SUNTECK TATASTEEL WIPRO RAJESHEXPO
## 2015-12-24 05:30:00      0.000    0 0.000    0.000 0.000    0.035
## 2016-12-30 05:30:00      0.000    0 0.000    0.000 0.000    0.000
## 2017-12-29 05:30:00      0.000    0 0.039    0.037 0.000    0.000
## 2018-12-28 05:30:00      0.000    0 0.000    0.000 0.006    0.000
## 2019-12-27 05:30:00      0.003    0 0.000    0.000 0.000    0.000
## 2020-12-18 05:30:00      0.040    0 0.000    0.000 0.000    0.000
##          POLYMED WELSPUNIND ALLCARGO DCMSHIRAM HINDPETRO CANFINHOME
## 2015-12-24 05:30:00      0    0 0    0.00 0.000    0
## 2016-12-30 05:30:00      0    0 0    0.00 0.000    0
## 2017-12-29 05:30:00      0    0 0    0.00 0.022    0
## 2018-12-28 05:30:00      0    0 0    0.00 0.000    0
## 2019-12-27 05:30:00      0    0 0    0.03 0.000    0
## 2020-12-18 05:30:00      0    0 0    0.00 0.000    0
##          BEL ICICIBANK AARTIIND DCAL
## 2015-12-24 05:30:00      0 0.000 0.000 0.021
## 2016-12-30 05:30:00      0 0.000 0.000 0.000
## 2017-12-29 05:30:00      0 0.024 0.000 0.000
## 2018-12-28 05:30:00      0 0.000 0.023 0.000
## 2019-12-27 05:30:00      0 0.000 0.000 0.000
## 2020-12-18 05:30:00      0 0.000 0.000 0.000

```

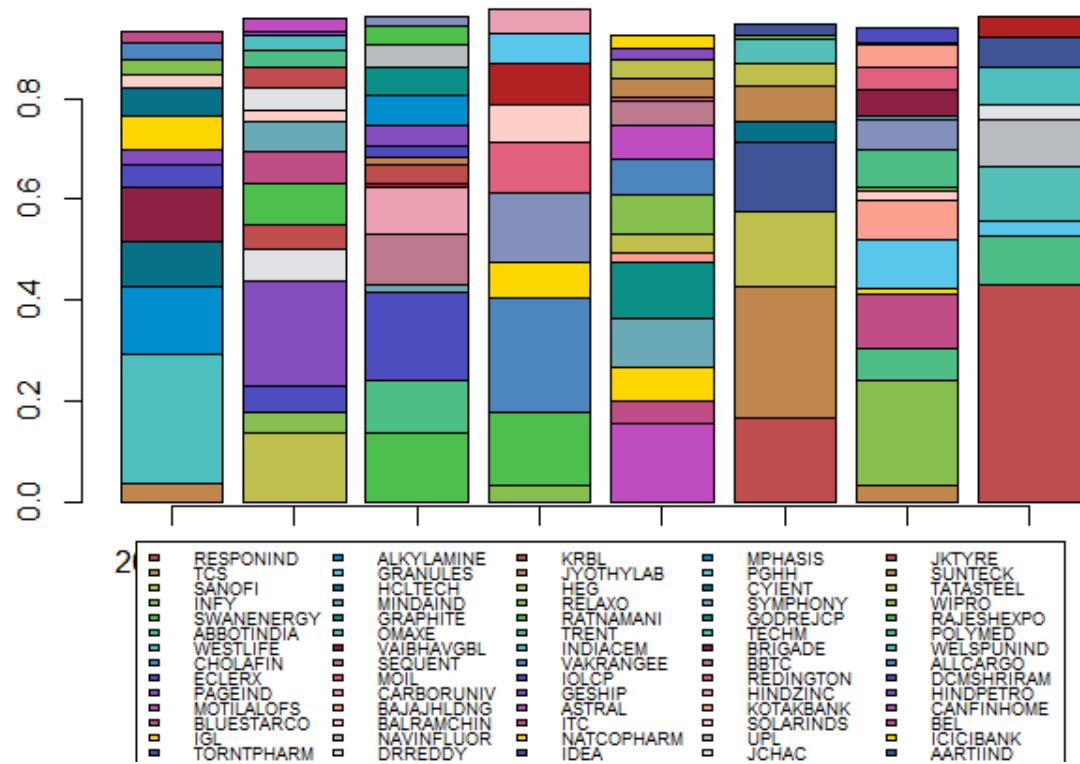
Weights for bt42



##	RESPONIND	TCS	SANOFI	INFY	SWANENERGY	ABBOTINDIA	WESTLIFE	
## 2015-12-24 05:30:00		0.000	0.000	0.000	0.000	0.137	0.103	0
## 2016-12-30 05:30:00		0.000	0.000	0.000	0.034	0.144	0.000	0
## 2017-12-29 05:30:00		0.000	0.000	0.000	0.000	0.000	0.000	0
## 2018-12-28 05:30:00		0.166	0.259	0.149	0.000	0.000	0.000	0
## 2019-12-27 05:30:00		0.000	0.032	0.000	0.208	0.000	0.063	0
## 2020-12-18 05:30:00		0.431	0.000	0.000	0.000	0.000	0.098	0
##	CHOLAFIN	ECLERX	PAGEIND	MOTILALOFS	BLUESTARCO	IGL		
## 2015-12-24 05:30:00		0.000	0.174	0	0.000	0.000	0.000	0.000
## 2016-12-30 05:30:00		0.228	0.000	0	0.000	0.000	0.069	0
## 2017-12-29 05:30:00		0.000	0.000	0	0.154	0.045	0.068	0
## 2018-12-28 05:30:00		0.000	0.000	0	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00		0.000	0.000	0	0.000	0.109	0.011	0
## 2020-12-18 05:30:00		0.000	0.000	0	0.000	0.000	0.000	0.000
##	TORNTPHARM	DHANUKA	ALKYLLAMINE	GRANULES	HCLTECH	MINDAIND		
## 2015-12-24 05:30:00		0.000	0.00	0	0.000	0.000	0.015	0
## 2016-12-30 05:30:00		0.000	0.14	0	0.000	0.000	0.000	0.000
## 2017-12-29 05:30:00		0.000	0.00	0	0.000	0.000	0.097	0
## 2018-12-28 05:30:00		0.141	0.00	0	0.000	0.038	0.000	0
## 2019-12-27 05:30:00		0.000	0.00	0	0.099	0.000	0.000	0
## 2020-12-18 05:30:00		0.000	0.00	0	0.028	0.000	0.000	0
##	GRAPHITE	OMAXE	VAIBHAVGBL	SEQUENT	MOIL	CARBORUNIV		
## 2015-12-24 05:30:00		0.000	0.000	0	0.101	0.0	0.094	0
## 2016-12-30 05:30:00		0.000	0.000	0	0.000	0.1	0.000	0
## 2017-12-29 05:30:00		0.111	0.000	0	0.000	0.0	0.000	0
## 2018-12-28 05:30:00		0.000	0.000	0	0.000	0.0	0.000	0
## 2019-12-27 05:30:00		0.000	0.000	0	0.000	0.0	0.000	0
## 2020-12-18 05:30:00		0.000	0.109	0	0.001	0.0	0.000	0
##	BAJAJHLDNG	BALRAMCHIN	NAVINFLUOR	DRREDDY	BPCL	KRBL		
## 2015-12-24 05:30:00		0.000	0.000	0.000	0.000	0.005	0.038	0
## 2016-12-30 05:30:00		0.000	0.073	0.000	0.000	0.083	0.000	0
## 2017-12-29 05:30:00		0.019	0.000	0.000	0.000	0.000	0.000	0
## 2018-12-28 05:30:00		0.000	0.000	0.000	0.000	0.000	0.000	0
## 2019-12-27 05:30:00		0.075	0.020	0.000	0.000	0.000	0.000	0
## 2020-12-18 05:30:00		0.000	0.000	0.092	0.028	0.000	0.000	0
##	JYOTHYLAB	HEG	RELAXO	RATNAMANI	TRENT	INDIACEM	VAKRANGE	
## 2015-12-24 05:30:00		0.016	0.000	0.000	0	0.000	0.000	0.000
## 2016-12-30 05:30:00		0.000	0.000	0.000	0	0.000	0.000	0.000
## 2017-12-29 05:30:00		0.000	0.039	0.075	0	0.000	0.000	0.071
## 2018-12-28 05:30:00		0.072	0.044	0.000	0	0.000	0.000	0.000
## 2019-12-27 05:30:00		0.000	0.000	0.006	0	0.077	0.000	0.000
## 2020-12-18 05:30:00		0.000	0.000	0.000	0	0.000	0.075	0.000
##	IOLCP	GESHIP	ASTRAL	ITC	NATCOPHARM	IDEA	IPCALAB	MPHASIS
## 2015-12-24 05:30:00	0.022	0.04	0.000	0		0	0.000	0.059
## 2016-12-30 05:30:00	0.000	0.00	0.000	0		0	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.00	0.067	0		0	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.00	0.000	0		0	0.000	0.000

```
## 2019-12-27 05:30:00 0.000 0.00 0.000 0 0 0.000 0.061 0.000
## 2020-12-18 05:30:00 0.000 0.00 0.000 0 0 0.061 0.000 0.000
## PGHH CYIENT SYMPHONY GODREJCP TECHM BRIGADE BBTC
## 2015-12-24 05:30:00 0.000 0 0.057 0.000 0.000 0.000
## 2016-12-30 05:30:00 0.058 0 0 0.000 0.000 0.000 0.000
## 2017-12-29 05:30:00 0.000 0 0 0.000 0.000 0.000 0.051
## 2018-12-28 05:30:00 0.000 0 0 0.000 0.049 0.000 0.000
## 2019-12-27 05:30:00 0.000 0 0 0.000 0.006 0.052 0.000
## 2020-12-18 05:30:00 0.000 0 0 0.000 0.000 0.000 0.000
## REDINGTON HINDZINC KOTAKBANK SOLARINDS UPL JCHAC
## 2015-12-24 05:30:00 0.000 0.000 0.000 0 0.046 0
## 2016-12-30 05:30:00 0.000 0.048 0.000 0 0.000 0
## 2017-12-29 05:30:00 0.006 0.000 0.000 0 0.000 0
## 2018-12-28 05:30:00 0.000 0.000 0.000 0 0.000 0
## 2019-12-27 05:30:00 0.043 0.000 0.047 0 0.000 0
## 2020-12-18 05:30:00 0.000 0.000 0.000 0 0.000 0
## PERSISTENT JKTYRE SUNTECK TATASTEEL WIPRO RAJESHEXPO
## 2015-12-24 05:30:00 0.000 0 0.000 0.000 0.000 0.035
## 2016-12-30 05:30:00 0.000 0 0.000 0.000 0.000 0.000
## 2017-12-29 05:30:00 0.000 0 0.039 0.037 0.000 0.000
## 2018-12-28 05:30:00 0.000 0 0.000 0.000 0.006 0.000
## 2019-12-27 05:30:00 0.003 0 0.000 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.040 0 0.000 0.000 0.000 0.000
## POLYMED WELSPUNIND ALLCARGO DCMSHRIRAM HINDPETRO CANFINHOME
## 2015-12-24 05:30:00 0 0 0 0.00 0.000 0
## 2016-12-30 05:30:00 0 0 0 0.00 0.000 0
## 2017-12-29 05:30:00 0 0 0 0.00 0.022 0
## 2018-12-28 05:30:00 0 0 0 0.00 0.000 0
## 2019-12-27 05:30:00 0 0 0 0.03 0.000 0
## 2020-12-18 05:30:00 0 0 0 0.00 0.000 0
## BEL ICICIBANK AARTIIND DCAL
## 2015-12-24 05:30:00 0 0.000 0.000 0.021
## 2016-12-30 05:30:00 0 0.000 0.000 0.000
## 2017-12-29 05:30:00 0 0.024 0.000 0.000
## 2018-12-28 05:30:00 0 0.000 0.023 0.000
## 2019-12-27 05:30:00 0 0.000 0.000 0.000
## 2020-12-18 05:30:00 0 0.000 0.000 0.000
```

Weights for bt43

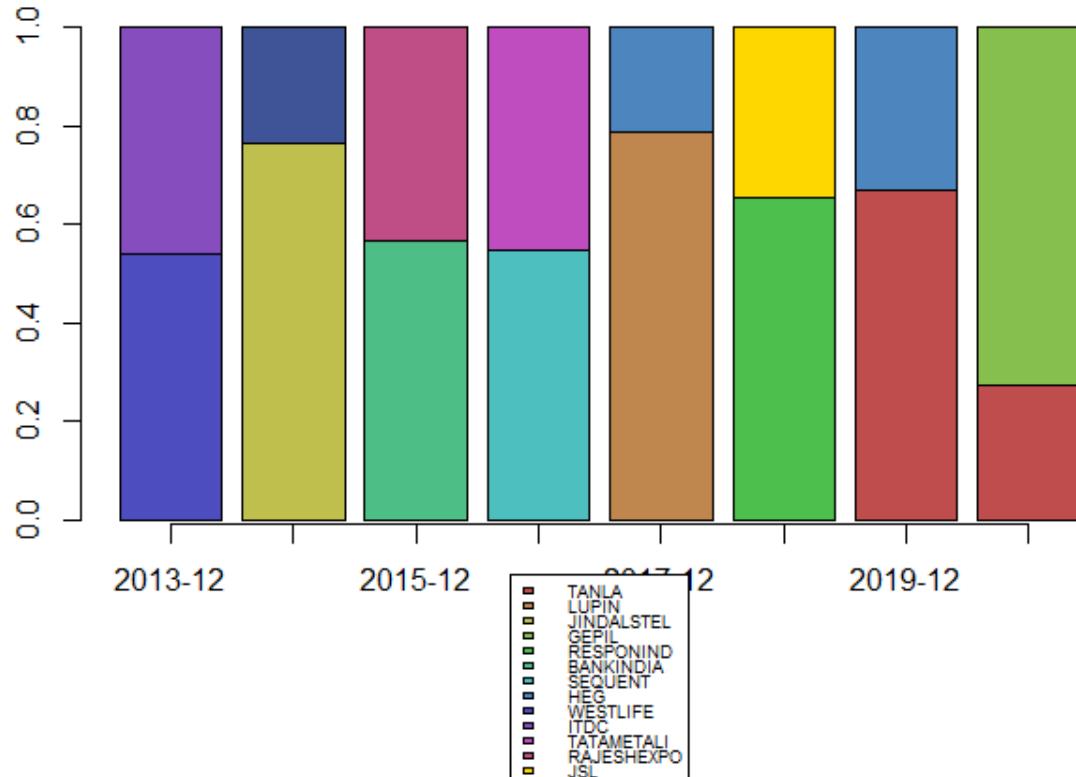


##	RESPONIND	TCS	SANOFI	INFY	SWANENERGY	ABBOTINDIA	WESTLIFE
## 2015-12-24 05:30:00		0.000	0.000	0.000	0.000	0.137	0.103
## 2016-12-30 05:30:00		0.000	0.000	0.000	0.034	0.144	0.000
## 2017-12-29 05:30:00		0.000	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00		0.166	0.259	0.149	0.000	0.000	0.000
## 2019-12-27 05:30:00		0.000	0.032	0.000	0.208	0.000	0.063
## 2020-12-18 05:30:00		0.431	0.000	0.000	0.000	0.000	0.098
##	CHOLAFIN	ECLERX	PAGEIND	MOTILALOFS	BLUESTARCO	IGL	
## 2015-12-24 05:30:00	0.000	0.174	0	0.000	0.000	0.000	0.000
## 2016-12-30 05:30:00	0.228	0.000	0	0.000	0.000	0.069	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0.154	0.045	0.068	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.109	0.011	0.000
## 2020-12-18 05:30:00	0.000	0.000	0	0.000	0.000	0.000	0.000
##	TORNTPHARM	DHANUKA	ALKYLAMINE	GRANULES	HCLTECH	MINDAIND	
## 2015-12-24 05:30:00	0.000	0.00	0	0.000	0.000	0.015	
## 2016-12-30 05:30:00	0.000	0.14	0	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.00	0	0.000	0.000	0.097	
## 2018-12-28 05:30:00	0.141	0.00	0	0.000	0.038	0.000	
## 2019-12-27 05:30:00	0.000	0.00	0	0.099	0.000	0.000	
## 2020-12-18 05:30:00	0.000	0.00	0	0.028	0.000	0.000	
##	GRAPHITE	OMAXE	VAIBHAVGBL	SEQUENT	MOIL	CARBORUNIV	
## 2015-12-24 05:30:00	0.000	0.000	0	0.101	0.0	0.094	

## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0.1	0.000
## 2017-12-29 05:30:00	0.111	0.000	0	0.000	0.0	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.0	0.000
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.0	0.000
## 2020-12-18 05:30:00	0.000	0.109	0	0.001	0.0	0.000
##	BAJAJHLDNG	BALRAMCHIN	NAVINFLUOR	DRREDDY	BPCL	KRBL
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.005	0.038
## 2016-12-30 05:30:00	0.000	0.073	0.000	0.000	0.083	0.000
## 2017-12-29 05:30:00	0.019	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00	0.075	0.020	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0.000	0.000	0.092	0.028	0.000	0.000
##	JYOTHYLAB	HEG	RELAXO	RATNAMANI	TRENT	INDIACEM
## 2015-12-24 05:30:00	0.016	0.000	0.000	0	0.000	0.000
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.039	0.075	0	0.000	0.000
## 2018-12-28 05:30:00	0.072	0.044	0.000	0	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.000	0.006	0	0.077	0.000
## 2020-12-18 05:30:00	0.000	0.000	0.000	0	0.000	0.075
##	IOLCP	GESHIP	ASTRAL	ITC	NATCOPHARM	IDEA
## 2015-12-24 05:30:00	0.022	0.04	0.000	0	0.000	0.000
## 2016-12-30 05:30:00	0.000	0.00	0.000	0	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.00	0.067	0	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.00	0.000	0	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.00	0.000	0	0.000	0.061
## 2020-12-18 05:30:00	0.000	0.00	0.000	0	0.061	0.000
##	PGHH	CYIENT	SYMPHONY	GODREJCP	TECHM	BRIGADE
## 2015-12-24 05:30:00	0.000	0	0	0.057	0.000	0.000
## 2016-12-30 05:30:00	0.058	0	0	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0	0	0.000	0.000	0.051
## 2018-12-28 05:30:00	0.000	0	0	0.000	0.049	0.000
## 2019-12-27 05:30:00	0.000	0	0	0.000	0.006	0.052
## 2020-12-18 05:30:00	0.000	0	0	0.000	0.000	0.000
##	REDINGTON	HINDZINC	KOTAKBANK	SOLARINDS	UPL	JCHAC
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.046	0
## 2016-12-30 05:30:00	0.000	0.048	0.000	0	0.000	0
## 2017-12-29 05:30:00	0.006	0.000	0.000	0	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000	0
## 2019-12-27 05:30:00	0.043	0.000	0.047	0	0.000	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0	0.000	0
##	PERSISTENT	JKTYRE	SUNTECK	TATASTEEL	WIPRO	RAJESHEXPO
## 2015-12-24 05:30:00	0.000	0	0.000	0.000	0.000	0.035
## 2016-12-30 05:30:00	0.000	0	0.000	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0	0.039	0.037	0.000	0.000
## 2018-12-28 05:30:00	0.000	0	0.000	0.000	0.006	0.000
## 2019-12-27 05:30:00	0.003	0	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0.040	0	0.000	0.000	0.000	0.000

```
##          POLYMED WELSPUNIND ALLCARGO DCMSHRIRAM HINDPETRO CANFINHOME
## 2015-12-24 05:30:00      0        0        0       0.00     0.000      0
## 2016-12-30 05:30:00      0        0        0       0.00     0.000      0
## 2017-12-29 05:30:00      0        0        0       0.00     0.022      0
## 2018-12-28 05:30:00      0        0        0       0.00     0.000      0
## 2019-12-27 05:30:00      0        0        0       0.03     0.000      0
## 2020-12-18 05:30:00      0        0        0       0.00     0.000      0
##          BEL ICICIBANK AARTIIND DCAL
## 2015-12-24 05:30:00      0     0.000    0.000 0.021
## 2016-12-30 05:30:00      0     0.000    0.000 0.000
## 2017-12-29 05:30:00      0     0.024    0.000 0.000
## 2018-12-28 05:30:00      0     0.000    0.023 0.000
## 2019-12-27 05:30:00      0     0.000    0.000 0.000
## 2020-12-18 05:30:00      0     0.000    0.000 0.000
```

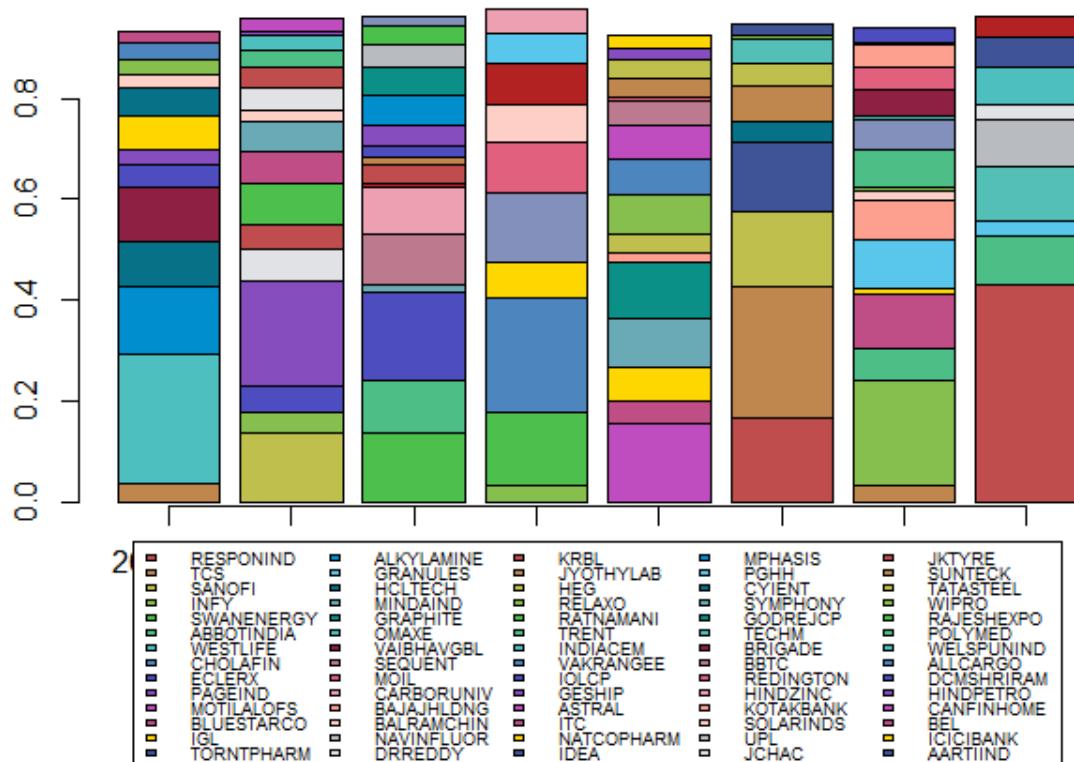
Weights for bt44



```
##          TANLA LUPIN JINDALSTEL GEPIL RESPONIND BANKINDIA SEQUENT
## 2015-12-24 05:30:00 0.000 0.000      0 0.000     0.000   0.568 0.000
## 2016-12-30 05:30:00 0.000 0.000      0 0.000     0.000   0.000 0.546
## 2017-12-29 05:30:00 0.000 0.787      0 0.000     0.000   0.000 0.000
## 2018-12-28 05:30:00 0.000 0.000      0 0.000     0.656   0.000 0.000
## 2019-12-27 05:30:00 0.670 0.000      0 0.000     0.000   0.000 0.000
## 2020-12-18 05:30:00 0.273 0.000      0 0.727     0.000   0.000 0.000
```

```
##          HEG WESTLIFE ITDC TATAMETALI RAJESHEXPO    JSL EDELWEISS
## 2015-12-24 05:30:00 0.000      0  0     0.000      0.432 0.000      0
## 2016-12-30 05:30:00 0.000      0  0     0.454      0.000 0.000      0
## 2017-12-29 05:30:00 0.213      0  0     0.000      0.000 0.000      0
## 2018-12-28 05:30:00 0.000      0  0     0.000      0.000 0.344      0
## 2019-12-27 05:30:00 0.330      0  0     0.000      0.000 0.000      0
## 2020-12-18 05:30:00 0.000      0  0     0.000      0.000 0.000      0
```

Weights for bt45



```
##          RESPONIND TCS SANOFI INFY SWANENERGY ABBOTINDIA WESTLIFE
## 2015-12-24 05:30:00 0.000 0.000 0.000 0.000      0.137 0.103      0
## 2016-12-30 05:30:00 0.000 0.000 0.000 0.034      0.144 0.000      0
## 2017-12-29 05:30:00 0.000 0.000 0.000 0.000      0.000 0.000      0
## 2018-12-28 05:30:00 0.166 0.259 0.149 0.000      0.000 0.000      0
## 2019-12-27 05:30:00 0.000 0.032 0.000 0.208      0.000 0.063      0
## 2020-12-18 05:30:00 0.431 0.000 0.000 0.000      0.000 0.098      0
##          CHOLAFIN ECLERX PAGEIND MOTILALOFS BLUESTARCO IGL
## 2015-12-24 05:30:00 0.000 0.174      0 0.000 0.000 0.000
## 2016-12-30 05:30:00 0.228 0.000      0 0.000 0.000 0.069
## 2017-12-29 05:30:00 0.000 0.000      0 0.154 0.045 0.068
## 2018-12-28 05:30:00 0.000 0.000      0 0.000 0.000 0.000
## 2019-12-27 05:30:00 0.000 0.000      0 0.000 0.109 0.011
## 2020-12-18 05:30:00 0.000 0.000      0 0.000 0.000 0.000
```

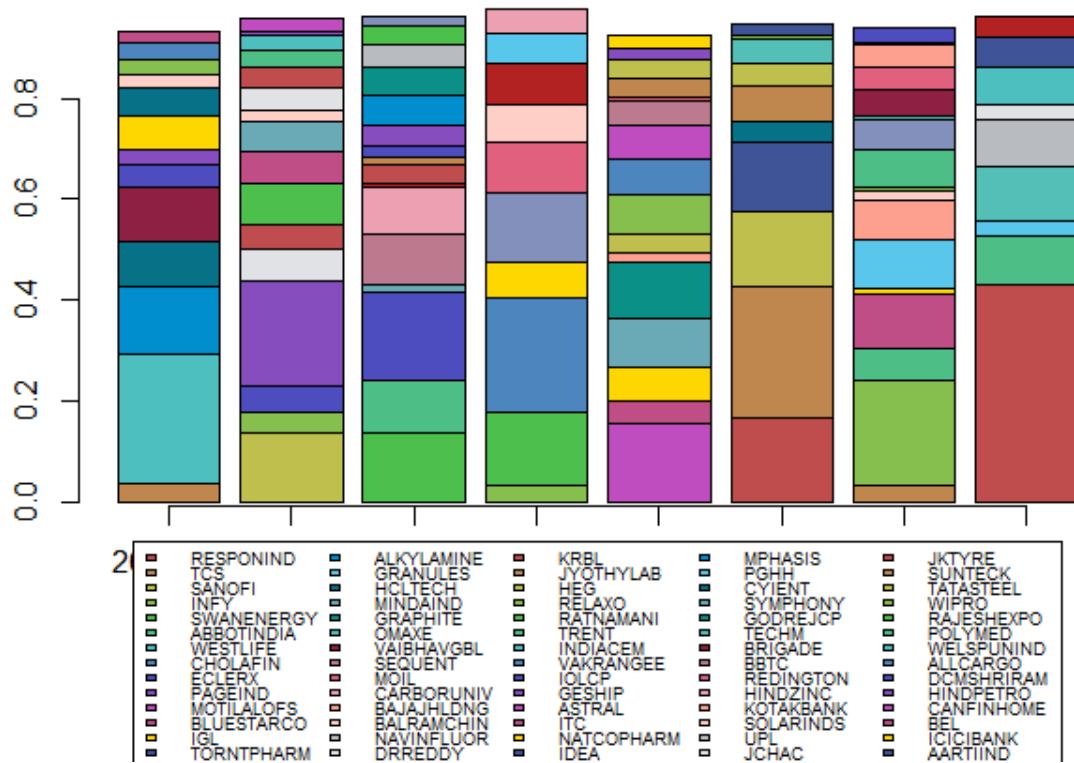
	TORNTPHARM	DHANUKA	ALKYLAMINE	GRANULES	HCLTECH	MINDAIND		
## 2015-12-24 05:30:00	0.000	0.00	0	0.000	0.000	0.015		
## 2016-12-30 05:30:00	0.000	0.14	0	0.000	0.000	0.000		
## 2017-12-29 05:30:00	0.000	0.00	0	0.000	0.000	0.097		
## 2018-12-28 05:30:00	0.141	0.00	0	0.000	0.038	0.000		
## 2019-12-27 05:30:00	0.000	0.00	0	0.099	0.000	0.000		
## 2020-12-18 05:30:00	0.000	0.00	0	0.028	0.000	0.000		
##	GRAPHITE	OMAXE	VAIBHAVGBL	SEQUENT	MOIL	CARBORUNIV		
## 2015-12-24 05:30:00	0.000	0.000	0	0.101	0.0	0.094		
## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0.1	0.000		
## 2017-12-29 05:30:00	0.111	0.000	0	0.000	0.0	0.000		
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.0	0.000		
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.0	0.000		
## 2020-12-18 05:30:00	0.000	0.109	0	0.001	0.0	0.000		
##	BAJAJHLDNG	BALRAMCHIN	NAVINFLUOR	DRREDDY	BPCL	KRBL		
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.005	0.038		
## 2016-12-30 05:30:00	0.000	0.073	0.000	0.000	0.083	0.000		
## 2017-12-29 05:30:00	0.019	0.000	0.000	0.000	0.000	0.000		
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000		
## 2019-12-27 05:30:00	0.075	0.020	0.000	0.000	0.000	0.000		
## 2020-12-18 05:30:00	0.000	0.000	0.092	0.028	0.000	0.000		
##	JYOTHYLAB	HEG	RELAXO	RATNAMANI	TRENT	INDIACEM	VAKRANGE	
## 2015-12-24 05:30:00	0.016	0.000	0.000	0	0.000	0.000	0.000	
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.039	0.075	0	0.000	0.000	0.071	
## 2018-12-28 05:30:00	0.072	0.044	0.000	0	0.000	0.000	0.000	
## 2019-12-27 05:30:00	0.000	0.000	0.006	0	0.077	0.000	0.000	
## 2020-12-18 05:30:00	0.000	0.000	0.000	0	0.000	0.075	0.000	
##	IOLCP	GESHIP	ASTRAL	ITC	NATCOPHARM	IDEA	IPCALAB	MPHASIS
## 2015-12-24 05:30:00	0.022	0.04	0.000	0	0	0.000	0.000	0.059
## 2016-12-30 05:30:00	0.000	0.00	0.000	0	0	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.00	0.067	0	0	0.000	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.00	0.000	0	0	0.000	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.00	0.000	0	0	0.000	0.061	0.000
## 2020-12-18 05:30:00	0.000	0.00	0.000	0	0	0.061	0.000	0.000
##	PGHH	CYIENT	SYMPHONY	GODREJCP	TECHM	BRIGADE	BBTC	
## 2015-12-24 05:30:00	0.000	0	0	0.057	0.000	0.000	0.000	
## 2016-12-30 05:30:00	0.058	0	0	0.000	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0	0	0.000	0.000	0.000	0.051	
## 2018-12-28 05:30:00	0.000	0	0	0.000	0.049	0.000	0.000	
## 2019-12-27 05:30:00	0.000	0	0	0.000	0.006	0.052	0.000	
## 2020-12-18 05:30:00	0.000	0	0	0.000	0.000	0.000	0.000	
##	REDINGTON	HINDZINC	KOTAKBANK	SOLARINDS	UPL	JCHAC		
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.046	0		
## 2016-12-30 05:30:00	0.000	0.048	0.000	0	0.000	0		
## 2017-12-29 05:30:00	0.006	0.000	0.000	0	0.000	0		
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000	0		

```

## 2019-12-27 05:30:00      0.043    0.000    0.047      0 0.000    0
## 2020-12-18 05:30:00      0.000    0.000    0.000      0 0.000    0
##          PERSISTENT JKTYRE SUNTECK TATASTEEL WIPRO RAJESHEXPO
## 2015-12-24 05:30:00      0.000    0 0.000    0.000 0.000    0.035
## 2016-12-30 05:30:00      0.000    0 0.000    0.000 0.000    0.000
## 2017-12-29 05:30:00      0.000    0 0.039    0.037 0.000    0.000
## 2018-12-28 05:30:00      0.000    0 0.000    0.000 0.006    0.000
## 2019-12-27 05:30:00      0.003    0 0.000    0.000 0.000    0.000
## 2020-12-18 05:30:00      0.040    0 0.000    0.000 0.000    0.000
##          POLYMED WELSPUNIND ALLCARGO DCMSHIRAM HINDPETRO CANFINHOME
## 2015-12-24 05:30:00      0    0    0    0.00 0.000    0
## 2016-12-30 05:30:00      0    0    0    0.00 0.000    0
## 2017-12-29 05:30:00      0    0    0    0.00 0.022    0
## 2018-12-28 05:30:00      0    0    0    0.00 0.000    0
## 2019-12-27 05:30:00      0    0    0    0.03 0.000    0
## 2020-12-18 05:30:00      0    0    0    0.00 0.000    0
##          BEL ICICIBANK AARTIIND DCAL
## 2015-12-24 05:30:00      0    0.000 0.000 0.021
## 2016-12-30 05:30:00      0    0.000 0.000 0.000
## 2017-12-29 05:30:00      0    0.024 0.000 0.000
## 2018-12-28 05:30:00      0    0.000 0.023 0.000
## 2019-12-27 05:30:00      0    0.000 0.000 0.000
## 2020-12-18 05:30:00      0    0.000 0.000 0.000

```

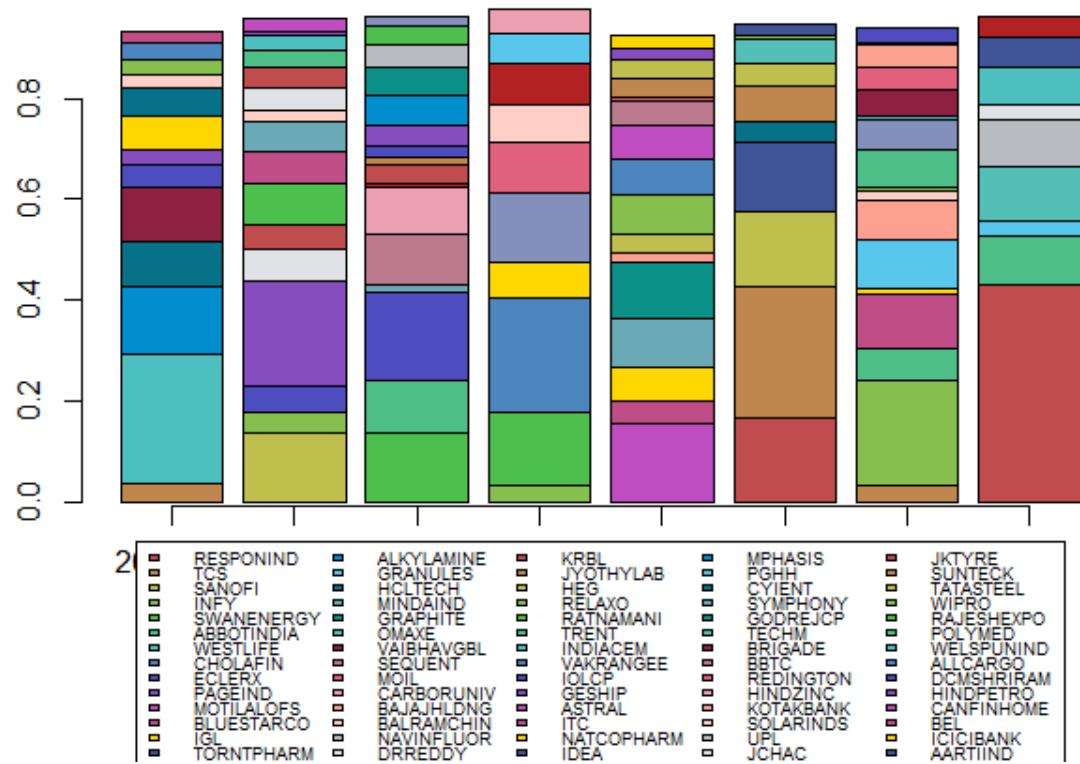
Weights for bt46



##	RESPONIND	TCS	SANOFI	INFY	SWANENERGY	ABBOTINDIA	WESTLIFE	
## 2015-12-24 05:30:00		0.000	0.000	0.000	0.000	0.137	0.103	0
## 2016-12-30 05:30:00		0.000	0.000	0.000	0.034	0.144	0.000	0
## 2017-12-29 05:30:00		0.000	0.000	0.000	0.000	0.000	0.000	0
## 2018-12-28 05:30:00		0.166	0.259	0.149	0.000	0.000	0.000	0
## 2019-12-27 05:30:00		0.000	0.032	0.000	0.208	0.000	0.063	0
## 2020-12-18 05:30:00		0.431	0.000	0.000	0.000	0.000	0.098	0
##	CHOLAFIN	ECLERX	PAGEIND	MOTILALOFS	BLUESTARCO	IGL		
## 2015-12-24 05:30:00		0.000	0.174	0	0.000	0.000	0.000	0.000
## 2016-12-30 05:30:00		0.228	0.000	0	0.000	0.000	0.069	0
## 2017-12-29 05:30:00		0.000	0.000	0	0.154	0.045	0.068	0
## 2018-12-28 05:30:00		0.000	0.000	0	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00		0.000	0.000	0	0.000	0.109	0.011	0
## 2020-12-18 05:30:00		0.000	0.000	0	0.000	0.000	0.000	0.000
##	TORNTPHARM	DHANUKA	ALKYLLAMINE	GRANULES	HCLTECH	MINDAIND		
## 2015-12-24 05:30:00		0.000	0.00	0	0.000	0.000	0.015	0
## 2016-12-30 05:30:00		0.000	0.14	0	0.000	0.000	0.000	0.000
## 2017-12-29 05:30:00		0.000	0.00	0	0.000	0.000	0.097	0
## 2018-12-28 05:30:00		0.141	0.00	0	0.000	0.038	0.000	0
## 2019-12-27 05:30:00		0.000	0.00	0	0.099	0.000	0.000	0
## 2020-12-18 05:30:00		0.000	0.00	0	0.028	0.000	0.000	0
##	GRAPHITE	OMAXE	VAIBHAVGBL	SEQUENT	MOIL	CARBORUNIV		
## 2015-12-24 05:30:00		0.000	0.000	0	0.101	0.0	0.094	0
## 2016-12-30 05:30:00		0.000	0.000	0	0.000	0.1	0.000	0
## 2017-12-29 05:30:00		0.111	0.000	0	0.000	0.0	0.000	0
## 2018-12-28 05:30:00		0.000	0.000	0	0.000	0.0	0.000	0
## 2019-12-27 05:30:00		0.000	0.000	0	0.000	0.0	0.000	0
## 2020-12-18 05:30:00		0.000	0.109	0	0.001	0.0	0.000	0
##	BAJAJHLDNG	BALRAMCHIN	NAVINFLUOR	DRREDDY	BPCL	KRBL		
## 2015-12-24 05:30:00		0.000	0.000	0.000	0.000	0.005	0.038	0
## 2016-12-30 05:30:00		0.000	0.073	0.000	0.000	0.083	0.000	0
## 2017-12-29 05:30:00		0.019	0.000	0.000	0.000	0.000	0.000	0
## 2018-12-28 05:30:00		0.000	0.000	0.000	0.000	0.000	0.000	0
## 2019-12-27 05:30:00		0.075	0.020	0.000	0.000	0.000	0.000	0
## 2020-12-18 05:30:00		0.000	0.000	0.092	0.028	0.000	0.000	0
##	JYOTHYLAB	HEG	RELAXO	RATNAMANI	TRENT	INDIACEM	VAKRANGE	
## 2015-12-24 05:30:00		0.016	0.000	0.000	0	0.000	0.000	0.000
## 2016-12-30 05:30:00		0.000	0.000	0.000	0	0.000	0.000	0.000
## 2017-12-29 05:30:00		0.000	0.039	0.075	0	0.000	0.000	0.071
## 2018-12-28 05:30:00		0.072	0.044	0.000	0	0.000	0.000	0.000
## 2019-12-27 05:30:00		0.000	0.000	0.006	0	0.077	0.000	0.000
## 2020-12-18 05:30:00		0.000	0.000	0.000	0	0.000	0.075	0.000
##	IOLCP	GESHIP	ASTRAL	ITC	NATCOPHARM	IDEA	IPCALAB	MPHASIS
## 2015-12-24 05:30:00	0.022	0.04	0.000	0		0	0.000	0.059
## 2016-12-30 05:30:00	0.000	0.00	0.000	0		0	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.00	0.067	0		0	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.00	0.000	0		0	0.000	0.000

```
## 2019-12-27 05:30:00 0.000 0.00 0.000 0 0 0.000 0.061 0.000
## 2020-12-18 05:30:00 0.000 0.00 0.000 0 0 0.061 0.000 0.000
## PGHH CYIENT SYMPHONY GODREJCP TECHM BRIGADE BBTC
## 2015-12-24 05:30:00 0.000 0 0.057 0.000 0.000 0.000
## 2016-12-30 05:30:00 0.058 0 0 0.000 0.000 0.000 0.000
## 2017-12-29 05:30:00 0.000 0 0 0.000 0.000 0.000 0.051
## 2018-12-28 05:30:00 0.000 0 0 0.000 0.049 0.000 0.000
## 2019-12-27 05:30:00 0.000 0 0 0.000 0.006 0.052 0.000
## 2020-12-18 05:30:00 0.000 0 0 0.000 0.000 0.000 0.000
## REDINGTON HINDZINC KOTAKBANK SOLARINDS UPL JCHAC
## 2015-12-24 05:30:00 0.000 0.000 0.000 0 0.046 0
## 2016-12-30 05:30:00 0.000 0.048 0.000 0 0.000 0
## 2017-12-29 05:30:00 0.006 0.000 0.000 0 0.000 0
## 2018-12-28 05:30:00 0.000 0.000 0.000 0 0.000 0
## 2019-12-27 05:30:00 0.043 0.000 0.047 0 0.000 0
## 2020-12-18 05:30:00 0.000 0.000 0.000 0 0.000 0
## PERSISTENT JKTYRE SUNTECK TATASTEEL WIPRO RAJESHEXPO
## 2015-12-24 05:30:00 0.000 0 0.000 0.000 0.000 0.035
## 2016-12-30 05:30:00 0.000 0 0.000 0.000 0.000 0.000
## 2017-12-29 05:30:00 0.000 0 0.039 0.037 0.000 0.000
## 2018-12-28 05:30:00 0.000 0 0.000 0.000 0.006 0.000
## 2019-12-27 05:30:00 0.003 0 0.000 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.040 0 0.000 0.000 0.000 0.000
## POLYMED WELSPUNIND ALLCARGO DCMSHRIRAM HINDPETRO CANFINHOME
## 2015-12-24 05:30:00 0 0 0 0.00 0.000 0
## 2016-12-30 05:30:00 0 0 0 0.00 0.000 0
## 2017-12-29 05:30:00 0 0 0 0.00 0.022 0
## 2018-12-28 05:30:00 0 0 0 0.00 0.000 0
## 2019-12-27 05:30:00 0 0 0 0.03 0.000 0
## 2020-12-18 05:30:00 0 0 0 0.00 0.000 0
## BEL ICICIBANK AARTIIND DCAL
## 2015-12-24 05:30:00 0 0.000 0.000 0.021
## 2016-12-30 05:30:00 0 0.000 0.000 0.000
## 2017-12-29 05:30:00 0 0.024 0.000 0.000
## 2018-12-28 05:30:00 0 0.000 0.023 0.000
## 2019-12-27 05:30:00 0 0.000 0.000 0.000
## 2020-12-18 05:30:00 0 0.000 0.000 0.000
```

Weights for bt47

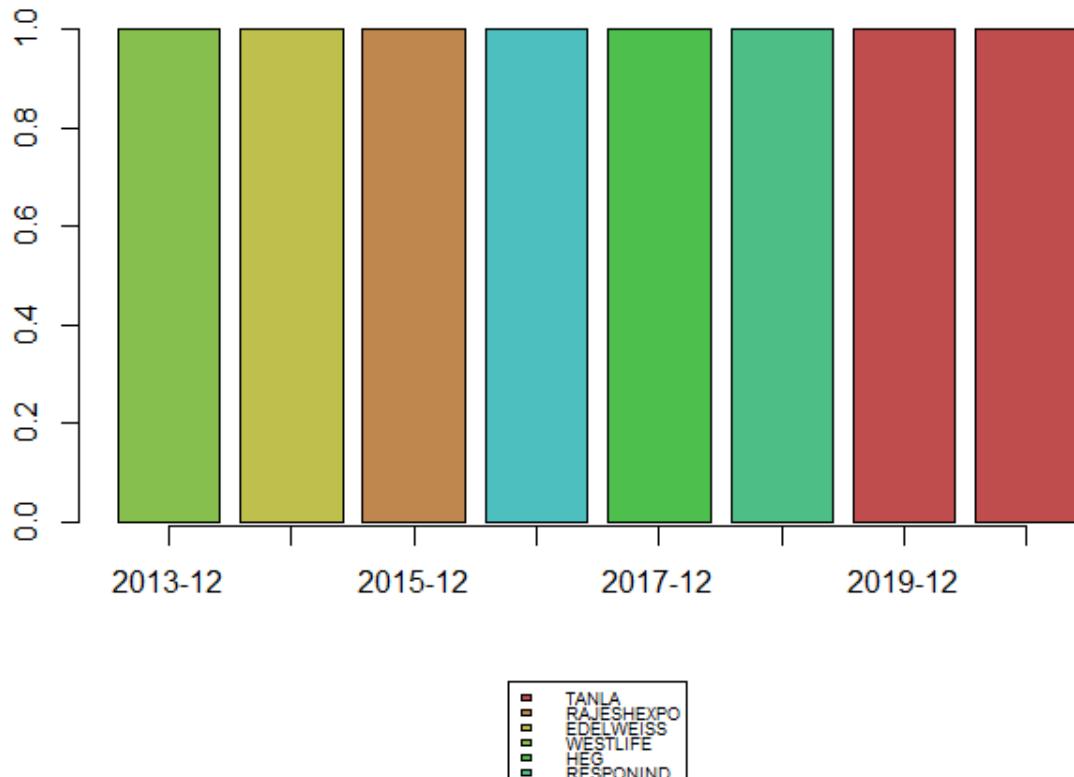


##	RESPONIND	TCS	SANOFI	INFY	SWANENERGY	ABBOTINDIA	WESTLIFE
## 2015-12-24 05:30:00		0.000	0.000	0.000	0.000	0.137	0.103
## 2016-12-30 05:30:00		0.000	0.000	0.000	0.034	0.144	0.000
## 2017-12-29 05:30:00		0.000	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00		0.166	0.259	0.149	0.000	0.000	0.000
## 2019-12-27 05:30:00		0.000	0.032	0.000	0.208	0.000	0.063
## 2020-12-18 05:30:00		0.431	0.000	0.000	0.000	0.000	0.098
##	CHOLAFIN	ECLERX	PAGEIND	MOTILALOFS	BLUESTARCO	IGL	
## 2015-12-24 05:30:00	0.000	0.174	0	0.000	0.000	0.000	0.000
## 2016-12-30 05:30:00	0.228	0.000	0	0.000	0.000	0.069	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0.154	0.045	0.068	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.109	0.011	0.000
## 2020-12-18 05:30:00	0.000	0.000	0	0.000	0.000	0.000	0.000
##	TORNTPHARM	DHANUKA	ALKYLAMINE	GRANULES	HCLTECH	MINDAIND	
## 2015-12-24 05:30:00	0.000	0.00	0	0.000	0.000	0.015	
## 2016-12-30 05:30:00	0.000	0.14	0	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.00	0	0.000	0.000	0.097	
## 2018-12-28 05:30:00	0.141	0.00	0	0.000	0.038	0.000	
## 2019-12-27 05:30:00	0.000	0.00	0	0.099	0.000	0.000	
## 2020-12-18 05:30:00	0.000	0.00	0	0.028	0.000	0.000	
##	GRAPHITE	OMAXE	VAIBHAVGBL	SEQUENT	MOIL	CARBORUNIV	
## 2015-12-24 05:30:00	0.000	0.000	0	0.101	0.0	0.094	

## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0.1	0.000
## 2017-12-29 05:30:00	0.111	0.000	0	0.000	0.0	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0.0	0.000
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0.0	0.000
## 2020-12-18 05:30:00	0.000	0.109	0	0.001	0.0	0.000
##	BAJAJHLDNG	BALRAMCHIN	NAVINFLUOR	DRREDDY	BPCL	KRBL
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.005	0.038
## 2016-12-30 05:30:00	0.000	0.073	0.000	0.000	0.083	0.000
## 2017-12-29 05:30:00	0.019	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00	0.075	0.020	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0.000	0.000	0.092	0.028	0.000	0.000
##	JYOTHYLAB	HEG	RELAXO	RATNAMANI	TRENT	INDIACEM
## 2015-12-24 05:30:00	0.016	0.000	0.000	0	0.000	0.000
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.039	0.075	0	0.000	0.000
## 2018-12-28 05:30:00	0.072	0.044	0.000	0	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.000	0.006	0	0.077	0.000
## 2020-12-18 05:30:00	0.000	0.000	0.000	0	0.000	0.075
##	IOLCP	GESHIP	ASTRAL	ITC	NATCOPHARM	IDEA
## 2015-12-24 05:30:00	0.022	0.04	0.000	0	0.000	0.000
## 2016-12-30 05:30:00	0.000	0.00	0.000	0	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.00	0.067	0	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.00	0.000	0	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.00	0.000	0	0.000	0.061
## 2020-12-18 05:30:00	0.000	0.00	0.000	0	0.061	0.000
##	PGHH	CYIENT	SYMPHONY	GODREJCP	TECHM	BRIGADE
## 2015-12-24 05:30:00	0.000	0	0	0.057	0.000	0.000
## 2016-12-30 05:30:00	0.058	0	0	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0	0	0.000	0.000	0.051
## 2018-12-28 05:30:00	0.000	0	0	0.000	0.049	0.000
## 2019-12-27 05:30:00	0.000	0	0	0.000	0.006	0.052
## 2020-12-18 05:30:00	0.000	0	0	0.000	0.000	0.000
##	REDINGTON	HINDZINC	KOTAKBANK	SOLARINDS	UPL	JCHAC
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.046	0
## 2016-12-30 05:30:00	0.000	0.048	0.000	0	0.000	0
## 2017-12-29 05:30:00	0.006	0.000	0.000	0	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000	0
## 2019-12-27 05:30:00	0.043	0.000	0.047	0	0.000	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0	0.000	0
##	PERSISTENT	JKTYRE	SUNTECK	TATASTEEL	WIPRO	RAJESHEXPO
## 2015-12-24 05:30:00	0.000	0	0.000	0.000	0.000	0.035
## 2016-12-30 05:30:00	0.000	0	0.000	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0	0.039	0.037	0.000	0.000
## 2018-12-28 05:30:00	0.000	0	0.000	0.000	0.006	0.000
## 2019-12-27 05:30:00	0.003	0	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0.040	0	0.000	0.000	0.000	0.000

```
##          POLYMED WELSPUNIND ALLCARGO DCMSHIRAM HINDPETRO CANFINHOME
## 2015-12-24 05:30:00      0        0        0       0.00     0.000      0
## 2016-12-30 05:30:00      0        0        0       0.00     0.000      0
## 2017-12-29 05:30:00      0        0        0       0.00     0.022      0
## 2018-12-28 05:30:00      0        0        0       0.00     0.000      0
## 2019-12-27 05:30:00      0        0        0       0.03     0.000      0
## 2020-12-18 05:30:00      0        0        0       0.00     0.000      0
##          BEL ICICIBANK AARTIIND DCAL
## 2015-12-24 05:30:00      0     0.000    0.000 0.021
## 2016-12-30 05:30:00      0     0.000    0.000 0.000
## 2017-12-29 05:30:00      0     0.024    0.000 0.000
## 2018-12-28 05:30:00      0     0.000    0.023 0.000
## 2019-12-27 05:30:00      0     0.000    0.000 0.000
## 2020-12-18 05:30:00      0     0.000    0.000 0.000
```

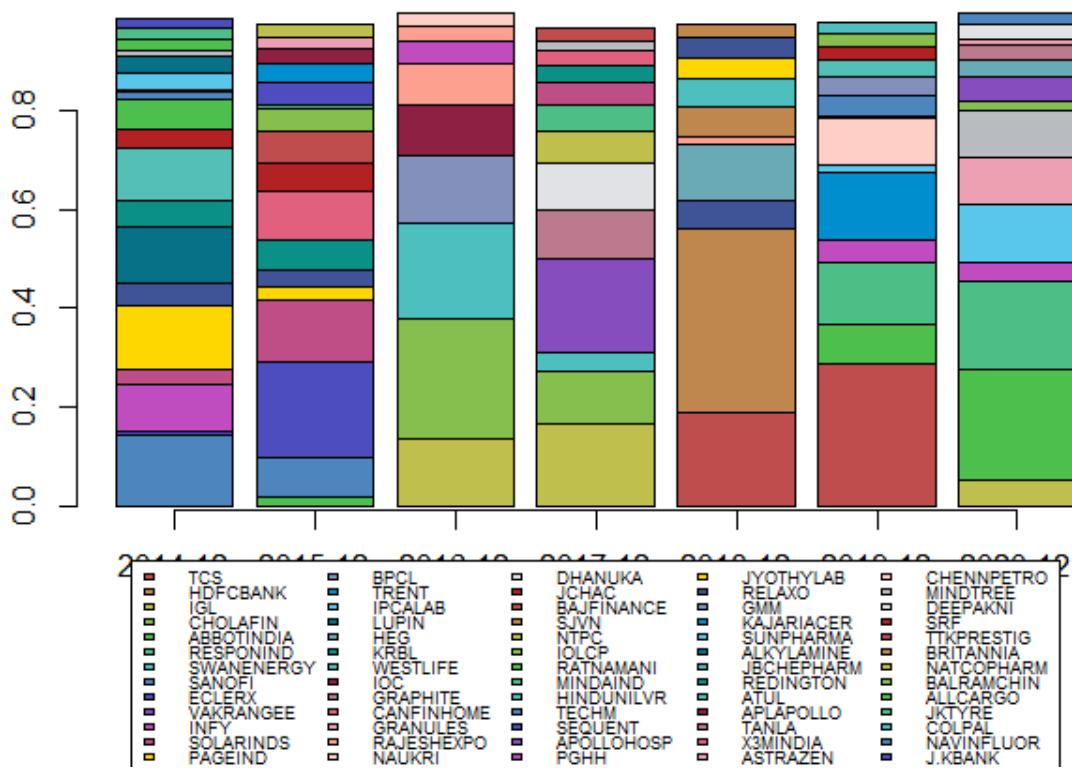
Weights for bt48



```
##          TANLA RAJESHEXPO EDELWEISS WESTLIFE HEG RESPONIND
## 2015-12-24 05:30:00      0        1        0       0  0     0
## 2016-12-30 05:30:00      0        0        0       0  0     0
## 2017-12-29 05:30:00      0        0        0       0  1     0
## 2018-12-28 05:30:00      0        0        0       0  0     1
## 2019-12-27 05:30:00      1        0        0       0  0     0
## 2020-12-18 05:30:00      1        0        0       0  0     0
```

```
##                                     TATAMETALI
## 2015-12-24 05:30:00          0
## 2016-12-30 05:30:00          1
## 2017-12-29 05:30:00          0
## 2018-12-28 05:30:00          0
## 2019-12-27 05:30:00          0
## 2020-12-18 05:30:00          0
```

Weights for bt49



```
##                                     TCS HDFCBANK IGL CHOLAFIN ABBOTINDIA RESPONIND
## 2015-12-24 05:30:00 0.000    0.000 0.000    0.000   0.018   0.000
## 2016-12-30 05:30:00 0.000    0.000 0.136    0.243   0.000   0.000
## 2017-12-29 05:30:00 0.000    0.000 0.164    0.108   0.000   0.000
## 2018-12-28 05:30:00 0.189    0.372 0.000    0.000   0.000   0.000
## 2019-12-27 05:30:00 0.286    0.000 0.000    0.000   0.082   0.124
## 2020-12-18 05:30:00 0.000    0.000 0.053    0.000   0.225   0.178
##                                     SWANENERGY SANOFI ECLERX VAKRANGEE INFY SOLARINDS PAGEIND
## 2015-12-24 05:30:00      0.000  0.077  0.196    0.000  0.000   0.125   0.026
## 2016-12-30 05:30:00      0.191  0.000  0.000    0.000  0.000   0.000   0.000
## 2017-12-29 05:30:00      0.037  0.000  0.000    0.191  0.000   0.000   0.000
## 2018-12-28 05:30:00      0.000  0.000  0.000    0.000  0.000   0.000   0.000
## 2019-12-27 05:30:00      0.000  0.000  0.000    0.000  0.047   0.000   0.000
## 2020-12-18 05:30:00      0.000  0.000  0.000    0.000  0.037   0.000   0.000
```

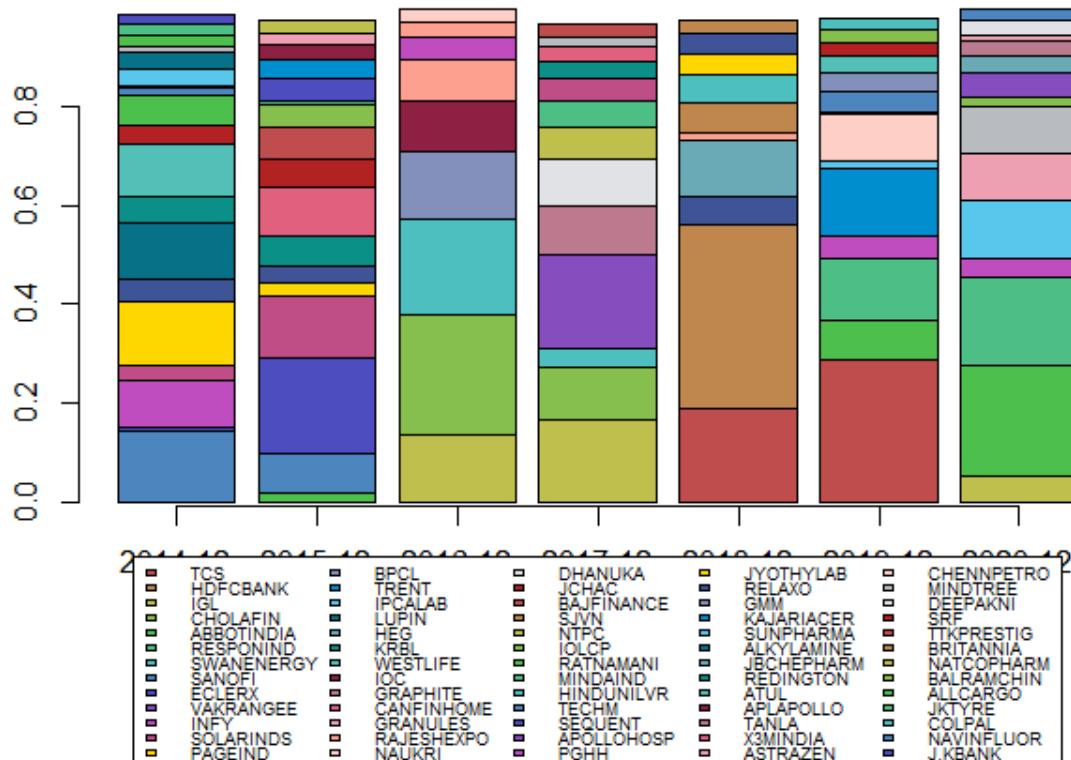
	HCLTECH	BPCL	TRENT	IPCALAB	LUPIN	HEG	KRBL	WESTLIFE
## 2015-12-24 05:30:00	0.037	0.000	0.000	0.000	0	0.000	0.059	0
## 2016-12-30 05:30:00	0.000	0.137	0.000	0.000	0	0.000	0.000	0
## 2017-12-29 05:30:00	0.000	0.000	0.000	0.000	0	0.000	0.000	0
## 2018-12-28 05:30:00	0.057	0.000	0.000	0.000	0	0.114	0.000	0
## 2019-12-27 05:30:00	0.000	0.000	0.134	0.015	0	0.000	0.000	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.116	0	0.000	0.000	0
##	IOC	GRAPHITE	CANFINHOME	GRANULES	RAJESHEXPO	NAUKRI		
## 2015-12-24 05:30:00	0.000	0.000	0.101	0.000	0.000	0.000	0.000	
## 2016-12-30 05:30:00	0.104	0.000	0.000	0.000	0.082	0.000		
## 2017-12-29 05:30:00	0.000	0.101	0.000	0.000	0.000	0.000	0.000	
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.015	0.000		
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000	0.096	
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.097	0.000	0.000		
##	INDIACEM	DHANUKA	JCHAC	BAJFINANCE	SJVN	NTPC	IOLCP	
## 2015-12-24 05:30:00	0.000	0.000	0.055	0.065	0.000	0.000	0.046	
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.095	0.000	0.000	0.000	0.065	0.000	
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.062	0.000	0.000	
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0.003	0.000	0.000	
## 2020-12-18 05:30:00	0.095	0.000	0.000	0.000	0.000	0.000	0.016	
##	RATNAMANI	MINDAIND	HINDUNILVR	TECHM	SEQUENT	APOLLOHOSP		
## 2015-12-24 05:30:00	0	0.006	0.000	0.000	0.048	0.000		
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.000	0.000		
## 2017-12-29 05:30:00	0	0.051	0.000	0.000	0.000	0.000		
## 2018-12-28 05:30:00	0	0.000	0.057	0.000	0.000	0.000		
## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0.000	0.000		
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0.000	0.052		
##	PGHH	MPHASIS	JYOTHYLAB	RELAXO	GMM	KAJARIACER	SUNPHARMA	
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.00	0.00	0.036	0	
## 2016-12-30 05:30:00	0.046	0.000	0.000	0.00	0.00	0.000	0	
## 2017-12-29 05:30:00	0.000	0.046	0.000	0.00	0.00	0.000	0	
## 2018-12-28 05:30:00	0.000	0.000	0.042	0.04	0.00	0.000	0	
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.00	0.04	0.000	0	
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.00	0.00	0.000	0	
##	ALKYLAMINE	JBCHEPHARM	REDINGTON	ATUL	APLAPOLLO	TANLA		
## 2015-12-24 05:30:00	0	0.000	0.000	0.000	0.032	0.000		
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.000	0.000		
## 2017-12-29 05:30:00	0	0.000	0.033	0.000	0.000	0.000		
## 2018-12-28 05:30:00	0	0.000	0.000	0.000	0.000	0.000		
## 2019-12-27 05:30:00	0	0.000	0.000	0.033	0.000	0.000		
## 2020-12-18 05:30:00	0	0.033	0.000	0.000	0.000	0.032		
##	X3MINDIA	ASTRAZEN	EDELWEISS	CHENNPETRO	MINDTREE	DEEPAKNI		
## 2015-12-24 05:30:00	0.000	0.020	0.00	0.003	0.00	0.00		
## 2016-12-30 05:30:00	0.000	0.000	0.03	0.027	0.00	0.00		
## 2017-12-29 05:30:00	0.031	0.000	0.00	0.000	0.02	0.00		
## 2018-12-28 05:30:00	0.000	0.000	0.00	0.000	0.00	0.00		

```

## 2019-12-27 05:30:00 0.000 0.000 0.00 0.000 0.00 0.00
## 2020-12-18 05:30:00 0.000 0.011 0.00 0.000 0.00 0.03
## SRF TTKPRESTIG BRITANNIA NATCOPHARM BALRAMCHIN ALLCARGO
## 2015-12-24 05:30:00 0.000 0.000 0.000 0.025 0.000 0
## 2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0
## 2017-12-29 05:30:00 0.000 0.029 0.000 0.000 0.000 0
## 2018-12-28 05:30:00 0.000 0.000 0.028 0.000 0.000 0
## 2019-12-27 05:30:00 0.029 0.000 0.000 0.000 0.025 0
## 2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0
## JKTYRE COLPAL NAVINFLUOR J.KBANK
## 2015-12-24 05:30:00 0 0.000 0.000 0
## 2016-12-30 05:30:00 0 0.000 0.000 0
## 2017-12-29 05:30:00 0 0.000 0.000 0
## 2018-12-28 05:30:00 0 0.000 0.000 0
## 2019-12-27 05:30:00 0 0.021 0.000 0
## 2020-12-18 05:30:00 0 0.000 0.021 0

```

Weights for bt50



```

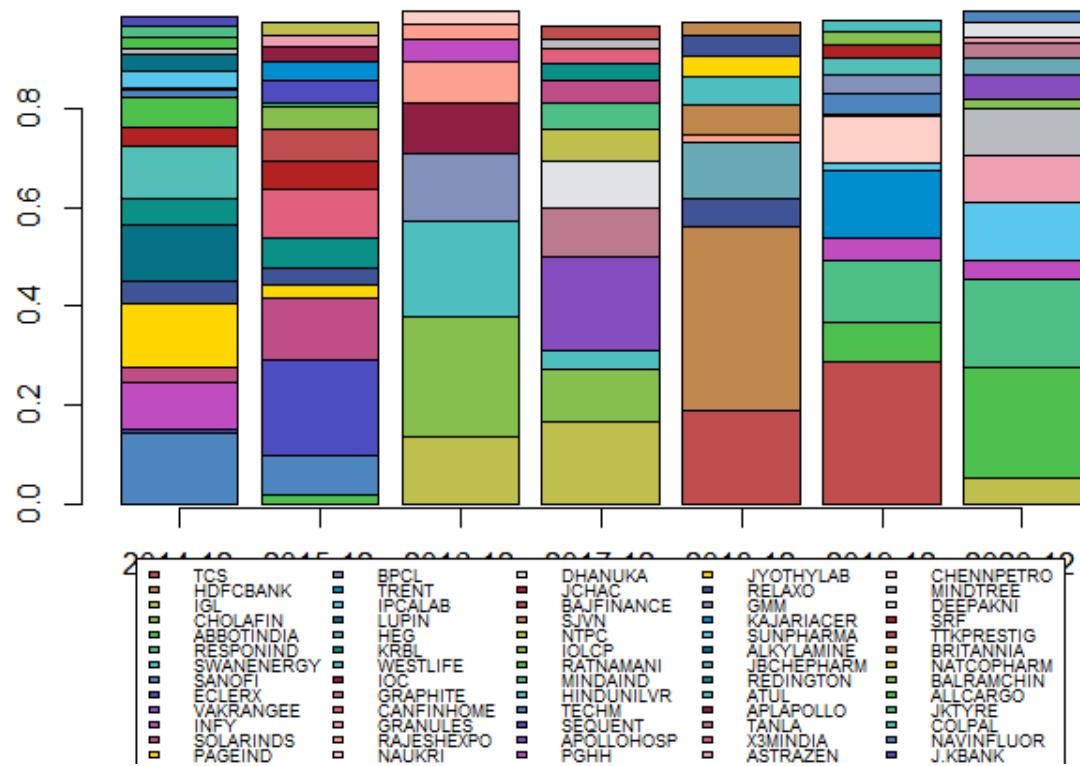
## TCS HDFCBANK IGL CHOLAFIN ABBOTINDIA RESPONIND
## 2015-12-24 05:30:00 0.000 0.000 0.000 0.018 0.000
## 2016-12-30 05:30:00 0.000 0.000 0.136 0.243 0.000
## 2017-12-29 05:30:00 0.000 0.000 0.164 0.108 0.000
## 2018-12-28 05:30:00 0.189 0.372 0.000 0.000 0.000

```

2019-12-27 05:30:00 0.286 0.000 0.000 0.000 0.082 0.124
2020-12-18 05:30:00 0.000 0.000 0.053 0.000 0.225 0.178
SWANENERGY SANOFI ECLERX VAKRANGEET INFY SOLARINDS PAGEIND
2015-12-24 05:30:00 0.000 0.077 0.196 0.000 0.000 0.125 0.026
2016-12-30 05:30:00 0.191 0.000 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.037 0.000 0.000 0.191 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.047 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.037 0.000 0.000
HCLTECH BPCL TRENT IPCALAB LUPIN HEG KRBL WESTLIFE
2015-12-24 05:30:00 0.037 0.000 0.000 0.000 0 0.000 0.059 0
2016-12-30 05:30:00 0.000 0.137 0.000 0.000 0 0.000 0.000 0
2017-12-29 05:30:00 0.000 0.000 0.000 0.000 0 0.000 0.000 0
2018-12-28 05:30:00 0.057 0.000 0.000 0.000 0 0.114 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.134 0.015 0 0.000 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.116 0 0.000 0.000 0
IOC GRAPHITE CANFINHOME GRANULES RAJESHEXPO NAUKRI
2015-12-24 05:30:00 0.000 0.000 0.101 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.104 0.000 0.000 0.000 0.082 0.000 0.000
2017-12-29 05:30:00 0.000 0.101 0.000 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.015 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.096
2020-12-18 05:30:00 0.000 0.000 0.000 0.097 0.000 0.000 0.000
INDIACEM DHANUKA JCHAC BAJFINANCE SJVN NTPC IOLCP
2015-12-24 05:30:00 0.000 0.000 0.055 0.065 0.000 0.000 0.046
2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.095 0.000 0.000 0.000 0.065 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.062 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.003 0.000 0.000
2020-12-18 05:30:00 0.095 0.000 0.000 0.000 0.000 0.000 0.016
RATNAMANI MINDAIND HINDUNILVR TECHM SEQUENT APOLLOHOSP
2015-12-24 05:30:00 0 0.006 0.000 0.000 0.048 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.051 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.057 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.042 0.000 0.000
2020-12-18 05:30:00 0 0.000 0.000 0.000 0.000 0.052
PGHH MPHYSIS JYOTHYLAB RELAXO GMM KAJARIACER SUNPHARMA
2015-12-24 05:30:00 0.000 0.000 0.000 0.00 0.00 0.036 0
2016-12-30 05:30:00 0.046 0.000 0.000 0.00 0.00 0.000 0
2017-12-29 05:30:00 0.000 0.046 0.000 0.00 0.00 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.042 0.04 0.00 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.000 0.00 0.04 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.00 0.00 0.000 0
ALKYLAMINE JBCHEPHARM REDINGTON ATUL APLAPOLLO TANLA
2015-12-24 05:30:00 0 0.000 0.000 0.000 0.032 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000

## 2017-12-29 05:30:00	0	0.000	0.033	0.000	0.000	0.000
## 2018-12-28 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00	0	0.000	0.000	0.033	0.000	0.000
## 2020-12-18 05:30:00	0	0.033	0.000	0.000	0.000	0.032
##	X3MINDIA	ASTRAZEN	EDELWEISS	CHENNPETRO	MINDTREE	DEEPAKNI
## 2015-12-24 05:30:00	0.000	0.020	0.00	0.003	0.00	0.00
## 2016-12-30 05:30:00	0.000	0.000	0.03	0.027	0.00	0.00
## 2017-12-29 05:30:00	0.031	0.000	0.00	0.000	0.02	0.00
## 2018-12-28 05:30:00	0.000	0.000	0.00	0.000	0.00	0.00
## 2019-12-27 05:30:00	0.000	0.000	0.00	0.000	0.00	0.00
## 2020-12-18 05:30:00	0.000	0.011	0.00	0.000	0.00	0.03
##	SRF	TTKPRESTIG	BRITANNIA	NATCOPHARM	BALRAMCHIN	ALLCARGO
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.025	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2017-12-29 05:30:00	0.000	0.029	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.028	0.000	0.000	0
## 2019-12-27 05:30:00	0.029	0.000	0.000	0.000	0.025	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	JKTYRE	COLPAL	NAVINFLUOR	J.KBANK		
## 2015-12-24 05:30:00	0	0.000	0.000	0		
## 2016-12-30 05:30:00	0	0.000	0.000	0		
## 2017-12-29 05:30:00	0	0.000	0.000	0		
## 2018-12-28 05:30:00	0	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.021	0.000	0		
## 2020-12-18 05:30:00	0	0.000	0.021	0		

Weights for bt51



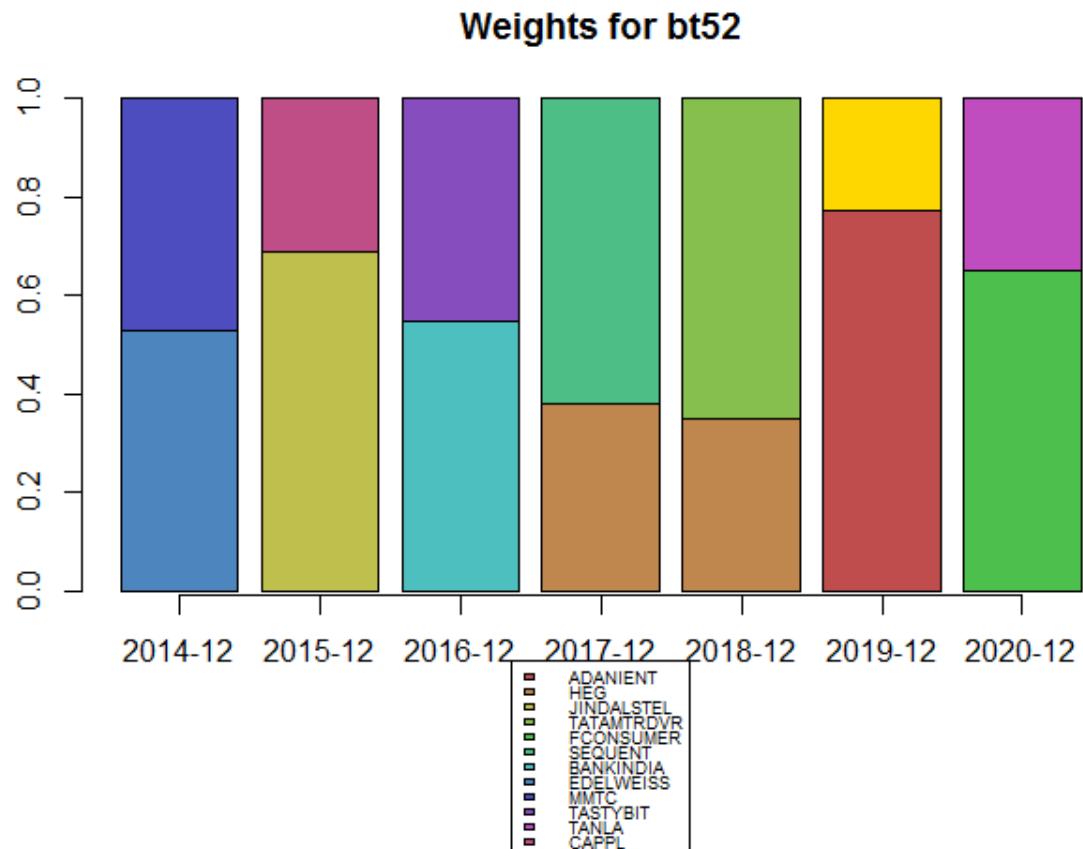
```

##          TCS HDFCBANK IGL CHOLAFIN ABBOTINDIA RESPONIND
## 2015-12-24 05:30:00 0.000    0.000 0.000    0.000   0.018   0.000
## 2016-12-30 05:30:00 0.000    0.000 0.136    0.243   0.000   0.000
## 2017-12-29 05:30:00 0.000    0.000 0.164    0.108   0.000   0.000
## 2018-12-28 05:30:00 0.189    0.372 0.000    0.000   0.000   0.000
## 2019-12-27 05:30:00 0.286    0.000 0.000    0.000   0.082   0.124
## 2020-12-18 05:30:00 0.000    0.000 0.053    0.000   0.225   0.178
##          SWANENERGY SANOFI ECLERX VAKRANGEE INFY SOLARINDS PAGEIND
## 2015-12-24 05:30:00      0.000 0.077 0.196    0.000 0.000   0.125   0.026
## 2016-12-30 05:30:00      0.191 0.000 0.000    0.000 0.000   0.000   0.000
## 2017-12-29 05:30:00      0.037 0.000 0.000    0.191 0.000   0.000   0.000
## 2018-12-28 05:30:00      0.000 0.000 0.000    0.000 0.000   0.000   0.000
## 2019-12-27 05:30:00      0.000 0.000 0.000    0.000 0.047   0.000   0.000
## 2020-12-18 05:30:00      0.000 0.000 0.000    0.000 0.037   0.000   0.000
##          HCLTECH BPCL TRENT IPCALAB LUPIN  HEG  KRBL WESTLIFE
## 2015-12-24 05:30:00     0.037 0.000 0.000    0.000 0 0.000 0.059   0
## 2016-12-30 05:30:00     0.000 0.137 0.000    0.000 0 0.000 0.000   0
## 2017-12-29 05:30:00     0.000 0.000 0.000    0.000 0 0.000 0.000   0
## 2018-12-28 05:30:00     0.057 0.000 0.000    0.000 0 0.114 0.000   0
## 2019-12-27 05:30:00     0.000 0.000 0.134    0.015 0 0.000 0.000   0
## 2020-12-18 05:30:00     0.000 0.000 0.000    0.116 0 0.000 0.000   0
##          IOC GRAPHITE CANFINHOME GRANULES RAJESHEXPO NAUKRI
## 2015-12-24 05:30:00 0.000    0.000 0.101    0.000 0.000   0.000   0.000

```

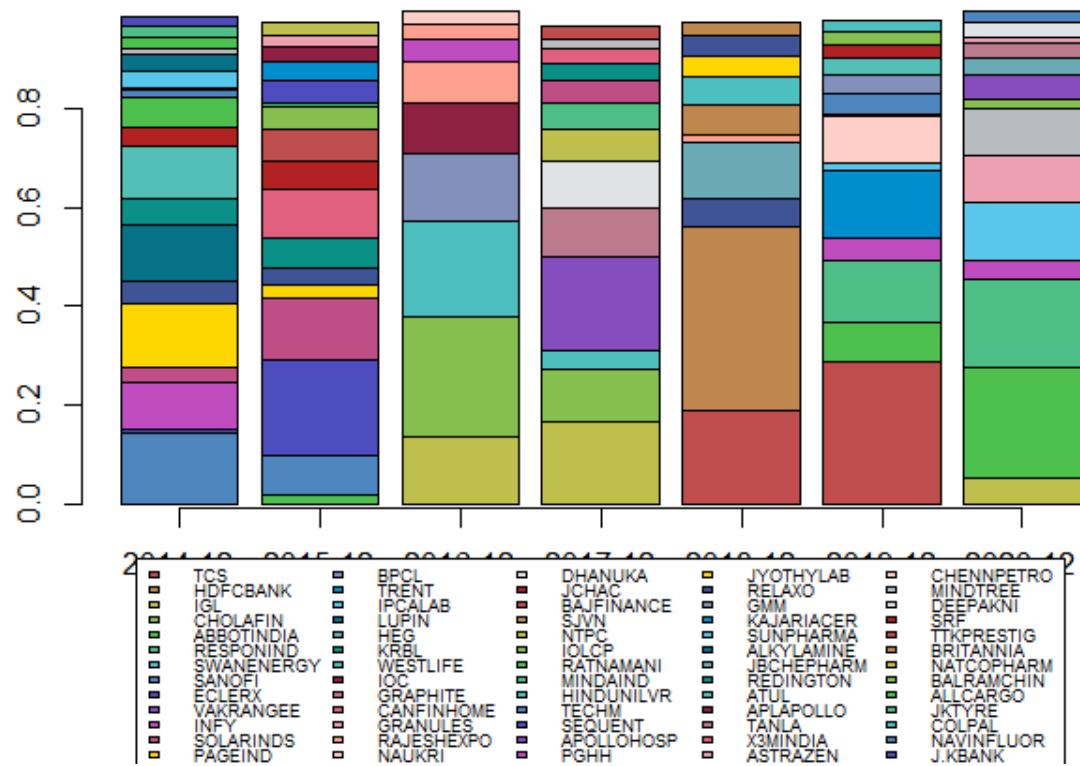
2016-12-30 05:30:00 0.104 0.000 0.000 0.000 0.082 0.000
2017-12-29 05:30:00 0.000 0.101 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.015 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.000 0.096
2020-12-18 05:30:00 0.000 0.000 0.000 0.097 0.000 0.000
INDIACEM DHANUKA JCHAC BAJFINANCE SJVN NTPC IOLCP
2015-12-24 05:30:00 0.000 0.000 0.055 0.065 0.000 0.000 0.046
2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.095 0.000 0.000 0.000 0.065 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.062 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.003 0.000 0.000
2020-12-18 05:30:00 0.095 0.000 0.000 0.000 0.000 0.000 0.016
RATNAMANI MINDAIND HINDUNILVR TECHM SEQUENT APOLLOHOSP
2015-12-24 05:30:00 0 0.006 0.000 0.000 0.048 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.051 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.057 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.042 0.000 0.000
2020-12-18 05:30:00 0 0.000 0.000 0.000 0.000 0.052
PGHH MPHASIS JYOTHYLAB RELAXO GMM KAJARIACER SUNPHARMA
2015-12-24 05:30:00 0.000 0.000 0.000 0.00 0.00 0.036 0
2016-12-30 05:30:00 0.046 0.000 0.000 0.00 0.00 0.000 0
2017-12-29 05:30:00 0.000 0.046 0.000 0.00 0.00 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.042 0.04 0.00 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.000 0.00 0.04 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.00 0.00 0.000 0
ALKYLAMINE JBCHEPHARM REDINGTON ATUL APLAPOLLO TANLA
2015-12-24 05:30:00 0 0.000 0.000 0.000 0.032 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.000 0.033 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.033 0.000 0.000
2020-12-18 05:30:00 0 0.033 0.000 0.000 0.000 0.032
X3MINDIA ASTRAZEN EDELWEISS CHENNPETRO MINDTREE DEEPAKNI
2015-12-24 05:30:00 0.000 0.020 0.00 0.003 0.00 0.00
2016-12-30 05:30:00 0.000 0.000 0.03 0.027 0.00 0.00
2017-12-29 05:30:00 0.031 0.000 0.00 0.000 0.02 0.00
2018-12-28 05:30:00 0.000 0.000 0.00 0.000 0.00 0.00
2019-12-27 05:30:00 0.000 0.000 0.00 0.000 0.00 0.00
2020-12-18 05:30:00 0.000 0.011 0.00 0.000 0.00 0.03
SRF TTKPRESTIG BRITANNIA NATCOPHARM BALRAMCHIN ALLCARGO
2015-12-24 05:30:00 0.000 0.000 0.000 0.025 0.000 0
2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0
2017-12-29 05:30:00 0.000 0.029 0.000 0.000 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.028 0.000 0.000 0
2019-12-27 05:30:00 0.029 0.000 0.000 0.000 0.025 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0

```
##          JKTYRE COLPAL NAVINFLUOR J.KBANK
## 2015-12-24 05:30:00      0  0.000    0.000      0
## 2016-12-30 05:30:00      0  0.000    0.000      0
## 2017-12-29 05:30:00      0  0.000    0.000      0
## 2018-12-28 05:30:00      0  0.000    0.000      0
## 2019-12-27 05:30:00      0  0.021    0.000      0
## 2020-12-18 05:30:00      0  0.000    0.021      0
```



```
##          ADANIENT HEG JINDALSTEL TATAMTRDVR FCONSUMER SEQUENT
## 2015-12-24 05:30:00 0.000 0.000    0.689     0.00     0.00   0.000
## 2016-12-30 05:30:00 0.000 0.000    0.000     0.00     0.00   0.000
## 2017-12-29 05:30:00 0.000 0.378    0.000     0.00     0.00   0.622
## 2018-12-28 05:30:00 0.000 0.350    0.000     0.65     0.00   0.000
## 2019-12-27 05:30:00 0.774 0.000    0.000     0.00     0.00   0.000
## 2020-12-18 05:30:00 0.000 0.000    0.000     0.00     0.65   0.000
##          BANKINDIA EDELWEISS MMTC TASTYBIT TANLA CAPPL CENTRALBK
## 2015-12-24 05:30:00 0.000      0  0.000  0.00  0.311   0.000
## 2016-12-30 05:30:00 0.549      0  0.451  0.00  0.000   0.000
## 2017-12-29 05:30:00 0.000      0  0.000  0.00  0.000   0.000
## 2018-12-28 05:30:00 0.000      0  0.000  0.00  0.000   0.000
## 2019-12-27 05:30:00 0.000      0  0.000  0.00  0.000   0.226
## 2020-12-18 05:30:00 0.000      0  0.000  0.35  0.000   0.000
```

Weights for bt53



```

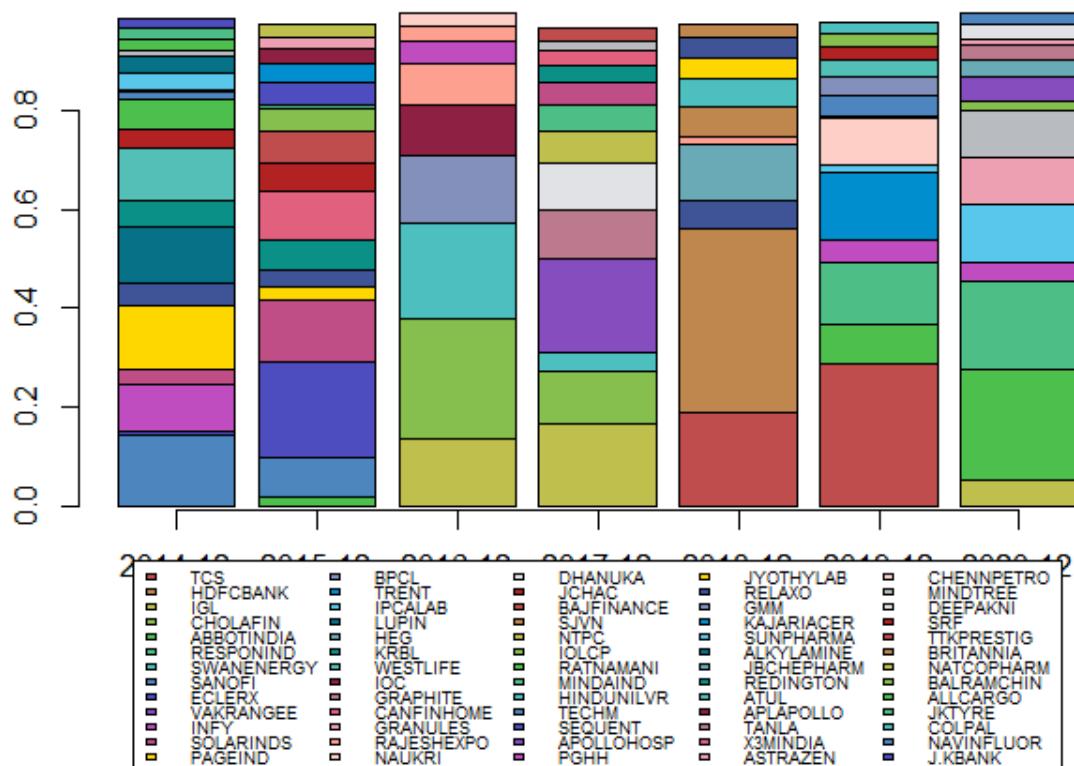
##          TCS HDFCBANK IGL CHOLAFIN ABBOTINDIA RESPONIND
## 2015-12-24 05:30:00 0.000    0.000 0.000    0.000   0.018   0.000
## 2016-12-30 05:30:00 0.000    0.000 0.136    0.243   0.000   0.000
## 2017-12-29 05:30:00 0.000    0.000 0.164    0.108   0.000   0.000
## 2018-12-28 05:30:00 0.189    0.372 0.000    0.000   0.000   0.000
## 2019-12-27 05:30:00 0.286    0.000 0.000    0.000   0.082   0.124
## 2020-12-18 05:30:00 0.000    0.000 0.053    0.000   0.225   0.178
##          SWANENERGY SANOFI ECLERX VAKRANGEET INFY SOLARINDS PAGEIND
## 2015-12-24 05:30:00     0.000 0.077 0.196    0.000 0.000   0.125   0.026
## 2016-12-30 05:30:00     0.191 0.000 0.000    0.000 0.000   0.000   0.000
## 2017-12-29 05:30:00     0.037 0.000 0.000    0.191 0.000   0.000   0.000
## 2018-12-28 05:30:00     0.000 0.000 0.000    0.000 0.000   0.000   0.000
## 2019-12-27 05:30:00     0.000 0.000 0.000    0.000 0.047   0.000   0.000
## 2020-12-18 05:30:00     0.000 0.000 0.000    0.000 0.037   0.000   0.000
##          HCLTECH BPCL TRENT IPCALAB LUPIN  HEG KRBL WESTLIFE
## 2015-12-24 05:30:00     0.037 0.000 0.000    0.000 0 0.000 0.059   0
## 2016-12-30 05:30:00     0.000 0.137 0.000    0.000 0 0.000 0.000   0
## 2017-12-29 05:30:00     0.000 0.000 0.000    0.000 0 0.000 0.000   0
## 2018-12-28 05:30:00     0.057 0.000 0.000    0.000 0 0.114 0.000   0
## 2019-12-27 05:30:00     0.000 0.000 0.134    0.015 0 0.000 0.000   0
## 2020-12-18 05:30:00     0.000 0.000 0.000    0.116 0 0.000 0.000   0
##          IOC GRAPHITE CANFINHOME GRANULES RAJESHEXPO NAUKRI
## 2015-12-24 05:30:00 0.000    0.000 0.101    0.000 0.000   0.000   0.000

```

2016-12-30 05:30:00 0.104 0.000 0.000 0.000 0.082 0.000
2017-12-29 05:30:00 0.000 0.101 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.015 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.000 0.096
2020-12-18 05:30:00 0.000 0.000 0.000 0.097 0.000 0.000
INDIACEM DHANUKA JCHAC BAJFINANCE SJVN NTPC IOLCP
2015-12-24 05:30:00 0.000 0.000 0.055 0.065 0.000 0.000 0.046
2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.095 0.000 0.000 0.000 0.065 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.062 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.003 0.000 0.000
2020-12-18 05:30:00 0.095 0.000 0.000 0.000 0.000 0.000 0.016
RATNAMANI MINDAIND HINDUNILVR TECHM SEQUENT APOLLOHOSP
2015-12-24 05:30:00 0 0.006 0.000 0.000 0.048 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.051 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.057 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.042 0.000 0.000
2020-12-18 05:30:00 0 0.000 0.000 0.000 0.000 0.052
PGHH MPHASIS JYOTHYLAB RELAXO GMM KAJARIACER SUNPHARMA
2015-12-24 05:30:00 0.000 0.000 0.000 0.00 0.00 0.036 0
2016-12-30 05:30:00 0.046 0.000 0.000 0.00 0.00 0.000 0
2017-12-29 05:30:00 0.000 0.046 0.000 0.00 0.00 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.042 0.04 0.00 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.000 0.00 0.04 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.00 0.00 0.000 0
ALKYLAMINE JBCHEPHARM REDINGTON ATUL APLAPOLLO TANLA
2015-12-24 05:30:00 0 0.000 0.000 0.000 0.032 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.000 0.033 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.033 0.000 0.000
2020-12-18 05:30:00 0 0.033 0.000 0.000 0.000 0.032
X3MINDIA ASTRAZEN EDELWEISS CHENNPETRO MINDTREE DEEPAKNI
2015-12-24 05:30:00 0.000 0.020 0.00 0.003 0.00 0.00
2016-12-30 05:30:00 0.000 0.000 0.03 0.027 0.00 0.00
2017-12-29 05:30:00 0.031 0.000 0.00 0.000 0.02 0.00
2018-12-28 05:30:00 0.000 0.000 0.00 0.000 0.00 0.00
2019-12-27 05:30:00 0.000 0.000 0.00 0.000 0.00 0.00
2020-12-18 05:30:00 0.000 0.011 0.00 0.000 0.00 0.03
SRF TTKPRESTIG BRITANNIA NATCOPHARM BALRAMCHIN ALLCARGO
2015-12-24 05:30:00 0.000 0.000 0.000 0.025 0.000 0
2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0
2017-12-29 05:30:00 0.000 0.029 0.000 0.000 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.028 0.000 0.000 0
2019-12-27 05:30:00 0.029 0.000 0.000 0.000 0.025 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0

```
##          JKTYRE COLPAL NAVINFLUOR J.KBANK
## 2015-12-24 05:30:00    0 0.000    0.000    0
## 2016-12-30 05:30:00    0 0.000    0.000    0
## 2017-12-29 05:30:00    0 0.000    0.000    0
## 2018-12-28 05:30:00    0 0.000    0.000    0
## 2019-12-27 05:30:00    0 0.021    0.000    0
## 2020-12-18 05:30:00    0 0.000    0.021    0
```

Weights for bt54



```
##          TCS HDFCBANK IGL CHOLAFIN ABBOTINDIA RESPONIND
## 2015-12-24 05:30:00 0.000    0.000 0.000    0.000   0.018    0.000
## 2016-12-30 05:30:00 0.000    0.000 0.136    0.243    0.000    0.000
## 2017-12-29 05:30:00 0.000    0.000 0.164    0.108    0.000    0.000
## 2018-12-28 05:30:00 0.189    0.372 0.000    0.000    0.000    0.000
## 2019-12-27 05:30:00 0.286    0.000 0.000    0.000    0.082    0.124
## 2020-12-18 05:30:00 0.000    0.000 0.053    0.000    0.225    0.178
##          SWANENERGY SANOFI ECLERX VAKRANGEE INFY SOLARINDS PAGEIND
## 2015-12-24 05:30:00    0.000 0.077 0.196    0.000 0.000    0.125 0.026
## 2016-12-30 05:30:00    0.191 0.000 0.000    0.000 0.000    0.000 0.000
## 2017-12-29 05:30:00    0.037 0.000 0.000    0.191 0.000    0.000 0.000
## 2018-12-28 05:30:00    0.000 0.000 0.000    0.000 0.000    0.000 0.000
## 2019-12-27 05:30:00    0.000 0.000 0.000    0.000 0.047    0.000 0.000
## 2020-12-18 05:30:00    0.000 0.000 0.000    0.000 0.037    0.000 0.000
```

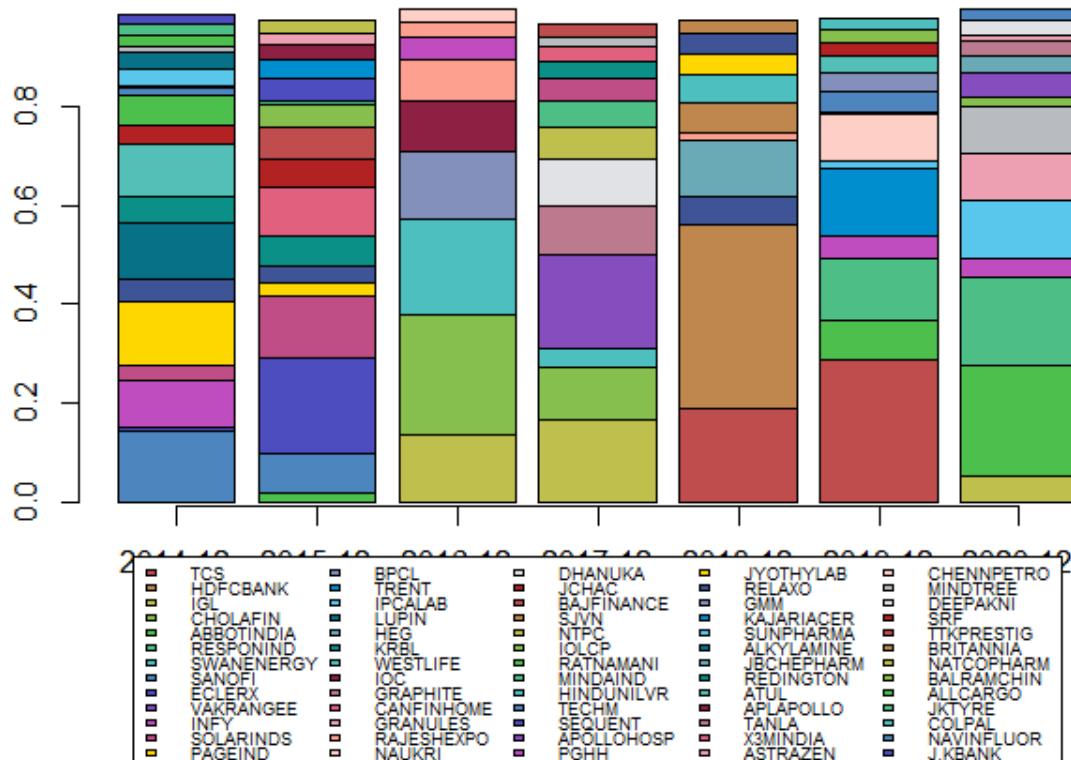
	HCLTECH	BPCL	TRENT	IPCALAB	LUPIN	HEG	KRBL	WESTLIFE
## 2015-12-24 05:30:00	0.037	0.000	0.000	0.000	0	0.000	0.059	0
## 2016-12-30 05:30:00	0.000	0.137	0.000	0.000	0	0.000	0.000	0
## 2017-12-29 05:30:00	0.000	0.000	0.000	0.000	0	0.000	0.000	0
## 2018-12-28 05:30:00	0.057	0.000	0.000	0.000	0	0.114	0.000	0
## 2019-12-27 05:30:00	0.000	0.000	0.134	0.015	0	0.000	0.000	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.116	0	0.000	0.000	0
##	IOC	GRAPHITE	CANFINHOME	GRANULES	RAJESHEXPO	NAUKRI		
## 2015-12-24 05:30:00	0.000	0.000	0.101	0.000	0.000	0.000	0.000	
## 2016-12-30 05:30:00	0.104	0.000	0.000	0.000	0.082	0.000		
## 2017-12-29 05:30:00	0.000	0.101	0.000	0.000	0.000	0.000	0.000	
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.015	0.000		
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000	0.096	
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.097	0.000	0.000		
##	INDIACEM	DHANUKA	JCHAC	BAJFINANCE	SJVN	NTPC	IOLCP	
## 2015-12-24 05:30:00	0.000	0.000	0.055	0.065	0.000	0.000	0.046	
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.095	0.000	0.000	0.000	0.065	0.000	
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.062	0.000	0.000	
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0.003	0.000	0.000	
## 2020-12-18 05:30:00	0.095	0.000	0.000	0.000	0.000	0.000	0.016	
##	RATNAMANI	MINDAIND	HINDUNILVR	TECHM	SEQUENT	APOLLOHOSP		
## 2015-12-24 05:30:00	0	0.006	0.000	0.000	0.048	0.000		
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.000	0.000		
## 2017-12-29 05:30:00	0	0.051	0.000	0.000	0.000	0.000		
## 2018-12-28 05:30:00	0	0.000	0.057	0.000	0.000	0.000		
## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0.000	0.000		
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0.000	0.052		
##	PGHH	MPHASIS	JYOTHYLAB	RELAXO	GMM	KAJARIACER	SUNPHARMA	
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.00	0.00	0.036	0	
## 2016-12-30 05:30:00	0.046	0.000	0.000	0.00	0.00	0.000	0	
## 2017-12-29 05:30:00	0.000	0.046	0.000	0.00	0.00	0.000	0	
## 2018-12-28 05:30:00	0.000	0.000	0.042	0.04	0.00	0.000	0	
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.00	0.04	0.000	0	
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.00	0.00	0.000	0	
##	ALKYLAMINE	JBCHEPHARM	REDINGTON	ATUL	APLAPOLLO	TANLA		
## 2015-12-24 05:30:00	0	0.000	0.000	0.000	0.032	0.000		
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.000	0.000		
## 2017-12-29 05:30:00	0	0.000	0.033	0.000	0.000	0.000		
## 2018-12-28 05:30:00	0	0.000	0.000	0.000	0.000	0.000		
## 2019-12-27 05:30:00	0	0.000	0.000	0.033	0.000	0.000		
## 2020-12-18 05:30:00	0	0.033	0.000	0.000	0.000	0.032		
##	X3MINDIA	ASTRAZEN	EDELWEISS	CHENNPETRO	MINDTREE	DEEPAKNI		
## 2015-12-24 05:30:00	0.000	0.020	0.00	0.003	0.00	0.00		
## 2016-12-30 05:30:00	0.000	0.000	0.03	0.027	0.00	0.00		
## 2017-12-29 05:30:00	0.031	0.000	0.00	0.000	0.02	0.00		
## 2018-12-28 05:30:00	0.000	0.000	0.00	0.000	0.00	0.00		

```

## 2019-12-27 05:30:00    0.000    0.000    0.00    0.000    0.00    0.00
## 2020-12-18 05:30:00    0.000    0.011    0.00    0.000    0.00    0.03
##          SRF TTKPRESTIG BRITANNIA NATCOPHARM BALRAMCHIN ALLCARGO
## 2015-12-24 05:30:00 0.000    0.000    0.000    0.025    0.000    0
## 2016-12-30 05:30:00 0.000    0.000    0.000    0.000    0.000    0
## 2017-12-29 05:30:00 0.000    0.029    0.000    0.000    0.000    0
## 2018-12-28 05:30:00 0.000    0.000    0.028    0.000    0.000    0
## 2019-12-27 05:30:00 0.029    0.000    0.000    0.000    0.025    0
## 2020-12-18 05:30:00 0.000    0.000    0.000    0.000    0.000    0
##          JKTYRE COLPAL NAVINFLUOR J.KBANK
## 2015-12-24 05:30:00    0 0.000    0.000    0
## 2016-12-30 05:30:00    0 0.000    0.000    0
## 2017-12-29 05:30:00    0 0.000    0.000    0
## 2018-12-28 05:30:00    0 0.000    0.000    0
## 2019-12-27 05:30:00    0 0.021    0.000    0
## 2020-12-18 05:30:00    0 0.000    0.021    0

```

Weights for bt55



```

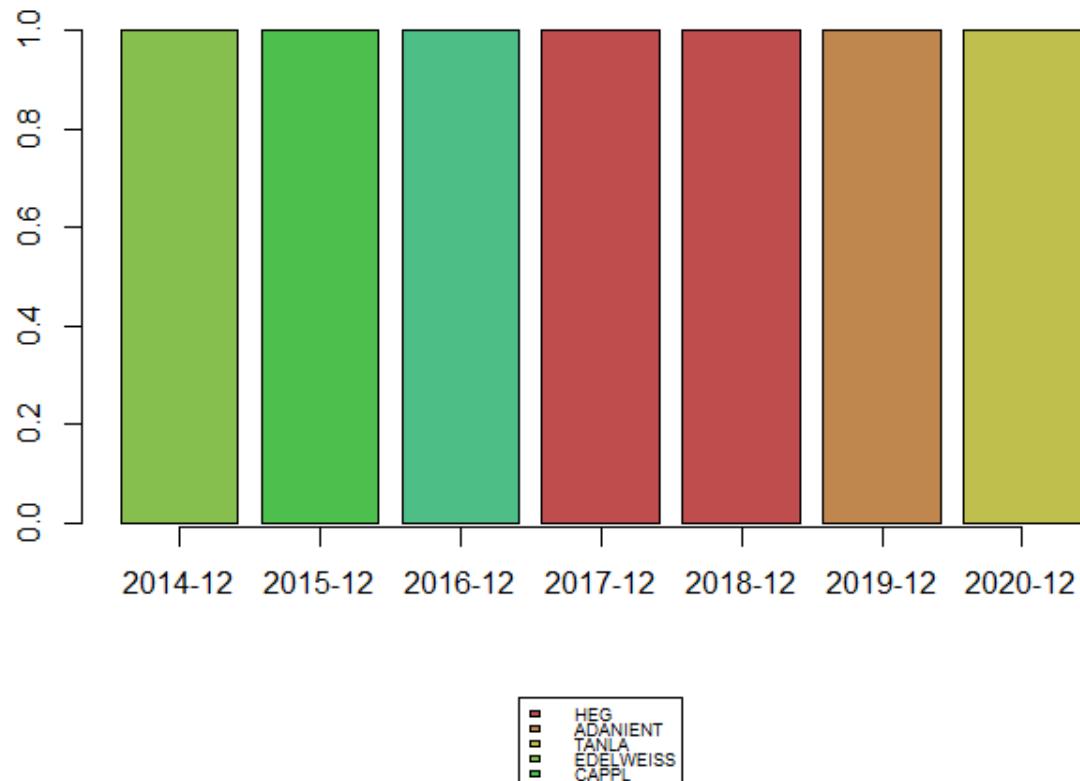
##          TCS HDFCBANK IGL CHOLAFIN ABBOTINDIA RESPONIND
## 2015-12-24 05:30:00 0.000    0.000 0.000    0.000    0.018    0.000
## 2016-12-30 05:30:00 0.000    0.000 0.136    0.243    0.000    0.000
## 2017-12-29 05:30:00 0.000    0.000 0.164    0.108    0.000    0.000
## 2018-12-28 05:30:00 0.189    0.372 0.000    0.000    0.000    0.000

```

2019-12-27 05:30:00 0.286 0.000 0.000 0.000 0.082 0.124
2020-12-18 05:30:00 0.000 0.000 0.053 0.000 0.225 0.178
SWANENERGY SANOFI ECLERX VAKRANGEET INFY SOLARINDS PAGEIND
2015-12-24 05:30:00 0.000 0.077 0.196 0.000 0.000 0.125 0.026
2016-12-30 05:30:00 0.191 0.000 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.037 0.000 0.000 0.191 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.047 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.037 0.000 0.000
HCLTECH BPCL TRENT IPCALAB LUPIN HEG KRBL WESTLIFE
2015-12-24 05:30:00 0.037 0.000 0.000 0.000 0 0.000 0.059 0
2016-12-30 05:30:00 0.000 0.137 0.000 0.000 0 0.000 0.000 0
2017-12-29 05:30:00 0.000 0.000 0.000 0.000 0 0.000 0.000 0
2018-12-28 05:30:00 0.057 0.000 0.000 0.000 0 0.114 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.134 0.015 0 0.000 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.116 0 0.000 0.000 0
IOC GRAPHITE CANFINHOME GRANULES RAJESHEXPO NAUKRI
2015-12-24 05:30:00 0.000 0.000 0.101 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.104 0.000 0.000 0.000 0.082 0.000 0.000
2017-12-29 05:30:00 0.000 0.101 0.000 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.015 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.096
2020-12-18 05:30:00 0.000 0.000 0.000 0.097 0.000 0.000 0.000
INDIACEM DHANUKA JCHAC BAJFINANCE SJVN NTPC IOLCP
2015-12-24 05:30:00 0.000 0.000 0.055 0.065 0.000 0.000 0.046
2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.095 0.000 0.000 0.000 0.065 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.062 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.003 0.000 0.000
2020-12-18 05:30:00 0.095 0.000 0.000 0.000 0.000 0.000 0.016
RATNAMANI MINDAIND HINDUNILVR TECHM SEQUENT APOLLOHOSP
2015-12-24 05:30:00 0 0.006 0.000 0.000 0.048 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.051 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.057 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.042 0.000 0.000
2020-12-18 05:30:00 0 0.000 0.000 0.000 0.000 0.052
PGHH MPHYSIS JYOTHYLAB RELAXO GMM KAJARIACER SUNPHARMA
2015-12-24 05:30:00 0.000 0.000 0.000 0.00 0.00 0.036 0
2016-12-30 05:30:00 0.046 0.000 0.000 0.00 0.00 0.000 0
2017-12-29 05:30:00 0.000 0.046 0.000 0.00 0.00 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.042 0.04 0.00 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.000 0.00 0.04 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.00 0.00 0.000 0
ALKYLAMINE JBCHEPHARM REDINGTON ATUL APLAPOLLO TANLA
2015-12-24 05:30:00 0 0.000 0.000 0.000 0.032 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000

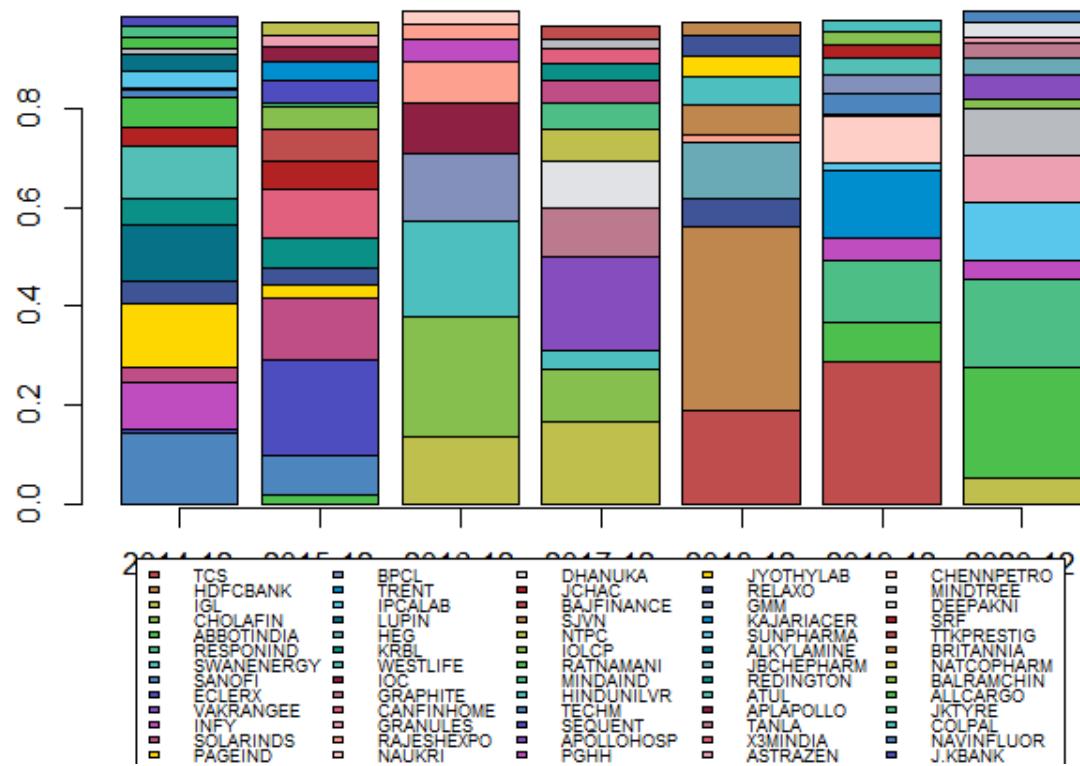
## 2017-12-29 05:30:00	0	0.000	0.033	0.000	0.000	0.000
## 2018-12-28 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00	0	0.000	0.000	0.033	0.000	0.000
## 2020-12-18 05:30:00	0	0.033	0.000	0.000	0.000	0.032
##	X3MINDIA	ASTRAZEN	EDELWEISS	CHENNPETRO	MINDTREE	DEEPAKNI
## 2015-12-24 05:30:00	0.000	0.020	0.00	0.003	0.00	0.00
## 2016-12-30 05:30:00	0.000	0.000	0.03	0.027	0.00	0.00
## 2017-12-29 05:30:00	0.031	0.000	0.00	0.000	0.02	0.00
## 2018-12-28 05:30:00	0.000	0.000	0.00	0.000	0.00	0.00
## 2019-12-27 05:30:00	0.000	0.000	0.00	0.000	0.00	0.00
## 2020-12-18 05:30:00	0.000	0.011	0.00	0.000	0.00	0.03
##	SRF	TTKPRESTIG	BRITANNIA	NATCOPHARM	BALRAMCHIN	ALLCARGO
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.025	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2017-12-29 05:30:00	0.000	0.029	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.028	0.000	0.000	0
## 2019-12-27 05:30:00	0.029	0.000	0.000	0.000	0.025	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	JKTYRE	COLPAL	NAVINFLUOR	J.KBANK		
## 2015-12-24 05:30:00	0	0.000	0.000	0		
## 2016-12-30 05:30:00	0	0.000	0.000	0		
## 2017-12-29 05:30:00	0	0.000	0.000	0		
## 2018-12-28 05:30:00	0	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.021	0.000	0		
## 2020-12-18 05:30:00	0	0.000	0.021	0		

Weights for bt56



```
##          HEG ADANIENT TANLA EDELWEISS CAPPL TASTYBIT
## 2015-12-24 05:30:00  0      0      0      0      1      0
## 2016-12-30 05:30:00  0      0      0      0      0      1
## 2017-12-29 05:30:00  1      0      0      0      0      0
## 2018-12-28 05:30:00  1      0      0      0      0      0
## 2019-12-27 05:30:00  0      1      0      0      0      0
## 2020-12-18 05:30:00  0      0      1      0      0      0
```

Weights for bt57



```

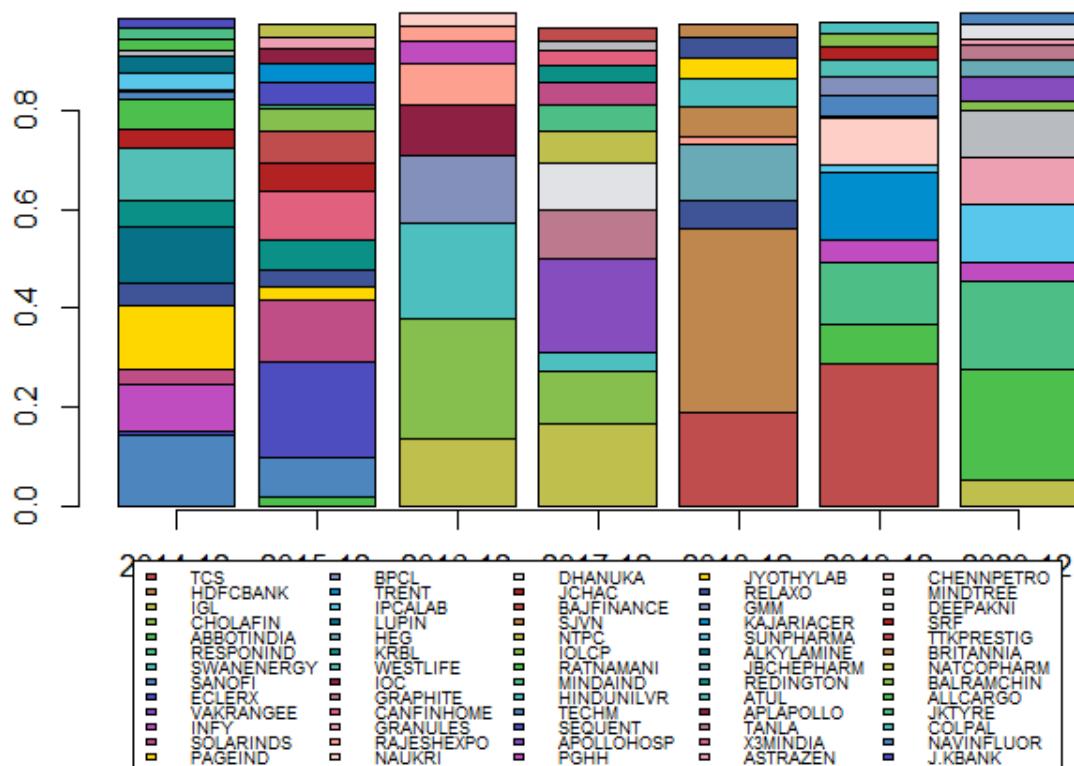
##          TCS HDFCBANK IGL CHOLAFIN ABBOTINDIA RESPONIND
## 2015-12-24 05:30:00 0.000    0.000 0.000    0.000   0.018   0.000
## 2016-12-30 05:30:00 0.000    0.000 0.136    0.243   0.000   0.000
## 2017-12-29 05:30:00 0.000    0.000 0.164    0.108   0.000   0.000
## 2018-12-28 05:30:00 0.189    0.372 0.000    0.000   0.000   0.000
## 2019-12-27 05:30:00 0.286    0.000 0.000    0.000   0.082   0.124
## 2020-12-18 05:30:00 0.000    0.000 0.053    0.000   0.225   0.178
##          SWANENERGY SANOFI ECLERX VAKRANGEET INFY SOLARINDS PAGEIND
## 2015-12-24 05:30:00     0.000 0.077 0.196    0.000 0.000   0.125   0.026
## 2016-12-30 05:30:00     0.191 0.000 0.000    0.000 0.000   0.000   0.000
## 2017-12-29 05:30:00     0.037 0.000 0.000    0.191 0.000   0.000   0.000
## 2018-12-28 05:30:00     0.000 0.000 0.000    0.000 0.000   0.000   0.000
## 2019-12-27 05:30:00     0.000 0.000 0.000    0.000 0.047   0.000   0.000
## 2020-12-18 05:30:00     0.000 0.000 0.000    0.000 0.037   0.000   0.000
##          HCLTECH BPCL TRENT IPCALAB LUPIN  HEG  KRBL WESTLIFE
## 2015-12-24 05:30:00     0.037 0.000 0.000    0.000 0 0.000 0.059   0
## 2016-12-30 05:30:00     0.000 0.137 0.000    0.000 0 0.000 0.000   0
## 2017-12-29 05:30:00     0.000 0.000 0.000    0.000 0 0.000 0.000   0
## 2018-12-28 05:30:00     0.057 0.000 0.000    0.000 0 0.114 0.000   0
## 2019-12-27 05:30:00     0.000 0.000 0.134    0.015 0 0.000 0.000   0
## 2020-12-18 05:30:00     0.000 0.000 0.000    0.116 0 0.000 0.000   0
##          IOC GRAPHITE CANFINHOME GRANULES RAJESHEXPO NAUKRI
## 2015-12-24 05:30:00 0.000    0.000 0.101    0.000 0.000   0.000   0.000

```

2016-12-30 05:30:00 0.104 0.000 0.000 0.000 0.082 0.000
2017-12-29 05:30:00 0.000 0.101 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.015 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.000 0.096
2020-12-18 05:30:00 0.000 0.000 0.000 0.097 0.000 0.000
INDIACEM DHANUKA JCHAC BAJFINANCE SJVN NTPC IOLCP
2015-12-24 05:30:00 0.000 0.000 0.055 0.065 0.000 0.000 0.046
2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.095 0.000 0.000 0.000 0.065 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.062 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.003 0.000 0.000
2020-12-18 05:30:00 0.095 0.000 0.000 0.000 0.000 0.000 0.016
RATNAMANI MINDAIND HINDUNILVR TECHM SEQUENT APOLLOHOSP
2015-12-24 05:30:00 0 0.006 0.000 0.000 0.048 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.051 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.057 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.042 0.000 0.000
2020-12-18 05:30:00 0 0.000 0.000 0.000 0.000 0.052
PGHH MPHASIS JYOTHYLAB RELAXO GMM KAJARIACER SUNPHARMA
2015-12-24 05:30:00 0.000 0.000 0.000 0.00 0.00 0.036 0
2016-12-30 05:30:00 0.046 0.000 0.000 0.00 0.00 0.000 0
2017-12-29 05:30:00 0.000 0.046 0.000 0.00 0.00 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.042 0.04 0.00 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.000 0.00 0.04 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.00 0.00 0.000 0
ALKYLAMINE JBCHEPHARM REDINGTON ATUL APLAPOLLO TANLA
2015-12-24 05:30:00 0 0.000 0.000 0.000 0.032 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.000 0.033 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.033 0.000 0.000
2020-12-18 05:30:00 0 0.033 0.000 0.000 0.000 0.032
X3MINDIA ASTRAZEN EDELWEISS CHENNPETRO MINDTREE DEEPAKNI
2015-12-24 05:30:00 0.000 0.020 0.00 0.003 0.00 0.00
2016-12-30 05:30:00 0.000 0.000 0.03 0.027 0.00 0.00
2017-12-29 05:30:00 0.031 0.000 0.00 0.000 0.02 0.00
2018-12-28 05:30:00 0.000 0.000 0.00 0.000 0.00 0.00
2019-12-27 05:30:00 0.000 0.000 0.00 0.000 0.00 0.00
2020-12-18 05:30:00 0.000 0.011 0.00 0.000 0.00 0.03
SRF TTKPRESTIG BRITANNIA NATCOPHARM BALRAMCHIN ALLCARGO
2015-12-24 05:30:00 0.000 0.000 0.000 0.025 0.000 0
2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0
2017-12-29 05:30:00 0.000 0.029 0.000 0.000 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.028 0.000 0.000 0
2019-12-27 05:30:00 0.029 0.000 0.000 0.000 0.025 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0

```
##          JKTYRE COLPAL NAVINFLUOR J.KBANK
## 2015-12-24 05:30:00    0 0.000    0.000    0
## 2016-12-30 05:30:00    0 0.000    0.000    0
## 2017-12-29 05:30:00    0 0.000    0.000    0
## 2018-12-28 05:30:00    0 0.000    0.000    0
## 2019-12-27 05:30:00    0 0.021    0.000    0
## 2020-12-18 05:30:00    0 0.000    0.021    0
```

Weights for bt58



```
##          TCS HDFCBANK IGL CHOLAFIN ABBOTINDIA RESPONIND
## 2015-12-24 05:30:00 0.000    0.000 0.000    0.000   0.018    0.000
## 2016-12-30 05:30:00 0.000    0.000 0.136    0.243    0.000    0.000
## 2017-12-29 05:30:00 0.000    0.000 0.164    0.108    0.000    0.000
## 2018-12-28 05:30:00 0.189    0.372 0.000    0.000    0.000    0.000
## 2019-12-27 05:30:00 0.286    0.000 0.000    0.000    0.082    0.124
## 2020-12-18 05:30:00 0.000    0.000 0.053    0.000    0.225    0.178
##          SWANENERGY SANOFI ECLRX VAKRANGEE INFY SOLARINDS PAGEIND
## 2015-12-24 05:30:00    0.000  0.077  0.196    0.000  0.000  0.125  0.026
## 2016-12-30 05:30:00    0.191  0.000  0.000    0.000  0.000  0.000  0.000
## 2017-12-29 05:30:00    0.037  0.000  0.000    0.191  0.000  0.000  0.000
## 2018-12-28 05:30:00    0.000  0.000  0.000    0.000  0.000  0.000  0.000
## 2019-12-27 05:30:00    0.000  0.000  0.000    0.000  0.047  0.000  0.000
## 2020-12-18 05:30:00    0.000  0.000  0.000    0.000  0.037  0.000  0.000
```

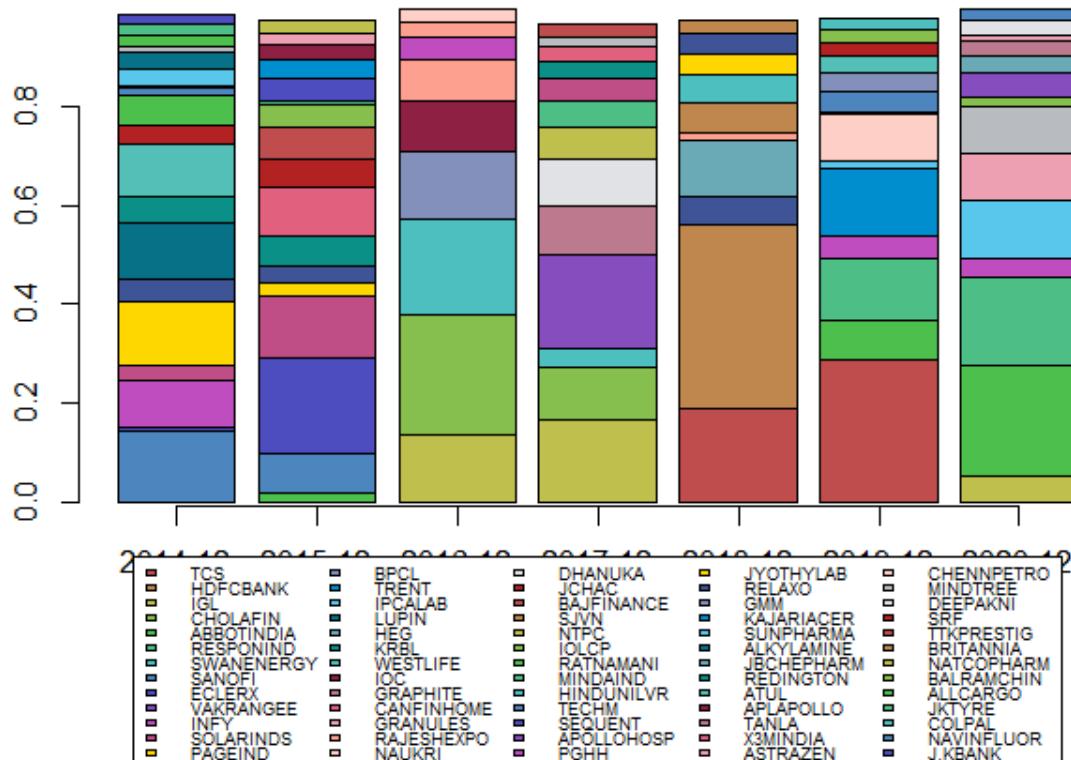
HCLTECH BPCL TRENT IPCALAB LUPIN HEG KRBL WESTLIFE
2015-12-24 05:30:00 0.037 0.000 0.000 0.000 0 0.000 0.059 0
2016-12-30 05:30:00 0.000 0.137 0.000 0.000 0 0.000 0.000 0
2017-12-29 05:30:00 0.000 0.000 0.000 0.000 0 0.000 0.000 0
2018-12-28 05:30:00 0.057 0.000 0.000 0.000 0 0.114 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.134 0.015 0 0.000 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.116 0 0.000 0.000 0
IOC GRAPHITE CANFINHOME GRANULES RAJESHEXPO NAUKRI
2015-12-24 05:30:00 0.000 0.000 0.101 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.104 0.000 0.000 0.000 0.082 0.000 0.000
2017-12-29 05:30:00 0.000 0.101 0.000 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.015 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.096
2020-12-18 05:30:00 0.000 0.000 0.000 0.097 0.000 0.000 0.000
INDIACEM DHANUKA JCHAC BAJFINANCE SJVN NTPC IOLCP
2015-12-24 05:30:00 0.000 0.000 0.055 0.065 0.000 0.000 0.046
2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.095 0.000 0.000 0.000 0.065 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.062 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.003 0.000 0.000
2020-12-18 05:30:00 0.095 0.000 0.000 0.000 0.000 0.000 0.016
RATNAMANI MINDAIND HINDUNILVR TECHM SEQUENT APOLLOHOSP
2015-12-24 05:30:00 0 0.006 0.000 0.000 0.048 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.051 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.057 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.042 0.000 0.000
2020-12-18 05:30:00 0 0.000 0.000 0.000 0.000 0.052
PGHH MPHASIS JYOTHYLAB RELAXO GMM KAJARIACER SUNPHARMA
2015-12-24 05:30:00 0.000 0.000 0.000 0.00 0.00 0.036 0
2016-12-30 05:30:00 0.046 0.000 0.000 0.00 0.00 0.000 0
2017-12-29 05:30:00 0.000 0.046 0.000 0.00 0.00 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.042 0.04 0.00 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.000 0.00 0.04 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.00 0.00 0.000 0
ALKYLAMINE JBCHEPHARM REDINGTON ATUL APLAPOLLO TANLA
2015-12-24 05:30:00 0 0.000 0.000 0.000 0.032 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.000 0.033 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.033 0.000 0.000
2020-12-18 05:30:00 0 0.033 0.000 0.000 0.000 0.032
X3MINDIA ASTRAZEN EDELWEISS CHENNPETRO MINDTREE DEEPAKNI
2015-12-24 05:30:00 0.000 0.020 0.00 0.003 0.00 0.00
2016-12-30 05:30:00 0.000 0.000 0.03 0.027 0.00 0.00
2017-12-29 05:30:00 0.031 0.000 0.00 0.000 0.02 0.00
2018-12-28 05:30:00 0.000 0.000 0.00 0.000 0.00 0.00

```

## 2019-12-27 05:30:00    0.000    0.000    0.00    0.000    0.00    0.00
## 2020-12-18 05:30:00    0.000    0.011    0.00    0.000    0.00    0.03
##          SRF TTKPRESTIG BRITANNIA NATCOPHARM BALRAMCHIN ALLCARGO
## 2015-12-24 05:30:00 0.000    0.000    0.000    0.025    0.000    0
## 2016-12-30 05:30:00 0.000    0.000    0.000    0.000    0.000    0
## 2017-12-29 05:30:00 0.000    0.029    0.000    0.000    0.000    0
## 2018-12-28 05:30:00 0.000    0.000    0.028    0.000    0.000    0
## 2019-12-27 05:30:00 0.029    0.000    0.000    0.000    0.025    0
## 2020-12-18 05:30:00 0.000    0.000    0.000    0.000    0.000    0
##          JKTYRE COLPAL NAVINFLUOR J.KBANK
## 2015-12-24 05:30:00    0 0.000    0.000    0
## 2016-12-30 05:30:00    0 0.000    0.000    0
## 2017-12-29 05:30:00    0 0.000    0.000    0
## 2018-12-28 05:30:00    0 0.000    0.000    0
## 2019-12-27 05:30:00    0 0.021    0.000    0
## 2020-12-18 05:30:00    0 0.000    0.021    0

```

Weights for bt59



```

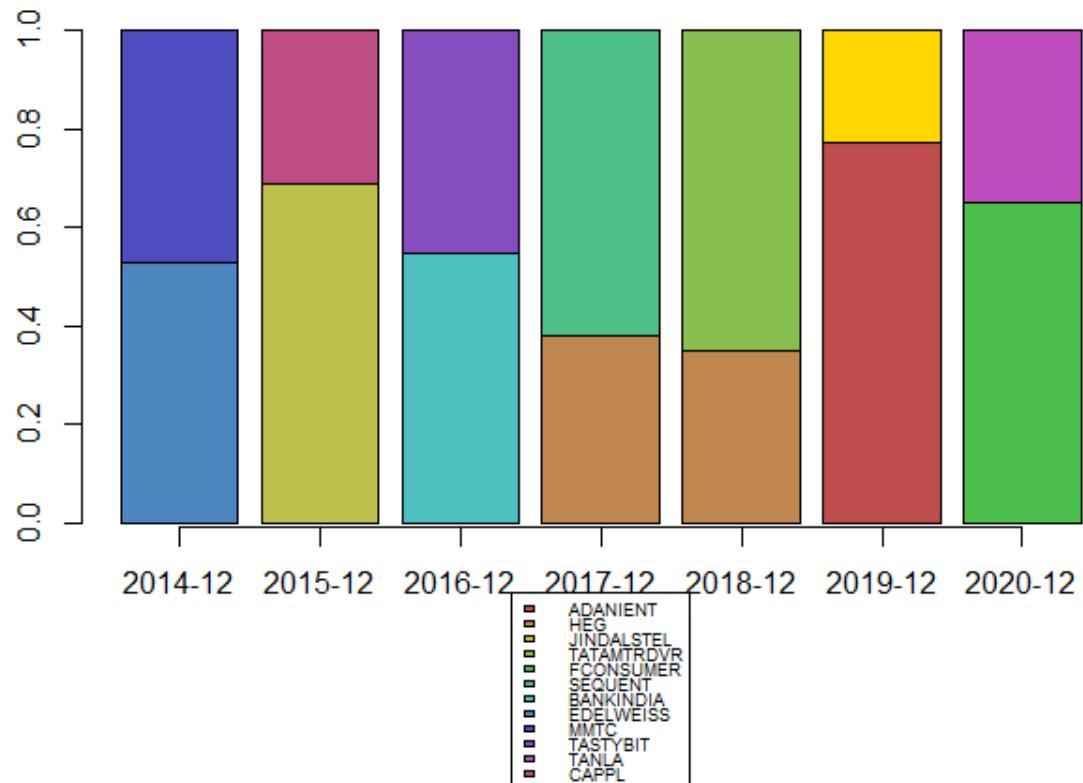
##          TCS HDFCBANK IGL CHOLAFIN ABBOTINDIA RESPONIND
## 2015-12-24 05:30:00 0.000    0.000 0.000    0.000    0.018    0.000
## 2016-12-30 05:30:00 0.000    0.000 0.136    0.243    0.000    0.000
## 2017-12-29 05:30:00 0.000    0.000 0.164    0.108    0.000    0.000
## 2018-12-28 05:30:00 0.189    0.372 0.000    0.000    0.000    0.000

```

2019-12-27 05:30:00 0.286 0.000 0.000 0.000 0.082 0.124
2020-12-18 05:30:00 0.000 0.000 0.053 0.000 0.225 0.178
SWANENERGY SANOFI ECLERX VAKRANGEET INFY SOLARINDS PAGEIND
2015-12-24 05:30:00 0.000 0.077 0.196 0.000 0.000 0.125 0.026
2016-12-30 05:30:00 0.191 0.000 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.037 0.000 0.000 0.191 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.047 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.037 0.000 0.000
HCLTECH BPCL TRENT IPCALAB LUPIN HEG KRBL WESTLIFE
2015-12-24 05:30:00 0.037 0.000 0.000 0.000 0 0.000 0.059 0
2016-12-30 05:30:00 0.000 0.137 0.000 0.000 0 0.000 0.000 0
2017-12-29 05:30:00 0.000 0.000 0.000 0.000 0 0.000 0.000 0
2018-12-28 05:30:00 0.057 0.000 0.000 0.000 0 0.114 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.134 0.015 0 0.000 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.116 0 0.000 0.000 0
IOC GRAPHITE CANFINHOME GRANULES RAJESHEXPO NAUKRI
2015-12-24 05:30:00 0.000 0.000 0.101 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.104 0.000 0.000 0.000 0.082 0.000 0.000
2017-12-29 05:30:00 0.000 0.101 0.000 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.015 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.096
2020-12-18 05:30:00 0.000 0.000 0.000 0.097 0.000 0.000 0.000
INDIACEM DHANUKA JCHAC BAJFINANCE SJVN NTPC IOLCP
2015-12-24 05:30:00 0.000 0.000 0.055 0.065 0.000 0.000 0.046
2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.095 0.000 0.000 0.000 0.065 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.062 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.003 0.000 0.000
2020-12-18 05:30:00 0.095 0.000 0.000 0.000 0.000 0.000 0.016
RATNAMANI MINDAIND HINDUNILVR TECHM SEQUENT APOLLOHOSP
2015-12-24 05:30:00 0 0.006 0.000 0.000 0.048 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.051 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.057 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.042 0.000 0.000
2020-12-18 05:30:00 0 0.000 0.000 0.000 0.000 0.052
PGHH MPHYSIS JYOTHYLAB RELAXO GMM KAJARIACER SUNPHARMA
2015-12-24 05:30:00 0.000 0.000 0.000 0.00 0.00 0.036 0
2016-12-30 05:30:00 0.046 0.000 0.000 0.00 0.00 0.000 0
2017-12-29 05:30:00 0.000 0.046 0.000 0.00 0.00 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.042 0.04 0.00 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.000 0.00 0.04 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.00 0.00 0.000 0
ALKYLAMINE JBCHEPHARM REDINGTON ATUL APLAPOULL TANLA
2015-12-24 05:30:00 0 0.000 0.000 0.000 0.032 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000

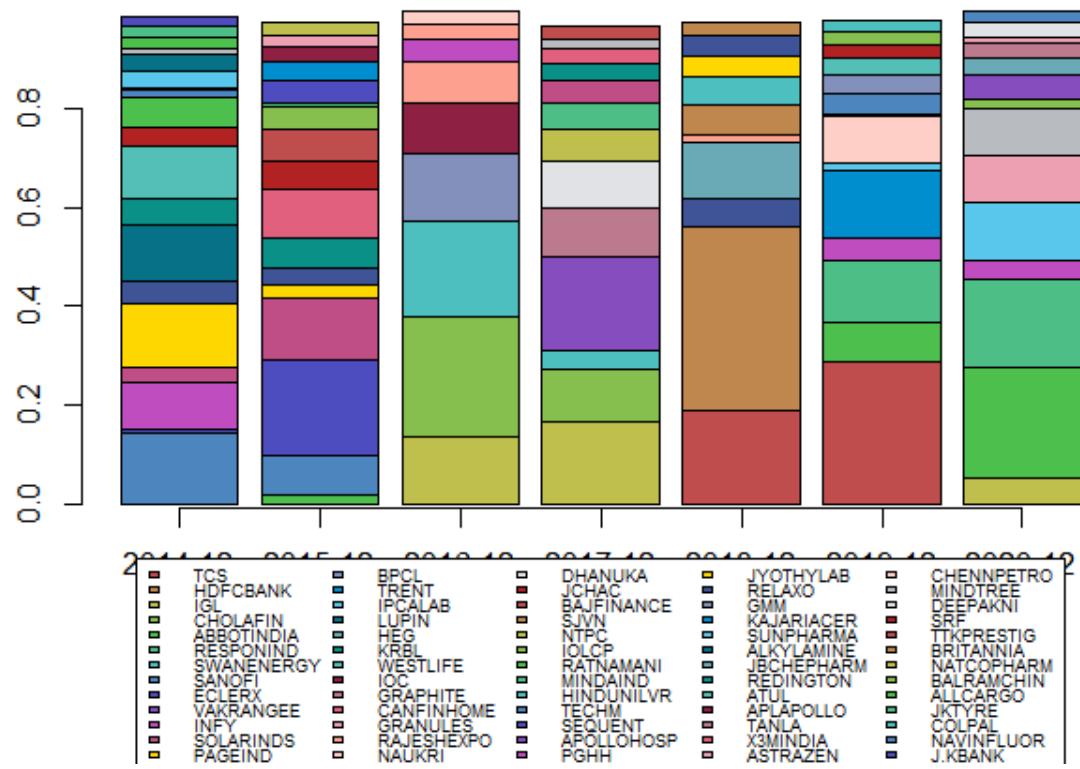
## 2017-12-29 05:30:00	0	0.000	0.033	0.000	0.000	0.000
## 2018-12-28 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00	0	0.000	0.000	0.033	0.000	0.000
## 2020-12-18 05:30:00	0	0.033	0.000	0.000	0.000	0.032
##	X3MINDIA	ASTRAZEN	EDELWEISS	CHENNPETRO	MINDTREE	DEEPAKNI
## 2015-12-24 05:30:00	0.000	0.020	0.00	0.003	0.00	0.00
## 2016-12-30 05:30:00	0.000	0.000	0.03	0.027	0.00	0.00
## 2017-12-29 05:30:00	0.031	0.000	0.00	0.000	0.02	0.00
## 2018-12-28 05:30:00	0.000	0.000	0.00	0.000	0.00	0.00
## 2019-12-27 05:30:00	0.000	0.000	0.00	0.000	0.00	0.00
## 2020-12-18 05:30:00	0.000	0.011	0.00	0.000	0.00	0.03
##	SRF	TTKPRESTIG	BRITANNIA	NATCOPHARM	BALRAMCHIN	ALLCARGO
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.025	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2017-12-29 05:30:00	0.000	0.029	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.028	0.000	0.000	0
## 2019-12-27 05:30:00	0.029	0.000	0.000	0.000	0.025	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	JKTYRE	COLPAL	NAVINFLUOR	J.KBANK		
## 2015-12-24 05:30:00	0	0.000	0.000	0		
## 2016-12-30 05:30:00	0	0.000	0.000	0		
## 2017-12-29 05:30:00	0	0.000	0.000	0		
## 2018-12-28 05:30:00	0	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.021	0.000	0		
## 2020-12-18 05:30:00	0	0.000	0.021	0		

Weights for bt60



```
##          ADANIENT HEG JINDALSTEL TATAMTRDVR FCONSUMER SEQUENT
## 2015-12-24 05:30:00 0.000 0.000    0.689     0.00     0.00  0.000
## 2016-12-30 05:30:00 0.000 0.000    0.000     0.00     0.00  0.000
## 2017-12-29 05:30:00 0.000 0.378    0.000     0.00     0.00  0.622
## 2018-12-28 05:30:00 0.000 0.350    0.000     0.65     0.00  0.000
## 2019-12-27 05:30:00 0.774 0.000    0.000     0.00     0.00  0.000
## 2020-12-18 05:30:00 0.000 0.000    0.000     0.00     0.65  0.000
##          BANKINDIA EDELWEISS MMTC TASTYBIT TANLA CAPPL CENTRALBK
## 2015-12-24 05:30:00 0.000      0  0  0.000  0.00  0.311  0.000
## 2016-12-30 05:30:00 0.549      0  0  0.451  0.00  0.000  0.000
## 2017-12-29 05:30:00 0.000      0  0  0.000  0.00  0.000  0.000
## 2018-12-28 05:30:00 0.000      0  0  0.000  0.00  0.000  0.000
## 2019-12-27 05:30:00 0.000      0  0  0.000  0.00  0.000  0.226
## 2020-12-18 05:30:00 0.000      0  0  0.000  0.35  0.000  0.000
```

Weights for bt61



```

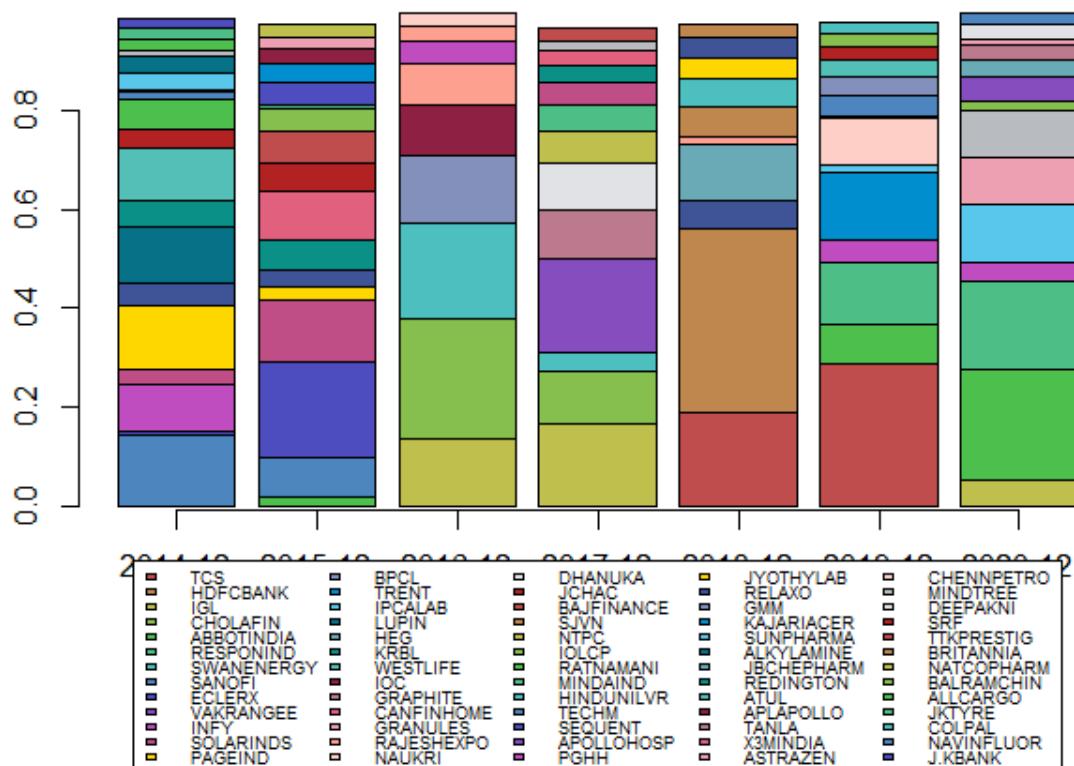
##          TCS HDFCBANK IGL CHOLAFIN ABBOTINDIA RESPONIND
## 2015-12-24 05:30:00 0.000    0.000 0.000    0.000   0.018   0.000
## 2016-12-30 05:30:00 0.000    0.000 0.136    0.243   0.000   0.000
## 2017-12-29 05:30:00 0.000    0.000 0.164    0.108   0.000   0.000
## 2018-12-28 05:30:00 0.189    0.372 0.000    0.000   0.000   0.000
## 2019-12-27 05:30:00 0.286    0.000 0.000    0.000   0.082   0.124
## 2020-12-18 05:30:00 0.000    0.000 0.053    0.000   0.225   0.178
##          SWANENERGY SANOFI ECLERX VAKRANGEET INFY SOLARINDS PAGEIND
## 2015-12-24 05:30:00     0.000 0.077 0.196    0.000 0.000   0.125   0.026
## 2016-12-30 05:30:00     0.191 0.000 0.000    0.000 0.000   0.000   0.000
## 2017-12-29 05:30:00     0.037 0.000 0.000    0.191 0.000   0.000   0.000
## 2018-12-28 05:30:00     0.000 0.000 0.000    0.000 0.000   0.000   0.000
## 2019-12-27 05:30:00     0.000 0.000 0.000    0.000 0.047   0.000   0.000
## 2020-12-18 05:30:00     0.000 0.000 0.000    0.000 0.037   0.000   0.000
##          HCLTECH BPCL TRENT IPCALAB LUPIN   HEG   KRBL WESTLIFE
## 2015-12-24 05:30:00     0.037 0.000 0.000    0.000 0 0.000 0.059   0
## 2016-12-30 05:30:00     0.000 0.137 0.000    0.000 0 0.000 0.000   0
## 2017-12-29 05:30:00     0.000 0.000 0.000    0.000 0 0.000 0.000   0
## 2018-12-28 05:30:00     0.057 0.000 0.000    0.000 0 0.114 0.000   0
## 2019-12-27 05:30:00     0.000 0.000 0.134    0.015 0 0.000 0.000   0
## 2020-12-18 05:30:00     0.000 0.000 0.000    0.116 0 0.000 0.000   0
##          IOC GRAPHITE CANFINHOME GRANULES RAJESHEXPO NAUKRI
## 2015-12-24 05:30:00 0.000    0.000 0.101    0.000 0.000   0.000   0.000

```

2016-12-30 05:30:00 0.104 0.000 0.000 0.000 0.082 0.000
2017-12-29 05:30:00 0.000 0.101 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.015 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.000 0.096
2020-12-18 05:30:00 0.000 0.000 0.000 0.097 0.000 0.000
INDIACEM DHANUKA JCHAC BAJFINANCE SJVN NTPC IOLCP
2015-12-24 05:30:00 0.000 0.000 0.055 0.065 0.000 0.000 0.046
2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.095 0.000 0.000 0.000 0.065 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.062 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.003 0.000 0.000
2020-12-18 05:30:00 0.095 0.000 0.000 0.000 0.000 0.000 0.016
RATNAMANI MINDAIND HINDUNILVR TECHM SEQUENT APOLLOHOSP
2015-12-24 05:30:00 0 0.006 0.000 0.000 0.048 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.051 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.057 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.042 0.000 0.000
2020-12-18 05:30:00 0 0.000 0.000 0.000 0.000 0.052
PGHH MPHASIS JYOTHYLAB RELAXO GMM KAJARIACER SUNPHARMA
2015-12-24 05:30:00 0.000 0.000 0.000 0.00 0.00 0.036 0
2016-12-30 05:30:00 0.046 0.000 0.000 0.00 0.00 0.000 0
2017-12-29 05:30:00 0.000 0.046 0.000 0.00 0.00 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.042 0.04 0.00 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.000 0.00 0.04 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.00 0.00 0.000 0
ALKYLAMINE JBCHEPHARM REDINGTON ATUL APLAPOLLO TANLA
2015-12-24 05:30:00 0 0.000 0.000 0.000 0.032 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.000 0.033 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.033 0.000 0.000
2020-12-18 05:30:00 0 0.033 0.000 0.000 0.000 0.032
X3MINDIA ASTRAZEN EDELWEISS CHENNPETRO MINDTREE DEEPAKNI
2015-12-24 05:30:00 0.000 0.020 0.00 0.003 0.00 0.00
2016-12-30 05:30:00 0.000 0.000 0.03 0.027 0.00 0.00
2017-12-29 05:30:00 0.031 0.000 0.00 0.000 0.02 0.00
2018-12-28 05:30:00 0.000 0.000 0.00 0.000 0.00 0.00
2019-12-27 05:30:00 0.000 0.000 0.00 0.000 0.00 0.00
2020-12-18 05:30:00 0.000 0.011 0.00 0.000 0.00 0.03
SRF TTKPRESTIG BRITANNIA NATCOPHARM BALRAMCHIN ALLCARGO
2015-12-24 05:30:00 0.000 0.000 0.000 0.025 0.000 0
2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0
2017-12-29 05:30:00 0.000 0.029 0.000 0.000 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.028 0.000 0.000 0
2019-12-27 05:30:00 0.029 0.000 0.000 0.000 0.025 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0

```
##          JKTYRE COLPAL NAVINFLUOR J.KBANK
## 2015-12-24 05:30:00    0 0.000    0.000    0
## 2016-12-30 05:30:00    0 0.000    0.000    0
## 2017-12-29 05:30:00    0 0.000    0.000    0
## 2018-12-28 05:30:00    0 0.000    0.000    0
## 2019-12-27 05:30:00    0 0.021    0.000    0
## 2020-12-18 05:30:00    0 0.000    0.021    0
```

Weights for bt62



```
##          TCS HDFCBANK IGL CHOLAFIN ABBOTINDIA RESPONIND
## 2015-12-24 05:30:00 0.000    0.000 0.000    0.000   0.018   0.000
## 2016-12-30 05:30:00 0.000    0.000 0.136    0.243   0.000   0.000
## 2017-12-29 05:30:00 0.000    0.000 0.164    0.108   0.000   0.000
## 2018-12-28 05:30:00 0.189    0.372 0.000    0.000   0.000   0.000
## 2019-12-27 05:30:00 0.286    0.000 0.000    0.000   0.082   0.124
## 2020-12-18 05:30:00 0.000    0.000 0.053    0.000   0.225   0.178
##          SWANENERGY SANOFI ECLERX VAKRANGEE INFY SOLARINDS PAGEIND
## 2015-12-24 05:30:00     0.000  0.077  0.196    0.000  0.000   0.125   0.026
## 2016-12-30 05:30:00     0.191  0.000  0.000    0.000  0.000   0.000   0.000
## 2017-12-29 05:30:00     0.037  0.000  0.000    0.191  0.000   0.000   0.000
## 2018-12-28 05:30:00     0.000  0.000  0.000    0.000  0.000   0.000   0.000
## 2019-12-27 05:30:00     0.000  0.000  0.000    0.000  0.047   0.000   0.000
## 2020-12-18 05:30:00     0.000  0.000  0.000    0.000  0.037   0.000   0.000
```

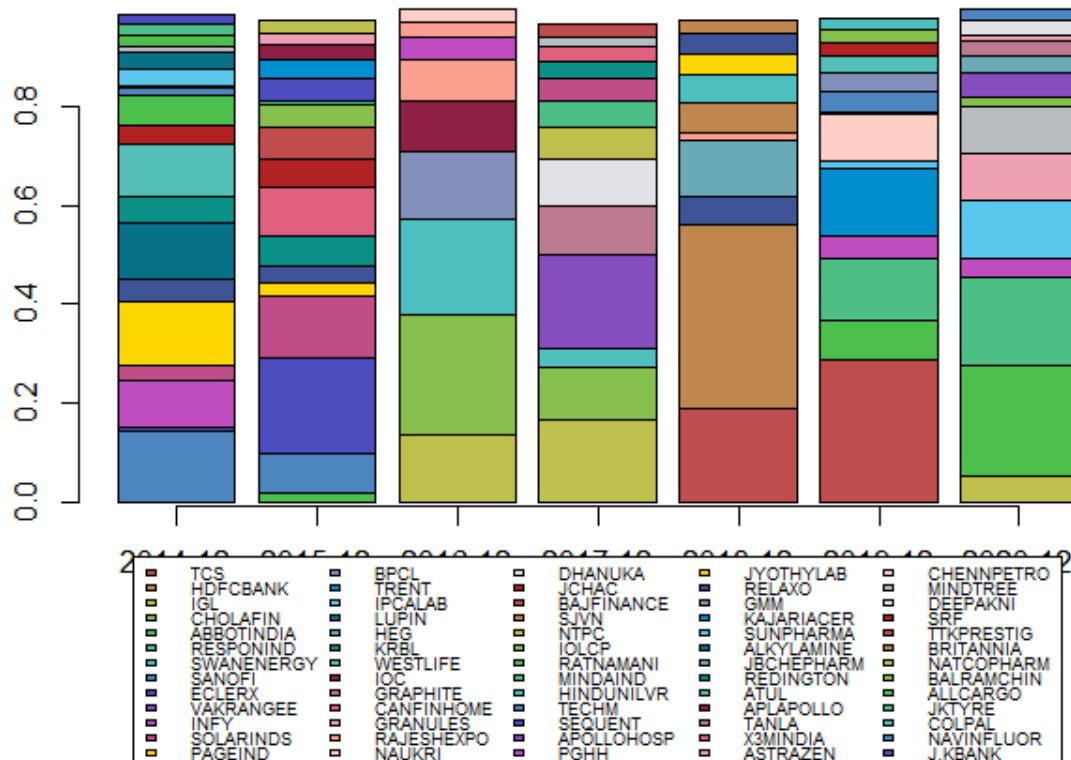
	HCLTECH	BPCL	TRENT	IPCALAB	LUPIN	HEG	KRBL	WESTLIFE
## 2015-12-24 05:30:00	0.037	0.000	0.000	0.000	0	0.000	0.059	0
## 2016-12-30 05:30:00	0.000	0.137	0.000	0.000	0	0.000	0.000	0
## 2017-12-29 05:30:00	0.000	0.000	0.000	0.000	0	0.000	0.000	0
## 2018-12-28 05:30:00	0.057	0.000	0.000	0.000	0	0.114	0.000	0
## 2019-12-27 05:30:00	0.000	0.000	0.134	0.015	0	0.000	0.000	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.116	0	0.000	0.000	0
##	IOC	GRAPHITE	CANFINHOME	GRANULES	RAJESHEXPO	NAUKRI		
## 2015-12-24 05:30:00	0.000	0.000	0.101	0.000	0.000	0.000	0.000	
## 2016-12-30 05:30:00	0.104	0.000	0.000	0.000	0.082	0.000		
## 2017-12-29 05:30:00	0.000	0.101	0.000	0.000	0.000	0.000	0.000	
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.015	0.000		
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000	0.096	
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.097	0.000	0.000		
##	INDIACEM	DHANUKA	JCHAC	BAJFINANCE	SJVN	NTPC	IOLCP	
## 2015-12-24 05:30:00	0.000	0.000	0.055	0.065	0.000	0.000	0.046	
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.095	0.000	0.000	0.000	0.065	0.000	
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.000	0.062	0.000	0.000	
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0.003	0.000	0.000	
## 2020-12-18 05:30:00	0.095	0.000	0.000	0.000	0.000	0.000	0.016	
##	RATNAMANI	MINDAIND	HINDUNILVR	TECHM	SEQUENT	APOLLOHOSP		
## 2015-12-24 05:30:00	0	0.006	0.000	0.000	0.048	0.000		
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.000	0.000		
## 2017-12-29 05:30:00	0	0.051	0.000	0.000	0.000	0.000		
## 2018-12-28 05:30:00	0	0.000	0.057	0.000	0.000	0.000		
## 2019-12-27 05:30:00	0	0.000	0.000	0.042	0.000	0.000		
## 2020-12-18 05:30:00	0	0.000	0.000	0.000	0.000	0.052		
##	PGHH	MPHASIS	JYOTHYLAB	RELAXO	GMM	KAJARIACER	SUNPHARMA	
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.00	0.00	0.036	0	
## 2016-12-30 05:30:00	0.046	0.000	0.000	0.00	0.00	0.000	0	
## 2017-12-29 05:30:00	0.000	0.046	0.000	0.00	0.00	0.000	0	
## 2018-12-28 05:30:00	0.000	0.000	0.042	0.04	0.00	0.000	0	
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.00	0.04	0.000	0	
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.00	0.00	0.000	0	
##	ALKYLAMINE	JBCHEPHARM	REDINGTON	ATUL	APLAPOLLO	TANLA		
## 2015-12-24 05:30:00	0	0.000	0.000	0.000	0.032	0.000		
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.000	0.000		
## 2017-12-29 05:30:00	0	0.000	0.033	0.000	0.000	0.000		
## 2018-12-28 05:30:00	0	0.000	0.000	0.000	0.000	0.000		
## 2019-12-27 05:30:00	0	0.000	0.000	0.033	0.000	0.000		
## 2020-12-18 05:30:00	0	0.033	0.000	0.000	0.000	0.032		
##	X3MINDIA	ASTRAZEN	EDELWEISS	CHENNPETRO	MINDTREE	DEEPAKNI		
## 2015-12-24 05:30:00	0.000	0.020	0.00	0.003	0.00	0.00		
## 2016-12-30 05:30:00	0.000	0.000	0.03	0.027	0.00	0.00		
## 2017-12-29 05:30:00	0.031	0.000	0.00	0.000	0.02	0.00		
## 2018-12-28 05:30:00	0.000	0.000	0.00	0.000	0.00	0.00		

```

## 2019-12-27 05:30:00    0.000    0.000    0.00    0.000    0.00    0.00
## 2020-12-18 05:30:00    0.000    0.011    0.00    0.000    0.00    0.03
##          SRF TTKPRESTIG BRITANNIA NATCOPHARM BALRAMCHIN ALLCARGO
## 2015-12-24 05:30:00 0.000    0.000    0.000    0.025    0.000    0
## 2016-12-30 05:30:00 0.000    0.000    0.000    0.000    0.000    0
## 2017-12-29 05:30:00 0.000    0.029    0.000    0.000    0.000    0
## 2018-12-28 05:30:00 0.000    0.000    0.028    0.000    0.000    0
## 2019-12-27 05:30:00 0.029    0.000    0.000    0.000    0.025    0
## 2020-12-18 05:30:00 0.000    0.000    0.000    0.000    0.000    0
##          JKTYRE COLPAL NAVINFLUOR J.KBANK
## 2015-12-24 05:30:00    0 0.000    0.000    0
## 2016-12-30 05:30:00    0 0.000    0.000    0
## 2017-12-29 05:30:00    0 0.000    0.000    0
## 2018-12-28 05:30:00    0 0.000    0.000    0
## 2019-12-27 05:30:00    0 0.021    0.000    0
## 2020-12-18 05:30:00    0 0.000    0.021    0

```

Weights for bt63



```

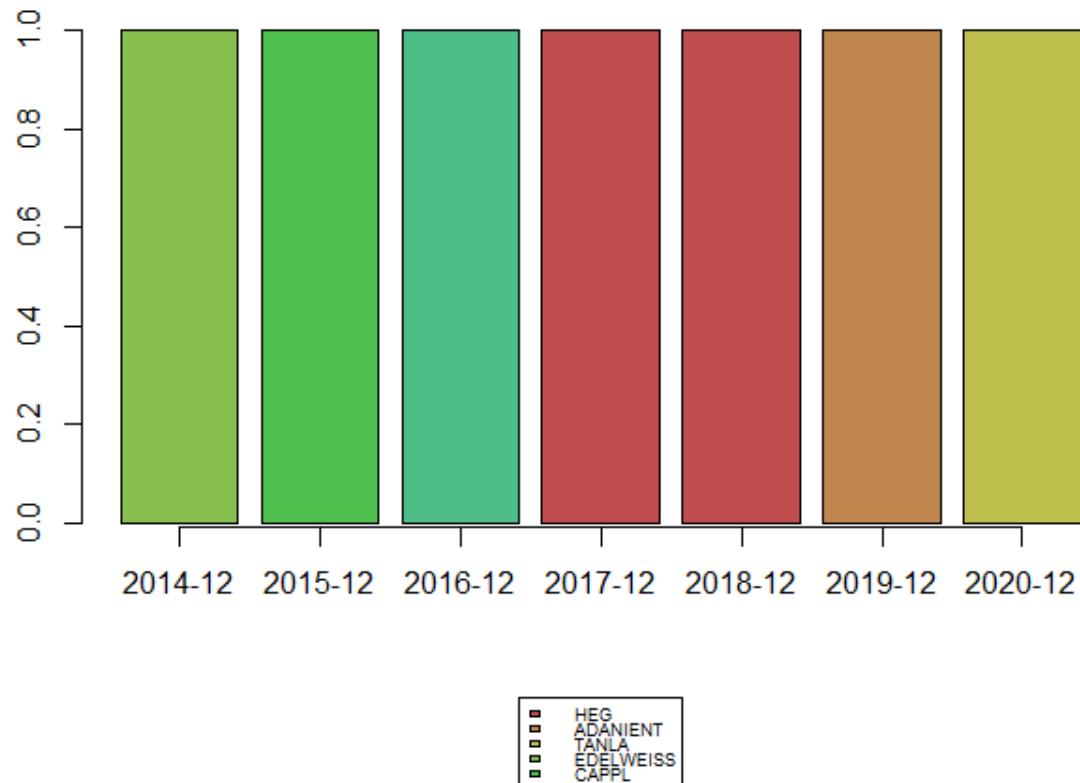
##          TCS HDFCBANK IGL CHOLAFIN ABBOTINDIA RESPONIND
## 2015-12-24 05:30:00 0.000    0.000 0.000    0.000    0.018    0.000
## 2016-12-30 05:30:00 0.000    0.000 0.136    0.243    0.000    0.000
## 2017-12-29 05:30:00 0.000    0.000 0.164    0.108    0.000    0.000
## 2018-12-28 05:30:00 0.189    0.372 0.000    0.000    0.000    0.000

```

2019-12-27 05:30:00 0.286 0.000 0.000 0.000 0.082 0.124
2020-12-18 05:30:00 0.000 0.000 0.053 0.000 0.225 0.178
SWANENERGY SANOFI ECLERX VAKRANGEET INFY SOLARINDS PAGEIND
2015-12-24 05:30:00 0.000 0.077 0.196 0.000 0.000 0.125 0.026
2016-12-30 05:30:00 0.191 0.000 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.037 0.000 0.000 0.191 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.047 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.037 0.000 0.000
HCLTECH BPCL TRENT IPCALAB LUPIN HEG KRBL WESTLIFE
2015-12-24 05:30:00 0.037 0.000 0.000 0.000 0 0.000 0.059 0
2016-12-30 05:30:00 0.000 0.137 0.000 0.000 0 0.000 0.000 0
2017-12-29 05:30:00 0.000 0.000 0.000 0.000 0 0.000 0.000 0
2018-12-28 05:30:00 0.057 0.000 0.000 0.000 0 0.114 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.134 0.015 0 0.000 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.116 0 0.000 0.000 0
IOC GRAPHITE CANFINHOME GRANULES RAJESHEXPO NAUKRI
2015-12-24 05:30:00 0.000 0.000 0.101 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.104 0.000 0.000 0.000 0.082 0.000 0.000
2017-12-29 05:30:00 0.000 0.101 0.000 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.015 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.096
2020-12-18 05:30:00 0.000 0.000 0.000 0.097 0.000 0.000 0.000
INDIACEM DHANUKA JCHAC BAJFINANCE SJVN NTPC IOLCP
2015-12-24 05:30:00 0.000 0.000 0.055 0.065 0.000 0.000 0.046
2016-12-30 05:30:00 0.000 0.000 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.095 0.000 0.000 0.000 0.065 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0.000 0.062 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0.000 0.003 0.000 0.000
2020-12-18 05:30:00 0.095 0.000 0.000 0.000 0.000 0.000 0.016
RATNAMANI MINDAIND HINDUNILVR TECHM SEQUENT APOLLOHOSP
2015-12-24 05:30:00 0 0.006 0.000 0.000 0.048 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0 0.051 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0 0.000 0.057 0.000 0.000 0.000
2019-12-27 05:30:00 0 0.000 0.000 0.042 0.000 0.000
2020-12-18 05:30:00 0 0.000 0.000 0.000 0.000 0.052
PGHH MPHYSIS JYOTHYLAB RELAXO GMM KAJARIACER SUNPHARMA
2015-12-24 05:30:00 0.000 0.000 0.000 0.00 0.00 0.036 0
2016-12-30 05:30:00 0.046 0.000 0.000 0.00 0.00 0.000 0
2017-12-29 05:30:00 0.000 0.046 0.000 0.00 0.00 0.000 0
2018-12-28 05:30:00 0.000 0.000 0.042 0.04 0.00 0.000 0
2019-12-27 05:30:00 0.000 0.000 0.000 0.00 0.04 0.000 0
2020-12-18 05:30:00 0.000 0.000 0.000 0.00 0.00 0.000 0
ALKYLAMINE JBCHEPHARM REDINGTON ATUL APLAPOULL TANLA
2015-12-24 05:30:00 0 0.000 0.000 0.000 0.032 0.000
2016-12-30 05:30:00 0 0.000 0.000 0.000 0.000 0.000

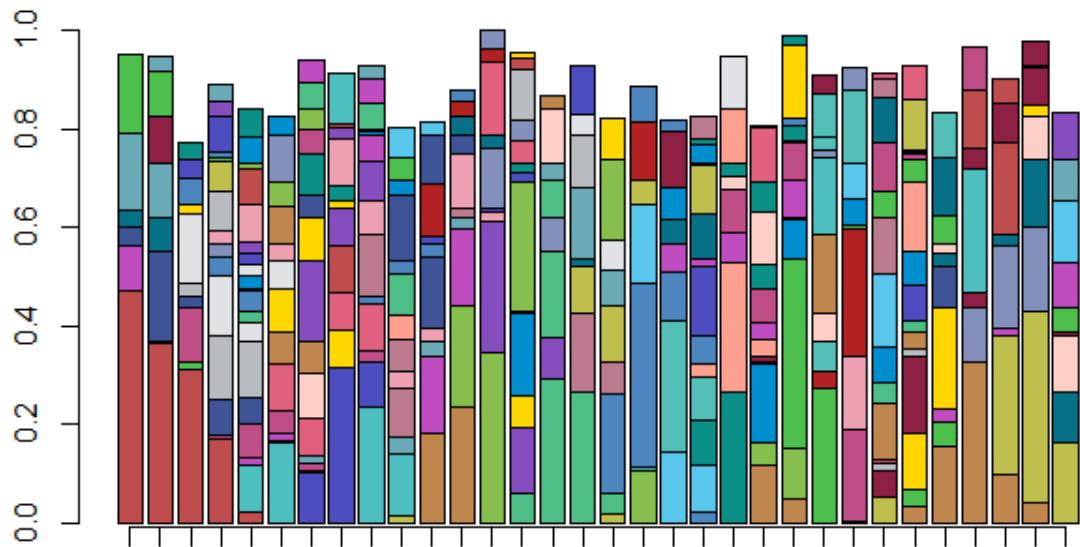
## 2017-12-29 05:30:00	0	0.000	0.033	0.000	0.000	0.000
## 2018-12-28 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2019-12-27 05:30:00	0	0.000	0.000	0.033	0.000	0.000
## 2020-12-18 05:30:00	0	0.033	0.000	0.000	0.000	0.032
##	X3MINDIA	ASTRAZEN	EDELWEISS	CHENNPETRO	MINDTREE	DEEPAKNI
## 2015-12-24 05:30:00	0.000	0.020	0.00	0.003	0.00	0.00
## 2016-12-30 05:30:00	0.000	0.000	0.03	0.027	0.00	0.00
## 2017-12-29 05:30:00	0.031	0.000	0.00	0.000	0.02	0.00
## 2018-12-28 05:30:00	0.000	0.000	0.00	0.000	0.00	0.00
## 2019-12-27 05:30:00	0.000	0.000	0.00	0.000	0.00	0.00
## 2020-12-18 05:30:00	0.000	0.011	0.00	0.000	0.00	0.03
##	SRF	TTKPRESTIG	BRITANNIA	NATCOPHARM	BALRAMCHIN	ALLCARGO
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.025	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2017-12-29 05:30:00	0.000	0.029	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.028	0.000	0.000	0
## 2019-12-27 05:30:00	0.029	0.000	0.000	0.000	0.025	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	JKTYRE	COLPAL	NAVINFLUOR	J.KBANK		
## 2015-12-24 05:30:00	0	0.000	0.000	0		
## 2016-12-30 05:30:00	0	0.000	0.000	0		
## 2017-12-29 05:30:00	0	0.000	0.000	0		
## 2018-12-28 05:30:00	0	0.000	0.000	0		
## 2019-12-27 05:30:00	0	0.021	0.000	0		
## 2020-12-18 05:30:00	0	0.000	0.021	0		

Weights for bt64



```
##          HEG ADANIENT TANLA EDELWEISS CAPPL TASTYBIT
## 2015-12-24 05:30:00  0      0      0      0      1      0
## 2016-12-30 05:30:00  0      0      0      0      0      1
## 2017-12-29 05:30:00  1      0      0      0      0      0
## 2018-12-28 05:30:00  1      0      0      0      0      0
## 2019-12-27 05:30:00  0      1      0      0      0      0
## 2020-12-18 05:30:00  0      0      1      0      0      0
```

Weights for bt65



ESTLIFE	MARICO	DRREDDY	DCMSHIRAM	NAVINFUOR	HINDPETRO	TVSMOTOR
ABBOTINDIA	GRAPHITE	NAUKRI	PIIND	ORIENTREF	PERSISTENT	SUPRAJIT
SPONIND	APLLTD	SONATSOFTW	MINDAIND	ASTRAL	TRENT	KOTAKBANK
PHASIS	ITDC	OMAXE	BALMLAWRIE	VSTIND	ESORTS	WELSPUNIND
CHOLAFIN	SUNTECK	GUJALKALI	SANOFI	REDINGTON	PHOENIXLTD	KPRMILL
KRBL	MOTILALOFS	MANAPPURAM	HATHWAY	CENTRALBK	LINDEINDIA	POLYMED
VAKRANGEET	IPCALAB	WHIRLPOOL	IDEA	AIAENG	TATASTEEL	MAHSCOOTER
GEIND	SWANENERGY	RELAXO	CANFINHOME	IOLCP	GRINDWELL	KEC
SHH	SYMPHONY	IGL	MINDTREE	NATCOPHARM	M.M.	IOC
SEQUENT	RAJESHEXPO	ITC	JCHAC	JKYTYRE	AARTIND	MAHINDCIE
HTECH	BRITANNIA	HEG	ZYDUSWELL	IFBIND	JUBLFOOD	FORCEMOT
DEEPAKNI	GRANULES	TECHM	YDOTHYLAB	HINDUNILVR	APOLLOTYRE	TITAN
	WIPRO	ALKYLAMINE	VEDL	CRISIL	EMAMILTD	NTPC
	VAIBHAVGBL	ECLERX	EDELWEISS	DCBBANK	SPICEJET	UPL

```

##          WESTLIFE ABBOTINDIA RESPONIND MPHASIS    TCS CHOLAFIN KRBL
## 2019-09-27 05:30:00      0   0.031   0.000   0 0.034      0   0
## 2019-12-27 05:30:00      0   0.155   0.000   0 0.049      0   0
## 2020-03-27 05:30:00      0   0.326   0.000   0 0.000      0   0
## 2020-06-26 05:30:00      0   0.098   0.282   0 0.000      0   0
## 2020-09-25 05:30:00      0   0.040   0.388   0 0.000      0   0
## 2020-12-18 05:30:00      0   0.000   0.164   0 0.000      0   0
##          VAKRANGEET PAGEIND PGHH SEQUENT HCLTECH INFY DEEPAKNI
## 2019-09-27 05:30:00      0     0     0 0.000   0 0.115   0.000
## 2019-12-27 05:30:00      0     0     0 0.027   0 0.206   0.083
## 2020-03-27 05:30:00      0     0     0 0.000   0 0.000   0.000
## 2020-06-26 05:30:00      0     0     0 0.015   0 0.000   0.000
## 2020-09-25 05:30:00      0     0     0 0.000   0 0.000   0.000
## 2020-12-18 05:30:00      0     0     0 0.000   0 0.000   0.000
##          INDIACEM MARICO GRAPHITE APLLTD ITDC SUNTECK MOTILALOFS
## 2019-09-27 05:30:00 0.000     0   0.000   0     0     0     0
## 2019-12-27 05:30:00 0.000     0   0.029   0     0     0     0
## 2020-03-27 05:30:00 0.109     0   0.000   0     0     0     0
## 2020-06-26 05:30:00 0.167     0   0.022   0     0     0     0
## 2020-09-25 05:30:00 0.172     0   0.138   0     0     0     0
## 2020-12-18 05:30:00 0.000     0   0.100   0     0     0     0
##          IPCALAB SWANENERGY SYMPHONY RAJESHEXPO BRITANNIA GRANULES
## 2019-09-27 05:30:00 0.155     0     0     0     0     0 0.000

```

## 2019-12-27 05:30:00	0.000	0	0	0	0	0.017
## 2020-03-27 05:30:00	0.032	0	0	0	0	0.000
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.000
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.087
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.114
##	WIPRO VAIBHAVGBL INDHOTEL DRREDDY NAUKRI SONATSOFTW OMAXE					
## 2019-09-27 05:30:00	0.015	0	0.00	0.037	0	0
## 2019-12-27 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0.19	0.000	0	0
## 2020-09-25 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0.00	0.000	0	0
##	GUJALKALI MANAPPURAM WHIRLPOOL RELAXO IGL ITC HEG TECHM					
## 2019-09-27 05:30:00	0	0.02	0.000	0 0.073	0	0
## 2019-12-27 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-03-27 05:30:00	0	0.00	0.252	0 0.000	0	0
## 2020-06-26 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-09-25 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-12-18 05:30:00	0	0.00	0.000	0 0.000	0	0
##	ALKYLAMINE ECLERX JSWSTEEL DCMSHRIRAM PIIND MINDAIND					
## 2019-09-27 05:30:00	0.000	0	0	0.069	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.000	0	0
## 2020-09-25 05:30:00	0.024	0	0	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.000	0	0
##	BALMILAWRIE SANOFI HATHWAY IDEA CANFINHOME MINDTREE JCHAC					
## 2019-09-27 05:30:00	0	0	0 0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0 0.000	0	0	0
## 2020-03-27 05:30:00	0	0	0 0.042	0	0	0
## 2020-06-26 05:30:00	0	0	0 0.077	0	0	0
## 2020-09-25 05:30:00	0	0	0 0.073	0	0	0
## 2020-12-18 05:30:00	0	0	0 0.010	0	0	0
##	ZYDUSWELL JYOTHYLAB VEDL EDELWEISS APLAPOLLO NAVINFLUOR					
## 2019-09-27 05:30:00	0.14	0	0	0	0	0.000
## 2019-12-27 05:30:00	0.00	0	0	0	0	0.000
## 2020-03-27 05:30:00	0.00	0	0	0	0	0.118
## 2020-06-26 05:30:00	0.00	0	0	0	0	0.049
## 2020-09-25 05:30:00	0.00	0	0	0	0	0.000
## 2020-12-18 05:30:00	0.00	0	0	0	0	0.000
##	ORIENTREF ASTRAL VSTIND REDINGTON CENTRALBK AIAENG IOLCP					
## 2019-09-27 05:30:00	0	0	0	0.048	0	0
## 2019-12-27 05:30:00	0	0	0	0.058	0	0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0
## 2020-12-18 05:30:00	0	0	0	0.048	0	0

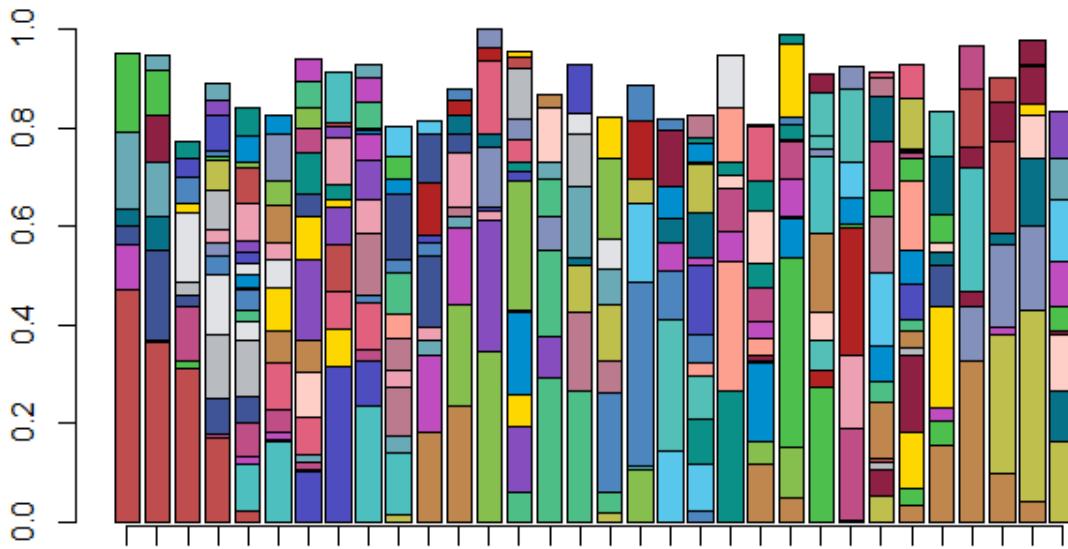
##	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK
## 2019-09-27 05:30:00	0	0	0.000	0.011	0	0.004
## 2019-12-27 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-03-27 05:30:00	0	0	0.000	0.086	0	0.000
## 2020-06-26 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-09-25 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-12-18 05:30:00	0	0	0.093	0.000	0	0.000
##	BALRAMCHIN	HINDPETRO	PERSISTENT	TRENT	ESCORTS	PHOENIXLTD
## 2019-09-27 05:30:00	0	0	0.000	0.004	0.000	0
## 2019-12-27 05:30:00	0	0	0.000	0.118	0.000	0
## 2020-03-27 05:30:00	0	0	0.000	0.000	0.000	0
## 2020-06-26 05:30:00	0	0	0.000	0.000	0.000	0
## 2020-09-25 05:30:00	0	0	0.007	0.000	0.000	0
## 2020-12-18 05:30:00	0	0	0.124	0.000	0.084	0
##	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLFOOD
## 2019-09-27 05:30:00	0.000	0	0	0	0	0
## 2019-12-27 05:30:00	0.093	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0
##	APOLLOTYRE	EMAMILTD	SPICEJET	FORTIS	TVSMOTOR	SUPRAJIT
## 2019-09-27 05:30:00	0	0	0	0	0	0
## 2019-12-27 05:30:00	0	0	0	0	0	0
## 2020-03-27 05:30:00	0	0	0	0	0	0
## 2020-06-26 05:30:00	0	0	0	0	0	0
## 2020-09-25 05:30:00	0	0	0	0	0	0
## 2020-12-18 05:30:00	0	0	0	0	0	0
##	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC IOC
## 2019-09-27 05:30:00	0.102	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0
##	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL	AUROPHARMA
## 2019-09-27 05:30:00	0.000	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.098	0	0	0	0	0
##	OBEROIRLTY	J.KBANK	BEL	NLCINDIA	ASTRAZEN	GODREJPROP
## 2019-09-27 05:30:00	0	0	0	0	0.000	0
## 2019-12-27 05:30:00	0	0	0	0	0.000	0
## 2020-03-27 05:30:00	0	0	0	0	0.000	0
## 2020-06-26 05:30:00	0	0	0	0	0.000	0

```

## 2020-09-25 05:30:00      0     0     0     0.048      0
## 2020-12-18 05:30:00      0     0     0     0.000      0
##                               PETRONET
## 2019-09-27 05:30:00      0.07
## 2019-12-27 05:30:00      0.00
## 2020-03-27 05:30:00      0.00
## 2020-06-26 05:30:00      0.00
## 2020-09-25 05:30:00      0.00
## 2020-12-18 05:30:00      0.00

```

Weights for bt66



ESTLIFE	MARICO	DRREDDY	DCMSHIRAM	NAVINFLUOR	HINDPETRO	TVSMOTOR
ABBOTINDIA	GRAPHITE	NAUKRI	PIIND	ORIENTREF	PERSISTENT	SUPRAJIT
RESPONIND	APLTD	SONATSOFTW	MINDAIND	ASTRAL	TRENT	KOTAKBANK
MPHASIS	ITDC	OMAXE	BALMLAWRIE	VSTIND	ESORTS	WELSPUNIND
CHOLAFIN	SUNTECK	GUJALKALI	SANOFI	REDINGTON	PHOENIXLTD	KPRMILL
KRBL	MOTILALOFS	MANAPPURAM	HATHWAY	CENTRALBK	LINDEINDIA	POLYMED
VAKRANGEET	IPCALAB	WHIRLPOOL	IDEA	AIAENG	TATASTEEL	MARSOOTER
AGEIND	SWANENERGY	RELAXO	CANFINHOME	IOCLP	GRINDWELL	KEC
PGHH	SYMPHONY	IGL	MINDTREE	NATCOPHARM	M.M.	IOC
SEQUENT	RAJESHXPO	ITC	JCHAC	JKTYRE	AARTIJIND	MAHINDCIE
HCLTECH	BRITANNIA	HEG	ZYDUSWELL	IFBIND	JUBLFOOD	FORCEMOT
FY	GRANULES	TECHM	JYOTHYLAB	HINDUNILVR	APOLLOTYRE	TITAN
DEEPAKNI	WIPRO	ALKYLAMINE	VEDI	CRISIL	EMAMILTD	NTPC
	VAIBHAVGBL	ECLERX	EDELWEISS	DCBBANK	SPICEJET	UPL

```

##                               WESTLIFE ABBOTINDIA RESPONIND MPHASIS    TCS CHOLAFIN KRBL
## 2019-09-27 05:30:00      0     0.031     0.000      0 0.034      0     0
## 2019-12-27 05:30:00      0     0.155     0.000      0 0.049      0     0
## 2020-03-27 05:30:00      0     0.326     0.000      0 0.000      0     0
## 2020-06-26 05:30:00      0     0.098     0.282      0 0.000      0     0
## 2020-09-25 05:30:00      0     0.040     0.388      0 0.000      0     0
## 2020-12-18 05:30:00      0     0.000     0.164      0 0.000      0     0
##                               VAKRANGEET PAGEIND PGHH SEQUENT HCLTECH INFY DEEPAKNI
## 2019-09-27 05:30:00      0     0     0     0.000      0 0.115     0.000
## 2019-12-27 05:30:00      0     0     0     0.027      0 0.206     0.083
## 2020-03-27 05:30:00      0     0     0     0.000      0 0.000     0.000
## 2020-06-26 05:30:00      0     0     0     0.015      0 0.000     0.000

```

## 2020-09-25 05:30:00	0	0	0	0.000	0	0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0.000	0	0.000	0.000
##	INDIACEM	MARICO	GRAPHITE	APLLTD	ITDC	SUNTECK	MOTILALOFS
## 2019-09-27 05:30:00	0.000	0	0	0.000	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.029	0	0	0
## 2020-03-27 05:30:00	0.109	0	0	0.000	0	0	0
## 2020-06-26 05:30:00	0.167	0	0	0.022	0	0	0
## 2020-09-25 05:30:00	0.172	0	0	0.138	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.100	0	0	0
##	IPCALAB	SWANENERGY	SYMPHONY	RAJESHEXPO	BRITANNIA	GRANULES	
## 2019-09-27 05:30:00	0.155	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0.000	0	0	0	0	0.017	
## 2020-03-27 05:30:00	0.032	0	0	0	0	0.000	
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.000	
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.087	
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.114	
##	WIPRO	VAIBHAVGBL	INDHOTEL	DRREDDY	NAUKRI	SONATSOFTW	OMAXE
## 2019-09-27 05:30:00	0.015	0	0	0.00	0.037	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.00	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.00	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.19	0.000	0	0
## 2020-09-25 05:30:00	0.000	0	0	0.00	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.00	0.000	0	0
##	GUJALKALI	MANAPPURAM	WHIRLPOOL	RELAXO	IGL	ITC	HEG TECHM
## 2019-09-27 05:30:00	0	0.02	0.000	0	0.073	0	0
## 2019-12-27 05:30:00	0	0.00	0.000	0	0.000	0	0
## 2020-03-27 05:30:00	0	0.00	0.252	0	0.000	0	0
## 2020-06-26 05:30:00	0	0.00	0.000	0	0.000	0	0
## 2020-09-25 05:30:00	0	0.00	0.000	0	0.000	0	0
## 2020-12-18 05:30:00	0	0.00	0.000	0	0.000	0	0
##	ALKYLAMINE	ECLERX	JSWSTEEL	DCMSHRIRAM	PIIND	MINDAIND	
## 2019-09-27 05:30:00	0.000	0	0	0.069	0	0	
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0	
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0	
## 2020-06-26 05:30:00	0.000	0	0	0.000	0	0	
## 2020-09-25 05:30:00	0.024	0	0	0.000	0	0	
## 2020-12-18 05:30:00	0.000	0	0	0.000	0	0	
##	BALMLAWRIE	SANOFI	HATHWAY	IDEA	CANFINHOME	MINDTREE	JCHAC
## 2019-09-27 05:30:00	0	0	0.000	0	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0	0	0	0
## 2020-03-27 05:30:00	0	0	0.042	0	0	0	0
## 2020-06-26 05:30:00	0	0	0.077	0	0	0	0
## 2020-09-25 05:30:00	0	0	0.073	0	0	0	0
## 2020-12-18 05:30:00	0	0	0.010	0	0	0	0
##	ZYDUSWELL	JYOTHYLAB	VEDL	EDELWEISS	APLAPOLLO	NAVINFLUOR	
## 2019-09-27 05:30:00	0.14	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0.00	0	0	0	0	0.000	

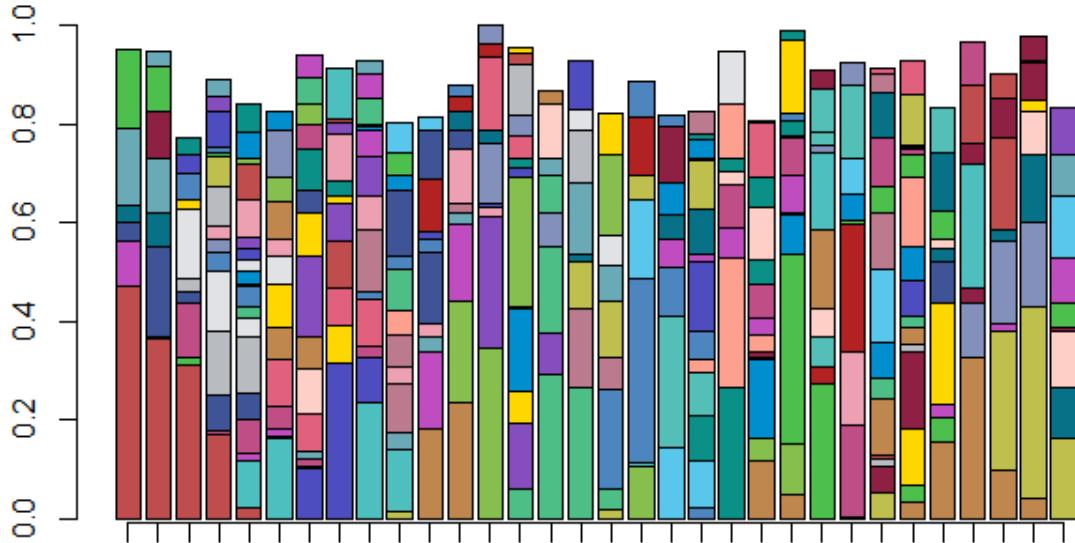
## 2020-03-27 05:30:00	0.00	0	0	0	0	0.118	
## 2020-06-26 05:30:00	0.00	0	0	0	0	0.049	
## 2020-09-25 05:30:00	0.00	0	0	0	0	0.000	
## 2020-12-18 05:30:00	0.00	0	0	0	0	0.000	
##	ORIENTREF	ASTRAL	VSTIND	REDINGTON	CENTRALBK	AIAENG	IOLCP
## 2019-09-27 05:30:00	0	0	0	0.048	0	0	0
## 2019-12-27 05:30:00	0	0	0	0.058	0	0	0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0	0.048	0	0	0
##	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK	
## 2019-09-27 05:30:00	0	0	0.000	0.011	0	0.004	
## 2019-12-27 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-03-27 05:30:00	0	0	0.000	0.086	0	0.000	
## 2020-06-26 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-09-25 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-12-18 05:30:00	0	0	0.093	0.000	0	0.000	
##	BALRAMCHIN	HINDPETRO	PERSISTENT	TRENT	ESCORTS	PHOENIXLTD	
## 2019-09-27 05:30:00	0	0	0.000	0.004	0.000	0	
## 2019-12-27 05:30:00	0	0	0.000	0.118	0.000	0	
## 2020-03-27 05:30:00	0	0	0.000	0.000	0.000	0	
## 2020-06-26 05:30:00	0	0	0.000	0.000	0.000	0	
## 2020-09-25 05:30:00	0	0	0.007	0.000	0.000	0	
## 2020-12-18 05:30:00	0	0	0.124	0.000	0.084	0	
##	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLFOOD	
## 2019-09-27 05:30:00	0.000	0	0	0	0	0	
## 2019-12-27 05:30:00	0.093	0	0	0	0	0	
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	
## 2020-12-18 05:30:00	0.000	0	0	0	0	0	
##	APOLLOTYRE	EMAMILTD	SPICEJET	FORTIS	TVSMOTOR	SUPRAJIT	
## 2019-09-27 05:30:00	0	0	0	0	0	0	
## 2019-12-27 05:30:00	0	0	0	0	0	0	
## 2020-03-27 05:30:00	0	0	0	0	0	0	
## 2020-06-26 05:30:00	0	0	0	0	0	0	
## 2020-09-25 05:30:00	0	0	0	0	0	0	
## 2020-12-18 05:30:00	0	0	0	0	0	0	
##	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC	IOC
## 2019-09-27 05:30:00	0.102	0	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0	0
##	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL	AUROPHARMA	VINALIORG

```

## 2019-09-27 05:30:00      0.000      0      0      0      0      0      0      0
## 2019-12-27 05:30:00      0.000      0      0      0      0      0      0      0
## 2020-03-27 05:30:00      0.000      0      0      0      0      0      0      0
## 2020-06-26 05:30:00      0.000      0      0      0      0      0      0      0
## 2020-09-25 05:30:00      0.000      0      0      0      0      0      0      0
## 2020-12-18 05:30:00      0.098      0      0      0      0      0      0      0
##                               OBEROIRLTY J.KBANK BEL NLCINDIA ASTRAZEN GODREJPROP
## 2019-09-27 05:30:00          0      0      0      0      0.000      0
## 2019-12-27 05:30:00          0      0      0      0      0.000      0
## 2020-03-27 05:30:00          0      0      0      0      0.000      0
## 2020-06-26 05:30:00          0      0      0      0      0.000      0
## 2020-09-25 05:30:00          0      0      0      0      0.048      0
## 2020-12-18 05:30:00          0      0      0      0      0.000      0
##                               PETRONET
## 2019-09-27 05:30:00      0.07
## 2019-12-27 05:30:00      0.00
## 2020-03-27 05:30:00      0.00
## 2020-06-26 05:30:00      0.00
## 2020-09-25 05:30:00      0.00
## 2020-12-18 05:30:00      0.00

```

Weights for bt67



ESTLIFE	ABBOTINDIA	RESPONIND	MPHASIS	SUNTECK	MOTILALOFS	IPCALAB	SWANENERGY	SYMPHONY	RAJESHXPO	BRETTANNIA	GRANULES	WIPRO	VAIBHAVGBL	MARICO	GRAPHITE	APLLTD	ITDC	OMAXE	GUJALKALLI	MANAPPURAM	WHIRLPOOL	RELAXO	IGL	ITC	HEG	TECHM	ALKYLAMINE	ECLERX	DRREDDY	NAUKRI	SONATSOFTW	HATHWAY	IDEA	CANFINHOME	MINDTREE	JCHAC	ZYDUSWELL	JYOTHYLAB	VEDL	EDELWEISS	DCMSHRIRAM	PIIND	MINDAIND	BALMLAWRIE	SANOFI	HATHWAY	IDEA	CANFINHOME	MINDTREE	JCHAC	ZYDUSWELL	JYOTHYLAB	VEDL	EDELWEISS	NAVINFLUOR	ORIENTREF	ASTRAL	VSTIND	REDINGTON	CENTRALBK	AIAENG	OLCP	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK	HINDPETRO	PERSISTENT	TRENT	ESORTS	PHOENIXLTD	LINDEINDIA	TATASTEEL	GRINDWELL	M.M.	AARTIIND	JUBLFOOD	APOLLOTYRE	EMAMILTD	SPICEJET	TVSMOTOR	SUPRAJIT	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC	IOC	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL
---------	------------	-----------	---------	---------	------------	---------	------------	----------	-----------	------------	----------	-------	------------	--------	----------	--------	------	-------	------------	------------	-----------	--------	-----	-----	-----	-------	------------	--------	---------	--------	------------	---------	------	------------	----------	-------	-----------	-----------	------	-----------	------------	-------	----------	------------	--------	---------	------	------------	----------	-------	-----------	-----------	------	-----------	------------	-----------	--------	--------	-----------	-----------	--------	------	------------	--------	--------	------------	--------	---------	-----------	------------	-------	--------	------------	------------	-----------	-----------	------	----------	----------	------------	----------	----------	----------	----------	-----------	------------	---------	---------	------------	-----	-----	-----------	----------	-------	------	-----

```

##                               WESTLIFE ABBOTINDIA RESPONIND MPHASIS      TCS CHOLAFIN KRBL

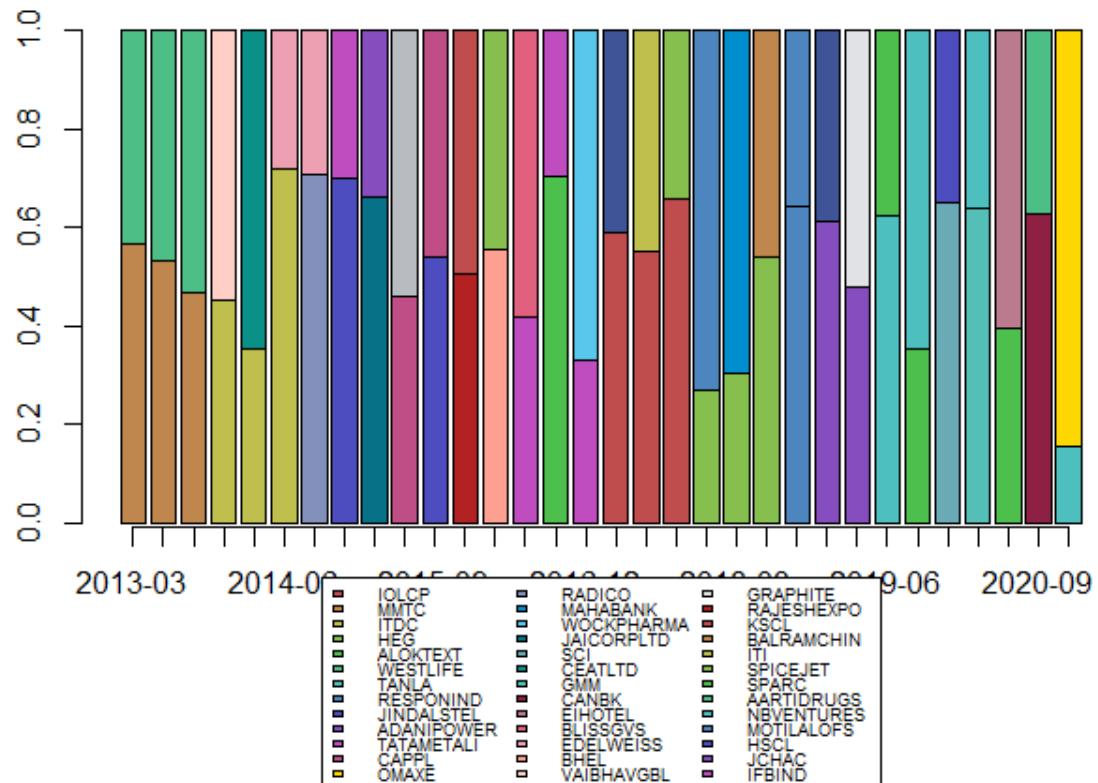
```

## 2019-09-27 05:30:00	0	0.031	0.000	0 0.034	0	0
## 2019-12-27 05:30:00	0	0.155	0.000	0 0.049	0	0
## 2020-03-27 05:30:00	0	0.326	0.000	0 0.000	0	0
## 2020-06-26 05:30:00	0	0.098	0.282	0 0.000	0	0
## 2020-09-25 05:30:00	0	0.040	0.388	0 0.000	0	0
## 2020-12-18 05:30:00	0	0.000	0.164	0 0.000	0	0
##	VAKRANGEET	PAGEIND	PGHH	SEQUENT	HCLTECH	INFY DEEPAKNI
## 2019-09-27 05:30:00	0	0	0	0.000	0 0.115	0.000
## 2019-12-27 05:30:00	0	0	0	0.027	0 0.206	0.083
## 2020-03-27 05:30:00	0	0	0	0.000	0 0.000	0.000
## 2020-06-26 05:30:00	0	0	0	0.015	0 0.000	0.000
## 2020-09-25 05:30:00	0	0	0	0.000	0 0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0.000	0 0.000	0.000
##	INDIACEM	MARICO	GRAPHITE	APLLTD	ITDC	SUNTECK MOTILALOFS
## 2019-09-27 05:30:00	0.000	0	0	0.000	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.029	0	0
## 2020-03-27 05:30:00	0.109	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.167	0	0	0.022	0	0
## 2020-09-25 05:30:00	0.172	0	0	0.138	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.100	0	0
##	IPCALAB	SWANENERGY	SYMPHONY	RAJESHEXPO	BRITANNIA	GRANULES
## 2019-09-27 05:30:00	0.155	0	0	0	0	0.000
## 2019-12-27 05:30:00	0.000	0	0	0	0	0.017
## 2020-03-27 05:30:00	0.032	0	0	0	0	0.000
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.000
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.087
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.114
##	WIPRO	VAIBHAVGBL	INDHOTEL	DRREDDY	NAUKRI	SONATSOFTW OMAXE
## 2019-09-27 05:30:00	0.015	0	0	0.00	0.037	0
## 2019-12-27 05:30:00	0.000	0	0	0.00	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0.00	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0.19	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0.00	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0.00	0.000	0
##	GUJALKALI	MANAPPURAM	WHIRLPOOL	RELAXO	IGL ITC HEG	TECHM
## 2019-09-27 05:30:00	0	0.02	0.000	0 0.073	0	0
## 2019-12-27 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-03-27 05:30:00	0	0.00	0.252	0 0.000	0	0
## 2020-06-26 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-09-25 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-12-18 05:30:00	0	0.00	0.000	0 0.000	0	0
##	ALKYLAMINE	ECLERX	JSWSTEEL	DCMSHRIRAM	PIIND	MINDAIND
## 2019-09-27 05:30:00	0.000	0	0	0.069	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.000	0	0
## 2020-09-25 05:30:00	0.024	0	0	0.000	0	0

## 2020-12-18 05:30:00	0.000	0	0	0.000	0	0	
##	BALMILAWRIE	SANOFI	HATHWAY	IDEA	CANFINHOME	MINDTREE	JCHAC
## 2019-09-27 05:30:00	0	0	0	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0	0	0.042	0	0	0
## 2020-06-26 05:30:00	0	0	0	0.077	0	0	0
## 2020-09-25 05:30:00	0	0	0	0.073	0	0	0
## 2020-12-18 05:30:00	0	0	0	0.010	0	0	0
##	ZYDUSWELL	JYOTHYLAB	VEDL	EDELWEISS	APLAPOLLO	NAVINFLUOR	
## 2019-09-27 05:30:00	0.14	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0.00	0	0	0	0	0.000	
## 2020-03-27 05:30:00	0.00	0	0	0	0	0.118	
## 2020-06-26 05:30:00	0.00	0	0	0	0	0.049	
## 2020-09-25 05:30:00	0.00	0	0	0	0	0.000	
## 2020-12-18 05:30:00	0.00	0	0	0	0	0.000	
##	ORIENTREF	ASTRAL	VSTIND	REDINGTON	CENTRALBK	AIAENG	IOLCP
## 2019-09-27 05:30:00	0	0	0	0.048	0	0	0
## 2019-12-27 05:30:00	0	0	0	0.058	0	0	0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0	0.048	0	0	0
##	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK	
## 2019-09-27 05:30:00	0	0	0.000	0.011	0	0.004	
## 2019-12-27 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-03-27 05:30:00	0	0	0.000	0.086	0	0.000	
## 2020-06-26 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-09-25 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-12-18 05:30:00	0	0	0.093	0.000	0	0.000	
##	BALRAMCHIN	HINDPETRO	PERSISTENT	TRENT	ESCORTS	PHOENIXLTD	
## 2019-09-27 05:30:00	0	0	0.000	0.004	0.000	0	
## 2019-12-27 05:30:00	0	0	0.000	0.118	0.000	0	
## 2020-03-27 05:30:00	0	0	0.000	0.000	0.000	0	
## 2020-06-26 05:30:00	0	0	0.000	0.000	0.000	0	
## 2020-09-25 05:30:00	0	0	0.007	0.000	0.000	0	
## 2020-12-18 05:30:00	0	0	0.124	0.000	0.084	0	
##	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLFOOD	
## 2019-09-27 05:30:00	0.000	0	0	0	0	0	
## 2019-12-27 05:30:00	0.093	0	0	0	0	0	
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	
## 2020-12-18 05:30:00	0.000	0	0	0	0	0	
##	APOLLOTYRE	EMAMILTD	SPICEJET	FORTIS	TVSMOTOR	SUPRAJIT	
## 2019-09-27 05:30:00	0	0	0	0	0	0	
## 2019-12-27 05:30:00	0	0	0	0	0	0	
## 2020-03-27 05:30:00	0	0	0	0	0	0	

## 2020-06-26 05:30:00	0	0	0	0	0	0		
## 2020-09-25 05:30:00	0	0	0	0	0	0		
## 2020-12-18 05:30:00	0	0	0	0	0	0		
##	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC IOC		
## 2019-09-27 05:30:00	0.102	0	0	0	0	0 0 0		
## 2019-12-27 05:30:00	0.000	0	0	0	0	0 0 0		
## 2020-03-27 05:30:00	0.000	0	0	0	0	0 0 0		
## 2020-06-26 05:30:00	0.000	0	0	0	0	0 0 0		
## 2020-09-25 05:30:00	0.000	0	0	0	0	0 0 0		
## 2020-12-18 05:30:00	0.000	0	0	0	0	0 0 0		
##	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL	AUROPHARMA	VINATIORG	VTI
## 2019-09-27 05:30:00	0.000	0	0	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-12-18 05:30:00	0.098	0	0	0	0	0	0	0
##	OBEROIRLTY	J.KBANK	BEL	NLCINDIA	ASTRAZEN	GODREJPROP		
## 2019-09-27 05:30:00	0	0	0	0	0.000	0		
## 2019-12-27 05:30:00	0	0	0	0	0.000	0		
## 2020-03-27 05:30:00	0	0	0	0	0.000	0		
## 2020-06-26 05:30:00	0	0	0	0	0.000	0		
## 2020-09-25 05:30:00	0	0	0	0	0.048	0		
## 2020-12-18 05:30:00	0	0	0	0	0.000	0		
##	PETRONET							
## 2019-09-27 05:30:00	0.07							
## 2019-12-27 05:30:00	0.00							
## 2020-03-27 05:30:00	0.00							
## 2020-06-26 05:30:00	0.00							
## 2020-09-25 05:30:00	0.00							
## 2020-12-18 05:30:00	0.00							

Weights for bt68



```

##          IOLCP MMTC ITDC HEG ALOKTEXT WESTLIFE TANLA RESPONIND
## 2019-09-27 05:30:00    0    0    0    0   0.353     0  0.647      0
## 2019-12-27 05:30:00    0    0    0    0   0.000     0  0.000      0
## 2020-03-27 05:30:00    0    0    0    0   0.000     0  0.000      0
## 2020-06-26 05:30:00    0    0    0    0   0.396     0  0.000      0
## 2020-09-25 05:30:00    0    0    0    0   0.000     0  0.000      0
## 2020-12-18 05:30:00    0    0    0    0   0.000     0  0.154      0
##          JINDALSTEL ADANIPOWER TATAMETALI CAPPL OMAXE JSL RADICO
## 2019-09-27 05:30:00     0        0        0    0.000    0    0      0
## 2019-12-27 05:30:00     0        0        0    0.000    0    0      0
## 2020-03-27 05:30:00     0        0        0    0.000    0    0      0
## 2020-06-26 05:30:00     0        0        0    0.000    0    0      0
## 2020-09-25 05:30:00     0        0        0    0.000    0    0      0
## 2020-12-18 05:30:00     0        0        0    0.000    0    0      0
##          MAHABANK WOCKPHARMA JAICORPLTD SCI CEATLTD GMM CANBK
## 2019-09-27 05:30:00     0        0        0    0.000    0    0.000  0.000
## 2019-12-27 05:30:00     0        0        0    0.65     0    0.000  0.000
## 2020-03-27 05:30:00     0        0        0    0.00     0    0.64  0.000
## 2020-06-26 05:30:00     0        0        0    0.00     0    0.00  0.000
## 2020-09-25 05:30:00     0        0        0    0.00     0    0.00  0.628
## 2020-12-18 05:30:00     0        0        0    0.00     0    0.00  0.000
##          EIHOTEL BLISSGVS EDELWEISS BHEL VAIBHAVGL DCMSHIRAM
## 2019-09-27 05:30:00    0.000     0       0     0     0     0

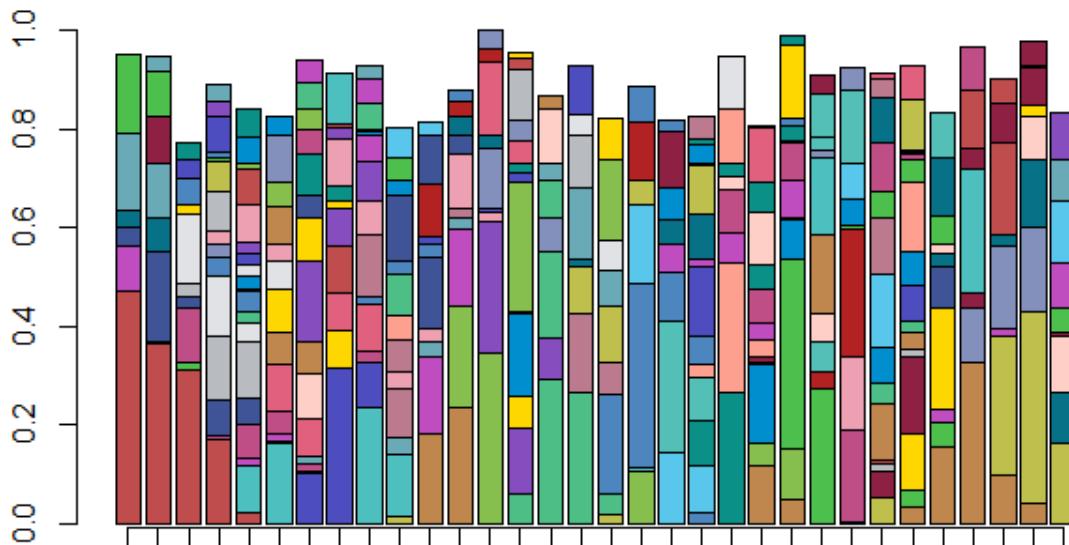
```

```

## 2019-12-27 05:30:00 0.000 0 0 0 0
## 2020-03-27 05:30:00 0.000 0 0 0 0
## 2020-06-26 05:30:00 0.604 0 0 0 0
## 2020-09-25 05:30:00 0.000 0 0 0 0
## 2020-12-18 05:30:00 0.000 0 0 0 0
## GRAPHITE RAJESHEXPO KSCL BALRAMCHIN ITI SPICEJET SPARC
## 2019-09-27 05:30:00 0 0 0 0 0 0
## 2019-12-27 05:30:00 0 0 0 0 0 0
## 2020-03-27 05:30:00 0 0 0 0 0 0
## 2020-06-26 05:30:00 0 0 0 0 0 0
## 2020-09-25 05:30:00 0 0 0 0 0 0
## 2020-12-18 05:30:00 0 0 0 0 0 0
## AARTIDRUGS NBVENTURES MOTILALOFS HSCL JCHAC IFBIND
## 2019-09-27 05:30:00 0.000 0.00 0 0.00 0 0
## 2019-12-27 05:30:00 0.000 0.00 0 0.35 0 0
## 2020-03-27 05:30:00 0.000 0.36 0 0.00 0 0
## 2020-06-26 05:30:00 0.000 0.00 0 0.00 0 0
## 2020-09-25 05:30:00 0.372 0.00 0 0.00 0 0
## 2020-12-18 05:30:00 0.000 0.00 0 0.00 0 0

```

Weights for bt69



ESTLIFE	MARICO	DRREDDY	DCMSHIRAM	NAVINFLUOR	HINDPETRO	TVSMOTOR
ABBOTINDIA	GRAPHITE	NAUKRI	PIIND	ORIENTREF	PERSISTENT	SUPRAJIT
RESPONIND	APLLTD	SONATSOFTW	MINDAIND	ASTRAL	TRENT	KOTAKBANK
MPHASIS	ITDC	OMAXE	BALMLAWRIE	VSTIND	ESORTS	WELSPUNIND
S	SUNTECK	GUJALKALI	SANOFI	REDINGTON	PHOENIXLTD	KPRMILL
CHOLAFIN	MOTILALOFS	MANAPPURAM	HATHWAY	CENTRALBK	LINDEINDIA	POLYMED
REL	IPCALAB	WHIRLPOOL	IDEA	AIAENG	TATASTEEL	MAHSOOTER
AKRANGEE	SWANENERGY	RELAXO	CANFINHOME	IOLCP	GRINDWELL	KEC
AGEIND	SYMPHONY	IGL	MINDTREE	NATCOPHARM	M.M.	IOC
SHH	RAJESHEXPO	ITC	JCHAC	JKTYRE	AARTIIND	MAHINDCIE
QUENT	BRITANNIA	HEG	ZYDUSWELL	IFBIND	JUBLFOOD	FORCEMOT
LTCH	GRANULES	TECHM	JYOTHYLAB	HINDUNILVR	APOLLOTYRE	TITAN
FY	WIPRO	ALKYLAMINE	VEDI	CRISIL	EMAMILTD	NTPC
SEPAKNI	VAIBHAVGBL	ECLERX	EDELWEISS	DCBBANK	SPICEJET	UPL

```

## WESTLIFE ABBOTINDIA RESPONIND MPHASIS TCS CHOLAFIN KRBL
## 2019-09-27 05:30:00 0 0.031 0.000 0 0.034 0 0

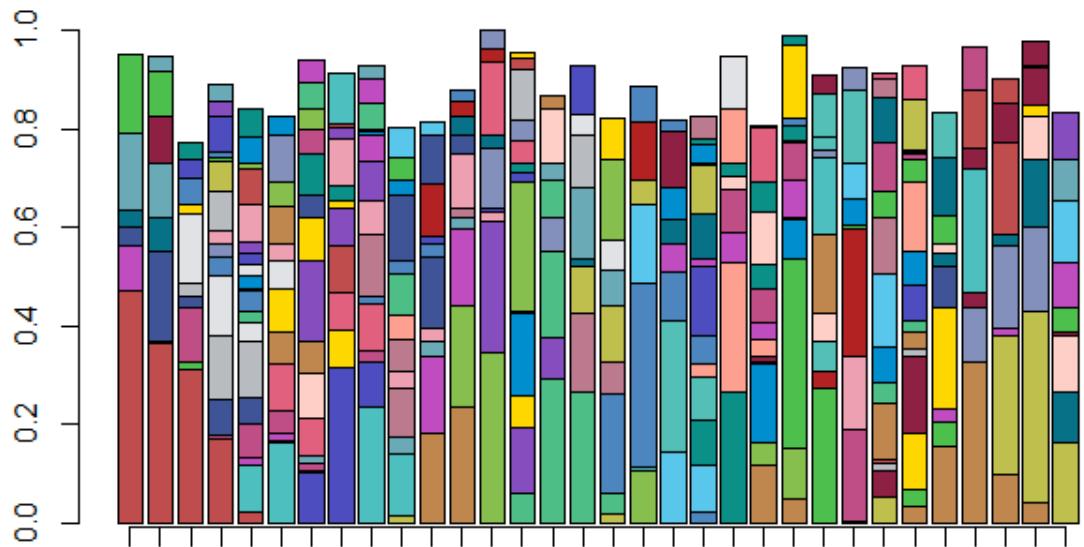
```

## 2019-12-27 05:30:00	0	0.155	0.000	0 0.049	0	0
## 2020-03-27 05:30:00	0	0.326	0.000	0 0.000	0	0
## 2020-06-26 05:30:00	0	0.098	0.282	0 0.000	0	0
## 2020-09-25 05:30:00	0	0.040	0.388	0 0.000	0	0
## 2020-12-18 05:30:00	0	0.000	0.164	0 0.000	0	0
##	VAKRANGE	PAGEIND	PGHH	SEQUENT	HCLTECH	INFY DEEPAKNI
## 2019-09-27 05:30:00	0	0	0	0.000	0 0.115	0.000
## 2019-12-27 05:30:00	0	0	0	0.027	0 0.206	0.083
## 2020-03-27 05:30:00	0	0	0	0.000	0 0.000	0.000
## 2020-06-26 05:30:00	0	0	0	0.015	0 0.000	0.000
## 2020-09-25 05:30:00	0	0	0	0.000	0 0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0.000	0 0.000	0.000
##	INDIACEM	MARICO	GRAPHITE	APLLTD	ITDC	SUNTECK MOTILALOFS
## 2019-09-27 05:30:00	0.000	0	0	0.000	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.029	0	0
## 2020-03-27 05:30:00	0.109	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.167	0	0	0.022	0	0
## 2020-09-25 05:30:00	0.172	0	0	0.138	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.100	0	0
##	IPCALAB	SWANENERGY	SYMPHONY	RAJESHEXPO	BRITANNIA	GRANULES
## 2019-09-27 05:30:00	0.155	0	0	0	0	0.000
## 2019-12-27 05:30:00	0.000	0	0	0	0	0.017
## 2020-03-27 05:30:00	0.032	0	0	0	0	0.000
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.000
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.087
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.114
##	WIPRO	VAIBHAVGBL	INDHOTEL	DRREDDY	NAUKRI	SONATSOFTW OMAXE
## 2019-09-27 05:30:00	0.015	0	0	0.037	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.19 0.000	0	0
## 2020-09-25 05:30:00	0.000	0	0	0.00 0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.00 0.000	0	0
##	GUJALKALI	MANAPPURAM	WHIRLPOOL	RELAXO	IGL ITC	HEG TECHM
## 2019-09-27 05:30:00	0	0.02	0.000	0 0.073	0 0	0
## 2019-12-27 05:30:00	0	0.00	0.000	0 0.000	0 0	0
## 2020-03-27 05:30:00	0	0.00	0.252	0 0.000	0 0	0
## 2020-06-26 05:30:00	0	0.00	0.000	0 0.000	0 0	0
## 2020-09-25 05:30:00	0	0.00	0.000	0 0.000	0 0	0
## 2020-12-18 05:30:00	0	0.00	0.000	0 0.000	0 0	0
##	ALKYLAMINE	ECLERX	JSWSTEEL	DCMSHRIRAM	PIIND	MINDAIND
## 2019-09-27 05:30:00	0.000	0	0	0.069	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.000	0	0
## 2020-09-25 05:30:00	0.024	0	0	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.000	0	0

	BALMLAWRIE	SANOFI	HATHWAY	IDEA	CANFINHOME	MINDTREE	JCHAC
## 2019-09-27 05:30:00	0	0	0 0.000	0	0	0	0
## 2019-12-27 05:30:00	0	0	0 0.000	0	0	0	0
## 2020-03-27 05:30:00	0	0	0 0.042	0	0	0	0
## 2020-06-26 05:30:00	0	0	0 0.077	0	0	0	0
## 2020-09-25 05:30:00	0	0	0 0.073	0	0	0	0
## 2020-12-18 05:30:00	0	0	0 0.010	0	0	0	0
	ZYDUSWELL	JYOTHYLAB	VEDL	EDELWEISS	APLAPOLO	NAVINFLUOR	
## 2019-09-27 05:30:00	0.14	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0.00	0	0	0	0	0.000	
## 2020-03-27 05:30:00	0.00	0	0	0	0	0.118	
## 2020-06-26 05:30:00	0.00	0	0	0	0	0.049	
## 2020-09-25 05:30:00	0.00	0	0	0	0	0.000	
## 2020-12-18 05:30:00	0.00	0	0	0	0	0.000	
	ORIENTREF	ASTRAL	VSTIND	REDINGTON	CENTRALBK	AIAENG	IOLCP
## 2019-09-27 05:30:00	0	0	0	0.048	0	0	0
## 2019-12-27 05:30:00	0	0	0	0.058	0	0	0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0	0.048	0	0	0
	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK	
## 2019-09-27 05:30:00	0	0	0.000	0.011	0	0.004	
## 2019-12-27 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-03-27 05:30:00	0	0	0.000	0.086	0	0.000	
## 2020-06-26 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-09-25 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-12-18 05:30:00	0	0	0.093	0.000	0	0.000	
	BALRAMCHIN	HINDPETRO	PERSISTENT	TRENT	ESCORTS	PHOENIXLTD	
## 2019-09-27 05:30:00	0	0	0.000 0.004	0.000	0	0	
## 2019-12-27 05:30:00	0	0	0.000 0.118	0.000	0	0	
## 2020-03-27 05:30:00	0	0	0.000 0.000	0.000	0	0	
## 2020-06-26 05:30:00	0	0	0.000 0.000	0.000	0	0	
## 2020-09-25 05:30:00	0	0	0.007 0.000	0.000	0	0	
## 2020-12-18 05:30:00	0	0	0.124 0.000	0.084	0	0	
	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLFOOD	
## 2019-09-27 05:30:00	0.000	0	0 0	0	0	0	
## 2019-12-27 05:30:00	0.093	0	0 0	0	0	0	
## 2020-03-27 05:30:00	0.000	0	0 0	0	0	0	
## 2020-06-26 05:30:00	0.000	0	0 0	0	0	0	
## 2020-09-25 05:30:00	0.000	0	0 0	0	0	0	
## 2020-12-18 05:30:00	0.000	0	0 0	0	0	0	
	APOLLOTYRE	EMAMILTD	SPICEJET	FORTIS	TVSMOTOR	SUPRAJIT	
## 2019-09-27 05:30:00	0	0	0 0	0	0	0	
## 2019-12-27 05:30:00	0	0	0 0	0	0	0	
## 2020-03-27 05:30:00	0	0	0 0	0	0	0	
## 2020-06-26 05:30:00	0	0	0 0	0	0	0	

## 2020-09-25 05:30:00	0	0	0	0	0	0		
## 2020-12-18 05:30:00	0	0	0	0	0	0		
##	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC IOC		
## 2019-09-27 05:30:00	0.102	0	0	0	0	0		
## 2019-12-27 05:30:00	0.000	0	0	0	0	0		
## 2020-03-27 05:30:00	0.000	0	0	0	0	0		
## 2020-06-26 05:30:00	0.000	0	0	0	0	0		
## 2020-09-25 05:30:00	0.000	0	0	0	0	0		
## 2020-12-18 05:30:00	0.000	0	0	0	0	0		
##	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL	AUROPHARMA	VINATIORG	VTI
## 2019-09-27 05:30:00	0.000	0	0	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-12-18 05:30:00	0.098	0	0	0	0	0	0	0
##	OBEROIRLTY	J.KBANK	BEL	NLCINDIA	ASTRAZEN	GODREJPROP		
## 2019-09-27 05:30:00	0	0	0	0	0.000	0		
## 2019-12-27 05:30:00	0	0	0	0	0.000	0		
## 2020-03-27 05:30:00	0	0	0	0	0.000	0		
## 2020-06-26 05:30:00	0	0	0	0	0.000	0		
## 2020-09-25 05:30:00	0	0	0	0	0.048	0		
## 2020-12-18 05:30:00	0	0	0	0	0.000	0		
##	PETRONET							
## 2019-09-27 05:30:00	0.07							
## 2019-12-27 05:30:00	0.00							
## 2020-03-27 05:30:00	0.00							
## 2020-06-26 05:30:00	0.00							
## 2020-09-25 05:30:00	0.00							
## 2020-12-18 05:30:00	0.00							

Weights for bt70



ESTLIFE	MARICO	GRAPHITE	APLLTD	ITDC	SUNTECK	MOTILALOFS	IPCALAB	SWANENERGY	SYMPHONY	RAJESHEXPO	BRITANNIA	GRANULES	WIPRO	VAIBHAVGBL	DRREDDY	NAUKRI	SONATSOFTW	OMAXE	GUJALKALI	MANAPPURAM	WHIRLPOOL	RELAXO	IGL	TC	HEG	TECHM	ALKYLAMINE	ECLERX	DCMSHIRAM	PIIND	MINDAIND	BALMLAWRIE	SANOFI	HATHWAY	IDEA	CANFINHOME	MINDTREE	JCHAC	ZYDUSWELL	JYOTHYLAB	VEDL	EDELWEISS	NAVINFUOR	ORIENTREF	ASTRAL	VSTIND	REDINGTON	CENTRALBK	AIAENG	IOLCP	NATCOPHARM	JKYTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK	HINDPETRO	PERSISTENT	TRENT	ESCOPTS	PHOENIXLTD	LINDEINDIA	TATASTEEL	GRINDWELL	M.M.	AARTIND	JUBLFOOD	APOLLOTYRE	EMAMILTD	SPICEJET	TVSMOTOR	SUPRAJIT	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC	IOC	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL
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##          WESTLIFE ABBOTINDIA RESPONIND MPHASIS    TCS CHOLAFIN KRBL
## 2019-09-27 05:30:00      0   0.031   0.000   0 0.034      0      0
## 2019-12-27 05:30:00      0   0.155   0.000   0 0.049      0      0
## 2020-03-27 05:30:00      0   0.326   0.000   0 0.000      0      0
## 2020-06-26 05:30:00      0   0.098   0.282   0 0.000      0      0
## 2020-09-25 05:30:00      0   0.040   0.388   0 0.000      0      0
## 2020-12-18 05:30:00      0   0.000   0.164   0 0.000      0      0
##          VAKRANGEE PAGEIND PGHH SEQUENT HCLTECH INFY DEEPAKNI
## 2019-09-27 05:30:00      0     0     0 0.000   0 0.115      0.000
## 2019-12-27 05:30:00      0     0     0 0.027   0 0.206      0.083
## 2020-03-27 05:30:00      0     0     0 0.000   0 0.000      0.000
## 2020-06-26 05:30:00      0     0     0 0.015   0 0.000      0.000
## 2020-09-25 05:30:00      0     0     0 0.000   0 0.000      0.000
## 2020-12-18 05:30:00      0     0     0 0.000   0 0.000      0.000
##          INDIACEM MARICO GRAPHITE APLLTD ITDC SUNTECK MOTILALOFS
## 2019-09-27 05:30:00 0.000     0     0 0.000     0     0     0
## 2019-12-27 05:30:00 0.000     0     0 0.029     0     0     0
## 2020-03-27 05:30:00 0.109     0     0 0.000     0     0     0
## 2020-06-26 05:30:00 0.167     0     0 0.022     0     0     0
## 2020-09-25 05:30:00 0.172     0     0 0.138     0     0     0
## 2020-12-18 05:30:00 0.000     0     0 0.100     0     0     0
##          IPCALAB SWANENERGY SYMPHONY RAJESHEXPO BRITANNIA GRANULES
## 2019-09-27 05:30:00 0.155     0     0     0     0     0     0.000

```

## 2019-12-27 05:30:00	0.000	0	0	0	0	0.017
## 2020-03-27 05:30:00	0.032	0	0	0	0	0.000
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.000
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.087
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.114
##	WIPRO VAIBHAVGBL INDHOTEL DRREDDY NAUKRI SONATSOFTW OMAXE					
## 2019-09-27 05:30:00	0.015	0	0.00	0.037	0	0
## 2019-12-27 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0.19	0.000	0	0
## 2020-09-25 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0.00	0.000	0	0
##	GUJALKALI MANAPPURAM WHIRLPOOL RELAXO IGL ITC HEG TECHM					
## 2019-09-27 05:30:00	0	0.02	0.000	0 0.073	0	0
## 2019-12-27 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-03-27 05:30:00	0	0.00	0.252	0 0.000	0	0
## 2020-06-26 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-09-25 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-12-18 05:30:00	0	0.00	0.000	0 0.000	0	0
##	ALKYLAMINE ECLERX JSWSTEEL DCMSHRIRAM PIIND MINDAIND					
## 2019-09-27 05:30:00	0.000	0	0	0.069	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.000	0	0
## 2020-09-25 05:30:00	0.024	0	0	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.000	0	0
##	BALMILAWRIE SANOFI HATHWAY IDEA CANFINHOME MINDTREE JCHAC					
## 2019-09-27 05:30:00	0	0	0 0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0 0.000	0	0	0
## 2020-03-27 05:30:00	0	0	0 0.042	0	0	0
## 2020-06-26 05:30:00	0	0	0 0.077	0	0	0
## 2020-09-25 05:30:00	0	0	0 0.073	0	0	0
## 2020-12-18 05:30:00	0	0	0 0.010	0	0	0
##	ZYDUSWELL JYOTHYLAB VEDL EDELWEISS APLAPOLLO NAVINFLUOR					
## 2019-09-27 05:30:00	0.14	0	0	0	0	0.000
## 2019-12-27 05:30:00	0.00	0	0	0	0	0.000
## 2020-03-27 05:30:00	0.00	0	0	0	0	0.118
## 2020-06-26 05:30:00	0.00	0	0	0	0	0.049
## 2020-09-25 05:30:00	0.00	0	0	0	0	0.000
## 2020-12-18 05:30:00	0.00	0	0	0	0	0.000
##	ORIENTREF ASTRAL VSTIND REDINGTON CENTRALBK AIAENG IOLCP					
## 2019-09-27 05:30:00	0	0	0	0.048	0	0
## 2019-12-27 05:30:00	0	0	0	0.058	0	0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0
## 2020-12-18 05:30:00	0	0	0	0.048	0	0

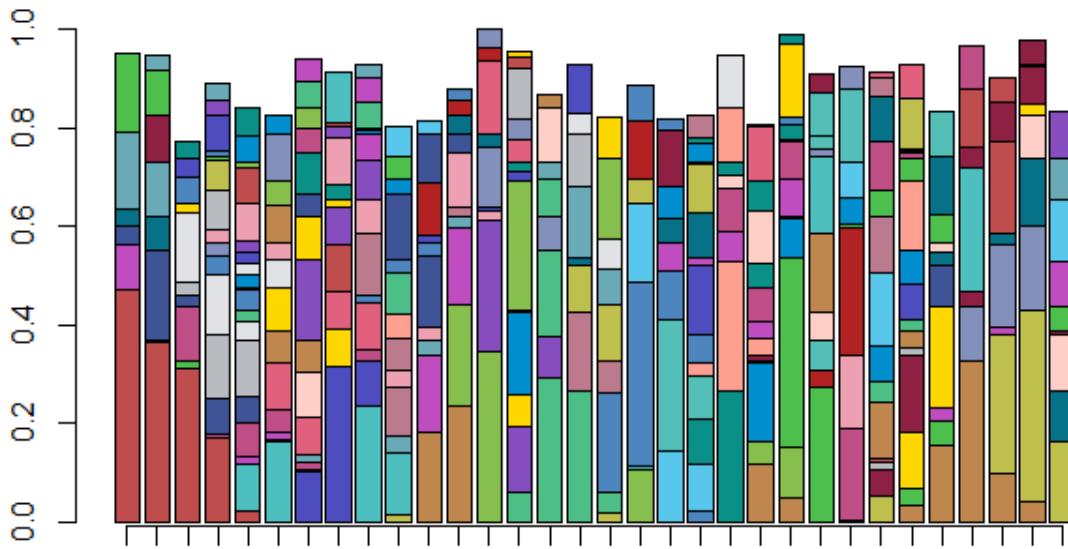
##	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK
## 2019-09-27 05:30:00	0	0	0.000	0.011	0	0.004
## 2019-12-27 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-03-27 05:30:00	0	0	0.000	0.086	0	0.000
## 2020-06-26 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-09-25 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-12-18 05:30:00	0	0	0.093	0.000	0	0.000
##	BALRAMCHIN	HINDPETRO	PERSISTENT	TRENT	ESCORTS	PHOENIXLTD
## 2019-09-27 05:30:00	0	0	0.000	0.004	0.000	0
## 2019-12-27 05:30:00	0	0	0.000	0.118	0.000	0
## 2020-03-27 05:30:00	0	0	0.000	0.000	0.000	0
## 2020-06-26 05:30:00	0	0	0.000	0.000	0.000	0
## 2020-09-25 05:30:00	0	0	0.007	0.000	0.000	0
## 2020-12-18 05:30:00	0	0	0.124	0.000	0.084	0
##	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLFOOD
## 2019-09-27 05:30:00	0.000	0	0	0	0	0
## 2019-12-27 05:30:00	0.093	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0
##	APOLLOTYRE	EMAMILTD	SPICEJET	FORTIS	TVSMOTOR	SUPRAJIT
## 2019-09-27 05:30:00	0	0	0	0	0	0
## 2019-12-27 05:30:00	0	0	0	0	0	0
## 2020-03-27 05:30:00	0	0	0	0	0	0
## 2020-06-26 05:30:00	0	0	0	0	0	0
## 2020-09-25 05:30:00	0	0	0	0	0	0
## 2020-12-18 05:30:00	0	0	0	0	0	0
##	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC IOC
## 2019-09-27 05:30:00	0.102	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0
##	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL	AUROPHARMA
## 2019-09-27 05:30:00	0.000	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.098	0	0	0	0	0
##	OBEROIRLTY	J.KBANK	BEL	NLCINDIA	ASTRAZEN	GODREJPROP
## 2019-09-27 05:30:00	0	0	0	0	0.000	0
## 2019-12-27 05:30:00	0	0	0	0	0.000	0
## 2020-03-27 05:30:00	0	0	0	0	0.000	0
## 2020-06-26 05:30:00	0	0	0	0	0.000	0

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## 2020-09-25 05:30:00      0     0     0     0.048      0
## 2020-12-18 05:30:00      0     0     0     0.000      0
##                               PETRONET
## 2019-09-27 05:30:00      0.07
## 2019-12-27 05:30:00      0.00
## 2020-03-27 05:30:00      0.00
## 2020-06-26 05:30:00      0.00
## 2020-09-25 05:30:00      0.00
## 2020-12-18 05:30:00      0.00

```

Weights for bt71



```

##                               WESTLIFE ABBOTINDIA RESPONIND MPHASIS    TCS CHOLAFIN KRBL
## 2019-09-27 05:30:00      0     0.031     0.000      0 0.034      0     0
## 2019-12-27 05:30:00      0     0.155     0.000      0 0.049      0     0
## 2020-03-27 05:30:00      0     0.326     0.000      0 0.000      0     0
## 2020-06-26 05:30:00      0     0.098     0.282      0 0.000      0     0
## 2020-09-25 05:30:00      0     0.040     0.388      0 0.000      0     0
## 2020-12-18 05:30:00      0     0.000     0.164      0 0.000      0     0
##                               VAKRANGEET PAGEIND PGHH SEQUENT HCLTECH INFY DEEPAKNI
## 2019-09-27 05:30:00      0     0     0     0.000      0 0.115     0.000
## 2019-12-27 05:30:00      0     0     0     0.027      0 0.206     0.083
## 2020-03-27 05:30:00      0     0     0     0.000      0 0.000     0.000
## 2020-06-26 05:30:00      0     0     0     0.015      0 0.000     0.000

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## 2020-09-25 05:30:00	0	0	0	0.000	0	0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0.000	0	0.000	0.000
##	INDIACEM	MARICO	GRAPHITE	APLLTD	ITDC	SUNTECK	MOTILALOFS
## 2019-09-27 05:30:00	0.000	0	0	0.000	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.029	0	0	0
## 2020-03-27 05:30:00	0.109	0	0	0.000	0	0	0
## 2020-06-26 05:30:00	0.167	0	0	0.022	0	0	0
## 2020-09-25 05:30:00	0.172	0	0	0.138	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.100	0	0	0
##	IPCALAB	SWANENERGY	SYMPHONY	RAJESHEXPO	BRITANNIA	GRANULES	
## 2019-09-27 05:30:00	0.155	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0.000	0	0	0	0	0.017	
## 2020-03-27 05:30:00	0.032	0	0	0	0	0.000	
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.000	
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.087	
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.114	
##	WIPRO	VAIBHAVGBL	INDHOTEL	DRREDDY	NAUKRI	SONATSOFTW	OMAXE
## 2019-09-27 05:30:00	0.015	0	0	0.00	0.037	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.00	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.00	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.19	0.000	0	0
## 2020-09-25 05:30:00	0.000	0	0	0.00	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.00	0.000	0	0
##	GUJALKALI	MANAPPURAM	WHIRLPOOL	RELAXO	IGL	ITC	HEG TECHM
## 2019-09-27 05:30:00	0	0.02	0.000	0	0.073	0	0
## 2019-12-27 05:30:00	0	0.00	0.000	0	0.000	0	0
## 2020-03-27 05:30:00	0	0.00	0.252	0	0.000	0	0
## 2020-06-26 05:30:00	0	0.00	0.000	0	0.000	0	0
## 2020-09-25 05:30:00	0	0.00	0.000	0	0.000	0	0
## 2020-12-18 05:30:00	0	0.00	0.000	0	0.000	0	0
##	ALKYLAMINE	ECLERX	JSWSTEEL	DCMSHRIRAM	PIIND	MINDAIND	
## 2019-09-27 05:30:00	0.000	0	0	0.069	0	0	
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0	
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0	
## 2020-06-26 05:30:00	0.000	0	0	0.000	0	0	
## 2020-09-25 05:30:00	0.024	0	0	0.000	0	0	
## 2020-12-18 05:30:00	0.000	0	0	0.000	0	0	
##	BALMLAWRIE	SANOFI	HATHWAY	IDEA	CANFINHOME	MINDTREE	JCHAC
## 2019-09-27 05:30:00	0	0	0.000	0	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0	0	0	0
## 2020-03-27 05:30:00	0	0	0.042	0	0	0	0
## 2020-06-26 05:30:00	0	0	0.077	0	0	0	0
## 2020-09-25 05:30:00	0	0	0.073	0	0	0	0
## 2020-12-18 05:30:00	0	0	0.010	0	0	0	0
##	ZYDUSWELL	JYOTHYLAB	VEDL	EDELWEISS	APLAPOLLO	NAVINFLUOR	
## 2019-09-27 05:30:00	0.14	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0.00	0	0	0	0	0.000	

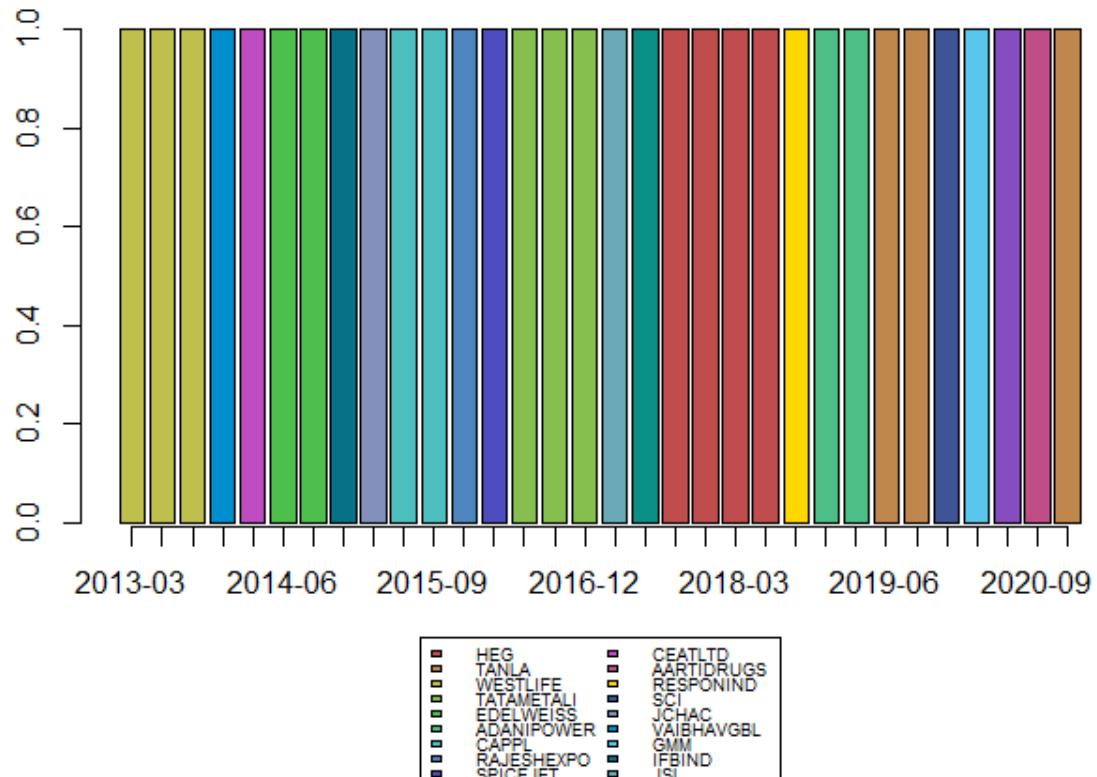
## 2020-03-27 05:30:00	0.00	0	0	0	0	0.118	
## 2020-06-26 05:30:00	0.00	0	0	0	0	0.049	
## 2020-09-25 05:30:00	0.00	0	0	0	0	0.000	
## 2020-12-18 05:30:00	0.00	0	0	0	0	0.000	
##	ORIENTREF	ASTRAL	VSTIND	REDINGTON	CENTRALBK	AIAENG	IOLCP
## 2019-09-27 05:30:00	0	0	0	0.048	0	0	0
## 2019-12-27 05:30:00	0	0	0	0.058	0	0	0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0	0.048	0	0	0
##	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK	
## 2019-09-27 05:30:00	0	0	0.000	0.011	0	0.004	
## 2019-12-27 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-03-27 05:30:00	0	0	0.000	0.086	0	0.000	
## 2020-06-26 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-09-25 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-12-18 05:30:00	0	0	0.093	0.000	0	0.000	
##	BALRAMCHIN	HINDPETRO	PERSISTENT	TRENT	ESCORTS	PHOENIXLTD	
## 2019-09-27 05:30:00	0	0	0.000	0.004	0.000		0
## 2019-12-27 05:30:00	0	0	0.000	0.118	0.000		0
## 2020-03-27 05:30:00	0	0	0.000	0.000	0.000		0
## 2020-06-26 05:30:00	0	0	0.000	0.000	0.000		0
## 2020-09-25 05:30:00	0	0	0.007	0.000	0.000		0
## 2020-12-18 05:30:00	0	0	0.124	0.000	0.084		0
##	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLFOOD	
## 2019-09-27 05:30:00	0.000	0	0	0	0	0	
## 2019-12-27 05:30:00	0.093	0	0	0	0	0	
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	
## 2020-12-18 05:30:00	0.000	0	0	0	0	0	
##	APOLLOTYRE	EMAMILTD	SPICEJET	FORTIS	TVSMOTOR	SUPRAJIT	
## 2019-09-27 05:30:00	0	0	0	0	0	0	
## 2019-12-27 05:30:00	0	0	0	0	0	0	
## 2020-03-27 05:30:00	0	0	0	0	0	0	
## 2020-06-26 05:30:00	0	0	0	0	0	0	
## 2020-09-25 05:30:00	0	0	0	0	0	0	
## 2020-12-18 05:30:00	0	0	0	0	0	0	
##	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC	IOC
## 2019-09-27 05:30:00	0.102	0	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0	0
##	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL	AUROPHARMA	VINALIORG

```

## 2019-09-27 05:30:00 0.000 0 0 0 0 0 0 0
## 2019-12-27 05:30:00 0.000 0 0 0 0 0 0 0
## 2020-03-27 05:30:00 0.000 0 0 0 0 0 0 0
## 2020-06-26 05:30:00 0.000 0 0 0 0 0 0 0
## 2020-09-25 05:30:00 0.000 0 0 0 0 0 0 0
## 2020-12-18 05:30:00 0.098 0 0 0 0 0 0 0
## OBEROIRLTY J.KBANK BEL NLCINDIA ASTRAZEN GODREJPROP
## 2019-09-27 05:30:00 0 0 0 0 0.000 0
## 2019-12-27 05:30:00 0 0 0 0 0.000 0
## 2020-03-27 05:30:00 0 0 0 0 0.000 0
## 2020-06-26 05:30:00 0 0 0 0 0.000 0
## 2020-09-25 05:30:00 0 0 0 0 0.048 0
## 2020-12-18 05:30:00 0 0 0 0 0.000 0
## PETRONET
## 2019-09-27 05:30:00 0.07
## 2019-12-27 05:30:00 0.00
## 2020-03-27 05:30:00 0.00
## 2020-06-26 05:30:00 0.00
## 2020-09-25 05:30:00 0.00
## 2020-12-18 05:30:00 0.00

```

Weights for bt72



```

## HEG TANLA WESTLIFE TATAMETALI EDELWEISS ADANIPOWER CAPPL

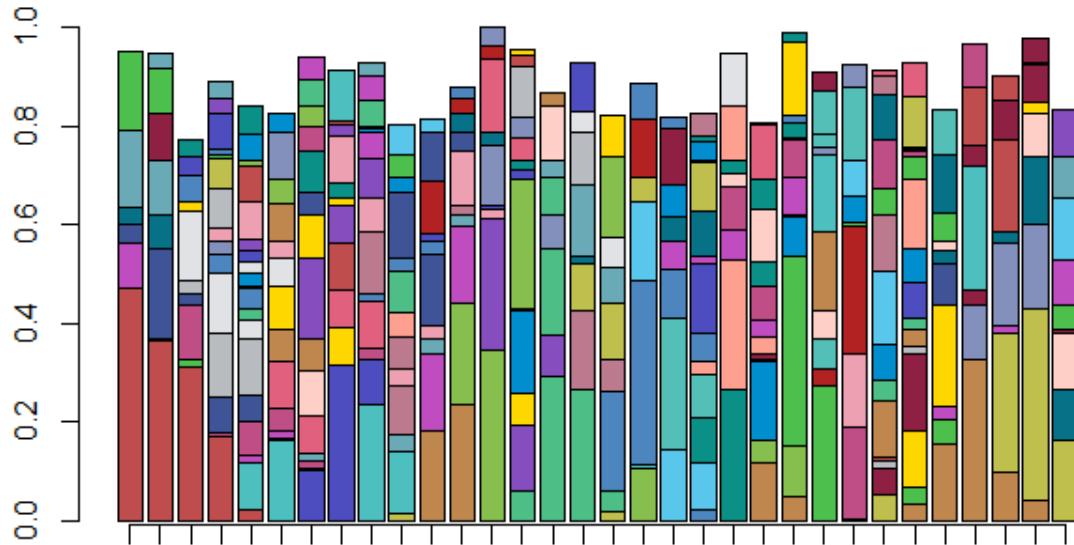
```

```

## 2019-09-27 05:30:00 0 1 0 0 0 0 0 0
## 2019-12-27 05:30:00 0 0 0 0 0 0 0 0
## 2020-03-27 05:30:00 0 0 0 0 0 0 0 0
## 2020-06-26 05:30:00 0 0 0 0 0 0 0 0
## 2020-09-25 05:30:00 0 0 0 0 0 0 0 0
## 2020-12-18 05:30:00 0 1 0 0 0 0 0 0
## RAJESHEXPO SPICEJET ALOKTEXT CEATLTD AARTIDRUGS RESPONIND
## 2019-09-27 05:30:00 0 0 0 0 0 0 0 0
## 2019-12-27 05:30:00 0 0 0 0 0 0 0 0
## 2020-03-27 05:30:00 0 0 0 0 0 0 0 0
## 2020-06-26 05:30:00 0 0 1 0 0 0 0 0
## 2020-09-25 05:30:00 0 0 0 0 0 1 0 0
## 2020-12-18 05:30:00 0 0 0 0 0 0 0 0
## SCI JCHAC VAIBHAVGBL GMM IFBIND JSL ITI
## 2019-09-27 05:30:00 0 0 0 0 0 0 0 0
## 2019-12-27 05:30:00 1 0 0 0 0 0 0 0
## 2020-03-27 05:30:00 0 0 0 1 0 0 0 0
## 2020-06-26 05:30:00 0 0 0 0 0 0 0 0
## 2020-09-25 05:30:00 0 0 0 0 0 0 0 0
## 2020-12-18 05:30:00 0 0 0 0 0 0 0 0

```

Weights for bt73



ESTLIFE	MARICO	DRREDDY	DCMSHRIRAM	NAVINFLUOR	HINDPETRO	TVSMOTOR
ABBOTINDIA	GRAPHITE	NAUKRI	PIIND	ORIENTREF	PERSISTENT	SUPRAJIT
RESPONIND	APLLTD	SONATSOFTW	MINDAIND	ASTRAL	TRENT	KOTAKBANK
MPHASIS	ITDC	OMAXE	BALMILAWRIE	VSTIND	ESORTS	WELSPUNIND
S	SUNTECK	GUJALKALLI	SANOFI	REDINGTON	PHOENIXLTD	KPRMILL
HOLAFIN	MOTILALOFS	MANAPPURAM	HATHWAY	CENTRALBK	LINDEINDIA	POLYMED
REL	IPCALAB	WHIRLPOOL	IDEA	AIAENG	TATASTEEL	MAHSCOOTER
AKRANGEE	SWANENERGY	RELAXO	CANFINHOME	IOLCP	GRINDWELL	KEC
AGEIND	SPHONYM	RELAXO	MINDTREE	NATCOPHARM	M.M	IOC
SHH	RAJESHEXPO	ITC	JKCHAC	JKTYRE	AARTIIND	MAHINDCIE
EQUENT	BRENT	HEG	EDELWEISS	ZYDUSWELL	JUBLFOOD	FORCEMOT
CLTECH	BRITANNIA	TECHM	JYOTHYLAB	JYOTHYLAB	APOLLOTYRE	TITAN
FY	GRANULES	ALKYLAMINE	VEDL	IFBIND	EMAMILTD	NTPC
EEPAKNI	WIPRO	ECLERX	EDCBANK	HINDUNILVR	SPICEJET	UPL

```

## WESTLIFE ABBOTINDIA RESPONIND MPHASIS TCS CHOLAFIN KRBL

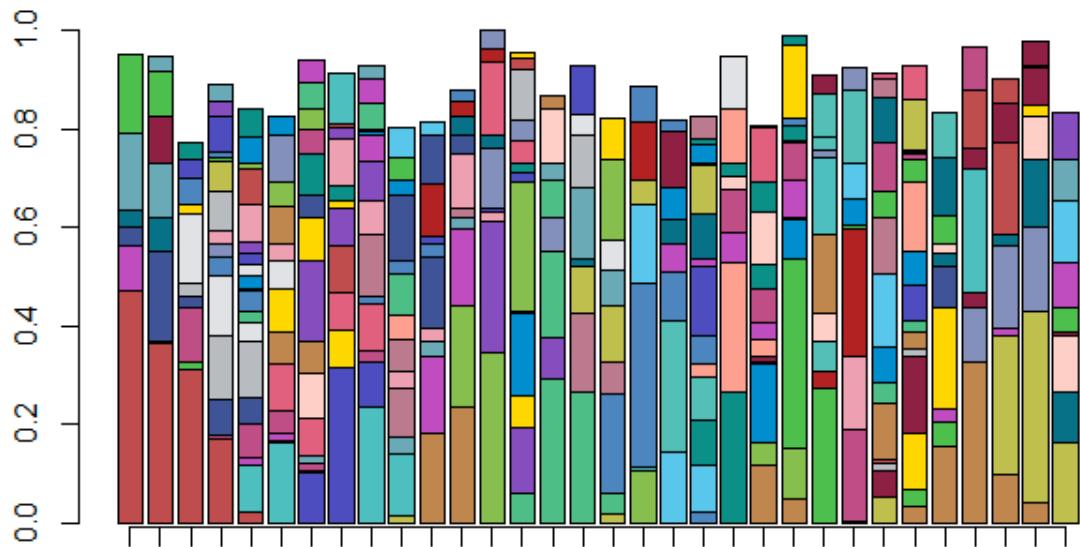
```

## 2019-09-27 05:30:00	0	0.031	0.000	0 0.034	0	0
## 2019-12-27 05:30:00	0	0.155	0.000	0 0.049	0	0
## 2020-03-27 05:30:00	0	0.326	0.000	0 0.000	0	0
## 2020-06-26 05:30:00	0	0.098	0.282	0 0.000	0	0
## 2020-09-25 05:30:00	0	0.040	0.388	0 0.000	0	0
## 2020-12-18 05:30:00	0	0.000	0.164	0 0.000	0	0
##	VAKRANGEET	PAGEIND	PGHH	SEQUENT	HCLTECH	INFY DEEPAKNI
## 2019-09-27 05:30:00	0	0	0	0.000	0 0.115	0.000
## 2019-12-27 05:30:00	0	0	0	0.027	0 0.206	0.083
## 2020-03-27 05:30:00	0	0	0	0.000	0 0.000	0.000
## 2020-06-26 05:30:00	0	0	0	0.015	0 0.000	0.000
## 2020-09-25 05:30:00	0	0	0	0.000	0 0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0.000	0 0.000	0.000
##	INDIACEM	MARICO	GRAPHITE	APLLTD	ITDC	SUNTECK MOTILALOFS
## 2019-09-27 05:30:00	0.000	0	0	0.000	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.029	0	0
## 2020-03-27 05:30:00	0.109	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.167	0	0	0.022	0	0
## 2020-09-25 05:30:00	0.172	0	0	0.138	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.100	0	0
##	IPCALAB	SWANENERGY	SYMPHONY	RAJESHEXPO	BRITANNIA	GRANULES
## 2019-09-27 05:30:00	0.155	0	0	0	0	0.000
## 2019-12-27 05:30:00	0.000	0	0	0	0	0.017
## 2020-03-27 05:30:00	0.032	0	0	0	0	0.000
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.000
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.087
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.114
##	WIPRO	VAIBHAVGBL	INDHOTEL	DRREDDY	NAUKRI	SONATSOFTW OMAXE
## 2019-09-27 05:30:00	0.015	0	0	0.00	0.037	0
## 2019-12-27 05:30:00	0.000	0	0	0.00	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0.00	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0.19	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0.00	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0.00	0.000	0
##	GUJALKALI	MANAPPURAM	WHIRLPOOL	RELAXO	IGL ITC HEG	TECHM
## 2019-09-27 05:30:00	0	0.02	0.000	0 0.073	0	0
## 2019-12-27 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-03-27 05:30:00	0	0.00	0.252	0 0.000	0	0
## 2020-06-26 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-09-25 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-12-18 05:30:00	0	0.00	0.000	0 0.000	0	0
##	ALKYLAMINE	ECLERX	JSWSTEEL	DCMSHRIRAM	PIIND	MINDAIND
## 2019-09-27 05:30:00	0.000	0	0	0.069	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.000	0	0
## 2020-09-25 05:30:00	0.024	0	0	0.000	0	0

## 2020-12-18 05:30:00	0.000	0	0	0.000	0	0	
##	BALMILAWRIE	SANOFI	HATHWAY	IDEA	CANFINHOME	MINDTREE	JCHAC
## 2019-09-27 05:30:00	0	0	0	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0	0	0.042	0	0	0
## 2020-06-26 05:30:00	0	0	0	0.077	0	0	0
## 2020-09-25 05:30:00	0	0	0	0.073	0	0	0
## 2020-12-18 05:30:00	0	0	0	0.010	0	0	0
##	ZYDUSWELL	JYOTHYLAB	VEDL	EDELWEISS	APLAPOLLO	NAVINFLUOR	
## 2019-09-27 05:30:00	0.14	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0.00	0	0	0	0	0.000	
## 2020-03-27 05:30:00	0.00	0	0	0	0	0.118	
## 2020-06-26 05:30:00	0.00	0	0	0	0	0.049	
## 2020-09-25 05:30:00	0.00	0	0	0	0	0.000	
## 2020-12-18 05:30:00	0.00	0	0	0	0	0.000	
##	ORIENTREF	ASTRAL	VSTIND	REDINGTON	CENTRALBK	AIAENG	IOLCP
## 2019-09-27 05:30:00	0	0	0	0.048	0	0	0
## 2019-12-27 05:30:00	0	0	0	0.058	0	0	0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0	0.048	0	0	0
##	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK	
## 2019-09-27 05:30:00	0	0	0.000	0.011	0	0.004	
## 2019-12-27 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-03-27 05:30:00	0	0	0.000	0.086	0	0.000	
## 2020-06-26 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-09-25 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-12-18 05:30:00	0	0	0.093	0.000	0	0.000	
##	BALRAMCHIN	HINDPETRO	PERSISTENT	TRENT	ESCORTS	PHOENIXLTD	
## 2019-09-27 05:30:00	0	0	0.000	0.004	0.000	0	
## 2019-12-27 05:30:00	0	0	0.000	0.118	0.000	0	
## 2020-03-27 05:30:00	0	0	0.000	0.000	0.000	0	
## 2020-06-26 05:30:00	0	0	0.000	0.000	0.000	0	
## 2020-09-25 05:30:00	0	0	0.007	0.000	0.000	0	
## 2020-12-18 05:30:00	0	0	0.124	0.000	0.084	0	
##	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLFOOD	
## 2019-09-27 05:30:00	0.000	0	0	0	0	0	
## 2019-12-27 05:30:00	0.093	0	0	0	0	0	
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	
## 2020-12-18 05:30:00	0.000	0	0	0	0	0	
##	APOLLOTYRE	EMAMILTD	SPICEJET	FORTIS	TVSMOTOR	SUPRAJIT	
## 2019-09-27 05:30:00	0	0	0	0	0	0	
## 2019-12-27 05:30:00	0	0	0	0	0	0	
## 2020-03-27 05:30:00	0	0	0	0	0	0	

## 2020-06-26 05:30:00	0	0	0	0	0	0		
## 2020-09-25 05:30:00	0	0	0	0	0	0		
## 2020-12-18 05:30:00	0	0	0	0	0	0		
##	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC IOC		
## 2019-09-27 05:30:00	0.102	0	0	0	0	0		
## 2019-12-27 05:30:00	0.000	0	0	0	0	0		
## 2020-03-27 05:30:00	0.000	0	0	0	0	0		
## 2020-06-26 05:30:00	0.000	0	0	0	0	0		
## 2020-09-25 05:30:00	0.000	0	0	0	0	0		
## 2020-12-18 05:30:00	0.000	0	0	0	0	0		
##	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL	AUROPHARMA	VINATIORG	VTL
## 2019-09-27 05:30:00	0.000	0	0	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-12-18 05:30:00	0.098	0	0	0	0	0	0	0
##	OBEROIRLTY	J.KBANK	BEL	NLCINDIA	ASTRAZEN	GODREJPROP		
## 2019-09-27 05:30:00	0	0	0	0	0.000	0		
## 2019-12-27 05:30:00	0	0	0	0	0.000	0		
## 2020-03-27 05:30:00	0	0	0	0	0.000	0		
## 2020-06-26 05:30:00	0	0	0	0	0.000	0		
## 2020-09-25 05:30:00	0	0	0	0	0.048	0		
## 2020-12-18 05:30:00	0	0	0	0	0.000	0		
##	PETRONET							
## 2019-09-27 05:30:00	0.07							
## 2019-12-27 05:30:00	0.00							
## 2020-03-27 05:30:00	0.00							
## 2020-06-26 05:30:00	0.00							
## 2020-09-25 05:30:00	0.00							
## 2020-12-18 05:30:00	0.00							

Weights for bt74



ESTLIFE	MARICO	GRAPHITE	APLLTD	ITDC	SUNTECK	MOTILALOFS	IPCALAB	SWANENERGY	SYMPHONY	RAJESHEXPO	BRITANNIA	GRANULES	WIPRO	VAIBHAVGBL	DRREDDY	NAUKRI	SONATSOFTW	OMAXE	GUJALKALI	MANAPPURAM	WHIRLPOOL	RELAXO	IGL	JTC	HEG	TECHM	ALKYLAMINE	ECLERX	DCMSHIRAM	PIIND	MINDAIND	BALMLAWRIE	SANOFI	HATHWAY	IDEA	CANFINHOME	MINDTREE	ZYDUSWELL	JCHAC	YODTHYLAB	VEDL	EDELWEISS	NAVINFUOR	ORIENTREF	ASTRAL	VSTIND	REDINGTON	CENTRALBK	AIAENG	IOLCP	NATCOPHARM	JKYTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK	HINDPETRO	PERSISTENT	TRENT	ESCOPTS	PHOENIXLTD	LINDEINDIA	TATASTEEL	GRINDWELL	M.M.	AARTIND	JUBLFOOD	APOLLOTYRE	EMAMILTD	SPICEJET	TVSMOTOR	SUPRAJIT	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC	IOC	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL
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##          WESTLIFE ABBOTINDIA RESPONIND MPHASIS    TCS CHOLAFIN KRBL
## 2019-09-27 05:30:00      0   0.031   0.000   0 0.034      0      0
## 2019-12-27 05:30:00      0   0.155   0.000   0 0.049      0      0
## 2020-03-27 05:30:00      0   0.326   0.000   0 0.000      0      0
## 2020-06-26 05:30:00      0   0.098   0.282   0 0.000      0      0
## 2020-09-25 05:30:00      0   0.040   0.388   0 0.000      0      0
## 2020-12-18 05:30:00      0   0.000   0.164   0 0.000      0      0
##          VAKRANGEE PAGEIND PGHH SEQUENT HCLTECH INFY DEEPAKNI
## 2019-09-27 05:30:00      0     0     0 0.000   0 0.115      0.000
## 2019-12-27 05:30:00      0     0     0 0.027   0 0.206      0.083
## 2020-03-27 05:30:00      0     0     0 0.000   0 0.000      0.000
## 2020-06-26 05:30:00      0     0     0 0.015   0 0.000      0.000
## 2020-09-25 05:30:00      0     0     0 0.000   0 0.000      0.000
## 2020-12-18 05:30:00      0     0     0 0.000   0 0.000      0.000
##          INDIACEM MARICO GRAPHITE APLLTD ITDC SUNTECK MOTILALOFS
## 2019-09-27 05:30:00 0.000     0     0 0.000     0     0     0
## 2019-12-27 05:30:00 0.000     0     0 0.029     0     0     0
## 2020-03-27 05:30:00 0.109     0     0 0.000     0     0     0
## 2020-06-26 05:30:00 0.167     0     0 0.022     0     0     0
## 2020-09-25 05:30:00 0.172     0     0 0.138     0     0     0
## 2020-12-18 05:30:00 0.000     0     0 0.100     0     0     0
##          IPCALAB SWANENERGY SYMPHONY RAJESHEXPO BRITANNIA GRANULES
## 2019-09-27 05:30:00 0.155     0     0     0     0     0     0.000

```

## 2019-12-27 05:30:00	0.000	0	0	0	0	0.017
## 2020-03-27 05:30:00	0.032	0	0	0	0	0.000
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.000
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.087
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.114
##	WIPRO VAIBHAVGBL INDHOTEL DRREDDY NAUKRI SONATSOFTW OMAXE					
## 2019-09-27 05:30:00	0.015	0	0.00	0.037	0	0
## 2019-12-27 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0.19	0.000	0	0
## 2020-09-25 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0.00	0.000	0	0
##	GUJALKALI MANAPPURAM WHIRLPOOL RELAXO IGL ITC HEG TECHM					
## 2019-09-27 05:30:00	0	0.02	0.000	0 0.073	0	0
## 2019-12-27 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-03-27 05:30:00	0	0.00	0.252	0 0.000	0	0
## 2020-06-26 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-09-25 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-12-18 05:30:00	0	0.00	0.000	0 0.000	0	0
##	ALKYLAMINE ECLERX JSWSTEEL DCMSHRIRAM PIIND MINDAIND					
## 2019-09-27 05:30:00	0.000	0	0	0.069	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.000	0	0
## 2020-09-25 05:30:00	0.024	0	0	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.000	0	0
##	BALMILAWRIE SANOFI HATHWAY IDEA CANFINHOME MINDTREE JCHAC					
## 2019-09-27 05:30:00	0	0	0 0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0 0.000	0	0	0
## 2020-03-27 05:30:00	0	0	0 0.042	0	0	0
## 2020-06-26 05:30:00	0	0	0 0.077	0	0	0
## 2020-09-25 05:30:00	0	0	0 0.073	0	0	0
## 2020-12-18 05:30:00	0	0	0 0.010	0	0	0
##	ZYDUSWELL JYOTHYLAB VEDL EDELWEISS APLAPOLLO NAVINFLUOR					
## 2019-09-27 05:30:00	0.14	0	0	0	0	0.000
## 2019-12-27 05:30:00	0.00	0	0	0	0	0.000
## 2020-03-27 05:30:00	0.00	0	0	0	0	0.118
## 2020-06-26 05:30:00	0.00	0	0	0	0	0.049
## 2020-09-25 05:30:00	0.00	0	0	0	0	0.000
## 2020-12-18 05:30:00	0.00	0	0	0	0	0.000
##	ORIENTREF ASTRAL VSTIND REDINGTON CENTRALBK AIAENG IOLCP					
## 2019-09-27 05:30:00	0	0	0	0.048	0	0
## 2019-12-27 05:30:00	0	0	0	0.058	0	0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0
## 2020-12-18 05:30:00	0	0	0	0.048	0	0

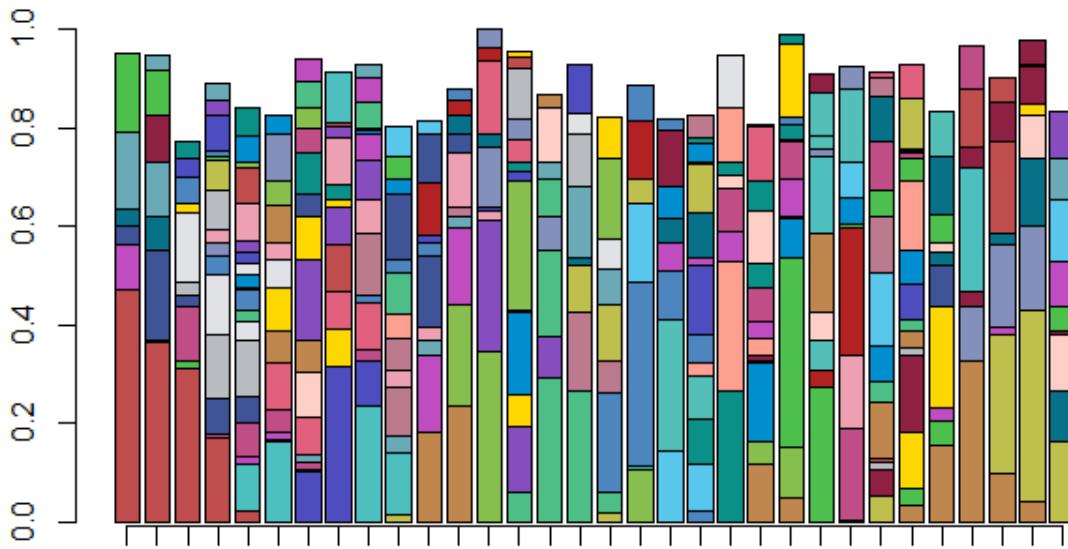
	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK
## 2019-09-27 05:30:00	0	0	0.000	0.011	0	0.004
## 2019-12-27 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-03-27 05:30:00	0	0	0.000	0.086	0	0.000
## 2020-06-26 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-09-25 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-12-18 05:30:00	0	0	0.093	0.000	0	0.000
	BALRAMCHIN	HINDPETRO	PERSISTENT	TRENT	ESCORTS	PHOENIXLTD
## 2019-09-27 05:30:00	0	0	0.000	0.004	0.000	0
## 2019-12-27 05:30:00	0	0	0.000	0.118	0.000	0
## 2020-03-27 05:30:00	0	0	0.000	0.000	0.000	0
## 2020-06-26 05:30:00	0	0	0.000	0.000	0.000	0
## 2020-09-25 05:30:00	0	0	0.007	0.000	0.000	0
## 2020-12-18 05:30:00	0	0	0.124	0.000	0.084	0
	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLFOOD
## 2019-09-27 05:30:00	0.000	0	0	0	0	0
## 2019-12-27 05:30:00	0.093	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0
	APOLLOTYRE	EMAMILTD	SPICEJET	FORTIS	TVSMOTOR	SUPRAJIT
## 2019-09-27 05:30:00	0	0	0	0	0	0
## 2019-12-27 05:30:00	0	0	0	0	0	0
## 2020-03-27 05:30:00	0	0	0	0	0	0
## 2020-06-26 05:30:00	0	0	0	0	0	0
## 2020-09-25 05:30:00	0	0	0	0	0	0
## 2020-12-18 05:30:00	0	0	0	0	0	0
	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC IOC
## 2019-09-27 05:30:00	0.102	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0
	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL	AUROPHARMA
## 2019-09-27 05:30:00	0.000	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.098	0	0	0	0	0
	OBEROIRLTY	J.KBANK	BEL	NLCINDIA	ASTRAZEN	GODREJPROP
## 2019-09-27 05:30:00	0	0	0	0	0.000	0
## 2019-12-27 05:30:00	0	0	0	0	0.000	0
## 2020-03-27 05:30:00	0	0	0	0	0.000	0
## 2020-06-26 05:30:00	0	0	0	0	0.000	0

```

## 2020-09-25 05:30:00      0     0   0     0    0.048      0
## 2020-12-18 05:30:00      0     0   0     0    0.000      0
##                               PETRONET
## 2019-09-27 05:30:00      0.07
## 2019-12-27 05:30:00      0.00
## 2020-03-27 05:30:00      0.00
## 2020-06-26 05:30:00      0.00
## 2020-09-25 05:30:00      0.00
## 2020-12-18 05:30:00      0.00

```

Weights for bt75



ESTLIFE	MARICO	DRREDDY	DCMSHRIRAM	NAVINFLUOR	HINDPETRO	TVSMOTOR
ABBOTINDIA	GRAPHITE	NAUKRI	PIIND	ORIENTREF	PERSISTENT	SUPRAJIT
RESPONIND	APLTD	SONATSOFTW	MINDAIND	ASTRAL	TRENT	KOTAKBANK
MPHASIS	ITDC	OMAXE	MINDAIND	VSTIND	ESORTS	WELSPUNIND
CHOLAFIN	SUNTECK	GUJALKALI	BALMLAWRIE	REDINGTON	PHOENIXLTD	KPRMILL
KRBL	MOTILALOFS	MANAPPURAM	SANOFI	CENTRALBK	LINDEINDIA	POLYMED
VAKRANGEET	IPCALAB	WHIRLPOOL	HATHWAY	IDEA	TATASTEEL	MARSOOTER
AGEIND	SWANENERGY	RELAXO	IDEA	CANFINHOME	GRINDWELL	KEC
PGHH	SYMPHONY	IGL	JCHAC	MINDTREE	M.M.	IOC
SEQUENT	RAJESHEXPO	ITC	JCHAC	NATCOPHARM	AARTIJIND	MAHINDCIE
HCLTECH	BRITANNIA	HEG	ZYDUSWELL	JKTYRE	IFBIND	FORCEMOT
FY	GRANULES	TECHM	JYOTHYLAB	HINDUNILVR	HINDUNILVR	TITAN
DEEPAKNI	WIPRO	ALKYLAMINE	VEDI	CRISIL	APOLLOTYRE	NTPC
	VAIBHAVGBL	ECLERX	EDELWEISS	DCBBANK	EMAMILTD	UPL
					SPICEJET	

```

##                               WESTLIFE ABBOTINDIA RESPONIND MPHASIS    TCS CHOLAFIN KRBL
## 2019-09-27 05:30:00      0     0.031   0.000      0 0.034      0     0
## 2019-12-27 05:30:00      0     0.155   0.000      0 0.049      0     0
## 2020-03-27 05:30:00      0     0.326   0.000      0 0.000      0     0
## 2020-06-26 05:30:00      0     0.098   0.282      0 0.000      0     0
## 2020-09-25 05:30:00      0     0.040   0.388      0 0.000      0     0
## 2020-12-18 05:30:00      0     0.000   0.164      0 0.000      0     0
##                               VAKRANGEET PAGEIND PGHH SEQUENT HCLTECH INFY DEEPAKNI
## 2019-09-27 05:30:00      0     0     0   0.000      0 0.115   0.000
## 2019-12-27 05:30:00      0     0     0   0.027      0 0.206   0.083
## 2020-03-27 05:30:00      0     0     0   0.000      0 0.000   0.000
## 2020-06-26 05:30:00      0     0     0   0.015      0 0.000   0.000

```

## 2020-09-25 05:30:00	0	0	0	0.000	0	0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0.000	0	0.000	0.000
##	INDIACEM	MARICO	GRAPHITE	APLLTD	ITDC	SUNTECK	MOTILALOFS
## 2019-09-27 05:30:00	0.000	0	0	0.000	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.029	0	0	0
## 2020-03-27 05:30:00	0.109	0	0	0.000	0	0	0
## 2020-06-26 05:30:00	0.167	0	0	0.022	0	0	0
## 2020-09-25 05:30:00	0.172	0	0	0.138	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.100	0	0	0
##	IPCALAB	SWANENERGY	SYMPHONY	RAJESHEXPO	BRITANNIA	GRANULES	
## 2019-09-27 05:30:00	0.155	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0.000	0	0	0	0	0.017	
## 2020-03-27 05:30:00	0.032	0	0	0	0	0.000	
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.000	
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.087	
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.114	
##	WIPRO	VAIBHAVGBL	INDHOTEL	DRREDDY	NAUKRI	SONATSOFTW	OMAXE
## 2019-09-27 05:30:00	0.015	0	0	0.00	0.037	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.00	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.00	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.19	0.000	0	0
## 2020-09-25 05:30:00	0.000	0	0	0.00	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.00	0.000	0	0
##	GUJALKALI	MANAPPURAM	WHIRLPOOL	RELAXO	IGL	ITC	HEG TECHM
## 2019-09-27 05:30:00	0	0.02	0.000	0	0.073	0	0
## 2019-12-27 05:30:00	0	0.00	0.000	0	0.000	0	0
## 2020-03-27 05:30:00	0	0.00	0.252	0	0.000	0	0
## 2020-06-26 05:30:00	0	0.00	0.000	0	0.000	0	0
## 2020-09-25 05:30:00	0	0.00	0.000	0	0.000	0	0
## 2020-12-18 05:30:00	0	0.00	0.000	0	0.000	0	0
##	ALKYLAMINE	ECLERX	JSWSTEEL	DCMSHRIRAM	PIIND	MINDAIND	
## 2019-09-27 05:30:00	0.000	0	0	0.069	0	0	
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0	
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0	
## 2020-06-26 05:30:00	0.000	0	0	0.000	0	0	
## 2020-09-25 05:30:00	0.024	0	0	0.000	0	0	
## 2020-12-18 05:30:00	0.000	0	0	0.000	0	0	
##	BALMLAWRIE	SANOFI	HATHWAY	IDEA	CANFINHOME	MINDTREE	JCHAC
## 2019-09-27 05:30:00	0	0	0.000	0	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0	0	0	0
## 2020-03-27 05:30:00	0	0	0.042	0	0	0	0
## 2020-06-26 05:30:00	0	0	0.077	0	0	0	0
## 2020-09-25 05:30:00	0	0	0.073	0	0	0	0
## 2020-12-18 05:30:00	0	0	0.010	0	0	0	0
##	ZYDUSWELL	JYOTHYLAB	VEDL	EDELWEISS	APLAPOLLO	NAVINFLUOR	
## 2019-09-27 05:30:00	0.14	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0.00	0	0	0	0	0.000	

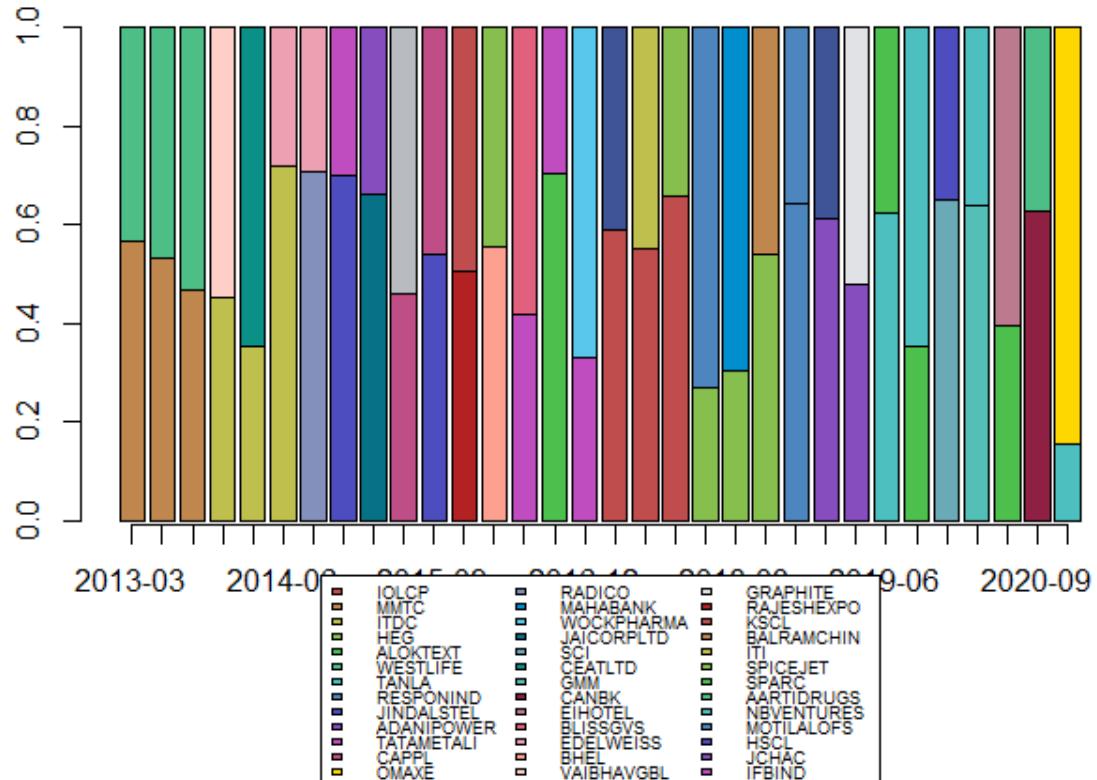
## 2020-03-27 05:30:00	0.00	0	0	0	0	0.118	
## 2020-06-26 05:30:00	0.00	0	0	0	0	0.049	
## 2020-09-25 05:30:00	0.00	0	0	0	0	0.000	
## 2020-12-18 05:30:00	0.00	0	0	0	0	0.000	
##	ORIENTREF	ASTRAL	VSTIND	REDINGTON	CENTRALBK	AIAENG	IOLCP
## 2019-09-27 05:30:00	0	0	0	0.048	0	0	0
## 2019-12-27 05:30:00	0	0	0	0.058	0	0	0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0	0.048	0	0	0
##	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK	
## 2019-09-27 05:30:00	0	0	0.000	0.011	0	0.004	
## 2019-12-27 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-03-27 05:30:00	0	0	0.000	0.086	0	0.000	
## 2020-06-26 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-09-25 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-12-18 05:30:00	0	0	0.093	0.000	0	0.000	
##	BALRAMCHIN	HINDPETRO	PERSISTENT	TRENT	ESCORTS	PHOENIXLTD	
## 2019-09-27 05:30:00	0	0	0.000	0.004	0.000		0
## 2019-12-27 05:30:00	0	0	0.000	0.118	0.000		0
## 2020-03-27 05:30:00	0	0	0.000	0.000	0.000		0
## 2020-06-26 05:30:00	0	0	0.000	0.000	0.000		0
## 2020-09-25 05:30:00	0	0	0.007	0.000	0.000		0
## 2020-12-18 05:30:00	0	0	0.124	0.000	0.084		0
##	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLFOOD	
## 2019-09-27 05:30:00	0.000	0	0	0	0	0	
## 2019-12-27 05:30:00	0.093	0	0	0	0	0	
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	
## 2020-12-18 05:30:00	0.000	0	0	0	0	0	
##	APOLLOTYRE	EMAMILTD	SPICEJET	FORTIS	TVSMOTOR	SUPRAJIT	
## 2019-09-27 05:30:00	0	0	0	0	0	0	
## 2019-12-27 05:30:00	0	0	0	0	0	0	
## 2020-03-27 05:30:00	0	0	0	0	0	0	
## 2020-06-26 05:30:00	0	0	0	0	0	0	
## 2020-09-25 05:30:00	0	0	0	0	0	0	
## 2020-12-18 05:30:00	0	0	0	0	0	0	
##	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC	IOC
## 2019-09-27 05:30:00	0.102	0	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0	0
##	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL	AUROPHARMA	VINALIORG

```

## 2019-09-27 05:30:00      0.000      0      0      0      0      0      0      0
## 2019-12-27 05:30:00      0.000      0      0      0      0      0      0      0
## 2020-03-27 05:30:00      0.000      0      0      0      0      0      0      0
## 2020-06-26 05:30:00      0.000      0      0      0      0      0      0      0
## 2020-09-25 05:30:00      0.000      0      0      0      0      0      0      0
## 2020-12-18 05:30:00      0.098      0      0      0      0      0      0      0
##                               OBEROIRLTY J.KBANK BEL NLCINDIA ASTRAZEN GODREJPROP
## 2019-09-27 05:30:00          0      0      0      0      0.000      0
## 2019-12-27 05:30:00          0      0      0      0      0.000      0
## 2020-03-27 05:30:00          0      0      0      0      0.000      0
## 2020-06-26 05:30:00          0      0      0      0      0.000      0
## 2020-09-25 05:30:00          0      0      0      0      0.048      0
## 2020-12-18 05:30:00          0      0      0      0      0.000      0
##                               PETRONET
## 2019-09-27 05:30:00      0.07
## 2019-12-27 05:30:00      0.00
## 2020-03-27 05:30:00      0.00
## 2020-06-26 05:30:00      0.00
## 2020-09-25 05:30:00      0.00
## 2020-12-18 05:30:00      0.00

```

Weights for bt76



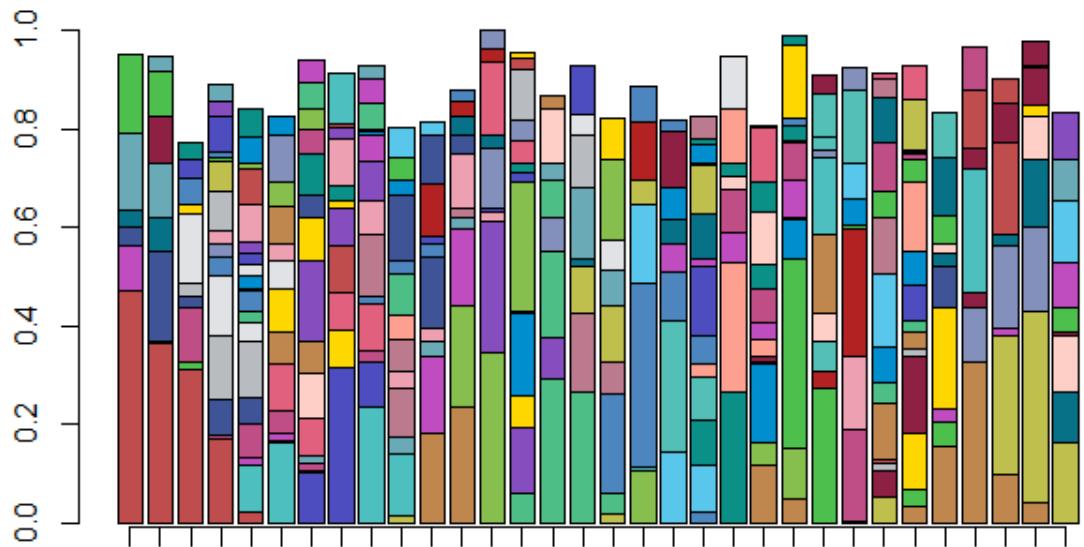
```

## IOLCP MMTC ITDC HEG ALOKTEXT WESTLIFE TANLA RESPONIND

```

## 2019-09-27 05:30:00	0	0	0	0	0.353	0	0.647	0
## 2019-12-27 05:30:00	0	0	0	0	0.000	0	0.000	0
## 2020-03-27 05:30:00	0	0	0	0	0.000	0	0.000	0
## 2020-06-26 05:30:00	0	0	0	0	0.396	0	0.000	0
## 2020-09-25 05:30:00	0	0	0	0	0.000	0	0.000	0
## 2020-12-18 05:30:00	0	0	0	0	0.000	0	0.154	0
##	JINDALSTEL	ADANIPOWER	TATAMETALI	CAPPL	OMAXE	JSL	RADICO	
## 2019-09-27 05:30:00	0	0	0	0	0.000	0	0	
## 2019-12-27 05:30:00	0	0	0	0	0.000	0	0	
## 2020-03-27 05:30:00	0	0	0	0	0.000	0	0	
## 2020-06-26 05:30:00	0	0	0	0	0.000	0	0	
## 2020-09-25 05:30:00	0	0	0	0	0.000	0	0	
## 2020-12-18 05:30:00	0	0	0	0	0.846	0	0	
##	MAHABANK	WOCKPHARMA	JAICORPLTD	SCI	CEATLTD	GMM	CANBK	
## 2019-09-27 05:30:00	0	0	0	0	0.00	0	0.00	0.000
## 2019-12-27 05:30:00	0	0	0	0	0.65	0	0.00	0.000
## 2020-03-27 05:30:00	0	0	0	0	0.00	0	0.64	0.000
## 2020-06-26 05:30:00	0	0	0	0	0.00	0	0.00	0.000
## 2020-09-25 05:30:00	0	0	0	0	0.00	0	0.00	0.628
## 2020-12-18 05:30:00	0	0	0	0	0.00	0	0.00	0.000
##	EIHOTEL	BLISSGVIS	EDELWEISS	BHEL	VAIBHAVGBL	DCMSHIRAM		
## 2019-09-27 05:30:00	0.000	0	0	0	0	0	0	
## 2019-12-27 05:30:00	0.000	0	0	0	0	0	0	
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	0	
## 2020-06-26 05:30:00	0.604	0	0	0	0	0	0	
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	0	
## 2020-12-18 05:30:00	0.000	0	0	0	0	0	0	
##	GRAPHITE	RAJESHEXPO	KSCL	BALRAMCHIN	ITI	SPICEJET	SPARC	
## 2019-09-27 05:30:00	0	0	0	0	0	0	0	
## 2019-12-27 05:30:00	0	0	0	0	0	0	0	
## 2020-03-27 05:30:00	0	0	0	0	0	0	0	
## 2020-06-26 05:30:00	0	0	0	0	0	0	0	
## 2020-09-25 05:30:00	0	0	0	0	0	0	0	
## 2020-12-18 05:30:00	0	0	0	0	0	0	0	
##	AARTIDRUGS	NBVENTURES	MOTILALOFS	HSCL	JCHAC	IFBIND		
## 2019-09-27 05:30:00	0.000	0.00	0	0.00	0	0		
## 2019-12-27 05:30:00	0.000	0.00	0	0.35	0	0		
## 2020-03-27 05:30:00	0.000	0.36	0	0.00	0	0		
## 2020-06-26 05:30:00	0.000	0.00	0	0.00	0	0		
## 2020-09-25 05:30:00	0.372	0.00	0	0.00	0	0		
## 2020-12-18 05:30:00	0.000	0.00	0	0.00	0	0		

Weights for bt77



ESTLIFE	MARICO	DRREDDY	DCMSHIRAM	NAVINFLUOR	HINDPETRO	TVSMOTOR
ABBOTINDIA	GRAPHITE	NAUKRI	PIIND	ORIENTREF	PERSISTENT	SUPRAJIT
SPONIND	APLLTD	SONATSOFTW	MINDAIND	ASTRAL	TRENT	KOTAKBANK
PHASIS	ITDC	OMAXE	BALMLAWRIE	VSTIND	ESORTS	WELSPUNIND
CHOLAFIN	SUNTECK	GUJALKALI	SANOFI	REDINGTON	PHOENIXLTD	KPRMILL
KRBL	MOTILALOFS	MANAPPURAM	HATHWAY	CENTRALBK	LINDEINDIA	POLYMED
VAKRANGEET	IPCALAB	WHIRLPOOL	IDEA	AIAENG	TATASTEEL	MAHSCOOTER
AGEIND	SWANENERGY	RELAXO	CANFINHOME	IOLCP	GRINDWELL	KEC
SHH	SYMPHONY	IGL	MINDTREE	NATCOPHARM	M.M.	IOC
SEQUENT	RAJESHEXPO	ITC	JCHAC	JKTYRE	AARTIND	MAHINDCIE
HCLTECH	BRITANNIA	HEG	ZYDUSWELL	IFBIND	JUBLFOOD	FORCEMOT
DEEPAKNI	GRANULES	TECHM	YDOTHYLAB	HINDUNILVR	APOLLOTYRE	TITAN
	WIPRO	ALKYLAMINE	VEDL	CRISIL	EMAMILTD	NTPC
	VAIBHAVGBL	ECLERX	EDELWEISS	DCBBANK	SPICEJET	UPL

```

##          WESTLIFE ABBOTINDIA RESPONIND MPHASIS    TCS CHOLAFIN KRBL
## 2019-09-27 05:30:00      0   0.031   0.000   0 0.034      0   0
## 2019-12-27 05:30:00      0   0.155   0.000   0 0.049      0   0
## 2020-03-27 05:30:00      0   0.326   0.000   0 0.000      0   0
## 2020-06-26 05:30:00      0   0.098   0.282   0 0.000      0   0
## 2020-09-25 05:30:00      0   0.040   0.388   0 0.000      0   0
## 2020-12-18 05:30:00      0   0.000   0.164   0 0.000      0   0
##          VAKRANGEET PAGEIND PGHH SEQUENT HCLTECH INFY DEEPAKNI
## 2019-09-27 05:30:00      0     0     0 0.000   0 0.115   0.000
## 2019-12-27 05:30:00      0     0     0 0.027   0 0.206   0.083
## 2020-03-27 05:30:00      0     0     0 0.000   0 0.000   0.000
## 2020-06-26 05:30:00      0     0     0 0.015   0 0.000   0.000
## 2020-09-25 05:30:00      0     0     0 0.000   0 0.000   0.000
## 2020-12-18 05:30:00      0     0     0 0.000   0 0.000   0.000
##          INDIACEM MARICO GRAPHITE APLLTD ITDC SUNTECK MOTILALOFS
## 2019-09-27 05:30:00 0.000     0   0.000   0     0     0     0
## 2019-12-27 05:30:00 0.000     0   0.029   0     0     0     0
## 2020-03-27 05:30:00 0.109     0   0.000   0     0     0     0
## 2020-06-26 05:30:00 0.167     0   0.022   0     0     0     0
## 2020-09-25 05:30:00 0.172     0   0.138   0     0     0     0
## 2020-12-18 05:30:00 0.000     0   0.100   0     0     0     0
##          IPCALAB SWANENERGY SYMPHONY RAJESHEXPO BRITANNIA GRANULES
## 2019-09-27 05:30:00 0.155     0     0     0     0     0 0.000

```

## 2019-12-27 05:30:00	0.000	0	0	0	0	0.017
## 2020-03-27 05:30:00	0.032	0	0	0	0	0.000
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.000
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.087
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.114
##	WIPRO VAIBHAVGBL INDHOTEL DRREDDY NAUKRI SONATSOFTW OMAXE					
## 2019-09-27 05:30:00	0.015	0	0.00	0.037	0	0
## 2019-12-27 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0.19	0.000	0	0
## 2020-09-25 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0.00	0.000	0	0
##	GUJALKALI MANAPPURAM WHIRLPOOL RELAXO IGL ITC HEG TECHM					
## 2019-09-27 05:30:00	0	0.02	0.000	0 0.073	0	0
## 2019-12-27 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-03-27 05:30:00	0	0.00	0.252	0 0.000	0	0
## 2020-06-26 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-09-25 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-12-18 05:30:00	0	0.00	0.000	0 0.000	0	0
##	ALKYLAMINE ECLERX JSWSTEEL DCMSHRIRAM PIIND MINDAIND					
## 2019-09-27 05:30:00	0.000	0	0	0.069	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.000	0	0
## 2020-09-25 05:30:00	0.024	0	0	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.000	0	0
##	BALMILAWRIE SANOFI HATHWAY IDEA CANFINHOME MINDTREE JCHAC					
## 2019-09-27 05:30:00	0	0	0 0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0 0.000	0	0	0
## 2020-03-27 05:30:00	0	0	0 0.042	0	0	0
## 2020-06-26 05:30:00	0	0	0 0.077	0	0	0
## 2020-09-25 05:30:00	0	0	0 0.073	0	0	0
## 2020-12-18 05:30:00	0	0	0 0.010	0	0	0
##	ZYDUSWELL JYOTHYLAB VEDL EDELWEISS APLAPOLLO NAVINFLUOR					
## 2019-09-27 05:30:00	0.14	0	0	0	0	0.000
## 2019-12-27 05:30:00	0.00	0	0	0	0	0.000
## 2020-03-27 05:30:00	0.00	0	0	0	0	0.118
## 2020-06-26 05:30:00	0.00	0	0	0	0	0.049
## 2020-09-25 05:30:00	0.00	0	0	0	0	0.000
## 2020-12-18 05:30:00	0.00	0	0	0	0	0.000
##	ORIENTREF ASTRAL VSTIND REDINGTON CENTRALBK AIAENG IOLCP					
## 2019-09-27 05:30:00	0	0	0	0.048	0	0
## 2019-12-27 05:30:00	0	0	0	0.058	0	0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0
## 2020-12-18 05:30:00	0	0	0	0.048	0	0

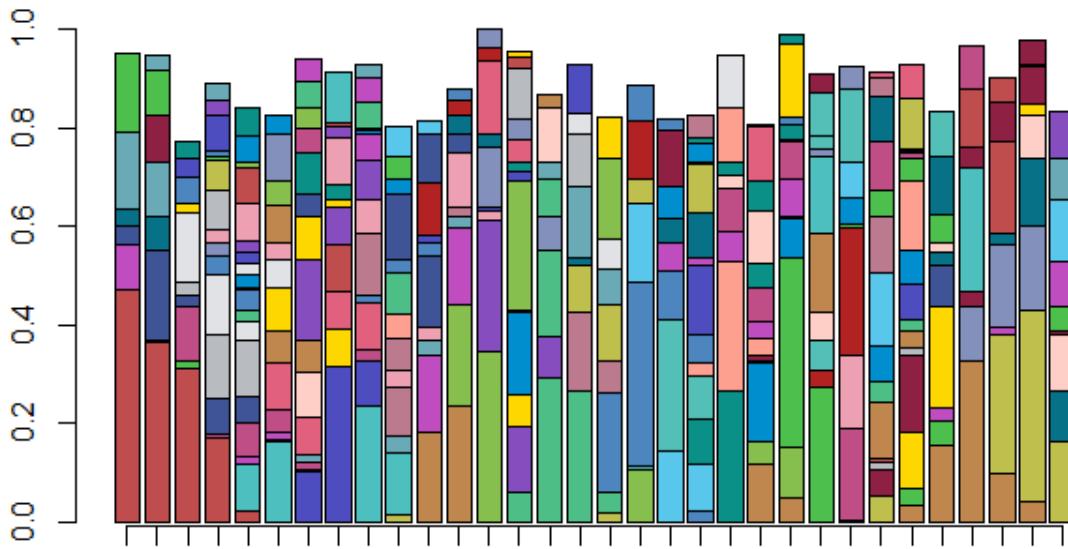
##	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK
## 2019-09-27 05:30:00	0	0	0.000	0.011	0	0.004
## 2019-12-27 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-03-27 05:30:00	0	0	0.000	0.086	0	0.000
## 2020-06-26 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-09-25 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-12-18 05:30:00	0	0	0.093	0.000	0	0.000
##	BALRAMCHIN	HINDPETRO	PERSISTENT	TRENT	ESCORTS	PHOENIXLTD
## 2019-09-27 05:30:00	0	0	0.000	0.004	0.000	0
## 2019-12-27 05:30:00	0	0	0.000	0.118	0.000	0
## 2020-03-27 05:30:00	0	0	0.000	0.000	0.000	0
## 2020-06-26 05:30:00	0	0	0.000	0.000	0.000	0
## 2020-09-25 05:30:00	0	0	0.007	0.000	0.000	0
## 2020-12-18 05:30:00	0	0	0.124	0.000	0.084	0
##	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLFOOD
## 2019-09-27 05:30:00	0.000	0	0	0	0	0
## 2019-12-27 05:30:00	0.093	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0
##	APOLLOTYRE	EMAMILTD	SPICEJET	FORTIS	TVSMOTOR	SUPRAJIT
## 2019-09-27 05:30:00	0	0	0	0	0	0
## 2019-12-27 05:30:00	0	0	0	0	0	0
## 2020-03-27 05:30:00	0	0	0	0	0	0
## 2020-06-26 05:30:00	0	0	0	0	0	0
## 2020-09-25 05:30:00	0	0	0	0	0	0
## 2020-12-18 05:30:00	0	0	0	0	0	0
##	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC IOC
## 2019-09-27 05:30:00	0.102	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0
##	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL	AUROPHARMA
## 2019-09-27 05:30:00	0.000	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.098	0	0	0	0	0
##	OBEROIRLTY	J.KBANK	BEL	NLCINDIA	ASTRAZEN	GODREJPROP
## 2019-09-27 05:30:00	0	0	0	0	0.000	0
## 2019-12-27 05:30:00	0	0	0	0	0.000	0
## 2020-03-27 05:30:00	0	0	0	0	0.000	0
## 2020-06-26 05:30:00	0	0	0	0	0.000	0

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## 2020-09-25 05:30:00      0     0     0     0.048      0
## 2020-12-18 05:30:00      0     0     0     0.000      0
##                               PETRONET
## 2019-09-27 05:30:00      0.07
## 2019-12-27 05:30:00      0.00
## 2020-03-27 05:30:00      0.00
## 2020-06-26 05:30:00      0.00
## 2020-09-25 05:30:00      0.00
## 2020-12-18 05:30:00      0.00

```

Weights for bt78



```

##                               WESTLIFE ABBOTINDIA RESPONIND MPHASIS    TCS CHOLAFIN KRBL
## 2019-09-27 05:30:00      0     0.031     0.000      0 0.034      0     0
## 2019-12-27 05:30:00      0     0.155     0.000      0 0.049      0     0
## 2020-03-27 05:30:00      0     0.326     0.000      0 0.000      0     0
## 2020-06-26 05:30:00      0     0.098     0.282      0 0.000      0     0
## 2020-09-25 05:30:00      0     0.040     0.388      0 0.000      0     0
## 2020-12-18 05:30:00      0     0.000     0.164      0 0.000      0     0
##                               VAKRANGEET PAGEIND PGHH SEQUENT HCLTECH INFY DEEPAKNI
## 2019-09-27 05:30:00      0     0     0     0.000      0 0.115     0.000
## 2019-12-27 05:30:00      0     0     0     0.027      0 0.206     0.083
## 2020-03-27 05:30:00      0     0     0     0.000      0 0.000     0.000
## 2020-06-26 05:30:00      0     0     0     0.015      0 0.000     0.000

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## 2020-09-25 05:30:00	0	0	0	0.000	0	0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0.000	0	0.000	0.000
##	INDIACEM	MARICO	GRAPHITE	APLLTD	ITDC	SUNTECK	MOTILALOFS
## 2019-09-27 05:30:00	0.000	0	0	0.000	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.029	0	0	0
## 2020-03-27 05:30:00	0.109	0	0	0.000	0	0	0
## 2020-06-26 05:30:00	0.167	0	0	0.022	0	0	0
## 2020-09-25 05:30:00	0.172	0	0	0.138	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.100	0	0	0
##	IPCALAB	SWANENERGY	SYMPHONY	RAJESHEXPO	BRITANNIA	GRANULES	
## 2019-09-27 05:30:00	0.155	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0.000	0	0	0	0	0.017	
## 2020-03-27 05:30:00	0.032	0	0	0	0	0.000	
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.000	
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.087	
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.114	
##	WIPRO	VAIBHAVGBL	INDHOTEL	DRREDDY	NAUKRI	SONATSOFTW	OMAXE
## 2019-09-27 05:30:00	0.015	0	0	0.00	0.037	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.00	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.00	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.19	0.000	0	0
## 2020-09-25 05:30:00	0.000	0	0	0.00	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.00	0.000	0	0
##	GUJALKALI	MANAPPURAM	WHIRLPOOL	RELAXO	IGL	ITC	HEG TECHM
## 2019-09-27 05:30:00	0	0.02	0.000	0	0.073	0	0
## 2019-12-27 05:30:00	0	0.00	0.000	0	0.000	0	0
## 2020-03-27 05:30:00	0	0.00	0.252	0	0.000	0	0
## 2020-06-26 05:30:00	0	0.00	0.000	0	0.000	0	0
## 2020-09-25 05:30:00	0	0.00	0.000	0	0.000	0	0
## 2020-12-18 05:30:00	0	0.00	0.000	0	0.000	0	0
##	ALKYLAMINE	ECLERX	JSWSTEEL	DCMSHRIRAM	PIIND	MINDAIND	
## 2019-09-27 05:30:00	0.000	0	0	0.069	0	0	
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0	
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0	
## 2020-06-26 05:30:00	0.000	0	0	0.000	0	0	
## 2020-09-25 05:30:00	0.024	0	0	0.000	0	0	
## 2020-12-18 05:30:00	0.000	0	0	0.000	0	0	
##	BALMLAWRIE	SANOFI	HATHWAY	IDEA	CANFINHOME	MINDTREE	JCHAC
## 2019-09-27 05:30:00	0	0	0.000	0	0	0	0
## 2019-12-27 05:30:00	0	0	0.000	0	0	0	0
## 2020-03-27 05:30:00	0	0	0.042	0	0	0	0
## 2020-06-26 05:30:00	0	0	0.077	0	0	0	0
## 2020-09-25 05:30:00	0	0	0.073	0	0	0	0
## 2020-12-18 05:30:00	0	0	0.010	0	0	0	0
##	ZYDUSWELL	JYOTHYLAB	VEDL	EDELWEISS	APLAPOLLO	NAVINFLUOR	
## 2019-09-27 05:30:00	0.14	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0.00	0	0	0	0	0.000	

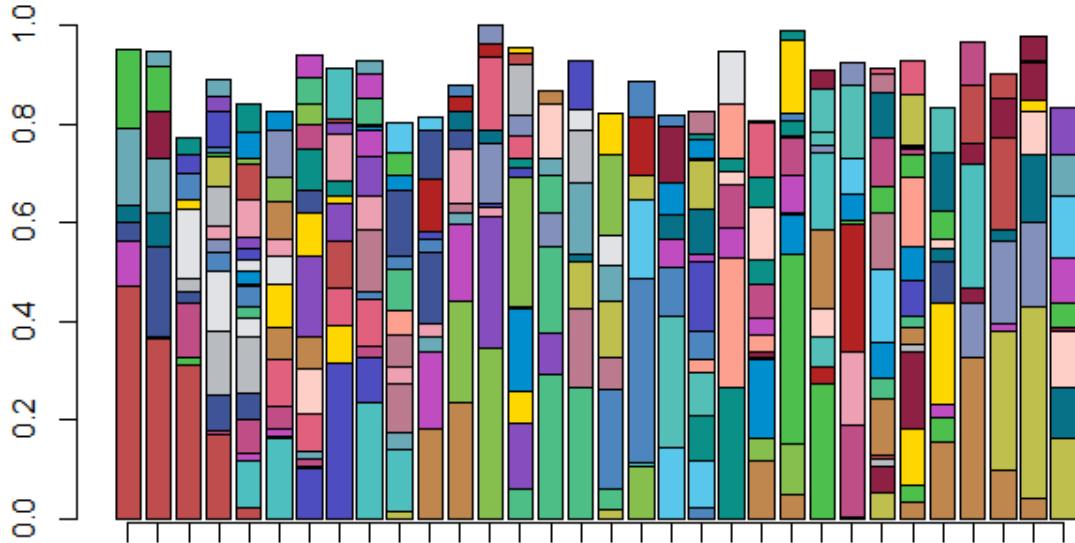
## 2020-03-27 05:30:00	0.00	0	0	0	0	0.118	
## 2020-06-26 05:30:00	0.00	0	0	0	0	0.049	
## 2020-09-25 05:30:00	0.00	0	0	0	0	0.000	
## 2020-12-18 05:30:00	0.00	0	0	0	0	0.000	
##	ORIENTREF	ASTRAL	VSTIND	REDINGTON	CENTRALBK	AIAENG	IOLCP
## 2019-09-27 05:30:00	0	0	0	0.048	0	0	0
## 2019-12-27 05:30:00	0	0	0	0.058	0	0	0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0	0.048	0	0	0
##	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK	
## 2019-09-27 05:30:00	0	0	0.000	0.011	0	0.004	
## 2019-12-27 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-03-27 05:30:00	0	0	0.000	0.086	0	0.000	
## 2020-06-26 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-09-25 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-12-18 05:30:00	0	0	0.093	0.000	0	0.000	
##	BALRAMCHIN	HINDPETRO	PERSISTENT	TRENT	ESCORTS	PHOENIXLTD	
## 2019-09-27 05:30:00	0	0	0.000	0.004	0.000	0	
## 2019-12-27 05:30:00	0	0	0.000	0.118	0.000	0	
## 2020-03-27 05:30:00	0	0	0.000	0.000	0.000	0	
## 2020-06-26 05:30:00	0	0	0.000	0.000	0.000	0	
## 2020-09-25 05:30:00	0	0	0.007	0.000	0.000	0	
## 2020-12-18 05:30:00	0	0	0.124	0.000	0.084	0	
##	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLFOOD	
## 2019-09-27 05:30:00	0.000	0	0	0	0	0	
## 2019-12-27 05:30:00	0.093	0	0	0	0	0	
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	
## 2020-12-18 05:30:00	0.000	0	0	0	0	0	
##	APOLLOTYRE	EMAMILTD	SPICEJET	FORTIS	TVSMOTOR	SUPRAJIT	
## 2019-09-27 05:30:00	0	0	0	0	0	0	
## 2019-12-27 05:30:00	0	0	0	0	0	0	
## 2020-03-27 05:30:00	0	0	0	0	0	0	
## 2020-06-26 05:30:00	0	0	0	0	0	0	
## 2020-09-25 05:30:00	0	0	0	0	0	0	
## 2020-12-18 05:30:00	0	0	0	0	0	0	
##	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSOOTER	KEC	IOC
## 2019-09-27 05:30:00	0.102	0	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0	0
##	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL	AUROPHARMA	VNATIORG

```

## 2019-09-27 05:30:00      0.000      0      0      0      0      0      0      0
## 2019-12-27 05:30:00      0.000      0      0      0      0      0      0      0
## 2020-03-27 05:30:00      0.000      0      0      0      0      0      0      0
## 2020-06-26 05:30:00      0.000      0      0      0      0      0      0      0
## 2020-09-25 05:30:00      0.000      0      0      0      0      0      0      0
## 2020-12-18 05:30:00      0.098      0      0      0      0      0      0      0
##                               OBEROIRLTY J.KBANK BEL NLCINDIA ASTRAZEN GODREJPROP
## 2019-09-27 05:30:00          0      0      0      0      0.000      0
## 2019-12-27 05:30:00          0      0      0      0      0.000      0
## 2020-03-27 05:30:00          0      0      0      0      0.000      0
## 2020-06-26 05:30:00          0      0      0      0      0.000      0
## 2020-09-25 05:30:00          0      0      0      0      0.048      0
## 2020-12-18 05:30:00          0      0      0      0      0.000      0
##                               PETRONET
## 2019-09-27 05:30:00      0.07
## 2019-12-27 05:30:00      0.00
## 2020-03-27 05:30:00      0.00
## 2020-06-26 05:30:00      0.00
## 2020-09-25 05:30:00      0.00
## 2020-12-18 05:30:00      0.00

```

Weights for bt79



ESTLIFE	ABBOTINDIA	RESPONIND	MPHASIS	SUNTECK	MOTILALOFS	IPCALAB	SWANENERGY	SYMPHONY	RAJESHXPO	BRETTA	AKRANGEE	GEIND	SHH	QUENT	CLETECH	FY	EEPAKNI	DRREDDY	NAUKRI	SONATSOFTW	OMAXE	GUJALKALLI	MANAPPURAM	WHIRLPOOL	RELAXO	IGL	ITC	HEG	TECHM	ALKYLAMINE	ECLERX	DCMSHRIRAM	PIIND	MINDAIND	BALMLAWRIE	HATHWAY	IDEA	CANFINHOME	MINDTREE	JCHAC	ZYDUSWELL	JYOTHYLAB	VEDL	EDELWEISS	NAVINFLUOR	ORIENTREF	ASTRAL	VSTIND	REDINGTON	CENTRALBK	AIAENG	OLCP	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK	HINDPETRO	PERSISTENT	TRENT	ESORTS	PHOENIXLTD	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLIFOOD	APOLLOTYRE	EMAMILTD	SPICEJET	TVSMOTOR	SUPRAJIT	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC	IOC	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL
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```

##                               WESTLIFE ABBOTINDIA RESPONIND MPHASIS      TCS CHOLAFIN KRBL

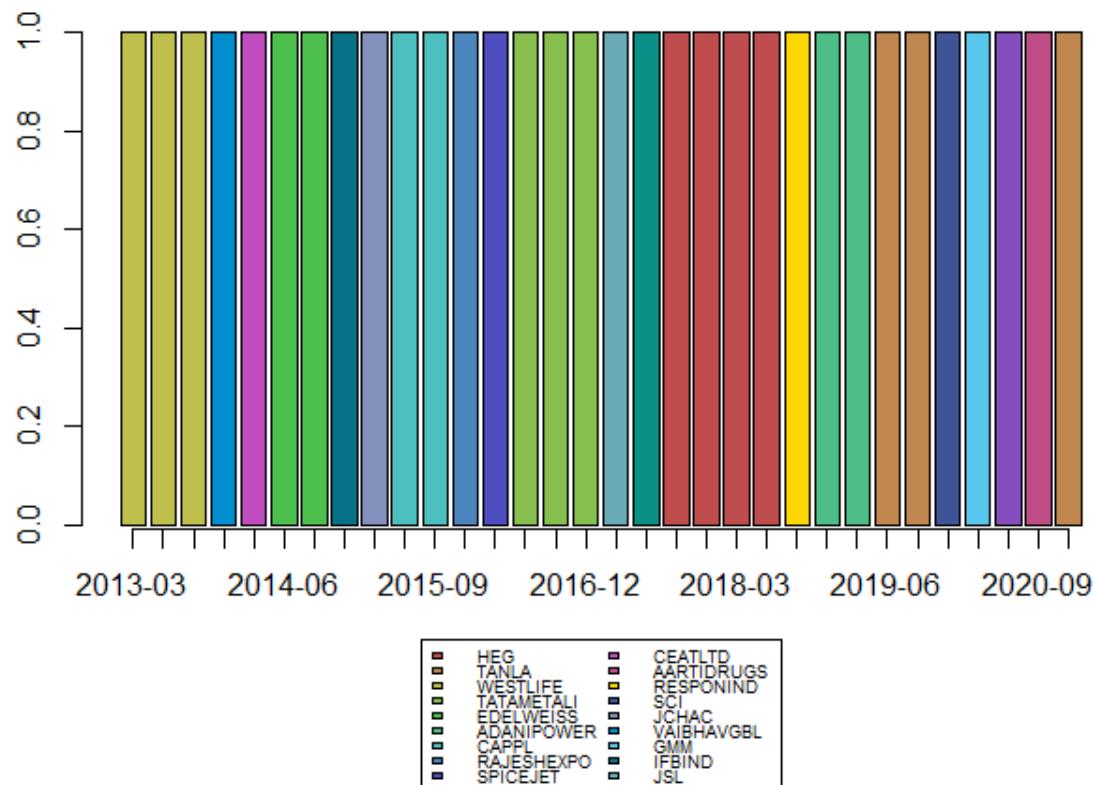
```

## 2019-09-27 05:30:00	0	0.031	0.000	0 0.034	0	0
## 2019-12-27 05:30:00	0	0.155	0.000	0 0.049	0	0
## 2020-03-27 05:30:00	0	0.326	0.000	0 0.000	0	0
## 2020-06-26 05:30:00	0	0.098	0.282	0 0.000	0	0
## 2020-09-25 05:30:00	0	0.040	0.388	0 0.000	0	0
## 2020-12-18 05:30:00	0	0.000	0.164	0 0.000	0	0
##	VAKRANGEET	PAGEIND	PGHH	SEQUENT	HCLTECH	INFY DEEPAKNI
## 2019-09-27 05:30:00	0	0	0	0.000	0 0.115	0.000
## 2019-12-27 05:30:00	0	0	0	0.027	0 0.206	0.083
## 2020-03-27 05:30:00	0	0	0	0.000	0 0.000	0.000
## 2020-06-26 05:30:00	0	0	0	0.015	0 0.000	0.000
## 2020-09-25 05:30:00	0	0	0	0.000	0 0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0.000	0 0.000	0.000
##	INDIACEM	MARICO	GRAPHITE	APLLTD	ITDC	SUNTECK MOTILALOFS
## 2019-09-27 05:30:00	0.000	0	0	0.000	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.029	0	0
## 2020-03-27 05:30:00	0.109	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.167	0	0	0.022	0	0
## 2020-09-25 05:30:00	0.172	0	0	0.138	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.100	0	0
##	IPCALAB	SWANENERGY	SYMPHONY	RAJESHEXPO	BRITANNIA	GRANULES
## 2019-09-27 05:30:00	0.155	0	0	0	0	0.000
## 2019-12-27 05:30:00	0.000	0	0	0	0	0.017
## 2020-03-27 05:30:00	0.032	0	0	0	0	0.000
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.000
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.087
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.114
##	WIPRO	VAIBHAVGBL	INDHOTEL	DRREDDY	NAUKRI	SONATSOFTW OMAXE
## 2019-09-27 05:30:00	0.015	0	0	0.00	0.037	0
## 2019-12-27 05:30:00	0.000	0	0	0.00	0.000	0
## 2020-03-27 05:30:00	0.000	0	0	0.00	0.000	0
## 2020-06-26 05:30:00	0.000	0	0	0.19	0.000	0
## 2020-09-25 05:30:00	0.000	0	0	0.00	0.000	0
## 2020-12-18 05:30:00	0.000	0	0	0.00	0.000	0
##	GUJALKALI	MANAPPURAM	WHIRLPOOL	RELAXO	IGL ITC HEG	TECHM
## 2019-09-27 05:30:00	0	0.02	0.000	0 0.073	0	0
## 2019-12-27 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-03-27 05:30:00	0	0.00	0.252	0 0.000	0	0
## 2020-06-26 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-09-25 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-12-18 05:30:00	0	0.00	0.000	0 0.000	0	0
##	ALKYLAMINE	ECLERX	JSWSTEEL	DCMSHRIRAM	PIIND	MINDAIND
## 2019-09-27 05:30:00	0.000	0	0	0.069	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.000	0	0
## 2020-09-25 05:30:00	0.024	0	0	0.000	0	0

## 2020-12-18 05:30:00	0.000	0	0	0.000	0	0	
##	BALMILAWRIE	SANOFI	HATHWAY	IDEA	CANFINHOME	MINDTREE	JCHAC
## 2019-09-27 05:30:00	0	0	0	0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0	0.000	0	0	0
## 2020-03-27 05:30:00	0	0	0	0.042	0	0	0
## 2020-06-26 05:30:00	0	0	0	0.077	0	0	0
## 2020-09-25 05:30:00	0	0	0	0.073	0	0	0
## 2020-12-18 05:30:00	0	0	0	0.010	0	0	0
##	ZYDUSWELL	JYOTHYLAB	VEDL	EDELWEISS	APLAPOLO	NAVINFLUOR	
## 2019-09-27 05:30:00	0.14	0	0	0	0	0.000	
## 2019-12-27 05:30:00	0.00	0	0	0	0	0.000	
## 2020-03-27 05:30:00	0.00	0	0	0	0	0.118	
## 2020-06-26 05:30:00	0.00	0	0	0	0	0.049	
## 2020-09-25 05:30:00	0.00	0	0	0	0	0.000	
## 2020-12-18 05:30:00	0.00	0	0	0	0	0.000	
##	ORIENTREF	ASTRAL	VSTIND	REDINGTON	CENTRALBK	AIAENG	IOLCP
## 2019-09-27 05:30:00	0	0	0	0.048	0	0	0
## 2019-12-27 05:30:00	0	0	0	0.058	0	0	0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0	0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0	0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0	0
## 2020-12-18 05:30:00	0	0	0	0.048	0	0	0
##	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK	
## 2019-09-27 05:30:00	0	0	0.000	0.011	0	0.004	
## 2019-12-27 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-03-27 05:30:00	0	0	0.000	0.086	0	0.000	
## 2020-06-26 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-09-25 05:30:00	0	0	0.000	0.000	0	0.000	
## 2020-12-18 05:30:00	0	0	0.093	0.000	0	0.000	
##	BALRAMCHIN	HINDPETRO	PERSISTENT	TRENT	ESCORTS	PHOENIXLTD	
## 2019-09-27 05:30:00	0	0	0.000	0.004	0.000	0	
## 2019-12-27 05:30:00	0	0	0.000	0.118	0.000	0	
## 2020-03-27 05:30:00	0	0	0.000	0.000	0.000	0	
## 2020-06-26 05:30:00	0	0	0.000	0.000	0.000	0	
## 2020-09-25 05:30:00	0	0	0.007	0.000	0.000	0	
## 2020-12-18 05:30:00	0	0	0.124	0.000	0.084	0	
##	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLFOOD	
## 2019-09-27 05:30:00	0.000	0	0	0	0	0	
## 2019-12-27 05:30:00	0.093	0	0	0	0	0	
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	
## 2020-12-18 05:30:00	0.000	0	0	0	0	0	
##	APOLLOTYRE	EMAMILTD	SPICEJET	FORTIS	TVSMOTOR	SUPRAJIT	
## 2019-09-27 05:30:00	0	0	0	0	0	0	
## 2019-12-27 05:30:00	0	0	0	0	0	0	
## 2020-03-27 05:30:00	0	0	0	0	0	0	

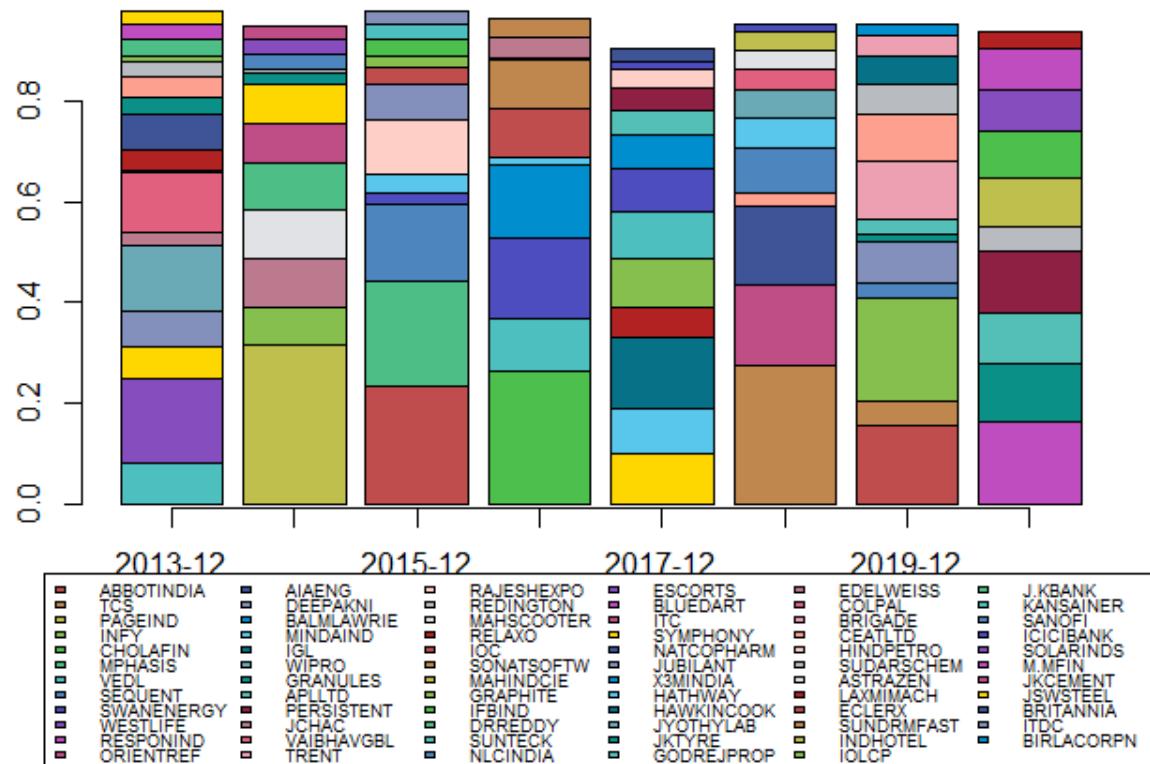
## 2020-06-26 05:30:00	0	0	0	0	0	0		
## 2020-09-25 05:30:00	0	0	0	0	0	0		
## 2020-12-18 05:30:00	0	0	0	0	0	0		
##	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC IOC		
## 2019-09-27 05:30:00	0.102	0	0	0	0	0		
## 2019-12-27 05:30:00	0.000	0	0	0	0	0		
## 2020-03-27 05:30:00	0.000	0	0	0	0	0		
## 2020-06-26 05:30:00	0.000	0	0	0	0	0		
## 2020-09-25 05:30:00	0.000	0	0	0	0	0		
## 2020-12-18 05:30:00	0.000	0	0	0	0	0		
##	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL	AUROPHARMA	VINATIORG	VTI
## 2019-09-27 05:30:00	0.000	0	0	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0	0	0
## 2020-12-18 05:30:00	0.098	0	0	0	0	0	0	0
##	OBEROIRLTY	J.KBANK	BEL	NLCINDIA	ASTRAZEN	GODREJPROP		
## 2019-09-27 05:30:00	0	0	0	0	0.000	0		
## 2019-12-27 05:30:00	0	0	0	0	0.000	0		
## 2020-03-27 05:30:00	0	0	0	0	0.000	0		
## 2020-06-26 05:30:00	0	0	0	0	0.000	0		
## 2020-09-25 05:30:00	0	0	0	0	0.048	0		
## 2020-12-18 05:30:00	0	0	0	0	0.000	0		
##	PETRONET							
## 2019-09-27 05:30:00	0.07							
## 2019-12-27 05:30:00	0.00							
## 2020-03-27 05:30:00	0.00							
## 2020-06-26 05:30:00	0.00							
## 2020-09-25 05:30:00	0.00							
## 2020-12-18 05:30:00	0.00							

Weights for bt80



```
##          HEG TANLA WESTLIFE TATAMETALI EDELWEISS ADANIPOWER CAPPL
## 2019-09-27 05:30:00  0    1      0        0       0        0     0
## 2019-12-27 05:30:00  0    0      0        0       0        0     0
## 2020-03-27 05:30:00  0    0      0        0       0        0     0
## 2020-06-26 05:30:00  0    0      0        0       0        0     0
## 2020-09-25 05:30:00  0    0      0        0       0        0     0
## 2020-12-18 05:30:00  0    1      0        0       0        0     0
##          RAJESHEXPO SPICEJET ALOKTEXT CEATLTD AARTIDRUGS RESPONIND
## 2019-09-27 05:30:00   0     0      0       0       0       0     0
## 2019-12-27 05:30:00   0     0      0       0       0       0     0
## 2020-03-27 05:30:00   0     0      0       0       0       0     0
## 2020-06-26 05:30:00   0     0      1       0       0       0     0
## 2020-09-25 05:30:00   0     0      0       0       1       0     0
## 2020-12-18 05:30:00   0     0      0       0       0       0     0
##          SCI JCHAC VAIBHAVGBL GMM IFBIND JSL ITI
## 2019-09-27 05:30:00  0    0      0     0     0     0     0
## 2019-12-27 05:30:00  1    0      0     0     0     0     0
## 2020-03-27 05:30:00  0    0      0     1     0     0     0
## 2020-06-26 05:30:00  0    0      0     0     0     0     0
## 2020-09-25 05:30:00  0    0      0     0     0     0     0
## 2020-12-18 05:30:00  0    0      0     0     0     0     0
```

Weights for bt81



```

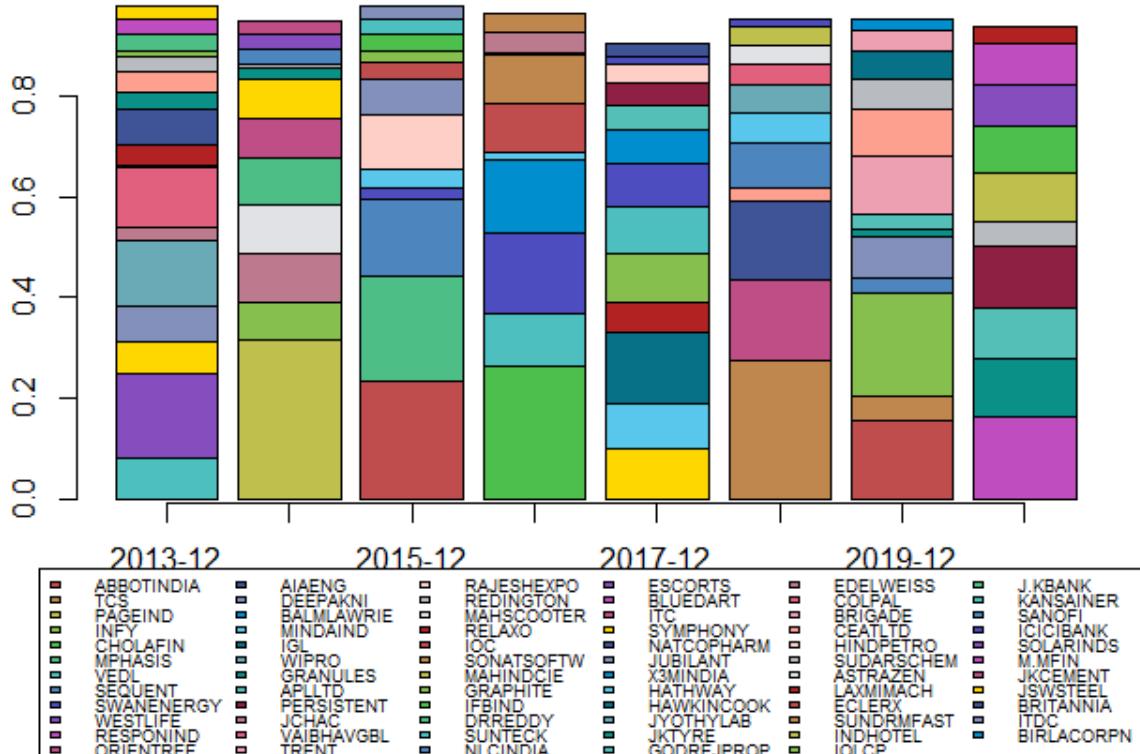
##          ABBOTINDIA    TCS PAGEIND   INFY CHOLAFIN MPHASIS VEDL
## 2015-12-24 05:30:00 0.234 0.000 0 0.000 0.000 0.208 0.000
## 2016-12-30 05:30:00 0.000 0.000 0 0.000 0.265 0.000 0.104
## 2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
## 2018-12-28 05:30:00 0.000 0.274 0 0.000 0.000 0.000 0.000
## 2019-12-27 05:30:00 0.155 0.049 0 0.206 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
##          SEQUENT SWANENERGY WESTLIFE RESPONIND ORIENTREF ASTRAL
## 2015-12-24 05:30:00 0.155 0.020 0 0.000 0.000 0.000
## 2016-12-30 05:30:00 0.000 0.159 0 0.000 0.000 0.000
## 2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.098
## 2018-12-28 05:30:00 0.000 0.000 0 0.000 0.163 0.000
## 2019-12-27 05:30:00 0.027 0.000 0 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.000 0.000 0 0.164 0.000 0.000
##          AIAENG DEEPAKNI BALMLAWRIE MINDAIND IGL WIPRO GRANULES
## 2015-12-24 05:30:00 0.000 0.000 0.000 0.038 0.000 0 0.000
## 2016-12-30 05:30:00 0.000 0.000 0.145 0.014 0.000 0 0.000
## 2017-12-29 05:30:00 0.000 0.000 0.000 0.091 0.142 0 0.000
## 2018-12-28 05:30:00 0.157 0.000 0.000 0.000 0.000 0 0.000
## 2019-12-27 05:30:00 0.000 0.083 0.000 0.000 0.000 0 0.017
## 2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0 0.114
##          APLLTD PERSISTENT JCHAC VAIBHAVGBL TRENT LINDEINDIA
## 2015-12-24 05:30:00 0.000 0.000 0 0 0.000 0.000

```

## 2016-12-30 05:30:00	0.000	0.000	0	0 0.000	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0 0.000	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0 0.000	0.024
## 2019-12-27 05:30:00	0.029	0.000	0	0 0.118	0.093
## 2020-12-18 05:30:00	0.100	0.124	0	0 0.000	0.000
##	RAJESHEXPO	REDINGTON	MAHSOOTER	RELAXO	IOC SONATSOFTW
## 2015-12-24 05:30:00	0.11	0.000	0	0 0.000 0.000	0.000
## 2016-12-30 05:30:00	0.00	0.000	0	0 0.000 0.099	0.098
## 2017-12-29 05:30:00	0.00	0.000	0	0 0.059 0.000	0.000
## 2018-12-28 05:30:00	0.00	0.000	0	0 0.000 0.000	0.000
## 2019-12-27 05:30:00	0.00	0.058	0	0 0.000 0.000	0.000
## 2020-12-18 05:30:00	0.00	0.048	0	0 0.000 0.000	0.000
##	MAHINDCIE	GRAPHITE	IFBIND	DRREDDY	SUNTECK NLCINDIA
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.000 0.00
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000 0.00
## 2017-12-29 05:30:00	0.000	0.097	0.002	0	0.091 0.00
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000 0.09
## 2019-12-27 05:30:00	0.000	0.000	0.000	0	0.000 0.00
## 2020-12-18 05:30:00	0.098	0.000	0.093	0	0.000 0.00
##	MOTILALOFS	ESCORTS	BLUEDART	ITC	SYMPHONY NATCOPHARM
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0 0.000
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0 0.001
## 2017-12-29 05:30:00	0.087	0.000	0.000	0	0 0.000
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0 0.000
## 2019-12-27 05:30:00	0.000	0.000	0.000	0	0 0.000
## 2020-12-18 05:30:00	0.000	0.084	0.081	0	0 0.000
##	JUBILANT	X3MINDIA	HATHWAY	HAWKINCOOK	JYOTHYLAB JKTYRE
## 2015-12-24 05:30:00	0.068	0.000	0.000	0.000	0.000 0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000 0
## 2017-12-29 05:30:00	0.000	0.067	0.000	0.000	0.000 0
## 2018-12-28 05:30:00	0.000	0.000	0.058	0.000	0.057 0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.057	0.000 0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000 0
##	GODREJPROP	HSCL	EDELWEISS	COLPAL	BRIGADE CEATLTD HINDPETRO
## 2015-12-24 05:30:00	0.000 0.000	0.000	0.000	0.000	0 0.000
## 2016-12-30 05:30:00	0.000 0.000	0.042	0.000	0.000	0 0.000
## 2017-12-29 05:30:00	0.048 0.045	0.000	0.000	0.000	0 0.039
## 2018-12-28 05:30:00	0.000 0.000	0.000	0.042	0.000	0 0.000
## 2019-12-27 05:30:00	0.000 0.000	0.000	0.000	0.041	0 0.000
## 2020-12-18 05:30:00	0.000 0.000	0.000	0.000	0.000	0 0.000
##	SUDARSCHM	ASTRAZEN	LAXMIMACH	ECLERX	SUNDRMFAST INDHOTEL
## 2015-12-24 05:30:00	0	0.000	0.000	0.035	0.000 0.000
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.035 0.000
## 2017-12-29 05:30:00	0	0.000	0.000	0.000	0.000 0.000
## 2018-12-28 05:30:00	0	0.038	0.000	0.000	0.000 0.035
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0.000 0.000
## 2020-12-18 05:30:00	0	0.000	0.036	0.000	0.000 0.000

```
##          IOLCP APLAPOLLO J.KBANK KANSAINER SANOFI ICICIBANK
## 2015-12-24 05:30:00 0.022      0.033      0  0.031      0  0.000
## 2016-12-30 05:30:00 0.000      0.000      0  0.000      0  0.000
## 2017-12-29 05:30:00 0.000      0.000      0  0.000      0  0.013
## 2018-12-28 05:30:00 0.000      0.000      0  0.000      0  0.016
## 2019-12-27 05:30:00 0.000      0.000      0  0.000      0  0.000
## 2020-12-18 05:30:00 0.000      0.000      0  0.000      0  0.000
##          SOLARINDS M.MFIN JKCEMENT JSWSTEEL BRITANNIA ITDC
## 2015-12-24 05:30:00      0      0      0      0  0.000 0.024
## 2016-12-30 05:30:00      0      0      0      0  0.000 0.000
## 2017-12-29 05:30:00      0      0      0      0  0.026 0.000
## 2018-12-28 05:30:00      0      0      0      0  0.000 0.000
## 2019-12-27 05:30:00      0      0      0      0  0.000 0.000
## 2020-12-18 05:30:00      0      0      0      0  0.000 0.000
##          BIRLACORPN
## 2015-12-24 05:30:00      0.000
## 2016-12-30 05:30:00      0.000
## 2017-12-29 05:30:00      0.000
## 2018-12-28 05:30:00      0.000
## 2019-12-27 05:30:00      0.022
## 2020-12-18 05:30:00      0.000
```

Weights for bt82

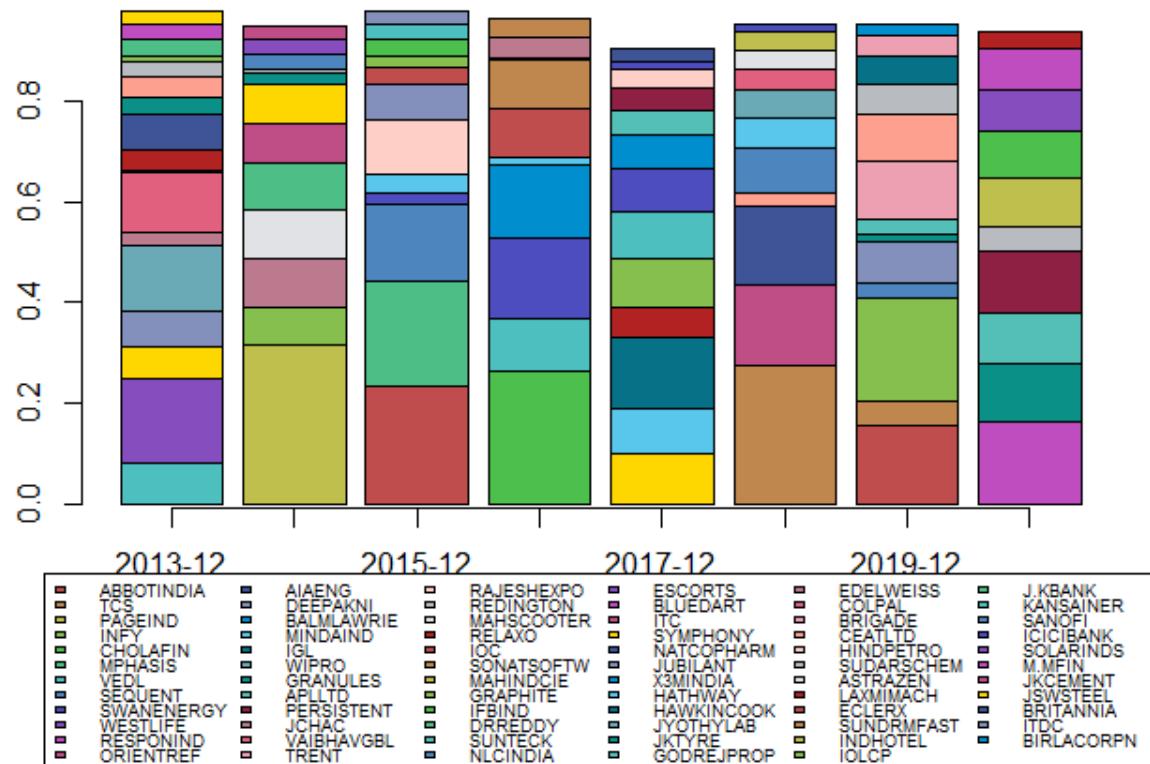


```
##          ABBOTINDIA TCS PAGEIND INFY CHOLAFIN MPHASIS VEDL
```

2015-12-24 05:30:00 0.234 0.000 0 0.000 0.000 0.208 0.000
2016-12-30 05:30:00 0.000 0.000 0 0.000 0.265 0.000 0.104
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.274 0 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.155 0.049 0 0.206 0.000 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
SEQUENT SWANENERGY WESTLIFE RESPONIND ORIENTREF ASTRAL
2015-12-24 05:30:00 0.155 0.020 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.159 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.098
2018-12-28 05:30:00 0.000 0.000 0 0.000 0.163 0.000 0.000
2019-12-27 05:30:00 0.027 0.000 0 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0 0.164 0.000 0.000 0.000
AIAENG DEEPAKNI BALMLAWRIE MINDAIND IGL WIPRO GRANULES
2015-12-24 05:30:00 0.000 0.000 0.000 0.038 0.000 0 0.000
2016-12-30 05:30:00 0.000 0.000 0.145 0.014 0.000 0 0.000
2017-12-29 05:30:00 0.000 0.000 0.000 0.091 0.142 0 0.000
2018-12-28 05:30:00 0.157 0.000 0.000 0.000 0.000 0 0.000
2019-12-27 05:30:00 0.000 0.083 0.000 0.000 0.000 0 0.017
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0 0.114
APLLTD PERSISTENT JCHAC VAIBHAVGBL TRENT LINDEINDIA
2015-12-24 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0 0.000 0.024 0.000 0.000
2019-12-27 05:30:00 0.029 0.000 0 0.118 0.093 0.000 0.000
2020-12-18 05:30:00 0.100 0.124 0 0.000 0.000 0.000 0.000
RAJESHEXPO REDINGTON MAHSCOOTER RELAXO IOC SONATSOFTW
2015-12-24 05:30:00 0.11 0.000 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.00 0.000 0 0.000 0.099 0.098 0.000
2017-12-29 05:30:00 0.00 0.000 0 0.059 0.000 0.000 0.000
2018-12-28 05:30:00 0.00 0.000 0 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.00 0.058 0 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.00 0.048 0 0.000 0.000 0.000 0.000
MAHINDCIE GRAPHITE IFBIND DRREDDY SUNTECK NLCINDIA
2015-12-24 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2016-12-30 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2017-12-29 05:30:00 0.000 0.097 0.002 0 0.091 0.091 0.00
2018-12-28 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.09
2019-12-27 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2020-12-18 05:30:00 0.098 0.000 0.093 0 0.000 0.000 0.00
MOTILALOFS ESCORTS BLUEDART ITC SYMPHONY NATCOPHARM
2015-12-24 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000
2016-12-30 05:30:00 0.000 0.000 0.000 0 0 0.001 0.001
2017-12-29 05:30:00 0.087 0.000 0.000 0 0 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000

## 2020-12-18 05:30:00	0.000	0.084	0.081	0	0	0.000
##	JUBILANT X3MINDIA HATHWAY HAWKINCOOK JYOTHYLAB JKTYRE					
## 2015-12-24 05:30:00	0.068	0.000	0.000	0.000	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2017-12-29 05:30:00	0.000	0.067	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.058	0.000	0.057	0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.057	0.000	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	GODREJPROP HSCL EDELWEISS COLPAL BRIGADE CEATLTD HINDPETRO					
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.042	0.000	0.000	0
## 2017-12-29 05:30:00	0.048	0.045	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.042	0.000	0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0.041	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	SUDARSCHEN ASTRAZEN LAXMIMACH ECLERX SUNDRMFAST INDHOTEL					
## 2015-12-24 05:30:00	0	0.000	0.000	0.035	0.000	0.000
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.035	0.000
## 2017-12-29 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00	0	0.038	0.000	0.000	0.000	0.035
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0	0.000	0.036	0.000	0.000	0.000
##	IOLCP APLAPOLLO J.KBANK KANSAINER SANOFI ICICIBANK					
## 2015-12-24 05:30:00	0.022	0.033	0	0.031	0	0.000
## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0.000	0	0.013
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0	0.016
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0	0.000
## 2020-12-18 05:30:00	0.000	0.000	0	0.000	0	0.000
##	SOLARINDS M.MFIN JKCEMENT JSWSTEEL BRITANNIA ITDC					
## 2015-12-24 05:30:00	0	0	0	0	0.000	0.024
## 2016-12-30 05:30:00	0	0	0	0	0.000	0.000
## 2017-12-29 05:30:00	0	0	0	0	0.026	0.000
## 2018-12-28 05:30:00	0	0	0	0	0.000	0.000
## 2019-12-27 05:30:00	0	0	0	0	0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.000
##	BIRLACORPN					
## 2015-12-24 05:30:00	0.000					
## 2016-12-30 05:30:00	0.000					
## 2017-12-29 05:30:00	0.000					
## 2018-12-28 05:30:00	0.000					
## 2019-12-27 05:30:00	0.022					
## 2020-12-18 05:30:00	0.000					

Weights for bt83



```
##          ABBOTINDIA    TCS PAGEIND   INFY CHOLAFIN MPHASIS VEDL
## 2015-12-24 05:30:00 0.234 0.000 0 0.000 0.000 0.208 0.000
## 2016-12-30 05:30:00 0.000 0.000 0 0.000 0.265 0.000 0.104
## 2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
## 2018-12-28 05:30:00 0.000 0.274 0 0.000 0.000 0.000 0.000
## 2019-12-27 05:30:00 0.155 0.049 0 0.206 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
##          SEQUENT SWANENERGY WESTLIFE RESPONIND ORIENTREF ASTRAL
## 2015-12-24 05:30:00 0.155 0.020 0 0.000 0.000 0.000
## 2016-12-30 05:30:00 0.000 0.159 0 0.000 0.000 0.000
## 2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.098
## 2018-12-28 05:30:00 0.000 0.000 0 0.000 0.163 0.000
## 2019-12-27 05:30:00 0.027 0.000 0 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.000 0.000 0 0.164 0.000 0.000
##          AIAENG DEEPAKNI BALMLAWRIE MINDAIND IGL WIPRO GRANULES
## 2015-12-24 05:30:00 0.000 0.000 0.000 0.038 0.000 0 0.000
## 2016-12-30 05:30:00 0.000 0.000 0.145 0.014 0.000 0 0.000
## 2017-12-29 05:30:00 0.000 0.000 0.000 0.091 0.142 0 0.000
## 2018-12-28 05:30:00 0.157 0.000 0.000 0.000 0.000 0 0.000
## 2019-12-27 05:30:00 0.000 0.083 0.000 0.000 0.000 0 0.017
## 2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0 0.114
##          APLLTD PERSISTENT JCHAC VAIBHAVGBL TRENT LINDEINDIA
## 2015-12-24 05:30:00 0.000 0.000 0 0 0.000 0.000
```

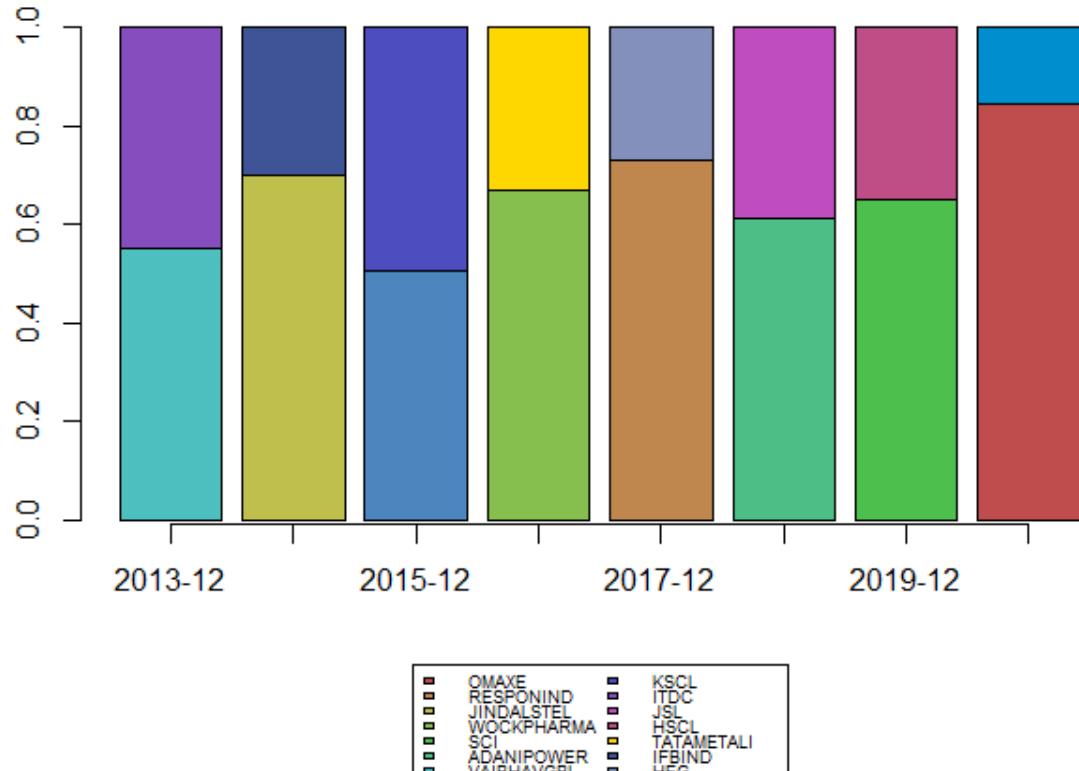
## 2016-12-30 05:30:00	0.000	0.000	0	0 0.000	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0 0.000	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0 0.000	0.024
## 2019-12-27 05:30:00	0.029	0.000	0	0 0.118	0.093
## 2020-12-18 05:30:00	0.100	0.124	0	0 0.000	0.000
##	RAJESHEXPO	REDINGTON	MAHSOOTER	RELAXO	IOC SONATSOFTW
## 2015-12-24 05:30:00	0.11	0.000	0	0 0.000 0.000	0.000
## 2016-12-30 05:30:00	0.00	0.000	0	0 0.000 0.099	0.098
## 2017-12-29 05:30:00	0.00	0.000	0	0 0.059 0.000	0.000
## 2018-12-28 05:30:00	0.00	0.000	0	0 0.000 0.000	0.000
## 2019-12-27 05:30:00	0.00	0.058	0	0 0.000 0.000	0.000
## 2020-12-18 05:30:00	0.00	0.048	0	0 0.000 0.000	0.000
##	MAHINDCIE	GRAPHITE	IFBIND	DRREDDY	SUNTECK NLCINDIA
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.000 0.00
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000 0.00
## 2017-12-29 05:30:00	0.000	0.097	0.002	0	0.091 0.00
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000 0.09
## 2019-12-27 05:30:00	0.000	0.000	0.000	0	0.000 0.00
## 2020-12-18 05:30:00	0.098	0.000	0.093	0	0.000 0.00
##	MOTILALOFS	ESCORTS	BLUEDART	ITC	SYMPHONY NATCOPHARM
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0 0.000
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0 0.001
## 2017-12-29 05:30:00	0.087	0.000	0.000	0	0 0.000
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0 0.000
## 2019-12-27 05:30:00	0.000	0.000	0.000	0	0 0.000
## 2020-12-18 05:30:00	0.000	0.084	0.081	0	0 0.000
##	JUBILANT	X3MINDIA	HATHWAY	HAWKINCOOK	JYOTHYLAB JKTYRE
## 2015-12-24 05:30:00	0.068	0.000	0.000	0.000	0.000 0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000 0
## 2017-12-29 05:30:00	0.000	0.067	0.000	0.000	0.000 0
## 2018-12-28 05:30:00	0.000	0.000	0.058	0.000	0.057 0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.057	0.000 0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000 0
##	GODREJPROP	HSCL	EDELWEISS	COLPAL	BRIGADE CEATLTD HINDPETRO
## 2015-12-24 05:30:00	0.000 0.000	0.000	0.000	0.000	0 0.000
## 2016-12-30 05:30:00	0.000 0.000	0.042	0.000	0.000	0 0.000
## 2017-12-29 05:30:00	0.048 0.045	0.000	0.000	0.000	0 0.039
## 2018-12-28 05:30:00	0.000 0.000	0.000	0.042	0.000	0 0.000
## 2019-12-27 05:30:00	0.000 0.000	0.000	0.000	0.041	0 0.000
## 2020-12-18 05:30:00	0.000 0.000	0.000	0.000	0.000	0 0.000
##	SUDARSCHM	ASTRAZEN	LAXMIMACH	ECLERX	SUNDRMFAST INDHOTEL
## 2015-12-24 05:30:00	0	0.000	0.000	0.035	0.000 0.000
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.035 0.000
## 2017-12-29 05:30:00	0	0.000	0.000	0.000	0.000 0.000
## 2018-12-28 05:30:00	0	0.038	0.000	0.000	0.000 0.035
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0.000 0.000
## 2020-12-18 05:30:00	0	0.000	0.036	0.000	0.000 0.000

```

##          IOLCP APLAPOLLO J.KBANK KANSAINER SANOFI ICICIBANK
## 2015-12-24 05:30:00 0.022      0.033      0     0.031      0     0.000
## 2016-12-30 05:30:00 0.000      0.000      0     0.000      0     0.000
## 2017-12-29 05:30:00 0.000      0.000      0     0.000      0     0.013
## 2018-12-28 05:30:00 0.000      0.000      0     0.000      0     0.016
## 2019-12-27 05:30:00 0.000      0.000      0     0.000      0     0.000
## 2020-12-18 05:30:00 0.000      0.000      0     0.000      0     0.000
##          SOLARINDS M.MFIN JKCEMENT JSWSTEEL BRITANNIA ITDC
## 2015-12-24 05:30:00      0      0      0      0     0.000 0.024
## 2016-12-30 05:30:00      0      0      0      0     0.000 0.000
## 2017-12-29 05:30:00      0      0      0      0     0.026 0.000
## 2018-12-28 05:30:00      0      0      0      0     0.000 0.000
## 2019-12-27 05:30:00      0      0      0      0     0.000 0.000
## 2020-12-18 05:30:00      0      0      0      0     0.000 0.000
##          BIRLACORPN
## 2015-12-24 05:30:00      0.000
## 2016-12-30 05:30:00      0.000
## 2017-12-29 05:30:00      0.000
## 2018-12-28 05:30:00      0.000
## 2019-12-27 05:30:00      0.022
## 2020-12-18 05:30:00      0.000

```

Weights for bt84



```

##          OMAXE RESPONIND JINDALSTEL WOCKPHARMA SCI ADANIPOWER

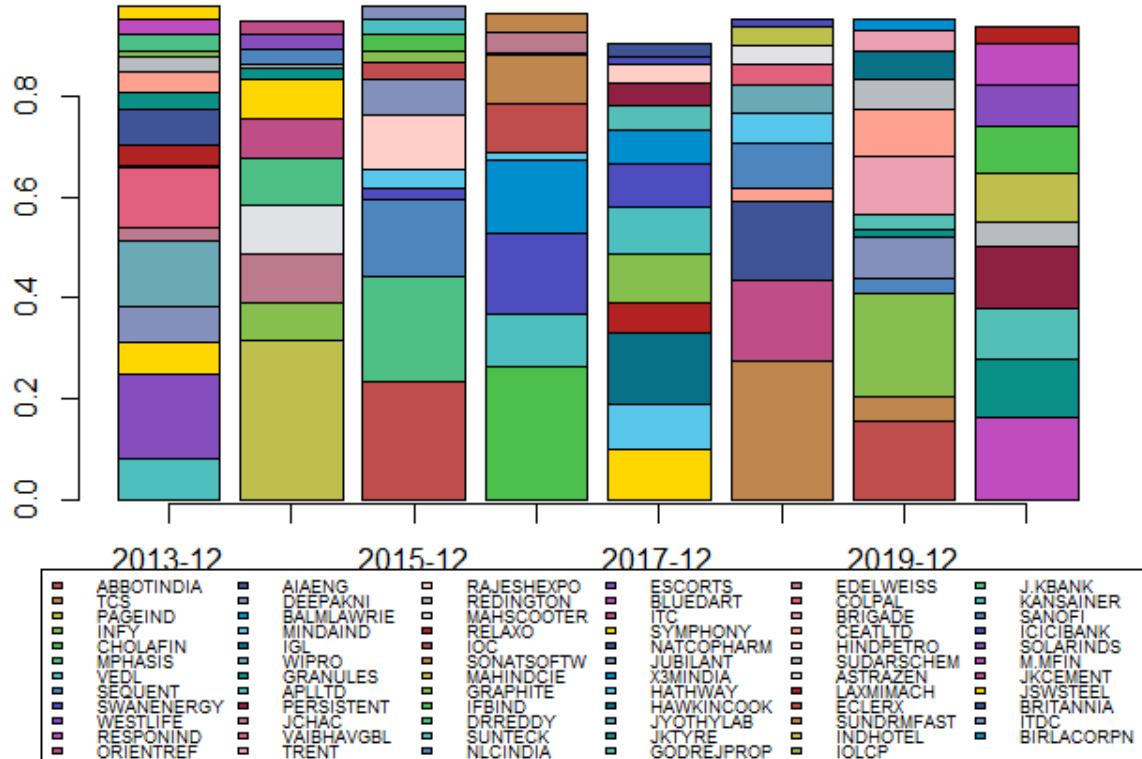
```

```

## 2015-12-24 05:30:00 0.000      0.00      0      0.000 0.00      0.000
## 2016-12-30 05:30:00 0.000      0.00      0      0.671 0.00      0.000
## 2017-12-29 05:30:00 0.000      0.73      0      0.000 0.00      0.000
## 2018-12-28 05:30:00 0.000      0.00      0      0.000 0.00      0.612
## 2019-12-27 05:30:00 0.000      0.00      0      0.000 0.65      0.000
## 2020-12-18 05:30:00 0.846      0.00      0      0.000 0.00      0.000
##          VAIBHAVGBL RAJESHEXPO KSCL ITDC   JSL HSCL TATAMETALI
## 2015-12-24 05:30:00      0      0.506 0.494      0 0.000 0.00      0.000
## 2016-12-30 05:30:00      0      0.000 0.000      0 0.000 0.00      0.329
## 2017-12-29 05:30:00      0      0.000 0.000      0 0.000 0.00      0.000
## 2018-12-28 05:30:00      0      0.000 0.000      0 0.388 0.00      0.000
## 2019-12-27 05:30:00      0      0.000 0.000      0 0.000 0.35      0.000
## 2020-12-18 05:30:00      0      0.000 0.000      0 0.000 0.00      0.000
##          IIFBIND  HEG TANLA
## 2015-12-24 05:30:00      0 0.00 0.000
## 2016-12-30 05:30:00      0 0.00 0.000
## 2017-12-29 05:30:00      0 0.27 0.000
## 2018-12-28 05:30:00      0 0.00 0.000
## 2019-12-27 05:30:00      0 0.00 0.000
## 2020-12-18 05:30:00      0 0.00 0.154

```

Weights for bt85



```

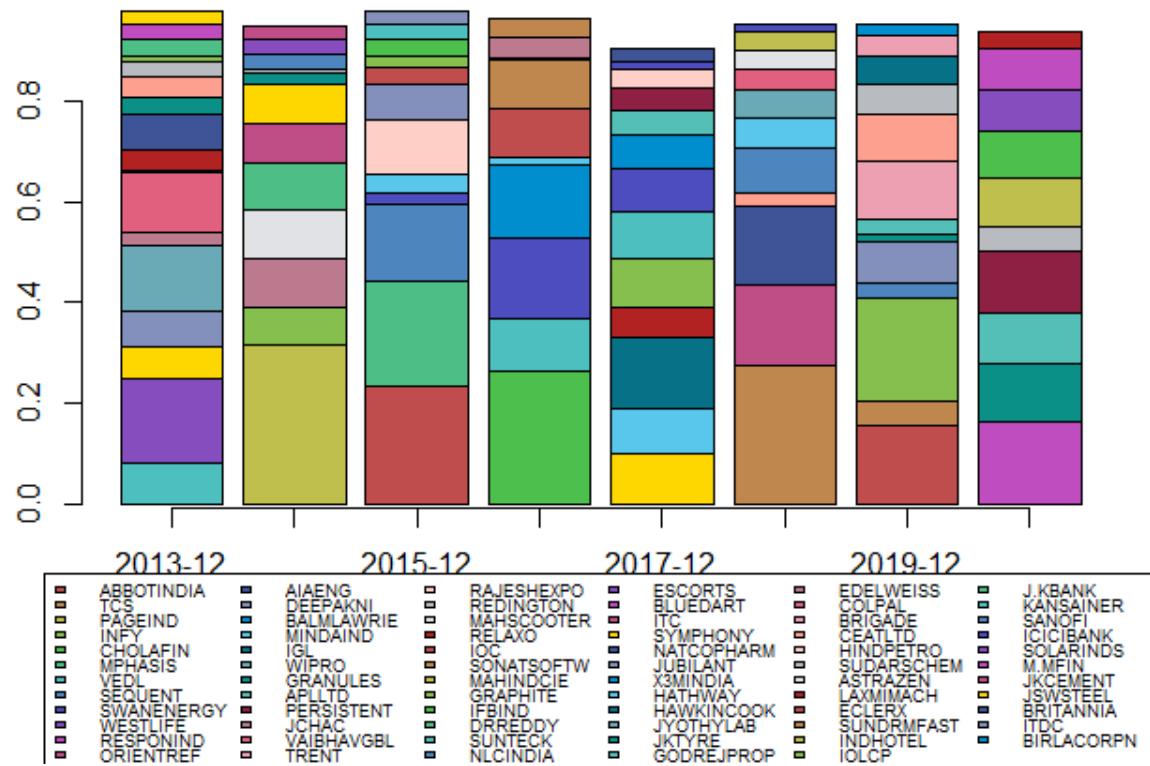
##          ABBOTINDIA    TCS PAGEIND INFY CHOLAFIN MPHASIS VEDL

```

2015-12-24 05:30:00 0.234 0.000 0 0.000 0.000 0.208 0.000
2016-12-30 05:30:00 0.000 0.000 0 0.000 0.265 0.000 0.104
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.274 0 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.155 0.049 0 0.206 0.000 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
SEQUENT SWANENERGY WESTLIFE RESPONIND ORIENTREF ASTRAL
2015-12-24 05:30:00 0.155 0.020 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.159 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.098
2018-12-28 05:30:00 0.000 0.000 0 0.000 0.163 0.000 0.000
2019-12-27 05:30:00 0.027 0.000 0 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0 0.164 0.000 0.000 0.000
AIAENG DEEPAKNI BALMLAWRIE MINDAIND IGL WIPRO GRANULES
2015-12-24 05:30:00 0.000 0.000 0.000 0.038 0.000 0 0.000
2016-12-30 05:30:00 0.000 0.000 0.145 0.014 0.000 0 0.000
2017-12-29 05:30:00 0.000 0.000 0.000 0.091 0.142 0 0.000
2018-12-28 05:30:00 0.157 0.000 0.000 0.000 0.000 0 0.000
2019-12-27 05:30:00 0.000 0.083 0.000 0.000 0.000 0 0.017
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0 0.114
APLLTD PERSISTENT JCHAC VAIBHAVGBL TRENT LINDEINDIA
2015-12-24 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0 0.000 0.024 0.000 0.000
2019-12-27 05:30:00 0.029 0.000 0 0.118 0.093 0.000 0.000
2020-12-18 05:30:00 0.100 0.124 0 0.000 0.000 0.000 0.000
RAJESHEXPO REDINGTON MAHSCOOTER RELAXO IOC SONATSOFTW
2015-12-24 05:30:00 0.11 0.000 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.00 0.000 0 0.000 0.099 0.098 0.000
2017-12-29 05:30:00 0.00 0.000 0 0.059 0.000 0.000 0.000
2018-12-28 05:30:00 0.00 0.000 0 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.00 0.058 0 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.00 0.048 0 0.000 0.000 0.000 0.000
MAHINDCIE GRAPHITE IFBIND DRREDDY SUNTECK NLCINDIA
2015-12-24 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2016-12-30 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2017-12-29 05:30:00 0.000 0.097 0.002 0 0.091 0.091 0.00
2018-12-28 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.09
2019-12-27 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2020-12-18 05:30:00 0.098 0.000 0.093 0 0.000 0.000 0.00
MOTILALOFS ESCORTS BLUEDART ITC SYMPHONY NATCOPHARM
2015-12-24 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000
2016-12-30 05:30:00 0.000 0.000 0.000 0 0 0.001 0.001
2017-12-29 05:30:00 0.087 0.000 0.000 0 0 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000

## 2020-12-18 05:30:00	0.000	0.084	0.081	0	0	0.000
##	JUBILANT X3MINDIA HATHWAY HAWKINCOOK JYOTHYLAB JKTYRE					
## 2015-12-24 05:30:00	0.068	0.000	0.000	0.000	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2017-12-29 05:30:00	0.000	0.067	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.058	0.000	0.057	0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.057	0.000	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	GODREJPROP HSCL EDELWEISS COLPAL BRIGADE CEATLTD HINDPETRO					
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.042	0.000	0.000	0
## 2017-12-29 05:30:00	0.048	0.045	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.042	0.000	0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0.041	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	SUDARSCHEN ASTRAZEN LAXMIMACH ECLERX SUNDRMFAST INDHOTEL					
## 2015-12-24 05:30:00	0	0.000	0.000	0.035	0.000	0.000
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.035	0.000
## 2017-12-29 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00	0	0.038	0.000	0.000	0.000	0.035
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0	0.000	0.036	0.000	0.000	0.000
##	IOLCP APLAPOLLO J.KBANK KANSAINER SANOFI ICICIBANK					
## 2015-12-24 05:30:00	0.022	0.033	0	0.031	0	0.000
## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0.000	0	0.013
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0	0.016
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0	0.000
## 2020-12-18 05:30:00	0.000	0.000	0	0.000	0	0.000
##	SOLARINDS M.MFIN JKCEMENT JSWSTEEL BRITANNIA ITDC					
## 2015-12-24 05:30:00	0	0	0	0	0.000	0.024
## 2016-12-30 05:30:00	0	0	0	0	0.000	0.000
## 2017-12-29 05:30:00	0	0	0	0	0.026	0.000
## 2018-12-28 05:30:00	0	0	0	0	0.000	0.000
## 2019-12-27 05:30:00	0	0	0	0	0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.000
##	BIRLACORPN					
## 2015-12-24 05:30:00	0.000					
## 2016-12-30 05:30:00	0.000					
## 2017-12-29 05:30:00	0.000					
## 2018-12-28 05:30:00	0.000					
## 2019-12-27 05:30:00	0.022					
## 2020-12-18 05:30:00	0.000					

Weights for bt86



```

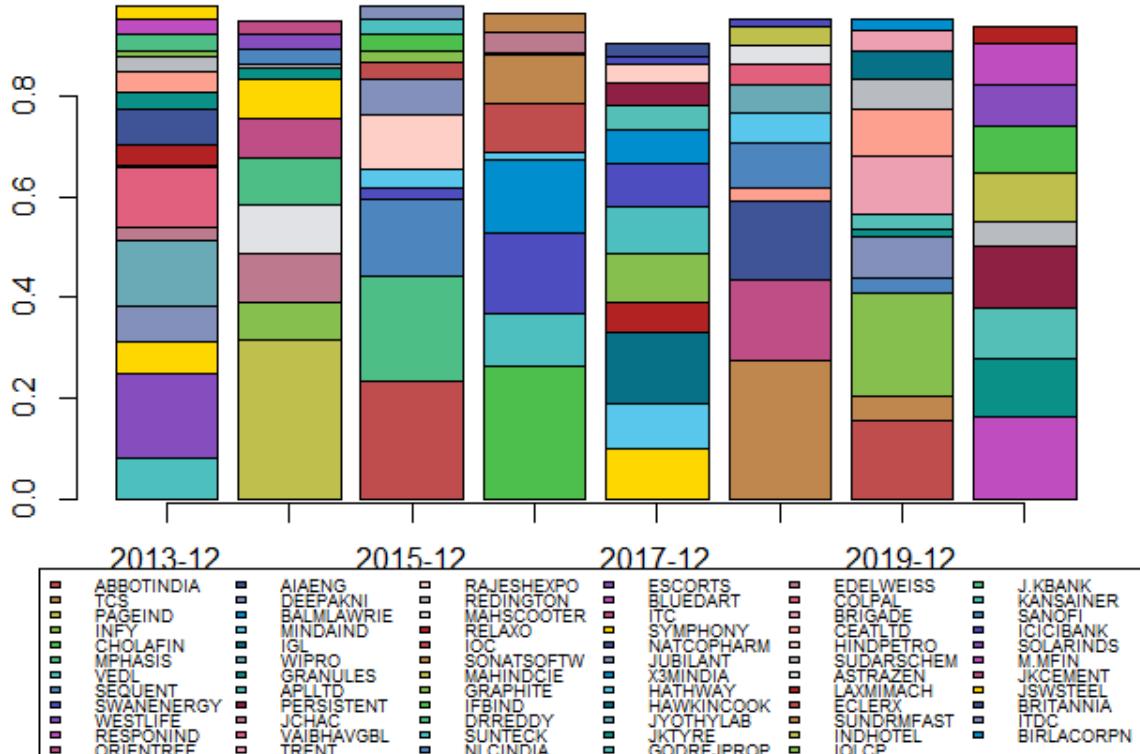
##          ABBOTINDIA      TCS PAGEIND     INFY CHOLAFIN MPHASIS VEDL
## 2015-12-24 05:30:00 0.234 0.000 0 0.000 0.000 0.208 0.000
## 2016-12-30 05:30:00 0.000 0.000 0 0.000 0.265 0.000 0.104
## 2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
## 2018-12-28 05:30:00 0.000 0.274 0 0.000 0.000 0.000 0.000
## 2019-12-27 05:30:00 0.155 0.049 0 0.206 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
##          SEQUENT SWANENERGY WESTLIFE RESPONIND ORIENTREF ASTRAL
## 2015-12-24 05:30:00 0.155 0.020 0 0.000 0.000 0.000
## 2016-12-30 05:30:00 0.000 0.159 0 0.000 0.000 0.000
## 2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.098
## 2018-12-28 05:30:00 0.000 0.000 0 0.000 0.163 0.000
## 2019-12-27 05:30:00 0.027 0.000 0 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.000 0.000 0 0.164 0.000 0.000
##          AIAENG DEEPAKNI BALMLAWRIE MINDAIND IGL WIPRO GRANULES
## 2015-12-24 05:30:00 0.000 0.000 0.000 0.038 0.000 0 0.000
## 2016-12-30 05:30:00 0.000 0.000 0.145 0.014 0.000 0 0.000
## 2017-12-29 05:30:00 0.000 0.000 0.000 0.091 0.142 0 0.000
## 2018-12-28 05:30:00 0.157 0.000 0.000 0.000 0.000 0 0.000
## 2019-12-27 05:30:00 0.000 0.083 0.000 0.000 0.000 0 0.017
## 2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0 0.114
##          APLLTD PERSISTENT JCHAC VAIBHAVGBL TRENT LINDEINDIA
## 2015-12-24 05:30:00 0.000 0.000 0 0 0.000 0.000

```

## 2016-12-30 05:30:00	0.000	0.000	0	0 0.000	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0 0.000	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0 0.000	0.024
## 2019-12-27 05:30:00	0.029	0.000	0	0 0.118	0.093
## 2020-12-18 05:30:00	0.100	0.124	0	0 0.000	0.000
## RAJESHEXPO	REDINGTON	MAHSOOTER	RELAXO	IOC	SONATSOFTW
## 2015-12-24 05:30:00	0.11	0.000	0	0 0.000	0.000
## 2016-12-30 05:30:00	0.00	0.000	0	0 0.000	0.098
## 2017-12-29 05:30:00	0.00	0.000	0	0 0.059	0.000
## 2018-12-28 05:30:00	0.00	0.000	0	0 0.000	0.000
## 2019-12-27 05:30:00	0.00	0.058	0	0 0.000	0.000
## 2020-12-18 05:30:00	0.00	0.048	0	0 0.000	0.000
## MAHINDCIE	GRAPHITE	IFBIND	DRREDDY	SUNTECK	NLCINDIA
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.000
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000
## 2017-12-29 05:30:00	0.000	0.097	0.002	0	0.091
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000
## 2019-12-27 05:30:00	0.000	0.000	0.000	0	0.000
## 2020-12-18 05:30:00	0.098	0.000	0.093	0	0.000
## MOTILALOFS	ESCORTS	BLUEDART	ITC	SYMPHONY	NATCOPHARM
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.000
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.001
## 2017-12-29 05:30:00	0.087	0.000	0.000	0	0.000
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000
## 2019-12-27 05:30:00	0.000	0.000	0.000	0	0.000
## 2020-12-18 05:30:00	0.000	0.084	0.081	0	0.000
## JUBILANT	X3MINDIA	HATHWAY	HAWKINCOOK	JYOTHYLAB	JKTYRE
## 2015-12-24 05:30:00	0.068	0.000	0.000	0.000	0.000
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.067	0.000	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.000	0.058	0.000	0.057
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.057	0.000
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000
## GODREJPROP	HSCL	EDELWEISS	COLPAL	BRIGADE	CEATLTD
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0 0.000
## 2016-12-30 05:30:00	0.000	0.000	0.042	0.000	0 0.000
## 2017-12-29 05:30:00	0.048	0.045	0.000	0.000	0 0.039
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.042	0 0.000
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0 0.000
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0 0.000
## SUDARSCHEN	ASTRAZEN	LAXMIMACH	ECLERX	SUNDRMFAST	INDHOTEL
## 2015-12-24 05:30:00	0	0.000	0.000	0.035	0.000 0.000
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.035 0.000
## 2017-12-29 05:30:00	0	0.000	0.000	0.000	0.000 0.000
## 2018-12-28 05:30:00	0	0.038	0.000	0.000	0.000 0.035
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0.000 0.000
## 2020-12-18 05:30:00	0	0.000	0.036	0.000	0.000 0.000

```
##          IOLCP APLAPOLLO J.KBANK KANSAINER SANOFI ICICIBANK
## 2015-12-24 05:30:00 0.022      0.033      0  0.031      0  0.000
## 2016-12-30 05:30:00 0.000      0.000      0  0.000      0  0.000
## 2017-12-29 05:30:00 0.000      0.000      0  0.000      0  0.013
## 2018-12-28 05:30:00 0.000      0.000      0  0.000      0  0.016
## 2019-12-27 05:30:00 0.000      0.000      0  0.000      0  0.000
## 2020-12-18 05:30:00 0.000      0.000      0  0.000      0  0.000
##          SOLARINDS M.MFIN JKCEMENT JSWSTEEL BRITANNIA ITDC
## 2015-12-24 05:30:00      0      0      0      0  0.000 0.024
## 2016-12-30 05:30:00      0      0      0      0  0.000 0.000
## 2017-12-29 05:30:00      0      0      0      0  0.026 0.000
## 2018-12-28 05:30:00      0      0      0      0  0.000 0.000
## 2019-12-27 05:30:00      0      0      0      0  0.000 0.000
## 2020-12-18 05:30:00      0      0      0      0  0.000 0.000
##          BIRLACORPN
## 2015-12-24 05:30:00      0.000
## 2016-12-30 05:30:00      0.000
## 2017-12-29 05:30:00      0.000
## 2018-12-28 05:30:00      0.000
## 2019-12-27 05:30:00      0.022
## 2020-12-18 05:30:00      0.000
```

Weights for bt87

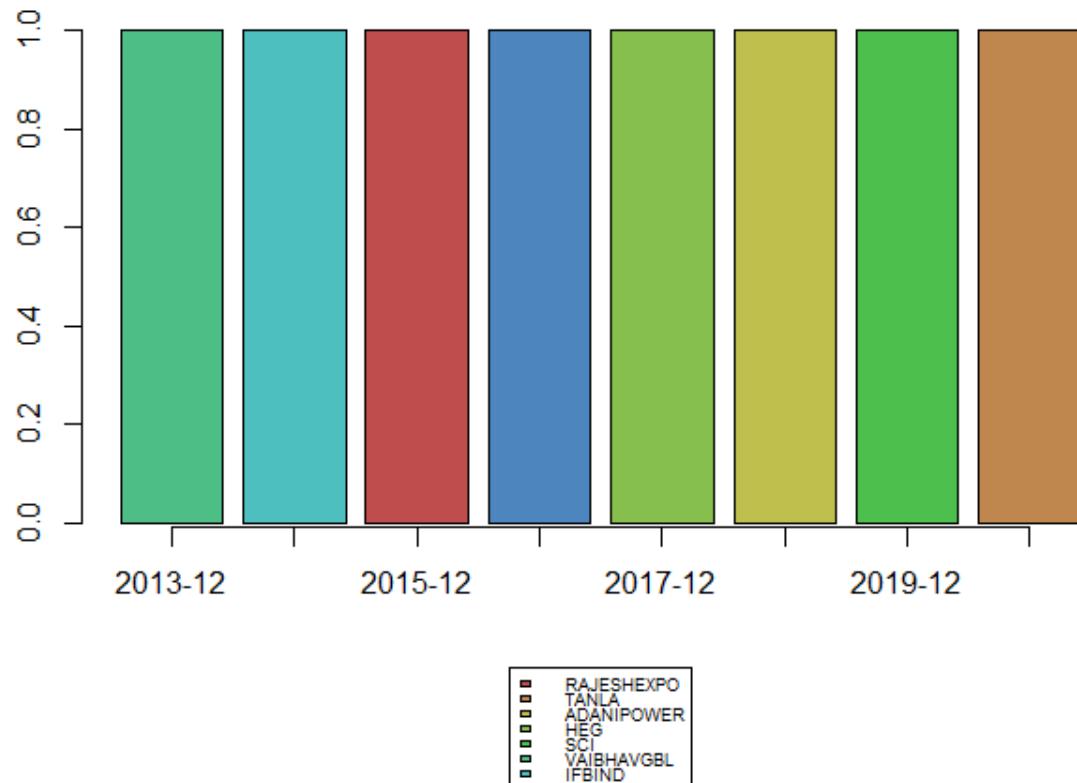


```
##          ABBOTINDIA TCS PAGEIND INFY CHOLAFIN MPHASIS VEDL
```

2015-12-24 05:30:00 0.234 0.000 0 0.000 0.000 0.208 0.000
2016-12-30 05:30:00 0.000 0.000 0 0.000 0.265 0.000 0.104
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.274 0 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.155 0.049 0 0.206 0.000 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
SEQUENT SWANENERGY WESTLIFE RESPONIND ORIENTREF ASTRAL
2015-12-24 05:30:00 0.155 0.020 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.159 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.098
2018-12-28 05:30:00 0.000 0.000 0 0.000 0.163 0.000 0.000
2019-12-27 05:30:00 0.027 0.000 0 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0 0.164 0.000 0.000 0.000
AIAENG DEEPAKNI BALMLAWRIE MINDAIND IGL WIPRO GRANULES
2015-12-24 05:30:00 0.000 0.000 0.000 0.038 0.000 0 0.000
2016-12-30 05:30:00 0.000 0.000 0.145 0.014 0.000 0 0.000
2017-12-29 05:30:00 0.000 0.000 0.000 0.091 0.142 0 0.000
2018-12-28 05:30:00 0.157 0.000 0.000 0.000 0.000 0 0.000
2019-12-27 05:30:00 0.000 0.083 0.000 0.000 0.000 0 0.017
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0 0.114
APLLTD PERSISTENT JCHAC VAIBHAVGBL TRENT LINDEINDIA
2015-12-24 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0 0.000 0.024 0.000 0.000
2019-12-27 05:30:00 0.029 0.000 0 0.118 0.093 0.000 0.000
2020-12-18 05:30:00 0.100 0.124 0 0.000 0.000 0.000 0.000
RAJESHEXPO REDINGTON MAHSCOOTER RELAXO IOC SONATSOFTW
2015-12-24 05:30:00 0.11 0.000 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.00 0.000 0 0.000 0.099 0.098 0.000
2017-12-29 05:30:00 0.00 0.000 0 0.059 0.000 0.000 0.000
2018-12-28 05:30:00 0.00 0.000 0 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.00 0.058 0 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.00 0.048 0 0.000 0.000 0.000 0.000
MAHINDCIE GRAPHITE IFBIND DRREDDY SUNTECK NLCINDIA
2015-12-24 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2016-12-30 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2017-12-29 05:30:00 0.000 0.097 0.002 0 0.091 0.091 0.00
2018-12-28 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.09
2019-12-27 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2020-12-18 05:30:00 0.098 0.000 0.093 0 0.000 0.000 0.00
MOTILALOFS ESCORTS BLUEDART ITC SYMPHONY NATCOPHARM
2015-12-24 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000
2016-12-30 05:30:00 0.000 0.000 0.000 0 0 0.001 0.001
2017-12-29 05:30:00 0.087 0.000 0.000 0 0 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000

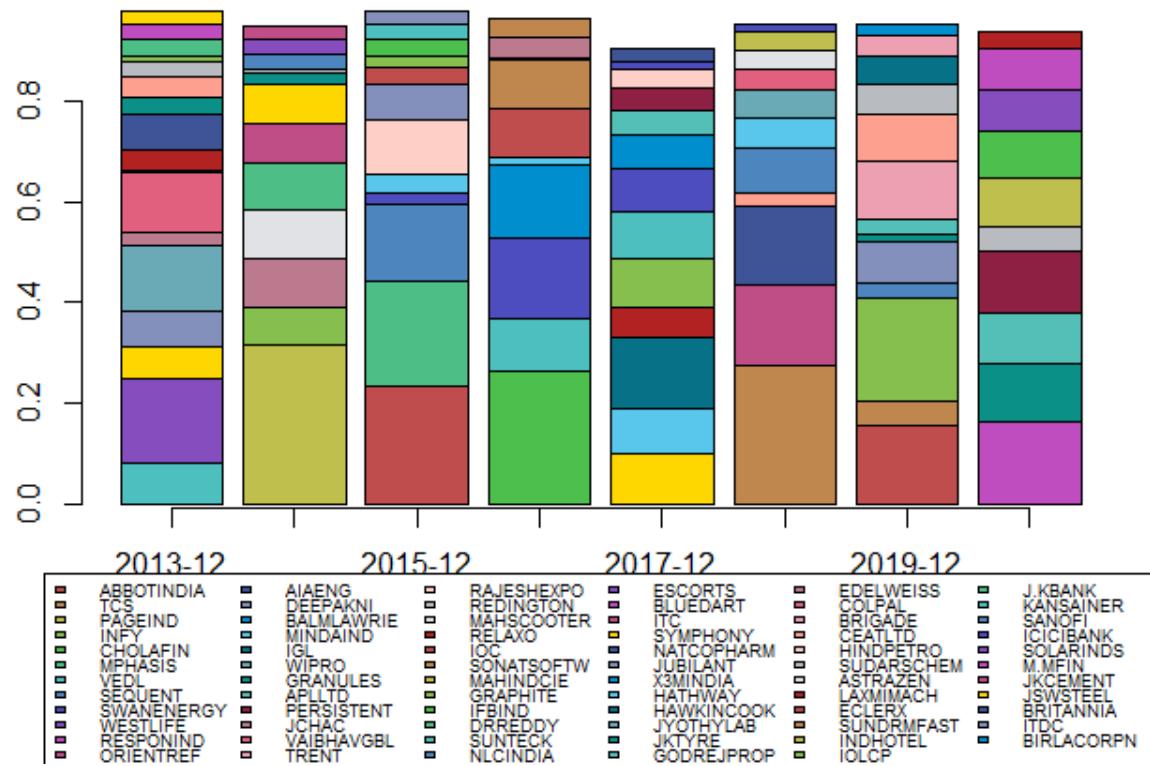
## 2020-12-18 05:30:00	0.000	0.084	0.081	0	0	0.000
##	JUBILANT X3MINDIA HATHWAY HAWKINCOOK JYOTHYLAB JKTYRE					
## 2015-12-24 05:30:00	0.068	0.000	0.000	0.000	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2017-12-29 05:30:00	0.000	0.067	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.058	0.000	0.057	0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.057	0.000	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	GODREJPROP HSCL EDELWEISS COLPAL BRIGADE CEATLTD HINDPETRO					
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.042	0.000	0.000	0
## 2017-12-29 05:30:00	0.048	0.045	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.042	0.000	0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0.041	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	SUDARSCHEN ASTRAZEN LAXMIMACH ECLERX SUNDRMFAST INDHOTEL					
## 2015-12-24 05:30:00	0	0.000	0.000	0.035	0.000	0.000
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.035	0.000
## 2017-12-29 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00	0	0.038	0.000	0.000	0.000	0.035
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0	0.000	0.036	0.000	0.000	0.000
##	IOLCP APLAPOLLO J.KBANK KANSAINER SANOFI ICICIBANK					
## 2015-12-24 05:30:00	0.022	0.033	0	0.031	0	0.000
## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0.000	0	0.013
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0	0.016
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0	0.000
## 2020-12-18 05:30:00	0.000	0.000	0	0.000	0	0.000
##	SOLARINDS M.MFIN JKCEMENT JSWSTEEL BRITANNIA ITDC					
## 2015-12-24 05:30:00	0	0	0	0	0.000	0.024
## 2016-12-30 05:30:00	0	0	0	0	0.000	0.000
## 2017-12-29 05:30:00	0	0	0	0	0.026	0.000
## 2018-12-28 05:30:00	0	0	0	0	0.000	0.000
## 2019-12-27 05:30:00	0	0	0	0	0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.000
##	BIRLACORPN					
## 2015-12-24 05:30:00	0.000					
## 2016-12-30 05:30:00	0.000					
## 2017-12-29 05:30:00	0.000					
## 2018-12-28 05:30:00	0.000					
## 2019-12-27 05:30:00	0.022					
## 2020-12-18 05:30:00	0.000					

Weights for bt88



```
##          RAJESHEXPO TANLA ADANIPOWER HEG SCI VAIBHAVGBL IFBIND
## 2015-12-24 05:30:00      1     0       0   0   0       0     0
## 2016-12-30 05:30:00      0     0       0   0   0       0     0
## 2017-12-29 05:30:00      0     0       0   1   0       0     0
## 2018-12-28 05:30:00      0     0       1   0   0       0     0
## 2019-12-27 05:30:00      0     0       0   0   1       0     0
## 2020-12-18 05:30:00      0     1       0   0   0       0     0
##          TATAMETALI
## 2015-12-24 05:30:00      0
## 2016-12-30 05:30:00      1
## 2017-12-29 05:30:00      0
## 2018-12-28 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-12-18 05:30:00      0
```

Weights for bt89



```

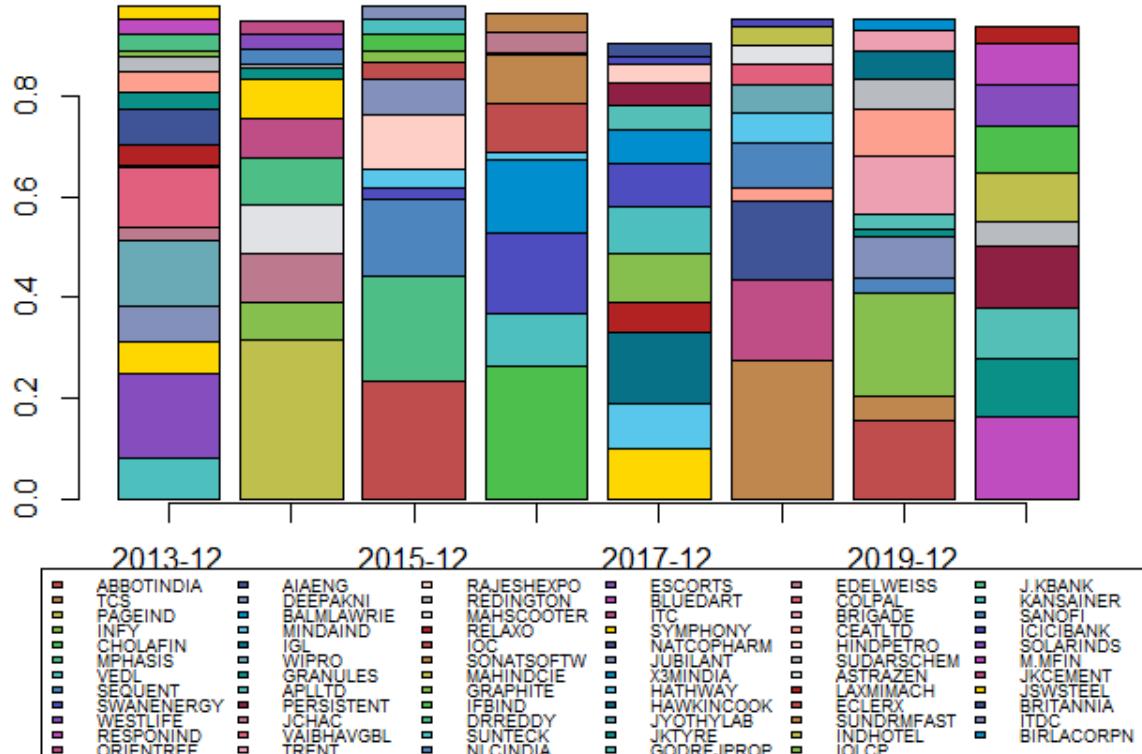
##          ABBOTINDIA    TCS PAGEIND   INFY CHOLAFIN MPHASIS VEDL
## 2015-12-24 05:30:00 0.234 0.000 0 0.000 0.000 0.208 0.000
## 2016-12-30 05:30:00 0.000 0.000 0 0.000 0.265 0.000 0.104
## 2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
## 2018-12-28 05:30:00 0.000 0.274 0 0.000 0.000 0.000 0.000
## 2019-12-27 05:30:00 0.155 0.049 0 0.206 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
##          SEQUENT SWANENERGY WESTLIFE RESPONIND ORIENTREF ASTRAL
## 2015-12-24 05:30:00 0.155 0.020 0 0.000 0.000 0.000
## 2016-12-30 05:30:00 0.000 0.159 0 0.000 0.000 0.000
## 2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.098
## 2018-12-28 05:30:00 0.000 0.000 0 0.000 0.163 0.000
## 2019-12-27 05:30:00 0.027 0.000 0 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.000 0.000 0 0.164 0.000 0.000
##          AIAENG DEEPAKNI BALMLAWRIE MINDAIND IGL WIPRO GRANULES
## 2015-12-24 05:30:00 0.000 0.000 0.000 0.038 0.000 0 0.000
## 2016-12-30 05:30:00 0.000 0.000 0.145 0.014 0.000 0 0.000
## 2017-12-29 05:30:00 0.000 0.000 0.000 0.091 0.142 0 0.000
## 2018-12-28 05:30:00 0.157 0.000 0.000 0.000 0.000 0 0.000
## 2019-12-27 05:30:00 0.000 0.083 0.000 0.000 0.000 0 0.017
## 2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0 0.114
##          APLLTD PERSISTENT JCHAC VAIBHAVGBL TRENT LINDEINDIA
## 2015-12-24 05:30:00 0.000 0.000 0 0 0.000 0.000

```

## 2016-12-30 05:30:00	0.000	0.000	0	0 0.000	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0 0.000	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0 0.000	0.024
## 2019-12-27 05:30:00	0.029	0.000	0	0 0.118	0.093
## 2020-12-18 05:30:00	0.100	0.124	0	0 0.000	0.000
## RAJESHEXPO	REDINGTON	MAHSOOTER	RELAXO	IOC	SONATSOFTW
## 2015-12-24 05:30:00	0.11	0.000	0	0 0.000	0.000
## 2016-12-30 05:30:00	0.00	0.000	0	0 0.000	0.098
## 2017-12-29 05:30:00	0.00	0.000	0	0 0.059	0.000
## 2018-12-28 05:30:00	0.00	0.000	0	0 0.000	0.000
## 2019-12-27 05:30:00	0.00	0.058	0	0 0.000	0.000
## 2020-12-18 05:30:00	0.00	0.048	0	0 0.000	0.000
## MAHINDCIE	GRAPHITE	IFBIND	DRREDDY	SUNTECK	NLCINDIA
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.000
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000
## 2017-12-29 05:30:00	0.000	0.097	0.002	0	0.091
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000
## 2019-12-27 05:30:00	0.000	0.000	0.000	0	0.000
## 2020-12-18 05:30:00	0.098	0.000	0.093	0	0.000
## MOTILALOFS	ESCORTS	BLUEDART	ITC	SYMPHONY	NATCOPHARM
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.000
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.001
## 2017-12-29 05:30:00	0.087	0.000	0.000	0	0.000
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000
## 2019-12-27 05:30:00	0.000	0.000	0.000	0	0.000
## 2020-12-18 05:30:00	0.000	0.084	0.081	0	0.000
## JUBILANT	X3MINDIA	HATHWAY	HAWKINCOOK	JYOTHYLAB	JKTYRE
## 2015-12-24 05:30:00	0.068	0.000	0.000	0.000	0.000
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.000	0.067	0.000	0.000	0.000
## 2018-12-28 05:30:00	0.000	0.000	0.058	0.000	0.057
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.057	0.000
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000
## GODREJPROP	HSCL	EDELWEISS	COLPAL	BRIGADE	CEATLTD
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0 0.000
## 2016-12-30 05:30:00	0.000	0.000	0.042	0.000	0 0.000
## 2017-12-29 05:30:00	0.048	0.045	0.000	0.000	0 0.039
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.042	0 0.000
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0 0.000
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0 0.000
## SUDARSCHEN	ASTRAZEN	LAXMIMACH	ECLERX	SUNDRMFAST	INDHOTEL
## 2015-12-24 05:30:00	0	0.000	0.000	0.035	0.000 0.000
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.035 0.000
## 2017-12-29 05:30:00	0	0.000	0.000	0.000	0.000 0.000
## 2018-12-28 05:30:00	0	0.038	0.000	0.000	0.000 0.035
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0.000 0.000
## 2020-12-18 05:30:00	0	0.000	0.036	0.000	0.000 0.000

```
##          IOLCP APLAPOLLO J.KBANK KANSAINER SANOFI ICICIBANK
## 2015-12-24 05:30:00 0.022      0.033      0  0.031      0  0.000
## 2016-12-30 05:30:00 0.000      0.000      0  0.000      0  0.000
## 2017-12-29 05:30:00 0.000      0.000      0  0.000      0  0.013
## 2018-12-28 05:30:00 0.000      0.000      0  0.000      0  0.016
## 2019-12-27 05:30:00 0.000      0.000      0  0.000      0  0.000
## 2020-12-18 05:30:00 0.000      0.000      0  0.000      0  0.000
##          SOLARINDS M.MFIN JKCEMENT JSWSTEEL BRITANNIA ITDC
## 2015-12-24 05:30:00      0      0      0      0  0.000 0.024
## 2016-12-30 05:30:00      0      0      0      0  0.000 0.000
## 2017-12-29 05:30:00      0      0      0      0  0.026 0.000
## 2018-12-28 05:30:00      0      0      0      0  0.000 0.000
## 2019-12-27 05:30:00      0      0      0      0  0.000 0.000
## 2020-12-18 05:30:00      0      0      0      0  0.000 0.000
##          BIRLACORPN
## 2015-12-24 05:30:00      0.000
## 2016-12-30 05:30:00      0.000
## 2017-12-29 05:30:00      0.000
## 2018-12-28 05:30:00      0.000
## 2019-12-27 05:30:00      0.022
## 2020-12-18 05:30:00      0.000
```

Weights for bt90

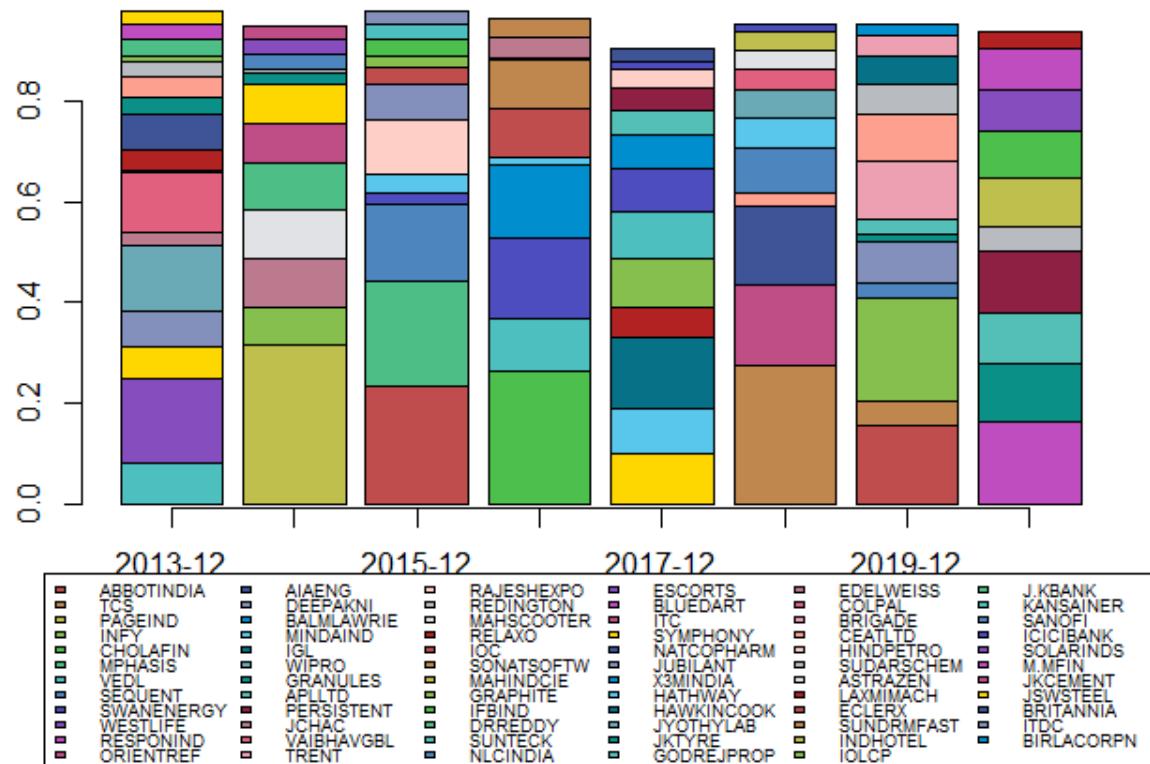


```
##          ABBOTINDIA TCS PAGEIND INFY CHOLAFIN MPHASIS VEDL
```

2015-12-24 05:30:00 0.234 0.000 0 0.000 0.000 0.208 0.000
2016-12-30 05:30:00 0.000 0.000 0 0.000 0.265 0.000 0.104
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.274 0 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.155 0.049 0 0.206 0.000 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
SEQUENT SWANENERGY WESTLIFE RESPONIND ORIENTREF ASTRAL
2015-12-24 05:30:00 0.155 0.020 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.159 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.098
2018-12-28 05:30:00 0.000 0.000 0 0.000 0.163 0.000 0.000
2019-12-27 05:30:00 0.027 0.000 0 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0 0.164 0.000 0.000 0.000
AIAENG DEEPAKNI BALMLAWRIE MINDAIND IGL WIPRO GRANULES
2015-12-24 05:30:00 0.000 0.000 0.000 0.038 0.000 0 0.000
2016-12-30 05:30:00 0.000 0.000 0.145 0.014 0.000 0 0.000
2017-12-29 05:30:00 0.000 0.000 0.000 0.091 0.142 0 0.000
2018-12-28 05:30:00 0.157 0.000 0.000 0.000 0.000 0 0.000
2019-12-27 05:30:00 0.000 0.083 0.000 0.000 0.000 0 0.017
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0 0.114
APLLTD PERSISTENT JCHAC VAIBHAVGBL TRENT LINDEINDIA
2015-12-24 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0 0.000 0.024 0.000 0.000
2019-12-27 05:30:00 0.029 0.000 0 0.118 0.093 0.000 0.000
2020-12-18 05:30:00 0.100 0.124 0 0.000 0.000 0.000 0.000
RAJESHEXPO REDINGTON MAHSCOOTER RELAXO IOC SONATSOFTW
2015-12-24 05:30:00 0.11 0.000 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.00 0.000 0 0.000 0.099 0.098 0.000
2017-12-29 05:30:00 0.00 0.000 0 0.059 0.000 0.000 0.000
2018-12-28 05:30:00 0.00 0.000 0 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.00 0.058 0 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.00 0.048 0 0.000 0.000 0.000 0.000
MAHINDCIE GRAPHITE IFBIND DRREDDY SUNTECK NLCINDIA
2015-12-24 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2016-12-30 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2017-12-29 05:30:00 0.000 0.097 0.002 0 0.091 0.091 0.00
2018-12-28 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.09
2019-12-27 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2020-12-18 05:30:00 0.098 0.000 0.093 0 0.000 0.000 0.00
MOTILALOFS ESCORTS BLUEDART ITC SYMPHONY NATCOPHARM
2015-12-24 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000
2016-12-30 05:30:00 0.000 0.000 0.000 0 0 0.001 0.001
2017-12-29 05:30:00 0.087 0.000 0.000 0 0 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000

## 2020-12-18 05:30:00	0.000	0.084	0.081	0	0	0.000
##	JUBILANT X3MINDIA HATHWAY HAWKINCOOK JYOTHYLAB JKTYRE					
## 2015-12-24 05:30:00	0.068	0.000	0.000	0.000	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2017-12-29 05:30:00	0.000	0.067	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.058	0.000	0.057	0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.057	0.000	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	GODREJPROP HSCL EDELWEISS COLPAL BRIGADE CEATLTD HINDPETRO					
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.042	0.000	0.000	0
## 2017-12-29 05:30:00	0.048	0.045	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.042	0.000	0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0.041	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	SUDARSCHEN ASTRAZEN LAXMIMACH ECLERX SUNDRMFAST INDHOTEL					
## 2015-12-24 05:30:00	0	0.000	0.000	0.035	0.000	0.000
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.035	0.000
## 2017-12-29 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00	0	0.038	0.000	0.000	0.000	0.035
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0	0.000	0.036	0.000	0.000	0.000
##	IOLCP APLAPOLLO J.KBANK KANSAINER SANOFI ICICIBANK					
## 2015-12-24 05:30:00	0.022	0.033	0	0.031	0	0.000
## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0.000	0	0.013
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0	0.016
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0	0.000
## 2020-12-18 05:30:00	0.000	0.000	0	0.000	0	0.000
##	SOLARINDS M.MFIN JKCEMENT JSWSTEEL BRITANNIA ITDC					
## 2015-12-24 05:30:00	0	0	0	0	0.000	0.024
## 2016-12-30 05:30:00	0	0	0	0	0.000	0.000
## 2017-12-29 05:30:00	0	0	0	0	0.026	0.000
## 2018-12-28 05:30:00	0	0	0	0	0.000	0.000
## 2019-12-27 05:30:00	0	0	0	0	0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.000
##	BIRLACORPN					
## 2015-12-24 05:30:00	0.000					
## 2016-12-30 05:30:00	0.000					
## 2017-12-29 05:30:00	0.000					
## 2018-12-28 05:30:00	0.000					
## 2019-12-27 05:30:00	0.022					
## 2020-12-18 05:30:00	0.000					

Weights for bt91



```

##          ABBOTINDIA    TCS PAGEIND   INFY CHOLAFIN MPHASIS VEDL
## 2015-12-24 05:30:00 0.234 0.000 0 0.000 0.000 0.208 0.000
## 2016-12-30 05:30:00 0.000 0.000 0 0.000 0.265 0.000 0.104
## 2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
## 2018-12-28 05:30:00 0.000 0.274 0 0.000 0.000 0.000 0.000
## 2019-12-27 05:30:00 0.155 0.049 0 0.206 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
##          SEQUENT SWANENERGY WESTLIFE RESPONIND ORIENTREF ASTRAL
## 2015-12-24 05:30:00 0.155 0.020 0 0.000 0.000 0.000
## 2016-12-30 05:30:00 0.000 0.159 0 0.000 0.000 0.000
## 2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.098
## 2018-12-28 05:30:00 0.000 0.000 0 0.000 0.163 0.000
## 2019-12-27 05:30:00 0.027 0.000 0 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.000 0.000 0 0.164 0.000 0.000
##          AIAENG DEEPAKNI BALMLAWRIE MINDAIND IGL WIPRO GRANULES
## 2015-12-24 05:30:00 0.000 0.000 0.000 0.038 0.000 0 0.000
## 2016-12-30 05:30:00 0.000 0.000 0.145 0.014 0.000 0 0.000
## 2017-12-29 05:30:00 0.000 0.000 0.000 0.091 0.142 0 0.000
## 2018-12-28 05:30:00 0.157 0.000 0.000 0.000 0.000 0 0.000
## 2019-12-27 05:30:00 0.000 0.083 0.000 0.000 0.000 0 0.017
## 2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0 0.114
##          APLLTD PERSISTENT JCHAC VAIBHAVGBL TRENT LINDEINDIA
## 2015-12-24 05:30:00 0.000 0.000 0 0 0.000 0.000

```

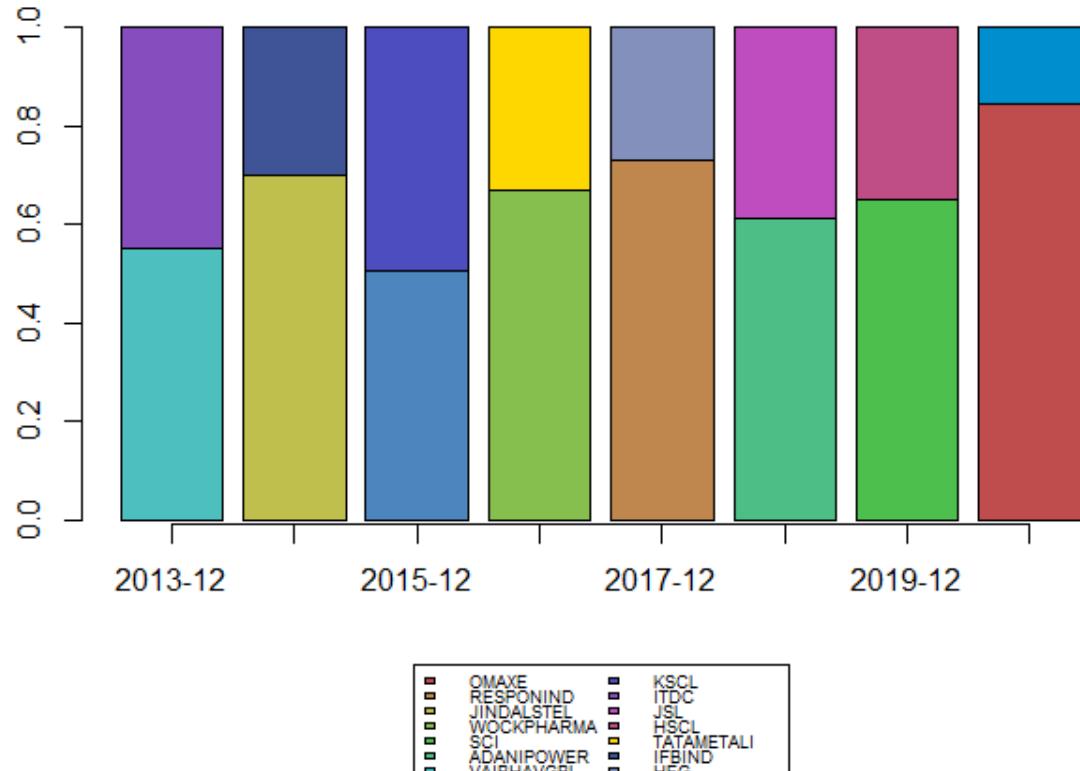
## 2016-12-30 05:30:00	0.000	0.000	0	0 0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.000	0	0 0.000	0.000	
## 2018-12-28 05:30:00	0.000	0.000	0	0 0.000	0.024	
## 2019-12-27 05:30:00	0.029	0.000	0	0 0.118	0.093	
## 2020-12-18 05:30:00	0.100	0.124	0	0 0.000	0.000	
## RAJESHEXPO	REDINGTON	MAHSOOTER	RELAXO	IOC	SONATSOFTW	
## 2015-12-24 05:30:00	0.11	0.000	0	0 0.000	0.000	
## 2016-12-30 05:30:00	0.00	0.000	0	0 0.000	0.098	
## 2017-12-29 05:30:00	0.00	0.000	0	0 0.059	0.000	
## 2018-12-28 05:30:00	0.00	0.000	0	0 0.000	0.000	
## 2019-12-27 05:30:00	0.00	0.058	0	0 0.000	0.000	
## 2020-12-18 05:30:00	0.00	0.048	0	0 0.000	0.000	
## MAHINDCIE	GRAPHITE	IFBIND	DRREDDY	SUNTECK	NLCINDIA	
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.000	
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000	
## 2017-12-29 05:30:00	0.000	0.097	0.002	0	0.091	
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000	
## 2019-12-27 05:30:00	0.000	0.000	0.000	0	0.000	
## 2020-12-18 05:30:00	0.098	0.000	0.093	0	0.000	
## MOTILALOFS	ESCORTS	BLUEDART	ITC	SYMPHONY	NATCOPHARM	
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.000	
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.001	
## 2017-12-29 05:30:00	0.087	0.000	0.000	0	0.000	
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000	
## 2019-12-27 05:30:00	0.000	0.000	0.000	0	0.000	
## 2020-12-18 05:30:00	0.000	0.084	0.081	0	0.000	
## JUBILANT	X3MINDIA	HATHWAY	HAWKINCOOK	JYOTHYLAB	JKTYRE	
## 2015-12-24 05:30:00	0.068	0.000	0.000	0.000	0.000	
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	
## 2017-12-29 05:30:00	0.000	0.067	0.000	0.000	0.000	
## 2018-12-28 05:30:00	0.000	0.000	0.058	0.000	0.057	
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.057	0.000	
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	
## GODREJPROP	HSCL	EDELWEISS	COLPAL	BRIGADE	CEATLTD	HINDPETRO
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0	0.000
## 2016-12-30 05:30:00	0.000	0.000	0.042	0.000	0.000	0.000
## 2017-12-29 05:30:00	0.048	0.045	0.000	0.000	0.000	0.039
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.042	0.000	0.000
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0.041	0.000
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0.000
## SUDARSCHEN	ASTRAZEN	LAXMIMACH	ECLERX	SUNDRMFAST	INDHOTEL	
## 2015-12-24 05:30:00	0	0.000	0.000	0.035	0.000	
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.035	
## 2017-12-29 05:30:00	0	0.000	0.000	0.000	0.000	
## 2018-12-28 05:30:00	0	0.038	0.000	0.000	0.000	
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0.000	
## 2020-12-18 05:30:00	0	0.000	0.036	0.000	0.000	

```

##          IOLCP APLAPOLLO J.KBANK KANSAINER SANOFI ICICIBANK
## 2015-12-24 05:30:00 0.022      0.033      0     0.031      0     0.000
## 2016-12-30 05:30:00 0.000      0.000      0     0.000      0     0.000
## 2017-12-29 05:30:00 0.000      0.000      0     0.000      0     0.013
## 2018-12-28 05:30:00 0.000      0.000      0     0.000      0     0.016
## 2019-12-27 05:30:00 0.000      0.000      0     0.000      0     0.000
## 2020-12-18 05:30:00 0.000      0.000      0     0.000      0     0.000
##          SOLARINDS M.MFIN JKCEMENT JSWSTEEL BRITANNIA ITDC
## 2015-12-24 05:30:00      0     0     0     0     0.000 0.024
## 2016-12-30 05:30:00      0     0     0     0     0.000 0.000
## 2017-12-29 05:30:00      0     0     0     0     0.026 0.000
## 2018-12-28 05:30:00      0     0     0     0     0.000 0.000
## 2019-12-27 05:30:00      0     0     0     0     0.000 0.000
## 2020-12-18 05:30:00      0     0     0     0     0.000 0.000
##          BIRLACORPN
## 2015-12-24 05:30:00      0.000
## 2016-12-30 05:30:00      0.000
## 2017-12-29 05:30:00      0.000
## 2018-12-28 05:30:00      0.000
## 2019-12-27 05:30:00      0.022
## 2020-12-18 05:30:00      0.000

```

Weights for bt92



```

##          OMAXE RESPONIND JINDALSTEL WOCKPHARMA SCI ADANIPOWER

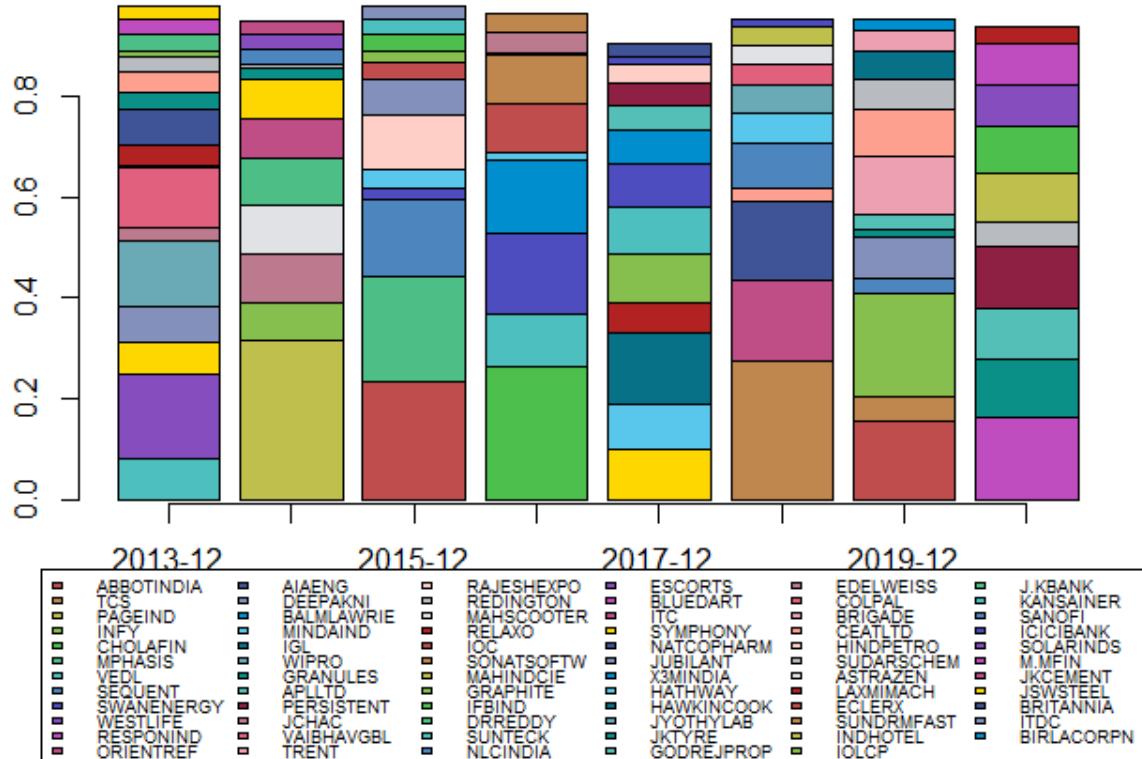
```

```

## 2015-12-24 05:30:00 0.000      0.00      0      0.000 0.00      0.000
## 2016-12-30 05:30:00 0.000      0.00      0      0.671 0.00      0.000
## 2017-12-29 05:30:00 0.000      0.73      0      0.000 0.00      0.000
## 2018-12-28 05:30:00 0.000      0.00      0      0.000 0.00      0.612
## 2019-12-27 05:30:00 0.000      0.00      0      0.000 0.65      0.000
## 2020-12-18 05:30:00 0.846      0.00      0      0.000 0.00      0.000
##          VAIBHAVGBL RAJESHEXPO KSCL ITDC   JSL HSCL TATAMETALI
## 2015-12-24 05:30:00      0      0.506 0.494      0 0.000 0.00      0.000
## 2016-12-30 05:30:00      0      0.000 0.000      0 0.000 0.00      0.329
## 2017-12-29 05:30:00      0      0.000 0.000      0 0.000 0.00      0.000
## 2018-12-28 05:30:00      0      0.000 0.000      0 0.388 0.00      0.000
## 2019-12-27 05:30:00      0      0.000 0.000      0 0.000 0.35      0.000
## 2020-12-18 05:30:00      0      0.000 0.000      0 0.000 0.00      0.000
##          IIFBIND  HEG TANLA
## 2015-12-24 05:30:00      0 0.00 0.000
## 2016-12-30 05:30:00      0 0.00 0.000
## 2017-12-29 05:30:00      0 0.27 0.000
## 2018-12-28 05:30:00      0 0.00 0.000
## 2019-12-27 05:30:00      0 0.00 0.000
## 2020-12-18 05:30:00      0 0.00 0.154

```

Weights for bt93



```

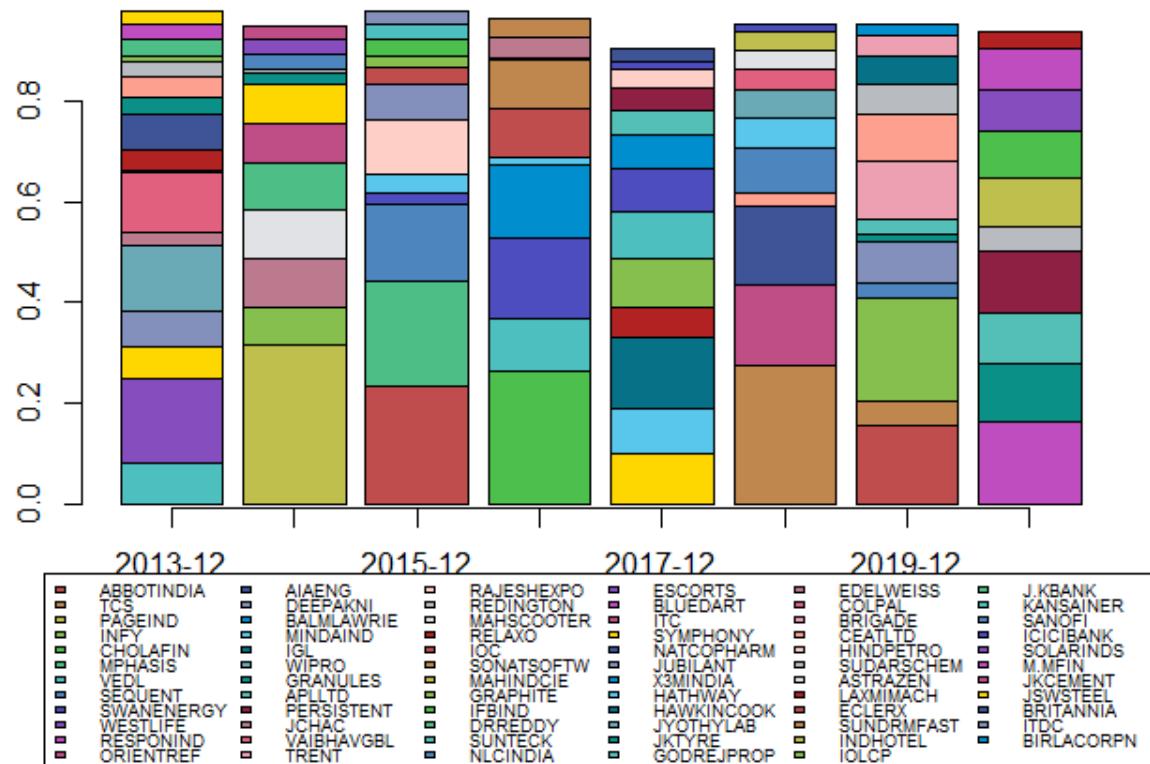
##          ABBOTINDIA    TCS PAGEIND    INFY CHOLAFIN MPHASIS    VEDL

```

2015-12-24 05:30:00 0.234 0.000 0 0.000 0.000 0.208 0.000
2016-12-30 05:30:00 0.000 0.000 0 0.000 0.265 0.000 0.104
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.274 0 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.155 0.049 0 0.206 0.000 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
SEQUENT SWANENERGY WESTLIFE RESPONIND ORIENTREF ASTRAL
2015-12-24 05:30:00 0.155 0.020 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.159 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.098
2018-12-28 05:30:00 0.000 0.000 0 0.000 0.163 0.000 0.000
2019-12-27 05:30:00 0.027 0.000 0 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0 0.164 0.000 0.000 0.000
AIAENG DEEPAKNI BALMLAWRIE MINDAIND IGL WIPRO GRANULES
2015-12-24 05:30:00 0.000 0.000 0.000 0.038 0.000 0 0.000
2016-12-30 05:30:00 0.000 0.000 0.145 0.014 0.000 0 0.000
2017-12-29 05:30:00 0.000 0.000 0.000 0.091 0.142 0 0.000
2018-12-28 05:30:00 0.157 0.000 0.000 0.000 0.000 0 0.000
2019-12-27 05:30:00 0.000 0.083 0.000 0.000 0.000 0 0.017
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0 0.114
APLLTD PERSISTENT JCHAC VAIBHAVGBL TRENT LINDEINDIA
2015-12-24 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0 0.000 0.024 0.000 0.024
2019-12-27 05:30:00 0.029 0.000 0 0.118 0.093 0.093 0.093
2020-12-18 05:30:00 0.100 0.124 0 0.000 0.000 0.000 0.000
RAJESHEXPO REDINGTON MAHSCOOTER RELAXO IOC SONATSOFTW
2015-12-24 05:30:00 0.11 0.000 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.00 0.000 0 0.000 0.099 0.098 0.098
2017-12-29 05:30:00 0.00 0.000 0 0.059 0.000 0.000 0.000
2018-12-28 05:30:00 0.00 0.000 0 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.00 0.058 0 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.00 0.048 0 0.000 0.000 0.000 0.000
MAHINDCIE GRAPHITE IFBIND DRREDDY SUNTECK NLCINDIA
2015-12-24 05:30:00 0.000 0.000 0.000 0 0.000 0.00 0.00
2016-12-30 05:30:00 0.000 0.000 0.000 0 0.000 0.00 0.00
2017-12-29 05:30:00 0.000 0.097 0.002 0 0.091 0.00 0.00
2018-12-28 05:30:00 0.000 0.000 0.000 0 0.000 0.09 0.09
2019-12-27 05:30:00 0.000 0.000 0.000 0 0.000 0.00 0.00
2020-12-18 05:30:00 0.098 0.000 0.093 0 0.000 0.00 0.00
MOTILALOFS ESCORTS BLUEDART ITC SYMPHONY NATCOPHARM
2015-12-24 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.000 0.000 0 0 0.001 0.000 0.001
2017-12-29 05:30:00 0.087 0.000 0.000 0 0 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000 0.000

## 2020-12-18 05:30:00	0.000	0.084	0.081	0	0	0.000
##	JUBILANT X3MINDIA HATHWAY HAWKINCOOK JYOTHYLAB JKTYRE					
## 2015-12-24 05:30:00	0.068	0.000	0.000	0.000	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2017-12-29 05:30:00	0.000	0.067	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.058	0.000	0.057	0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.057	0.000	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	GODREJPROP HSCL EDELWEISS COLPAL BRIGADE CEATLTD HINDPETRO					
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.042	0.000	0.000	0
## 2017-12-29 05:30:00	0.048	0.045	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.042	0.000	0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0.041	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	SUDARSCHEN ASTRAZEN LAXMIMACH ECLERX SUNDRMFAST INDHOTEL					
## 2015-12-24 05:30:00	0	0.000	0.000	0.035	0.000	0.000
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.035	0.000
## 2017-12-29 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00	0	0.038	0.000	0.000	0.000	0.035
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0	0.000	0.036	0.000	0.000	0.000
##	IOLCP APLAPOLLO J.KBANK KANSAINER SANOFI ICICIBANK					
## 2015-12-24 05:30:00	0.022	0.033	0	0.031	0	0.000
## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0.000	0	0.013
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0	0.016
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0	0.000
## 2020-12-18 05:30:00	0.000	0.000	0	0.000	0	0.000
##	SOLARINDS M.MFIN JKCEMENT JSWSTEEL BRITANNIA ITDC					
## 2015-12-24 05:30:00	0	0	0	0	0.000	0.024
## 2016-12-30 05:30:00	0	0	0	0	0.000	0.000
## 2017-12-29 05:30:00	0	0	0	0	0.026	0.000
## 2018-12-28 05:30:00	0	0	0	0	0.000	0.000
## 2019-12-27 05:30:00	0	0	0	0	0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.000
##	BIRLACORPN					
## 2015-12-24 05:30:00	0.000					
## 2016-12-30 05:30:00	0.000					
## 2017-12-29 05:30:00	0.000					
## 2018-12-28 05:30:00	0.000					
## 2019-12-27 05:30:00	0.022					
## 2020-12-18 05:30:00	0.000					

Weights for bt94



```

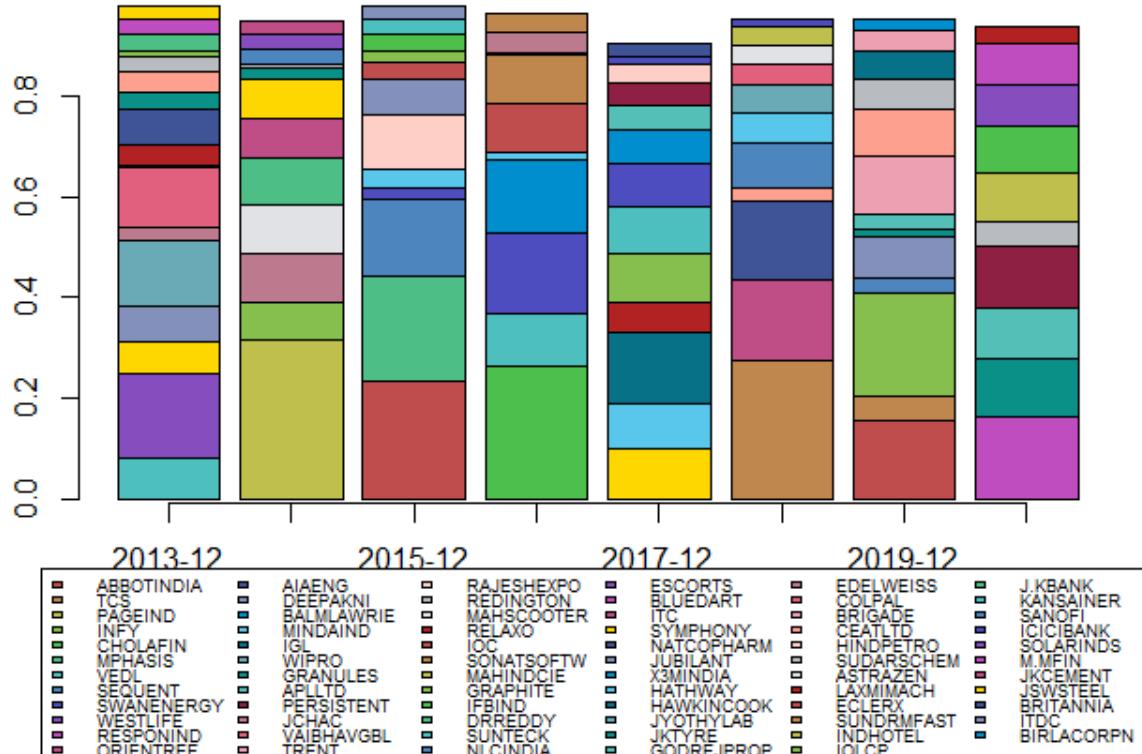
##          ABBOTINDIA    TCS PAGEIND   INFY CHOLAFIN MPHASIS VEDL
## 2015-12-24 05:30:00 0.234 0.000 0 0.000 0.000 0.208 0.000
## 2016-12-30 05:30:00 0.000 0.000 0 0.000 0.265 0.000 0.104
## 2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
## 2018-12-28 05:30:00 0.000 0.274 0 0.000 0.000 0.000 0.000
## 2019-12-27 05:30:00 0.155 0.049 0 0.206 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
##          SEQUENT SWANENERGY WESTLIFE RESPONIND ORIENTREF ASTRAL
## 2015-12-24 05:30:00 0.155 0.020 0 0.000 0.000 0.000
## 2016-12-30 05:30:00 0.000 0.159 0 0.000 0.000 0.000
## 2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.098
## 2018-12-28 05:30:00 0.000 0.000 0 0.000 0.163 0.000
## 2019-12-27 05:30:00 0.027 0.000 0 0.000 0.000 0.000
## 2020-12-18 05:30:00 0.000 0.000 0 0.164 0.000 0.000
##          AIAENG DEEPAKNI BALMLAWRIE MINDAIND IGL WIPRO GRANULES
## 2015-12-24 05:30:00 0.000 0.000 0.000 0.038 0.000 0 0.000
## 2016-12-30 05:30:00 0.000 0.000 0.145 0.014 0.000 0 0.000
## 2017-12-29 05:30:00 0.000 0.000 0.000 0.091 0.142 0 0.000
## 2018-12-28 05:30:00 0.157 0.000 0.000 0.000 0.000 0 0.000
## 2019-12-27 05:30:00 0.000 0.083 0.000 0.000 0.000 0 0.017
## 2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0 0.114
##          APLLTD PERSISTENT JCHAC VAIBHAVGBL TRENT LINDEINDIA
## 2015-12-24 05:30:00 0.000 0.000 0 0 0.000 0.000

```

## 2016-12-30 05:30:00	0.000	0.000	0	0 0.000	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0 0.000	0.000
## 2018-12-28 05:30:00	0.000	0.000	0	0 0.000	0.024
## 2019-12-27 05:30:00	0.029	0.000	0	0 0.118	0.093
## 2020-12-18 05:30:00	0.100	0.124	0	0 0.000	0.000
##	RAJESHEXPO	REDINGTON	MAHSOOTER	RELAXO	IOC SONATSOFTW
## 2015-12-24 05:30:00	0.11	0.000	0	0 0.000 0.000	0.000
## 2016-12-30 05:30:00	0.00	0.000	0	0 0.000 0.099	0.098
## 2017-12-29 05:30:00	0.00	0.000	0	0 0.059 0.000	0.000
## 2018-12-28 05:30:00	0.00	0.000	0	0 0.000 0.000	0.000
## 2019-12-27 05:30:00	0.00	0.058	0	0 0.000 0.000	0.000
## 2020-12-18 05:30:00	0.00	0.048	0	0 0.000 0.000	0.000
##	MAHINDCIE	GRAPHITE	IFBIND	DRREDDY	SUNTECK NLCINDIA
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0.000 0.00
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0.000 0.00
## 2017-12-29 05:30:00	0.000	0.097	0.002	0	0.091 0.00
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0.000 0.09
## 2019-12-27 05:30:00	0.000	0.000	0.000	0	0.000 0.00
## 2020-12-18 05:30:00	0.098	0.000	0.093	0	0.000 0.00
##	MOTILALOFS	ESCORTS	BLUEDART	ITC	SYMPHONY NATCOPHARM
## 2015-12-24 05:30:00	0.000	0.000	0.000	0	0 0.000
## 2016-12-30 05:30:00	0.000	0.000	0.000	0	0 0.001
## 2017-12-29 05:30:00	0.087	0.000	0.000	0	0 0.000
## 2018-12-28 05:30:00	0.000	0.000	0.000	0	0 0.000
## 2019-12-27 05:30:00	0.000	0.000	0.000	0	0 0.000
## 2020-12-18 05:30:00	0.000	0.084	0.081	0	0 0.000
##	JUBILANT	X3MINDIA	HATHWAY	HAWKINCOOK	JYOTHYLAB JKTYRE
## 2015-12-24 05:30:00	0.068	0.000	0.000	0.000	0.000 0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000 0
## 2017-12-29 05:30:00	0.000	0.067	0.000	0.000	0.000 0
## 2018-12-28 05:30:00	0.000	0.000	0.058	0.000	0.057 0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.057	0.000 0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000 0
##	GODREJPROP	HSCL	EDELWEISS	COLPAL	BRIGADE CEATLTD HINDPETRO
## 2015-12-24 05:30:00	0.000 0.000	0.000	0.000	0.000	0 0.000
## 2016-12-30 05:30:00	0.000 0.000	0.042	0.000	0.000	0 0.000
## 2017-12-29 05:30:00	0.048 0.045	0.000	0.000	0.000	0 0.039
## 2018-12-28 05:30:00	0.000 0.000	0.000	0.042	0.000	0 0.000
## 2019-12-27 05:30:00	0.000 0.000	0.000	0.000	0.041	0 0.000
## 2020-12-18 05:30:00	0.000 0.000	0.000	0.000	0.000	0 0.000
##	SUDARSCHM	ASTRAZEN	LAXMIMACH	ECLERX	SUNDRMFAST INDHOTEL
## 2015-12-24 05:30:00	0	0.000	0.000	0.035	0.000 0.000
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.035 0.000
## 2017-12-29 05:30:00	0	0.000	0.000	0.000	0.000 0.000
## 2018-12-28 05:30:00	0	0.038	0.000	0.000	0.000 0.035
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0.000 0.000
## 2020-12-18 05:30:00	0	0.000	0.036	0.000	0.000 0.000

```
##          IOLCP APLAPOLLO J.KBANK KANSAINER SANOFI ICICIBANK
## 2015-12-24 05:30:00 0.022      0.033      0  0.031      0  0.000
## 2016-12-30 05:30:00 0.000      0.000      0  0.000      0  0.000
## 2017-12-29 05:30:00 0.000      0.000      0  0.000      0  0.013
## 2018-12-28 05:30:00 0.000      0.000      0  0.000      0  0.016
## 2019-12-27 05:30:00 0.000      0.000      0  0.000      0  0.000
## 2020-12-18 05:30:00 0.000      0.000      0  0.000      0  0.000
##          SOLARINDS M.MFIN JKCEMENT JSWSTEEL BRITANNIA ITDC
## 2015-12-24 05:30:00      0      0      0      0  0.000 0.024
## 2016-12-30 05:30:00      0      0      0      0  0.000 0.000
## 2017-12-29 05:30:00      0      0      0      0  0.026 0.000
## 2018-12-28 05:30:00      0      0      0      0  0.000 0.000
## 2019-12-27 05:30:00      0      0      0      0  0.000 0.000
## 2020-12-18 05:30:00      0      0      0      0  0.000 0.000
##          BIRLACORPN
## 2015-12-24 05:30:00      0.000
## 2016-12-30 05:30:00      0.000
## 2017-12-29 05:30:00      0.000
## 2018-12-28 05:30:00      0.000
## 2019-12-27 05:30:00      0.022
## 2020-12-18 05:30:00      0.000
```

Weights for bt95

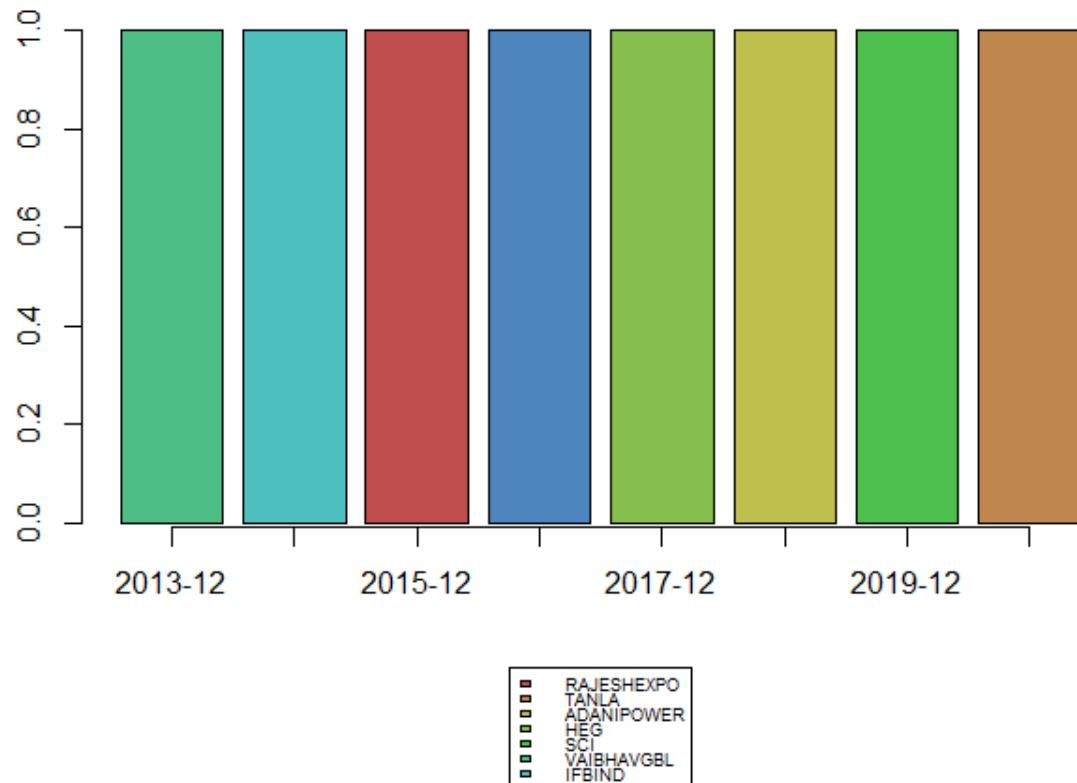


```
##          ABBOTINDIA TCS PAGEIND INFY CHOLAFIN MPHASIS VEDL
```

2015-12-24 05:30:00 0.234 0.000 0 0.000 0.000 0.208 0.000
2016-12-30 05:30:00 0.000 0.000 0 0.000 0.265 0.000 0.104
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.274 0 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.155 0.049 0 0.206 0.000 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
SEQUENT SWANENERGY WESTLIFE RESPONIND ORIENTREF ASTRAL
2015-12-24 05:30:00 0.155 0.020 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.159 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.098
2018-12-28 05:30:00 0.000 0.000 0 0.000 0.163 0.000 0.000
2019-12-27 05:30:00 0.027 0.000 0 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.000 0.000 0 0.164 0.000 0.000 0.000
AIAENG DEEPAKNI BALMLAWRIE MINDAIND IGL WIPRO GRANULES
2015-12-24 05:30:00 0.000 0.000 0.000 0.038 0.000 0 0.000
2016-12-30 05:30:00 0.000 0.000 0.145 0.014 0.000 0 0.000
2017-12-29 05:30:00 0.000 0.000 0.000 0.091 0.142 0 0.000
2018-12-28 05:30:00 0.157 0.000 0.000 0.000 0.000 0 0.000
2019-12-27 05:30:00 0.000 0.083 0.000 0.000 0.000 0 0.017
2020-12-18 05:30:00 0.000 0.000 0.000 0.000 0.000 0 0.114
APLLTD PERSISTENT JCHAC VAIBHAVGBL TRENT LINDEINDIA
2015-12-24 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2017-12-29 05:30:00 0.000 0.000 0 0.000 0.000 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0 0.000 0.024 0.000 0.000
2019-12-27 05:30:00 0.029 0.000 0 0.118 0.093 0.000 0.000
2020-12-18 05:30:00 0.100 0.124 0 0.000 0.000 0.000 0.000
RAJESHEXPO REDINGTON MAHSCOOTER RELAXO IOC SONATSOFTW
2015-12-24 05:30:00 0.11 0.000 0 0.000 0.000 0.000 0.000
2016-12-30 05:30:00 0.00 0.000 0 0.000 0.099 0.098 0.000
2017-12-29 05:30:00 0.00 0.000 0 0.059 0.000 0.000 0.000
2018-12-28 05:30:00 0.00 0.000 0 0.000 0.000 0.000 0.000
2019-12-27 05:30:00 0.00 0.058 0 0.000 0.000 0.000 0.000
2020-12-18 05:30:00 0.00 0.048 0 0.000 0.000 0.000 0.000
MAHINDCIE GRAPHITE IFBIND DRREDDY SUNTECK NLCINDIA
2015-12-24 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2016-12-30 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2017-12-29 05:30:00 0.000 0.097 0.002 0 0.091 0.091 0.00
2018-12-28 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.09
2019-12-27 05:30:00 0.000 0.000 0.000 0 0.000 0.000 0.00
2020-12-18 05:30:00 0.098 0.000 0.093 0 0.000 0.000 0.00
MOTILALOFS ESCORTS BLUEDART ITC SYMPHONY NATCOPHARM
2015-12-24 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000
2016-12-30 05:30:00 0.000 0.000 0.000 0 0 0.001 0.001
2017-12-29 05:30:00 0.087 0.000 0.000 0 0 0.000 0.000
2018-12-28 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000
2019-12-27 05:30:00 0.000 0.000 0.000 0 0 0.000 0.000

## 2020-12-18 05:30:00	0.000	0.084	0.081	0	0	0.000
##	JUBILANT X3MINDIA HATHWAY HAWKINCOOK JYOTHYLAB JKTYRE					
## 2015-12-24 05:30:00	0.068	0.000	0.000	0.000	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2017-12-29 05:30:00	0.000	0.067	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.058	0.000	0.057	0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.057	0.000	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	GODREJPROP HSCL EDELWEISS COLPAL BRIGADE CEATLTD HINDPETRO					
## 2015-12-24 05:30:00	0.000	0.000	0.000	0.000	0.000	0
## 2016-12-30 05:30:00	0.000	0.000	0.042	0.000	0.000	0
## 2017-12-29 05:30:00	0.048	0.045	0.000	0.000	0.000	0
## 2018-12-28 05:30:00	0.000	0.000	0.000	0.042	0.000	0
## 2019-12-27 05:30:00	0.000	0.000	0.000	0.000	0.041	0
## 2020-12-18 05:30:00	0.000	0.000	0.000	0.000	0.000	0
##	SUDARSCHEN ASTRAZEN LAXMIMACH ECLERX SUNDRMFAST INDHOTEL					
## 2015-12-24 05:30:00	0	0.000	0.000	0.035	0.000	0.000
## 2016-12-30 05:30:00	0	0.000	0.000	0.000	0.035	0.000
## 2017-12-29 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2018-12-28 05:30:00	0	0.038	0.000	0.000	0.000	0.035
## 2019-12-27 05:30:00	0	0.000	0.000	0.000	0.000	0.000
## 2020-12-18 05:30:00	0	0.000	0.036	0.000	0.000	0.000
##	IOLCP APLAPOLLO J.KBANK KANSAINER SANOFI ICICIBANK					
## 2015-12-24 05:30:00	0.022	0.033	0	0.031	0	0.000
## 2016-12-30 05:30:00	0.000	0.000	0	0.000	0	0.000
## 2017-12-29 05:30:00	0.000	0.000	0	0.000	0	0.013
## 2018-12-28 05:30:00	0.000	0.000	0	0.000	0	0.016
## 2019-12-27 05:30:00	0.000	0.000	0	0.000	0	0.000
## 2020-12-18 05:30:00	0.000	0.000	0	0.000	0	0.000
##	SOLARINDS M.MFIN JKCEMENT JSWSTEEL BRITANNIA ITDC					
## 2015-12-24 05:30:00	0	0	0	0	0.000	0.024
## 2016-12-30 05:30:00	0	0	0	0	0.000	0.000
## 2017-12-29 05:30:00	0	0	0	0	0.026	0.000
## 2018-12-28 05:30:00	0	0	0	0	0.000	0.000
## 2019-12-27 05:30:00	0	0	0	0	0.000	0.000
## 2020-12-18 05:30:00	0	0	0	0	0.000	0.000
##	BIRLACORPN					
## 2015-12-24 05:30:00	0.000					
## 2016-12-30 05:30:00	0.000					
## 2017-12-29 05:30:00	0.000					
## 2018-12-28 05:30:00	0.000					
## 2019-12-27 05:30:00	0.022					
## 2020-12-18 05:30:00	0.000					

Weights for bt96

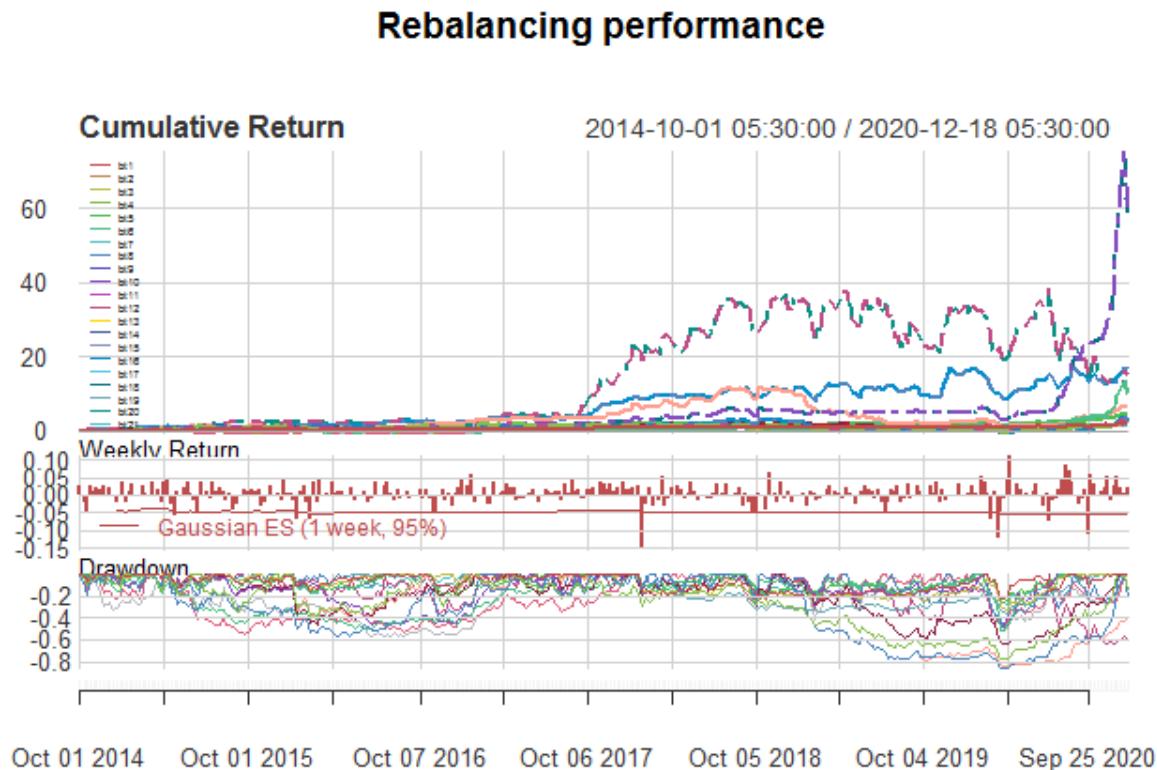


```
##          RAJESHEXPO TANLA ADANIPOWER HEG SCI VAIBHAVGBL IFBIND
## 2015-12-24 05:30:00      1     0       0   0   0       0     0
## 2016-12-30 05:30:00      0     0       0   0   0       0     0
## 2017-12-29 05:30:00      0     0       0   1   0       0     0
## 2018-12-28 05:30:00      0     0       1   0   0       0     0
## 2019-12-27 05:30:00      0     0       0   0   1       0     0
## 2020-12-18 05:30:00      0     1       0   0   0       0     0
##          TATAMETALI
## 2015-12-24 05:30:00      0
## 2016-12-30 05:30:00      1
## 2017-12-29 05:30:00      0
## 2018-12-28 05:30:00      0
## 2019-12-27 05:30:00      0
## 2020-12-18 05:30:00      0
```

```
btouts.rets.mx <- do.call(cbind, btouts.rets)
colnames(btouts.rets.mx) <- names(btouts.rets) # Was: paste("bt", 1:length(btout
mycharts.PerformanceSummary(btouts.rets.mx, main=paste0("Rebalancing performance
```

```
## Warning in mycharts.PerformanceSummary(btouts.rets.mx, main =
```

```
## paste0("Rebalancing performance")): Rf=0, geometric=TRUE, ylog=FALSE.
```



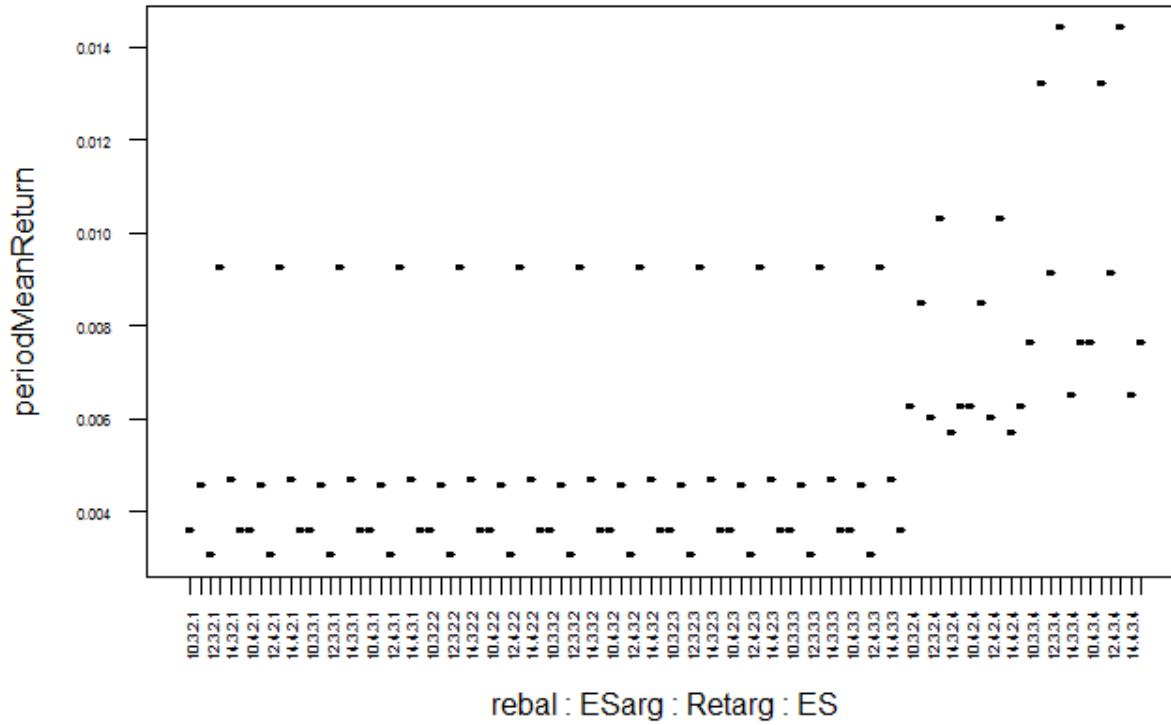
```
## NULL
```

Peek at a Latest Rebalancing: Weights and More

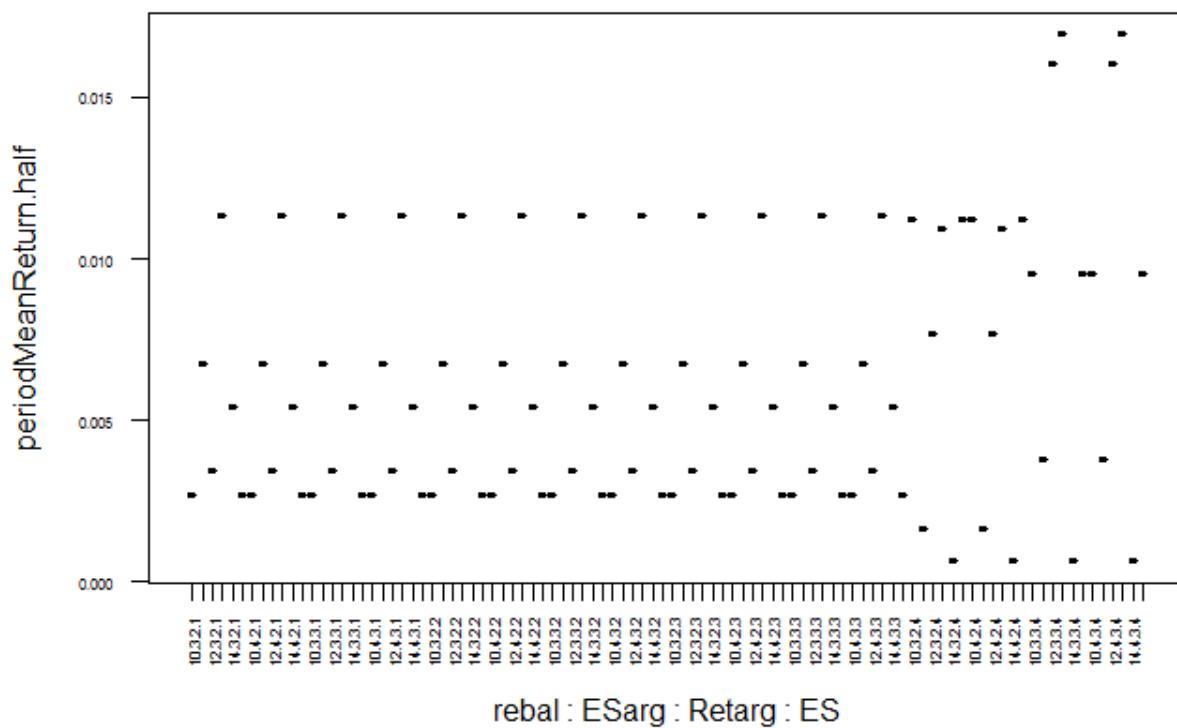
```
btExplain.df <- data.frame(bt=1:length(colnames(btouts.rets.mx)), fname=flist,
  periodMeanReturn=colMeans(btouts.rets.mx, na.rm=TRUE),
  periodMeanReturn.half=colMeans(btouts.rets.mx[1:round(nrow(btouts.rets.mx)/2)],
  stringsAsFactors=FALSE); str(btExplain.df)
```

```
## 'data.frame': 96 obs. of 4 variables:
## $ bt : int 1 2 3 4 5 6 7 8 9 10 ...
## $ fname : chr "bt-rebal9opt_pfESplus-ESarg4Retarg2ES1-20201231"
## $ periodMeanReturn : num 0.00362 0.00362 0.00362 0.00627 0.00362 ...
## $ periodMeanReturn.half: num 0.00272 0.00272 0.00272 0.01123 0.00272 ...
```

```
btExplain.df <- cbind(parseBtFnames(flist), btExplain.df, stringsAsFactors=FALSE  
# tmp3 <- btExplain.df[order(btExplain.df$periodMeanReturn),]; tail(tmp3)  
boxplot(periodMeanReturn ~ rebal+ESarg+Retarg+ES, data=btExplain.df, las=2, cex.
```



```
boxplot(periodMeanReturn.half ~ rebal+ESarg+Retarg+ES, data=btExplain.df, las=2,
```



```

# 2021Jan01:
# To avoid <1-year taxation, investor might prefer rebal[11,12,14] to rebalance
# instead of "quarters".
# rebal13 >> rebal[11?,14?, 9,10,12]. rebal10 too rebalances on quarters, but d
# as well. Considering first half periods, after rebal13, rebal11 (followed by
# better than the others for ES[1,2,3] and worse overall (rebal14 seems worst)
# Retarg2.
# So, 36-period Training (and Rolling) Window dominates (52-period or longer) !
# apparently.
# ES4 >> ES[1-3]. So, a (pass-through or) nil ES Objective allows Return Objecti
# to maximize freely.
# In ES4 scenarios when varying other optimization drivers, backtest performanc
# when Retarg3, i.e.,
# "unbridled" Return maximization, as opposed to mean-targeted Retarg2. In no
# scenarios, Retarg3 and Retarg2 seem to perform similarly.
# ESarg does not seem to matter.

```

```

Reqwt.rebalQtr <- Return.portfolio(R, rebalance_on="quarters") # rowSums(R) /
btouts.rets.IR <- InformationRatio(Ra=btouts.rets.mx, Rb=Reqwt.rebalQtr, scale=5
# coz 52 weeks in a year.
# [William Sharpe now recommends InformationRatio preferentially to the origin
# Ratio], says a vignette.
# IRhigh.ix <- which(btouts.rets.IR > 0)

```

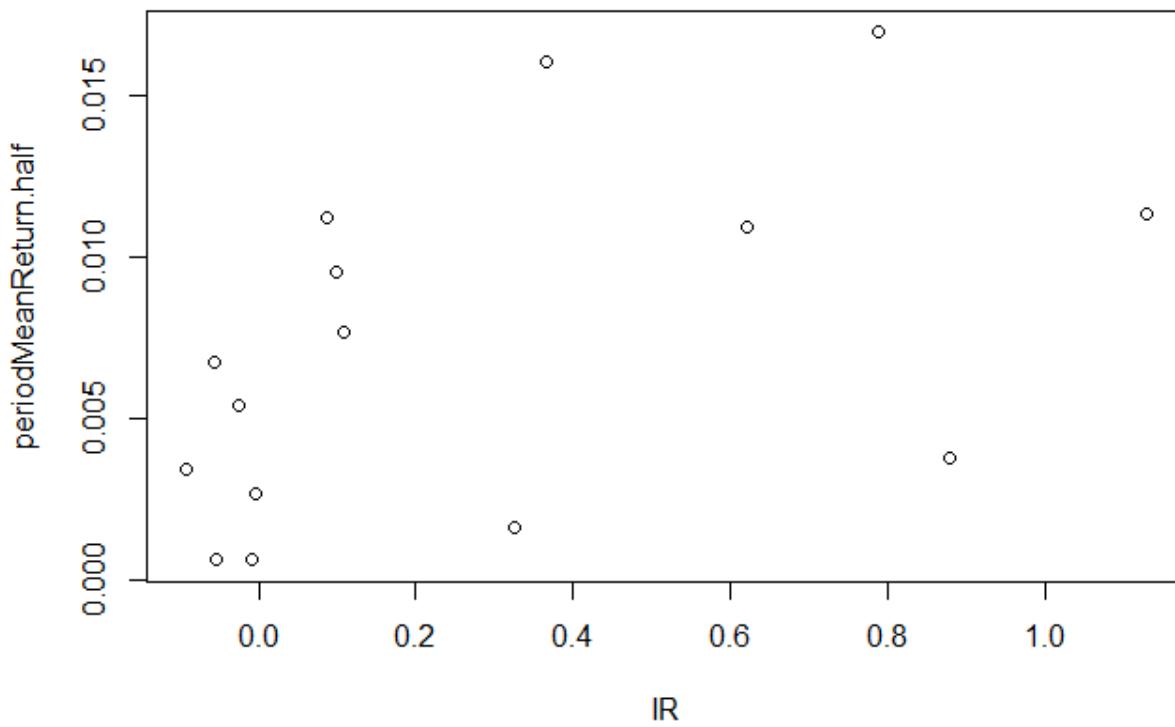
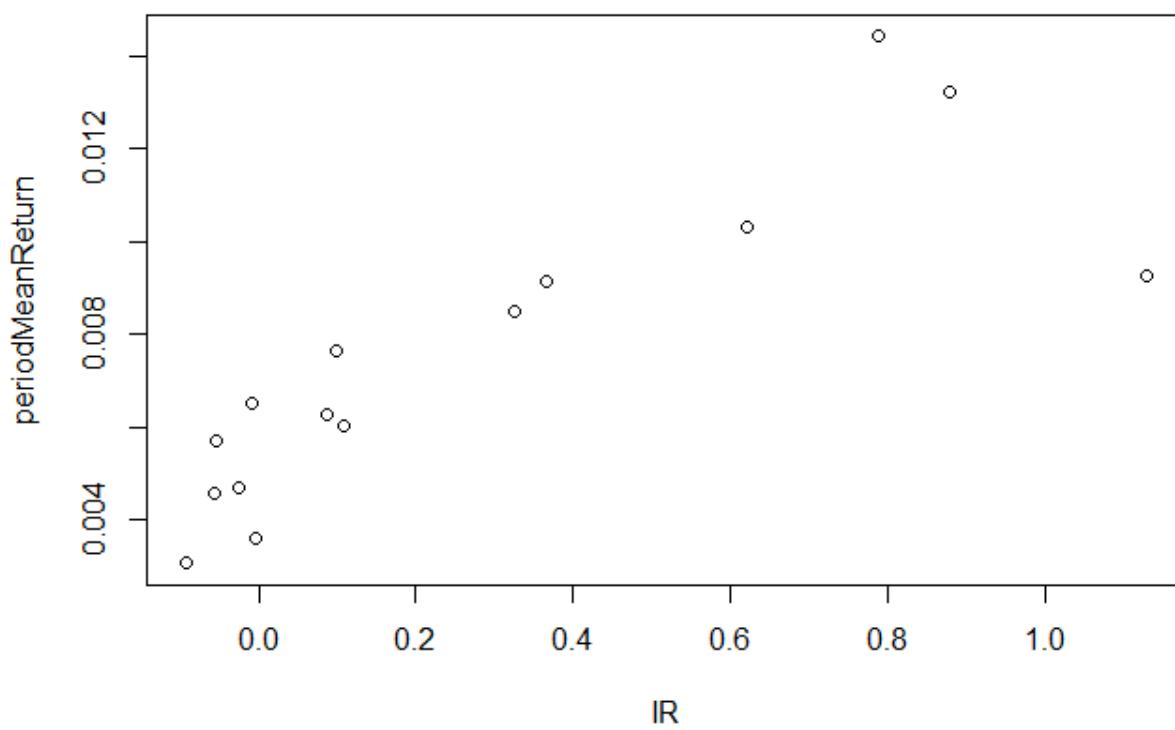
```
# (btouts.rets.IR[IRhigh.ix]) # tail(sort(btouts.rets.IR))
# IRhigh.ix.names <- dimnames(btouts.rets.IR)[[2]][IRhigh.ix] # c("bt1","bt2",..
btExplain.df <- cbind(btExplain.df, IR=btouts.rets.IR[1,], stringsAsFactors=FALSE)

## 'data.frame': 96 obs. of 9 variables:
## $ rebal : chr "9" "9" "9" "9" ...
## $ ESarg : chr "4" "4" "4" "4" ...
## $ Retarg : chr "2" "2" "2" "2" ...
## $ ES : chr "1" "2" "3" "4" ...
## $ bt : int 1 2 3 4 5 6 7 8 9 10 ...
## $ fname : chr "bt-rebal9opt_pfESplus-ESarg4Retarg2ES1-20201231"
## $ periodMeanReturn : num 0.00362 0.00362 0.00362 0.00627 0.00362 ...
## $ periodMeanReturn.half: num 0.00272 0.00272 0.00272 0.01123 0.00272 ...
## $ IR : num -0.00473 -0.00473 -0.00473 0.0879 -0.00473 ...

cRebalSpec.df <- as.data.frame(cRebalSpec, stringsAsFactors=FALSE)
cRebalSpec.df <- cbind(ix=1:nrow(cRebalSpec.df), cRebalSpec.df, stringsAsFactors=FALSE)
tmp2 <- do.call(rbind, lapply(as.integer(btExplain.df$rebal),
  FUN=function(ix) cRebalSpec.df[ix == cRebalSpec.df$ix,]))
# , stringsAsFactors=FALSE) # [1:nrow(btExplain.df)]
btExplain.df <- cbind(btExplain.df, tmp2, stringsAsFactors=FALSE); str(btExplain)

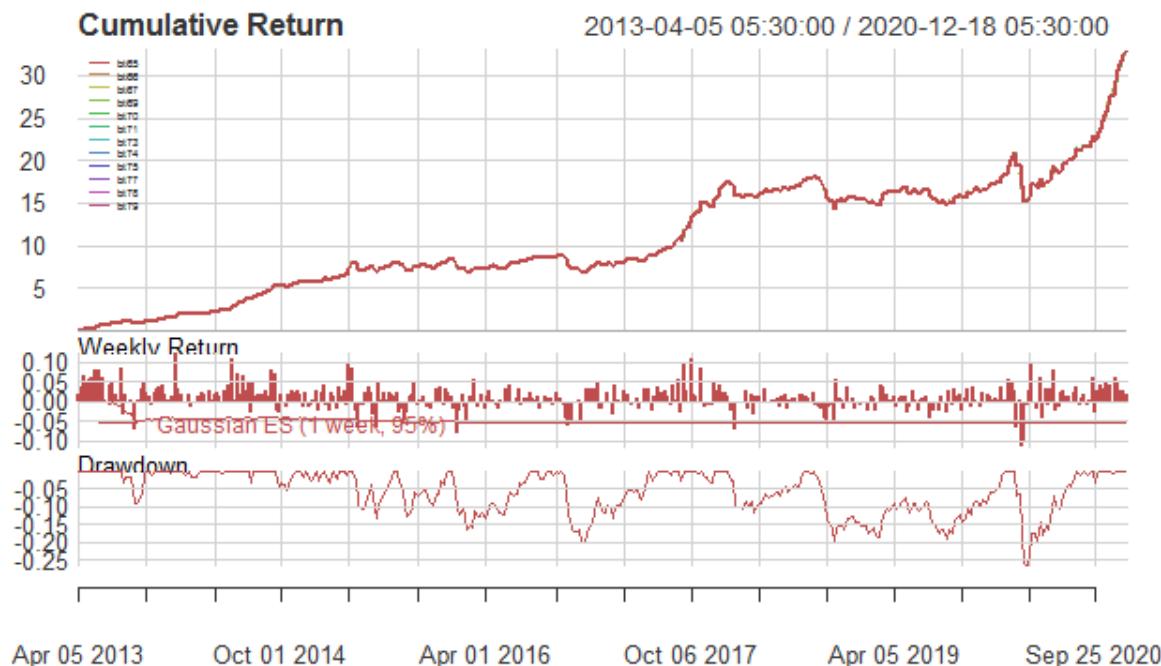
## 'data.frame': 96 obs. of 14 variables:
## $ rebal : chr "9" "9" "9" "9" ...
## $ ESarg : chr "4" "4" "4" "4" ...
## $ Retarg : chr "2" "2" "2" "2" ...
## $ ES : chr "1" "2" "3" "4" ...
## $ bt : int 1 2 3 4 5 6 7 8 9 10 ...
## $ fname : chr "bt-rebal9opt_pfESplus-ESarg4Retarg2ES1-20201231"
## $ periodMeanReturn : num 0.00362 0.00362 0.00362 0.00627 0.00362 ...
## $ periodMeanReturn.half: num 0.00272 0.00272 0.00272 0.01123 0.00272 ...
## $ IR : num -0.00473 -0.00473 -0.00473 0.0879 -0.00473 ...
## $ ix : int 9 9 9 9 9 9 9 9 9 ...
## $ momentFUN : chr "set.portfolio.moments" "set.portfolio.moments"
## $ rebalance_on : chr "quarters" "quarters" "quarters" "quarters" ...
## $ training_period : num 104 104 104 104 104 104 104 104 104 ...
## $ rolling_window : num 104 104 104 104 104 104 104 104 104 ...

plot(periodMeanReturn ~ IR, data=btExplain.df); plot(periodMeanReturn.half ~ IR,
  data=btExplain.df)
```



```
# Beware: there are overlapped points, since we did not jitter them.  
# So, IR cannot be rejected as a reasonable indicator of mean Return. And it is  
# accepted as an indicator of fund-management goodness.  
  
IR.interest.cutoffChosen <- c(0.5, 1)[2]  
bt.interestSet.names <-  
  rownames(btExplain.df[btExplain.df$IR >= IR.interest.cutoffChosen & TRUE,])  
bt.interestSet.names  
  
## [1] "bt65" "bt66" "bt67" "bt69" "bt70" "bt71" "bt73" "bt74" "bt75" "bt77"  
## [11] "bt78" "bt79"  
  
mycharts.PerformanceSummary(btouts.rets.mx[, bt.interestSet.names],  
  main=paste0("Rebalancing performance (InformationRatio >=", IR.interest.cutoff  
  
## Warning in mycharts.PerformanceSummary(btouts.rets.mx[, bt.interestSet.names],  
## Rf=0, geometric=TRUE, ylog=FALSE.
```

Rebalancing performance (InformationRatio >=1)



```
## NULL

# "bt77"

bt.interestSet <- c(77)
# c(24,16,8,20)
# bt.interestSet.not <- setdiff(colnames(btouts.rets.mx), paste0("bt", bt.inte
# mycharts.PerformanceSummary(btouts.rets.mx[,bt.interestSet.not],
#   main=paste0("Rebalancing performance"))
# mycharts.PerformanceSummary(btouts.rets.mx[,paste0("bt", c(4,12,20))],
#   main=paste0("Rebalancing performance"))

ix <- bt.interestSet[1] # Was 7. Corresponding to bt<ix>. Presently, ix=1,2,3 are
btout <- btouts[[ix]]
# names(btout)
# length(btout$opt_rebalancing)
# btout$opt_rebalancing[[1]] # first Rebalancing weights.
# btout$opt_rebalancing[[1]]$data_summary
btout.rebal.last <- btout$opt_rebalancing[[length(btout$opt_rebalancing)]] # weigh
# btout.rebal.last
tail(sort(btout.rebal.last$weights), 20)

## JKCEMENT MPHASIS HONAUT HINDPETRO TATACOMM HINDCOPPER
## 0.000000000 0.000000000 0.000000000 0.000000000 0.002701332 0.002776040
## TATAELXSI IDEA ZENSARTECH APOLLOHOSP LAXMIMACH REDINGTON
## 0.005231897 0.009671393 0.019001967 0.020172145 0.035598496 0.048115976
## BLUEDART ESCORTS IFBIND MAHINDCIE APLLTD GRANULES
## 0.080507742 0.083504416 0.093143320 0.097832826 0.100098027 0.114086973
## PERSISTENT RESPONDIND
## 0.124027283 0.163530168

# btout$opt_rebalancing[[length(btout$opt_rebalancing)]]$data_summary
# Brief optimization result and return/risk measures:
btout.summary <- summary(btout)
# btout.summary
head(extractObjectiveMeasures(btout)); tail(extractObjectiveMeasures(btout))

##                                     mean          ES
## 2013-03-28 05:30:00 0.03847186 -0.02055696
## 2013-06-28 05:30:00 0.03440486 -0.01920620
## 2013-09-27 05:30:00 0.02477663 -0.01526597
```

```
## 2013-12-27 05:30:00 0.02393043 -0.01727395
## 2014-03-28 05:30:00 0.02237974 -0.01483882
## 2014-06-27 05:30:00 0.03260340 -0.02366522

##                                mean          ES
## 2019-09-27 05:30:00 0.006106190 -0.0003786346
## 2019-12-27 05:30:00 0.007735650 -0.0006891503
## 2020-03-27 05:30:00 0.009886654  0.0182978811
## 2020-06-26 05:30:00 0.011600032  0.0050587370
## 2020-09-25 05:30:00 0.013372769  0.0094190932
## 2020-12-18 05:30:00 0.026236461 -0.0157854193

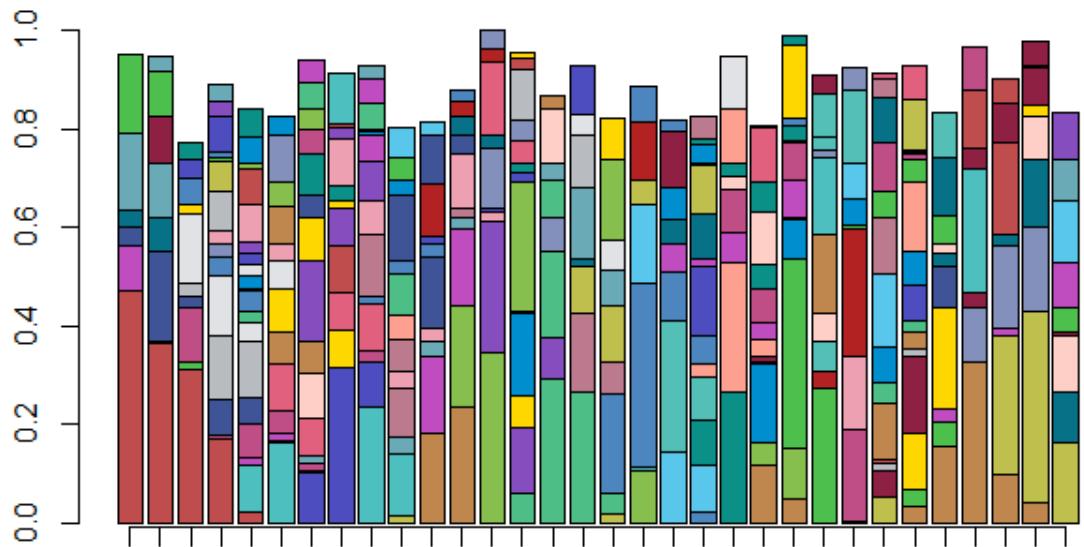
# par.ask=TRUE); plot.new()
if(FALSE){ # iff ES.contribution columns via specifying prisk= specified eg bt5
  chart.RiskBudget(btout, match.col="ES", risk.type="percentage", col=my_color) #
} # else continue

print(btout)

## ****
## PortfolioAnalytics Optimization with Rebalancing
## ****
##
## Call:
## optimize.portfolio.rebalancing(R = R, portfolio = pfESplus, optimize_method =
##       trace = TRUE, momentFUN = cRebalSpec$momentFUN[cRebalSpec.ix],
##       rebalance_on = cRebalSpec$rebalance_on[cRebalSpec.ix], training_period = cR
##       rolling_window = cRebalSpec$rolling_window[cRebalSpec.ix])
##
## Number of rebalancing dates: 32
## First rebalance date:
## [1] "2013-03-28"
## Last rebalance date:
## [1] "2020-12-18"
##
## Annualized Portfolio Rebalancing Return:
## [1] 0.5770982
##
## Annualized Portfolio Standard Deviation:
## [1] 0.2220162

rebalWts <- mychart.Weights(btout, main=paste0("Weights bt", ix)); print(tail(roun
```

Weights bt77



ESTLIFE	MARICO	DRREDDY	DCMSHIRAM	NAVINFLUOR	HINDPETRO	TVSMOTOR
ABBOTINDIA	GRAPHITE	NAUKRI	PIIND	ORIENTREF	PERSISTENT	SUPRAJIT
SPONIND	APLLTD	SONATSOFTW	MINDAIND	ASTRAL	TRENT	KOTAKBANK
PHASIS	ITDC	OMAXE	BALMLAWRIE	VSTIND	ESORTS	WELSPUNIND
S	SUNTECK	GUJALKALI	SANOFI	REDINGTON	PHOENIXLTD	KPRMILL
COLAFIN	MOTILALOFS	MANAPPURAM	HATHWAY	CENTRALBK	LINDEINDIA	POLYMED
RBL	IPCALAB	WHIRLPOOL	IDEA	AIAENG	TATASTEEL	MAHSCOOTER
VKRANGEEE	SWANENERGY	RELAXO	CANFINHOME	IOLCP	GRINDWELL	KEC
AGEIND	SYMPHONY	IGL	MINDTREE	NATCOPHARM	M.M.	IOC
SHH	RAJESHXPO	ITC	JCHAC	JKTYRE	AARTIND	MAHINDCIE
SEQUENT	BRITANNIA	HEG	ZYDUSWELL	IFBIND	JUBLFOOD	FORCEMOT
HTECH	GRANULES	TECHM	YDOTHYLAB	HINDUNILVR	APOLLOTYRE	TITAN
DEEPAKNI	WIPRO	ALKYLAMINE	VEDL	CRISIL	EMAMILTD	NTPC
	VAIBHAVGBL	ECLERX	EDELWEISS	DCBBANK	SPICEJET	UPL

```

##          WESTLIFE ABBOTINDIA RESPONIND MPHASIS    TCS CHOLAFIN KRBL
## 2019-09-27 05:30:00      0   0.031   0.000      0 0.034      0   0
## 2019-12-27 05:30:00      0   0.155   0.000      0 0.049      0   0
## 2020-03-27 05:30:00      0   0.326   0.000      0 0.000      0   0
## 2020-06-26 05:30:00      0   0.098   0.282      0 0.000      0   0
## 2020-09-25 05:30:00      0   0.040   0.388      0 0.000      0   0
## 2020-12-18 05:30:00      0   0.000   0.164      0 0.000      0   0
##          VAKRANGEEE PAGEIND PGHH SEQUENT HCLTECH INFY DEEPAKNI
## 2019-09-27 05:30:00      0     0     0 0.000      0 0.115      0.000
## 2019-12-27 05:30:00      0     0     0 0.027      0 0.206      0.083
## 2020-03-27 05:30:00      0     0     0 0.000      0 0.000      0.000
## 2020-06-26 05:30:00      0     0     0 0.015      0 0.000      0.000
## 2020-09-25 05:30:00      0     0     0 0.000      0 0.000      0.000
## 2020-12-18 05:30:00      0     0     0 0.000      0 0.000      0.000
##          INDIACEM MARICO GRAPHITE APLLTD ITDC SUNTECK MOTILALOFS
## 2019-09-27 05:30:00 0.000      0     0 0.000      0     0     0
## 2019-12-27 05:30:00 0.000      0     0 0.029      0     0     0
## 2020-03-27 05:30:00 0.109      0     0 0.000      0     0     0
## 2020-06-26 05:30:00 0.167      0     0 0.022      0     0     0
## 2020-09-25 05:30:00 0.172      0     0 0.138      0     0     0
## 2020-12-18 05:30:00 0.000      0     0 0.100      0     0     0
##          IPCALAB SWANENERGY SYMPHONY RAJESHXPO BRITANNIA GRANULES
## 2019-09-27 05:30:00 0.155      0     0     0     0     0 0.000

```

## 2019-12-27 05:30:00	0.000	0	0	0	0	0.017
## 2020-03-27 05:30:00	0.032	0	0	0	0	0.000
## 2020-06-26 05:30:00	0.000	0	0	0	0	0.000
## 2020-09-25 05:30:00	0.000	0	0	0	0	0.087
## 2020-12-18 05:30:00	0.000	0	0	0	0	0.114
##	WIPRO VAIBHAVGBL INDHOTEL DRREDDY NAUKRI SONATSOFTW OMAXE					
## 2019-09-27 05:30:00	0.015	0	0.00	0.037	0	0
## 2019-12-27 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0.19	0.000	0	0
## 2020-09-25 05:30:00	0.000	0	0.00	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0.00	0.000	0	0
##	GUJALKALI MANAPPURAM WHIRLPOOL RELAXO IGL ITC HEG TECHM					
## 2019-09-27 05:30:00	0	0.02	0.000	0 0.073	0	0
## 2019-12-27 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-03-27 05:30:00	0	0.00	0.252	0 0.000	0	0
## 2020-06-26 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-09-25 05:30:00	0	0.00	0.000	0 0.000	0	0
## 2020-12-18 05:30:00	0	0.00	0.000	0 0.000	0	0
##	ALKYLAMINE ECLERX JSWSTEEL DCMSHRIRAM PIIND MINDAIND					
## 2019-09-27 05:30:00	0.000	0	0	0.069	0	0
## 2019-12-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-03-27 05:30:00	0.000	0	0	0.000	0	0
## 2020-06-26 05:30:00	0.000	0	0	0.000	0	0
## 2020-09-25 05:30:00	0.024	0	0	0.000	0	0
## 2020-12-18 05:30:00	0.000	0	0	0.000	0	0
##	BALMILAWRIE SANOFI HATHWAY IDEA CANFINHOME MINDTREE JCHAC					
## 2019-09-27 05:30:00	0	0	0 0.000	0	0	0
## 2019-12-27 05:30:00	0	0	0 0.000	0	0	0
## 2020-03-27 05:30:00	0	0	0 0.042	0	0	0
## 2020-06-26 05:30:00	0	0	0 0.077	0	0	0
## 2020-09-25 05:30:00	0	0	0 0.073	0	0	0
## 2020-12-18 05:30:00	0	0	0 0.010	0	0	0
##	ZYDUSWELL JYOTHYLAB VEDL EDELWEISS APLAPOLLO NAVINFLUOR					
## 2019-09-27 05:30:00	0.14	0	0	0	0	0.000
## 2019-12-27 05:30:00	0.00	0	0	0	0	0.000
## 2020-03-27 05:30:00	0.00	0	0	0	0	0.118
## 2020-06-26 05:30:00	0.00	0	0	0	0	0.049
## 2020-09-25 05:30:00	0.00	0	0	0	0	0.000
## 2020-12-18 05:30:00	0.00	0	0	0	0	0.000
##	ORIENTREF ASTRAL VSTIND REDINGTON CENTRALBK AIAENG IOLCP					
## 2019-09-27 05:30:00	0	0	0	0.048	0	0
## 2019-12-27 05:30:00	0	0	0	0.058	0	0
## 2020-03-27 05:30:00	0	0	0	0.000	0	0
## 2020-06-26 05:30:00	0	0	0	0.000	0	0
## 2020-09-25 05:30:00	0	0	0	0.000	0	0
## 2020-12-18 05:30:00	0	0	0	0.048	0	0

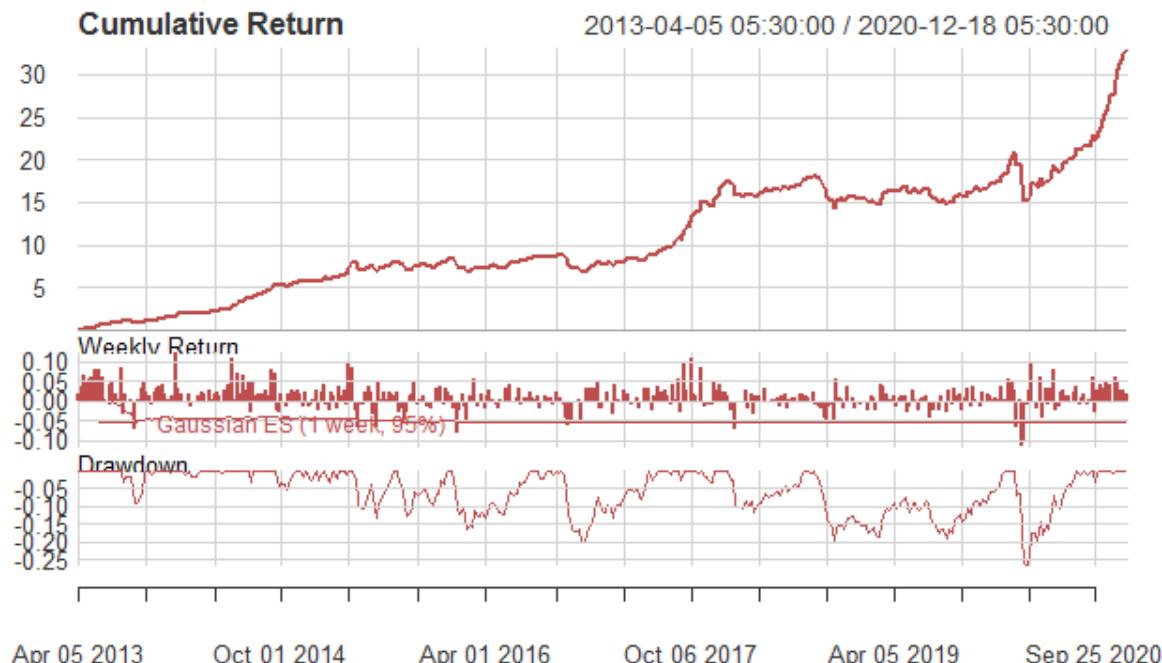
##	NATCOPHARM	JKTYRE	IFBIND	HINDUNILVR	CRISIL	DCBBANK
## 2019-09-27 05:30:00	0	0	0.000	0.011	0	0.004
## 2019-12-27 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-03-27 05:30:00	0	0	0.000	0.086	0	0.000
## 2020-06-26 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-09-25 05:30:00	0	0	0.000	0.000	0	0.000
## 2020-12-18 05:30:00	0	0	0.093	0.000	0	0.000
##	BALRAMCHIN	HINDPETRO	PERSISTENT	TRENT	ESCORTS	PHOENIXLTD
## 2019-09-27 05:30:00	0	0	0.000	0.004	0.000	0
## 2019-12-27 05:30:00	0	0	0.000	0.118	0.000	0
## 2020-03-27 05:30:00	0	0	0.000	0.000	0.000	0
## 2020-06-26 05:30:00	0	0	0.000	0.000	0.000	0
## 2020-09-25 05:30:00	0	0	0.007	0.000	0.000	0
## 2020-12-18 05:30:00	0	0	0.124	0.000	0.084	0
##	LINDEINDIA	TATASTEEL	GRINDWELL	M.M	AARTIIND	JUBLFOOD
## 2019-09-27 05:30:00	0.000	0	0	0	0	0
## 2019-12-27 05:30:00	0.093	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0
##	APOLLOTYRE	EMAMILTD	SPICEJET	FORTIS	TVSMOTOR	SUPRAJIT
## 2019-09-27 05:30:00	0	0	0	0	0	0
## 2019-12-27 05:30:00	0	0	0	0	0	0
## 2020-03-27 05:30:00	0	0	0	0	0	0
## 2020-06-26 05:30:00	0	0	0	0	0	0
## 2020-09-25 05:30:00	0	0	0	0	0	0
## 2020-12-18 05:30:00	0	0	0	0	0	0
##	KOTAKBANK	WELSPUNIND	KPRMILL	POLYMED	MAHSCOOTER	KEC IOC
## 2019-09-27 05:30:00	0.102	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.000	0	0	0	0	0
##	MAHINDCIE	FORCEMOT	TITAN	NTPC	UPL	AUROPHARMA
## 2019-09-27 05:30:00	0.000	0	0	0	0	0
## 2019-12-27 05:30:00	0.000	0	0	0	0	0
## 2020-03-27 05:30:00	0.000	0	0	0	0	0
## 2020-06-26 05:30:00	0.000	0	0	0	0	0
## 2020-09-25 05:30:00	0.000	0	0	0	0	0
## 2020-12-18 05:30:00	0.098	0	0	0	0	0
##	OBEROIRLTY	J.KBANK	BEL	NLCINDIA	ASTRAZEN	GODREJPROP
## 2019-09-27 05:30:00	0	0	0	0	0.000	0
## 2019-12-27 05:30:00	0	0	0	0	0.000	0
## 2020-03-27 05:30:00	0	0	0	0	0.000	0
## 2020-06-26 05:30:00	0	0	0	0	0.000	0

```
## 2020-09-25 05:30:00      0      0      0      0.048      0
## 2020-12-18 05:30:00      0      0      0      0.000      0
##                               PETRONET
## 2019-09-27 05:30:00      0.07
## 2019-12-27 05:30:00      0.00
## 2020-03-27 05:30:00      0.00
## 2020-06-26 05:30:00      0.00
## 2020-09-25 05:30:00      0.00
## 2020-12-18 05:30:00      0.00

# chart.Weights(btout, main=paste0("Weights bt", ix),
#   cex.legend=0.8/2, col=my_colors) # ylim=c(1.2),
#   # col=my_colors # bluemono)
mycharts.PerformanceSummary(btout.summary$portfolio_returns, main=paste0("Performa

## Warning in mycharts.PerformanceSummary(btout.summary$portfolio_returns, : Rf=0,
## geometric=TRUE, ylog=FALSE.
```

Performance bt77



```
## NULL
```

For this portfolio specification, weights from the (latest at the time of writing) Rebalancing of 2020-Nov show up as tabulated here:

GOLDBEES	PFIZER.NS	N10GS	TSLA	UUP
0.4456	0.3260	0.0838	0.0820	0.0626

Appendix: Runtime Environment

Here's the runtime environment used. It's reported here for reproducibility:

```
sessionInfo() # Sys.info()[['sysname']]  
  
## R version 3.6.2 (2019-12-12)  
## Platform: x86_64-w64-mingw32/x64 (64-bit)  
## Running under: Windows 8.1 x64 (build 9600)  
##  
## Matrix products: default  
##  
## locale:  
## [1] LC_COLLATE=English_India.1252 LC_CTYPE=English_India.1252  
## [3] LC_MONETARY=English_India.1252 LC_NUMERIC=C  
## [5] LC_TIME=English_India.1252  
##  
## attached base packages:  
## [1] parallel stats      graphics grDevices utils      datasets methods  
## [8] base  
##  
## other attached packages:  
## [1] quadprog_1.5-8          Rglpk_0.6-4  
## [3] slam_0.1-47            unikn_0.3.0  
## [5] PortfolioAnalytics_1.1.0 PerformanceAnalytics_2.0.4  
## [7] foreach_1.4.8           xts_0.12.1  
## [9] zoo_1.8-7              ROI.plugin.quadprog_1.0-0  
## [11] ROI.plugin.glpk_1.0-0   ROI_1.0-0  
## [13] DEoptim_2.2-5  
##  
## loaded via a namespace (and not attached):  
## [1] Rcpp_1.0.3             pillar_1.4.3       compiler_3.6.2  
## [4] iterators_1.0.12       tools_3.6.2       digest_0.6.24  
## [7] tibble_2.1.3           evaluate_0.14     lifecycle_0.1.0
```

```
## [10] gtable_0.3.0          lattice_0.20-38      pkgconfig_2.0.3
## [13] rlang_0.4.4             registry_0.5-1       yaml_2.2.1
## [16] xfun_0.19               dplyr_0.8.3           stringr_1.4.0
## [19] knitr_1.27              tidyselect_0.2.5     grid_3.6.2
## [22] glue_1.3.1              R6_2.4.1              rmarkdown_2.1
## [25] purrrr_0.3.3            ggplot2_3.3.2         magrittr_1.5
## [28] scales_1.1.0             codetools_0.2-16     htmltools_0.4.0
## [31] assertthat_0.2.1         colorspace_1.4-1     numDeriv_2016.8-1.1
## [34] stringi_1.4.6            munsell_0.5.0         crayon_1.3.4
```