

ESG analysis

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```
# Reading in Excel Data
BBG_ES <- read_excel("Raw_Data/BBG_E&S.xlsx")
BBG_G <- read_excel("Raw_Data/BBG_G.xlsx")
Stock_14 <- read_excel("Raw_Data/ESG_14.xlsx")
Stock_15 <- read_excel("Raw_Data/ESG_15.xlsx")
Stock_16 <- read_excel("Raw_Data/ESG_16.xlsx")
Stock_17 <- read_excel("Raw_Data/ESG_17.xlsx")
Stock_18 <- read_excel("Raw_Data/ESG_18.xlsx")
Stock_19 <- read_excel("Raw_Data/ESG_19.xlsx")
Stock_20 <- read_excel("Raw_Data/ESG_20.xlsx")
Stock_21 <- read_excel("Raw_Data/ESG_21.xlsx")
Stock_22 <- read_excel("Raw_Data/ESG_22.xlsx")
```

First we clean the data on Environmental and Social

```
# Renaming columns to only list out year
BBG_ES <- rename(.data = BBG_ES, `2021` = `44561`, `2020` = `44196`, `2019` = `43830`, `2018` = `43466`)
# Renaming the index identifier variable
BBG_ES <- rename(.data = BBG_ES, Index = Value_Name)

# Dropping Value_Type (unnecessary information)
BBG_ES <- select(.data = BBG_ES, !Value_Type)

# Reshapping data so that one observation is one company in one year
BBG_ES <- pivot_longer(data = BBG_ES, cols = c(`2015`, `2016`, `2017`, `2018`, `2019`, `2020`, `2021`))
BBG_ES <- pivot_wider(data = BBG_ES, names_from = Index, values_from = value)
```

Next, we clean up company governance scores, which are in a separate dataset

```
# Renaming columns to only list out year
# Technically these are *reported* on the first day of the subsequent year
# however, they are reporting on the previous year, so we will use that
BBG_G <- rename(.data = BBG_G, `2020` = `44197`, `2019` = `43831`, `2018` = `43466`, `2017` = `43101`)

# Reshapping data so that one observation is one score for one company in one year
BBG_G <- pivot_longer(data = BBG_G, cols = c(`2014`, `2015`, `2016`, `2017`, `2018`, `2019`, `2020`)),

# We add an index variable to identify this as the governance indicator
BBG_G <- mutate(.data = BBG_G, Index = "Governance")

# We rename some variables
BBG_G <- rename(.data = BBG_G, Industry = Bi074, Governance = value)
# We reorder the variables
```

```
BBG_G <- BBG_G[, c(2, 5, 6, 1, 3, 4)]
```

Next, we merge the ES and G to get ESG data

```
# Isolating Governance metric
BBG_ESG <- merge(x = BBG_ES, y = BBG_G, by = c("Security_Name", "Year"))
# Dropping redundant measures
BBG_ESG <- select(.data = BBG_ESG, !Ticker.y)
# Renaming variables
BBG_ESG <- rename(.data = BBG_ESG, Ticker = Ticker.x)
```

After that, we clean the containing company information

```
# Adding in Year to the data
Stock_14 <- mutate(.data = Stock_14, Year = 2014)
Stock_15 <- mutate(.data = Stock_15, Year = 2015)
Stock_16 <- mutate(.data = Stock_16, Year = 2016)
Stock_17 <- mutate(.data = Stock_17, Year = 2017)
Stock_18 <- mutate(.data = Stock_18, Year = 2018)
Stock_19 <- mutate(.data = Stock_19, Year = 2019)
Stock_20 <- mutate(.data = Stock_20, Year = 2020)
Stock_21 <- mutate(.data = Stock_21, Year = 2021)
Stock_22 <- mutate(.data = Stock_22, Year = 2022)

# Appending into blank dataframe
Stock <- rbind(Stock_14, Stock_15)
Stock <- rbind(Stock, Stock_16)
Stock <- rbind(Stock, Stock_17)
Stock <- rbind(Stock, Stock_18)
Stock <- rbind(Stock, Stock_19)
Stock <- rbind(Stock, Stock_20)
Stock <- rbind(Stock, Stock_21)
Stock <- rbind(Stock, Stock_22)

# removing obsolete individual year date
rm(list = c("Stock_14", "Stock_15", "Stock_16", "Stock_17", "Stock_18", "Stock_19", "Stock_20", "Stock_21", "Stock_22"))

# Dropping useless variables
Stock <- select(.data = Stock, !`MSCI Govnce Pillr Scr` & !`MSCI Soc Pillr Scr` & !`MSCI Env Pillr Scr`)
# Dropping Observations missing a name (blank observations)
Stock <- Stock[!is.na(Stock$Name), ]
```

Now we combine the Stock data and the stock data to get one big data

```
# merging Stock and BBG_ESG
ESG <- merge(x = Stock, y = BBG_G, by = c("Ticker", "Year"))

# We sort the esg data by Ticker by year
attach(ESG)
ESG <- ESG[order(Ticker, Year), ]

# getting summary Statistics on various variables
summary(ESG)
```

```
##      Ticker      Year      Name
```

```
## Length:3320      Min.    :2014      Length:3320
## Class :character  1st Qu.:2015      Class :character
## Mode  :character  Median  :2017      Mode  :character
##                      Mean    :2017
##                      3rd Qu.:2019
##                      Max.    :2020
##
## CAGR of Market Cap over 1 Month CAGR of P/E over 1 Month Sharpe:M-1
## Min.    : -99.95      Min.    : -99.40      Min.    : -6.4456
## 1st Qu.: -40.06      1st Qu.: -20.28      1st Qu.: -1.2951
## Median :  14.35      Median :  10.56      Median :  0.8074
## Mean    : 145.98      Mean    :  86.93      Mean    :  3.3206
## 3rd Qu.: 104.68      3rd Qu.: 112.43      3rd Qu.:  5.2263
## Max.    :182022.32    Max.    :12883.87    Max.    :188.0844
## NA's    :2           NA's    :146
## Tkr & Exch      BEst Target Px:D-1 Tot Assets LF      FCF T12M
## Length:3320      Min.    :  4.832      Min.    :0.000e+00      Min.    : -7.662e+10
## Class :character  1st Qu.: 49.310      1st Qu.:8.825e+09      1st Qu.: 3.586e+08
## Mode  :character  Median : 80.471      Median :1.968e+10      Median : 8.766e+08
##                      Mean    :120.059      Mean    :7.044e+10      Mean    : 2.257e+09
##                      3rd Qu.:130.545      3rd Qu.:4.944e+10      3rd Qu.: 2.182e+09
##                      Max.    :5348.750      Max.    :3.246e+12      Max.    : 8.604e+10
##                      NA's    :11           NA's    :13           NA's    :42
## Governance      Security_Name      Industry      Country
## Min.    :1.750      Length:3320      Length:3320      Length:3320
## 1st Qu.:6.740      Class :character  Class :character  Class :character
## Median :7.250      Mode  :character  Mode  :character  Mode  :character
## Mean    :7.163
## 3rd Qu.:7.670
## Max.    :9.130
## NA's    :271
```

```
# Regression 1: Regressing CAGR mkt Cap on all values
# Running Regression
reg1 <- lm(log(`CAGR of Market Cap over 1 Month` + 100) ~
  `Governance` + #pinkie fix thes
  `Sharpe:M-1` +
  `BEst Target Px:D-1` +
  `Tot Assets LF` +
  `FCF T12M` +
  factor(Name) +
  factor(Year), data = ESG)
```

```
# Analysis of reg1
# Outputting Regression Table
summary(reg1)
```

```
##
## Call:
## lm(formula = log(`CAGR of Market Cap over 1 Month` + 100) ~
##     Governance + `Sharpe:M-1` + `BEst Target Px:D-1` + `Tot Assets LF` +
##     `FCF T12M` + factor(Name) + factor(Year), data = ESG)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
```

```

## -8.1758 -0.2510 0.0377 0.3221 5.1958
##
## Coefficients:
##
## Estimate Std. Error t value Pr(>|t|)
## (Intercept) 5.362e+00 4.206e-01 12.746 < 2e-16
## Governance -6.598e-02 4.127e-02 -1.599 0.109993
## `Sharpe:M-1` 7.392e-02 1.733e-03 42.665 < 2e-16
## `BEst Target Px:D-1` 1.631e-04 1.906e-04 0.856 0.392154
## `Tot Assets LF` 7.698e-14 6.089e-13 0.126 0.899414
## `FCF T12M` 2.258e-12 3.987e-12 0.566 0.571288
## factor(Name)ABBOTT LABORATORIES -1.109e-01 3.862e-01 -0.287 0.773927
## factor(Name)ABBVIE INC -1.491e-01 3.885e-01 -0.384 0.701172
## factor(Name)ABIOMED INC -1.125e-01 5.062e-01 -0.222 0.824075
## factor(Name)ACCENTURE PLC-CL A -2.336e-01 4.004e-01 -0.583 0.559754
## factor(Name)ACTIVISION BLIZZARD INC -3.841e-01 4.024e-01 -0.954 0.340001
## factor(Name)ACUITY BRANDS INC -4.756e-01 5.810e-01 -0.818 0.413180
## factor(Name)ADOBE INC 9.919e-02 4.013e-01 0.247 0.804816
## factor(Name)ADVANCE AUTO PARTS INC -2.665e-01 4.013e-01 -0.664 0.506650
## factor(Name)ADVANCED MICRO DEVICES -8.942e-01 4.536e-01 -1.971 0.048802
## factor(Name)AES CORP -1.405e-01 4.018e-01 -0.350 0.726630
## factor(Name)AETNA INC -1.888e-01 4.972e-01 -0.380 0.704119
## factor(Name)AFFILIATED MANAGERS GROUP -5.791e-01 4.041e-01 -1.433 0.151958
## factor(Name)AFLAC INC -2.210e-01 4.079e-01 -0.542 0.587970
## factor(Name)AGILENT TECHNOLOGIES INC -7.044e-01 3.907e-01 -1.803 0.071507
## factor(Name)AIR PRODUCTS & CHEMICALS INC 2.966e-02 4.011e-01 0.074 0.941059
## factor(Name)AKAMAI TECHNOLOGIES INC -5.895e-02 4.062e-01 -0.145 0.884619
## factor(Name)ALASKA AIR GROUP INC -2.604e-01 4.227e-01 -0.616 0.537962
## factor(Name)ALBEMARLE CORP 2.704e-01 4.522e-01 0.598 0.549901
## factor(Name)ALCOA CORP -1.231e+00 5.831e-01 -2.111 0.034892
## factor(Name)ALEXANDRIA REAL ESTATE EQUIT 1.366e-01 5.079e-01 0.269 0.787900
## factor(Name)ALEXION PHARMACEUTICALS INC -5.778e-02 4.010e-01 -0.144 0.885458
## factor(Name)ALIGN TECHNOLOGY INC -3.997e+00 4.764e-01 -8.390 < 2e-16
## factor(Name)ALLEGION PLC 6.363e-02 3.863e-01 0.165 0.869163
## factor(Name)ALLERGAN LTD/IRELAND -1.059e+00 4.244e-01 -2.497 0.012607
## factor(Name)ALLIANT ENERGY CORP 5.303e-02 4.524e-01 0.117 0.906702
## factor(Name)ALLSTATE CORP -2.462e-01 4.039e-01 -0.610 0.542230
## factor(Name)ALPHABET INC-CL A -4.034e-01 4.421e-01 -0.912 0.361617
## factor(Name)ALTRIA GROUP INC 5.429e-02 3.855e-01 0.141 0.888012
## factor(Name)AMAZON.COM INC -6.620e-01 4.721e-01 -1.402 0.160968
## factor(Name)AMCOR FLEXIBLES NORTH AMERIC -1.892e-01 7.706e-01 -0.246 0.806048
## factor(Name)AMCOR PLC 1.554e-01 7.719e-01 0.201 0.840479
## factor(Name)AMEREN CORPORATION 2.320e-02 3.857e-01 0.060 0.952049
## factor(Name)AMERICAN AIRLINES GROUP INC -4.912e-01 4.025e-01 -1.220 0.222443
## factor(Name)AMERICAN ELECTRIC POWER -1.576e-02 3.865e-01 -0.041 0.967481
## factor(Name)AMERICAN EXPRESS CO -1.548e-01 3.950e-01 -0.392 0.695089
## factor(Name)AMERICAN INTERNATIONAL GROUP -3.837e-01 4.880e-01 -0.786 0.431821
## factor(Name)AMERICAN TOWER CORP 1.497e-01 3.851e-01 0.389 0.697557
## factor(Name)AMERICAN WATER WORKS CO INC 1.147e-01 4.223e-01 0.272 0.786029
## factor(Name)AMERIPRISE FINANCIAL INC -6.223e-01 4.078e-01 -1.526 0.127148
## factor(Name)AMERISOURCEBERGEN CORP -3.124e-01 4.008e-01 -0.779 0.435825
## factor(Name)AMETEK INC -1.613e-01 4.034e-01 -0.400 0.689414
## factor(Name)AMGEN INC -5.083e-01 4.013e-01 -1.267 0.205388
## factor(Name)AMPHENOL CORP-CL A 1.161e-01 3.875e-01 0.300 0.764583
## factor(Name)ANADARKO PETROLEUM CORP -3.088e-01 4.532e-01 -0.681 0.495784

```

## factor(Name)ANALOG DEVICES INC	1.138e-01	3.887e-01	0.293	0.769812
## factor(Name)ANSYS INC	-4.814e-01	5.000e-01	-0.963	0.335699
## factor(Name)AON PLC-CLASS A	-1.198e+00	7.730e-01	-1.550	0.121277
## factor(Name)APA CORP	-8.561e-01	3.861e-01	-2.217	0.026682
## factor(Name)APARTMENT INVT & MGMT CO -A	1.233e-01	4.048e-01	0.305	0.760736
## factor(Name)APPLE INC	-3.409e-01	4.820e-01	-0.707	0.479395
## factor(Name)APPLIED MATERIALS INC	2.099e-01	3.859e-01	0.544	0.586580
## factor(Name)APTIV PLC	-1.013e-02	3.901e-01	-0.026	0.979278
## factor(Name)ARCHER-DANIELS-MIDLAND CO	-2.197e-01	3.866e-01	-0.568	0.569993
## factor(Name)ARISTA NETWORKS INC	-6.724e-01	5.083e-01	-1.323	0.186065
## factor(Name)ARTHUR J GALLAGHER & CO	-1.707e-02	4.561e-01	-0.037	0.970147
## factor(Name)ASSURANT INC	-3.918e-01	4.010e-01	-0.977	0.328671
## factor(Name)AT&T INC	-6.194e-01	4.777e-01	-1.297	0.194887
## factor(Name)ATI INC	-1.352e+00	7.718e-01	-1.751	0.080040
## factor(Name)ATMOS ENERGY CORP	-3.922e-01	7.717e-01	-0.508	0.611363
## factor(Name)AUTODESK INC	-1.230e+00	3.874e-01	-3.175	0.001517
## factor(Name)AUTOMATIC DATA PROCESSING	4.354e-02	3.851e-01	0.113	0.909995
## factor(Name)AUTONATION INC	-8.050e-01	4.976e-01	-1.618	0.105832
## factor(Name)AUTOZONE INC	-3.777e-01	4.225e-01	-0.894	0.371357
## factor(Name)AVALONBAY COMMUNITIES INC	9.363e-03	4.020e-01	0.023	0.981418
## factor(Name)AVERY DENNISON CORP	-3.779e-01	4.035e-01	-0.936	0.349132
## factor(Name)AVON PRODUCTS INC	-1.611e+00	7.714e-01	-2.088	0.036909
## factor(Name)BAKER HUGHES CO	-8.906e-01	5.818e-01	-1.531	0.125979
## factor(Name)BALL CORP	-2.277e-01	4.101e-01	-0.555	0.578783
## factor(Name)BANK OF AMERICA CORP	-4.413e-01	1.435e+00	-0.307	0.758514
## factor(Name)BANK OF NEW YORK MELLON CORP	-2.758e-01	4.396e-01	-0.627	0.530431
## factor(Name)BATH & BODY WORKS INC	-2.779e-02	3.893e-01	-0.071	0.943107
## factor(Name)BAXTER INTERNATIONAL INC	-5.912e-01	4.019e-01	-1.471	0.141377
## factor(Name)BECTON DICKINSON AND CO	-4.966e-02	3.849e-01	-0.129	0.897349
## factor(Name)BED BATH & BEYOND INC	-9.679e-01	5.088e-01	-1.902	0.057248
## factor(Name)BEST BUY CO INC	1.071e-01	3.858e-01	0.277	0.781447
## factor(Name)BIO-RAD LABORATORIES-A	-1.681e-01	7.775e-01	-0.216	0.828885
## factor(Name)BIOGEN INC	-9.651e-02	3.870e-01	-0.249	0.803089
## factor(Name)BLACKROCK INC	-2.175e-01	4.128e-01	-0.527	0.598320
## factor(Name)BOEING CO/THE	-2.037e-01	4.028e-01	-0.506	0.613144
## factor(Name)BOOKING HOLDINGS INC	-2.808e-01	4.980e-01	-0.564	0.572849
## factor(Name)BORGWARNER INC	-4.115e-01	3.867e-01	-1.064	0.287344
## factor(Name)BOSTON PROPERTIES INC	-3.187e-01	3.877e-01	-0.822	0.411086
## factor(Name)BOSTON SCIENTIFIC CORP	-1.835e-01	3.866e-01	-0.475	0.634992
## factor(Name)BRIGHTHOUSE FINANCIAL INC	-2.596e-01	7.788e-01	-0.333	0.738898
## factor(Name)BRISTOL-MYERS SQUIBB CO	-3.846e-01	4.010e-01	-0.959	0.337671
## factor(Name)BROADCOM INC	1.465e-01	3.865e-01	0.379	0.704677
## factor(Name)BROADRIDGE FINANCIAL SOLUTIO	-1.601e-01	5.784e-01	-0.277	0.781916
## factor(Name)BROWN-FORMAN CORP-CLASS B	-1.040e-02	4.041e-01	-0.026	0.979472
## factor(Name)C.H. ROBINSON WORLDWIDE INC	-4.482e-01	3.905e-01	-1.148	0.251232
## factor(Name)CADENCE DESIGN SYS INC	7.198e-02	5.001e-01	0.144	0.885564
## factor(Name)CAMPBELL SOUP CO	-8.234e-02	3.861e-01	-0.213	0.831132
## factor(Name)CAPITAL ONE FINANCIAL CORP	-2.361e-01	4.463e-01	-0.529	0.596806
## factor(Name)CAPRI HOLDINGS LTD	-1.449e-01	4.030e-01	-0.360	0.719229
## factor(Name)CARDINAL HEALTH INC	-1.740e-01	3.852e-01	-0.452	0.651593
## factor(Name)CARMAX INC	-8.498e-02	3.861e-01	-0.220	0.825822
## factor(Name)CARNIVAL CORP	-2.042e-01	3.911e-01	-0.522	0.601684
## factor(Name)CATALENT INC	6.016e-01	7.723e-01	0.779	0.436111
## factor(Name)CATERPILLAR INC	-4.366e-01	3.863e-01	-1.130	0.258511

## factor(Name)CBOE GLOBAL MARKETS INC	-8.634e-02	4.523e-01	-0.191	0.848643
## factor(Name)CBRE GROUP INC - A	2.827e-01	3.859e-01	0.733	0.463876
## factor(Name)CDW CORP/DE	2.714e-01	5.784e-01	0.469	0.638980
## factor(Name)CELANESE CORP	-1.943e-01	7.703e-01	-0.252	0.800899
## factor(Name)CELGENE CORP	-6.847e-01	4.518e-01	-1.516	0.129773
## factor(Name)CENTENE CORP	-9.651e-02	4.598e-01	-0.210	0.833778
## factor(Name)CENTERPOINT ENERGY INC	-1.294e-02	3.896e-01	-0.033	0.973515
## factor(Name)CERNER CORP	-5.811e-01	3.902e-01	-1.489	0.136543
## factor(Name)CF INDUSTRIES HOLDINGS INC	-6.715e-01	3.862e-01	-1.739	0.082166
## factor(Name)CHARTER COMMUNICATIONS INC-A	-4.466e-01	5.036e-01	-0.887	0.375317
## factor(Name)CHEVRON CORP	4.340e-02	4.076e-01	0.106	0.915210
## factor(Name)CHIPOTLE MEXICAN GRILL INC	-8.475e-01	4.011e-01	-2.113	0.034733
## factor(Name)CHUBB LTD	-1.277e-01	4.072e-01	-0.314	0.753789
## factor(Name)CHURCH & DWIGHT CO INC	-3.299e-01	4.284e-01	-0.770	0.441378
## factor(Name)CIGNA CORP	-1.270e-01	3.879e-01	-0.328	0.743298
## factor(Name)CIMAREX ENERGY CO	-6.052e-01	4.048e-01	-1.495	0.135008
## factor(Name)CINCINNATI FINANCIAL CORP	-2.246e-01	4.027e-01	-0.558	0.577133
## factor(Name)CINTAS CORP	-3.514e-01	3.864e-01	-0.909	0.363303
## factor(Name)CISCO SYSTEMS INC	-1.250e-01	3.907e-01	-0.320	0.748985
## factor(Name)CITIGROUP INC	-4.116e-01	1.206e+00	-0.341	0.732931
## factor(Name)CITIZENS FINANCIAL GROUP	-6.661e-02	4.310e-01	-0.155	0.877184
## factor(Name)CITRIX SYSTEMS INC	-1.804e-01	4.053e-01	-0.445	0.656230
## factor(Name)CLOROX COMPANY	-4.495e-02	4.012e-01	-0.112	0.910807
## factor(Name)CME GROUP INC	-1.751e-01	3.931e-01	-0.446	0.655933
## factor(Name)CMS ENERGY CORP	-1.391e-02	4.036e-01	-0.034	0.972504
## factor(Name)CNX RESOURCES CORP	-1.489e+00	5.783e-01	-2.574	0.010105
## factor(Name)COCA-COLA CO/THE	-6.353e-03	4.032e-01	-0.016	0.987429
## factor(Name)COGNIZANT TECH SOLUTIONS-A	5.162e-03	3.869e-01	0.013	0.989355
## factor(Name)COLGATE-PALMOLIVE CO	-2.811e-01	4.011e-01	-0.701	0.483527
## factor(Name)COLLINS AEROSPACE	-6.148e-02	4.555e-01	-0.135	0.892646
## factor(Name)COMCAST CORP-CLASS A	-2.194e-01	4.188e-01	-0.524	0.600476
## factor(Name)COMERICA INC	-1.962e-01	4.027e-01	-0.487	0.626081
## factor(Name)CONAGRA BRANDS INC	3.239e-01	4.026e-01	0.805	0.421153
## factor(Name)CONCHO RESOURCES INC	-5.074e-01	5.021e-01	-1.011	0.312304
## factor(Name)CONOCOPHILLIPS	-3.839e-01	4.029e-01	-0.953	0.340875
## factor(Name)CONSOLIDATED EDISON INC	-6.670e-02	4.014e-01	-0.166	0.868044
## factor(Name)CONSTELLATION BRANDS INC-A	-2.190e-01	4.044e-01	-0.542	0.588212
## factor(Name)COOPER COS INC/THE	-1.748e-01	4.539e-01	-0.385	0.700241
## factor(Name)COPART INC	3.034e-02	5.020e-01	0.060	0.951807
## factor(Name)CORNING INC	-3.311e-01	4.049e-01	-0.818	0.413603
## factor(Name)CORTEVA INC	4.281e-01	7.714e-01	0.555	0.578959
## factor(Name)COSTCO WHOLESALE CORP	1.583e-02	3.896e-01	0.041	0.967586
## factor(Name)COTERRA ENERGY INC	-4.744e-01	3.890e-01	-1.220	0.222739
## factor(Name)COTY INC-CL A	-5.278e-01	4.558e-01	-1.158	0.246980
## factor(Name)CROWN CASTLE INC	1.775e-01	3.860e-01	0.460	0.645588
## factor(Name)CSX CORP	-1.549e-01	4.012e-01	-0.386	0.699412
## factor(Name)CUMMINS INC	-2.581e-01	4.011e-01	-0.643	0.520061
## factor(Name)CVS HEALTH CORP	-2.215e-01	3.902e-01	-0.568	0.570347
## factor(Name)DANAHER CORP	-1.165e-02	4.025e-01	-0.029	0.976909
## factor(Name)DARDEN RESTAURANTS INC	-6.117e-02	3.857e-01	-0.159	0.874013
## factor(Name)DAVITA INC	-3.166e-01	4.011e-01	-0.789	0.430063
## factor(Name)DEERE & CO	-1.755e-02	3.856e-01	-0.046	0.963695
## factor(Name)DELTA AIR LINES INC	1.622e-01	3.861e-01	0.420	0.674338
## factor(Name)DENTSPLY SIRONA INC	3.031e-02	4.041e-01	0.075	0.940227

## factor(Name)DEVON ENERGY CORP	-4.723e-01	4.017e-01	-1.176	0.239847
## factor(Name)DEXCOM INC	-6.972e-01	7.760e-01	-0.898	0.369021
## factor(Name)DIAMONDBACK ENERGY INC	-1.296e+00	7.705e-01	-1.682	0.092652
## factor(Name)DIGITAL REALTY TRUST INC	2.884e-01	4.225e-01	0.683	0.494889
## factor(Name)DISCOVER FINANCIAL SERVICES	-1.743e-01	3.876e-01	-0.450	0.652929
## factor(Name)DISH NETWORK CORP-A	-4.151e-01	4.619e-01	-0.899	0.368942
## factor(Name)DOLLAR GENERAL CORP	5.686e-02	3.862e-01	0.147	0.882963
## factor(Name)DOLLAR TREE INC	5.910e-02	3.875e-01	0.153	0.878780
## factor(Name)DOMINION ENERGY INC	-3.843e-02	4.248e-01	-0.090	0.927927
## factor(Name)DOVER CORP	-8.374e-02	4.013e-01	-0.209	0.834725
## factor(Name)DOW INC	-5.324e-02	5.786e-01	-0.092	0.926690
## factor(Name)DR HORTON INC	-3.554e-01	3.903e-01	-0.910	0.362703
## factor(Name)DTE ENERGY COMPANY	1.203e-01	4.010e-01	0.300	0.764155
## factor(Name)DUKE ENERGY CORP	-1.950e-02	4.060e-01	-0.048	0.961689
## factor(Name)DUKE REALTY CORP	2.385e-01	4.530e-01	0.526	0.598625
## factor(Name)DUN & BRADSTREET CORP	-3.121e-01	4.982e-01	-0.626	0.531099
## factor(Name)DUPONT DE NEMOURS INC	1.564e-02	7.710e-01	0.020	0.983817
## factor(Name)DXC TECHNOLOGY CO	-9.356e-01	5.783e-01	-1.618	0.105820
## factor(Name)E*TRADE FINANCIAL CORP	-8.940e-03	4.225e-01	-0.021	0.983121
## factor(Name)EASTMAN CHEMICAL CO	-4.659e-02	4.014e-01	-0.116	0.907609
## factor(Name)EATON CORP PLC	-2.130e-01	3.852e-01	-0.553	0.580366
## factor(Name)EBAY INC	-5.624e-01	4.013e-01	-1.402	0.161179
## factor(Name)ECOLAB INC	-1.633e-01	3.876e-01	-0.421	0.673578
## factor(Name)EDISON INTERNATIONAL	-2.005e-01	4.017e-01	-0.499	0.617785
## factor(Name)EDWARDS LIFESCIENCES CORP	-4.222e-01	4.016e-01	-1.051	0.293171
## factor(Name)ELECTRONIC ARTS INC	-4.168e-01	3.875e-01	-1.076	0.282216
## factor(Name)ELEVANCE HEALTH INC	3.002e-02	3.860e-01	0.078	0.938023
## factor(Name)ELI LILLY & CO	-4.753e-01	4.049e-01	-1.174	0.240458
## factor(Name)EMERSON ELECTRIC CO	-1.994e-01	4.057e-01	-0.492	0.623055
## factor(Name)ENDO INTERNATIONAL PLC	-2.695e+00	5.779e-01	-4.663	3.28e-06
## factor(Name)ENTERGY CORP	-3.438e-02	4.013e-01	-0.086	0.931738
## factor(Name)EOG RESOURCES INC	-2.703e-01	4.013e-01	-0.674	0.500571
## factor(Name)EQT CORP	-7.757e-01	4.527e-01	-1.714	0.086733
## factor(Name)EQUIFAX INC	-5.204e-01	3.866e-01	-1.346	0.178437
## factor(Name)EQUINIX INC	-1.372e-01	4.287e-01	-0.320	0.749034
## factor(Name)EQUITY RESIDENTIAL	6.031e-02	4.040e-01	0.149	0.881329
## factor(Name)ESSEX PROPERTY TRUST INC	-7.484e-03	4.039e-01	-0.019	0.985218
## factor(Name)ESTEE LAUDER COMPANIES-CL A	-2.845e-01	4.097e-01	-0.694	0.487465
## factor(Name)EVEREST RE GROUP LTD	6.094e-03	4.561e-01	0.013	0.989341
## factor(Name)EVERGY INC	-3.475e-01	7.706e-01	-0.451	0.652106
## factor(Name)EVERNORTH HEALTH INC	-6.011e-02	4.973e-01	-0.121	0.903798
## factor(Name)EVERSOURCE ENERGY	-4.763e-03	4.015e-01	-0.012	0.990534
## factor(Name)EXELON CORP	-4.531e-02	4.057e-01	-0.112	0.911076
## factor(Name)EXPEDIA GROUP INC	-4.138e-01	4.132e-01	-1.001	0.316775
## factor(Name)EXPEDITORS INTL WASH INC	-8.444e-04	3.861e-01	-0.002	0.998255
## factor(Name)EXTRA SPACE STORAGE INC	-2.438e-02	4.242e-01	-0.057	0.954173
## factor(Name)EXXON MOBIL CORP	-1.246e-01	4.320e-01	-0.288	0.773036
## factor(Name)F5 INC	1.067e-01	3.861e-01	0.276	0.782327
## factor(Name)FASTENAL CO	1.468e-03	3.873e-01	0.004	0.996976
## factor(Name)FEDERAL REALTY INVS TRUST	-2.632e-01	4.252e-01	-0.619	0.535916
## factor(Name)FEDEX CORP	1.591e-01	3.858e-01	0.412	0.680047
## factor(Name)FIDELITY NATIONAL INFO SERV	-1.379e-01	4.017e-01	-0.343	0.731514
## factor(Name)FIFTH THIRD BANCORP	-9.979e-03	4.077e-01	-0.024	0.980474
## factor(Name)FIRST REPUBLIC BANK/CA	2.279e-01	5.805e-01	0.393	0.694672

## factor(Name)FIRST SOLAR INC	-9.342e-01	4.985e-01	-1.874	0.061041
## factor(Name)FIRSTENERGY CORP	5.385e-02	4.021e-01	0.134	0.893492
## factor(Name)FISERV INC	-1.902e-01	3.851e-01	-0.494	0.621383
## factor(Name)FLEETCOR TECHNOLOGIES INC	-6.050e-01	5.089e-01	-1.189	0.234569
## factor(Name)FLIR SYSTEMS INC	-2.428e-01	4.046e-01	-0.600	0.548554
## factor(Name)FLOWSERVE CORP	-3.710e-01	3.866e-01	-0.960	0.337397
## factor(Name)FLUOR CORP	-6.459e-01	4.236e-01	-1.525	0.127451
## factor(Name)FMC CORP	1.167e-01	4.057e-01	0.288	0.773534
## factor(Name)FOOT LOCKER INC	-2.512e-01	4.979e-01	-0.505	0.613931
## factor(Name)FORD MOTOR CO	-2.192e-01	4.262e-01	-0.514	0.607116
## factor(Name)FORTINET INC	-3.889e-01	5.002e-01	-0.778	0.436853
## factor(Name)FORTIVE CORP	2.446e-04	4.566e-01	0.001	0.999573
## factor(Name)FORTUNE BRANDS HOME & SECURI	-4.326e-01	4.253e-01	-1.017	0.309203
## factor(Name)FOSSIL GROUP INC	-1.217e-02	5.780e-01	-0.021	0.983203
## factor(Name)FOX CORP - CLASS A	-5.830e-01	5.829e-01	-1.000	0.317285
## factor(Name)FRANKLIN RESOURCES INC	-1.572e-01	3.859e-01	-0.407	0.683860
## factor(Name)FREEPORT-MCMORAN INC	-1.507e-01	3.865e-01	-0.390	0.696655
## factor(Name)FRONTIER COMMUNICATIONS CORP	-1.364e+00	4.981e-01	-2.739	0.006209
## factor(Name)GAMESTOP CORP-CLASS A	2.395e-01	5.785e-01	0.414	0.678856
## factor(Name)GAP INC/THE	2.469e-02	3.868e-01	0.064	0.949110
## factor(Name)GARMIN LTD	2.089e-01	3.947e-01	0.529	0.596578
## factor(Name)GARTNER INC	-1.199e-03	4.542e-01	-0.003	0.997893
## factor(Name)GENERAL DYNAMICS CORP	-2.900e-01	4.005e-01	-0.724	0.469127
## factor(Name)GENERAL ELECTRIC CO	-1.058e+00	4.494e-01	-2.355	0.018583
## factor(Name)GENERAL MILLS INC	-1.056e-01	3.859e-01	-0.274	0.784406
## factor(Name)GENERAL MOTORS CO	-1.308e-01	4.168e-01	-0.314	0.753765
## factor(Name)GENUINE PARTS CO	-3.079e-01	4.023e-01	-0.765	0.444080
## factor(Name)GENWORTH FINANCIAL INC-CL A	-3.246e+00	5.805e-01	-5.592	2.50e-08
## factor(Name)GILEAD SCIENCES INC	-3.094e-01	4.029e-01	-0.768	0.442578
## factor(Name)GLOBAL PAYMENTS INC	-4.272e-01	4.980e-01	-0.858	0.391033
## factor(Name)GLOBE LIFE INC	-3.033e-02	3.856e-01	-0.079	0.937306
## factor(Name)GOLDMAN SACHS GROUP INC	-1.621e-01	6.738e-01	-0.241	0.809896
## factor(Name)GOODYEAR TIRE & RUBBER CO	-4.064e-01	4.232e-01	-0.960	0.337018
## factor(Name)H&R BLOCK INC	2.090e-01	4.020e-01	0.520	0.603164
## factor(Name)HALLIBURTON CO	-3.991e-01	3.906e-01	-1.022	0.307074
## factor(Name)HANESBRANDS INC	-3.691e-01	4.232e-01	-0.872	0.383182
## factor(Name)HARLEY-DAVIDSON INC	-2.480e-01	4.017e-01	-0.617	0.537051
## factor(Name)HARTFORD FINANCIAL SVCS GRP	-1.283e-01	3.935e-01	-0.326	0.744340
## factor(Name)HASBRO INC	-3.113e-01	4.020e-01	-0.774	0.438746
## factor(Name)HCA HEALTHCARE INC	-2.122e-01	4.219e-01	-0.503	0.614962
## factor(Name)HEALTHPEAK PROPERTIES INC	-6.530e-01	4.033e-01	-1.619	0.105577
## factor(Name)HELMERICH & PAYNE	-2.490e-01	4.025e-01	-0.619	0.536212
## factor(Name)HENRY SCHEIN INC	-6.319e-01	4.278e-01	-1.477	0.139714
## factor(Name)HERSHEY CO/THE	-2.134e-01	3.856e-01	-0.553	0.580032
## factor(Name)HESS CORP	-5.253e-01	3.876e-01	-1.356	0.175383
## factor(Name)HEWLETT PACKARD ENTERPRISE	-3.292e-01	4.532e-01	-0.726	0.467672
## factor(Name)HILTON WORLDWIDE HOLDINGS IN	-1.298e-01	4.989e-01	-0.260	0.794762
## factor(Name)HOLOGIC INC	1.911e-01	4.228e-01	0.452	0.651314
## factor(Name)HOME DEPOT INC	-1.638e-01	3.853e-01	-0.425	0.670853
## factor(Name)HONEYWELL INTERNATIONAL INC	-1.798e-01	4.007e-01	-0.449	0.653691
## factor(Name)HORMEL FOODS CORP	-1.276e-02	4.022e-01	-0.032	0.974698
## factor(Name)HOST HOTELS & RESORTS INC	1.520e-02	4.021e-01	0.038	0.969860
## factor(Name)HOWMET AEROSPACE INC	-2.438e-01	5.036e-01	-0.484	0.628286
## factor(Name)HP INC	-1.180e+00	3.860e-01	-3.057	0.002258

## factor(Name)HUMANA INC	-1.061e-01	4.011e-01	-0.264	0.791447
## factor(Name)HUNT (JB) TRANSPRT SVCS INC	-2.061e-01	4.037e-01	-0.510	0.609812
## factor(Name)HUNTINGTON BANCSHARES INC	-4.421e-02	4.037e-01	-0.109	0.912817
## factor(Name)HUNTINGTON INGALLS INDUSTRIE	-5.027e-01	4.978e-01	-1.010	0.312704
## factor(Name>IDEX CORP	-1.044e-01	7.713e-01	-0.135	0.892397
## factor(Name>IDEXX LABORATORIES INC	-6.453e-01	4.552e-01	-1.418	0.156435
## factor(Name>IHS MARKIT LTD	-1.034e-02	4.993e-01	-0.021	0.983473
## factor(Name)ILLINOIS TOOL WORKS	-6.655e-02	4.009e-01	-0.166	0.868163
## factor(Name)ILLUMINA INC	-8.538e-01	4.248e-01	-2.010	0.044555
## factor(Name)INCYTE CORP	1.711e-02	4.985e-01	0.034	0.972628
## factor(Name)INTEL CORP	-2.639e-01	4.069e-01	-0.648	0.516757
## factor(Name)INTERCONTINENTAL EXCHANGE IN	3.499e-02	4.021e-01	0.087	0.930666
## factor(Name)INTERNATIONAL PAPER CO	2.642e-02	3.855e-01	0.069	0.945356
## factor(Name)INTERPUBLIC GROUP OF COS INC	-1.314e-01	4.047e-01	-0.325	0.745457
## factor(Name)INTL BUSINESS MACHINES CORP	-8.753e-01	3.907e-01	-2.240	0.025156
## factor(Name)INTL FLAVORS & FRAGRANCES	4.313e-01	4.015e-01	1.074	0.282757
## factor(Name)INTUIT INC	-7.882e-02	4.013e-01	-0.196	0.844317
## factor(Name)INTUITIVE SURGICAL INC	2.274e-02	3.957e-01	0.057	0.954178
## factor(Name)INVESCO LTD	-7.022e-02	3.861e-01	-0.182	0.855720
## factor(Name)IPG PHOTONICS CORP	7.209e-01	5.822e-01	1.238	0.215720
## factor(Name)IQVIA HOLDINGS INC	-4.096e-01	4.622e-01	-0.886	0.375579
## factor(Name)IRON MOUNTAIN INC	-5.500e-02	3.864e-01	-0.142	0.886826
## factor(Name)JACK HENRY & ASSOCIATES INC	-3.019e-01	5.789e-01	-0.521	0.602093
## factor(Name)JEFFERIES FINANCIAL GROUP IN	-3.317e-01	4.992e-01	-0.665	0.506417
## factor(Name)JM SMUCKER CO/THE	-6.457e-02	3.871e-01	-0.167	0.867533
## factor(Name)JOHNSON & JOHNSON	-7.008e-03	4.096e-01	-0.017	0.986351
## factor(Name)JOHNSON CONTROLS INTERNATION	-3.043e-01	4.025e-01	-0.756	0.449778
## factor(Name)JPMORGAN CHASE & CO	-3.462e-01	1.652e+00	-0.210	0.833964
## factor(Name)JUNIPER NETWORKS INC	-4.468e-02	4.046e-01	-0.110	0.912091
## factor(Name)KANSAS CITY SOUTHERN	-3.667e-01	4.012e-01	-0.914	0.360788
## factor(Name)KELLOGG CO	-1.475e-01	4.018e-01	-0.367	0.713593
## factor(Name)KEURIG DR PEPPER INC	-7.010e-02	4.520e-01	-0.155	0.876771
## factor(Name)KEYCORP	-8.281e-02	3.908e-01	-0.212	0.832189
## factor(Name)KEYSIGHT TECHNOLOGIES IN	-1.488e-01	5.005e-01	-0.297	0.766225
## factor(Name)KIMBERLY-CLARK CORP	-5.038e-01	4.029e-01	-1.251	0.211236
## factor(Name)KIMCO REALTY CORP	-9.989e-02	4.037e-01	-0.247	0.804608
## factor(Name)KINDER MORGAN INC	-7.155e-01	3.886e-01	-1.841	0.065695
## factor(Name)KLA CORP	2.187e-01	3.880e-01	0.564	0.573043
## factor(Name)KOHLS CORP	-8.401e-04	4.016e-01	-0.002	0.998331
## factor(Name)KRAFT HEINZ CO/THE	-1.756e-02	5.031e-01	-0.035	0.972153
## factor(Name)KROGER CO	2.148e-01	3.880e-01	0.553	0.580007
## factor(Name)L3 TECHNOLOGIES INC	-2.227e-01	4.544e-01	-0.490	0.624179
## factor(Name)L3HARRIS TECHNOLOGIES INC	4.122e-03	4.231e-01	0.010	0.992228
## factor(Name)LABORATORY CRP OF AMER HLDGS	-1.183e-01	3.861e-01	-0.306	0.759380
## factor(Name)LAM RESEARCH CORP	2.352e-01	3.854e-01	0.610	0.541837
## factor(Name)LAMB WESTON HOLDINGS INC	-3.552e-01	5.789e-01	-0.614	0.539522
## factor(Name)LAS VEGAS SANDS CORP	1.044e-01	7.794e-01	0.134	0.893460
## factor(Name)LEGG MASON INC	-1.079e+00	5.791e-01	-1.862	0.062655
## factor(Name)LEGGETT & PLATT INC	-1.015e+00	3.879e-01	-2.617	0.008928
## factor(Name)LEIDOS HOLDINGS INC	-1.547e-01	7.705e-01	-0.201	0.840877
## factor(Name)LENNAR CORP-A	-1.496e-01	3.917e-01	-0.382	0.702488
## factor(Name)LINCOLN NATIONAL CORP	-1.607e-01	4.296e-01	-0.374	0.708451
## factor(Name)LIVE NATION ENTERTAINMENT IN	-2.336e-02	7.781e-01	-0.030	0.976048
## factor(Name)LKQ CORP	8.633e-02	4.244e-01	0.203	0.838818

## factor(Name)LOCKHEED MARTIN CORP	-2.692e-01	4.011e-01	-0.671	0.502248
## factor(Name)LOEWS CORP	-1.762e-01	4.151e-01	-0.425	0.671166
## factor(Name)LOWE'S COS INC	-2.978e-01	3.857e-01	-0.772	0.440131
## factor(Name)LUMEN TECHNOLOGIES INC	5.942e-01	4.030e-01	1.474	0.140484
## factor(Name)LYONDELLBASELL INDU-CL A	-5.758e-01	3.850e-01	-1.495	0.134935
## factor(Name)M & T BANK CORP	4.469e-01	3.894e-01	1.148	0.251171
## factor(Name)MACERICH CO/THE	-2.116e-01	4.028e-01	-0.525	0.599385
## factor(Name)MACY'S INC	-1.118e-01	4.014e-01	-0.278	0.780693
## factor(Name)MALLINCKRODT PLC	3.337e-01	5.779e-01	0.577	0.563696
## factor(Name)MARATHON OIL CORP	-8.925e-01	4.018e-01	-2.222	0.026401
## factor(Name)MARATHON PETROLEUM CORP	-2.438e-01	3.936e-01	-0.620	0.535644
## factor(Name)MARKETAXESS HOLDINGS INC	1.451e-01	5.811e-01	0.250	0.802912
## factor(Name)MARRIOTT INTERNATIONAL -CL A	-1.436e-01	4.034e-01	-0.356	0.721962
## factor(Name)MARSH & MCLENNAN COS	-6.634e-02	3.853e-01	-0.172	0.863306
## factor(Name)MARTIN MARIETTA MATERIALS	4.860e-02	3.879e-01	0.125	0.900313
## factor(Name)MASCO CORP	-6.439e-01	4.071e-01	-1.582	0.113850
## factor(Name)MASTERCARD INC - A	-2.789e-01	3.869e-01	-0.721	0.471180
## factor(Name)MATTEL INC	-2.575e-01	4.238e-01	-0.608	0.543499
## factor(Name)MAXIM INTEGRATED PRODUCTS	2.239e-01	5.789e-01	0.387	0.698985
## factor(Name)MCCORMICK & CO-NON VTG SHRS	-2.904e-02	4.015e-01	-0.072	0.942350
## factor(Name)MCDONALD'S CORP	-1.989e-01	4.009e-01	-0.496	0.619939
## factor(Name)MCKESSON CORP	-6.324e-01	3.859e-01	-1.639	0.101372
## factor(Name)MEDTRONIC PLC	-1.401e-01	3.876e-01	-0.361	0.717764
## factor(Name)MERCK & CO. INC.	-3.137e-01	4.032e-01	-0.778	0.436542
## factor(Name)META PLATFORMS INC-CLASS A	1.989e-02	3.962e-01	0.050	0.959952
## factor(Name)METLIFE INC	-1.476e-01	6.293e-01	-0.235	0.814588
## factor(Name)METTLER-TOLEDO INTERNATIONAL	-1.006e-01	4.378e-01	-0.230	0.818297
## factor(Name)MGM RESORTS INTERNATIONAL	2.848e-01	4.980e-01	0.572	0.567482
## factor(Name)MICROCHIP TECHNOLOGY INC	3.002e-03	3.947e-01	0.008	0.993931
## factor(Name)MICRON TECHNOLOGY INC	-1.489e-01	4.013e-01	-0.371	0.710648
## factor(Name)MICROSOFT CORP	2.052e-01	4.325e-01	0.474	0.635194
## factor(Name)MID-AMERICA APARTMENT COMM	-5.637e-02	4.979e-01	-0.113	0.909869
## factor(Name)MOHAWK INDUSTRIES INC	-6.635e-01	4.116e-01	-1.612	0.107087
## factor(Name)MOLSON COORS BEVERAGE CO - B	-2.929e-02	4.037e-01	-0.073	0.942168
## factor(Name)MONDELEZ INTERNATIONAL INC-A	-4.309e-02	4.019e-01	-0.107	0.914618
## factor(Name)MONSTER BEVERAGE CORP	-5.121e-02	4.285e-01	-0.120	0.904878
## factor(Name)MOODY'S CORP	-2.167e-01	4.017e-01	-0.539	0.589604
## factor(Name)MORGAN STANLEY	-4.108e-01	6.587e-01	-0.624	0.532891
## factor(Name)MOSAIC CO/THE	2.579e-01	4.018e-01	0.642	0.520935
## factor(Name)MOTOROLA SOLUTIONS INC	-3.616e-02	3.866e-01	-0.094	0.925493
## factor(Name)MSCI INC	-2.708e-01	4.995e-01	-0.542	0.587785
## factor(Name)MURPHY OIL CORP	-4.241e-01	4.978e-01	-0.852	0.394358
## factor(Name)NABORS INDUSTRIES LTD	-2.836e+00	7.769e-01	-3.651	0.000267
## factor(Name)NASDAQ INC	1.004e-01	3.856e-01	0.261	0.794487
## factor(Name)NAVIENT CORP	-3.520e-01	5.020e-01	-0.701	0.483204
## factor(Name)NEKTAR THERAPEUTICS	-3.915e+00	7.724e-01	-5.069	4.30e-07
## factor(Name)NETAPP INC	5.087e-03	3.864e-01	0.013	0.989497
## factor(Name)NETFLIX INC	-3.789e-01	4.060e-01	-0.933	0.350866
## factor(Name)NEWELL BRANDS INC	-4.558e-01	3.869e-01	-1.178	0.238920
## factor(Name)NEWMONT CORP	-3.124e-01	4.024e-01	-0.776	0.437666
## factor(Name)NEWS CORP - CLASS A	-4.250e-01	4.075e-01	-1.043	0.297122
## factor(Name)NEXTERA ENERGY INC	1.507e-01	4.051e-01	0.372	0.709976
## factor(Name)NIELSEN HOLDINGS PLC	-5.263e-01	4.022e-01	-1.309	0.190728
## factor(Name)NIKE INC -CL B	-6.417e-02	3.852e-01	-0.167	0.867706

## factor(Name)NISOURCE INC	-5.582e-03	4.020e-01	-0.014	0.988922
## factor(Name)NOBLE ENERGY INC	-4.456e-01	4.227e-01	-1.054	0.291838
## factor(Name)NORDSTROM INC	-2.565e-01	4.021e-01	-0.638	0.523687
## factor(Name)NORFOLK SOUTHERN CORP	-2.784e-01	4.007e-01	-0.695	0.487259
## factor(Name)NORTHERN TRUST CORP	-3.374e-01	4.051e-01	-0.833	0.404978
## factor(Name)NORTHROP GRUMMAN CORP	-2.225e-01	4.013e-01	-0.555	0.579282
## factor(Name)NORTONLIFELOCK INC	-1.551e-01	3.862e-01	-0.402	0.688053
## factor(Name)NORWEGIAN CRUISE LINE HOLDIN	-6.113e-01	5.011e-01	-1.220	0.222623
## factor(Name)NOV INC	-4.579e-01	3.876e-01	-1.181	0.237630
## factor(Name)NRG ENERGY INC	-1.100e-01	4.247e-01	-0.259	0.795708
## factor(Name)NUCOR CORP	2.386e-01	4.016e-01	0.594	0.552480
## factor(Name)NVIDIA CORP	-1.303e-01	3.875e-01	-0.336	0.736725
## factor(Name)NVR INC	-1.126e+00	1.023e+00	-1.101	0.271131
## factor(Name)O-I GLASS INC	-2.089e-01	5.000e-01	-0.418	0.676074
## factor(Name)O'REILLY AUTOMOTIVE INC	-2.117e-01	3.909e-01	-0.542	0.588175
## factor(Name)OCCIDENTAL PETROLEUM CORP	-6.051e-01	4.015e-01	-1.507	0.131904
## factor(Name)OLD DOMINION FREIGHT LINE	3.041e-01	7.718e-01	0.394	0.693575
## factor(Name)OMNICOM GROUP	-7.520e-02	4.013e-01	-0.187	0.851357
## factor(Name)ONEOK INC	-8.472e-01	3.889e-01	-2.178	0.029479
## factor(Name)ORACLE CORP	-8.028e-02	4.119e-01	-0.195	0.845464
## factor(Name)OTIS WORLDWIDE CORP	-1.982e-01	7.714e-01	-0.257	0.797227
## factor(Name)OVINTIV EXPLORATION INC	-6.179e-01	4.979e-01	-1.241	0.214664
## factor(Name)P G & E CORP	-2.160e-01	4.231e-01	-0.510	0.609790
## factor(Name)PACCAR INC	-4.679e-01	4.078e-01	-1.147	0.251340
## factor(Name)PACKAGING CORP OF AMERICA	-6.617e-02	4.524e-01	-0.146	0.883715
## factor(Name)PARAMOUNT GLOBAL-CLASS B	-2.779e-01	4.066e-01	-0.683	0.494372
## factor(Name)PARKER HANNIFIN CORP	3.490e-02	4.015e-01	0.087	0.930734
## factor(Name)PATTERSON COS INC	-1.114e-01	4.522e-01	-0.246	0.805381
## factor(Name)PAYCHEX INC	-1.824e-01	3.873e-01	-0.471	0.637641
## factor(Name)PAYCOM SOFTWARE INC	5.271e-01	7.788e-01	0.677	0.498613
## factor(Name)PAYPAL HOLDINGS INC	2.814e-01	4.222e-01	0.667	0.505136
## factor(Name)PENTAIR PLC	-1.348e-01	3.869e-01	-0.348	0.727598
## factor(Name)PEOPLE'S UNITED FINANCIAL	1.150e-01	4.027e-01	0.286	0.775144
## factor(Name)PEPSICO INC	5.710e-02	3.858e-01	0.148	0.882360
## factor(Name)PERKINELMER INC	-2.404e-01	4.033e-01	-0.596	0.551193
## factor(Name)PERRIGO CO PLC	-4.223e-01	4.230e-01	-0.998	0.318246
## factor(Name)PFIZER INC	-1.938e-01	4.126e-01	-0.470	0.638671
## factor(Name)PHILIP MORRIS INTERNATIONAL	-3.770e-02	4.020e-01	-0.094	0.925291
## factor(Name)PHILLIPS 66	-5.755e-01	3.887e-01	-1.481	0.138850
## factor(Name)PINNACLE WEST CAPITAL	-9.954e-02	4.019e-01	-0.248	0.804408
## factor(Name)PIONEER NATURAL RESOURCES CO	-5.538e-01	3.875e-01	-1.429	0.153133
## factor(Name)PITNEY BOWES INC	-8.336e-01	4.982e-01	-1.673	0.094434
## factor(Name)PNC FINANCIAL SERVICES GROUP	-1.901e-01	4.511e-01	-0.421	0.673454
## factor(Name)PPG INDUSTRIES INC	-7.686e-02	3.895e-01	-0.197	0.843600
## factor(Name)PPL CORP	2.507e-01	4.021e-01	0.623	0.533126
## factor(Name)PRINCIPAL FINANCIAL GROUP	-3.131e-01	4.222e-01	-0.741	0.458500
## factor(Name)PROCTER & GAMBLE CO/THE	-1.055e-01	4.058e-01	-0.260	0.794990
## factor(Name)PROGRESSIVE CORP	-3.872e-02	3.854e-01	-0.100	0.919990
## factor(Name)PROLOGIS INC	4.560e-02	4.050e-01	0.113	0.910376
## factor(Name)PRUDENTIAL FINANCIAL INC	-2.406e-01	6.224e-01	-0.387	0.699058
## factor(Name)PUBLIC SERVICE ENTERPRISE GP	-1.150e-01	4.043e-01	-0.285	0.776017
## factor(Name)PUBLIC STORAGE	-2.827e-01	4.033e-01	-0.701	0.483406
## factor(Name)PULTEGROUP INC	-4.217e-01	3.863e-01	-1.092	0.275101
## factor(Name)PVH CORP	-3.373e-01	3.869e-01	-0.872	0.383373

## factor(Name)QEP RESOURCES INC	-2.052e+00	7.716e-01	-2.660	0.007872
## factor(Name)QORVO INC	1.110e-01	4.030e-01	0.275	0.783055
## factor(Name)QUALCOMM INC	-1.633e-01	3.870e-01	-0.422	0.673199
## factor(Name)QUANTA SERVICES INC	-1.070e+00	4.019e-01	-2.663	0.007806
## factor(Name)QUEST DIAGNOSTICS INC	-3.956e-04	3.855e-01	-0.001	0.999181
## factor(Name)RALPH LAUREN CORP	3.789e-02	3.953e-01	0.096	0.923642
## factor(Name)RANGE RESOURCES CORP	-1.936e-01	4.979e-01	-0.389	0.697420
## factor(Name)RAYMOND JAMES FINANCIAL INC	-3.073e-01	4.518e-01	-0.680	0.496408
## factor(Name)RAYTHEON COMPANY	-1.961e-01	4.216e-01	-0.465	0.641793
## factor(Name)RAYTHEON TECHNOLOGIES CORP	-8.283e-02	4.029e-01	-0.206	0.837122
## factor(Name)REALTY INCOME CORP	1.293e-02	4.023e-01	0.032	0.974354
## factor(Name)RED HAT INC	2.716e-01	4.240e-01	0.641	0.521749
## factor(Name)REGENCY CENTERS CORP	-4.175e-01	4.528e-01	-0.922	0.356614
## factor(Name)REGENERON PHARMACEUTICALS	-5.833e-01	4.192e-01	-1.392	0.164183
## factor(Name)REGIONS FINANCIAL CORP	-5.205e-02	4.567e-01	-0.114	0.909288
## factor(Name)REPUBLIC SERVICES INC	4.819e-02	3.855e-01	0.125	0.900538
## factor(Name)RESMED INC	-3.050e-01	4.554e-01	-0.670	0.503126
## factor(Name)ROBERT HALF INTL INC	-1.592e-01	3.890e-01	-0.409	0.682391
## factor(Name)ROCKWELL AUTOMATION INC	9.981e-02	3.887e-01	0.257	0.797399
## factor(Name)ROLLINS INC	1.697e-01	5.902e-01	0.288	0.773683
## factor(Name)ROPER TECHNOLOGIES INC	-1.486e-01	3.901e-01	-0.381	0.703198
## factor(Name)ROSS STORES INC	2.028e-02	3.865e-01	0.052	0.958168
## factor(Name)ROYAL CARIBBEAN CRUISES LTD	-5.854e-02	4.241e-01	-0.138	0.890222
## factor(Name)RYDER SYSTEM INC	3.773e-02	4.976e-01	0.076	0.939562
## factor(Name)S&P GLOBAL INC	-3.867e-03	3.853e-01	-0.010	0.991994
## factor(Name)SALESFORCE INC	-3.438e-02	3.898e-01	-0.088	0.929722
## factor(Name)SBA COMMUNICATIONS CORP	1.749e-01	5.019e-01	0.348	0.727575
## factor(Name)SCANA CORP	-1.522e-03	4.990e-01	-0.003	0.997567
## factor(Name)SCHLUMBERGER LTD	-2.791e-01	4.017e-01	-0.695	0.487255
## factor(Name)SCHWAB (CHARLES) CORP	-1.985e-01	4.142e-01	-0.479	0.631822
## factor(Name)SEAGATE TECHNOLOGY HOLDINGS	-2.502e-01	3.862e-01	-0.648	0.517211
## factor(Name)SEALED AIR CORP	-3.251e-01	4.034e-01	-0.806	0.420266
## factor(Name)SEMPRA ENERGY	1.206e-02	4.012e-01	0.030	0.976027
## factor(Name)SHERWIN-WILLIAMS CO/THE	-1.803e-01	3.893e-01	-0.463	0.643348
## factor(Name)SIGNET JEWELERS LTD	1.212e-01	4.976e-01	0.244	0.807534
## factor(Name)SIMON PROPERTY GROUP INC	-3.591e-01	3.928e-01	-0.914	0.360741
## factor(Name)SKYWORKS SOLUTIONS INC	-3.301e-02	4.031e-01	-0.082	0.934748
## factor(Name)SL GREEN REALTY CORP	-4.544e-01	4.596e-01	-0.989	0.322887
## factor(Name)SMITH (A.O.) CORP	-3.072e-01	5.035e-01	-0.610	0.541849
## factor(Name)SNAP-ON INC	-1.056e-01	3.896e-01	-0.271	0.786396
## factor(Name)SOUTHERN CO/THE	1.239e-01	4.037e-01	0.307	0.758847
## factor(Name)SOUTHWEST AIRLINES CO	-2.235e-01	3.868e-01	-0.578	0.563521
## factor(Name)SOUTHWESTERN ENERGY CO	-1.881e+00	4.982e-01	-3.775	0.000164
## factor(Name)STANLEY BLACK & DECKER INC	-1.137e-01	4.012e-01	-0.283	0.776872
## factor(Name)STARBUCKS CORP	9.310e-02	4.010e-01	0.232	0.816424
## factor(Name)STATE STREET CORP	-4.659e-01	4.078e-01	-1.143	0.253310
## factor(Name)STERICYCLE INC	-6.157e-01	4.230e-01	-1.455	0.145718
## factor(Name)STERIS PLC	-1.784e-01	7.720e-01	-0.231	0.817226
## factor(Name)STRYKER CORP	-5.682e-02	3.857e-01	-0.147	0.882902
## factor(Name)SUNTRUST BANKS INC	3.365e-02	4.635e-01	0.073	0.942130
## factor(Name)SVB FINANCIAL GROUP	-9.525e-01	5.779e-01	-1.648	0.099435
## factor(Name)SYNCHRONY FINANCIAL	-3.449e-01	4.248e-01	-0.812	0.416981
## factor(Name)SYNOPSYS INC	-1.515e-01	5.024e-01	-0.302	0.762945
## factor(Name)SYSCO CORP	-2.359e-01	4.014e-01	-0.588	0.556700

## factor(Name)T ROWE PRICE GROUP INC	-1.834e-01	4.031e-01	-0.455	0.649152
## factor(Name)T-MOBILE US INC	1.488e-01	5.843e-01	0.255	0.799000
## factor(Name)TAKE-TWO INTERACTIVE SOFTWARE	-2.170e-01	5.010e-01	-0.433	0.664963
## factor(Name)TAPESTRY INC	-1.512e+00	3.880e-01	-3.898	9.95e-05
## factor(Name)TARGET CORP	1.842e-02	3.850e-01	0.048	0.961856
## factor(Name)TE CONNECTIVITY LTD	2.856e-02	4.010e-01	0.071	0.943232
## factor(Name)TECHNIPFMC PLC	-4.244e-01	3.926e-01	-1.081	0.279772
## factor(Name)TEGNA INC	-3.554e-01	4.982e-01	-0.713	0.475741
## factor(Name)TELEFLEX INC	-1.401e-01	7.752e-01	-0.181	0.856651
## factor(Name)TENET HEALTHCARE CORP	-1.204e+00	5.781e-01	-2.083	0.037391
## factor(Name)TERADATA CORP	-9.637e-01	5.028e-01	-1.917	0.055372
## factor(Name)TEXAS INSTRUMENTS INC	-1.540e-01	3.864e-01	-0.399	0.690150
## factor(Name)TEXTRON INC	-4.312e-01	4.034e-01	-1.069	0.285231
## factor(Name)THERMO FISHER SCIENTIFIC INC	-1.102e-01	4.016e-01	-0.274	0.783803
## factor(Name)TIFFANY & CO	-2.228e-01	4.036e-01	-0.552	0.581014
## factor(Name)TIJX COMPANIES INC	-9.487e-02	3.857e-01	-0.246	0.805735
## factor(Name)TOTAL SYSTEM SERVICES INC	1.870e-01	4.534e-01	0.412	0.680124
## factor(Name)TRACTOR SUPPLY COMPANY	1.890e-01	4.017e-01	0.471	0.638017
## factor(Name)TRANE TECHNOLOGIES PLC	-7.409e-02	3.920e-01	-0.189	0.850108
## factor(Name)TRANSDIGM GROUP INC	-1.428e-01	4.298e-01	-0.332	0.739788
## factor(Name)TRANSOCEAN LTD	-5.102e-01	4.987e-01	-1.023	0.306428
## factor(Name)TRAVEL + LEISURE CO	-2.850e-01	4.558e-01	-0.625	0.531932
## factor(Name)TRAVELERS COS INC/THE	-3.094e-01	3.874e-01	-0.799	0.424565
## factor(Name)TRIPADVISOR INC	-1.535e-01	4.153e-01	-0.370	0.711749
## factor(Name)TRUIST FINANCIAL CORP	1.127e-01	4.263e-01	0.264	0.791446
## factor(Name)TWITTER INC	-1.065e+00	5.832e-01	-1.826	0.067939
## factor(Name)TYSON FOODS INC-CL A	-1.816e-01	3.868e-01	-0.469	0.638774
## factor(Name)UDR INC	2.380e-01	4.528e-01	0.526	0.599180
## factor(Name)ULTA BEAUTY INC	-3.507e-01	4.251e-01	-0.825	0.409420
## factor(Name)UNDER ARMOUR INC-CLASS A	-1.102e+00	4.060e-01	-2.715	0.006671
## factor(Name)UNION PACIFIC CORP	-4.422e-01	3.855e-01	-1.147	0.251415
## factor(Name)UNITED AIRLINES HOLDINGS INC	1.517e-01	4.221e-01	0.359	0.719346
## factor(Name)UNITED PARCEL SERVICE-CL B	-1.510e-01	4.030e-01	-0.375	0.708023
## factor(Name)UNITED RENTALS INC	-5.240e-01	4.012e-01	-1.306	0.191663
## factor(Name)UNITEDHEALTH GROUP INC	1.754e-01	4.051e-01	0.433	0.665097
## factor(Name)UNIVERSAL HEALTH SERVICES-B	-4.093e-01	4.085e-01	-1.002	0.316375
## factor(Name)UNUM GROUP	-1.241e-01	3.862e-01	-0.321	0.747946
## factor(Name)URBAN OUTFITTERS INC	-1.165e+00	5.024e-01	-2.320	0.020447
## factor(Name)US BANCORP	-2.631e-02	4.754e-01	-0.055	0.955877
## factor(Name)VALARIS PLC	4.716e-01	5.784e-01	0.815	0.414996
## factor(Name)VALERO ENERGY CORP	-4.487e-01	3.852e-01	-1.165	0.244149
## factor(Name)VARIAN MEDICAL SYSTEMS INC	1.260e-01	4.230e-01	0.298	0.765752
## factor(Name)VENTAS INC	-5.432e-01	4.025e-01	-1.350	0.177289
## factor(Name)VERISIGN INC	1.381e-02	3.865e-01	0.036	0.971495
## factor(Name)VERISK ANALYTICS INC	-2.658e-01	4.034e-01	-0.659	0.510091
## factor(Name)VERIZON COMMUNICATIONS INC	-1.944e-01	4.135e-01	-0.470	0.638216
## factor(Name)VERTEX PHARMACEUTICALS INC	-3.461e-01	3.884e-01	-0.891	0.372900
## factor(Name)VF CORP	-1.983e-01	4.242e-01	-0.468	0.640146
## factor(Name)VIACOM INC-CLASS B	-2.959e-01	4.229e-01	-0.700	0.484230
## factor(Name)VISA INC-CLASS A SHARES	1.386e-02	4.014e-01	0.035	0.972453
## factor(Name)VORNADO REALTY TRUST	-6.240e-01	4.076e-01	-1.531	0.125930
## factor(Name)VULCAN MATERIALS CO	-1.240e-03	3.863e-01	-0.003	0.997439
## factor(Name)WABTEC CORP	1.474e-01	7.723e-01	0.191	0.848638
## factor(Name)WALGREENS BOOTS ALLIANCE INC	-1.384e-01	4.012e-01	-0.345	0.730093

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## factor(Name)WALMART INC -7.598e-02 4.049e-01 -0.188 0.851165
## factor(Name)WALT DISNEY CO/THE 9.609e-02 3.890e-01 0.247 0.804898
## factor(Name)WASTE MANAGEMENT INC -7.730e-02 4.011e-01 -0.193 0.847177
## factor(Name)WATERS CORP -2.735e-01 4.024e-01 -0.680 0.496821
## factor(Name)WEC ENERGY GROUP INC -9.356e-02 4.023e-01 -0.233 0.816138
## factor(Name)WELLS FARGO & CO -3.153e-01 1.182e+00 -0.267 0.789682
## factor(Name)WELLTOWER INC -3.296e-01 3.864e-01 -0.853 0.393748
## factor(Name)WEST PHARMACEUTICAL SERVICES -8.794e-02 7.723e-01 -0.114 0.909350
## factor(Name)WESTERN DIGITAL CORP -7.824e-01 4.021e-01 -1.946 0.051789
## factor(Name)WESTERN UNION CO -1.154e-01 3.862e-01 -0.299 0.765200
## factor(Name)WESTROCK CO -8.976e-02 4.233e-01 -0.212 0.832073
## factor(Name)WEYERHAEUSER CO -1.640e-01 4.017e-01 -0.408 0.683162
## factor(Name)WHIRLPOOL CORP -3.074e-01 3.874e-01 -0.794 0.427539
## factor(Name)WILLIAMS COS INC -5.539e-01 3.863e-01 -1.434 0.151742
## factor(Name)WILLIS TOWERS WATSON PLC -3.419e-01 4.224e-01 -0.809 0.418366
## factor(Name)WINDSTREAM HOLDINGS INC -1.207e+00 7.706e-01 -1.566 0.117384
## factor(Name)WW GRAINGER INC -6.161e-01 4.024e-01 -1.531 0.125883
## factor(Name)WYNN RESORTS LTD -1.215e-01 3.931e-01 -0.309 0.757353
## factor(Name)XCEL ENERGY INC 1.177e-01 4.019e-01 0.293 0.769725
## factor(Name)XEROX HOLDINGS CORP -5.948e-01 4.072e-01 -1.461 0.144207
## factor(Name)XILINX INC 2.303e-01 3.858e-01 0.597 0.550509
## factor(Name)XYLEM INC -1.775e-01 4.016e-01 -0.442 0.658449
## factor(Name)YUM! BRANDS INC -1.166e+00 3.858e-01 -3.022 0.002537
## factor(Name)ZIMMER BIOMET HOLDINGS INC -5.424e-01 3.857e-01 -1.406 0.159796
## factor(Name)ZIONS BANCORP NA -2.858e-02 4.025e-01 -0.071 0.943400
## factor(Name)ZOETIS INC 6.770e-02 4.029e-01 0.168 0.866568
## factor(Year)2015 -9.169e-02 4.946e-02 -1.854 0.063908
## factor(Year)2016 -6.319e-01 5.021e-02 -12.584 < 2e-16
## factor(Year)2017 -2.893e-01 5.004e-02 -5.782 8.34e-09
## factor(Year)2018 -5.890e-01 5.141e-02 -11.459 < 2e-16
## factor(Year)2019 -1.418e-01 5.184e-02 -2.736 0.006269
## factor(Year)2020 -7.541e-02 6.472e-02 -1.165 0.244061
##
## (Intercept) ***
## Governance
## `Sharpe:M-1` ***
## `BEst Target Px:D-1`
## `Tot Assets LF`
## `FCF T12M`
## factor(Name)ABBOTT LABORATORIES
## factor(Name)ABBVIE INC
## factor(Name)ABIOMED INC
## factor(Name)ACCENTURE PLC-CL A
## factor(Name)ACTIVISION BLIZZARD INC
## factor(Name)ACUITY BRANDS INC
## factor(Name)ADOBE INC
## factor(Name)ADVANCE AUTO PARTS INC
## factor(Name)ADVANCED MICRO DEVICES *
## factor(Name)AES CORP
## factor(Name)AETNA INC
## factor(Name)AFFILIATED MANAGERS GROUP
## factor(Name)AFLAC INC
## factor(Name)AGILENT TECHNOLOGIES INC .
## factor(Name)AIR PRODUCTS & CHEMICALS INC

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## factor(Name)AKAMAI TECHNOLOGIES INC
## factor(Name)ALASKA AIR GROUP INC
## factor(Name)ALBEMARLE CORP
## factor(Name)ALCOA CORP *
## factor(Name)ALEXANDRIA REAL ESTATE EQUIT
## factor(Name)ALEXION PHARMACEUTICALS INC
## factor(Name)ALIGN TECHNOLOGY INC ***
## factor(Name)ALLEGION PLC
## factor(Name)ALLERGAN LTD/IRELAND *
## factor(Name)ALLIANT ENERGY CORP
## factor(Name)ALLSTATE CORP
## factor(Name)ALPHABET INC-CL A
## factor(Name)ALTRIA GROUP INC
## factor(Name)AMAZON.COM INC
## factor(Name)AMCOR FLEXIBLES NORTH AMERIC
## factor(Name)AMCOR PLC
## factor(Name)AMEREN CORPORATION
## factor(Name)AMERICAN AIRLINES GROUP INC
## factor(Name)AMERICAN ELECTRIC POWER
## factor(Name)AMERICAN EXPRESS CO
## factor(Name)AMERICAN INTERNATIONAL GROUP
## factor(Name)AMERICAN TOWER CORP
## factor(Name)AMERICAN WATER WORKS CO INC
## factor(Name)AMERIPRISE FINANCIAL INC
## factor(Name)AMERISOURCEBERGEN CORP
## factor(Name)AMETEK INC
## factor(Name)AMGEN INC
## factor(Name)AMPHENOL CORP-CL A
## factor(Name)ANADARKO PETROLEUM CORP
## factor(Name)ANALOG DEVICES INC
## factor(Name)ANSYS INC
## factor(Name)AON PLC-CLASS A
## factor(Name)APA CORP *
## factor(Name)APARTMENT INVT & MGMT CO -A
## factor(Name)APPLE INC
## factor(Name)APPLIED MATERIALS INC
## factor(Name)APTIV PLC
## factor(Name)ARCHER-DANIELS-MIDLAND CO
## factor(Name)ARISTA NETWORKS INC
## factor(Name)ARTHUR J GALLAGHER & CO
## factor(Name)ASSURANT INC
## factor(Name)AT&T INC
## factor(Name)ATI INC .
## factor(Name)ATMOS ENERGY CORP
## factor(Name)AUTODESK INC **
## factor(Name)AUTOMATIC DATA PROCESSING
## factor(Name)AUTONATION INC
## factor(Name)AUTOZONE INC
## factor(Name)AVALONBAY COMMUNITIES INC
## factor(Name)AVERY DENNISON CORP
## factor(Name)AVON PRODUCTS INC *
## factor(Name)BAKER HUGHES CO
## factor(Name)BALL CORP
## factor(Name)BANK OF AMERICA CORP

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## factor(Name)BANK OF NEW YORK MELLON CORP
## factor(Name)BATH & BODY WORKS INC
## factor(Name)BAXTER INTERNATIONAL INC
## factor(Name)BECTON DICKINSON AND CO
## factor(Name)BED BATH & BEYOND INC
## factor(Name)BEST BUY CO INC
## factor(Name)BIO-RAD LABORATORIES-A
## factor(Name)BIOGEN INC
## factor(Name)BLACKROCK INC
## factor(Name)BOEING CO/THE
## factor(Name)BOOKING HOLDINGS INC
## factor(Name)BORGWARNER INC
## factor(Name)BOSTON PROPERTIES INC
## factor(Name)BOSTON SCIENTIFIC CORP
## factor(Name)BRIGHTHOUSE FINANCIAL INC
## factor(Name)BRISTOL-MYERS SQUIBB CO
## factor(Name)BROADCOM INC
## factor(Name)BROADRIDGE FINANCIAL Solutio
## factor(Name)BROWN-FORMAN CORP-CLASS B
## factor(Name)C.H. ROBINSON WORLDWIDE INC
## factor(Name)CADENCE DESIGN SYS INC
## factor(Name)CAMPBELL SOUP CO
## factor(Name)CAPITAL ONE FINANCIAL CORP
## factor(Name)CAPRI HOLDINGS LTD
## factor(Name)CARDINAL HEALTH INC
## factor(Name)CARMAX INC
## factor(Name)CARNIVAL CORP
## factor(Name)CATALENT INC
## factor(Name)CATERPILLAR INC
## factor(Name)CBOE GLOBAL MARKETS INC
## factor(Name)CBRE GROUP INC - A
## factor(Name)CDW CORP/DE
## factor(Name)CELANESE CORP
## factor(Name)CELGENE CORP
## factor(Name)CENTENE CORP
## factor(Name)CENTERPOINT ENERGY INC
## factor(Name)CERNER CORP
## factor(Name)CF INDUSTRIES HOLDINGS INC
## factor(Name)CHARTER COMMUNICATIONS INC-A
## factor(Name)CHEVRON CORP
## factor(Name)CHIPOTLE MEXICAN GRILL INC
## factor(Name)CHUBB LTD
## factor(Name)CHURCH & DWIGHT CO INC
## factor(Name)CIGNA CORP
## factor(Name)CIMAREX ENERGY CO
## factor(Name)CINCINNATI FINANCIAL CORP
## factor(Name)CINTAS CORP
## factor(Name)CISCO SYSTEMS INC
## factor(Name)CITIGROUP INC
## factor(Name)CITIZENS FINANCIAL GROUP
## factor(Name)CITRIX SYSTEMS INC
## factor(Name)CLOROX COMPANY
## factor(Name)CME GROUP INC
## factor(Name)CMS ENERGY CORP

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## factor(Name)CNX RESOURCES CORP          *
## factor(Name)COCA-COLA CO/THE
## factor(Name)COGNIZANT TECH SOLUTIONS-A
## factor(Name)COLGATE-PALMOLIVE CO
## factor(Name)COLLINS AEROSPACE
## factor(Name)COMCAST CORP-CLASS A
## factor(Name)COMERICA INC
## factor(Name)CONAGRA BRANDS INC
## factor(Name)CONCHO RESOURCES INC
## factor(Name)CONOCOPHILLIPS
## factor(Name)CONSOLIDATED EDISON INC
## factor(Name)CONSTELLATION BRANDS INC-A
## factor(Name)COOPER COS INC/THE
## factor(Name)COPART INC
## factor(Name)CORNING INC
## factor(Name)CORTEVA INC
## factor(Name)COSTCO WHOLESALE CORP
## factor(Name)COTERRA ENERGY INC
## factor(Name)COTY INC-CL A
## factor(Name)CROWN CASTLE INC
## factor(Name)CSX CORP
## factor(Name)CUMMINS INC
## factor(Name)CVS HEALTH CORP
## factor(Name)DANAHER CORP
## factor(Name)DARDEN RESTAURANTS INC
## factor(Name)DAVITA INC
## factor(Name)DEERE & CO
## factor(Name)DELTA AIR LINES INC
## factor(Name)DENTSPLY SIRONA INC
## factor(Name)DEVON ENERGY CORP
## factor(Name)DEXCOM INC
## factor(Name)DIAMONDBACK ENERGY INC    .
## factor(Name)DIGITAL REALTY TRUST INC
## factor(Name)DISCOVER FINANCIAL SERVICES
## factor(Name)DISH NETWORK CORP-A
## factor(Name)DOLLAR GENERAL CORP
## factor(Name)DOLLAR TREE INC
## factor(Name)DOMINION ENERGY INC
## factor(Name)DOVER CORP
## factor(Name)DOW INC
## factor(Name)DR HORTON INC
## factor(Name)DTE ENERGY COMPANY
## factor(Name)DUKE ENERGY CORP
## factor(Name)DUKE REALTY CORP
## factor(Name)DUN & BRADSTREET CORP
## factor(Name)DUPONT DE NEMOURS INC
## factor(Name)DXC TECHNOLOGY CO
## factor(Name)E*TRADE FINANCIAL CORP
## factor(Name)EASTMAN CHEMICAL CO
## factor(Name)EATON CORP PLC
## factor(Name)EBAY INC
## factor(Name)ECOLAB INC
## factor(Name)EDISON INTERNATIONAL
## factor(Name)EDWARDS LIFESCIENCES CORP

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## factor(Name)ELECTRONIC ARTS INC
## factor(Name)ELEVANCE HEALTH INC
## factor(Name)ELI LILLY & CO
## factor(Name)EMERSON ELECTRIC CO
## factor(Name)ENDO INTERNATIONAL PLC      ***
## factor(Name)ENTERGY CORP
## factor(Name)EOG RESOURCES INC
## factor(Name)EQT CORP                      .
## factor(Name)EQUIFAX INC
## factor(Name)EQUINIX INC
## factor(Name)EQUITY RESIDENTIAL
## factor(Name)ESSEX PROPERTY TRUST INC
## factor(Name)ESTEE LAUDER COMPANIES-CL A
## factor(Name)EVEREST RE GROUP LTD
## factor(Name)EVERGY INC
## factor(Name)EVERNORTH HEALTH INC
## factor(Name)EVERSOURCE ENERGY
## factor(Name)EXELON CORP
## factor(Name)EXPEDIA GROUP INC
## factor(Name)EXPEDITORS INTL WASH INC
## factor(Name)EXTRA SPACE STORAGE INC
## factor(Name)EXXON MOBIL CORP
## factor(Name)F5 INC
## factor(Name)FASTENAL CO
## factor(Name)FEDERAL REALTY INVS TRUST
## factor(Name)FEDEX CORP
## factor(Name)FIDELITY NATIONAL INFO SERV
## factor(Name)FIFTH THIRD BANCORP
## factor(Name)FIRST REPUBLIC BANK/CA
## factor(Name)FIRST SOLAR INC              .
## factor(Name)FIRSTENERGY CORP
## factor(Name)FISERV INC
## factor(Name)FLEETCOR TECHNOLOGIES INC
## factor(Name)FLIR SYSTEMS INC
## factor(Name)FLOWSERVE CORP
## factor(Name)FLUOR CORP
## factor(Name)FMC CORP
## factor(Name)FOOT LOCKER INC
## factor(Name)FORD MOTOR CO
## factor(Name)FORTINET INC
## factor(Name)FORTIVE CORP
## factor(Name)FORTUNE BRANDS HOME & SECURI
## factor(Name)FOSSIL GROUP INC
## factor(Name)FOX CORP - CLASS A
## factor(Name)FRANKLIN RESOURCES INC
## factor(Name)FREEPORT-MCMORAN INC
## factor(Name)FRONTIER COMMUNICATIONS CORP **
## factor(Name)GAMESTOP CORP-CLASS A
## factor(Name)GAP INC/THE
## factor(Name)GARMIN LTD
## factor(Name)GARTNER INC
## factor(Name)GENERAL DYNAMICS CORP
## factor(Name)GENERAL ELECTRIC CO          *
## factor(Name)GENERAL MILLS INC

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## factor(Name)GENERAL MOTORS CO
## factor(Name)GENUINE PARTS CO
## factor(Name)GENWORTH FINANCIAL INC-CL A ***
## factor(Name)GILEAD SCIENCES INC
## factor(Name)GLOBAL PAYMENTS INC
## factor(Name)GLOBE LIFE INC
## factor(Name)GOLDMAN SACHS GROUP INC
## factor(Name)GOODYEAR TIRE & RUBBER CO
## factor(Name)H&R BLOCK INC
## factor(Name)HALLIBURTON CO
## factor(Name)HANESBRANDS INC
## factor(Name)HARLEY-DAVIDSON INC
## factor(Name)HARTFORD FINANCIAL SVCS GRP
## factor(Name)HASBRO INC
## factor(Name)HCA HEALTHCARE INC
## factor(Name)HEALTHPEAK PROPERTIES INC
## factor(Name)HELMERICH & PAYNE
## factor(Name)HENRY SCHEIN INC
## factor(Name)HERSHEY CO/THE
## factor(Name)HESS CORP
## factor(Name)HEWLETT PACKARD ENTERPRISE
## factor(Name)HILTON WORLDWIDE HOLDINGS IN
## factor(Name)HOLOGIC INC
## factor(Name)HOME DEPOT INC
## factor(Name)HONEYWELL INTERNATIONAL INC
## factor(Name)HORMEL FOODS CORP
## factor(Name)HOST HOTELS & RESORTS INC
## factor(Name)HOWMET AEROSPACE INC
## factor(Name)HP INC **
## factor(Name)HUMANA INC
## factor(Name)HUNT (JB) TRANSPRT SVCS INC
## factor(Name)HUNTINGTON BANCSHARES INC
## factor(Name)HUNTINGTON INGALLS INDUSTRIE
## factor(Name>IDEX CORP
## factor(Name>IDEXX LABORATORIES INC
## factor(Name>IHS MARKIT LTD
## factor(Name)ILLINOIS TOOL WORKS
## factor(Name)ILLUMINA INC *
## factor(Name)INCYTE CORP
## factor(Name)INTEL CORP
## factor(Name)INTERCONTINENTAL EXCHANGE IN
## factor(Name)INTERNATIONAL PAPER CO
## factor(Name)INTERPUBLIC GROUP OF COS INC
## factor(Name)INTL BUSINESS MACHINES CORP *
## factor(Name)INTL FLAVORS & FRAGRANCES
## factor(Name)INTUIT INC
## factor(Name)INTUITIVE SURGICAL INC
## factor(Name)INVESCO LTD
## factor(Name)IPG PHOTONICS CORP
## factor(Name)IQVIA HOLDINGS INC
## factor(Name)IRON MOUNTAIN INC
## factor(Name)JACK HENRY & ASSOCIATES INC
## factor(Name)JEFFERIES FINANCIAL GROUP IN
## factor(Name)JM SMUCKER CO/THE

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## factor(Name)JOHNSON & JOHNSON
## factor(Name)JOHNSON CONTROLS INTERNATIONAL
## factor(Name)JPMORGAN CHASE & CO
## factor(Name)JUNIPER NETWORKS INC
## factor(Name)KANSAS CITY SOUTHERN
## factor(Name)KELLOGG CO
## factor(Name)KEURIG DR PEPPER INC
## factor(Name)KEYCORP
## factor(Name)KEYSIGHT TECHNOLOGIES IN
## factor(Name)KIMBERLY-CLARK CORP
## factor(Name)KIMCO REALTY CORP
## factor(Name)KINDER MORGAN INC
## factor(Name)KLA CORP
## factor(Name)KOHL'S CORP
## factor(Name)KRAFT HEINZ CO/THE
## factor(Name)KROGER CO
## factor(Name)L3 TECHNOLOGIES INC
## factor(Name)L3HARRIS TECHNOLOGIES INC
## factor(Name)LABORATORY CRP OF AMER HLDGS
## factor(Name)LAM RESEARCH CORP
## factor(Name)LAMB WESTON HOLDINGS INC
## factor(Name)LAS VEGAS SANDS CORP
## factor(Name)LEGG MASON INC
## factor(Name)LEGGETT & PLATT INC
## factor(Name)LEIDOS HOLDINGS INC
## factor(Name)LENNAR CORP-A
## factor(Name)LINCOLN NATIONAL CORP
## factor(Name)LIVE NATION ENTERTAINMENT IN
## factor(Name)LKQ CORP
## factor(Name)LOCKHEED MARTIN CORP
## factor(Name)LOEWS CORP
## factor(Name)LOWE'S COS INC
## factor(Name)LUMEN TECHNOLOGIES INC
## factor(Name)LYONDELLBASELL INDU-CL A
## factor(Name)M & T BANK CORP
## factor(Name)MACERICH CO/THE
## factor(Name)MACY'S INC
## factor(Name)MALLINCKRODT PLC
## factor(Name)MARATHON OIL CORP
## factor(Name)MARATHON PETROLEUM CORP
## factor(Name)MARKETAXESS HOLDINGS INC
## factor(Name)MARRIOTT INTERNATIONAL -CL A
## factor(Name)MARSH & MCLENNAN COS
## factor(Name)MARTIN MARIETTA MATERIALS
## factor(Name)MASCO CORP
## factor(Name)MASTERCARD INC - A
## factor(Name)MATTEL INC
## factor(Name)MAXIM INTEGRATED PRODUCTS
## factor(Name)MCCORMICK & CO-NON VTG SHRS
## factor(Name)MCDONALD'S CORP
## factor(Name)MCKESSON CORP
## factor(Name)MEDTRONIC PLC
## factor(Name)MERCK & CO. INC.
## factor(Name)META PLATFORMS INC-CLASS A

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```

## factor(Name)METLIFE INC
## factor(Name)METTLER-TOLEDO INTERNATIONAL
## factor(Name)MGM RESORTS INTERNATIONAL
## factor(Name)MICROCHIP TECHNOLOGY INC
## factor(Name)MICRON TECHNOLOGY INC
## factor(Name)MICROSOFT CORP
## factor(Name)MID-AMERICA APARTMENT COMM
## factor(Name)MOHAWK INDUSTRIES INC
## factor(Name)MOLSON COORS BEVERAGE CO - B
## factor(Name)MONDELEZ INTERNATIONAL INC-A
## factor(Name)MONSTER BEVERAGE CORP
## factor(Name)MOODY'S CORP
## factor(Name)MORGAN STANLEY
## factor(Name)MOSAIC CO/THE
## factor(Name)MOTOROLA SOLUTIONS INC
## factor(Name)MSCI INC
## factor(Name)MURPHY OIL CORP
## factor(Name)NABORS INDUSTRIES LTD      ***
## factor(Name)NASDAQ INC
## factor(Name)NAVIENT CORP
## factor(Name)NEKTAR THERAPEUTICS      ***
## factor(Name)NETAPP INC
## factor(Name)NETFLIX INC
## factor(Name)NEWELL BRANDS INC
## factor(Name)NEWMONT CORP
## factor(Name)NEWS CORP - CLASS A
## factor(Name)NEXTERA ENERGY INC
## factor(Name)NIELSEN HOLDINGS PLC
## factor(Name)NIKE INC -CL B
## factor(Name)NISOURCE INC
## factor(Name)NOBLE ENERGY INC
## factor(Name)NORDSTROM INC
## factor(Name)NORFOLK SOUTHERN CORP
## factor(Name)NORTHERN TRUST CORP
## factor(Name)NORTHROP GRUMMAN CORP
## factor(Name)NORTONLIFELOCK INC
## factor(Name)NORWEGIAN CRUISE LINE HOLDIN
## factor(Name)NOV INC
## factor(Name)NRG ENERGY INC
## factor(Name)NUCOR CORP
## factor(Name)NVIDIA CORP
## factor(Name)NVR INC
## factor(Name)O-I GLASS INC
## factor(Name)O'REILLY AUTOMOTIVE INC
## factor(Name)OCCIDENTAL PETROLEUM CORP
## factor(Name)OLD DOMINION FREIGHT LINE
## factor(Name)OMNICOM GROUP
## factor(Name)ONEOK INC                  *
## factor(Name)ORACLE CORP
## factor(Name)OTIS WORLDWIDE CORP
## factor(Name)OVINTIV EXPLORATION INC
## factor(Name)P G & E CORP
## factor(Name)PACCAR INC
## factor(Name)PACKAGING CORP OF AMERICA

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## factor(Name)PARAMOUNT GLOBAL-CLASS B
## factor(Name)PARKER HANNIFIN CORP
## factor(Name)PATTERSON COS INC
## factor(Name)PAYCHEX INC
## factor(Name)PAYCOM SOFTWARE INC
## factor(Name)PAYPAL HOLDINGS INC
## factor(Name)PENTAIR PLC
## factor(Name)PEOPLE'S UNITED FINANCIAL
## factor(Name)PEPSICO INC
## factor(Name)PERKINELMER INC
## factor(Name)PERRIGO CO PLC
## factor(Name)PFIZER INC
## factor(Name)PHILIP MORRIS INTERNATIONAL
## factor(Name)PHILLIPS 66
## factor(Name)PINNACLE WEST CAPITAL
## factor(Name)PIONEER NATURAL RESOURCES CO
## factor(Name)PITNEY BOWES INC
## factor(Name)PNC FINANCIAL SERVICES GROUP
## factor(Name)PPG INDUSTRIES INC
## factor(Name)PPL CORP
## factor(Name)PRINCIPAL FINANCIAL GROUP
## factor(Name)PROCTER & GAMBLE CO/THE
## factor(Name)PROGRESSIVE CORP
## factor(Name)PROLOGIS INC
## factor(Name)PRUDENTIAL FINANCIAL INC
## factor(Name)PUBLIC SERVICE ENTERPRISE GP
## factor(Name)PUBLIC STORAGE
## factor(Name)PULTEGROUP INC
## factor(Name)PVH CORP
## factor(Name)QEP RESOURCES INC          **
## factor(Name)QORVO INC
## factor(Name)QUALCOMM INC
## factor(Name)QUANTA SERVICES INC        **
## factor(Name)QUEST DIAGNOSTICS INC
## factor(Name)RALPH LAUREN CORP
## factor(Name)RANGE RESOURCES CORP
## factor(Name)RAYMOND JAMES FINANCIAL INC
## factor(Name)RAYTHEON COMPANY
## factor(Name)RAYTHEON TECHNOLOGIES CORP
## factor(Name)REALTY INCOME CORP
## factor(Name)RED HAT INC
## factor(Name)REGENCY CENTERS CORP
## factor(Name)REGENERON PHARMACEUTICALS
## factor(Name)REGIONS FINANCIAL CORP
## factor(Name)REPUBLIC SERVICES INC
## factor(Name)RESMED INC
## factor(Name)ROBERT HALF INTL INC
## factor(Name)ROCKWELL AUTOMATION INC
## factor(Name)ROLLINS INC
## factor(Name)ROPER TECHNOLOGIES INC
## factor(Name)ROSS STORES INC
## factor(Name)ROYAL CARIBBEAN CRUISES LTD
## factor(Name)RYDER SYSTEM INC
## factor(Name)S&P GLOBAL INC

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## factor(Name)SALESFORCE INC
## factor(Name)SBA COMMUNICATIONS CORP
## factor(Name)SCANA CORP
## factor(Name)SCHLUMBERGER LTD
## factor(Name)SCHWAB (CHARLES) CORP
## factor(Name)SEAGATE TECHNOLOGY HOLDINGS
## factor(Name)SEALED AIR CORP
## factor(Name)SEMPRA ENERGY
## factor(Name)SHERWIN-WILLIAMS CO/THE
## factor(Name)SIGNET JEWELERS LTD
## factor(Name)SIMON PROPERTY GROUP INC
## factor(Name)SKYWORKS SOLUTIONS INC
## factor(Name)SL GREEN REALTY CORP
## factor(Name)SMITH (A.O.) CORP
## factor(Name)SNAP-ON INC
## factor(Name)SOUTHERN CO/THE
## factor(Name)SOUTHWEST AIRLINES CO
## factor(Name)SOUTHWESTERN ENERGY CO      ***
## factor(Name)STANLEY BLACK & DECKER INC
## factor(Name)STARBUCKS CORP
## factor(Name)STATE STREET CORP
## factor(Name)STERICYCLE INC
## factor(Name)STERIS PLC
## factor(Name)STRYKER CORP
## factor(Name)SUNTRUST BANKS INC
## factor(Name)SVB FINANCIAL GROUP           .
## factor(Name)SYNCHRONY FINANCIAL
## factor(Name)SYNOPSYS INC
## factor(Name)SYSCO CORP
## factor(Name)T ROWE PRICE GROUP INC
## factor(Name)T-MOBILE US INC
## factor(Name)TAKE-TWO INTERACTIVE SOFTWARE
## factor(Name)TAPESTRY INC                  ***
## factor(Name)TARGET CORP
## factor(Name)TE CONNECTIVITY LTD
## factor(Name)TECHNIPFMC PLC
## factor(Name)TEGNA INC
## factor(Name)TELEFLEX INC
## factor(Name)TENET HEALTHCARE CORP         *
## factor(Name)TERADATA CORP                 .
## factor(Name)TEXAS INSTRUMENTS INC
## factor(Name)TEXTRON INC
## factor(Name)THERMO FISHER SCIENTIFIC INC
## factor(Name)TIFFANY & CO
## factor(Name)TJX COMPANIES INC
## factor(Name)TOTAL SYSTEM SERVICES INC
## factor(Name)TRACTOR SUPPLY COMPANY
## factor(Name)TRANE TECHNOLOGIES PLC
## factor(Name)TRANSDIGM GROUP INC
## factor(Name)TRANSOCEAN LTD
## factor(Name)TRAVEL + LEISURE CO
## factor(Name)TRAVELERS COS INC/THE
## factor(Name)TRIPADVISOR INC
## factor(Name)TRUIST FINANCIAL CORP

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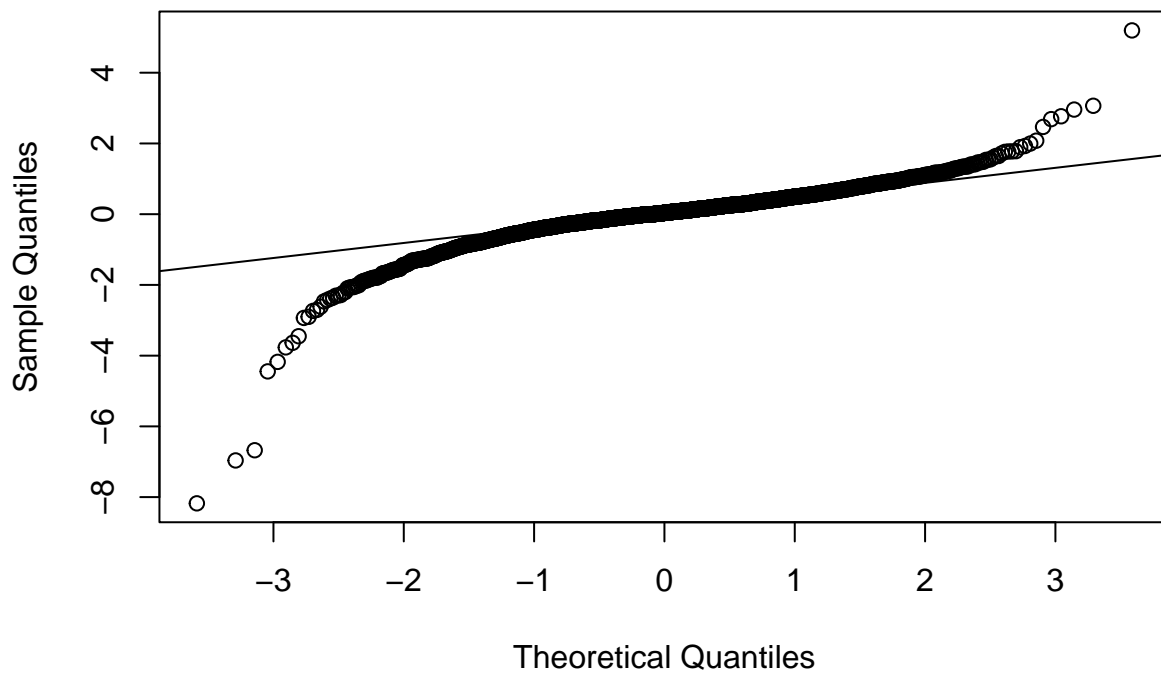
## factor(Name)TWITTER INC .
## factor(Name)TYSON FOODS INC-CL A
## factor(Name)UDR INC
## factor(Name)ULTA BEAUTY INC
## factor(Name)UNDER ARMOUR INC-CLASS A **
## factor(Name)UNION PACIFIC CORP
## factor(Name)UNITED AIRLINES HOLDINGS INC
## factor(Name)UNITED PARCEL SERVICE-CL B
## factor(Name)UNITED RENTALS INC
## factor(Name)UNITEDHEALTH GROUP INC
## factor(Name)UNIVERSAL HEALTH SERVICES-B
## factor(Name)UNUM GROUP
## factor(Name)URBAN OUTFITTERS INC *
## factor(Name)US BANCORP
## factor(Name)VALARIS PLC
## factor(Name)VALERO ENERGY CORP
## factor(Name)VARIAN MEDICAL SYSTEMS INC
## factor(Name)VENTAS INC
## factor(Name)VERISIGN INC
## factor(Name)VERISK ANALYTICS INC
## factor(Name)VERIZON COMMUNICATIONS INC
## factor(Name)VERTEX PHARMACEUTICALS INC
## factor(Name)VF CORP
## factor(Name)VIACOM INC-CLASS B
## factor(Name)VISA INC-CLASS A SHARES
## factor(Name)VORNADO REALTY TRUST
## factor(Name)VULCAN MATERIALS CO
## factor(Name)WABTEC CORP
## factor(Name)WALGREENS BOOTS ALLIANCE INC
## factor(Name)WALMART INC
## factor(Name)WALT DISNEY CO/THE
## factor(Name)WASTE MANAGEMENT INC
## factor(Name)WATERS CORP
## factor(Name)WEC ENERGY GROUP INC
## factor(Name)WELLS FARGO & CO
## factor(Name)WELLTOWER INC
## factor(Name)WEST PHARMACEUTICAL SERVICES
## factor(Name)WESTERN DIGITAL CORP .
## factor(Name)WESTERN UNION CO
## factor(Name)WESTROCK CO
## factor(Name)WEYERHAEUSER CO
## factor(Name)WHIRLPOOL CORP
## factor(Name)WILLIAMS COS INC
## factor(Name)WILLIS TOWERS WATSON PLC
## factor(Name)WINDSTREAM HOLDINGS INC
## factor(Name)WW GRAINGER INC
## factor(Name)WYNN RESORTS LTD
## factor(Name)XCEL ENERGY INC
## factor(Name)XEROX HOLDINGS CORP
## factor(Name)XILINX INC
## factor(Name)XYLEM INC
## factor(Name)YUM! BRANDS INC **
## factor(Name)ZIMMER BIOMET HOLDINGS INC
## factor(Name)ZIONS BANCORP NA

```

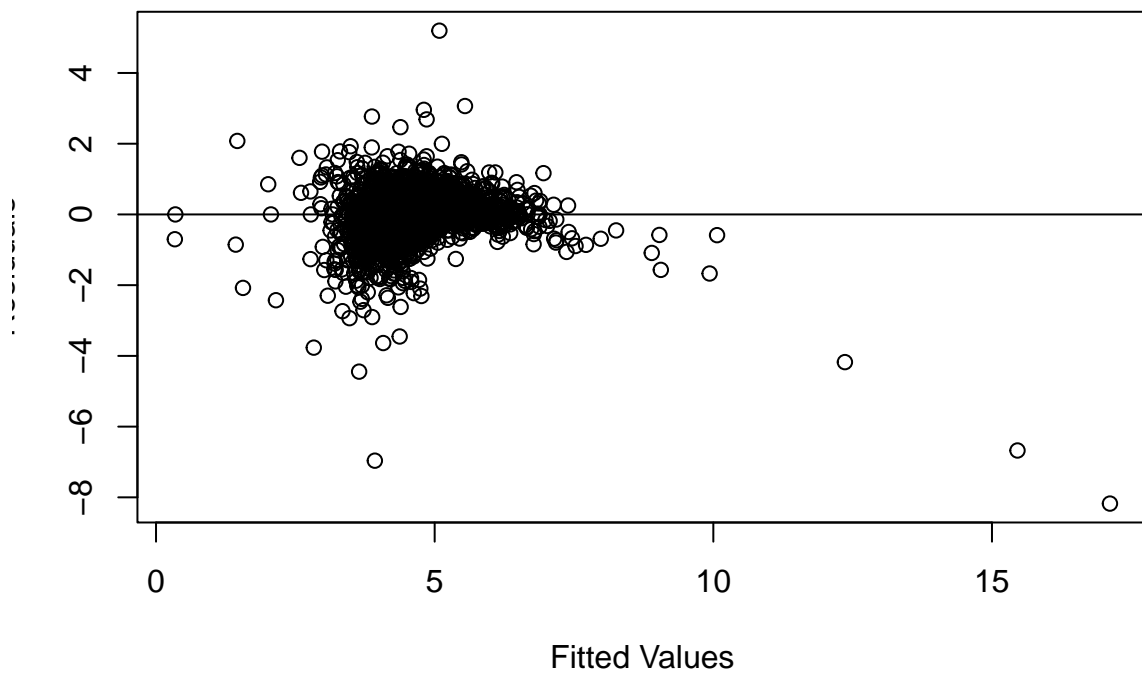


```
## factor(Name)ZOETIS INC
## factor(Year)2015
## factor(Year)2016
## factor(Year)2017
## factor(Year)2018
## factor(Year)2019
## factor(Year)2020
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.7194 on 2431 degrees of freedom
## (321 observations deleted due to missingness)
## Multiple R-squared:  0.6139, Adjusted R-squared:  0.5238
## F-statistic: 6.816 on 567 and 2431 DF, p-value: < 2.2e-16

# Testing for Normally Distributed Errors
qqnorm(reg1$residuals)
qqline(reg1$residuals)
```

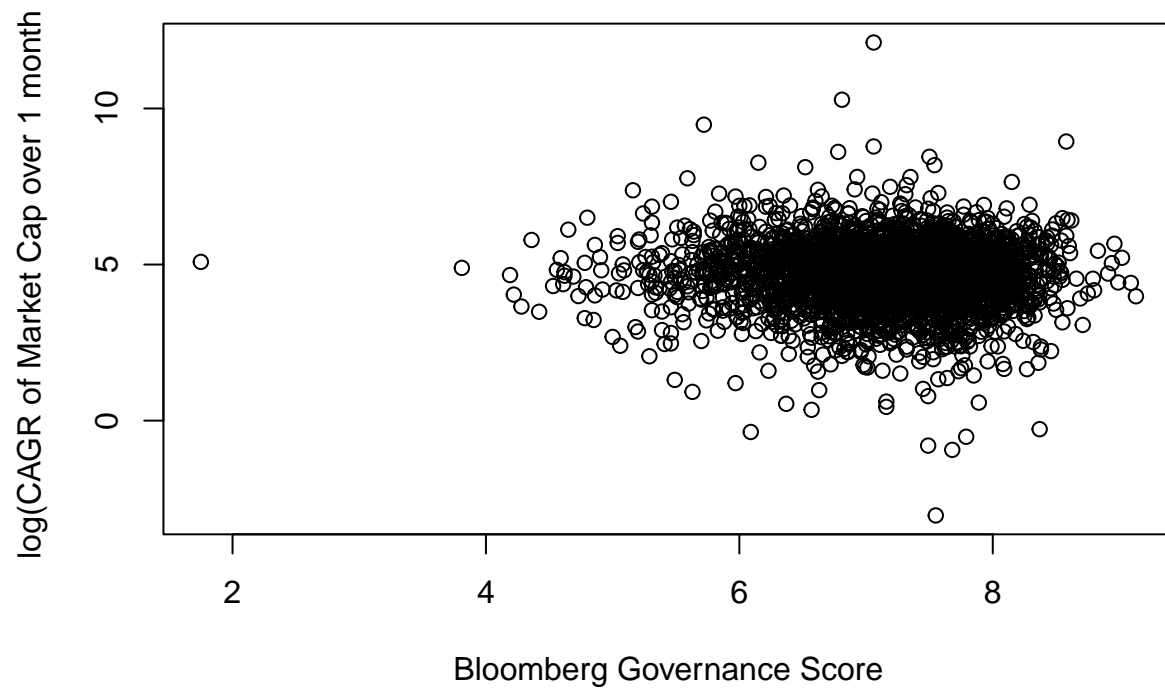


```
# Residuals to fitted Value Plot
plot(x = reg1$fitted.values, y = reg1$residuals, xlab =
      "Fitted Values", ylab = "Residuals" )
abline(h = 0)
```



```
# Growth in ESG and Growth in CAGR mkt CAP
```

```
plot(x = ESG$Governance, y = log(ESG$`CAGR of Market Cap over 1 Month` + 100), xlab = "Bloomberg G
```



```
write_csv(ESG, "Processed_Data/ESG.csv")
```