

Environnement Impacting Factors of institutionals investors in Bank

Contents

Load Packages	1
Load Data	2
Check Missing data	2
LASSO regression	3
Scale data	3
Load <code>glmnet</code> library	3
LASSO on each variables Y	3
Global Functions for Bayesian models	5
makeDataList()	5
generatePost()	6
mcmcConvergence()	7
bayesList()	7
Global Bayesian models	14
Quantitative Y	14
Binomial Y	44
noUS-Global Bayesian models	58
Quantitative Y	58
Binomial Y	88
noTWN-Global Bayesian models	100
Quantitative Y	100
Binomial Y	130
noExtr-Global Bayesian models	142
Quantitative Y	142
Binomial Y	172
Endogeneity	184

Load Packages

```
library(openxlsx)
#install.packages('glmnet')
library(glmnet)
```

```
## Le chargement a nécessité le package : Matrix
```

```
## Loaded glmnet 4.1-1
```

```
library(rjags)

## Le chargement a nécessité le package : coda
## Linked to JAGS 4.3.0
## Loaded modules: basemod,bugs
library(BayesCompanion)

##
## Attachement du package : 'BayesCompanion'
## L'objet suivant est masqué depuis 'package:coda':
##
##      crosscorr
library(foreach)
#install.packages('AER')
library(AER) # test of Wu Hausman

## Le chargement a nécessité le package : car
## Le chargement a nécessité le package : carData
## Le chargement a nécessité le package : lmttest
## Le chargement a nécessité le package : zoo
##
## Attachement du package : 'zoo'
## Les objets suivants sont masqués depuis 'package:base':
##
##      as.Date, as.Date.numeric
## Le chargement a nécessité le package : sandwich
## Le chargement a nécessité le package : survival
```

Load Data

```
X <- read.xlsx("BDD_DEF_2.xlsx") # [-c(5,18),]
# View(X) # Display for check
```

Check Missing data

```
sum.na <- function(x){ sum(is.na(x))}
apply(X, 2, sum.na)
```

##	Bank	Country_B	Shareholder	ET3	EPS	ER3
##	0	0	0	0	0	0
##	ER1	ER	CP	CERT	INI	DISCL
##	0	0	0	0	0	0
##	PRI	INIT	EPI	STEW	II_10	FOR_10
##	0	0	0	0	0	0
##	SH1	SH10	II	INTER	GPS	SIZE
##	0	0	0	0	0	0
##	GROWTH	ROE	ROA	CAR	NPL	DE

```
##          0          0          0          2          5          0
##      DE_5      DC      DC_5      DEPO      RET      EPI_C
##          0          0          0          0          0          1
##      GFI      BASEL      EPSI      FS      BRGR      STAB
##          0          38          29          0          0          0
##      GDP
##          0
```

LASSO regression

Scale data

We scale the data to avoid the scale influence the shrinkage.

```
X.sc <- scale(X[, c('GPS', 'SIZE', 'GROWTH', 'ROA', 'GFI', 'GDP', 'CAR')])

Y.sc <- scale(X[,c('EPS', 'ET3', 'ER1', 'ER3', 'CP', 'DISCL')])

#names(X)
colnames(X.sc); head(X.sc)

## [1] "GPS"      "SIZE"      "GROWTH"    "ROA"      "GFI"      "GDP"      "CAR"
##
##      GPS      SIZE      GROWTH      ROA      GFI      GDP      CAR
## 1  1.2568612 -1.0987827 -1.0501274 -1.0709397  1.0374862  0.6264649  1.6758187
## 2  0.3106746  0.4856660  0.6099765 -0.4897837  1.1544058  0.7242240  1.1693433
## 3 -1.8209464 -0.6374993 -0.2847363  0.2137210 -0.7664163 -1.4429387 -0.8846962
## 4  0.3132471 -0.5829601  0.3288270  0.2748953 -0.6160911  0.4524645  0.1479510
## 5 -1.7813290 -1.4378768 -0.6723439  0.4176354 -0.6160911  0.4524645  0.8373204
## 6 -0.1585599 -0.8372692 -0.8205994 -0.6631109 -0.1818183 -0.2536338  0.5503177

colnames(Y.sc); head(Y.sc)

## [1] "EPS"      "ET3"      "ER1"      "ER3"      "CP"      "DISCL"
##
##      EPS      ET3      ER1      ER3      CP      DISCL
## 1 -1.4338648 -0.44157870 -0.1463587 -0.3311381 -0.1694033 -0.7508553
## 2  1.0149538 -0.57529785 -0.4095204 -0.3658056  1.0634766  1.9625803
## 3 -0.1929061 -1.51659396 -1.9747870 -1.4207319  1.0634766  0.6058625
## 4 -0.6315890 -0.32086003  0.1033531 -0.3329627 -1.4022833 -2.1075730
## 5 -1.2945534  7.64409615  0.1706027  8.1402026 -1.4022833 -2.1075730
## 6  0.4162110 -0.06858895  0.6169879  0.2819295 -0.1694033  0.6058625
```

Load glmnet library

```
#install.packages('glmnet')
library(glmnet)
```

LASSO on each variables Y

alpha parameter is set to 1 in elastic net, to obtain a strict LASSO regression. The aim is to select the most explicative X, and avoid over-fitting in the following part.

We limit impact of LASSO

```
for(i in 1:ncol(Y.sc)){
  cat('-----\n')
```

```

cat("LASSO regression on variable ", colnames(Y.sc)[i], '\n')
  # detect NA from X$CAR
  which(is.na(X$CAR)) -> NA.ind
  x.sc <- X.sc
  y.sc <- Y.sc

if('CAR' %in% colnames(X.sc)){
  x.sc <- X.sc[-NA.ind,]
  y.sc <- Y.sc[-NA.ind,]
}
# Ajustement d'elastic cv
enet <- cv.glmnet(x.sc,
                  y.sc[, i],
                  alpha=1
                  )

# Fit the Ridge regression
regenet <- glmnet(x.sc, y.sc[,i], alpha=1,
                  lambda = enet$lambda.1se/2)

print(coef(regenet))
#plot(regenet)
}

```

```

## -----
## LASSO regression on variable  EPS
## 8 x 1 sparse Matrix of class "dgCMatrix"
##              s0
## (Intercept) 0.004267412
## GPS         .
## SIZE        0.241040262
## GROWTH       .
## ROA          .
## GFI          0.070881492
## GDP          .
## CAR          .
## -----
## LASSO regression on variable  ET3
## 8 x 1 sparse Matrix of class "dgCMatrix"
##              s0
## (Intercept) -0.008480326
## GPS         -0.039257252
## SIZE         .
## GROWTH       .
## ROA          .
## GFI         -0.081297360
## GDP         -0.017524669
## CAR          .
## -----
## LASSO regression on variable  ER1
## 8 x 1 sparse Matrix of class "dgCMatrix"
##              s0
## (Intercept) 0.007667533
## GPS         0.095181074

```

```

## SIZE      .
## GROWTH    .
## ROA       .
## GFI       .
## GDP       -0.079739986
## CAR       .
## -----
## LASSO regression on variable  ER3
## 8 x 1 sparse Matrix of class "dgCMatrix"
##              s0
## (Intercept) -0.007984943
## GPS         -0.024163634
## SIZE        .
## GROWTH      .
## ROA         .
## GFI         -0.079181485
## GDP         -0.044915041
## CAR        .
## -----
## LASSO regression on variable  CP
## 8 x 1 sparse Matrix of class "dgCMatrix"
##              s0
## (Intercept) 0.009495255
## GPS         0.052620297
## SIZE        0.118906213
## GROWTH      .
## ROA         .
## GFI         0.075320578
## GDP         .
## CAR         .
## -----
## LASSO regression on variable  DISCL
## 8 x 1 sparse Matrix of class "dgCMatrix"
##              s0
## (Intercept) 0.007134387
## GPS         0.174874812
## SIZE        0.144167276
## GROWTH      -0.102786944
## ROA         .
## GFI         0.148437438
## GDP         0.008092372
## CAR         .

```

To conclude, LASSO regression indicates that Y variables are mostly explained by GFI, and marginally, SIZE and GDP.

Global Functions for Bayesian models

makeDataList()

A function to make list of data X is the whole data.frame form which we extract the data. `x.name` is a string, the name of the explicative variable we add to GFI, SIZE and GDP. `y.name` is a string, the name of the explained variable.

```

makeDataList <- function(
  X=X,
  x.name=NULL, y.name=NULL
){
  if(is.null(x.name) | !(x.name %in% colnames(X))
  )stop('x.name must be the name of a column of X')

  if(is.null(y.name) | !(y.name %in% colnames(X))
  )stop('y.name must be the name of a column of X')

  if(sum(is.na(X[ , x.name]))>0) stop("Column x.name contains NA")

  if(sum(is.na(X[ , y.name]))>0) stop("Column y.name contains NA")

  list(
    N = nrow(X), # number of rows
    n = ifelse(y.name=='CP', 3, 8 ), # max value for CP and DISCL -- not use elsewhere
    GFI = X$GFI,
    SIZE=X$SIZE,
    GPS = X$GPS,
    x = X[ , x.name],
    y = X[ , y.name]
  )
}

```

Examples

```
makeDataList(X, x.name='PRI', y.name='EPS')
```

NA in column CAR => error

```
# makeDataList(X, x.name='CAR', y.name='EPS')
```

generatePost()

A function to generate bayesian *a posteriori*

```

#model <- "model1.R"
#x.name <- 'PRI'
#y.name <- 'EPS'
#DF <- X # extraction of data

generatePost <- function(DF, x.name, y.name, model='model1.R'){
  dataList <- makeDataList(DF, x.name, y.name )
  jagsModel <- jags.model(
    file = model,
    data=dataList,
    n.chains=3,
    n.adapt=500
  )
  update(jagsModel, n.iter=500)
  coda.samples(
    jagsModel,
    variable.names = c('beta0', 'beta1', 'alpha1',
                       'betaSIZE', # 'betaGFI',
                       'betaGPS'),# 'nu' for robust student model # not used
    n.iter=3000, # change to 300 000
  )
}

```

```

    thin=1
  )
}

```

Example :

```
PRI_EPS <- generatePost(X, x.name='PRI', y.name='EPS', model='model1.R')
```

mcmcConvergence()

A function to validate convergence

```

mcmcConvergence <- function(codaObj){
  print(effectiveSize(codaObj))
  plot(codaObj, ask=FALSE, auto=FALSE)
}

```

Example :

```

#PRI_EPS <- generatePost(X, x.name='PRI', y.name='EPS', model='model1.R')
mcmcConvergence(PRI_EPS)

```

bayesList()

A function to analyse lists of variable

```

bayesList <- function(X, x.names, y.names, model.name ){
  post <- list()
  foreach(y.name = y.names, .combine = rbind)%do%{
    foreach( x.name = x.names, .combine=c)%do%{
      print("
      ----- ")
      print(paste(" Analysis of Y=",y.name," explained by x=", x.name))
      post[[x.name]] <-
        generatePost(X,
                     x.name, y.name,
                     model=model.name)
      print(effectiveSize(post[[x.name]]))
      # mcmcConvergence(EPS[[x.name]])
      M <- as.matrix(post[[x.name]][, 'beta1'])
      proba <- signif(100 * max(c(mean(M>0), mean(M<0) ) ) , 4) * sign(mean(M))
      conclusion <- paste(x.name, ' impact in ', y.name, ' with a\n probability of ', proba, "%")
      print( conclusion)
      # display posterior histogram of beta1
      plotPost(M ,
               compVal = 0,
               main= conclusion
              )
      proba
    }
  }
  res.quanti
  save(post,
        file=paste0('post',model.name, '.RData'))
  colnames(res.quanti) <- x.names
  rownames(res.quanti) <- y.names
  res.quanti
}

```

```

# Example
y.names <- c('EPS' , 'ET3' )
x.names <- c('PRI', 'INIT' , 'EPI')
bayesList(X, x.names, y.names, 'model1.R')

## [1] "      ----- "
## [1] " Analysis of Y= EPS  explained by x= PRI"

## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data

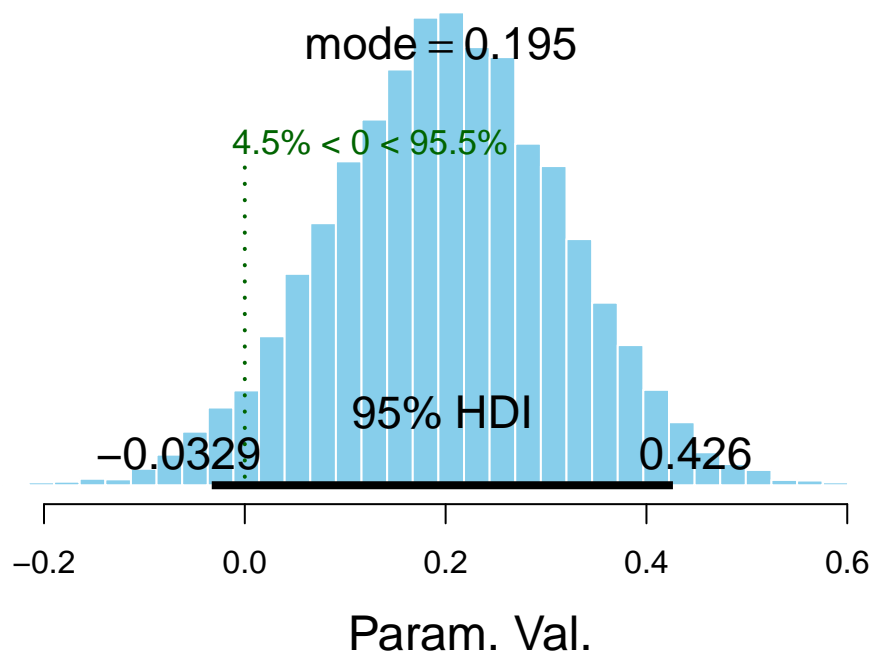
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1919
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 9351.123 9445.480 9351.123 7588.205 7129.501
## [1] "PRI  impact in  EPS  with a\n probability of  95.47 %"

## [1] "      ----- "
## [1] " Analysis of Y= EPS  explained by x= INIT"

## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data

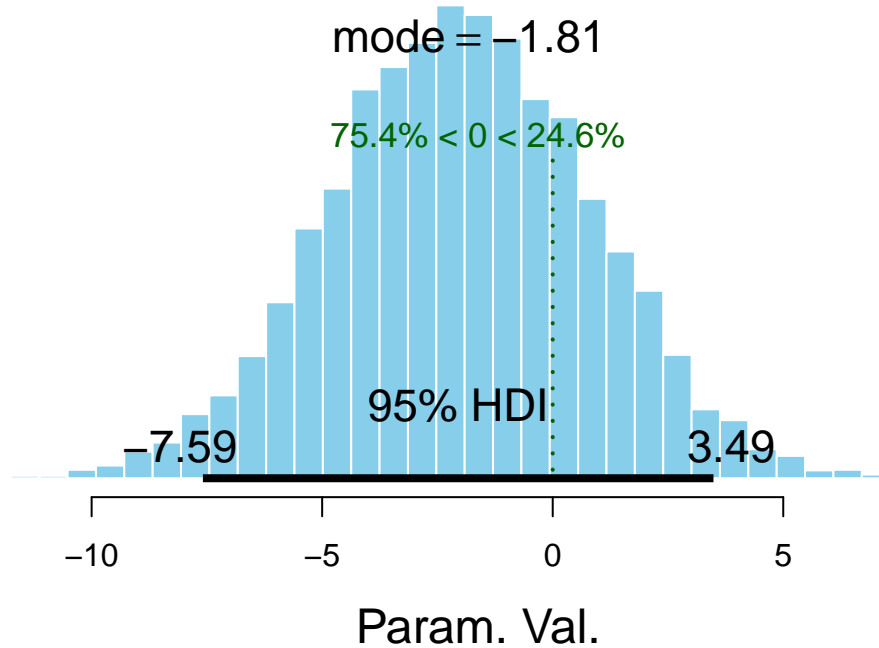
```


PRI impact in EPS with a probability of 95.47 %



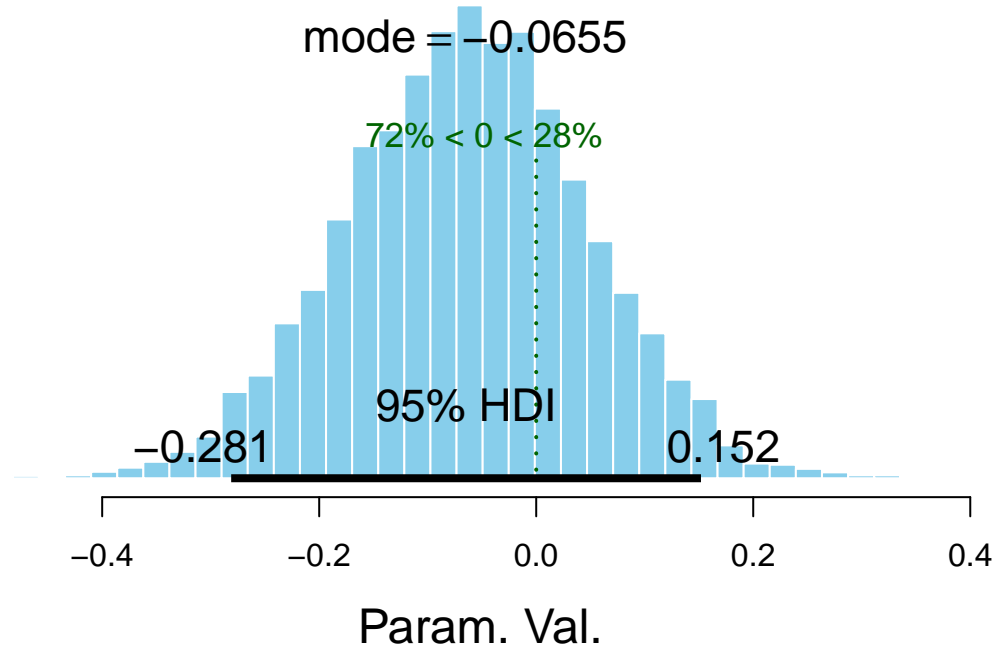
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1918
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8609.844 9000.000 8609.844 7367.319 6592.481
## [1] "INIT  impact in  EPS  with a\n probability of  -75.39 %"
## [1] "
## [1] " Analysis of Y= EPS  explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in EPS with a probability of -75.39 %



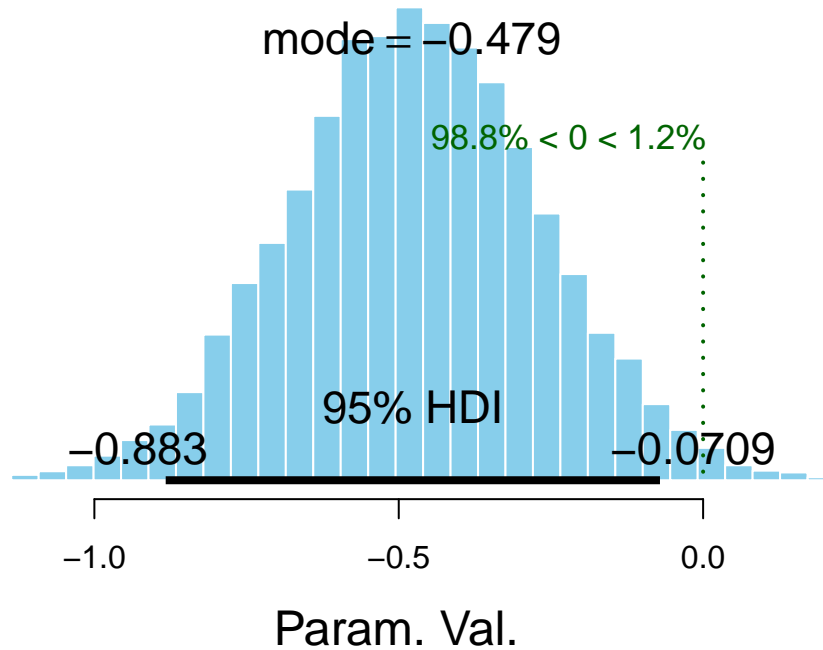
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1912
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 6355.494 8813.179 6355.494 7421.082 6800.008
## [1] "EPI impact in EPS with a\n probability of -72.04 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in EPS with a probability of -72.04 %



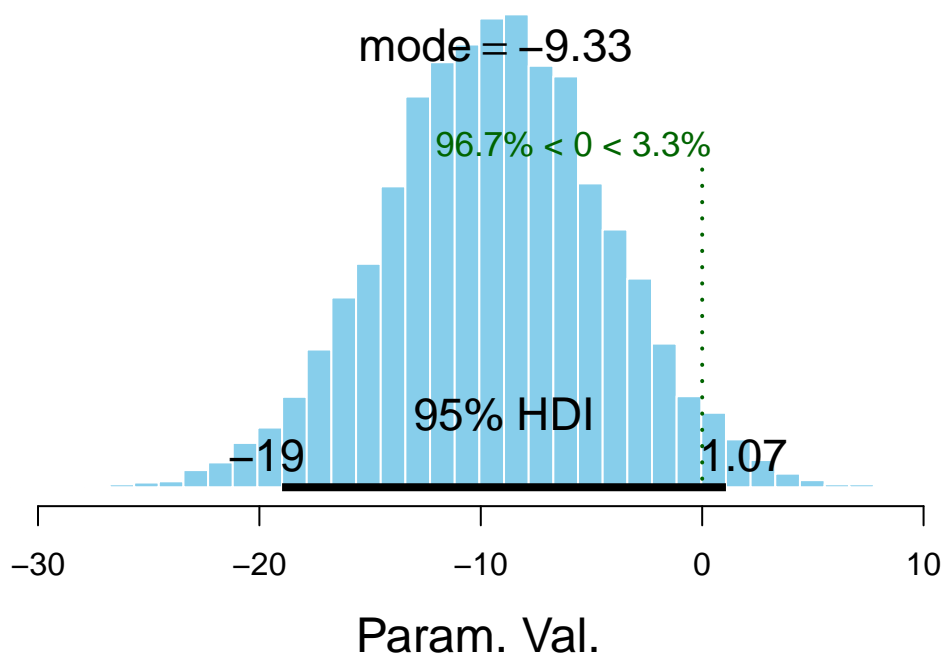
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1919
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8762.827 8057.870 8762.827 7336.991 7065.306
## [1] "PRI impact in ET3 with a\n probability of -98.84 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

PRI impact in ET3 with a probability of -98.84 %



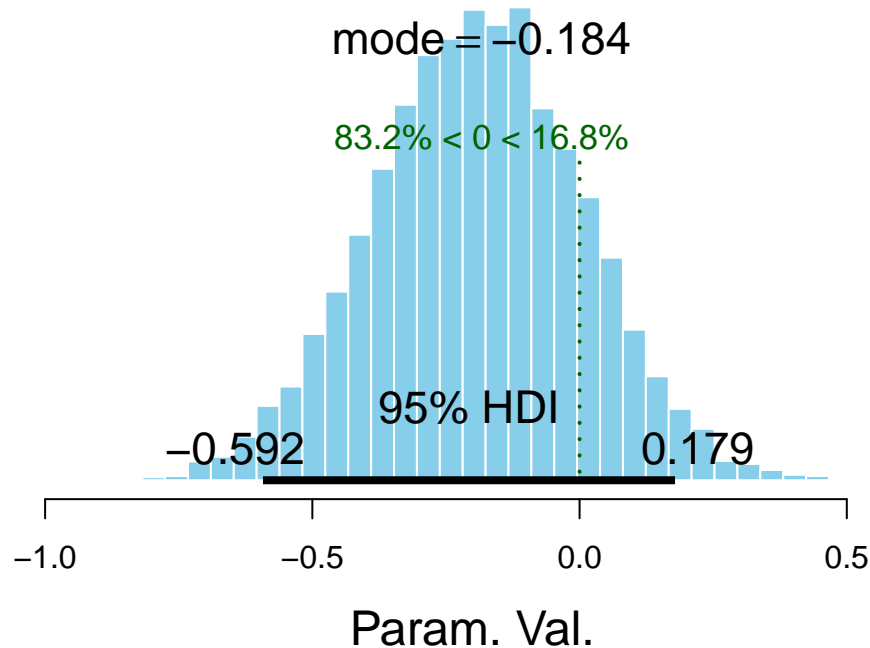
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1918
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8076.520 9334.857 8076.520 7173.881 6967.685
## [1] "INIT impact in ET3 with a\n probability of -96.73 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ET3 with a probability of -96.73 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1912
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 6250.567 8992.815 6250.567 6683.596 6409.862
## [1] "EPI impact in ET3 with a\n probability of -83.21 %"
```

EPI impact in ET3 with a probability of -83.21 %



```
##      PRI  INIT  EPI
## EPS  95.47 -75.39 -72.04
## ET3 -98.84 -96.73 -83.21
```

Global Bayesian models

Why do we choose bayesian method? Because it will allow us to obtain the probability of validating our search hypothesis, and also the probability of not validating it. In our case, we want to quantify the level of comprehension of the financial mechanism, even if it doesn't work, because it is an interesting result.

Quantitative Y

```
x.names <- c('PRI', 'INIT', 'EPI', 'STEW', 'II_10', 'FOR_10')
y.names <- c('EPS', 'ET3', 'ER3', 'ER1', 'ER')
BLquanti <- bayesList(X, x.names, y.names, 'model1.R')
```

```
## [1] "      "
## [1] " Analysis of Y= EPS  explained by x= PRI"

## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data

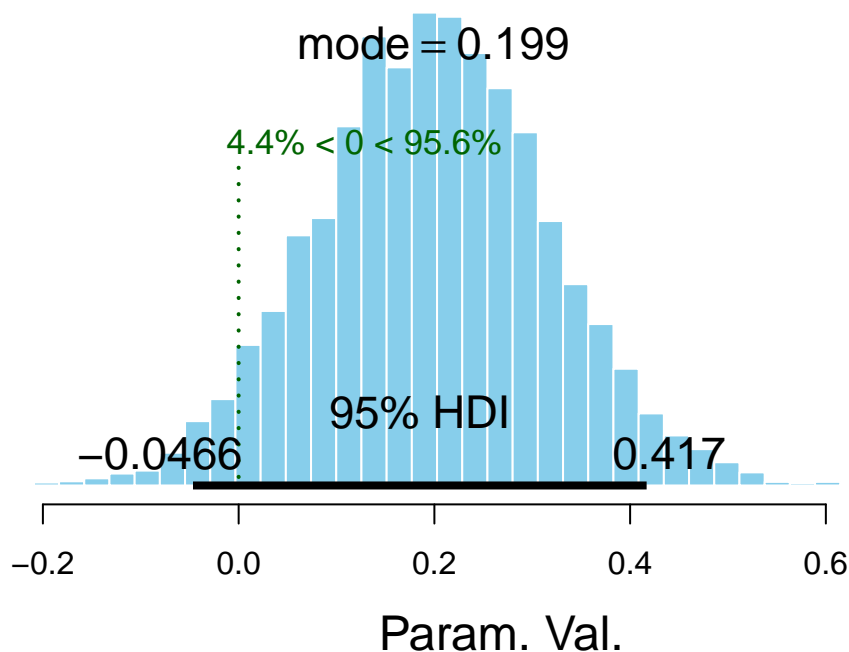
## Compiling data graph
## Resolving undeclared variables
## Allocating nodes
## Initializing
```

```

## Reading data back into data table
## Compiling model graph
## Resolving undeclared variables
## Allocating nodes
## Graph information:
## Observed stochastic nodes: 131
## Unobserved stochastic nodes: 6
## Total graph size: 1919
##
## Initializing model
##
## alpha1 beta0 beta1 betaGPS betaSIZE
## 8823.585 9491.084 8823.585 7414.593 7477.194
## [1] "PRI impact in EPS with a\n probability of 95.57 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data

```

PRI impact in EPS with a probability of 95.57 %



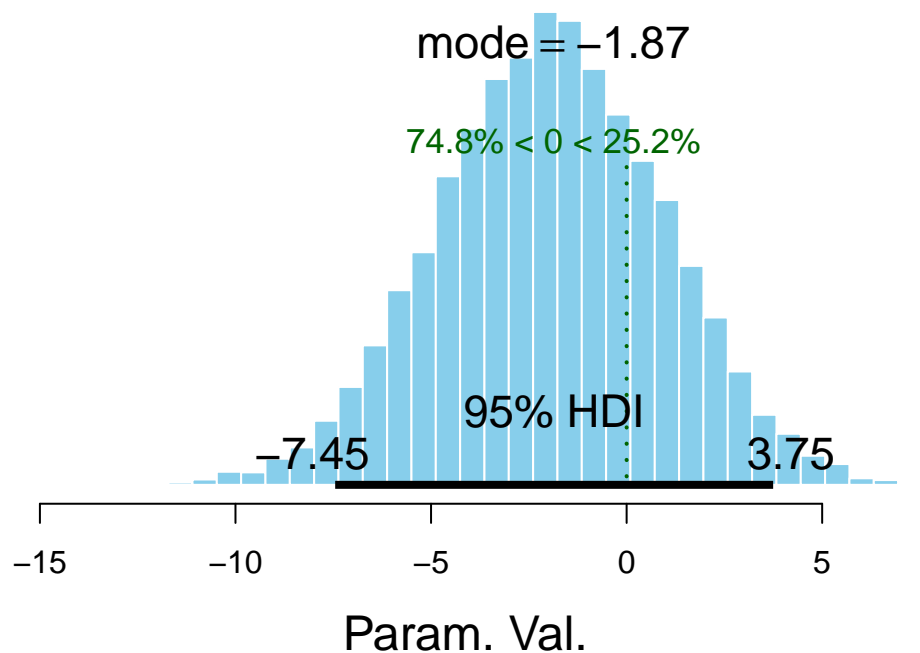
```

## Compiling data graph
## Resolving undeclared variables
## Allocating nodes
## Initializing
## Reading data back into data table
## Compiling model graph
## Resolving undeclared variables

```

```
## Allocating nodes
## Graph information:
## Observed stochastic nodes: 131
## Unobserved stochastic nodes: 6
## Total graph size: 1918
##
## Initializing model
##
## alpha1 beta0 beta1 betaGPS betaSIZE
## 8192.307 9000.000 8192.307 7246.519 7412.124
## [1] "INIT impact in EPS with a\n probability of -74.77 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in EPS with a probability of -74.77 %

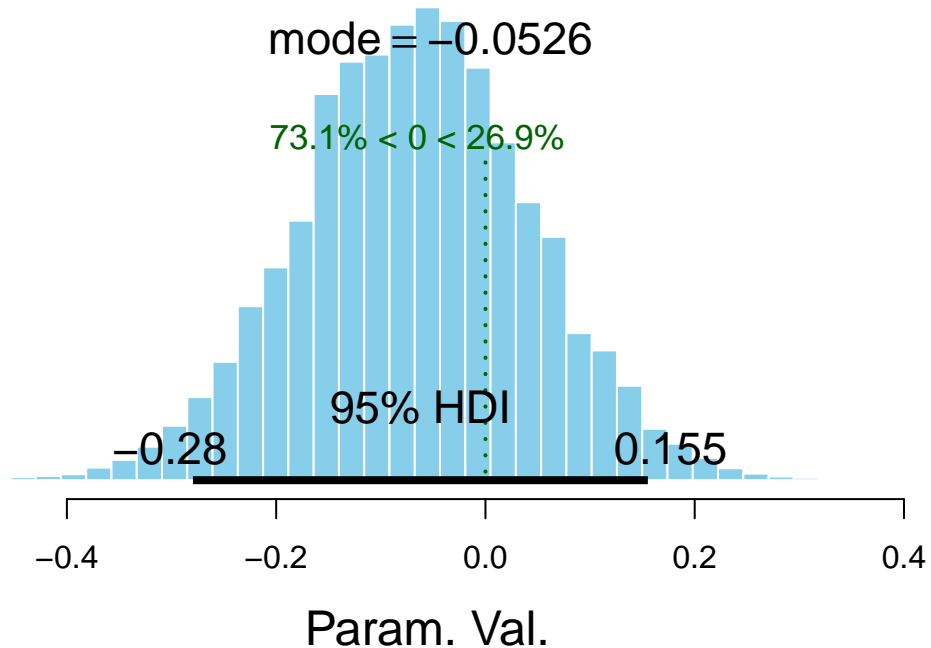


```
## Compiling data graph
## Resolving undeclared variables
## Allocating nodes
## Initializing
## Reading data back into data table
## Compiling model graph
## Resolving undeclared variables
## Allocating nodes
## Graph information:
## Observed stochastic nodes: 131
```



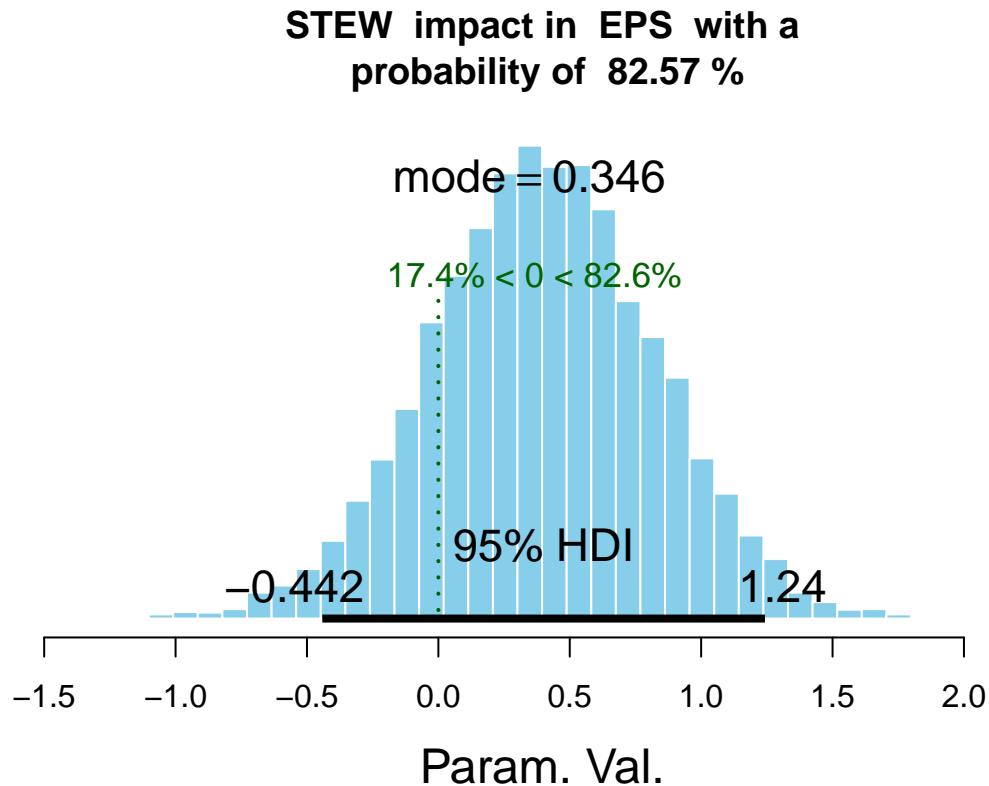
```
## Unobserved stochastic nodes: 6
## Total graph size: 1912
##
## Initializing model
##
## alpha1 beta0 beta1 betaGPS betaSIZE
## 6948.050 8667.723 6948.050 7241.325 6444.248
## [1] "EPI impact in EPS with a\n probability of -73.11 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in EPS with a probability of -73.11 %



```
## Compiling data graph
## Resolving undeclared variables
## Allocating nodes
## Initializing
## Reading data back into data table
## Compiling model graph
## Resolving undeclared variables
## Allocating nodes
## Graph information:
## Observed stochastic nodes: 131
## Unobserved stochastic nodes: 6
## Total graph size: 1911
##
```

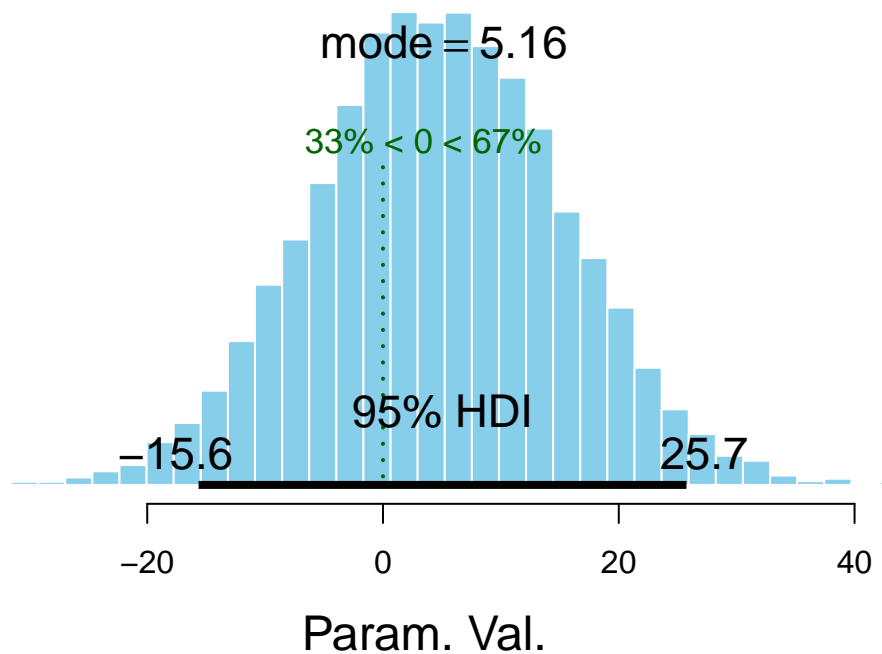
```
## Initializing model
##
##      alpha1      beta0      beta1      betaGPS      betaSIZE
## 10344.634  8758.379 10344.634  7278.744  7337.861
## [1] "STEW impact in EPS with a\n probability of 82.57 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1828
##
## Initializing model
##
##      alpha1      beta0      beta1      betaGPS      betaSIZE
```

```
## 8427.622 9525.312 8427.622 7479.944 7136.140
## [1] "II_10 impact in EPS with a\n probability of 67.03 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in EPS with a probability of 67.03 %

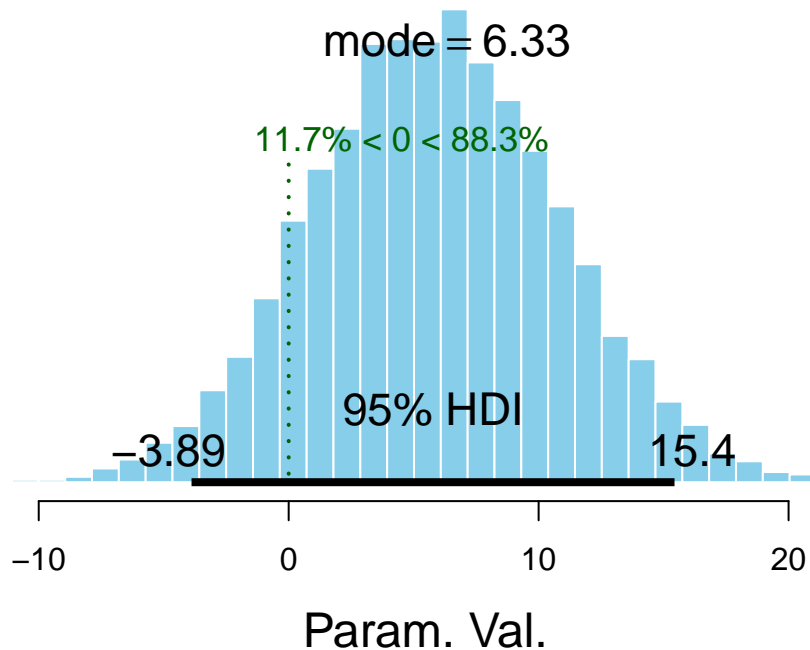


```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1908
##
## Initializing model
##
##   alpha1   beta0   beta1  betaGPS betaSIZE
## 7614.072 8972.675 7614.072 6645.824 7335.913
## [1] "FOR_10 impact in EPS with a\n probability of 88.29 %"
```

```
## [1] "      -----"
## [1] " Analysis of Y= ET3  explained by x= PRI"

## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

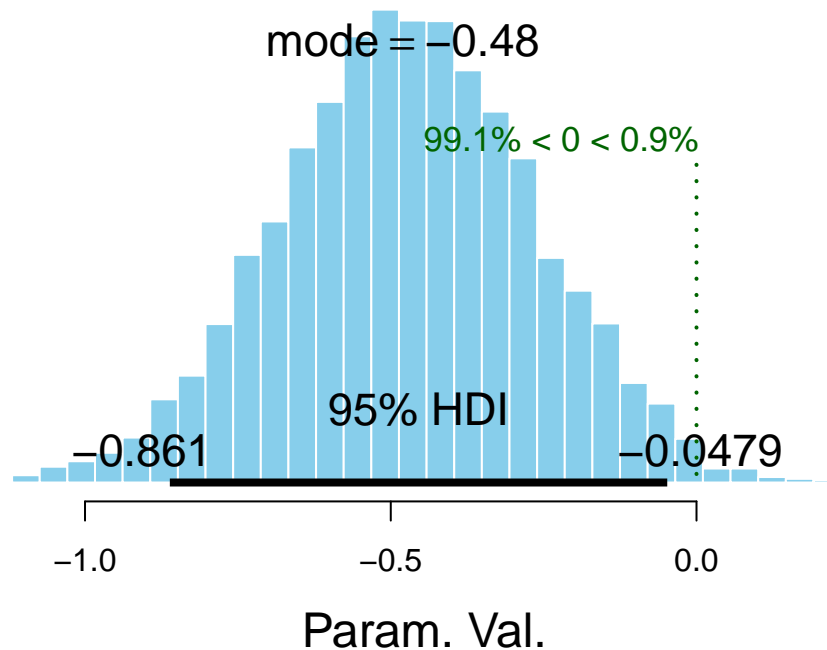
FOR₁₀ impact in EPS with a probability of 88.29 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1919
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8846.106 9000.000 8846.106 7116.051 6523.653
## [1] "PRI  impact in  ET3  with a\n probability of  -99.07 %"
## [1] "      -----"
## [1] " Analysis of Y= ET3  explained by x= INIT"
```

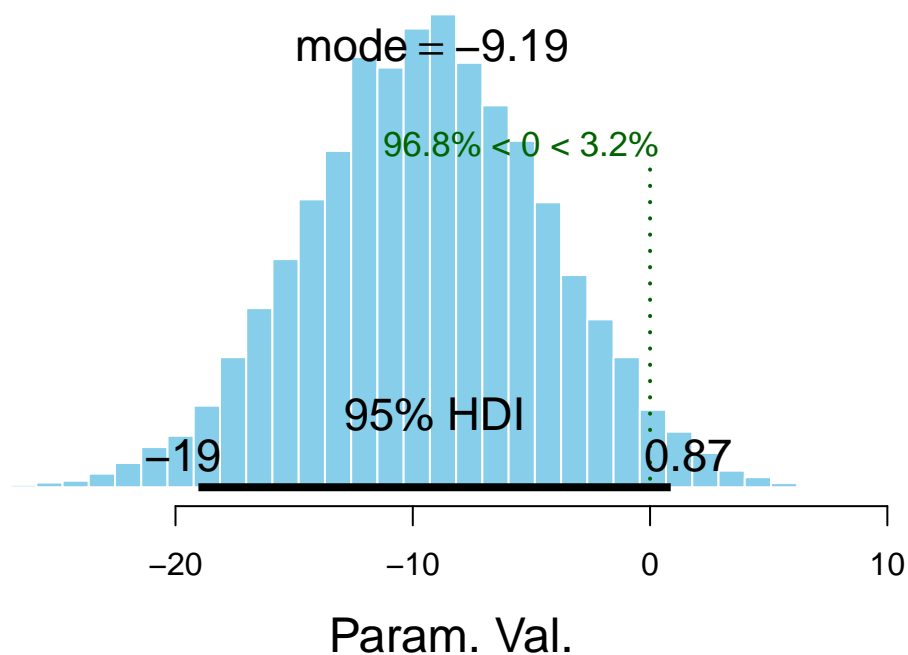
```
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

PRI impact in ET3 with a probability of -99.07 %



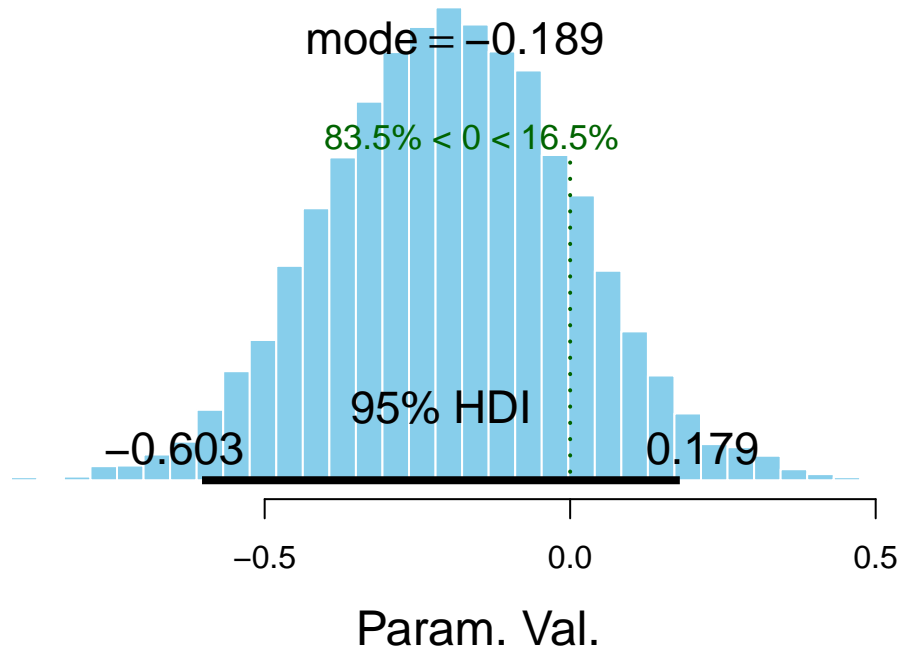
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1918
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS   betaSIZE
## 7971.873 8812.220 7971.873 7143.942 6391.730
## [1] "INIT  impact in  ET3  with a\n probability of  -96.79 %"
## [1] "
## [1] " Analysis of Y= ET3  explained by x= EPI"
##
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ET3 with a probability of -96.79 %



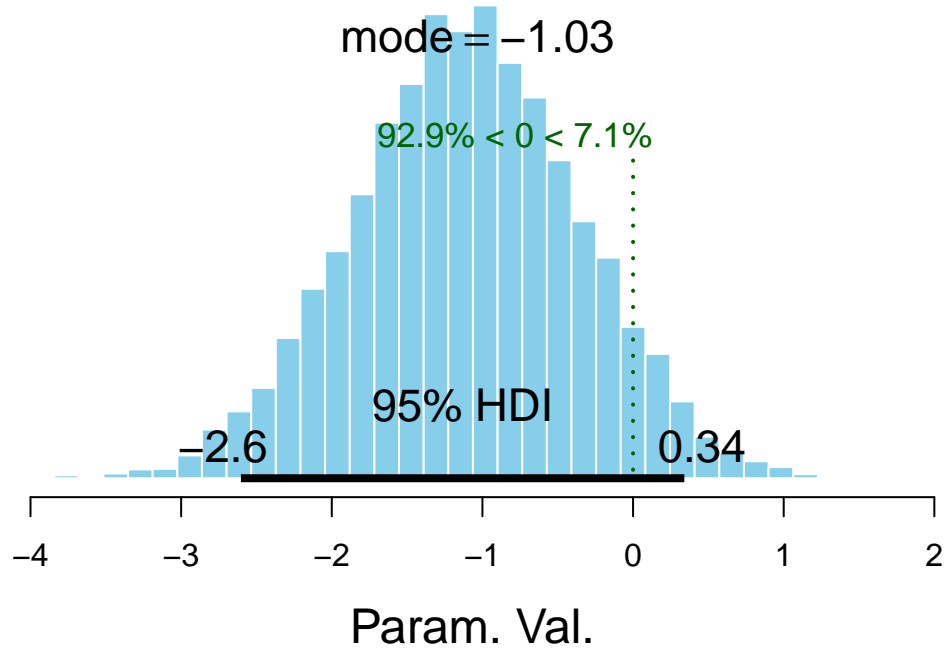
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1912
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 5969.795 9693.767 5969.795 7338.560 6811.115
## [1] "EPI impact in ET3 with a\n probability of -83.47 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in ET3 with a probability of -83.47 %



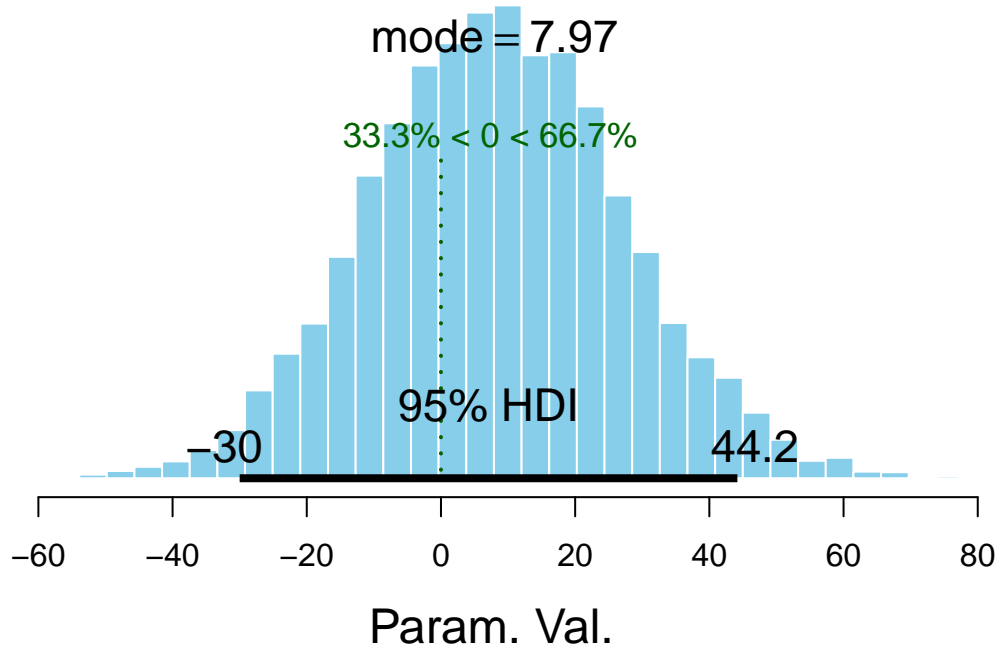
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1911
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 9446.886 9587.517 9446.886 6987.864 7261.687
## [1] "STEW impact in ET3 with a\n probability of -92.89 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ET3 with a probability of -92.89 %



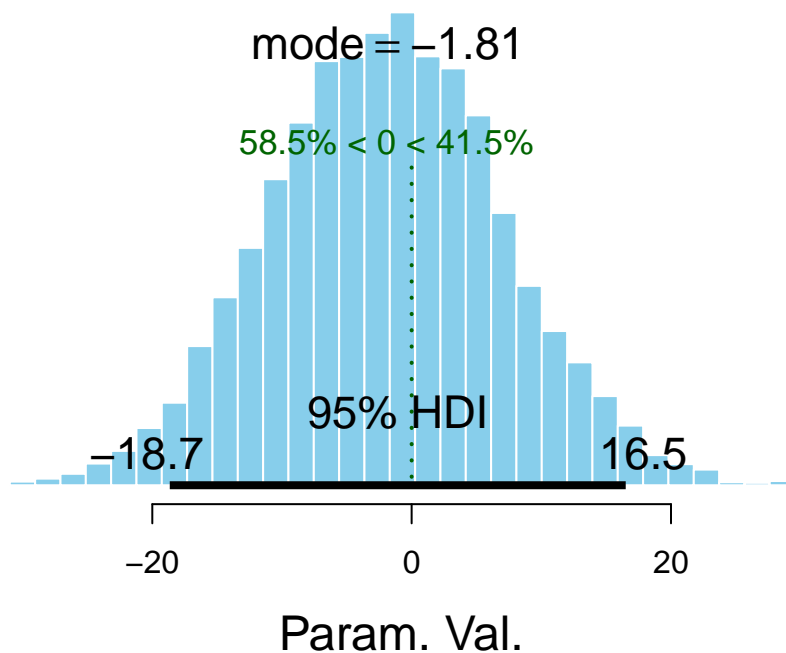
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1828
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 8177.824 9000.000 8177.824 7635.499 6800.615
## [1] "II_10 impact in ET3 with a\n probability of 66.67 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```


II_10 impact in ET3 with a probability of 66.67 %



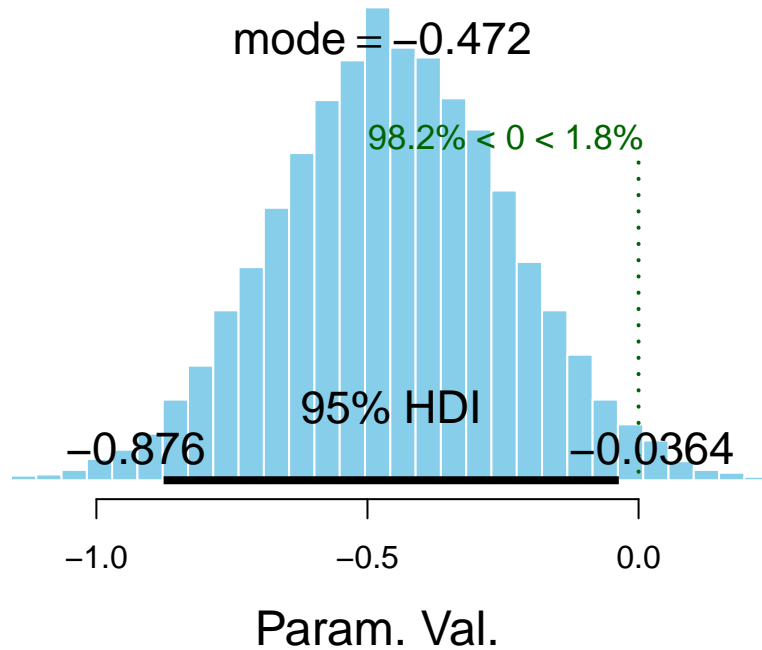
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1908
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7737.295 9000.000 7737.295 7628.371 7136.656
## [1] "FOR_10 impact in ET3 with a\n probability of -58.51 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

FOR_10 impact in ET3 with a probability of -58.51 %



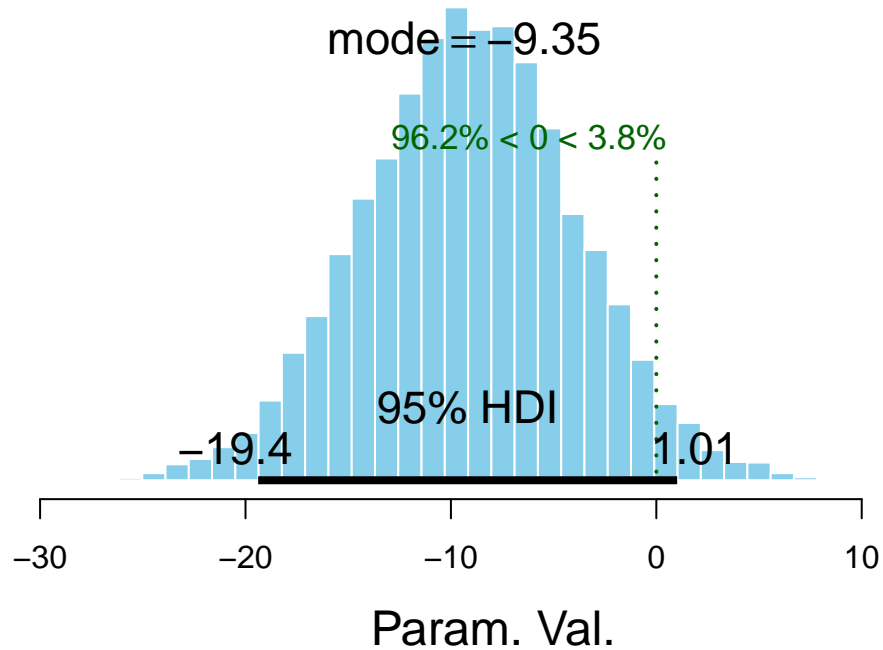
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1919
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 9000.000 8831.159 9000.000 7122.762 6680.035
## [1] "PRI impact in ER3 with a\n probability of -98.2 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

PRI impact in ER3 with a probability of -98.2 %



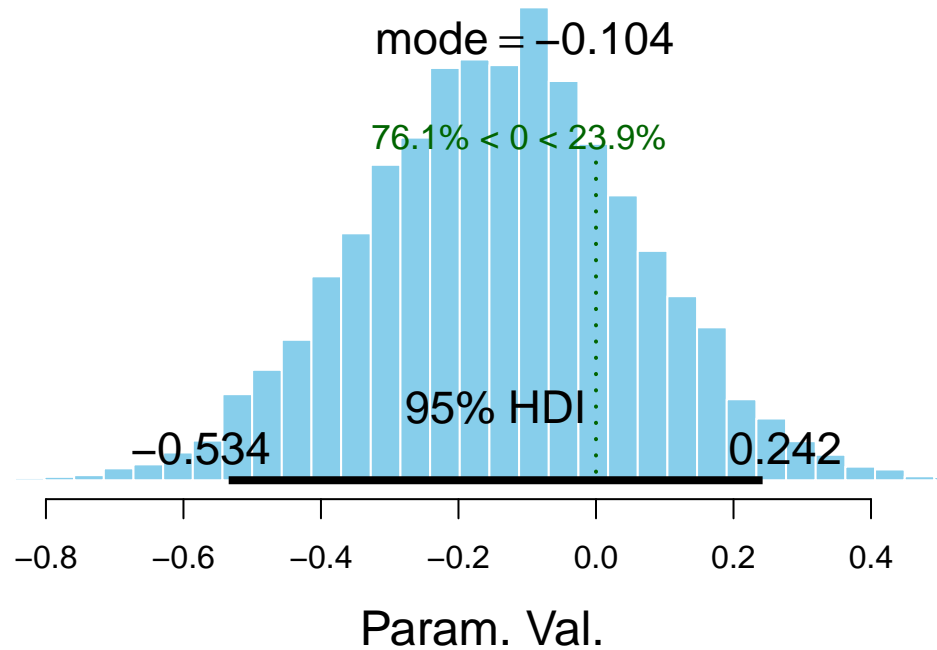
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1918
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7843.468 9178.435 7843.468 7581.875 6921.133
## [1] "INIT  impact in  ER3  with a\n probability of  -96.2 %"
## [1] "
## [1] " Analysis of Y= ER3  explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ER3 with a probability of -96.2 %



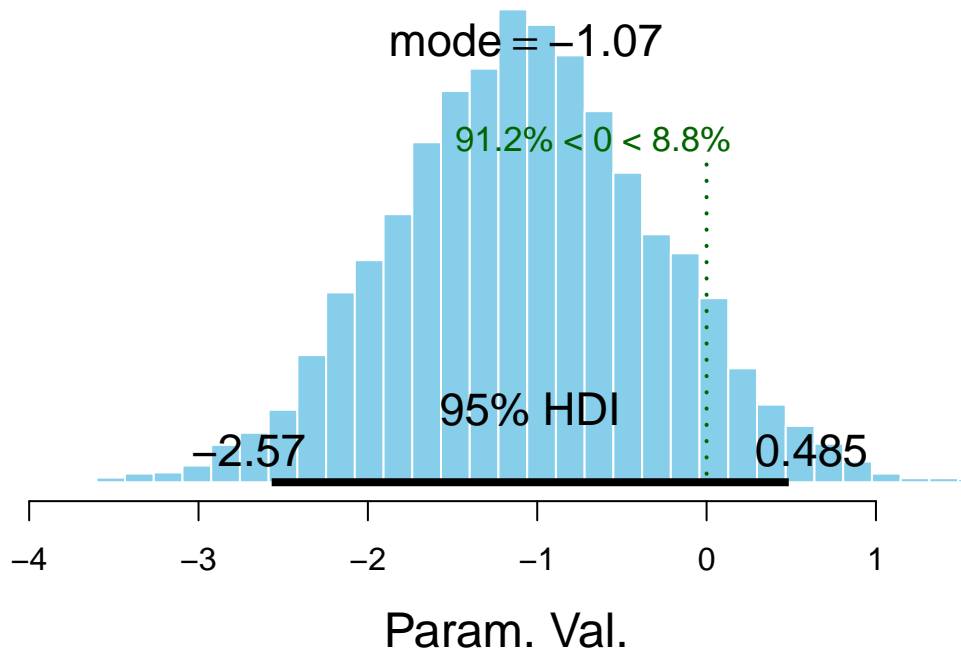
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1912
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 6670.643 9000.000 6670.643 7427.957 6883.605
## [1] "EPI impact in ER3 with a\n probability of -76.12 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in ER3 with a probability of -76.12 %



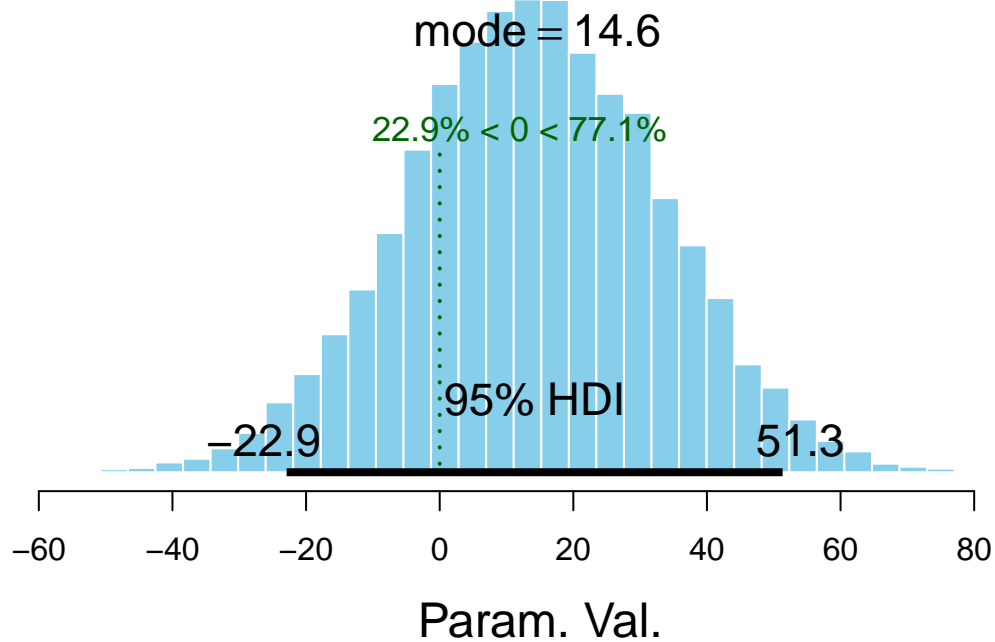
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1911
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 9000.000 7766.588 9000.000 6891.507 7455.382
## [1] "STEW impact in ER3 with a\n probability of -91.2 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ER3 with a probability of -91.2 %



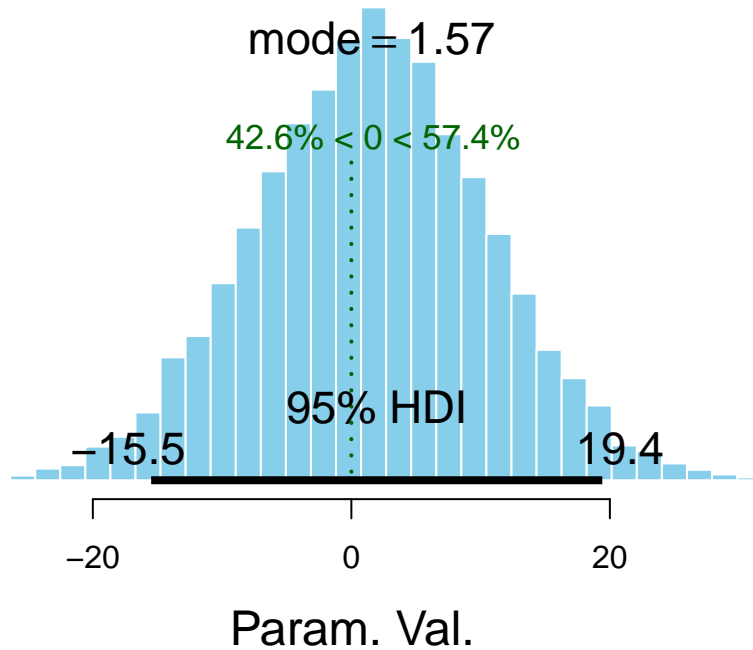
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1828
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8452.319 9289.196 8452.319 7557.718 7035.748
## [1] "II_10 impact in ER3 with a\n probability of 77.06 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in ER3 with a probability of 77.06 %



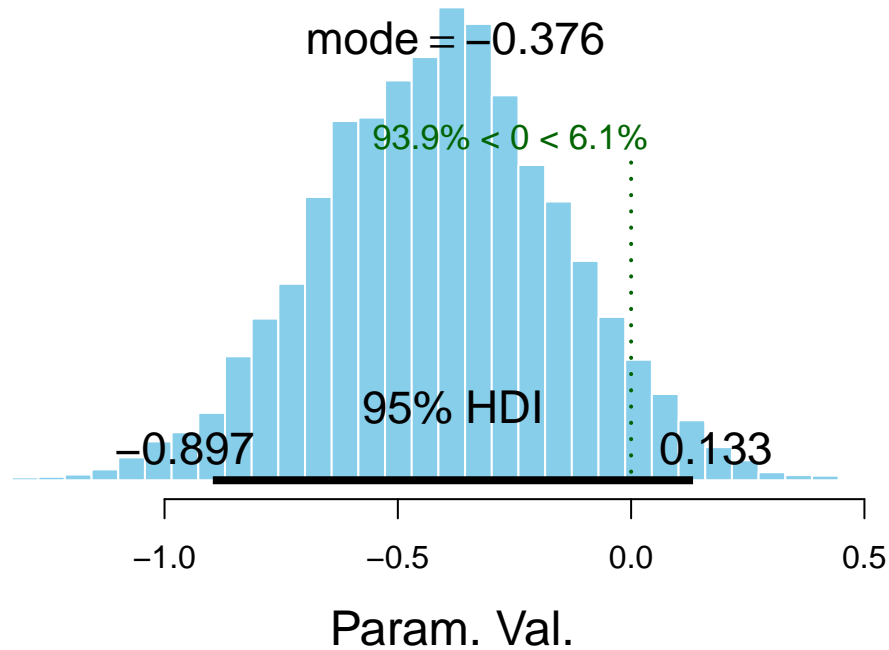
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1908
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8472.787 8998.185 8472.787 6872.555 6548.272
## [1] "FOR_10 impact in ER3 with a\n probability of 57.44 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

FOR_10 impact in ER3 with a probability of 57.44 %



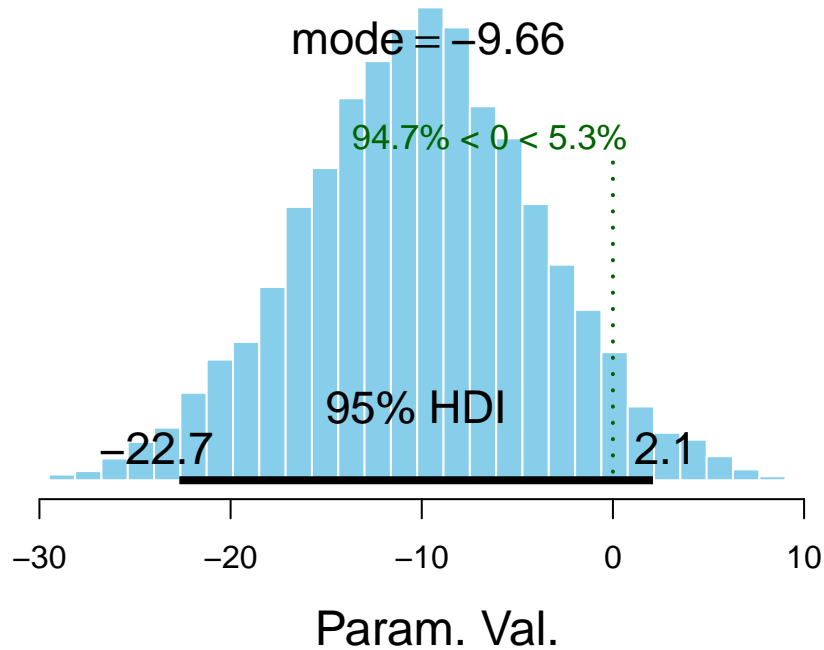
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1919
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 9000.000 8712.510 9000.000 7523.116 6616.420
## [1] "PRI impact in ER1 with a\n probability of -93.9 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```


**PRI impact in ER1 with a
probability of -93.9 %**



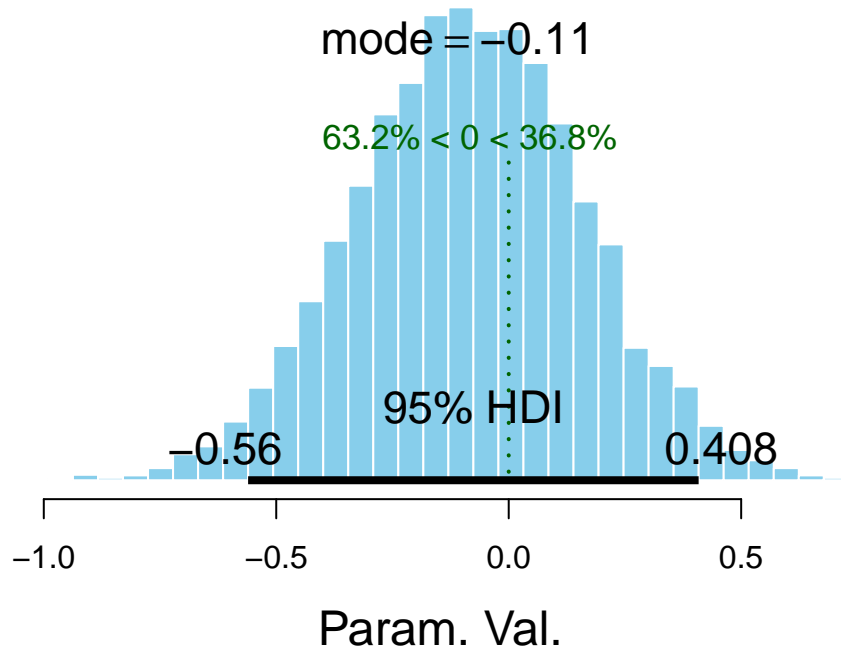
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1918
##
## Initializing model
##
##   alpha1   beta0   beta1  betaGPS betaSIZE
## 7907.065 9504.051 7907.065 7359.750 6757.717
## [1] "INIT impact in ER1 with a\n probability of -94.72 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ER1 with a probability of -94.72 %



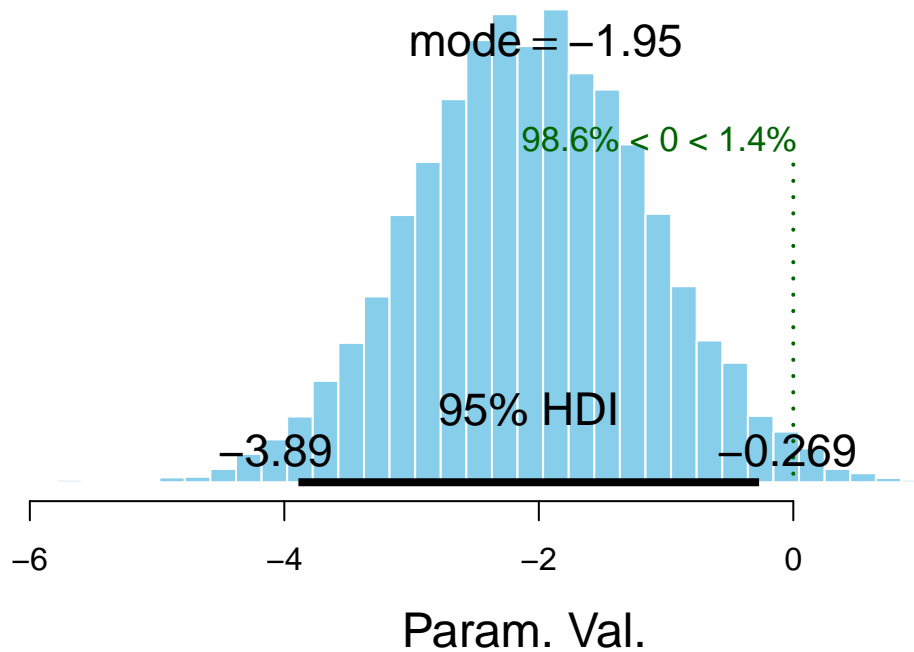
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1912
##
## Initializing model
##
##   alpha1      beta0      beta1    betaGPS  betaSIZE
## 6503.325 10378.583 6503.325 7097.438 6821.538
## [1] "EPI impact in ER1 with a\n probability of -63.18 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in ER1 with a probability of -63.18 %



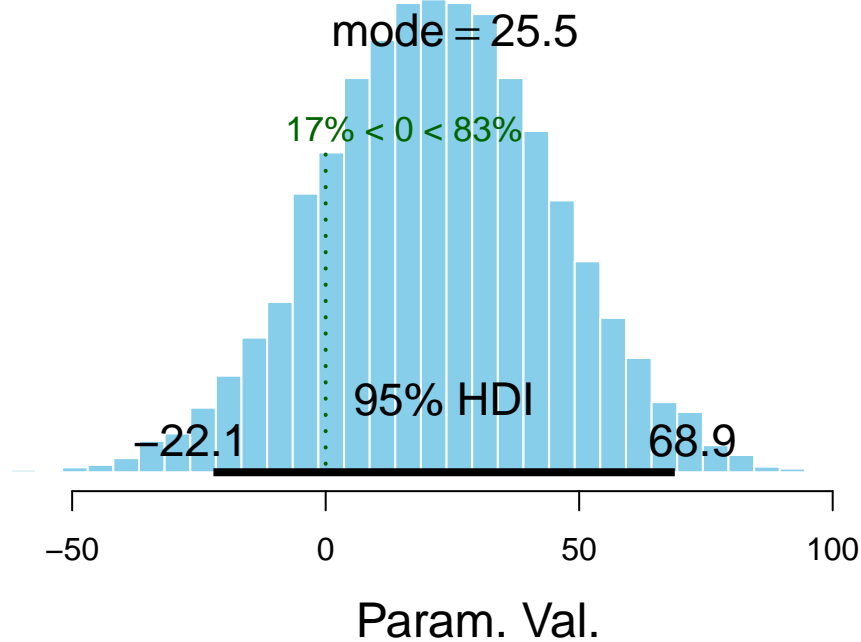
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1911
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8719.405 9000.000 8719.405 7201.760 7062.427
## [1] "STEW impact in ER1 with a\n probability of -98.61 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ER1 with a probability of -98.61 %



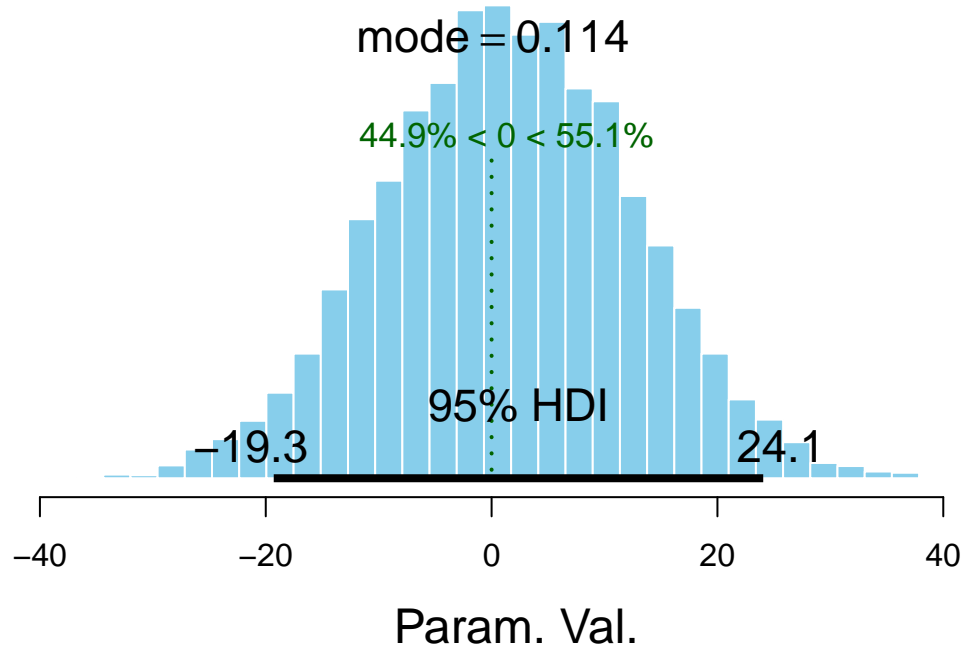
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1828
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8012.483 8804.905 8012.483 7181.631 6302.439
## [1] "II_10 impact in ER1 with a\n probability of 83.04 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in ER1 with a probability of 83.04 %



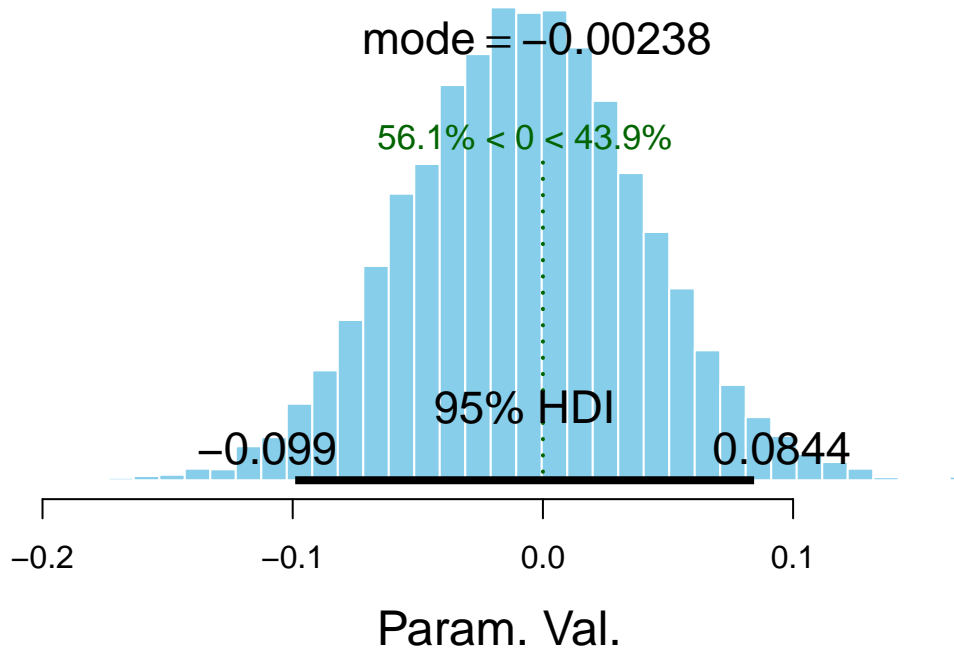
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1908
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7750.551 9000.000 7750.551 7145.140 6793.900
## [1] "FOR_10 impact in ER1 with a\n probability of 55.08 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

FOR_10 impact in ER1 with a probability of 55.08 %



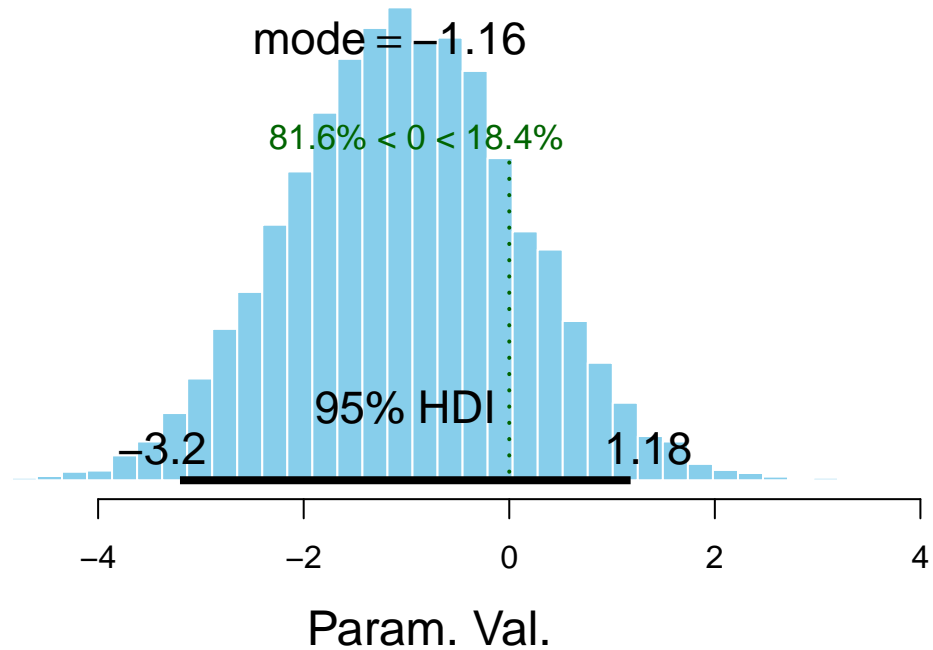
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1919
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 9000.000 9461.543 9000.000 7240.080 7364.118
## [1] "PRI impact in ER with a\n probability of -56.09 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

PRI impact in ER with a probability of -56.09 %



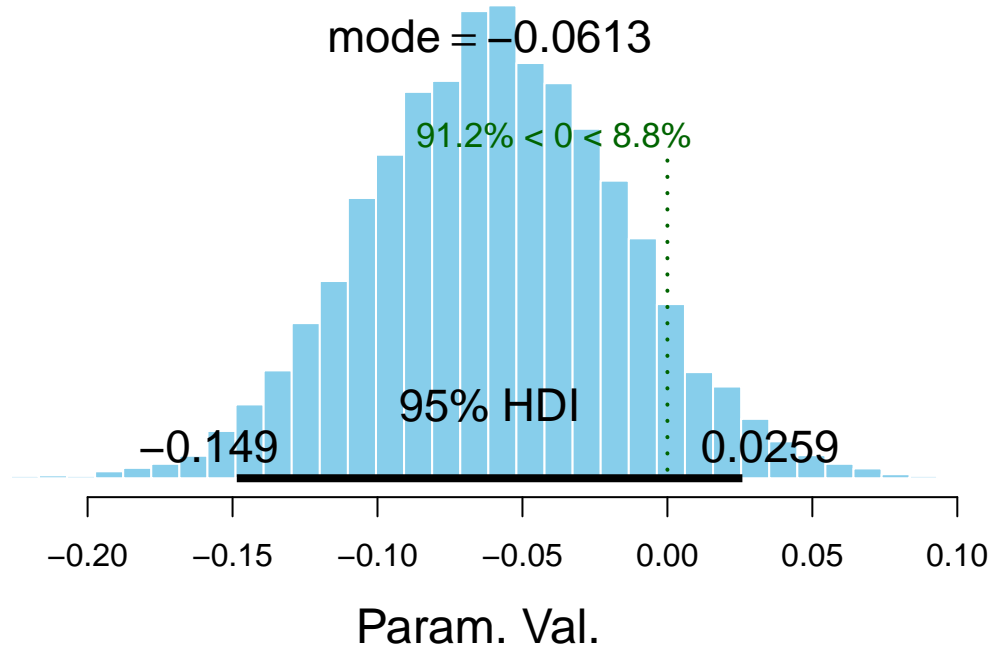
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1918
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7980.397 8958.123 7980.397 7101.727 6786.098
## [1] "INIT impact in ER with a\n probability of -81.56 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ER with a probability of -81.56 %



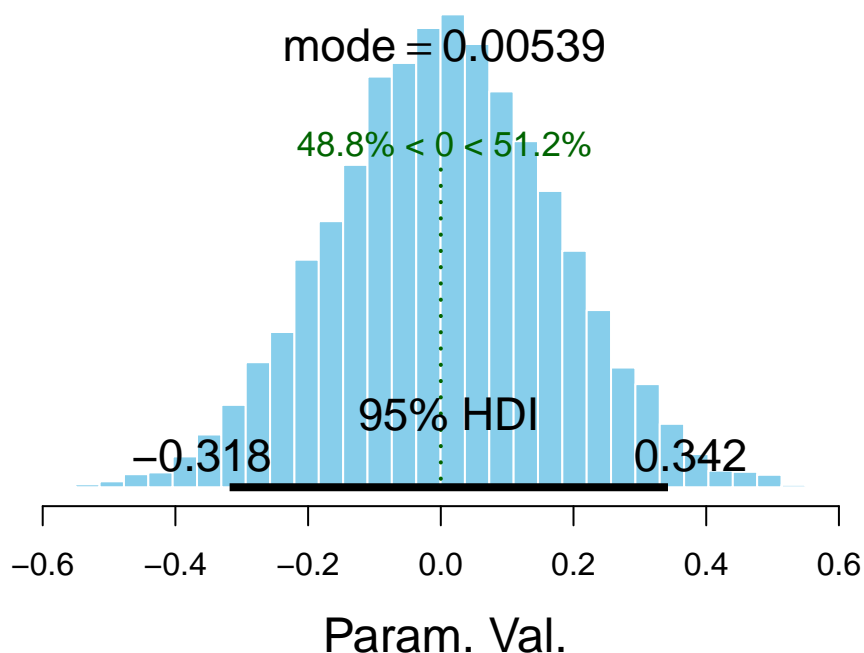
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1912
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 6210.692 8566.267 6210.692 6936.393 6363.544
## [1] "EPI impact in ER with a\n probability of -91.21 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```


EPI impact in ER with a probability of -91.21 %



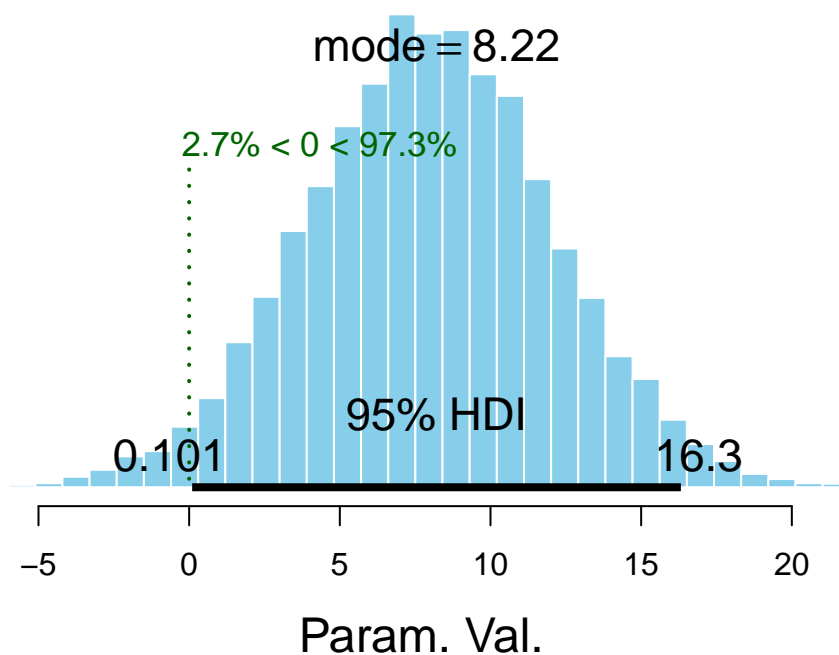
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1911
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8833.740 9000.000 8833.740 7163.169 6868.483
## [1] "STEW impact in ER with a\n probability of 51.21 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ER with a probability of 51.21 %



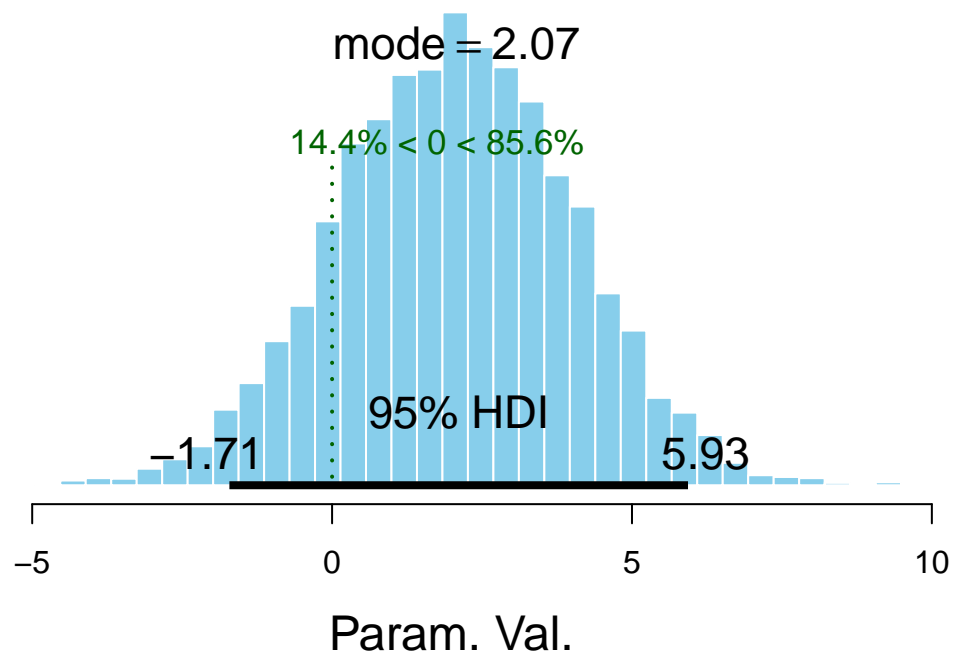
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1828
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8021.061 9585.447 8021.061 7090.691 6447.991
## [1] "II_10 impact in ER with a\n probability of 97.3 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in ER with a probability of 97.3 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 6
##   Total graph size: 1908
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8330.400 9000.000 8330.400 7355.653 7087.018
## [1] "FOR_10 impact in ER with a\n probability of 85.57 %"
```

FOR_10 impact in ER with a probability of 85.57 %



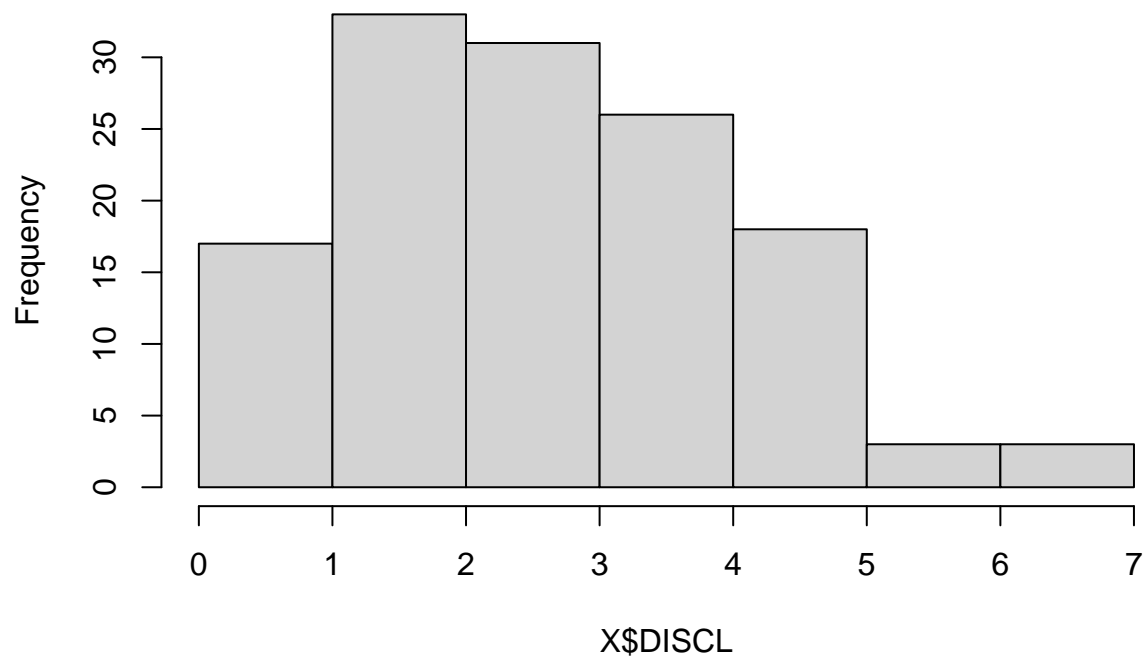
```
write.csv(BLquanti,  
  file=paste(  
    'quantiResults',  
    format(Sys.time(), "%d-%b-%H-%M-%S"),  
    '.csv')  
)
```

Binomial Y

DISCL and CP follow binomial distributions.

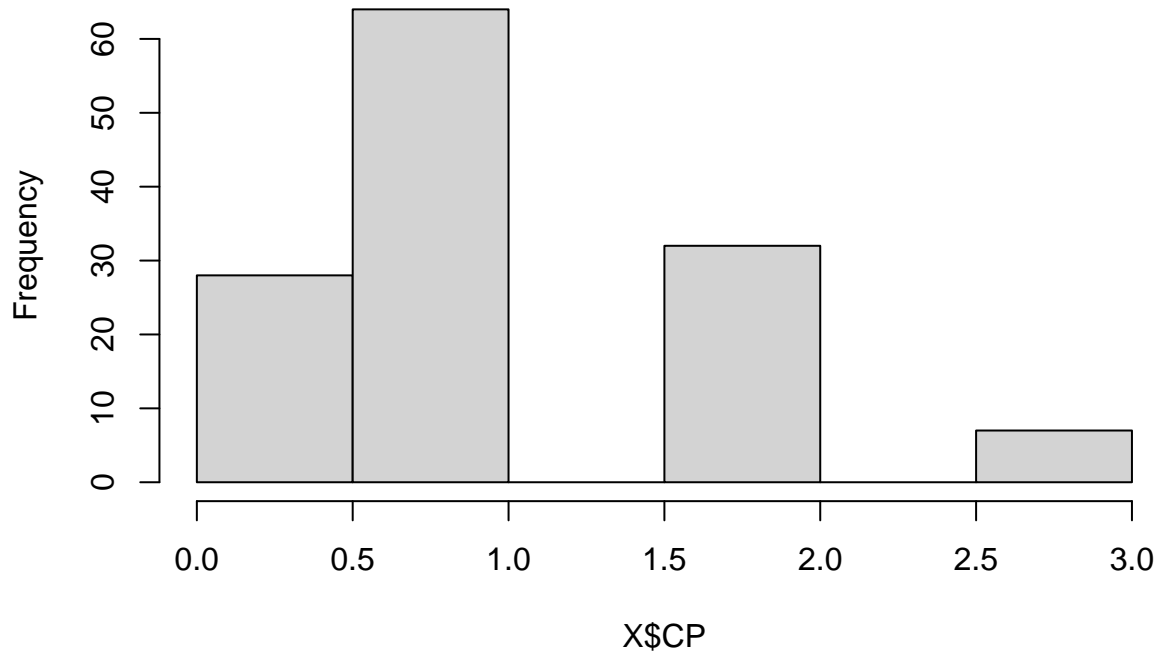
```
hist(X$DISCL)
```

Histogram of X\$DISCL



```
hist(X$CP)
```

Histogram of X\$CP

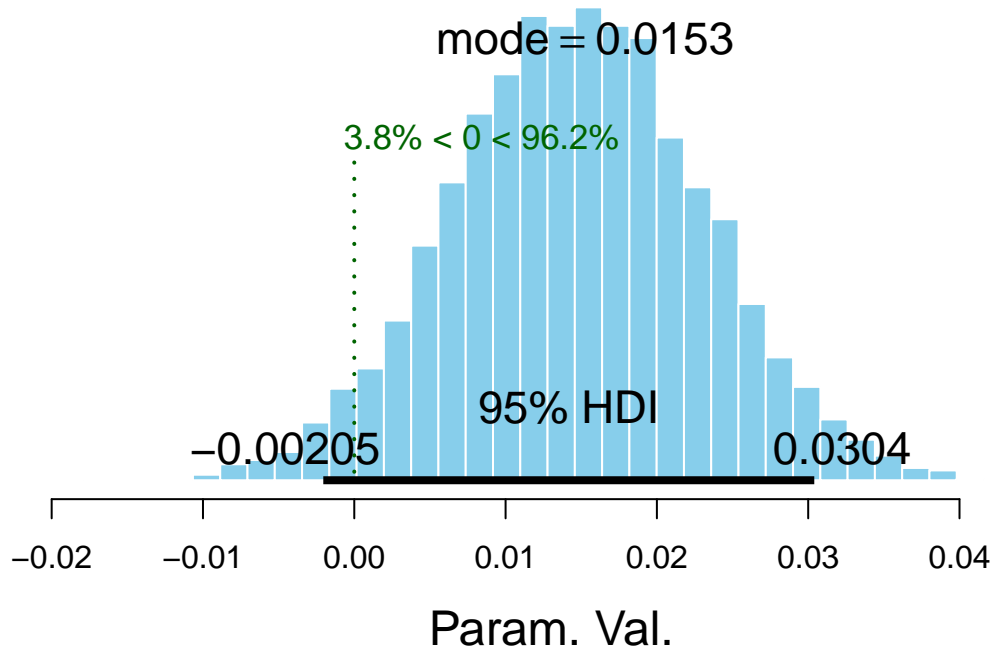


```
x.names <- c('PRI', 'INIT', 'EPI', 'STEW', 'II_10', 'FOR_10')
y.names <- c('CP', 'DISCL')
```

```
BLbinom <- bayesList(X, x.names, y.names, 'model2.R')
```

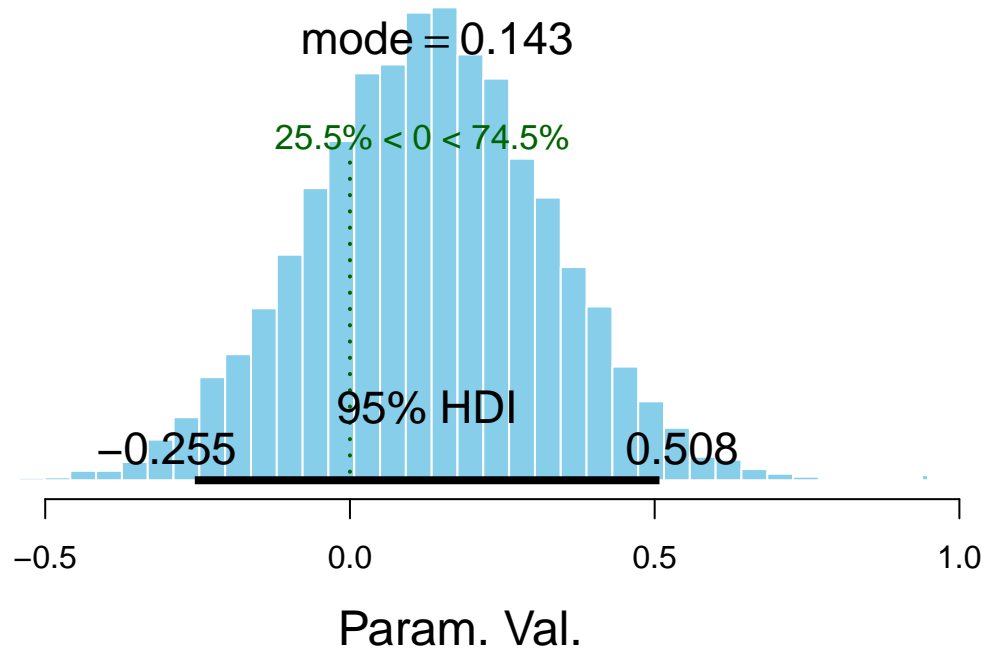
```
## [1] "      -----"
## [1] " Analysis of Y= CP  explained by x= PRI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 5
##   Total graph size: 1908
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 5619.054 6002.959 5619.054 4678.981 4548.367
## [1] "PRI impact in CP with a\n probability of 96.19 %"
```

PRI impact in CP with a probability of 96.19 %



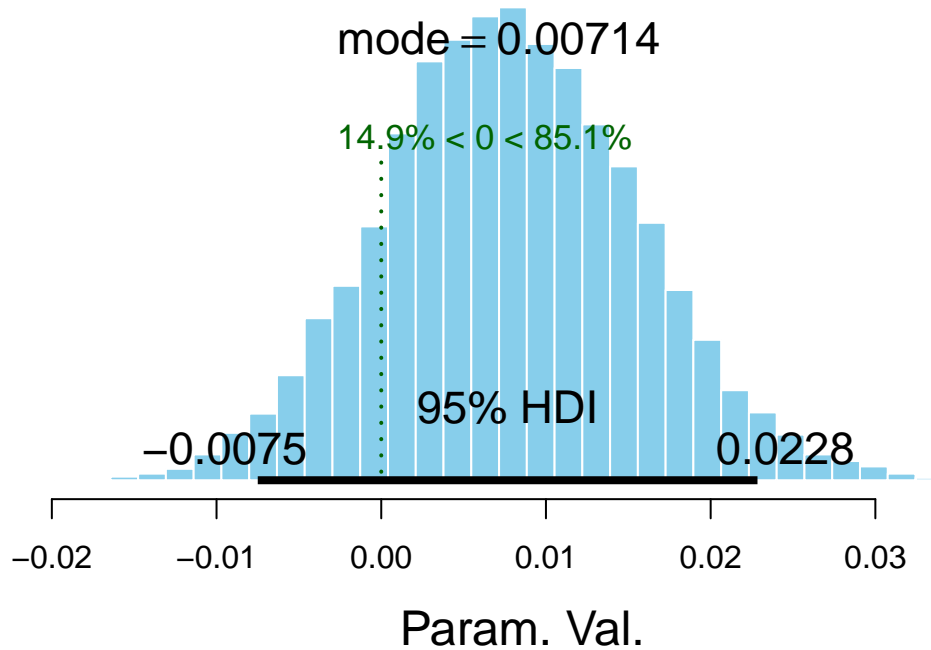
```
## [1] "-----"
## [1] " Analysis of Y= CP explained by x= INIT"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 5
##   Total graph size: 1907
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 4836.319 5854.400 4836.319 4493.400 4513.006
## [1] "INIT impact in CP with a\n probability of 74.52 %"
```

INIT impact in CP with a probability of 74.52 %



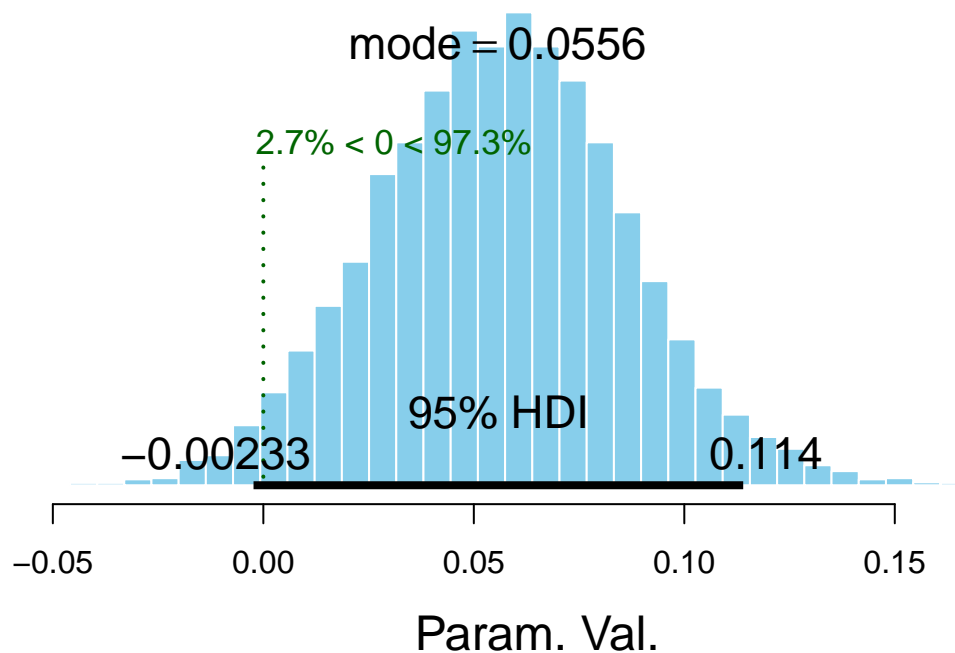
```
## [1] "-----"
## [1] " Analysis of Y= CP explained by x= EPI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 5
##   Total graph size: 1901
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 3691.801 5591.222 3691.801 4670.808 3958.267
## [1] "EPI impact in CP with a\n probability of 85.09 %"
```


EPI impact in CP with a probability of 85.09 %



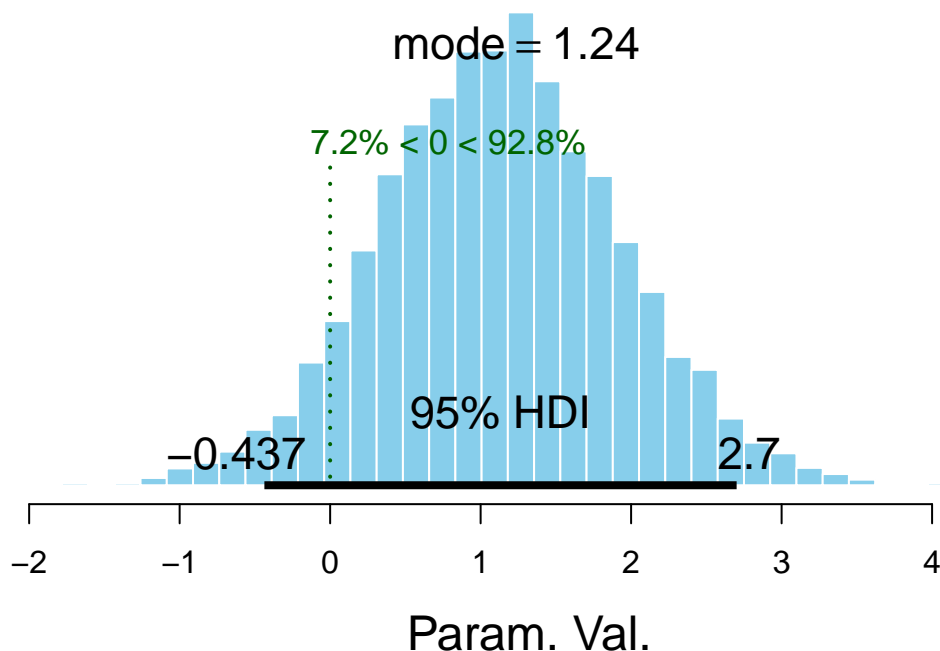
```
## [1] "-----"
## [1] " Analysis of Y= CP explained by x= STEW"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 5
##   Total graph size: 1900
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5210.078 5674.356 5210.078 4506.599 4462.734
## [1] "STEW impact in CP with a\n probability of 97.31 %"
```

STEW impact in CP with a probability of 97.31 %



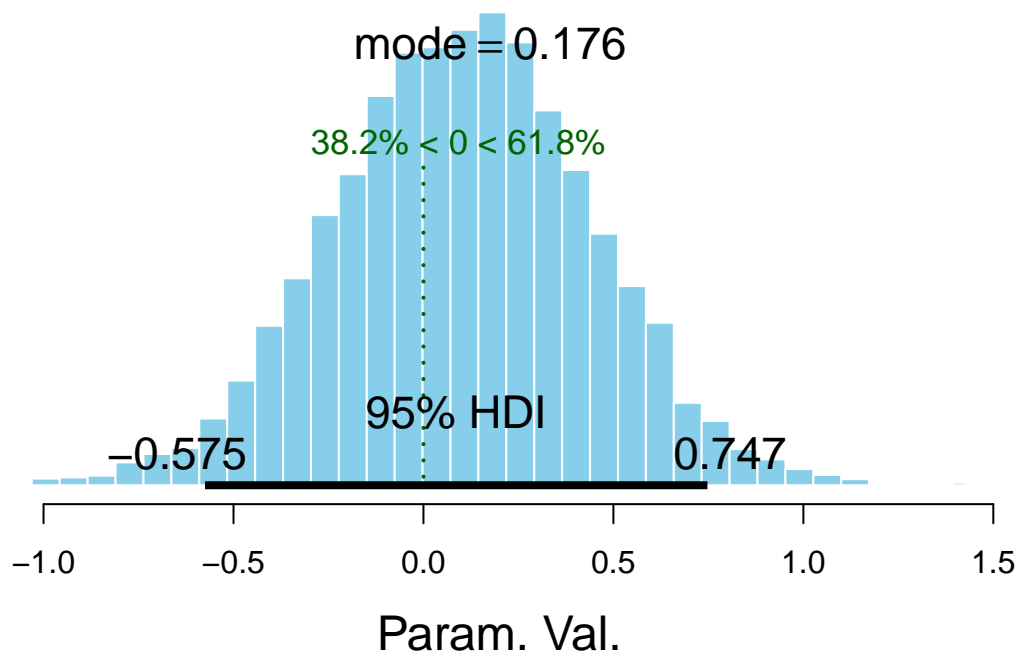
```
## [1] "
## [1] " Analysis of Y= CP explained by x= II_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 5
##   Total graph size: 1817
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5071.278 6141.628 5071.278 4734.085 4464.567
## [1] "II_10 impact in CP with a\n probability of 92.84 %"
```

II_10 impact in CP with a probability of 92.84 %



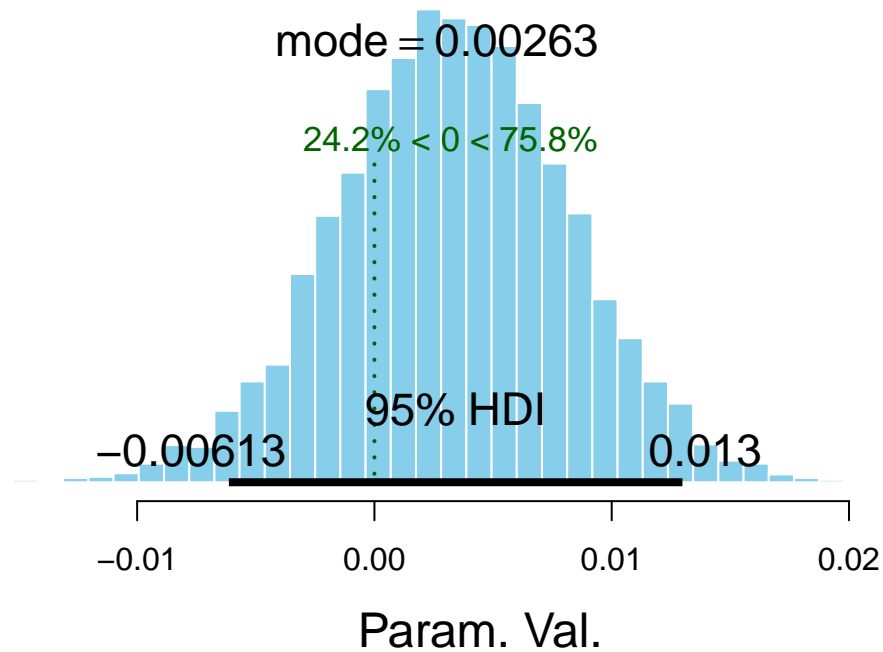
```
## [1] "
## [1] " Analysis of Y= CP explained by x= FOR_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 5
##   Total graph size: 1897
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 4978.170 6124.078 4978.170 4525.137 4216.784
## [1] "FOR_10 impact in CP with a\n probability of 61.83 %"
```

FOR_10 impact in CP with a probability of 61.83 %



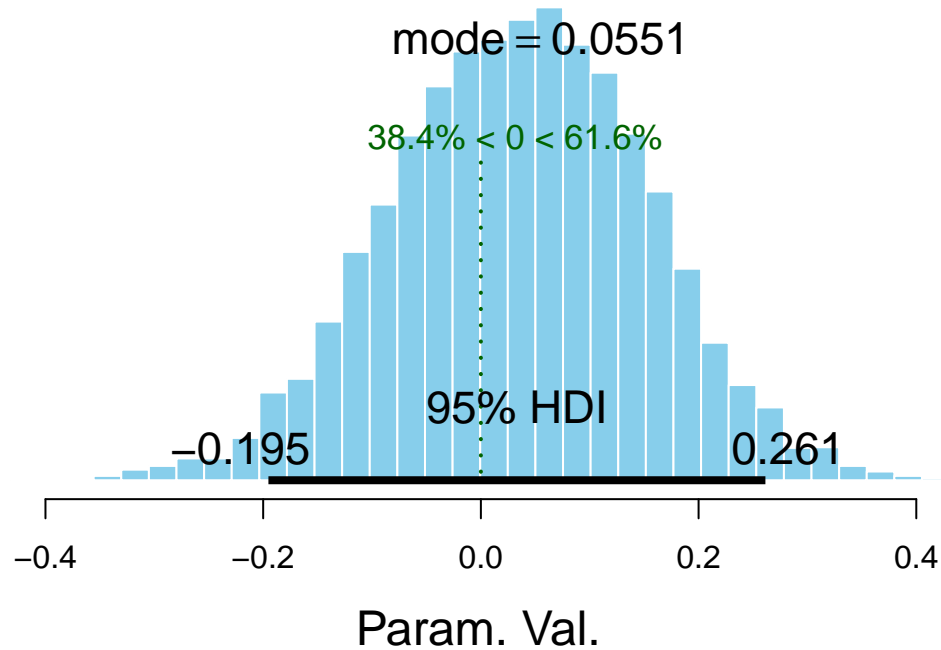
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= PRI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 5
##   Total graph size: 1908
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5296.291 5488.924 5296.291 4686.871 4280.597
## [1] "PRI impact in DISCL with a\n probability of 75.79 %"
```

PRI impact in DISCL with a probability of 75.79 %



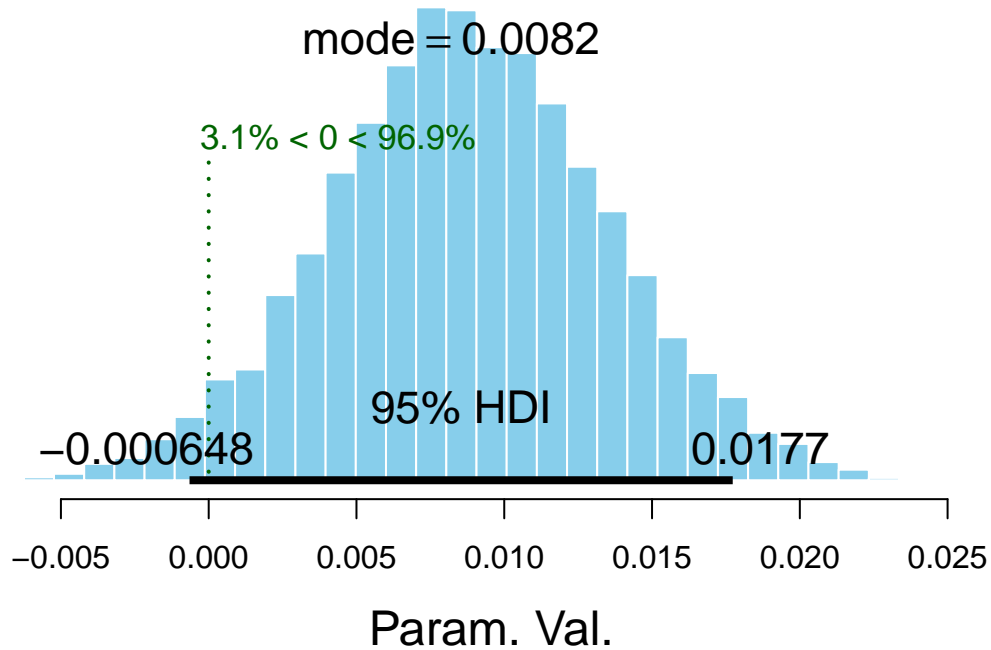
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= INIT"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 5
##   Total graph size: 1907
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5036.182 5662.146 5036.182 4443.519 4368.962
## [1] "INIT impact in DISCL with a\n probability of 61.6 %"
```

INIT impact in DISCL with a probability of 61.6 %



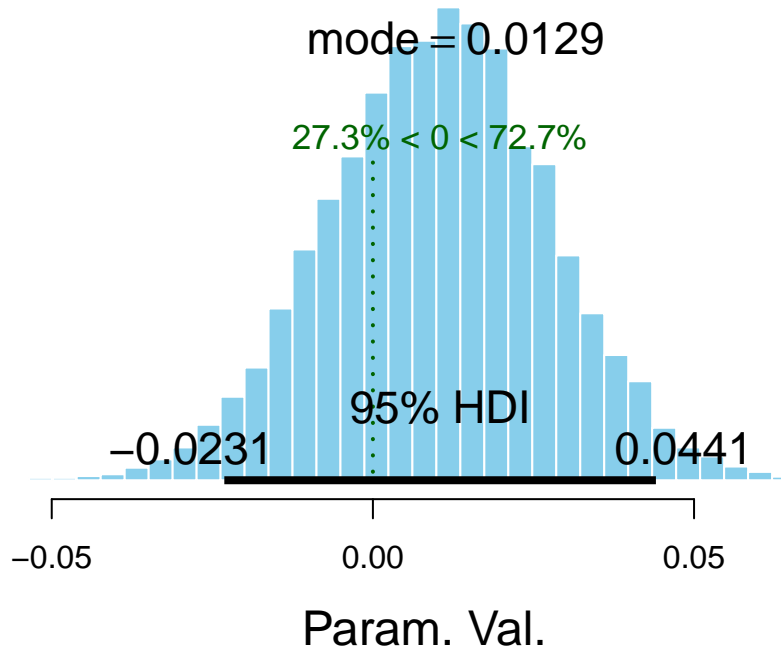
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= EPI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 5
##   Total graph size: 1901
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 4362.230 5173.509 4362.230 4439.132 3808.489
## [1] "EPI impact in DISCL with a\n probability of 96.92 %"
```

EPI impact in DISCL with a probability of 96.92 %



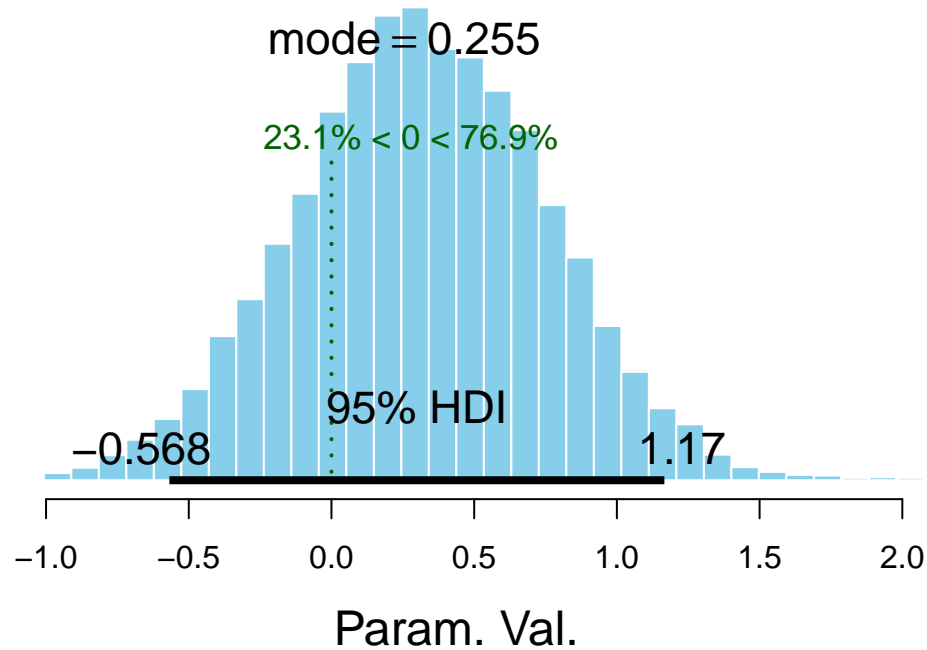
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= STEW"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 5
##   Total graph size: 1900
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5685.823 6127.356 5685.823 4774.153 4762.987
## [1] "STEW impact in DISCL with a\n probability of 72.66 %"
```

STEW impact in DISCL with a probability of 72.66 %



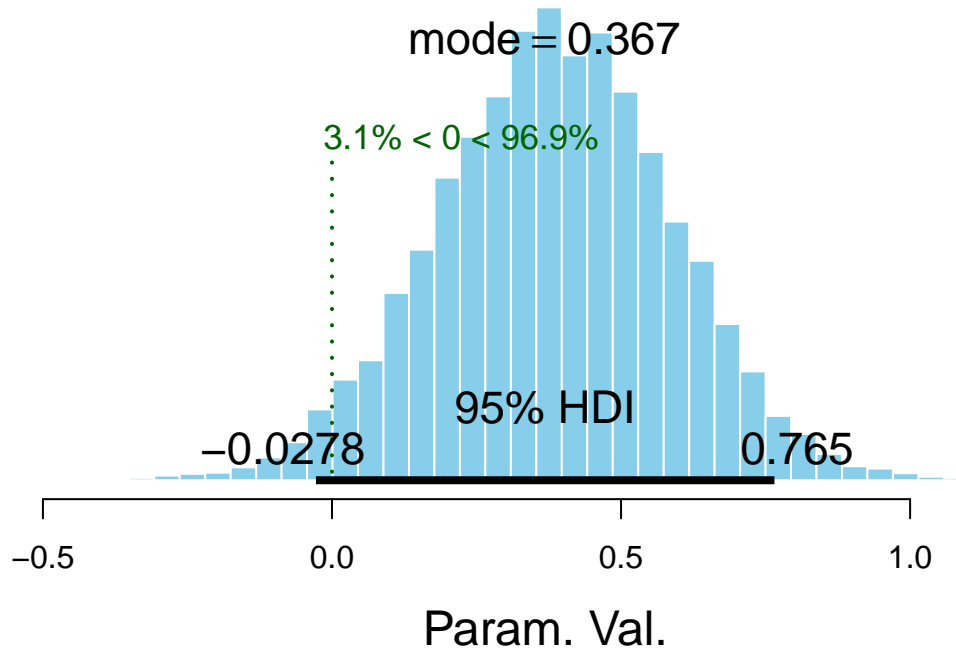
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= II_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 5
##   Total graph size: 1817
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5416.031 6198.256 5416.031 4896.642 4505.951
## [1] "II_10 impact in DISCL with a\n probability of 76.91 %"
```


II_10 impact in DISCL with a probability of 76.91 %



```
## [1] "-----"
## [1] " Analysis of Y= DISCL explained by x= FOR_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 131
##   Unobserved stochastic nodes: 5
##   Total graph size: 1897
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5093.349 6008.814 5093.349 4428.722 4240.726
## [1] "FOR_10 impact in DISCL with a\n probability of 96.87 %"
```

FOR_10 impact in DISCL with a probability of 96.87 %



```
write.csv(BLbinom,
          file=paste(
            'binomResults',
            format(Sys.time(), "%d-%b-%H-%M-%S"),
            '.csv')
)
```

noUS-Global Bayesian models

Quantitative Y

```
x.names <- c('PRI', 'INIT', 'EPI', 'STEW', 'II_10', 'FOR_10')
y.names <- c('EPS', 'ET3', 'ER3', 'ER1', 'ER')
BLquanti <- bayesList(X[X$Country_B!='USA',], x.names, y.names, 'model1.R')

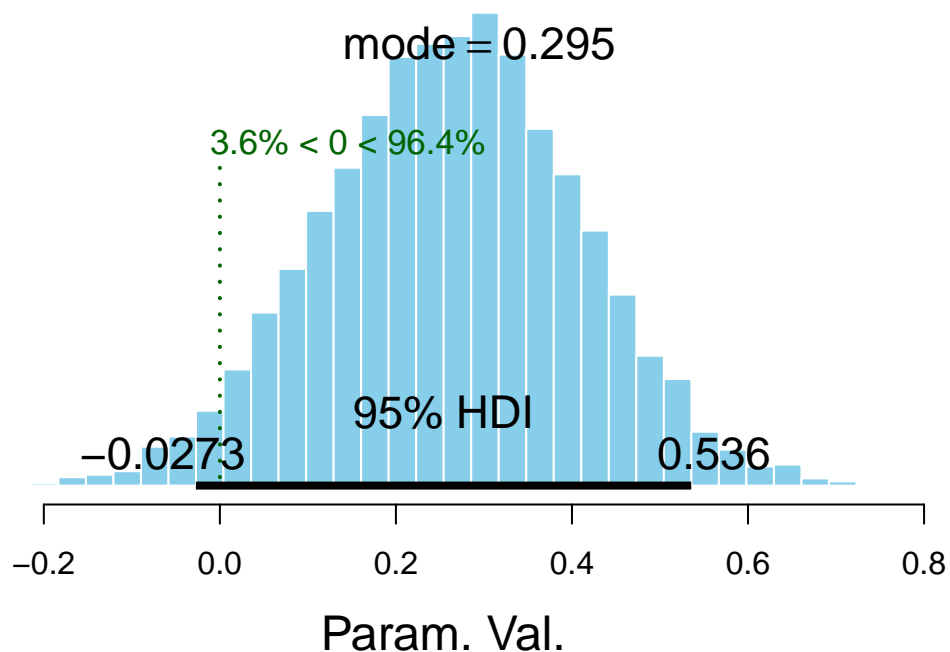
## [1] "
## [1] " ----- "
## [1] " Analysis of Y= EPS explained by x= PRI"

## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data

## Compiling data graph
## Resolving undeclared variables
## Allocating nodes
## Initializing
## Reading data back into data table
```

```
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1681
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS betaSIZE
## 8129.935 9322.219 8129.935 7133.529 6884.362
## [1] "PRI impact in EPS with a\n probability of 96.43 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

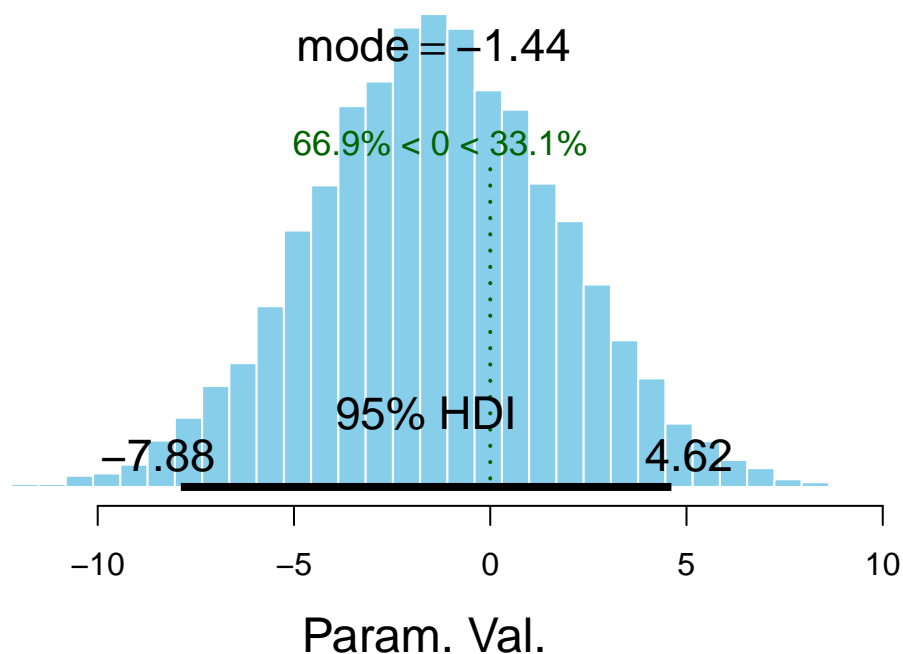
PRI impact in EPS with a probability of 96.43 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
```

```
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1680
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8218.358 9000.000 8218.358 6704.768 6781.591
## [1] "INIT impact in EPS with a\n probability of -66.92 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

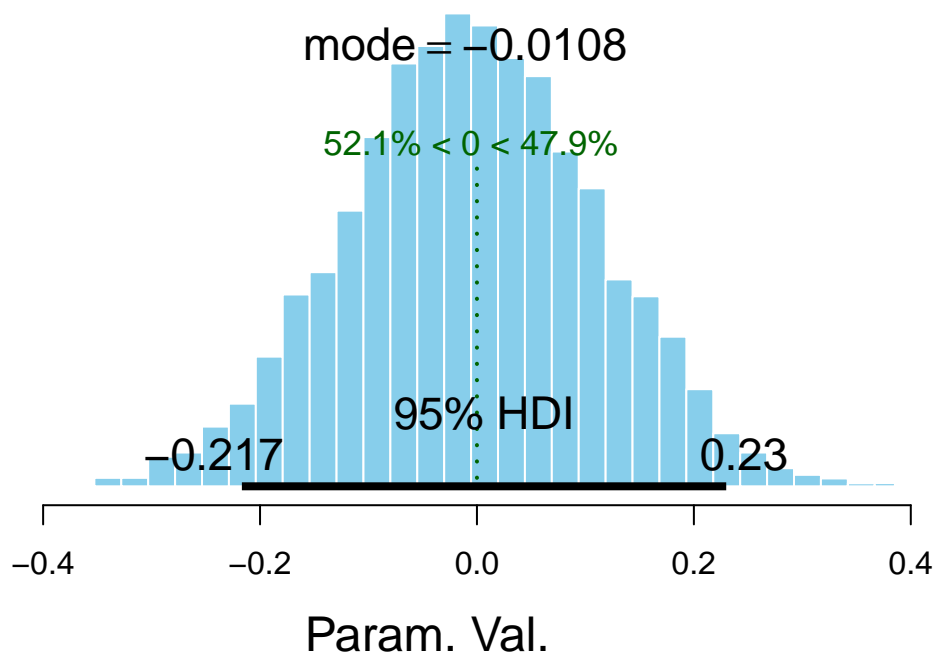
INIT impact in EPS with a probability of -66.92 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
```

```
## Total graph size: 1681
##
## Initializing model
##
## alpha1 beta0 beta1 betaGPS betaSIZE
## 6273.198 8673.192 6273.198 7053.349 6684.277
## [1] "EPI impact in EPS with a\n probability of -52.06 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

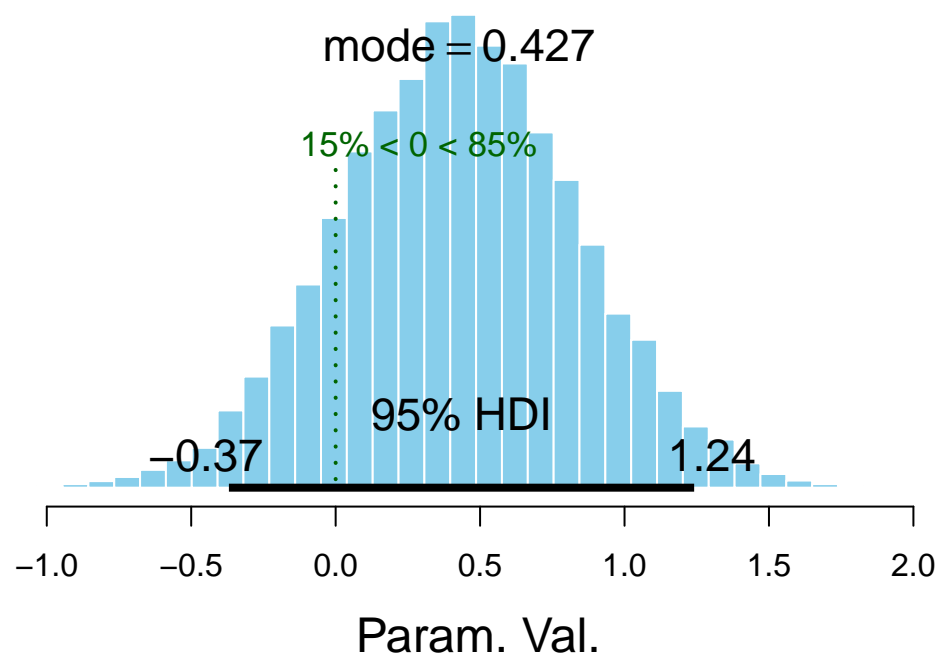
EPI impact in EPS with a probability of -52.06 %



```
## Compiling data graph
## Resolving undeclared variables
## Allocating nodes
## Initializing
## Reading data back into data table
## Compiling model graph
## Resolving undeclared variables
## Allocating nodes
## Graph information:
## Observed stochastic nodes: 114
## Unobserved stochastic nodes: 6
## Total graph size: 1680
##
## Initializing model
```

```
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 8554.374 9000.000 8554.374 6912.605 6528.165
## [1] "STEW impact in EPS with a\n probability of 85.01 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

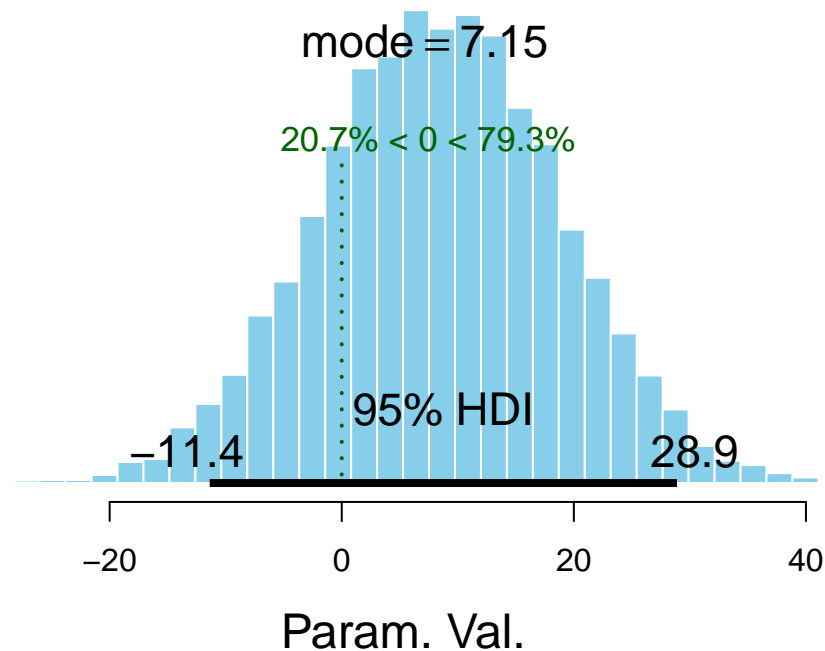
STEW impact in EPS with a probability of 85.01 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1606
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 8785.434 9539.025 8785.434 6995.975 6238.458
```

```
## [1] "II_10 impact in EPS with a\n probability of 79.29 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in EPS with a probability of 79.29 %

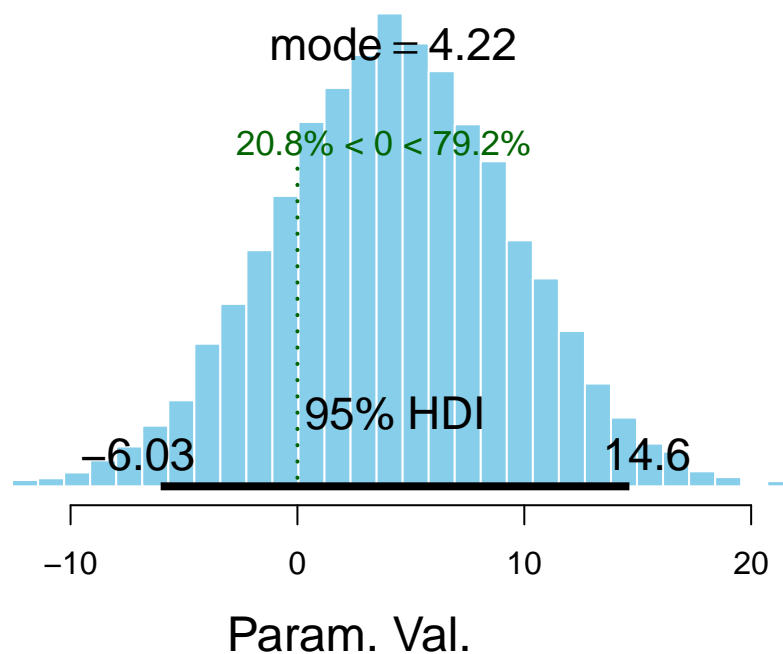


```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1678
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 8022.986 9000.000 8022.986 6894.687 6745.946
## [1] "FOR_10 impact in EPS with a\n probability of 79.2 %"
## [1] "

```

```
## [1] " Analysis of Y= ET3  explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

FOR₁₀ impact in EPS with a probability of 79.2 %

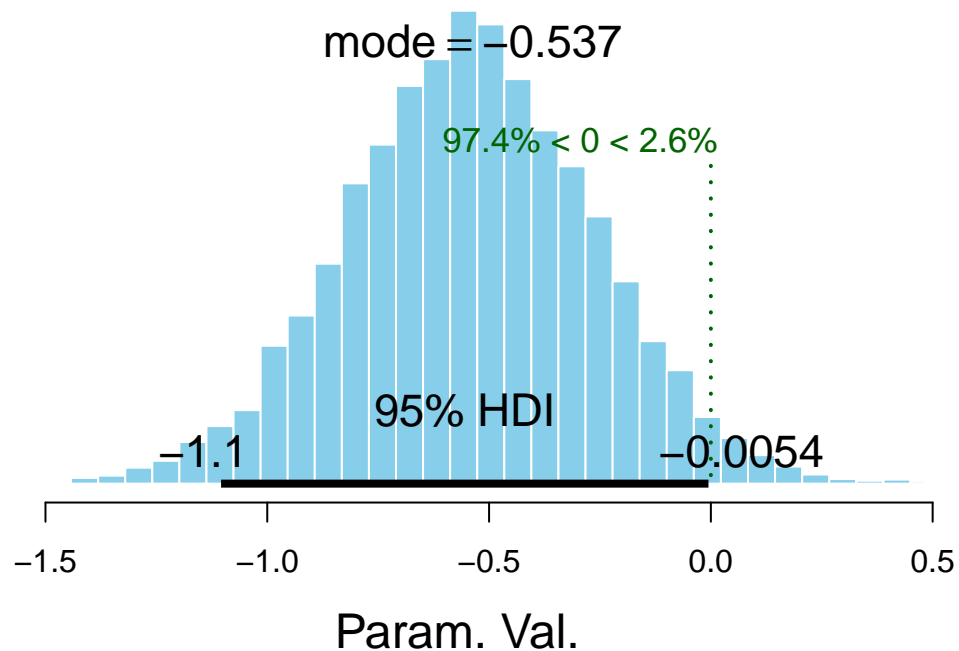


```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1681
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8776.943 9000.000 8776.943 7184.480 6363.842
## [1] "PRI  impact in  ET3  with a\n probability of  -97.36 %"
## [1] "
## [1] " Analysis of Y= ET3  explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
```



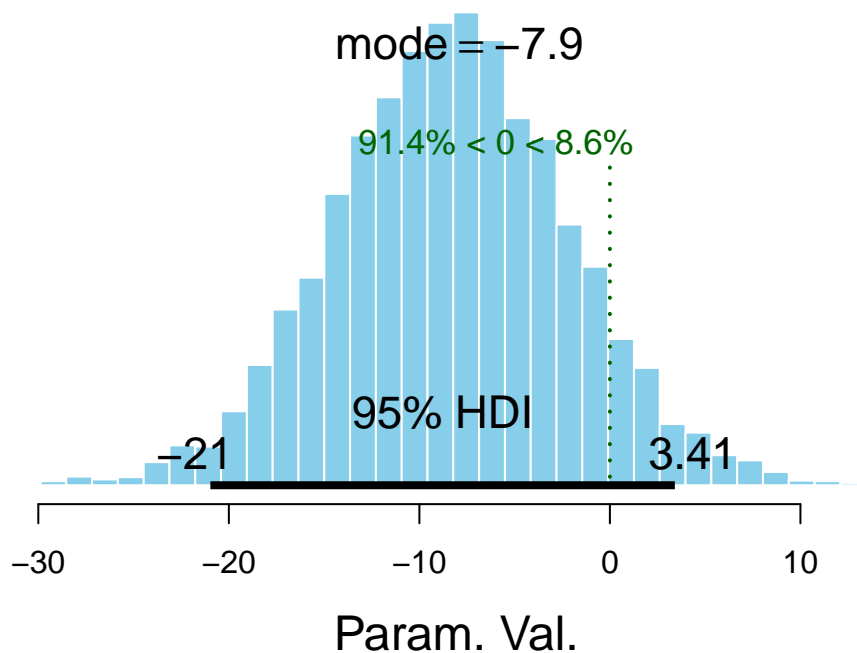
```
## 500): Unused variable "n" in data
```

PRI impact in ET3 with a probability of -97.36 %



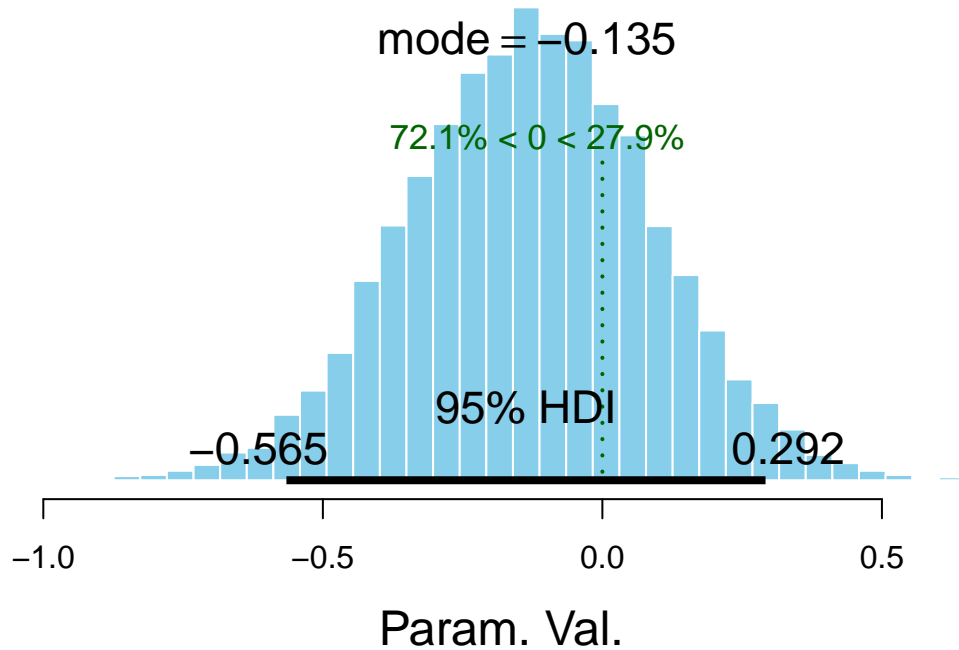
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1680
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS   betaSIZE
## 7908.150 8832.152 7908.150 6061.479 6632.728
## [1] "INIT  impact in  ET3  with a\n probability of  -91.37 %"
## [1] "
## [1] " Analysis of Y= ET3  explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ET3 with a probability of -91.37 %



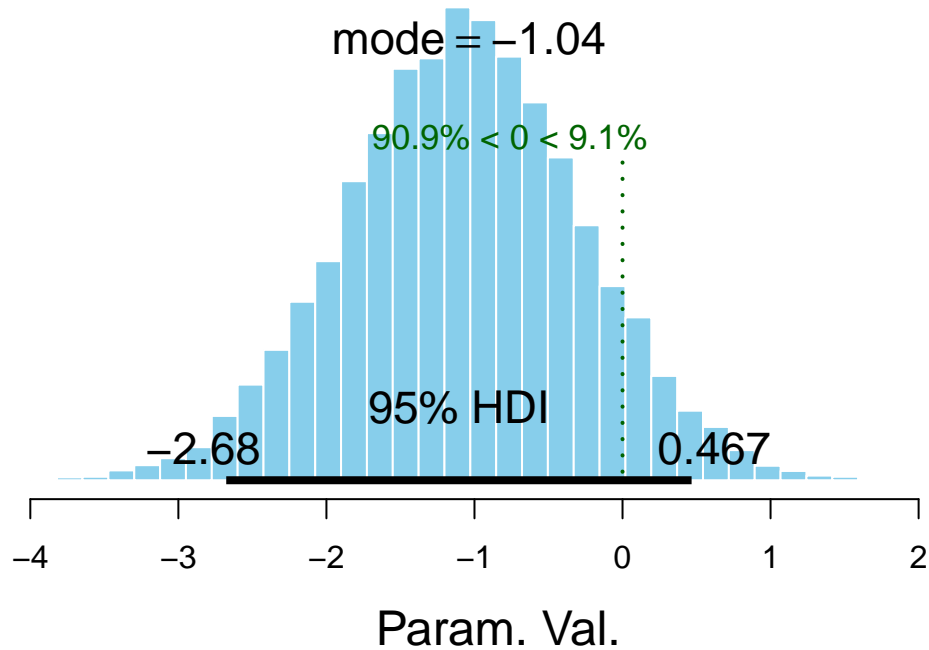
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1681
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 6459.281 9529.224 6459.281 7005.433 6552.444
## [1] "EPI impact in ET3 with a\n probability of -72.11 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in ET3 with a probability of -72.11 %



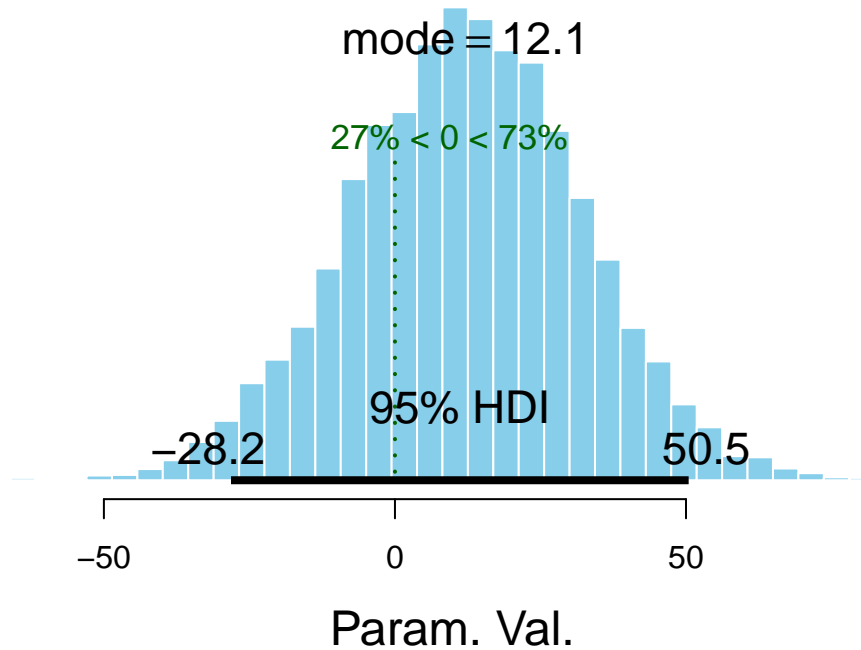
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1680
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 9089.015 9000.000 9089.015 6756.981 6553.134
## [1] "STEW impact in ET3 with a\n probability of -90.91 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ET3 with a probability of -90.91 %



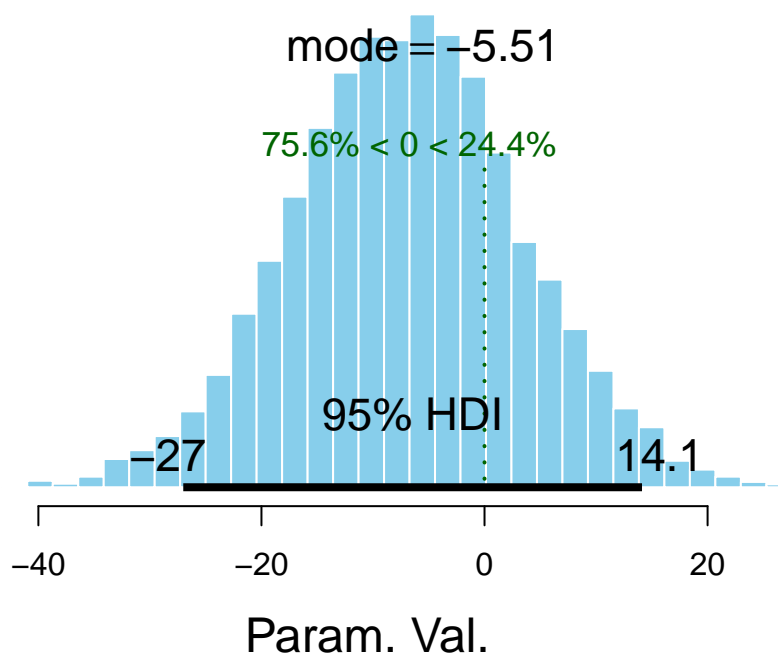
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1606
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8466.109 9756.755 8466.109 7437.834 6725.097
## [1] "II_10 impact in ET3 with a\n probability of 72.96 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in ET3 with a probability of 72.96 %



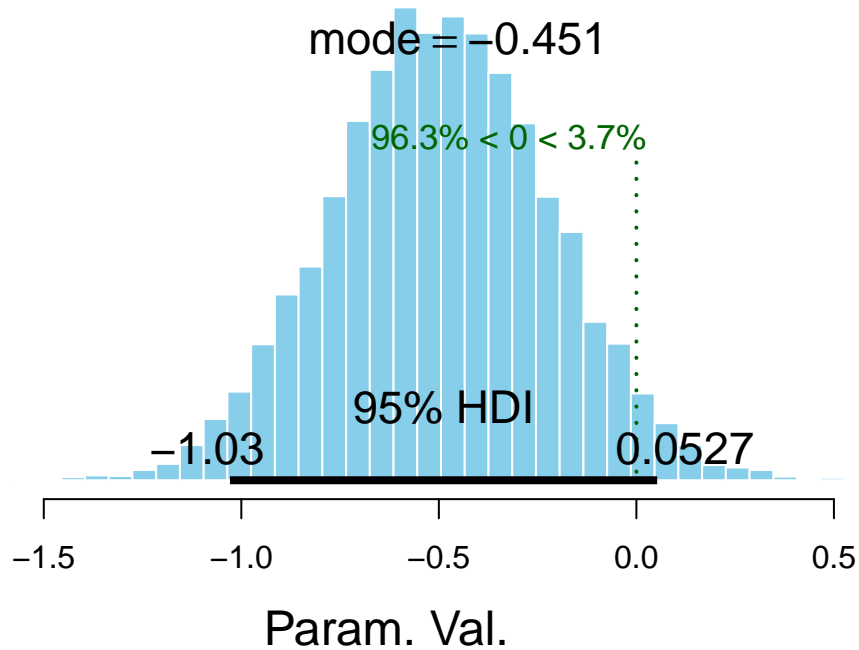
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1678
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 7753.744 9374.741 7753.744 6867.198 6409.843
## [1] "FOR_10 impact in ET3 with a\n probability of -75.58 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

FOR_10 impact in ET3 with a probability of -75.58 %



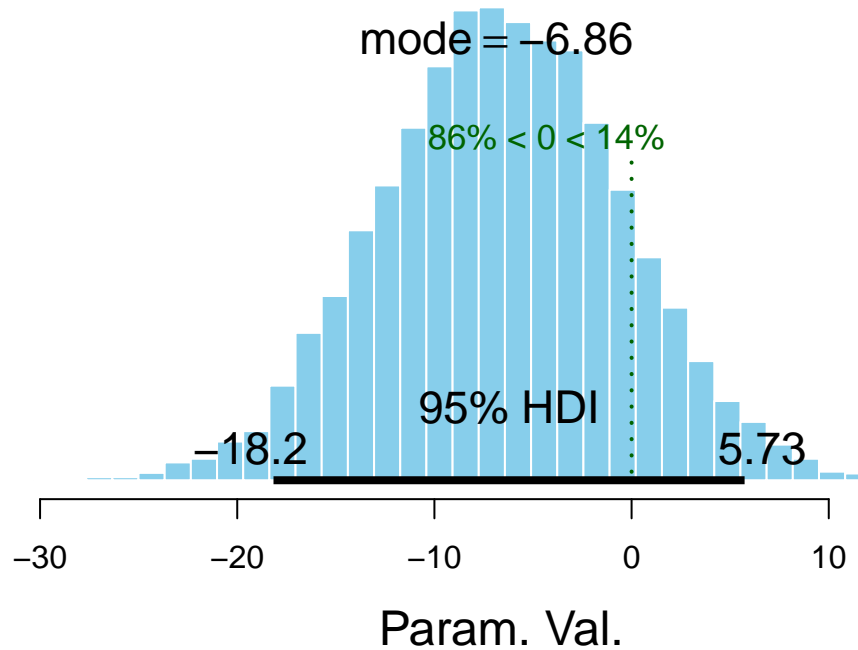
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1681
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7850.880 9360.649 7850.880 6683.894 6783.154
## [1] "PRI impact in ER3 with a\n probability of -96.29 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

PRI impact in ER3 with a probability of -96.29 %



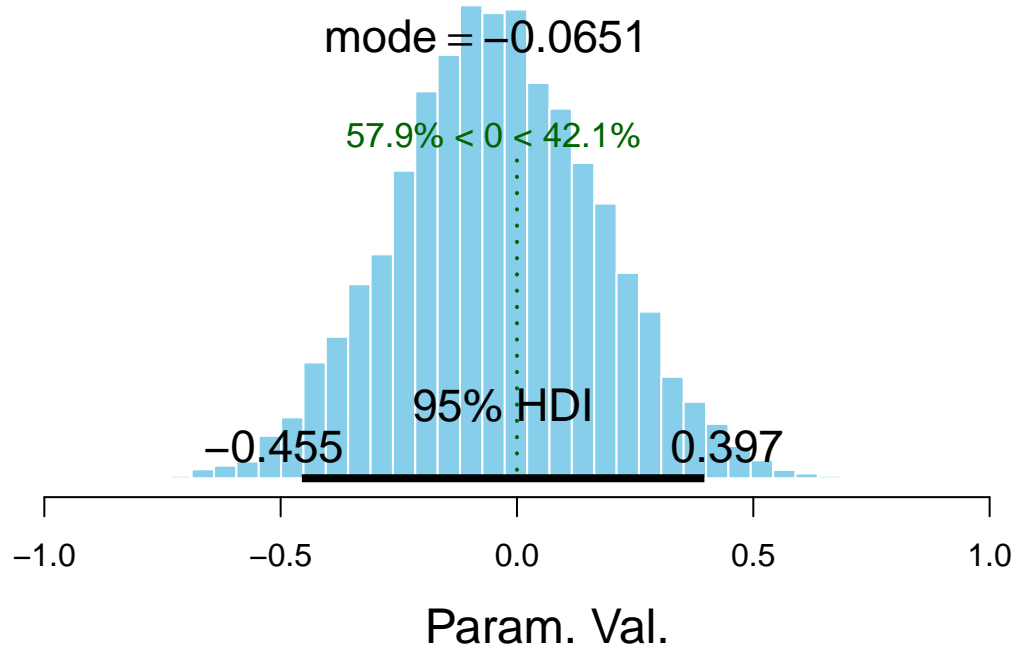
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1680
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7948.851 8644.286 7948.851 7095.512 7252.809
## [1] "INIT impact in ER3 with a\n probability of -85.97 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ER3 with a probability of -85.97 %



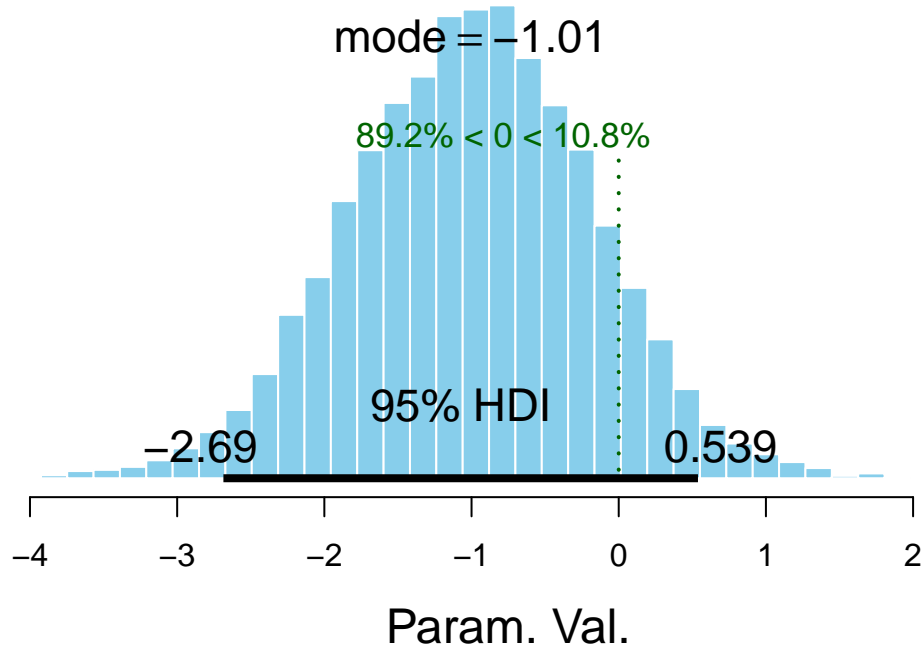
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1681
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 6615.060 8598.701 6615.060 7161.225 6725.041
## [1] "EPI impact in ER3 with a\n probability of -57.93 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```


EPI impact in ER3 with a probability of -57.93 %



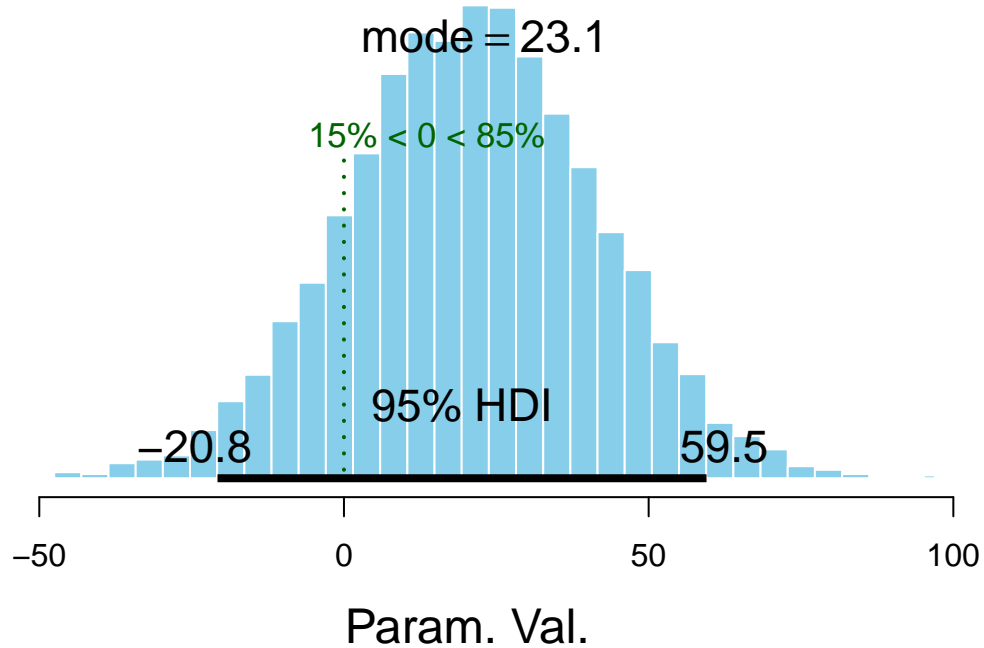
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1680
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8842.686 8805.380 8842.686 6941.171 6168.072
## [1] "STEW impact in ER3 with a\n probability of -89.18 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ER3 with a probability of -89.18 %



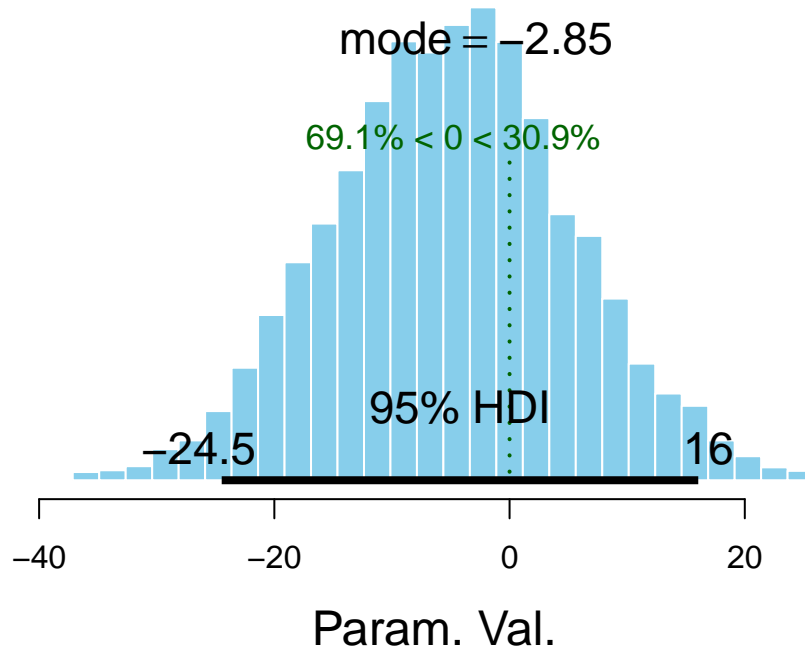
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1606
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8423.429 9000.000 8423.429 6456.097 6198.967
## [1] "II_10 impact in ER3 with a\n probability of 84.99 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in ER3 with a probability of 84.99 %



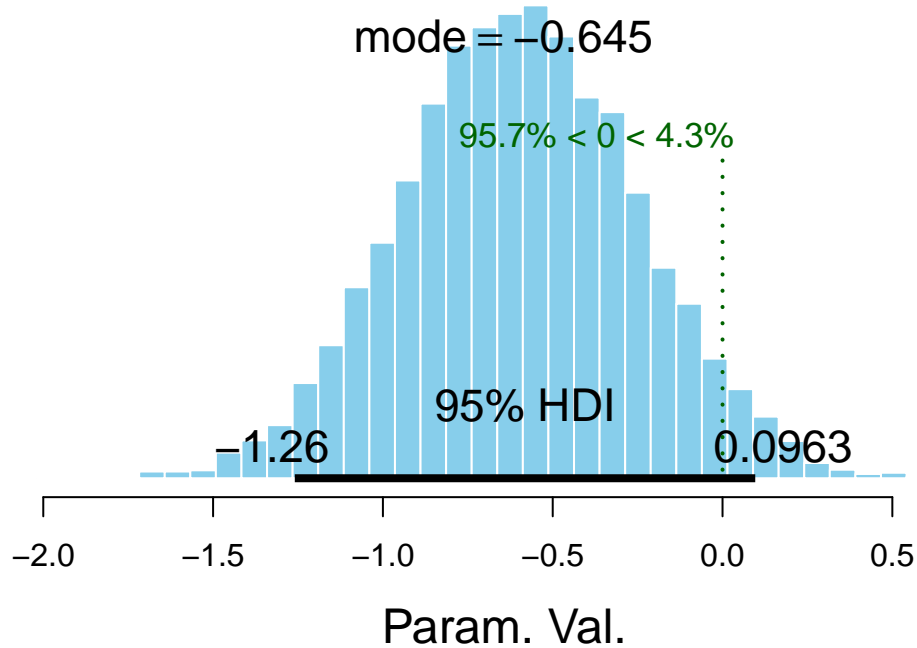
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1678
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7932.227 9000.000 7932.227 6836.413 6529.773
## [1] "FOR_10 impact in ER3 with a\n probability of -69.08 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

FOR_10 impact in ER3 with a probability of -69.08 %



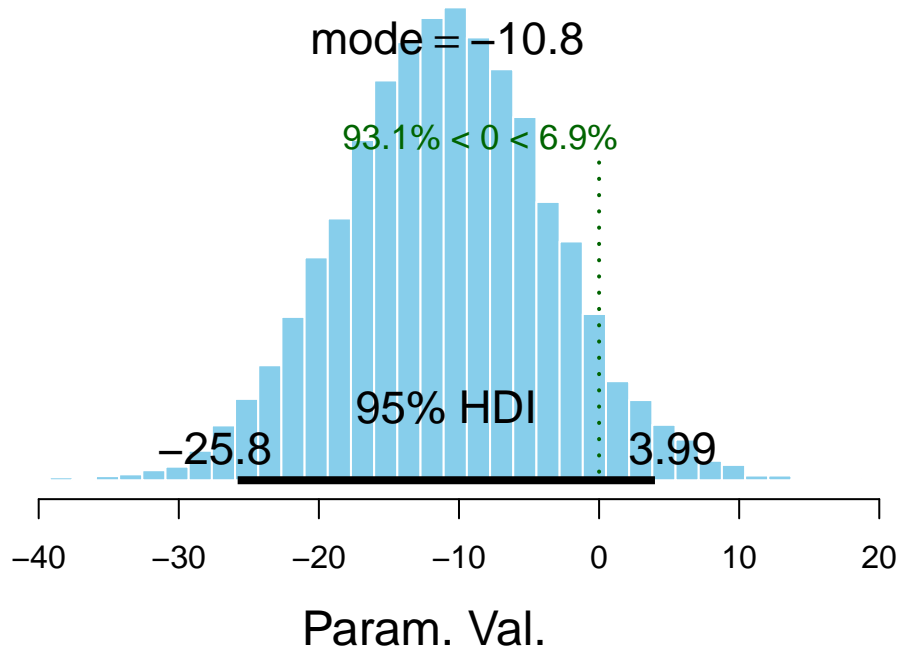
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1681
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8437.756 9507.894 8437.756 6605.779 6865.926
## [1] "PRI impact in ER1 with a\n probability of -95.68 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

PRI impact in ER1 with a probability of -95.68 %



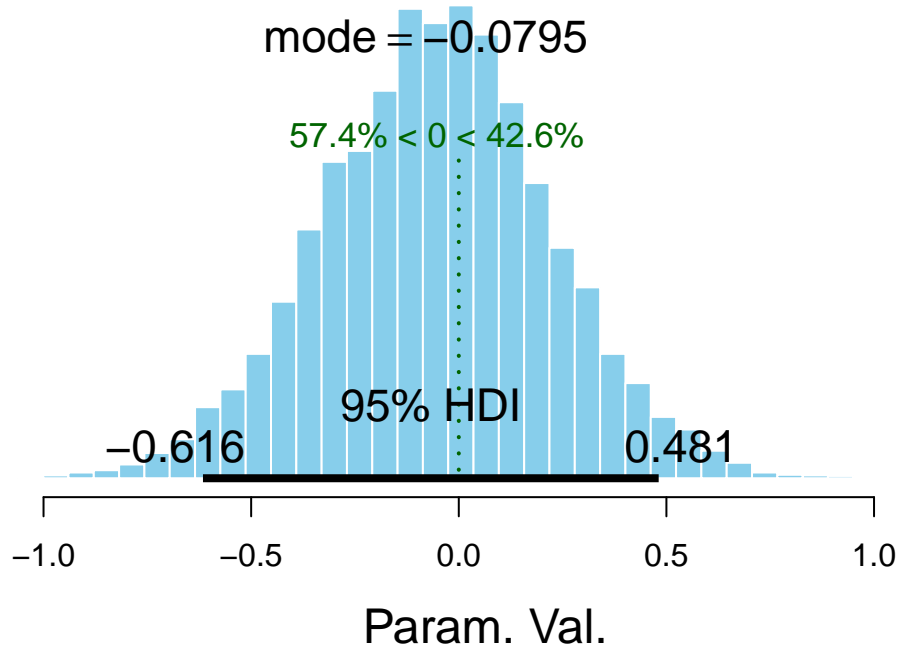
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1680
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7844.384 9000.000 7844.384 6735.152 6686.035
## [1] "INIT impact in ER1 with a\n probability of -93.09 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ER1 with a probability of -93.09 %



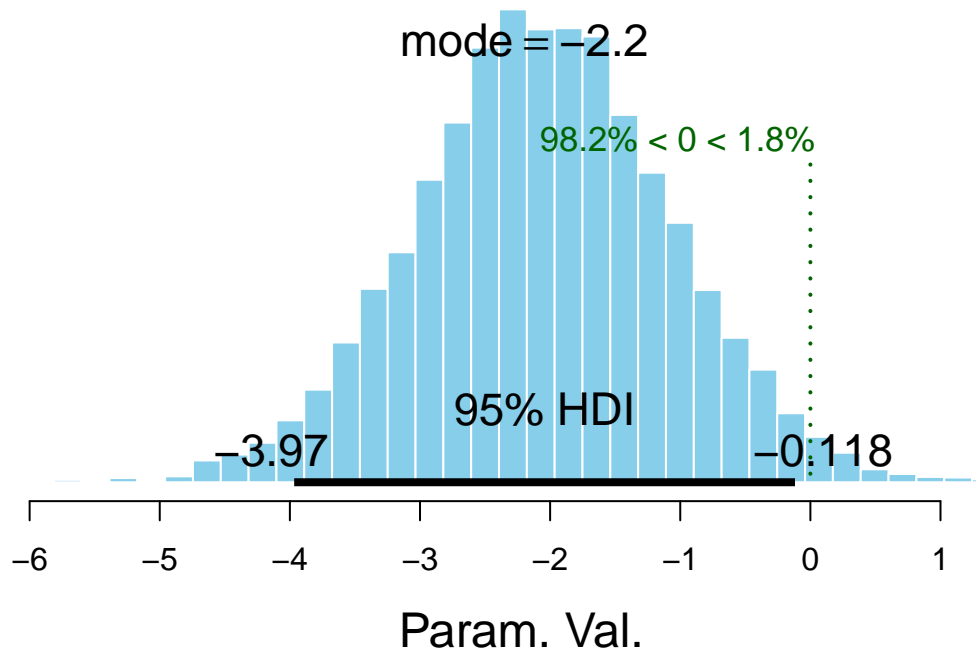
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1681
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 6162.192 8955.594 6162.192 7325.897 6355.301
## [1] "EPI impact in ER1 with a\n probability of -57.38 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in ER1 with a probability of -57.38 %



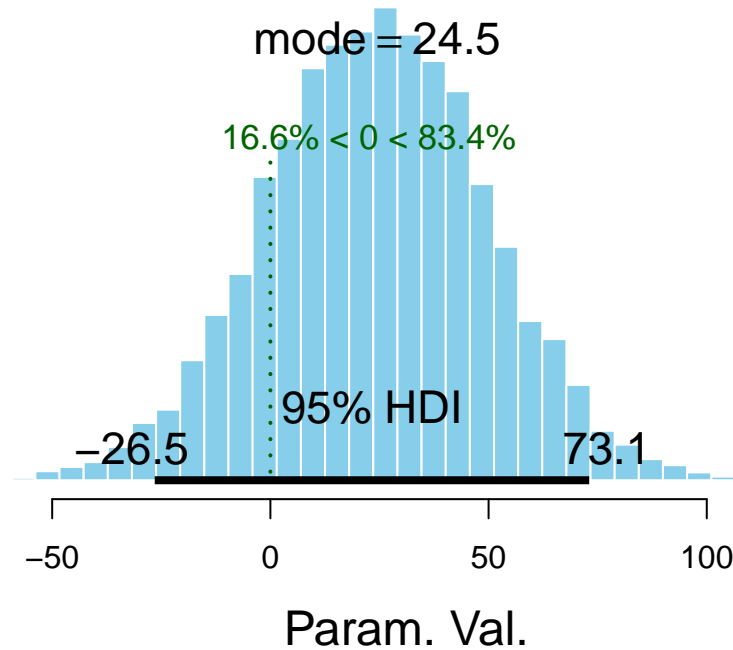
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1680
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8434.790 9000.000 8434.790 7215.451 6705.175
## [1] "STEW impact in ER1 with a\n probability of -98.17 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ER1 with a probability of -98.17 %



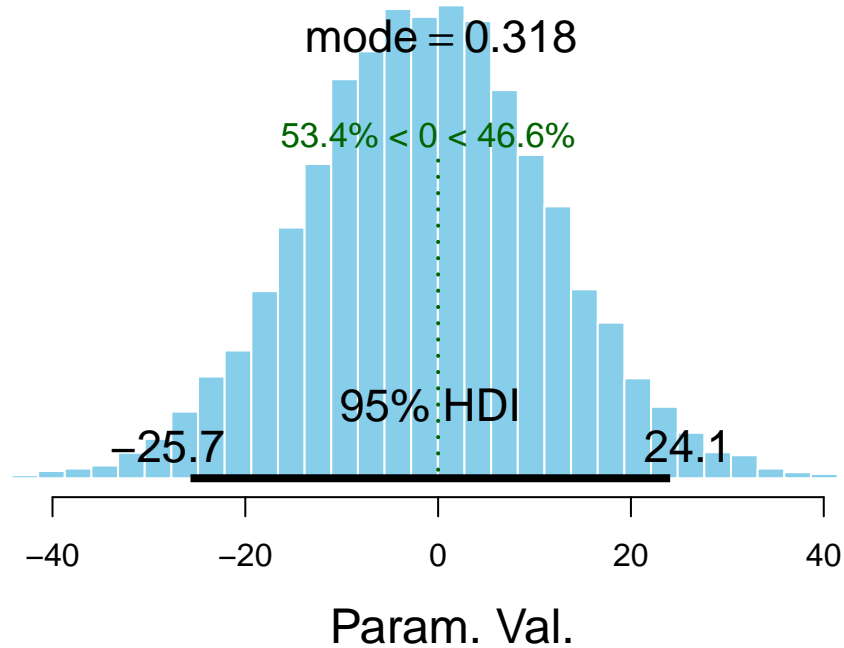
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1606
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8776.212 9739.005 8776.212 7030.774 6631.480
## [1] "II_10 impact in ER1 with a\n probability of 83.37 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```


II_10 impact in ER1 with a probability of 83.37 %



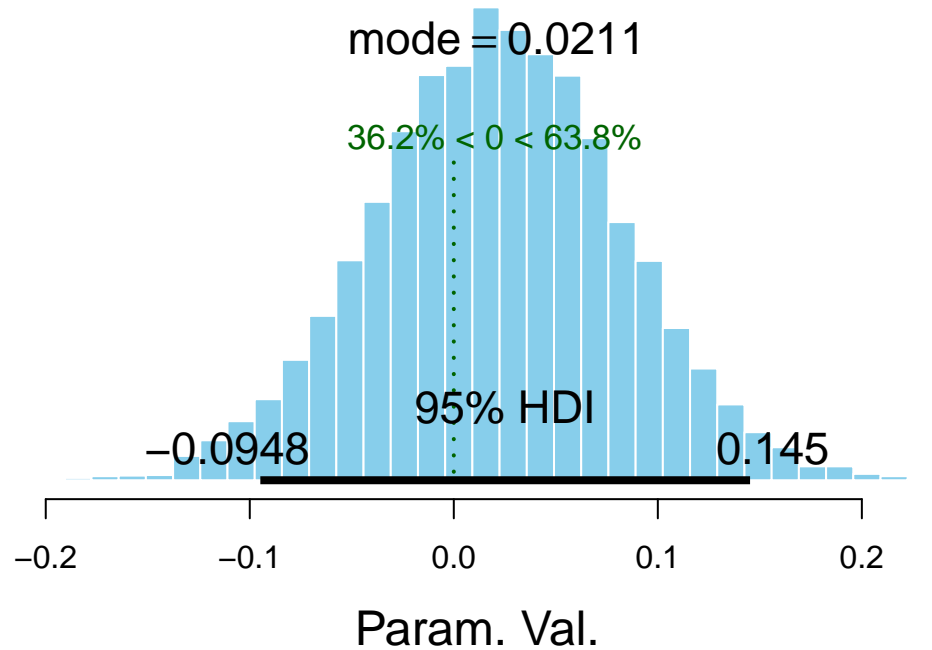
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1678
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7806.985 8930.646 7806.985 6998.549 6765.293
## [1] "FOR_10 impact in ER1 with a\n probability of -53.4 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

FOR_10 impact in ER1 with a probability of -53.4 %



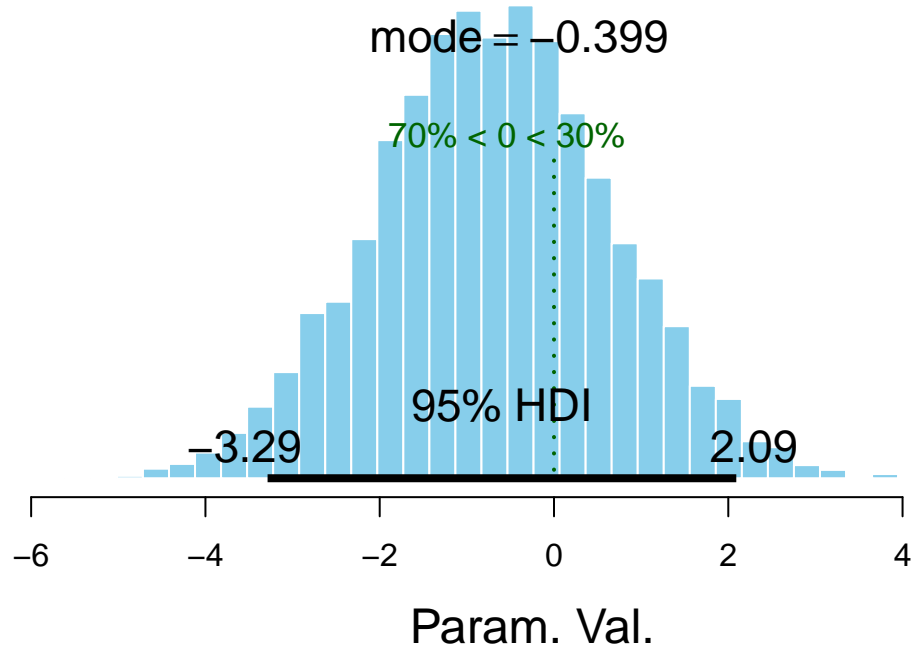
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1681
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8790.989 9250.260 8790.989 7659.991 7023.784
## [1] "PRI impact in ER with a\n probability of 63.83 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

PRI impact in ER with a probability of 63.83 %



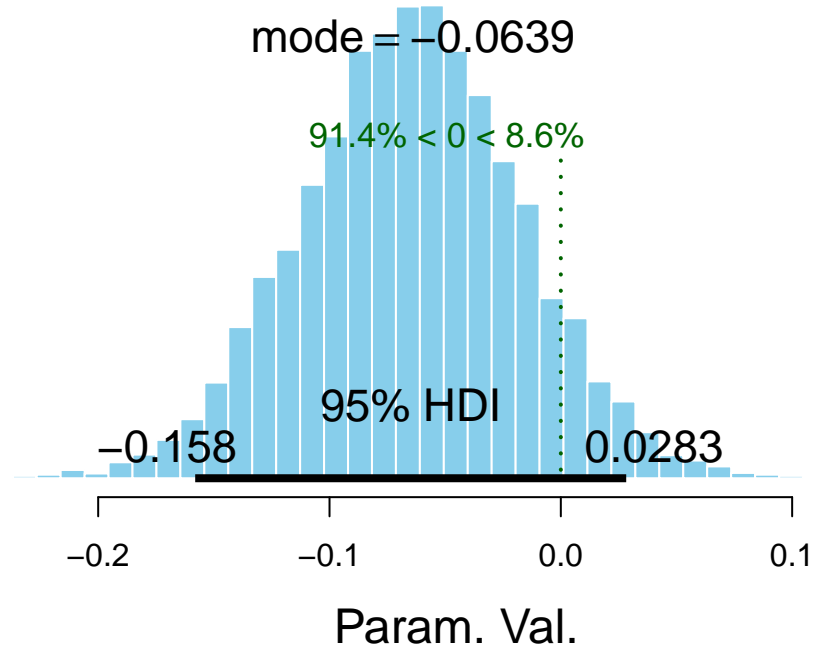
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1680
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 7960.492 8847.381 7960.492 7133.048 6983.246
## [1] "INIT impact in ER with a\n probability of -69.97 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ER with a probability of -69.97 %



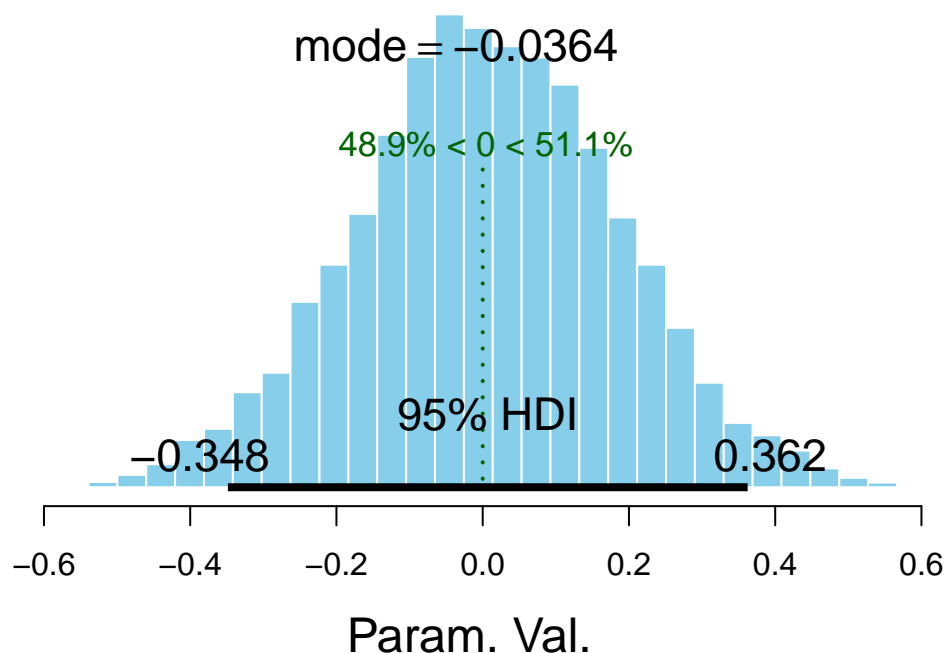
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1681
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 6617.036 8492.712 6617.036 6702.417 6440.151
## [1] "EPI impact in ER with a\n probability of -91.38 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in ER with a probability of -91.38 %



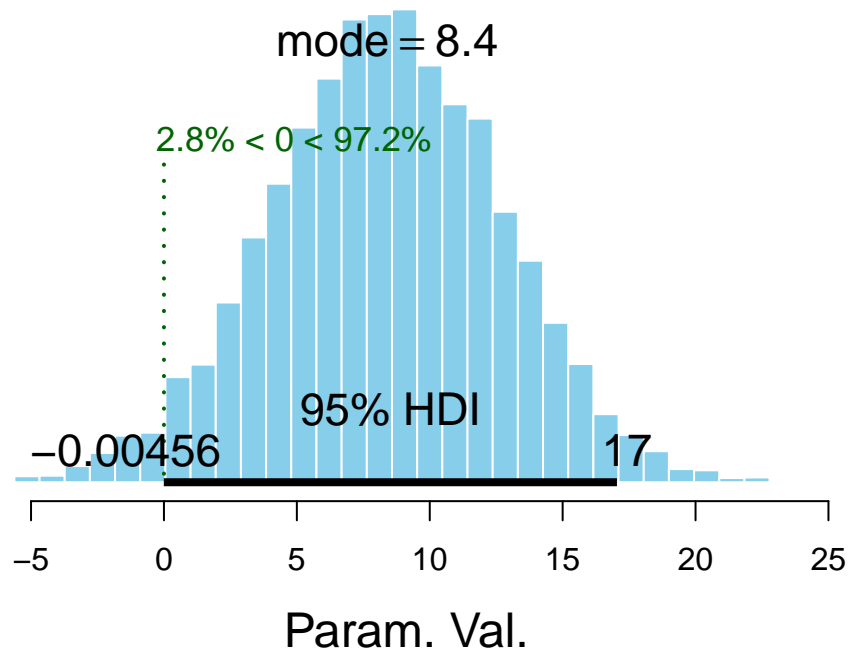
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1680
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 9566.073 9000.000 9566.073 6962.853 6533.005
## [1] "STEW impact in ER with a\n probability of 51.1 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ER with a probability of 51.1 %



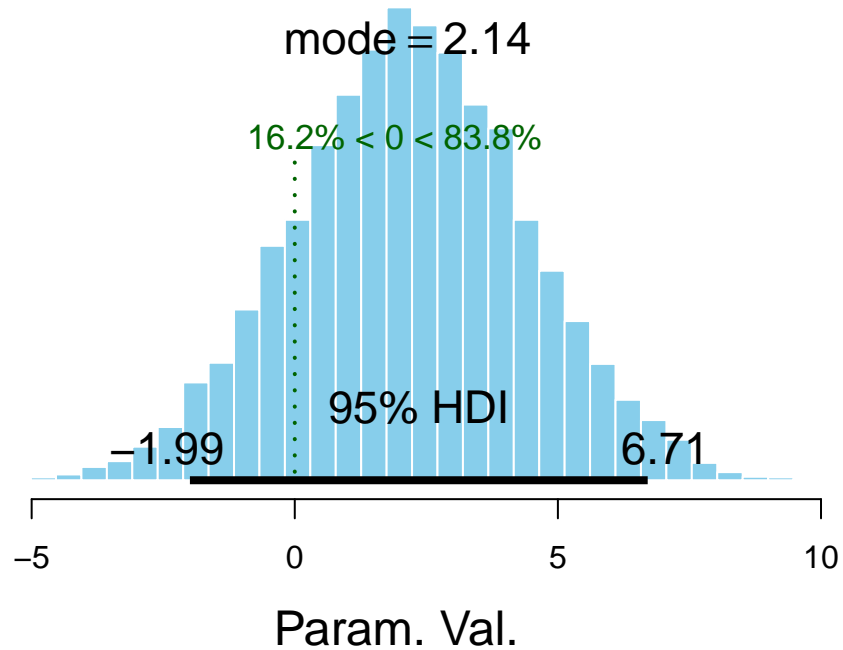
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1606
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8732.025 9235.314 8732.025 6861.852 6057.939
## [1] "II_10 impact in ER with a\n probability of 97.18 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in ER with a probability of 97.18 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 6
##   Total graph size: 1678
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8166.014 8348.970 8166.014 6967.134 6840.366
## [1] "FOR_10 impact in ER with a\n probability of 83.81 %"
```

FOR_10 impact in ER with a probability of 83.81 %



```
write.csv(BLquanti,
          file=paste(
            'noUSA-quantiResults',
            format(Sys.time(), "%d-%b-%H-%M-%S"),
            '.csv')
)
```

Binomial Y

```
x.names <- c('PRI', 'INIT', 'EPI', 'STEW', 'II_10', 'FOR_10')
y.names <- c('CP', 'DISCL')

BLbinom <- bayesList(X[X$Country_B!='USA'], x.names, y.names, 'model2.R')

## [1] "
## [1] " Analysis of Y= CP explained by x= PRI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
```

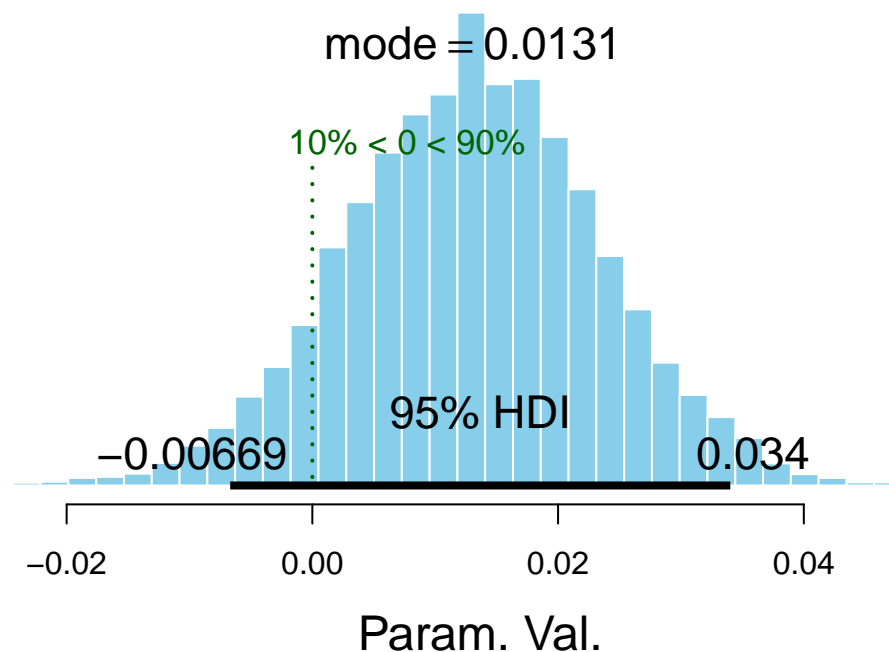


```

##      Unobserved stochastic nodes: 5
##      Total graph size: 1670
##
## Initializing model
##
##      alpha1      beta0      beta1      betaGPS      betaSIZE
## 5282.950 5756.204 5282.950 4188.093 4266.309
## [1] "PRI impact in CP with a\n probability of 89.96 %"

```

PRI impact in CP with a probability of 89.96 %



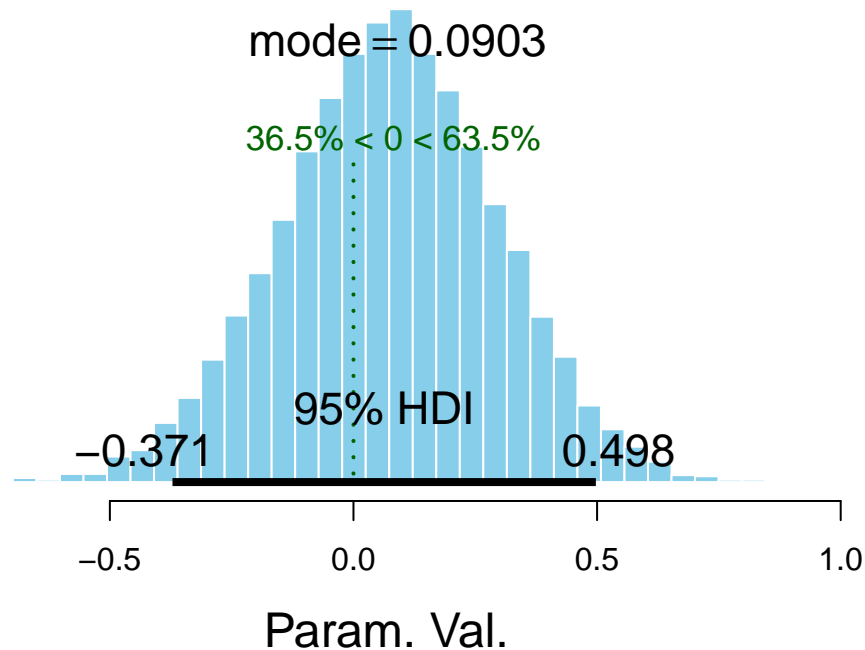
```

## [1] "-----"
## [1] " Analysis of Y= CP explained by x= INIT"
## Compiling data graph
##      Resolving undeclared variables
##      Allocating nodes
##      Initializing
##      Reading data back into data table
## Compiling model graph
##      Resolving undeclared variables
##      Allocating nodes
## Graph information:
##      Observed stochastic nodes: 114
##      Unobserved stochastic nodes: 5
##      Total graph size: 1669
##
## Initializing model
##

```

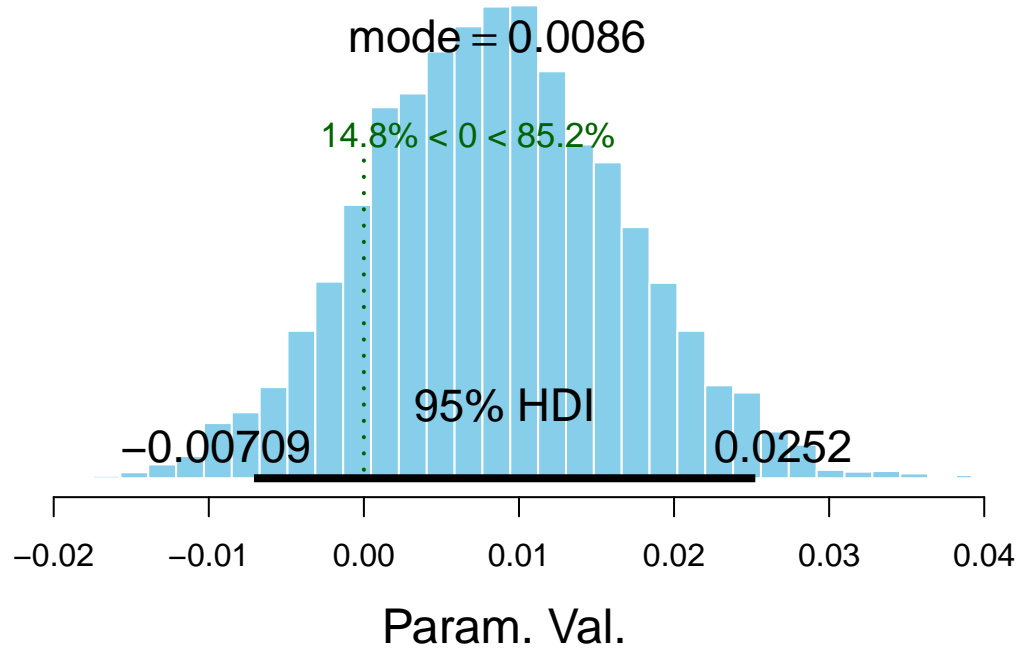
```
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 4704.656 5336.352 4704.656 4639.298 3946.854
## [1] "INIT impact in CP with a\n probability of 63.54 %"
```

INIT impact in CP with a probability of 63.54 %



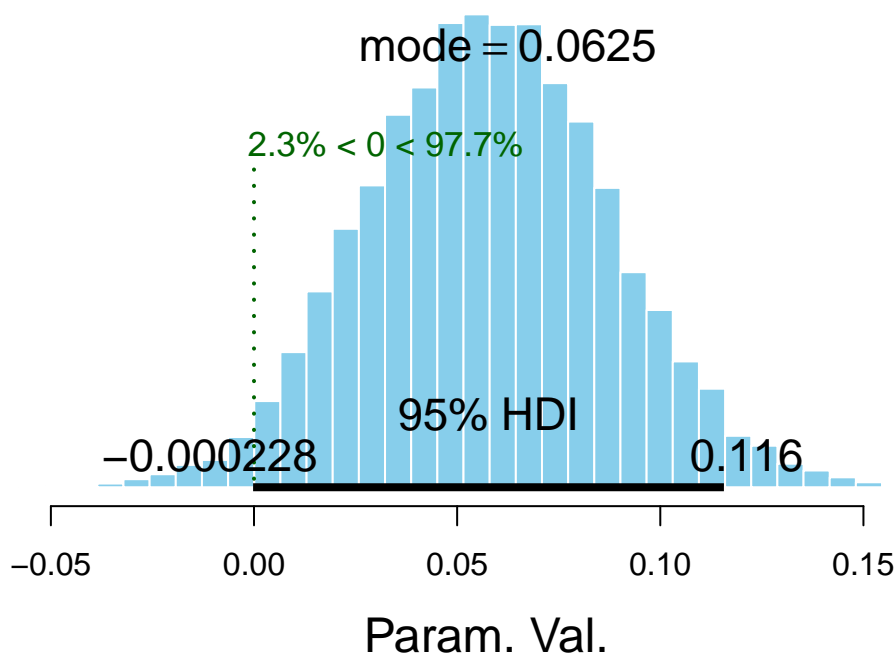
```
## [1] "-----"
## [1] " Analysis of Y= CP explained by x= EPI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 5
##   Total graph size: 1670
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 3991.205 4971.491 3991.205 4565.488 4040.952
## [1] "EPI impact in CP with a\n probability of 85.24 %"
```

EPI impact in CP with a probability of 85.24 %



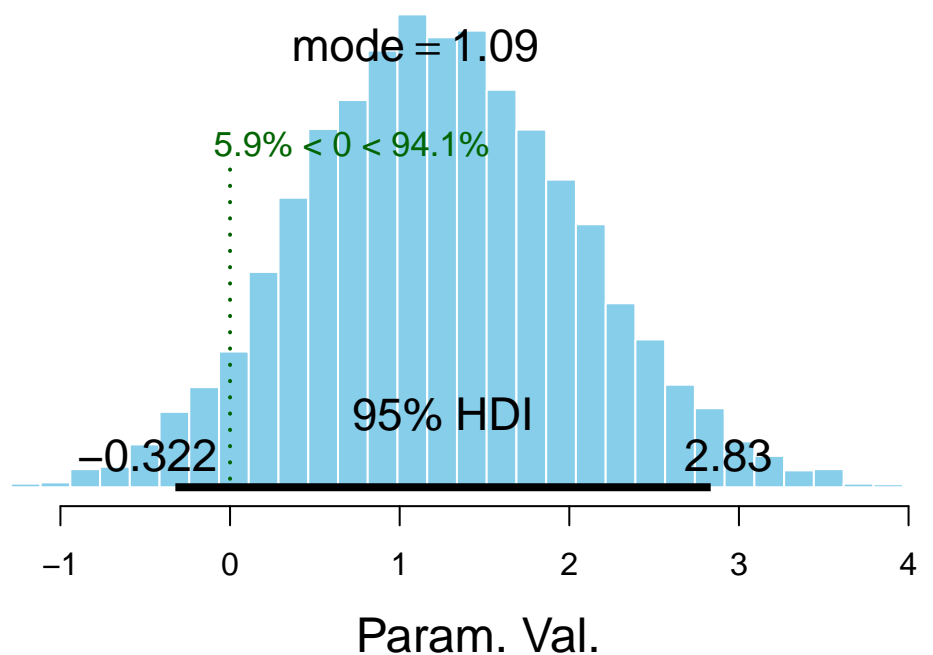
```
## [1] "-----"
## [1] " Analysis of Y= CP explained by x= STEW"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 5
##   Total graph size: 1669
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 6274.697 5913.682 6274.697 4277.414 4101.902
## [1] "STEW impact in CP with a\n probability of 97.72 %"
```

STEW impact in CP with a probability of 97.72 %



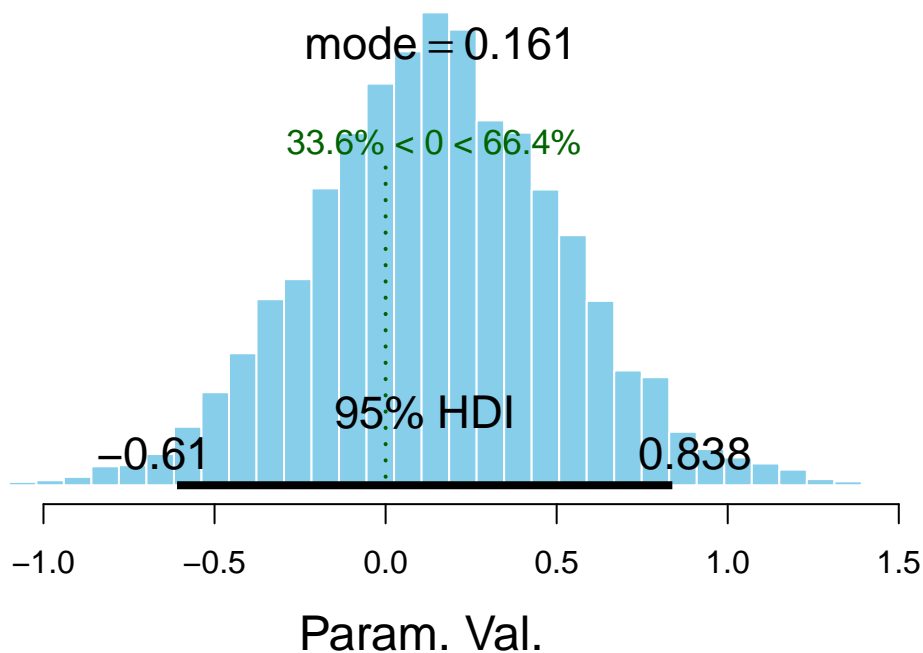
```
## [1] "
## [1] " Analysis of Y= CP explained by x= II_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 5
##   Total graph size: 1595
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5422.477 5876.700 5422.477 4455.749 3949.427
## [1] "II_10 impact in CP with a\n probability of 94.14 %"
```

II_10 impact in CP with a probability of 94.14 %



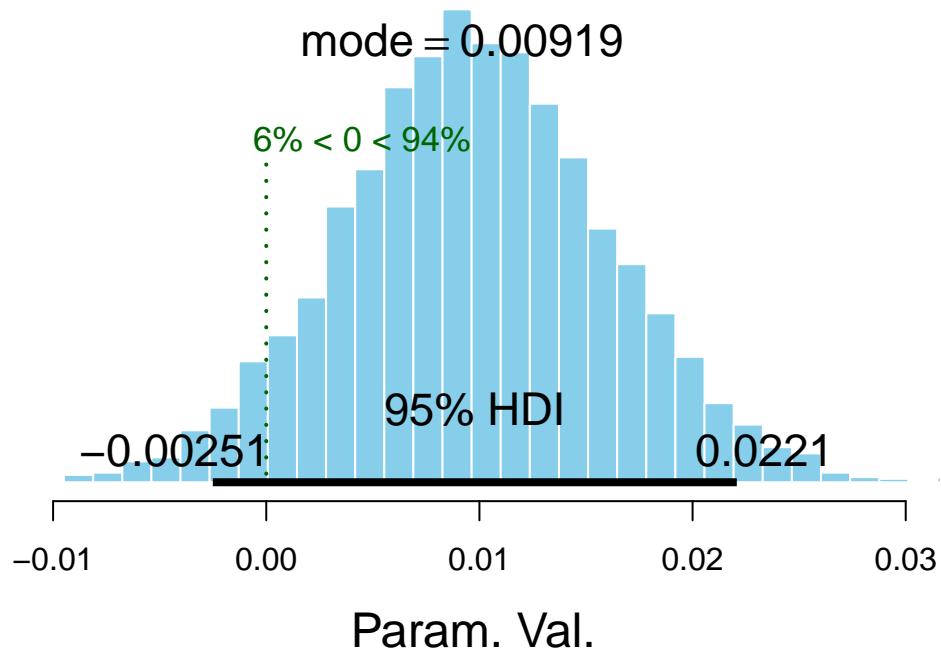
```
## [1] "-----"
## [1] " Analysis of Y= CP explained by x= FOR_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 5
##   Total graph size: 1667
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 4786.550 5702.999 4786.550 4540.374 4519.967
## [1] "FOR_10 impact in CP with a\n probability of 66.42 %"
```

FOR_10 impact in CP with a probability of 66.42 %



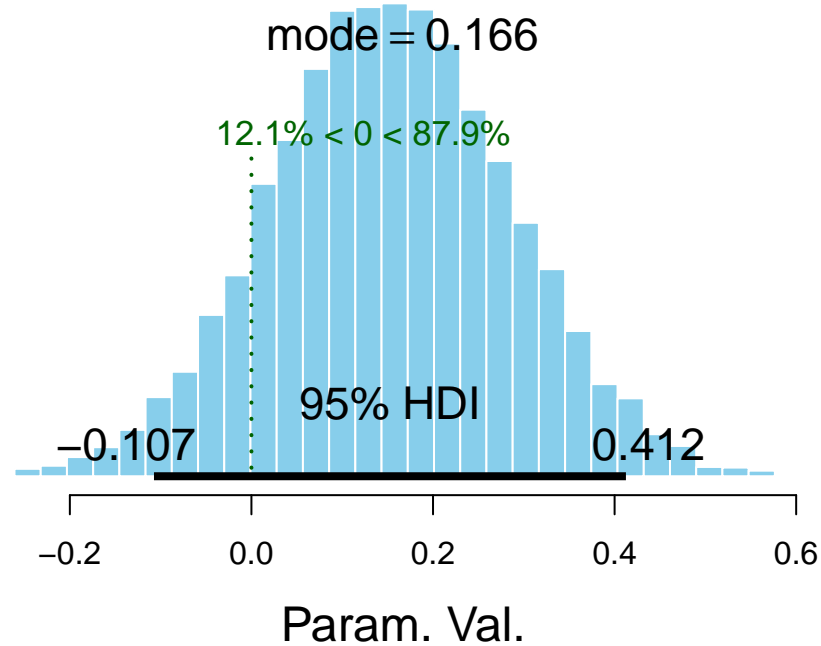
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= PRI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 5
##   Total graph size: 1670
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5601.917 5837.615 5601.917 4234.186 4145.612
## [1] "PRI impact in DISCL with a\n probability of 94.01 %"
```

PRI impact in DISCL with a probability of 94.01 %



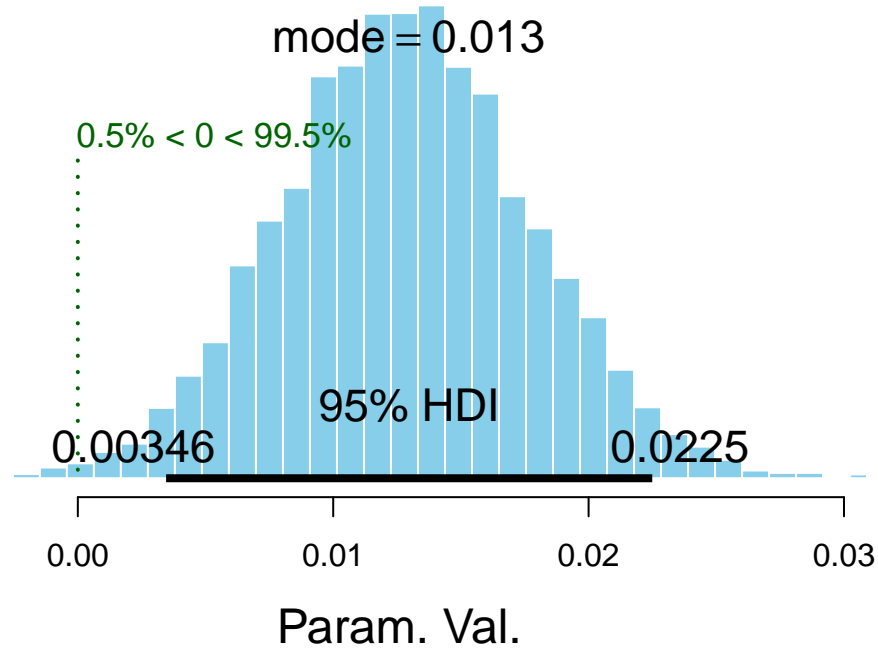
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= INIT"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 5
##   Total graph size: 1669
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5061.160 5119.035 5061.160 4606.551 3964.197
## [1] "INIT impact in DISCL with a\n probability of 87.92 %"
```

INIT impact in DISCL with a probability of 87.92 %



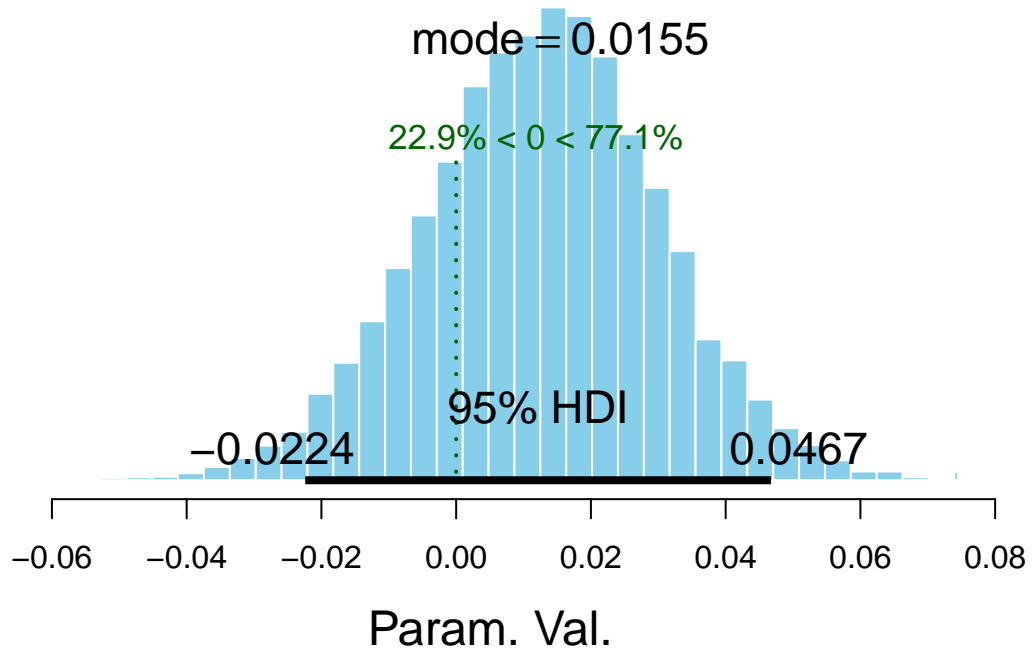
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= EPI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 5
##   Total graph size: 1670
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 4269.227 5453.212 4269.227 4360.810 4115.971
## [1] "EPI impact in DISCL with a\n probability of 99.5 %"
```


EPI impact in DISCL with a probability of 99.5 %



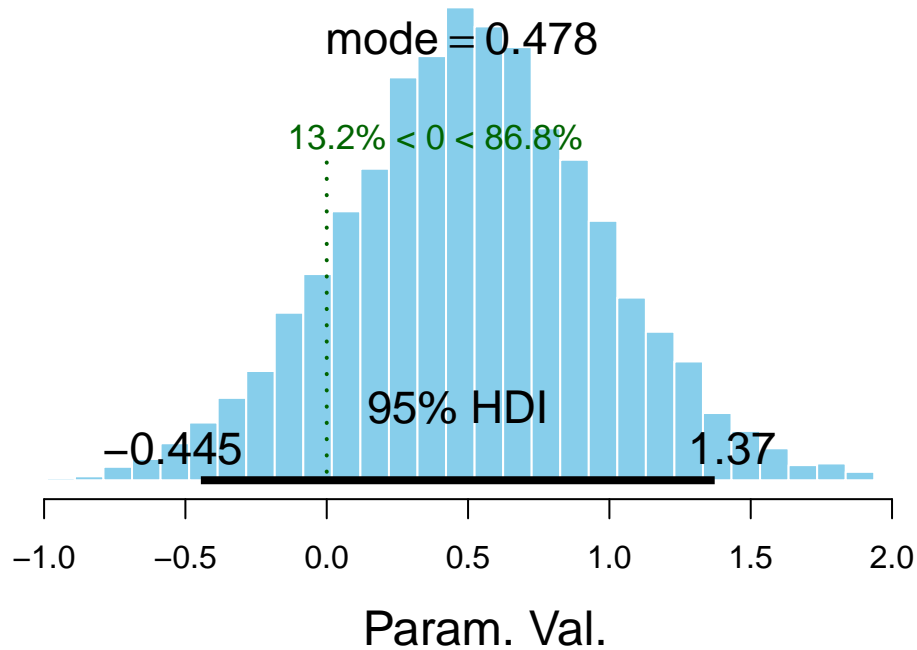
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= STEW"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 5
##   Total graph size: 1669
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5771.320 6165.066 5771.320 4609.580 4435.632
## [1] "STEW impact in DISCL with a\n probability of 77.07 %"
```

STEW impact in DISCL with a probability of 77.07 %



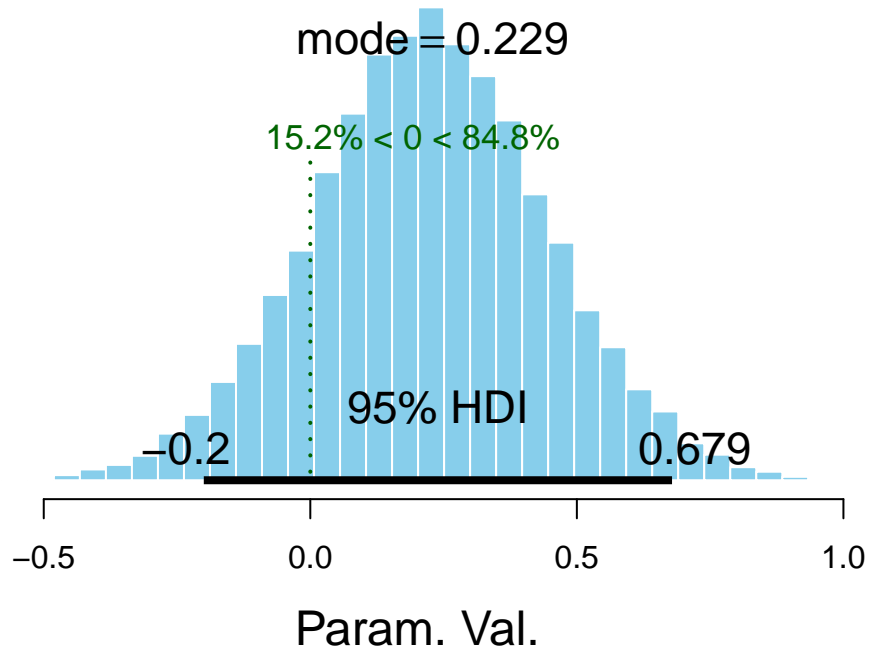
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= II_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 5
##   Total graph size: 1595
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5255.218 6661.908 5255.218 4530.293 4409.322
## [1] "II_10 impact in DISCL with a\n probability of 86.84 %"
```

II_10 impact in DISCL with a probability of 86.84 %



```
## [1] "-----"
## [1] " Analysis of Y= DISCL explained by x= FOR_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 114
##   Unobserved stochastic nodes: 5
##   Total graph size: 1667
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS   betaSIZE
## 5014.610 5807.855 5014.610 4275.506 4387.964
## [1] "FOR_10 impact in DISCL with a\n probability of 84.77 %"
```

FOR_10 impact in DISCL with a probability of 84.77 %



```
write.csv(BLbinom,
          file=paste(
            'noUSA-binomResults',
            format(Sys.time(), "%d-%b-%H-%M-%S"),
            '.csv')
)
```

noTWN-Global Bayesian models

Quantitative Y

```
x.names <- c('PRI', 'INIT', 'EPI', 'STEW', 'II_10', 'FOR_10')
y.names <- c('EPS', 'ET3', 'ER3', 'ER1', 'ER')
BLquanti <- bayesList(X[X$Country_B!='TWN'], x.names, y.names, 'model1.R')

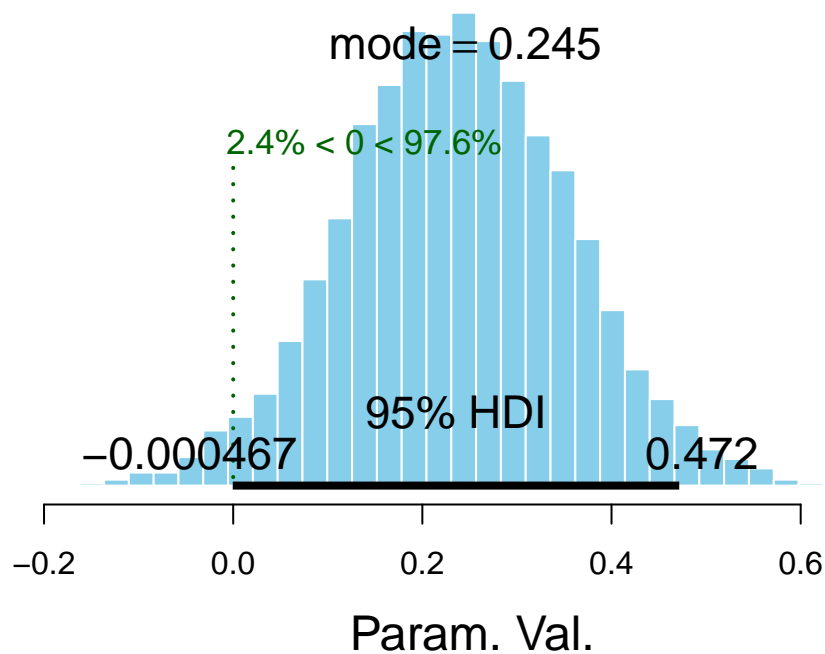
## [1] "
## [1] " ----- "
## [1] " Analysis of Y= EPS explained by x= PRI"

## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data

## Compiling data graph
## Resolving undeclared variables
## Allocating nodes
## Initializing
## Reading data back into data table
```

```
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1792
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS betaSIZE
## 9343.690 9501.505 9343.690 7502.127 7167.681
## [1] "PRI impact in EPS with a\n probability of 97.57 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

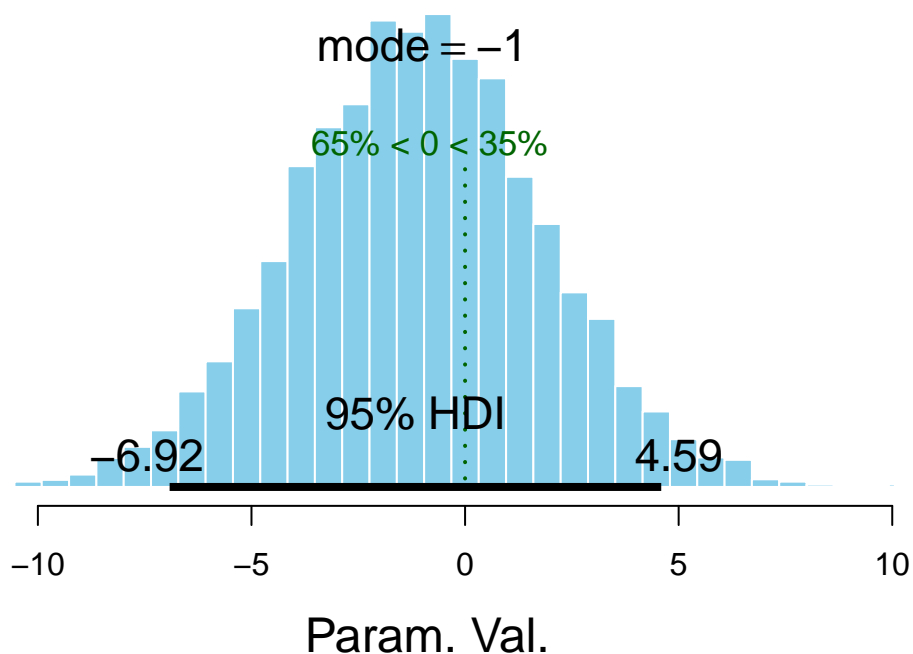
PRI impact in EPS with a probability of 97.57 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
```

```
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1791
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8534.869 9000.000 8534.869 7474.848 6536.407
## [1] "INIT impact in EPS with a\n probability of -64.97 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in EPS with a probability of -64.97 %



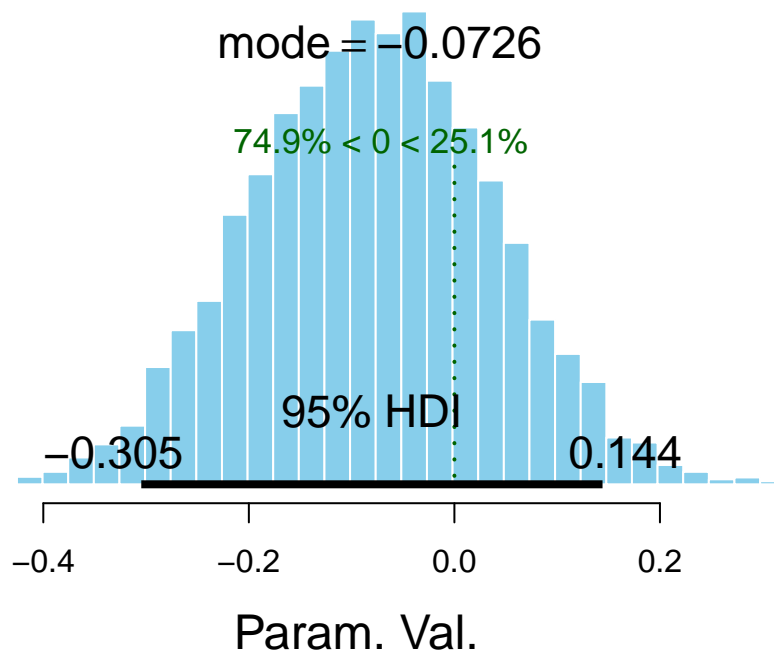
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
```

```

## Total graph size: 1785
##
## Initializing model
##
## alpha1 beta0 beta1 betaGPS betaSIZE
## 6566.186 8399.790 6566.186 7757.125 6948.669
## [1] "EPI impact in EPS with a\n probability of -74.88 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data

```

EPI impact in EPS with a probability of -74.88 %



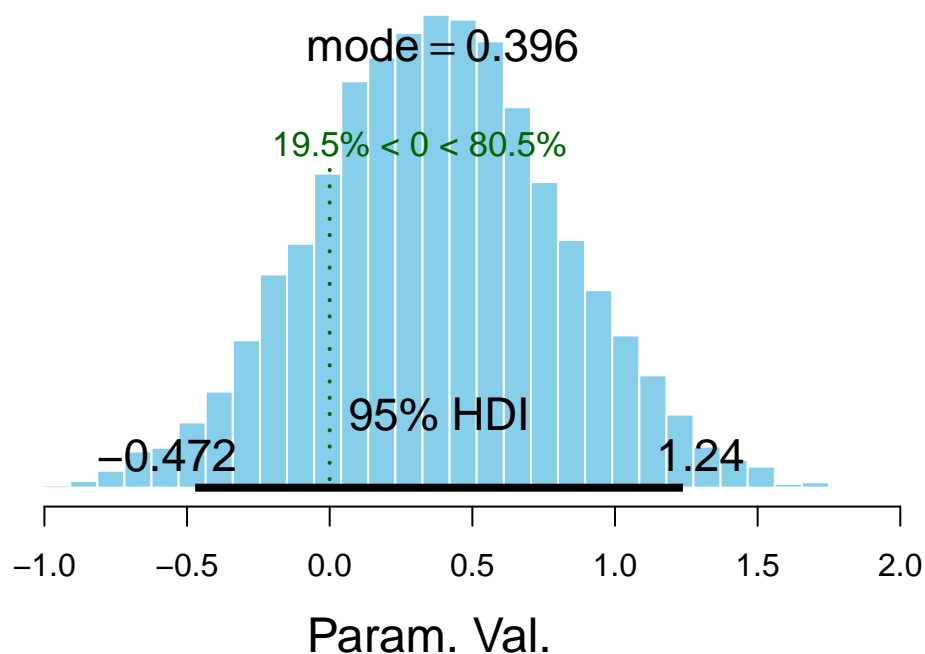
```

## Compiling data graph
## Resolving undeclared variables
## Allocating nodes
## Initializing
## Reading data back into data table
## Compiling model graph
## Resolving undeclared variables
## Allocating nodes
## Graph information:
## Observed stochastic nodes: 122
## Unobserved stochastic nodes: 6
## Total graph size: 1784
##
## Initializing model

```

```
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 8824.363 9031.564 8824.363 7037.025 7309.354
## [1] "STEW impact in EPS with a\n probability of 80.48 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in EPS with a probability of 80.48 %

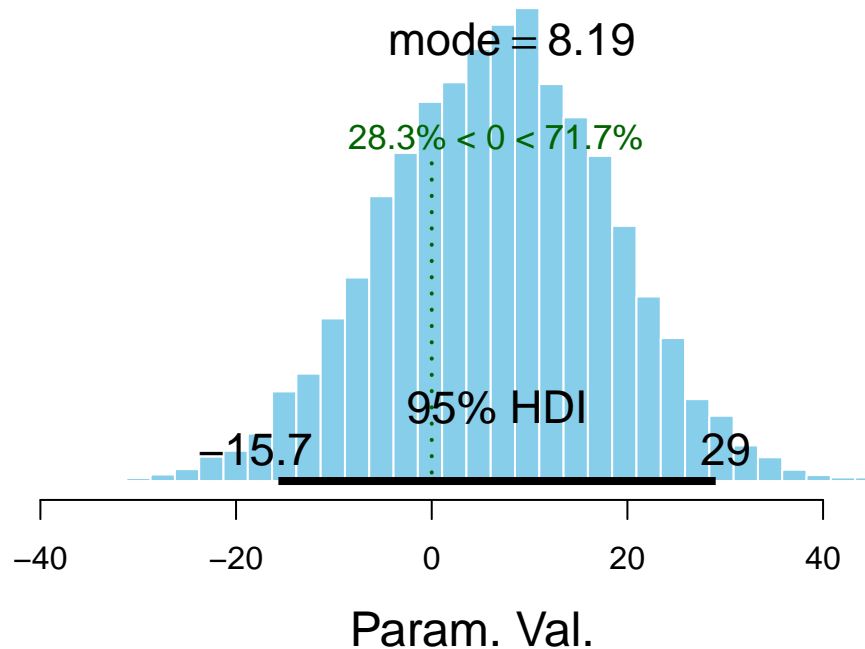


```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1703
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 8421.111 9000.000 8421.111 7092.107 7232.512
```



```
## [1] "II_10 impact in EPS with a\n probability of 71.71 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in EPS with a probability of 71.71 %

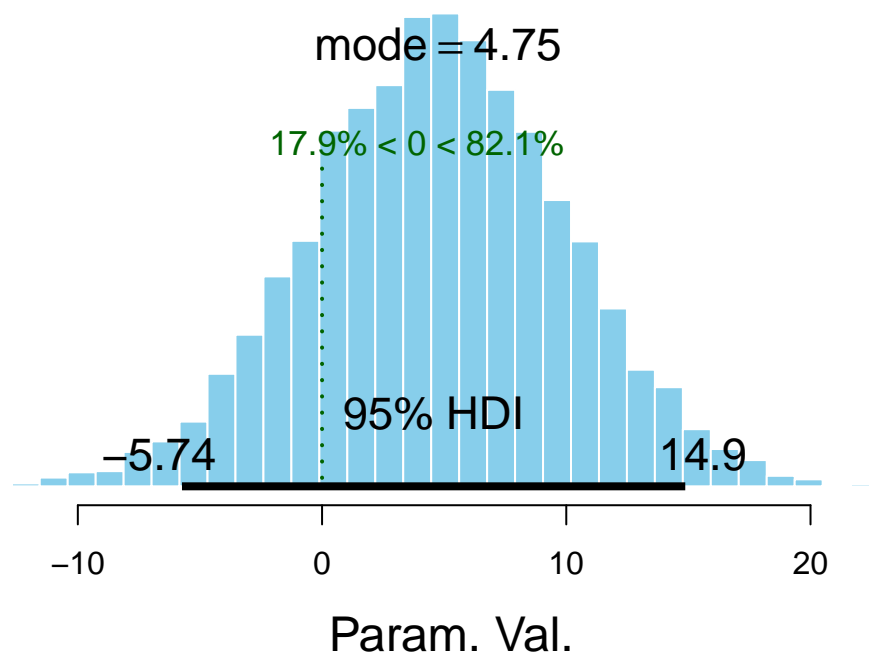


```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1781
##
## Initializing model
##
##   alpha1   beta0   beta1  betaGPS betaSIZE
## 7702.770 8877.746 7702.770 7326.421 7730.997
## [1] "FOR_10 impact in EPS with a\n probability of 82.12 %"
## [1] "

```

```
## [1] " Analysis of Y= ET3  explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

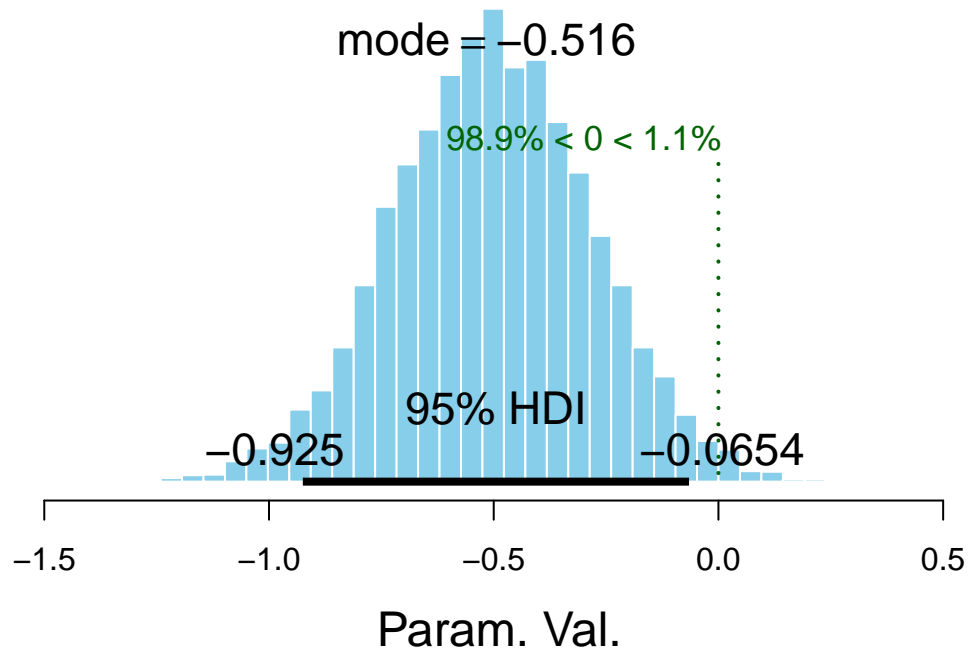
FOR₁₀ impact in EPS with a probability of 82.12 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1792
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8819.235 9168.260 8819.235 7317.906 7032.089
## [1] "PRI  impact in  ET3  with a\n probability of  -98.86 %"
## [1] "
## [1] " Analysis of Y= ET3  explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
```

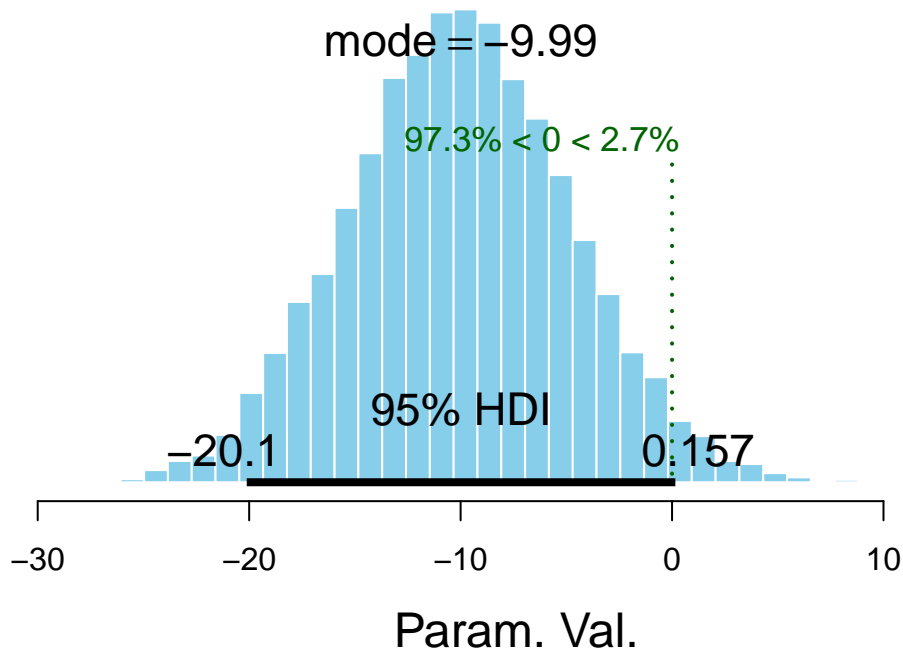
```
## 500): Unused variable "n" in data
```

PRI impact in ET3 with a probability of -98.86 %



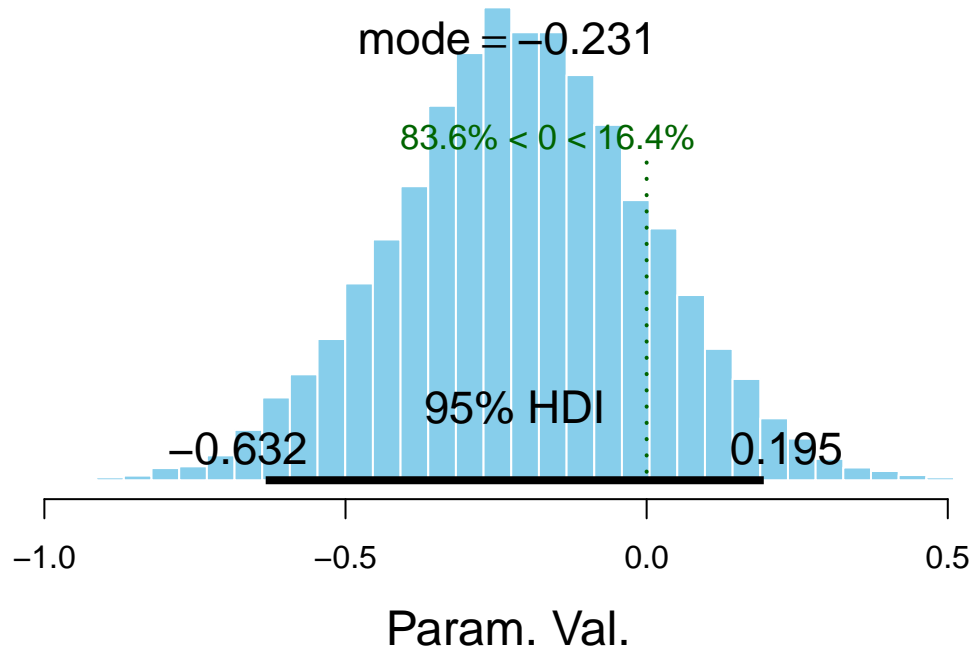
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1791
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS   betaSIZE
## 7892.889 9471.270 7892.889 7182.027 6817.182
## [1] "INIT impact in ET3 with a\n probability of -97.26 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ET3 with a probability of -97.26 %



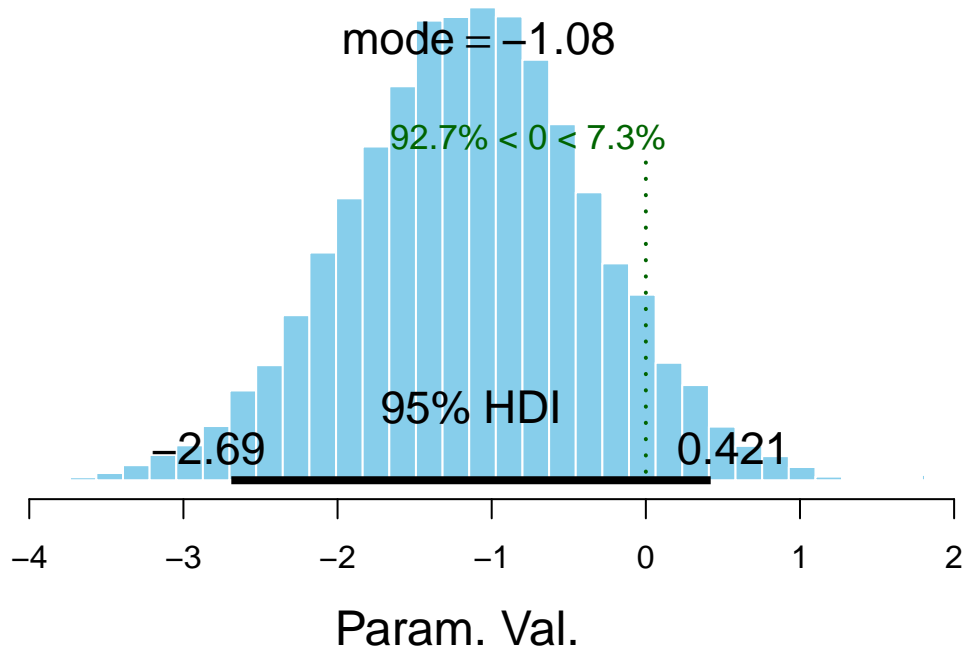
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1785
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 6544.240 9167.747 6544.240 7165.481 7106.180
## [1] "EPI impact in ET3 with a\n probability of -83.62 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in ET3 with a probability of -83.62 %



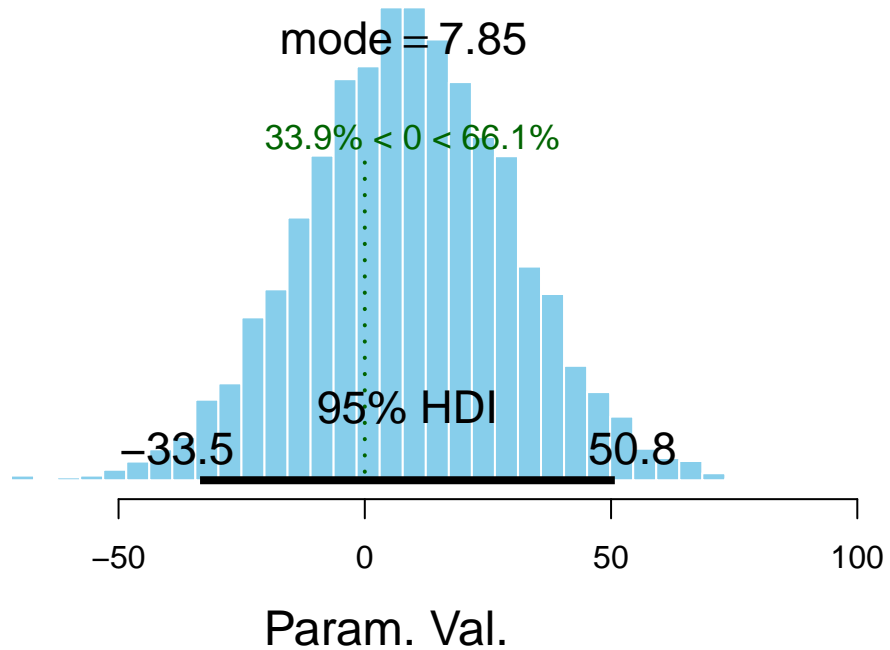
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1784
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 9000.000 9000.000 9000.000 7359.993 7268.559
## [1] "STEW impact in ET3 with a\n probability of -92.72 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ET3 with a probability of -92.72 %



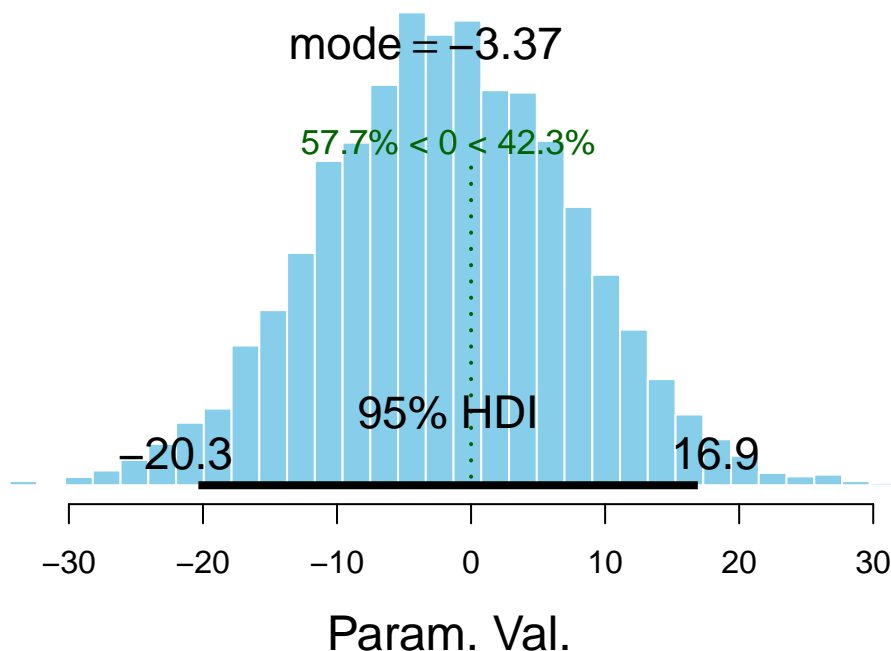
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1703
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 7921.957 9000.000 7921.957 7565.729 6359.528
## [1] "II_10 impact in ET3 with a\n probability of 66.14 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in ET3 with a probability of 66.14 %



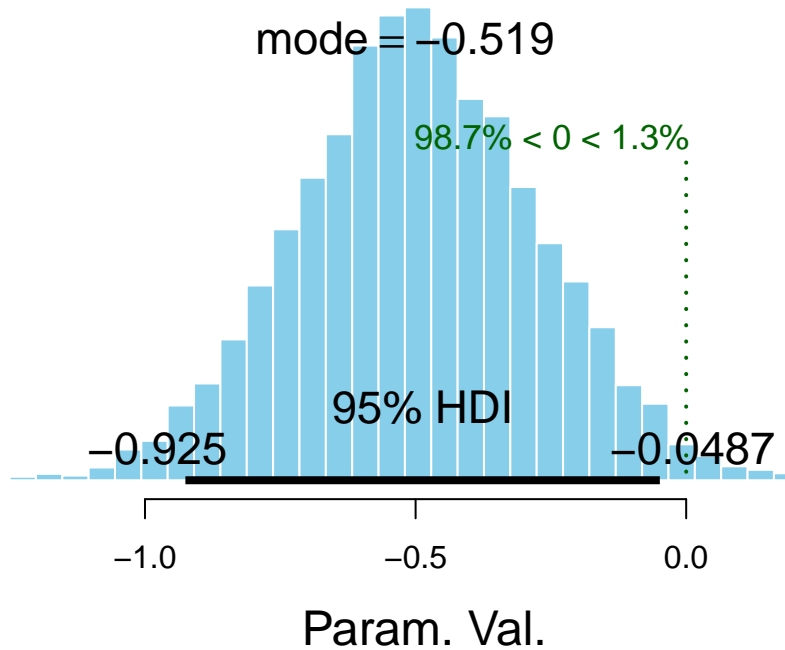
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1781
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7672.590 9000.000 7672.590 7119.478 7677.969
## [1] "FOR_10 impact in ET3 with a\n probability of -57.73 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

FOR_10 impact in ET3 with a probability of -57.73 %



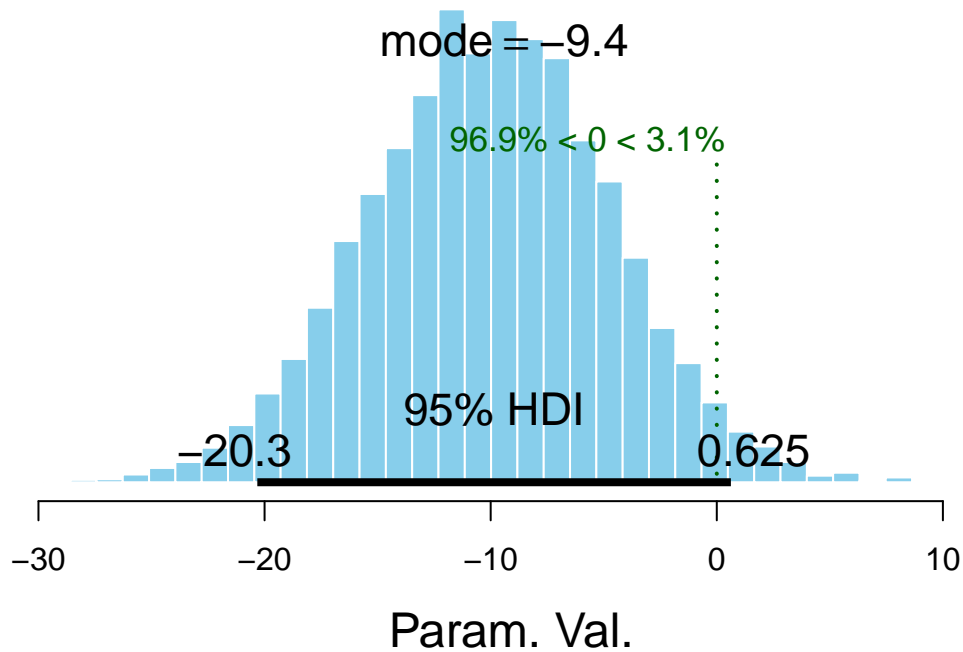
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1792
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8840.755 9163.606 8840.755 7359.852 6772.424
## [1] "PRI impact in ER3 with a\n probability of -98.69 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```


**PRI impact in ER3 with a
probability of -98.69 %**



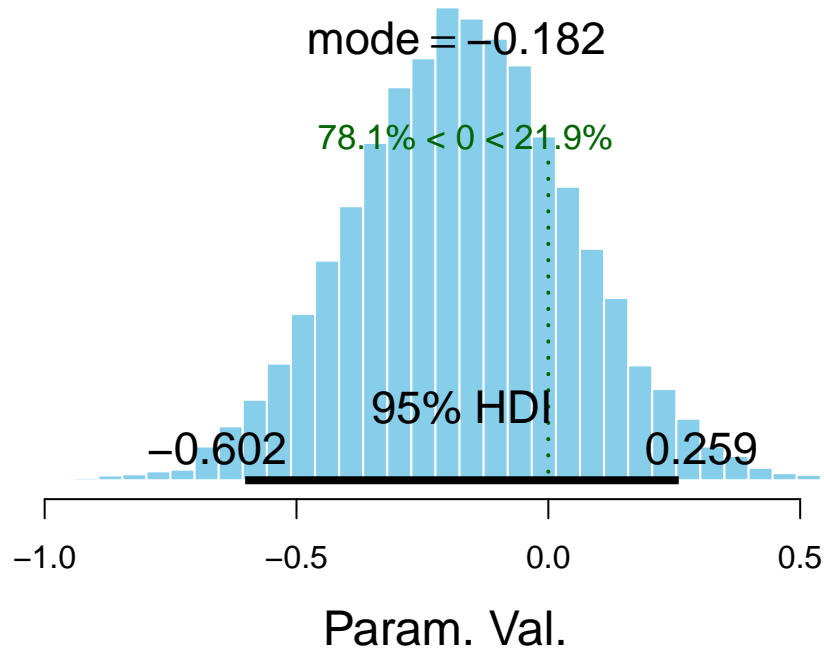
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1791
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 9333.476 9982.389 9333.476 7125.638 7025.345
## [1] "INIT impact in ER3 with a\n probability of -96.94 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ER3 with a probability of -96.94 %



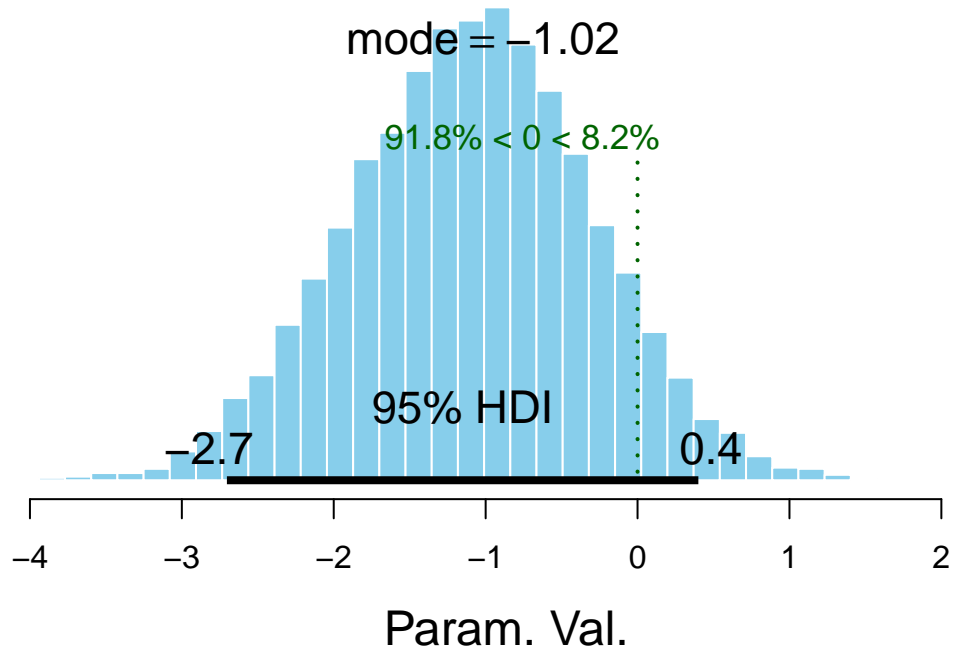
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1785
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 6518.221 8772.179 6518.221 6824.898 6813.389
## [1] "EPI impact in ER3 with a\n probability of -78.12 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in ER3 with a probability of -78.12 %



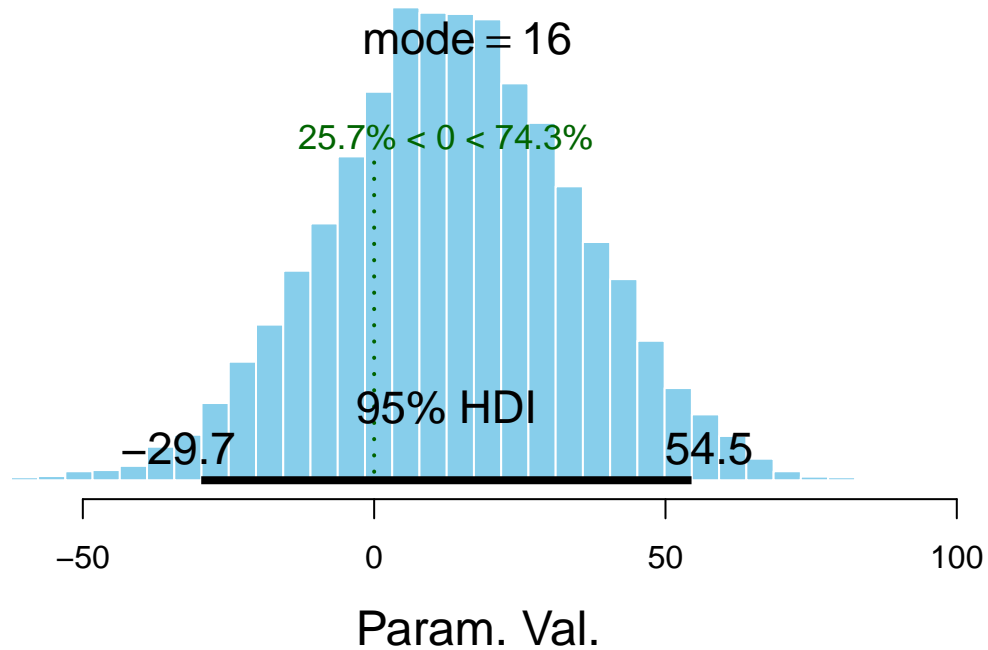
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1784
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 8964.744 9000.000 8964.744 7412.591 7304.970
## [1] "STEW impact in ER3 with a\n probability of -91.82 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ER3 with a probability of -91.82 %



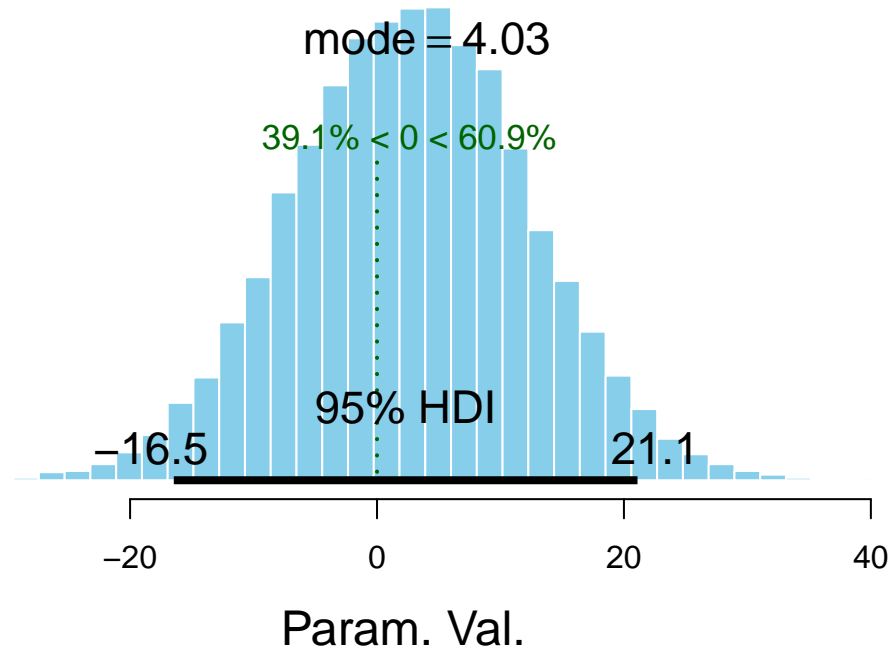
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1703
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8475.020 9000.000 8475.020 6905.524 6827.791
## [1] "II_10 impact in ER3 with a\n probability of 74.28 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in ER3 with a probability of 74.28 %



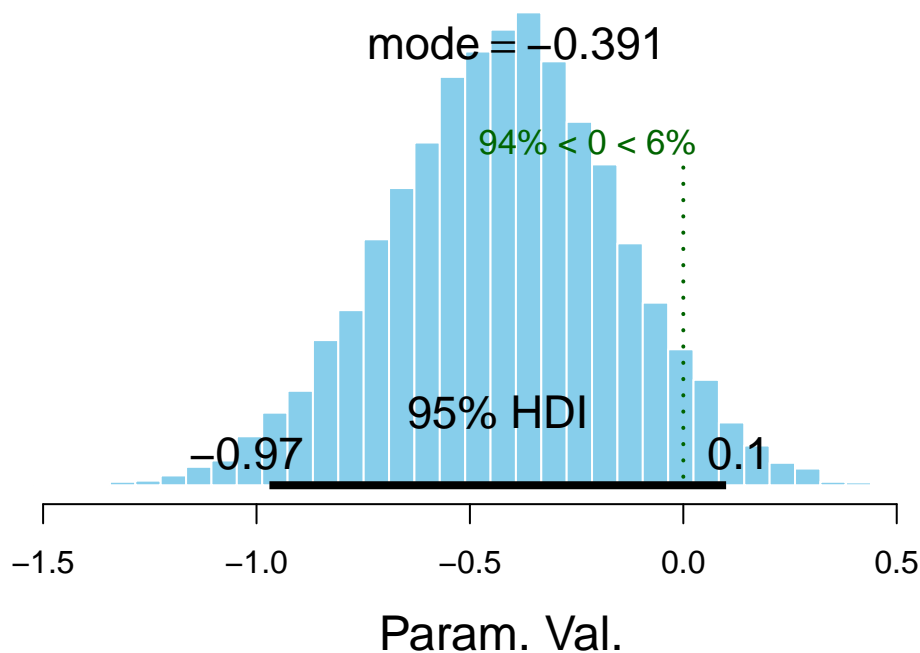
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1781
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7399.280 9000.000 7399.280 7106.982 7516.373
## [1] "FOR_10 impact in ER3 with a\n probability of 60.92 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

FOR_10 impact in ER3 with a probability of 60.92 %



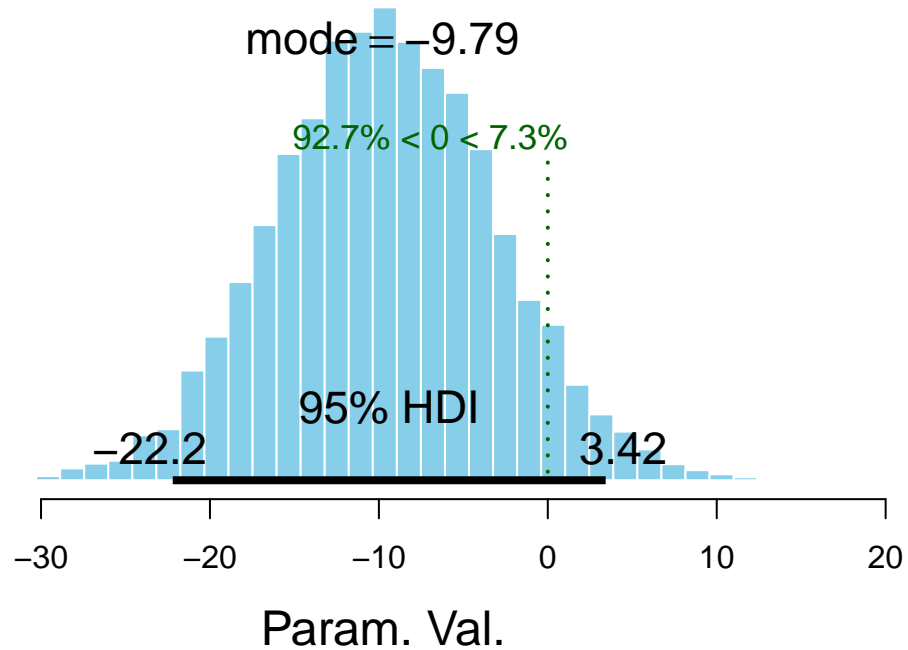
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1792
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 9000.000 8945.398 9000.000 7575.122 7030.889
## [1] "PRI impact in ER1 with a\n probability of -94 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

PRI impact in ER1 with a probability of -94 %



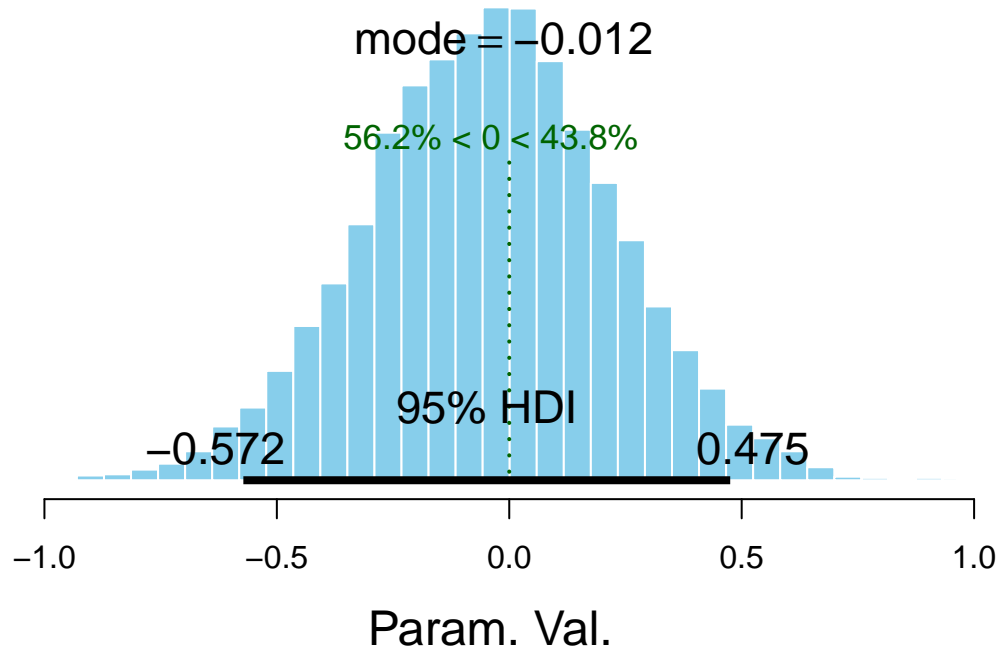
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1791
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8500.687 9802.903 8500.687 7453.344 7103.438
## [1] "INIT  impact in  ER1  with a\n probability of  -92.67 %"
## [1] "
## [1] " Analysis of Y= ER1  explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ER1 with a probability of -92.67 %



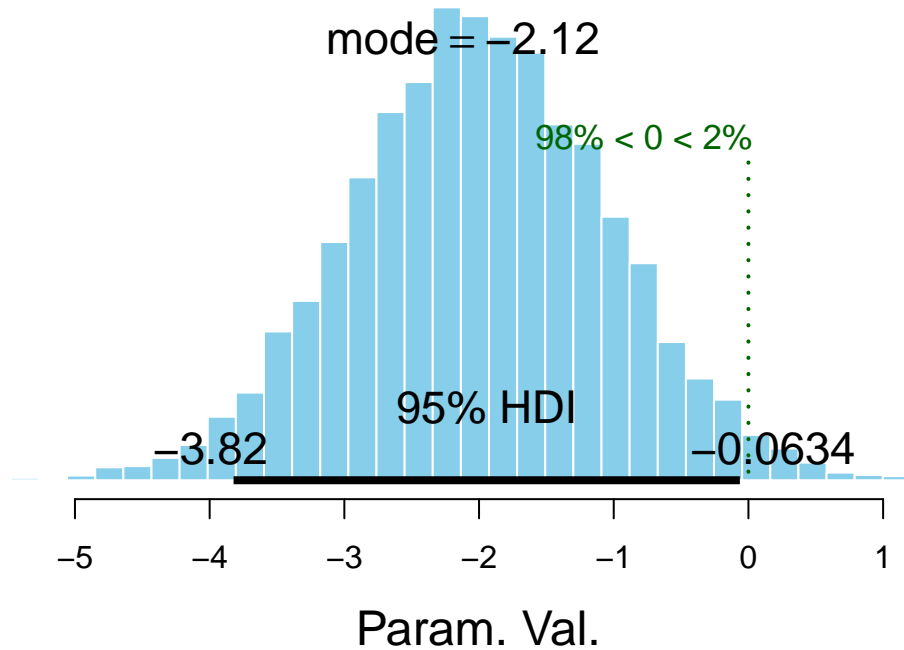
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1785
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 6393.546 8450.714 6393.546 7067.236 6845.563
## [1] "EPI impact in ER1 with a\n probability of -56.19 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```


EPI impact in ER1 with a probability of -56.19 %



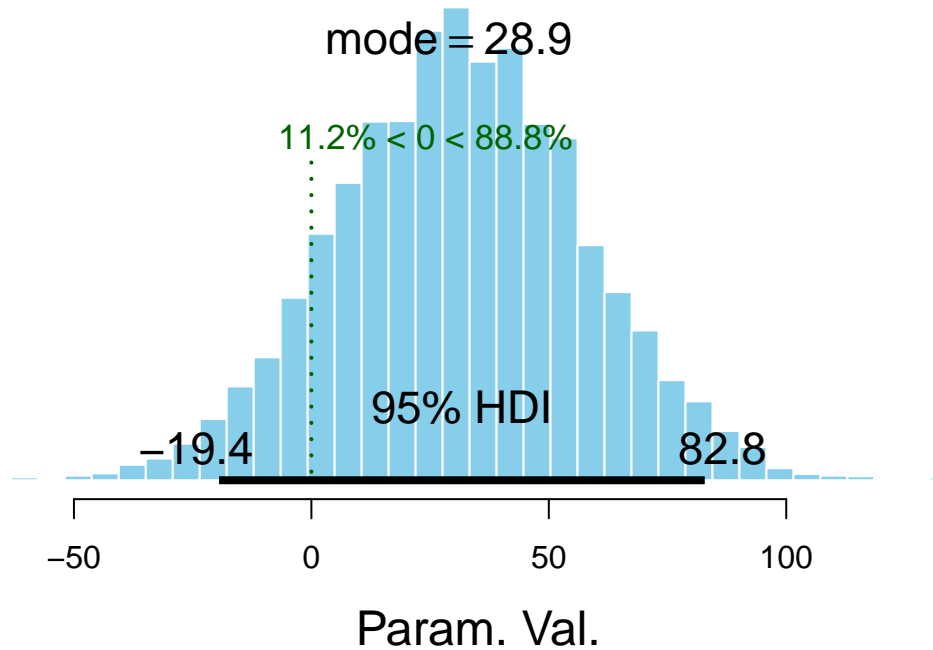
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1784
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8781.892 8631.077 8781.892 7760.986 7187.863
## [1] "STEW impact in ER1 with a\n probability of -98 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ER1 with a probability of -98 %



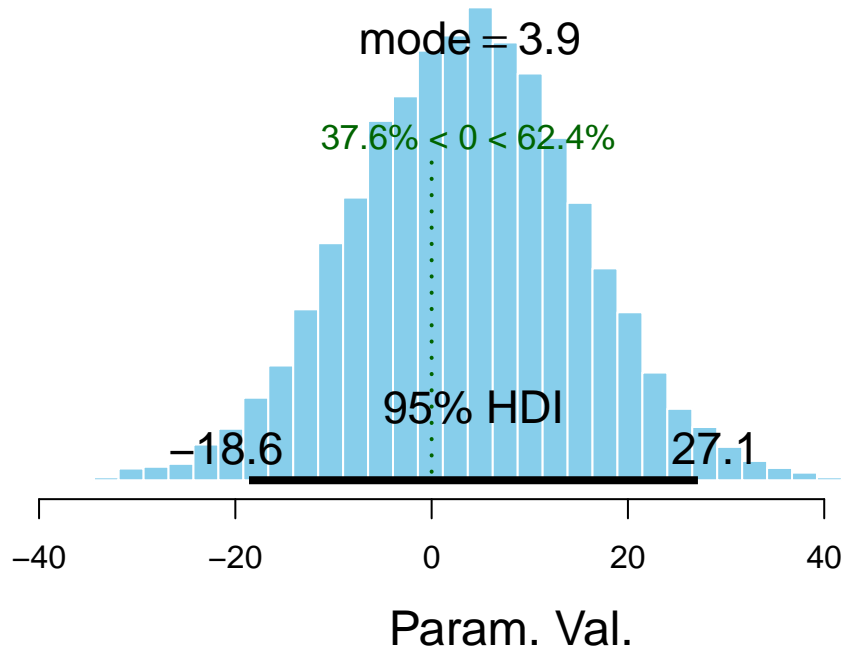
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1703
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8720.195 9000.000 8720.195 7099.730 6856.047
## [1] "II_10 impact in ER1 with a\n probability of 88.77 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in ER1 with a probability of 88.77 %



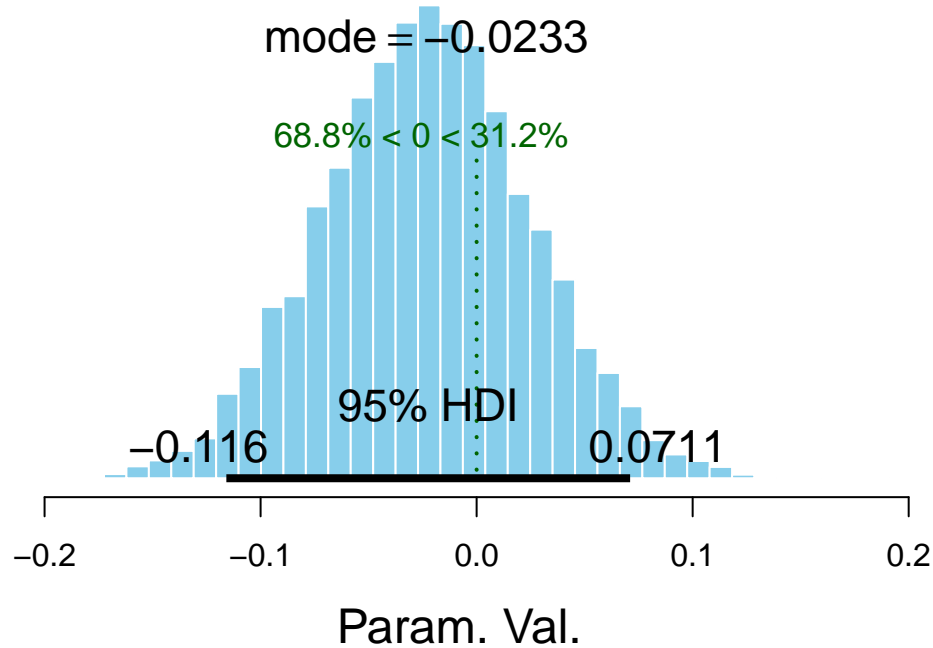
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1781
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7500.785 8766.981 7500.785 8221.194 7263.861
## [1] "FOR_10 impact in ER1 with a\n probability of 62.38 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

FOR_10 impact in ER1 with a probability of 62.38 %



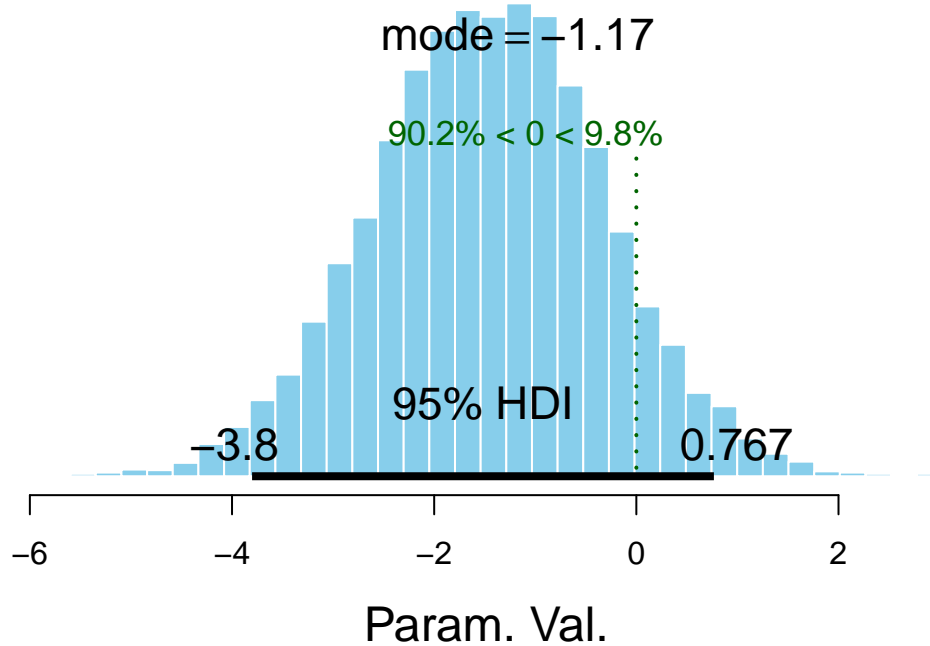
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1792
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 9035.407 9238.920 9035.407 8185.127 7823.235
## [1] "PRI impact in ER with a\n probability of -68.82 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

PRI impact in ER with a probability of -68.82 %



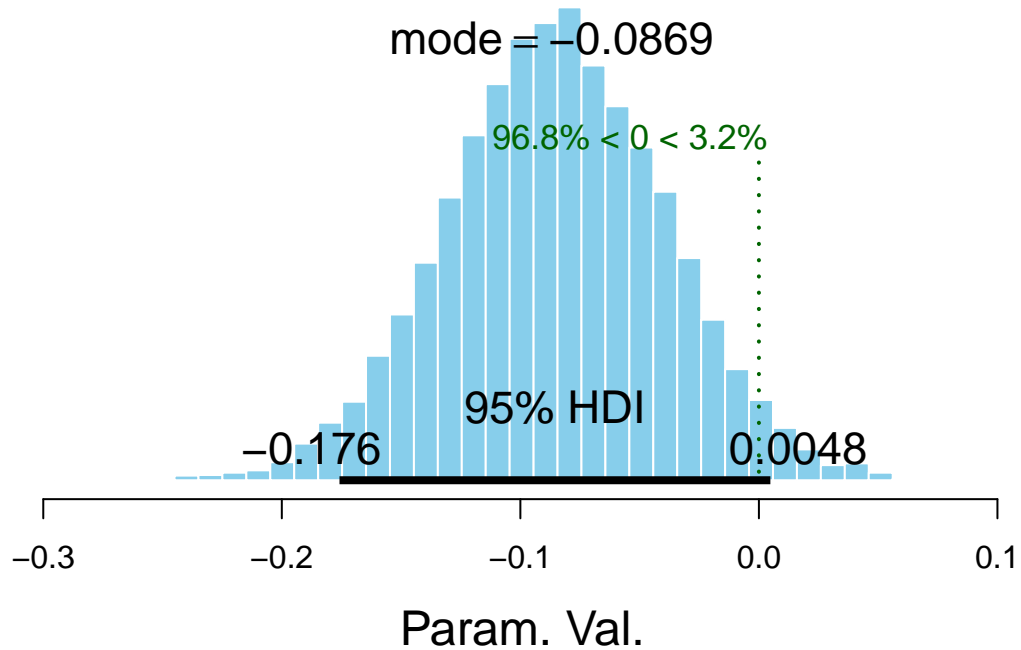
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1791
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 8928.070 8820.994 8928.070 7310.200 6840.290
## [1] "INIT impact in ER with a\n probability of -90.23 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ER with a probability of -90.23 %



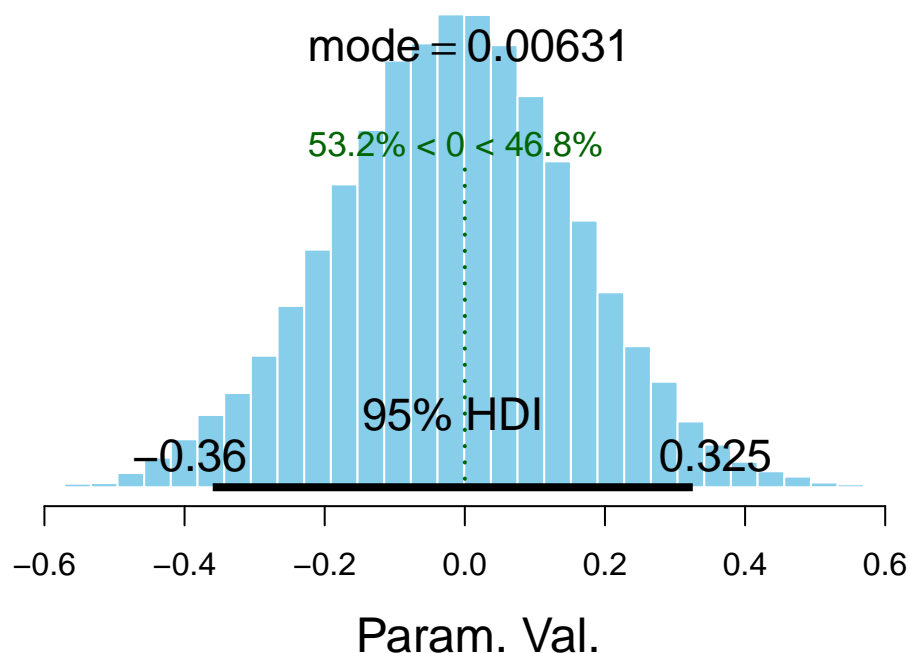
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1785
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 6561.086 8434.496 6561.086 7430.764 6448.525
## [1] "EPI impact in ER with a\n probability of -96.82 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in ER with a probability of -96.82 %



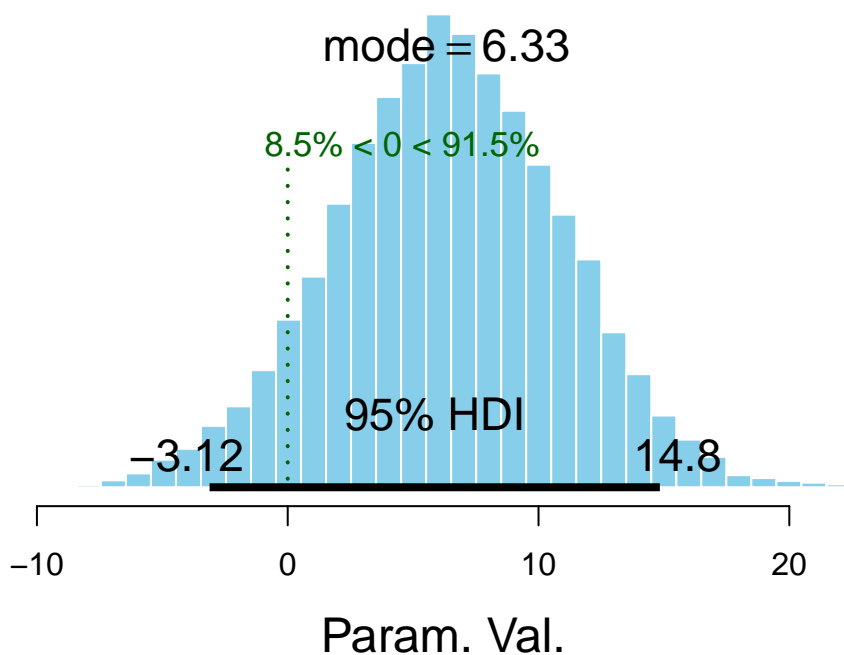
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1784
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8564.509 9000.000 8564.509 7214.047 7392.830
## [1] "STEW impact in ER with a\n probability of -53.16 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ER with a probability of -53.16 %



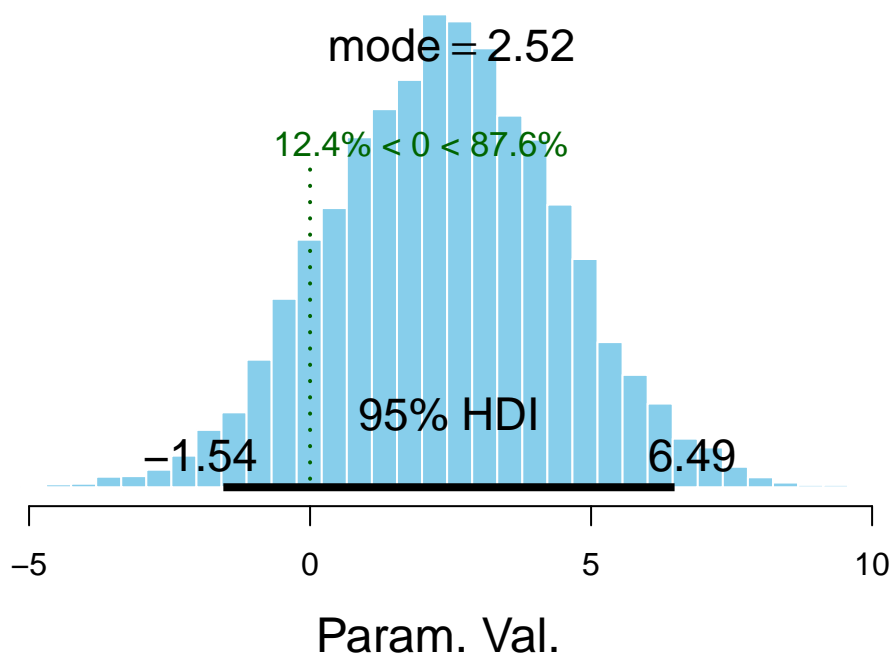
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1703
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8665.257 9590.562 8665.257 7352.032 6676.818
## [1] "II_10 impact in ER with a\n probability of 91.53 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```


II_10 impact in ER with a probability of 91.53 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 6
##   Total graph size: 1781
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7846.281 9210.244 7846.281 7467.977 7347.854
## [1] "FOR_10 impact in ER with a\n probability of 87.58 %"
```

FOR_10 impact in ER with a probability of 87.58 %



```
write.csv(BLquanti,
          file=paste(
            'noTWN-quantiResults',
            format(Sys.time(), "%d-%b-%H-%M-%S"),
            '.csv')
)
```

Binomial Y

```
x.names <- c('PRI', 'INIT', 'EPI', 'STEW', 'II_10', 'FOR_10')
y.names <- c('CP', 'DISCL')

BLbinom <- bayesList(X[X$Country_B!='TWN'], x.names, y.names, 'model2.R')

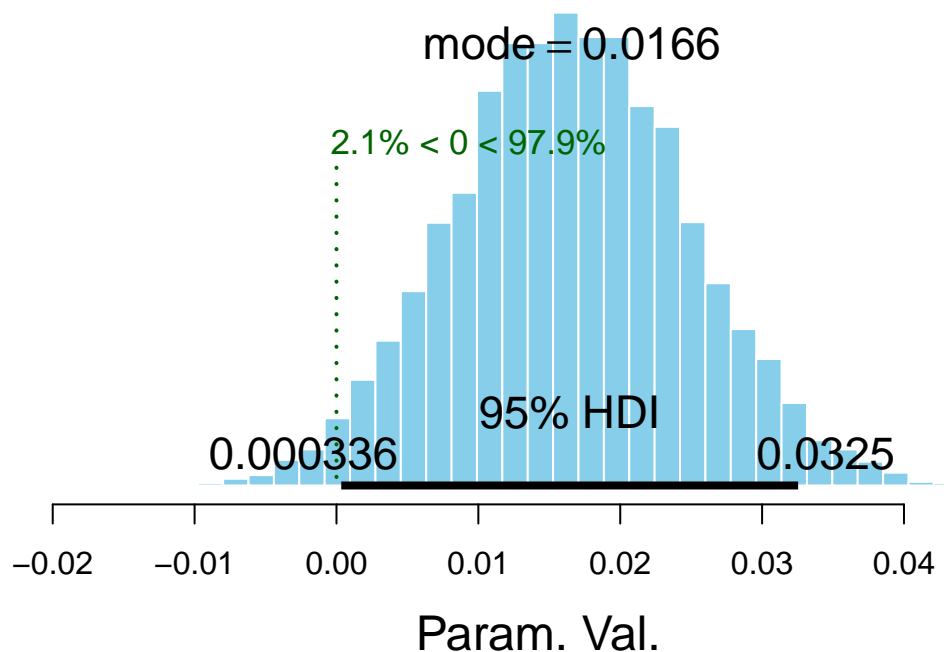
## [1] "
## [1] " Analysis of Y= CP explained by x= PRI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
```

```

##      Unobserved stochastic nodes: 5
##      Total graph size: 1781
##
## Initializing model
##
##      alpha1      beta0      beta1      betaGPS      betaSIZE
## 5701.914 5568.233 5701.914 4841.427 4510.526
## [1] "PRI impact in CP with a\n probability of 97.91 %"

```

PRI impact in CP with a probability of 97.91 %



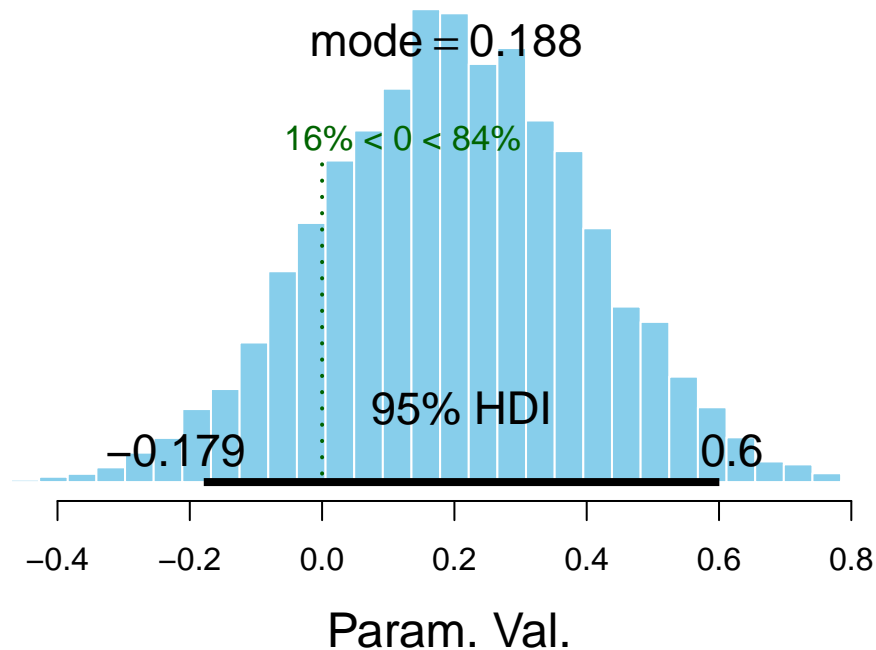
```

## [1] "-----"
## [1] " Analysis of Y= CP explained by x= INIT"
## Compiling data graph
##      Resolving undeclared variables
##      Allocating nodes
##      Initializing
##      Reading data back into data table
## Compiling model graph
##      Resolving undeclared variables
##      Allocating nodes
## Graph information:
##      Observed stochastic nodes: 122
##      Unobserved stochastic nodes: 5
##      Total graph size: 1780
##
## Initializing model
##

```

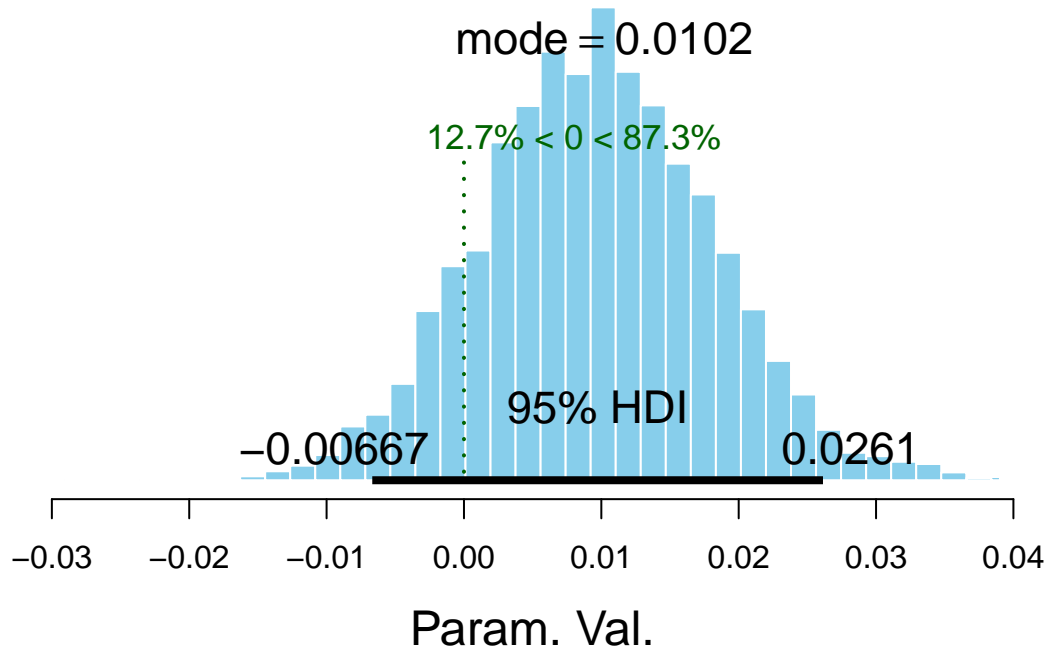
```
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 5428.167 5285.254 5428.167 4965.778 4335.766
## [1] "INIT impact in CP with a\n probability of 83.98 %"
```

INIT impact in CP with a probability of 83.98 %



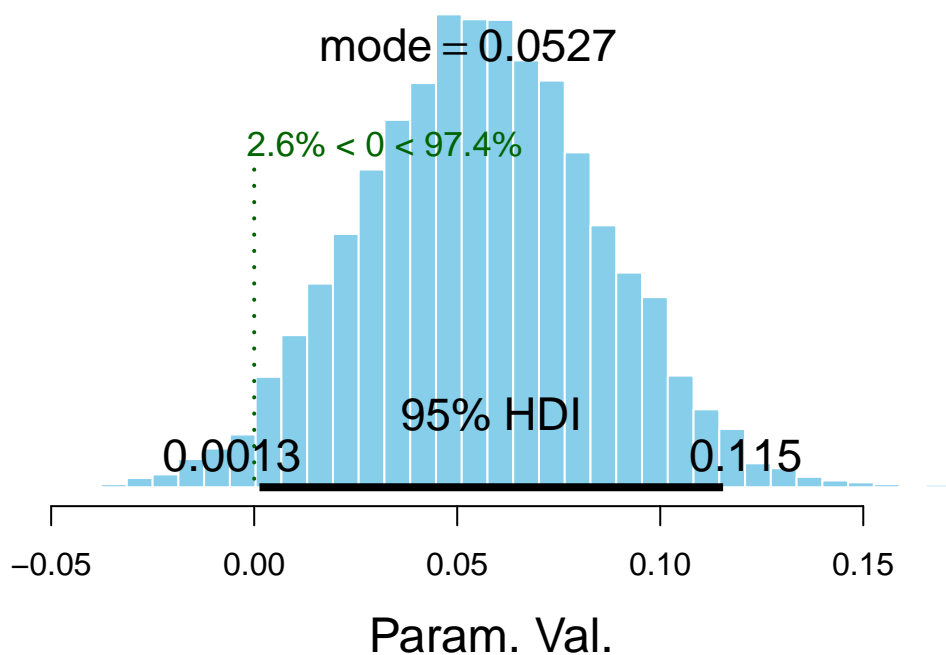
```
## [1] "-----"
## [1] " Analysis of Y= CP explained by x= EPI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 5
##   Total graph size: 1774
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 3893.699 5523.578 3893.699 4759.671 4395.197
## [1] "EPI impact in CP with a\n probability of 87.26 %"
```

EPI impact in CP with a probability of 87.26 %



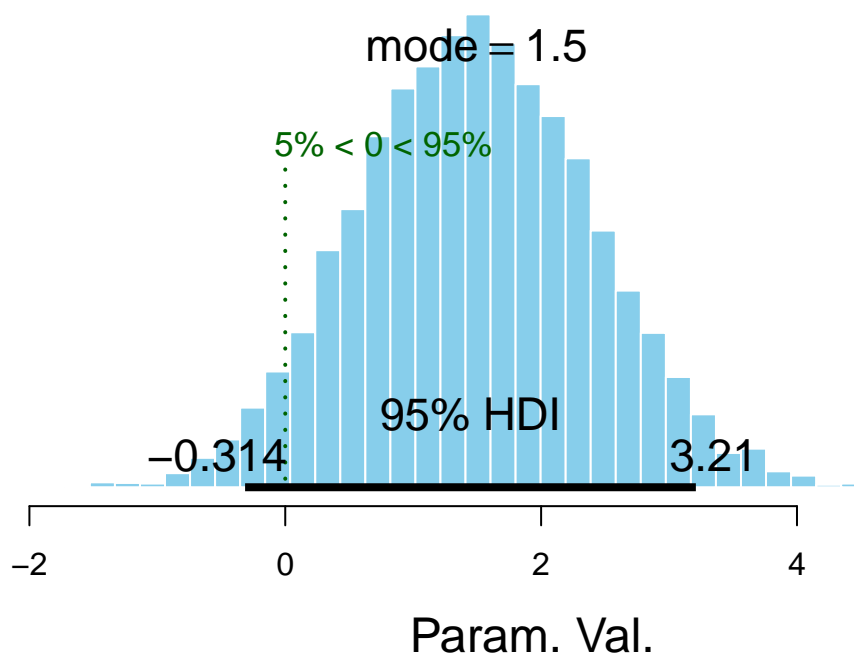
```
## [1] "-----"
## [1] " Analysis of Y= CP explained by x= STEW"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 5
##   Total graph size: 1773
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS   betaSIZE
## 5481.270 5706.103 5481.270 4566.322 4888.367
## [1] "STEW impact in CP with a\n probability of 97.36 %"
```

STEW impact in CP with a probability of 97.36 %



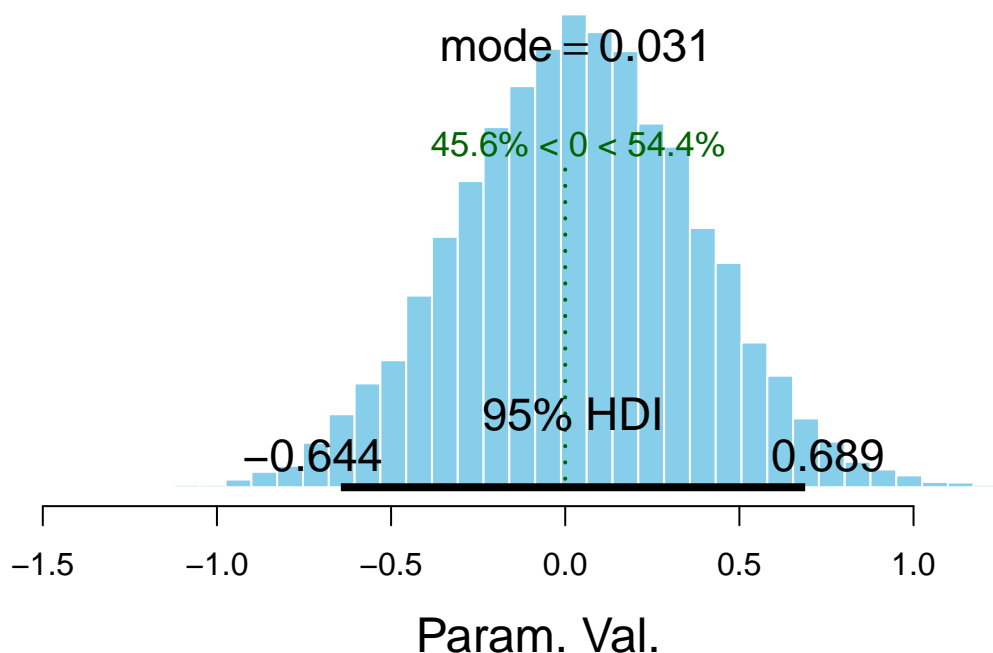
```
## [1] "
## [1] " Analysis of Y= CP explained by x= II_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 5
##   Total graph size: 1692
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5551.585 6171.102 5551.585 4567.365 4483.819
## [1] "II_10 impact in CP with a\n probability of 95.02 %"
```

II_10 impact in CP with a probability of 95.02 %



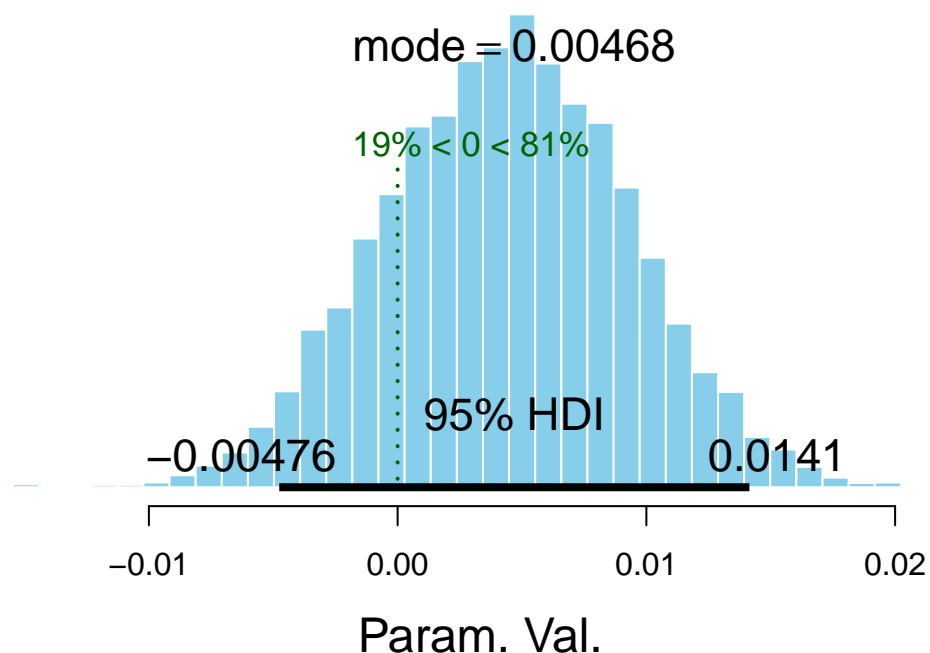
```
## [1] "
## [1] " Analysis of Y= CP explained by x= FOR_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 5
##   Total graph size: 1770
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5207.351 5865.138 5207.351 4590.790 5065.537
## [1] "FOR_10 impact in CP with a\n probability of 54.43 %"
```

FOR_10 impact in CP with a probability of 54.43 %



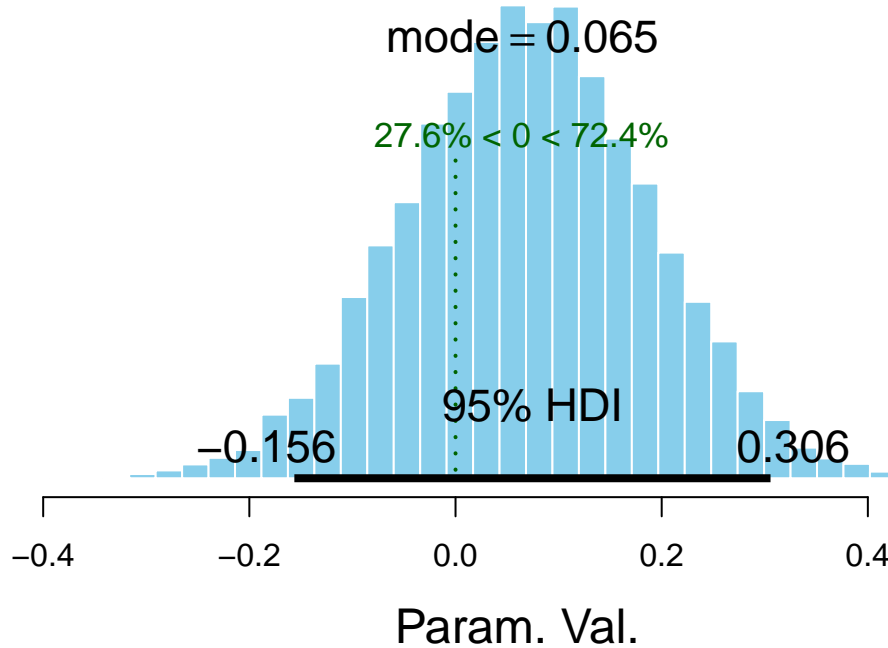
```
## [1] "-----"
## [1] " Analysis of Y= DISCL explained by x= PRI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 5
##   Total graph size: 1781
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 6325.077 6166.421 6325.077 4687.406 4614.268
## [1] "PRI impact in DISCL with a\n probability of 80.97 %"
```


PRI impact in DISCL with a probability of 80.97 %



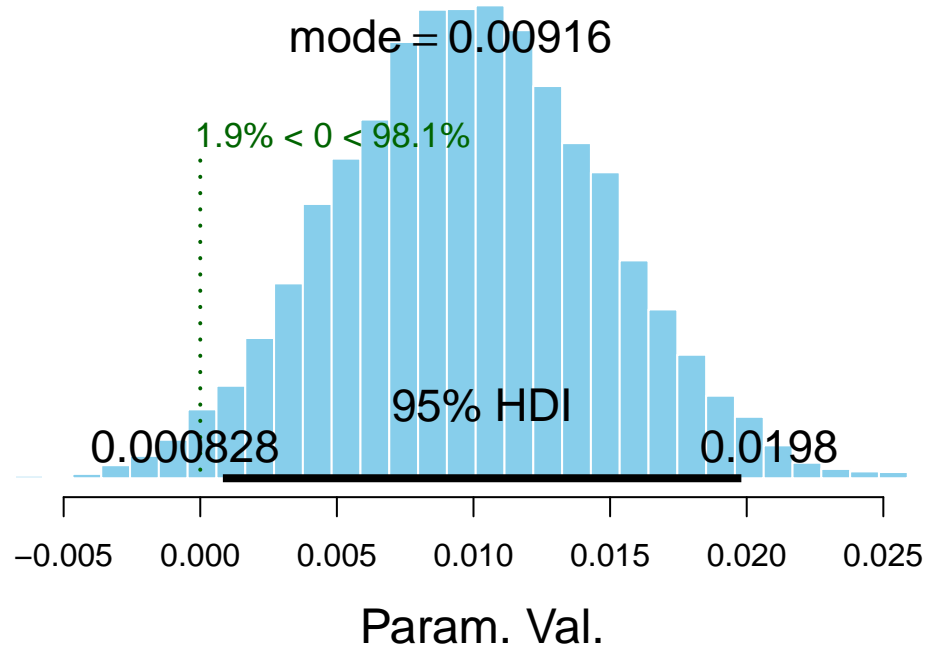
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= INIT"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 5
##   Total graph size: 1780
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5048.333 5633.159 5048.333 4969.700 4418.780
## [1] "INIT impact in DISCL with a\n probability of 72.38 %"
```

INIT impact in DISCL with a probability of 72.38 %



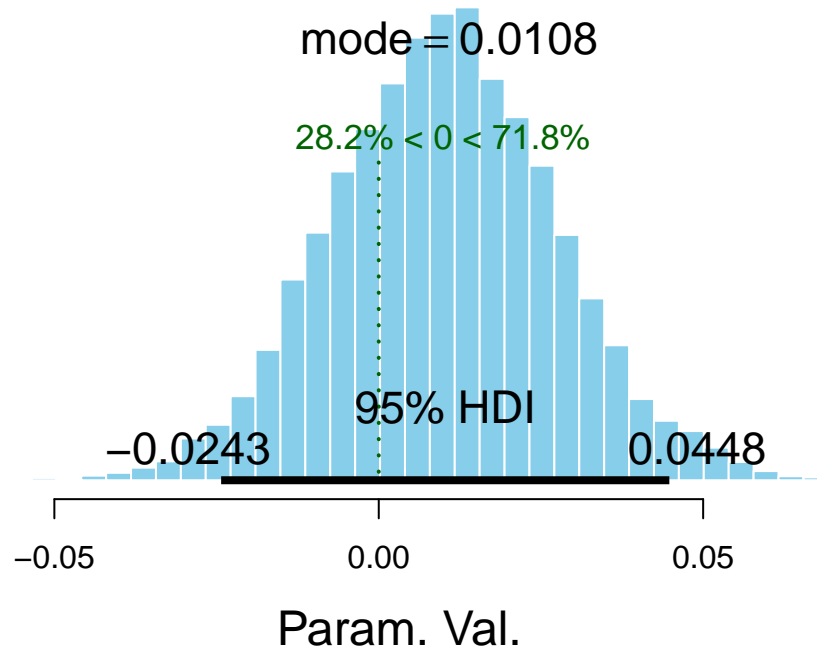
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= EPI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 5
##   Total graph size: 1774
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 4214.519 5241.536 4214.519 4551.056 4229.261
## [1] "EPI impact in DISCL with a\n probability of 98.07 %"
```

EPI impact in DISCL with a probability of 98.07 %



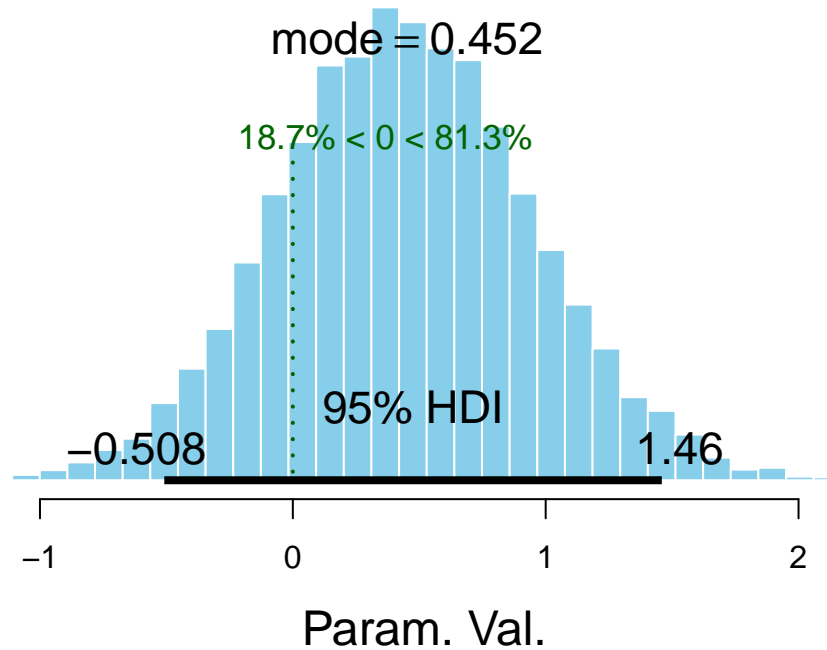
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= STEW"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 5
##   Total graph size: 1773
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5642.720 6039.718 5642.720 4601.616 4527.530
## [1] "STEW impact in DISCL with a\n probability of 71.79 %"
```

STEW impact in DISCL with a probability of 71.79 %



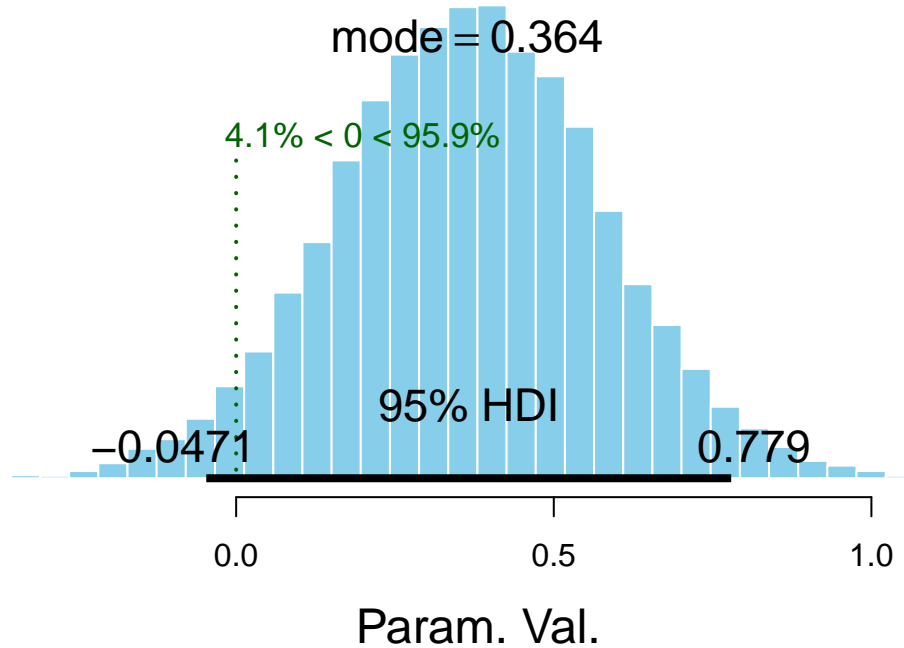
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= II_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 5
##   Total graph size: 1692
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5667.926 6309.367 5667.926 4793.681 4571.695
## [1] "II_10 impact in DISCL with a\n probability of 81.32 %"
```

II_10 impact in DISCL with a probability of 81.32 %



```
## [1] "-----"
## [1] " Analysis of Y= DISCL explained by x= FOR_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 122
##   Unobserved stochastic nodes: 5
##   Total graph size: 1770
##
## Initializing model
##
##   alpha1   beta0   beta1  betaGPS betaSIZE
## 4509.640 5714.162 4509.640 4971.916 4775.665
## [1] "FOR_10 impact in DISCL with a\n probability of 95.9 %"
```

FOR_10 impact in DISCL with a probability of 95.9 %



```
write.csv(BLbinom,
          file=paste(
            'noTWN-binomResults',
            format(Sys.time(), "%d-%b-%H-%M-%S"),
            '.csv')
)
```

noExtr-Global Bayesian models

Quantitative Y

```
x.names <- c('PRI', 'INIT', 'EPI', 'STEW', 'II_10', 'FOR_10')
y.names <- c('EPS', 'ET3', 'ER3', 'ER1', 'ER')
BLquanti <- bayesList(X[-c(5, 18),], x.names, y.names, 'model1.R')
```

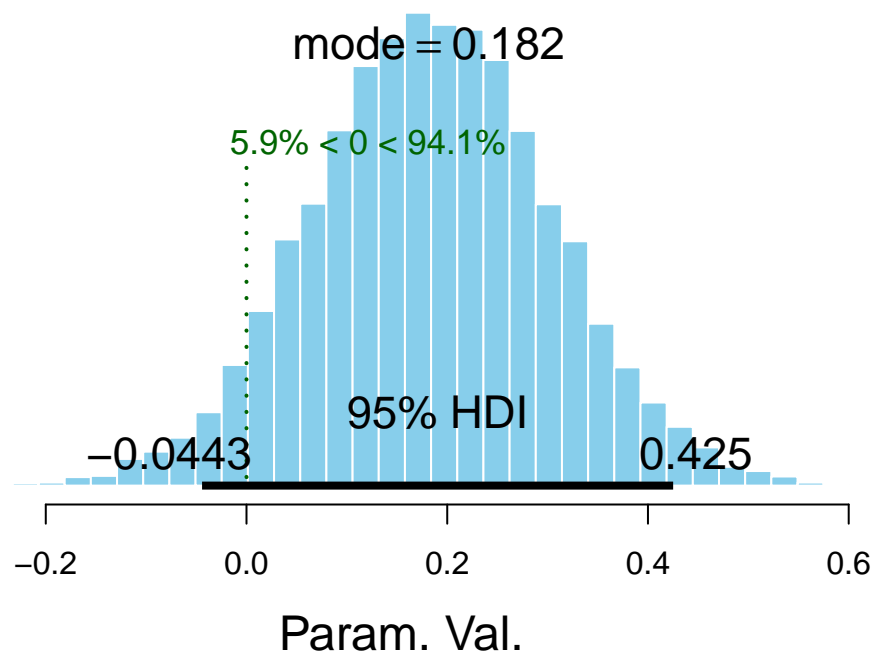
```
## [1] "
## [1] " ----- "
## [1] " Analysis of Y= EPS explained by x= PRI"

## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data

## Compiling data graph
## Resolving undeclared variables
## Allocating nodes
## Initializing
## Reading data back into data table
```

```
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1891
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS betaSIZE
## 9261.209 9000.000 9261.209 7068.098 7118.420
## [1] "PRI impact in EPS with a\n probability of 94.11 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

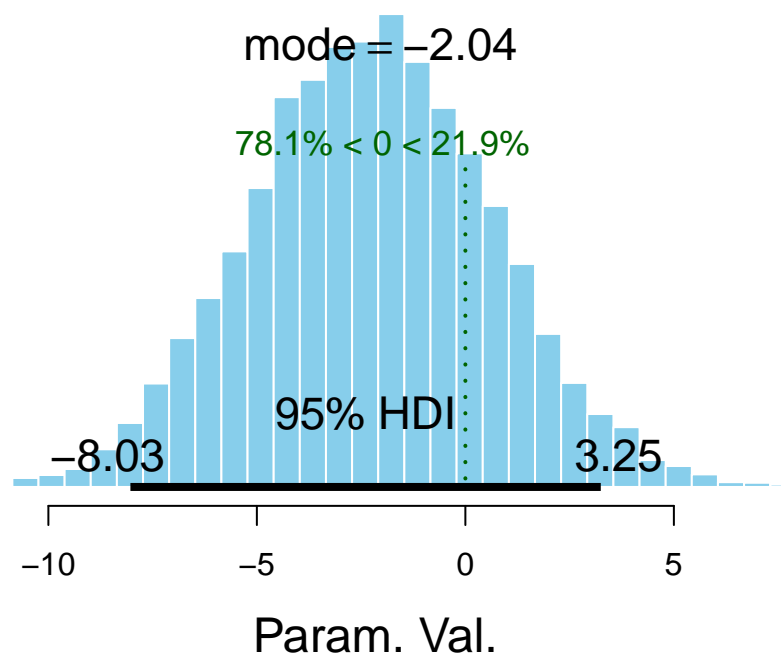
PRI impact in EPS with a probability of 94.11 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
```

```
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1890
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS   betaSIZE
## 8067.826 9000.000 8067.826 6827.613 6657.894
## [1] "INIT impact in EPS with a\n probability of -78.12 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in EPS with a probability of -78.12 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
```

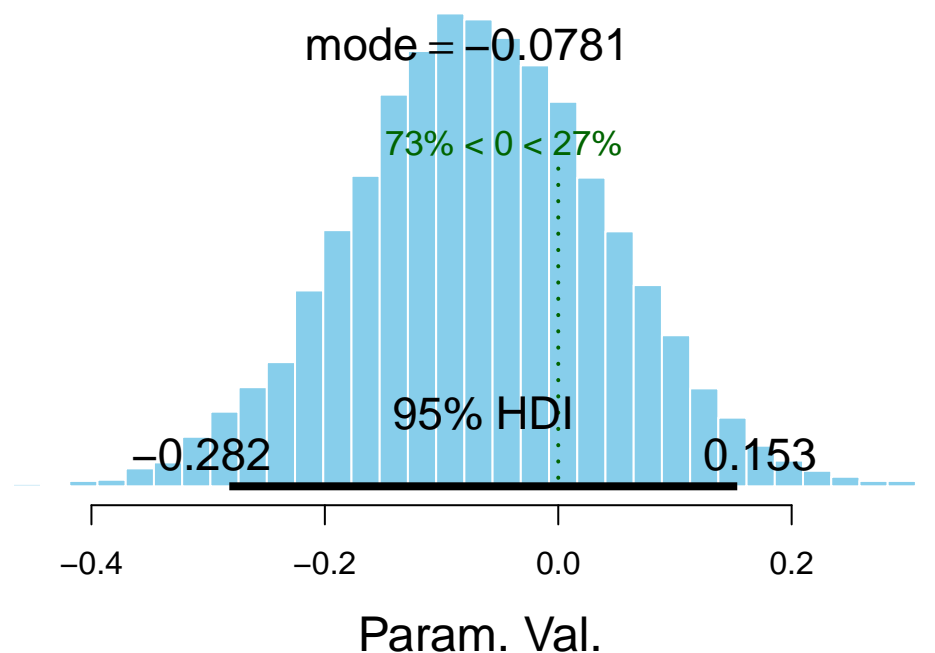


```

## Total graph size: 1884
##
## Initializing model
##
## alpha1 beta0 beta1 betaGPS betaSIZE
## 6363.873 8764.517 6363.873 6763.376 5768.486
## [1] "EPI impact in EPS with a\n probability of -73.04 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data

```

EPI impact in EPS with a probability of -73.04 %

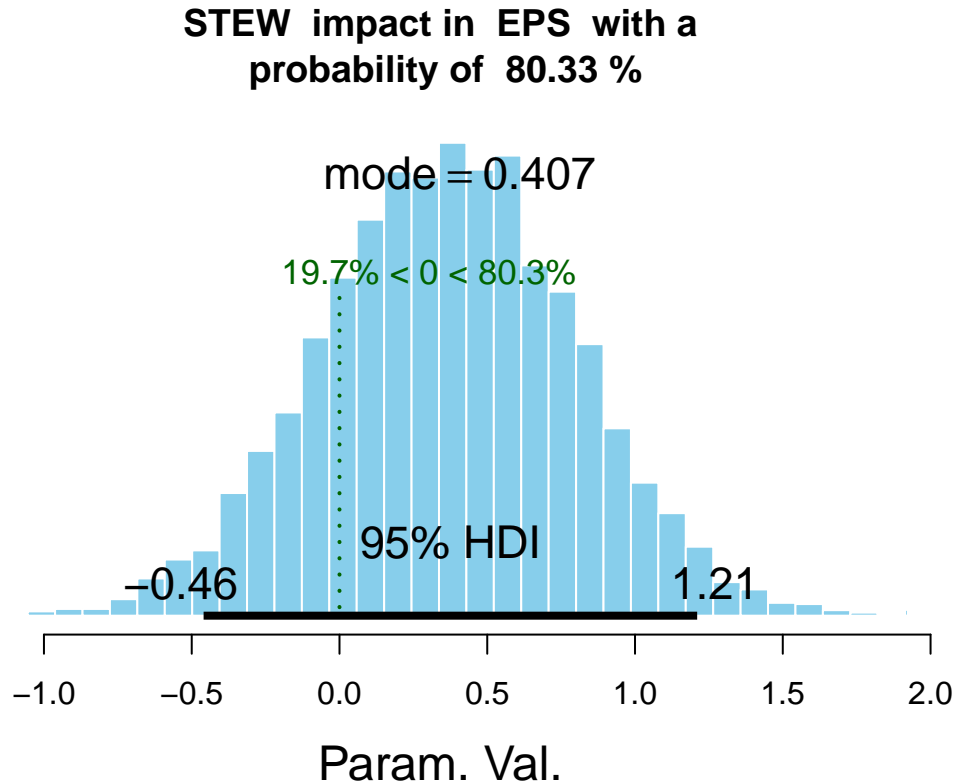


```

## Compiling data graph
## Resolving undeclared variables
## Allocating nodes
## Initializing
## Reading data back into data table
## Compiling model graph
## Resolving undeclared variables
## Allocating nodes
## Graph information:
## Observed stochastic nodes: 129
## Unobserved stochastic nodes: 6
## Total graph size: 1883
##
## Initializing model

```

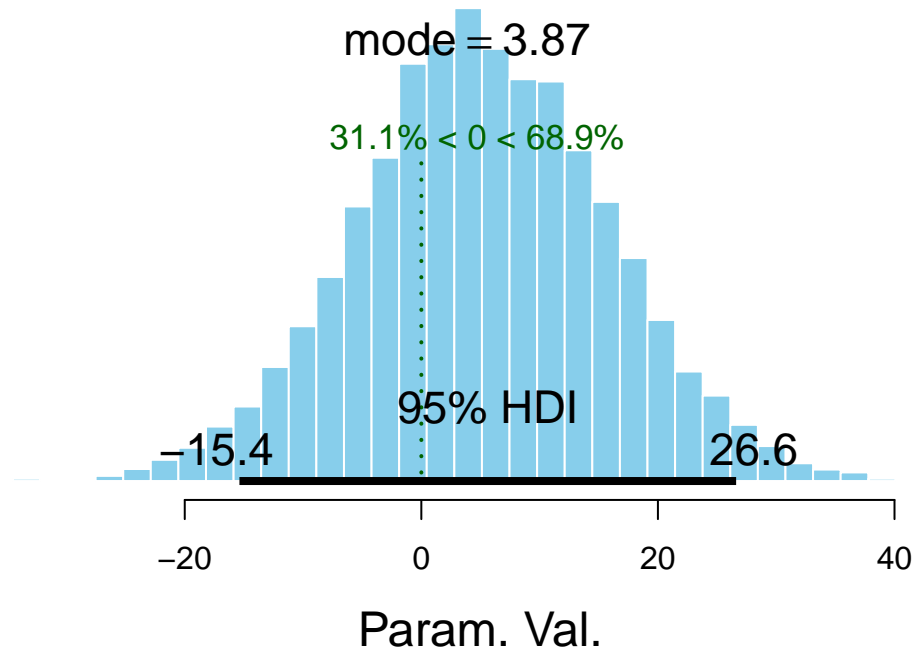
```
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 8477.096 9053.906 8477.096 7300.281 7067.111
## [1] "STEW impact in EPS with a\n probability of 80.33 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1802
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 8771.897 8804.340 8771.897 7131.662 6847.355
```

```
## [1] "II_10 impact in EPS with a\n probability of 68.89 %"
## [1] "
## [1] " Analysis of Y= EPS explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in EPS with a probability of 68.89 %

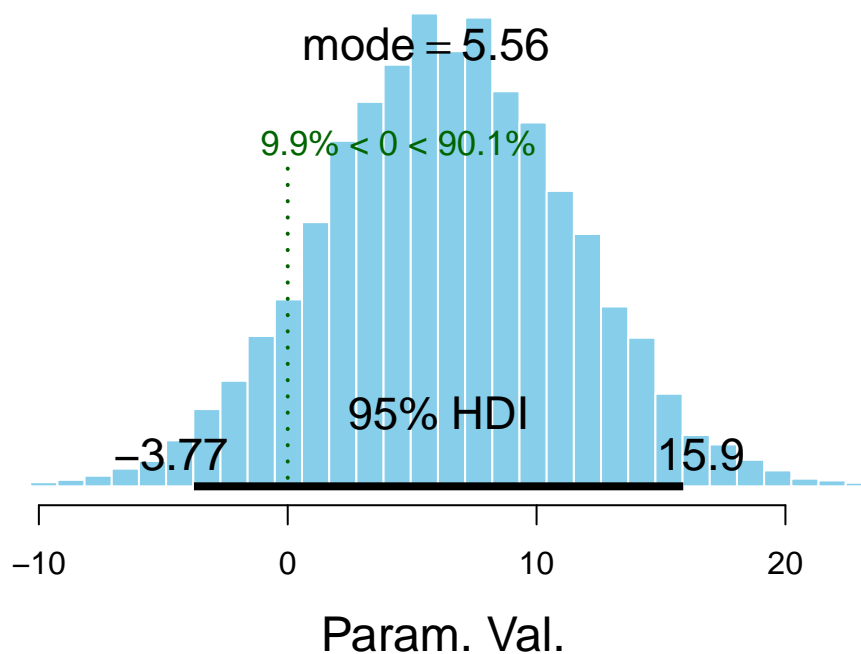


```
## Compiling data graph
## Resolving undeclared variables
## Allocating nodes
## Initializing
## Reading data back into data table
## Compiling model graph
## Resolving undeclared variables
## Allocating nodes
## Graph information:
## Observed stochastic nodes: 129
## Unobserved stochastic nodes: 6
## Total graph size: 1880
##
## Initializing model
##
## alpha1 beta0 beta1 betaGPS betaSIZE
## 7396.395 8845.591 7396.395 7142.130 6788.072
## [1] "FOR_10 impact in EPS with a\n probability of 90.08 %"
## [1] "

```

```
## [1] " Analysis of Y= ET3  explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

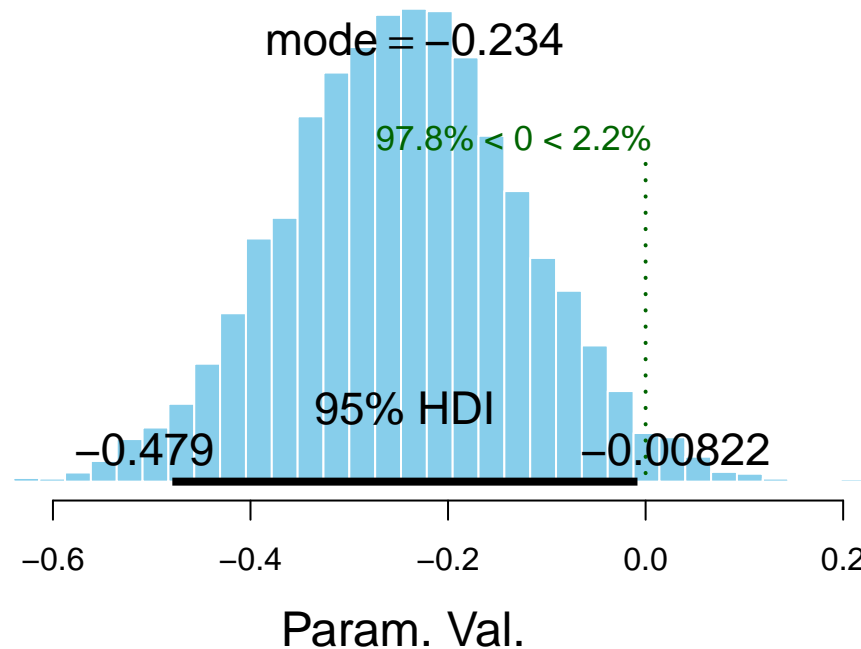
FOR₁₀ impact in EPS with a probability of 90.08 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1891
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 9000.000 9327.868 9000.000 6929.119 6670.312
## [1] "PRI  impact in  ET3  with a\n probability of  -97.83 %"
## [1] "
## [1] " Analysis of Y= ET3  explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
```

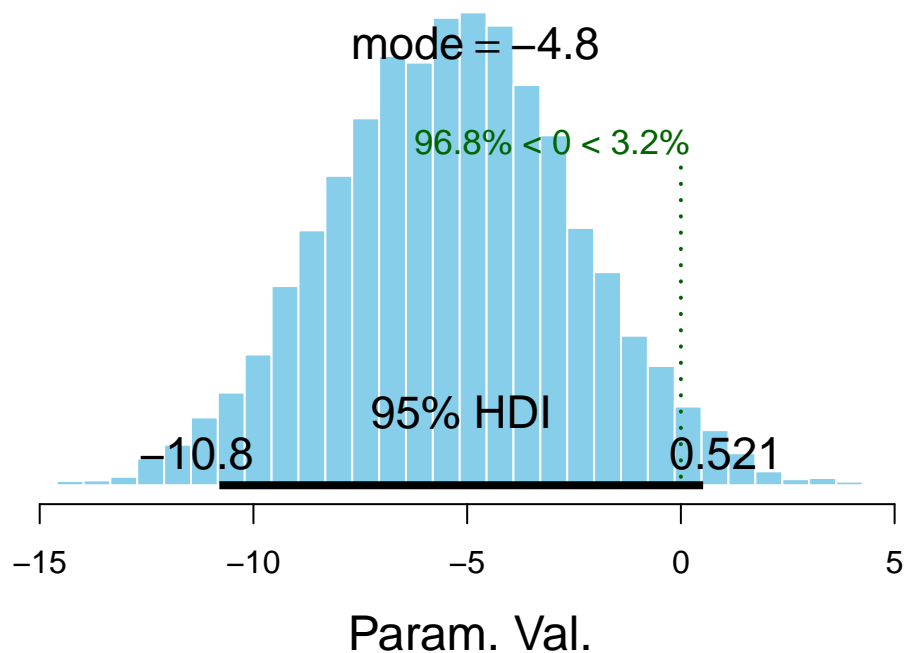
```
## 500): Unused variable "n" in data
```

PRI impact in ET3 with a probability of -97.83 %



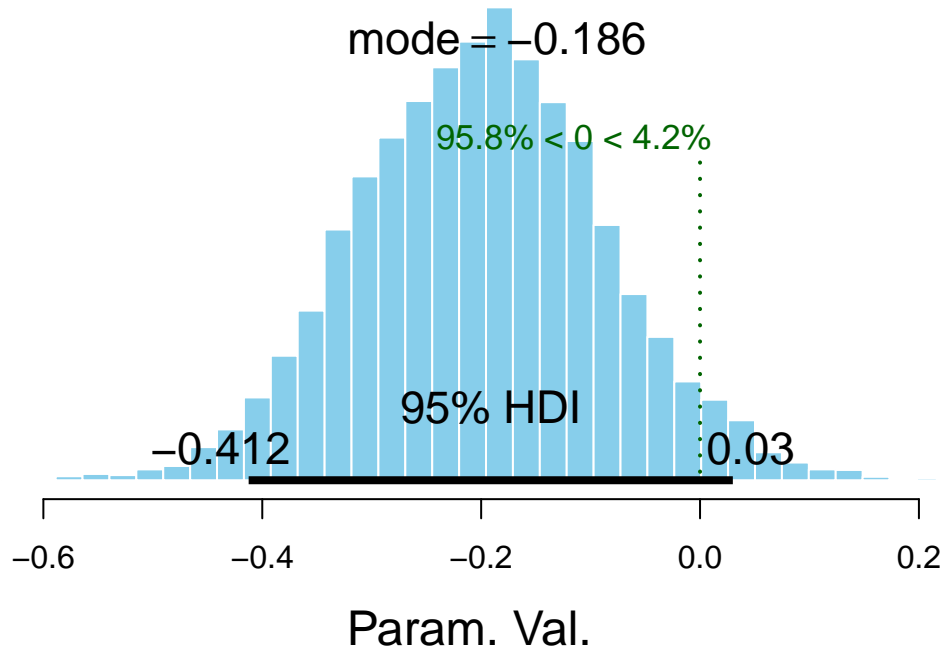
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1890
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS   betaSIZE
## 8689.854 9000.000 8689.854 7381.727 7109.971
## [1] "INIT impact in ET3 with a\n probability of -96.76 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ET3 with a probability of -96.76 %



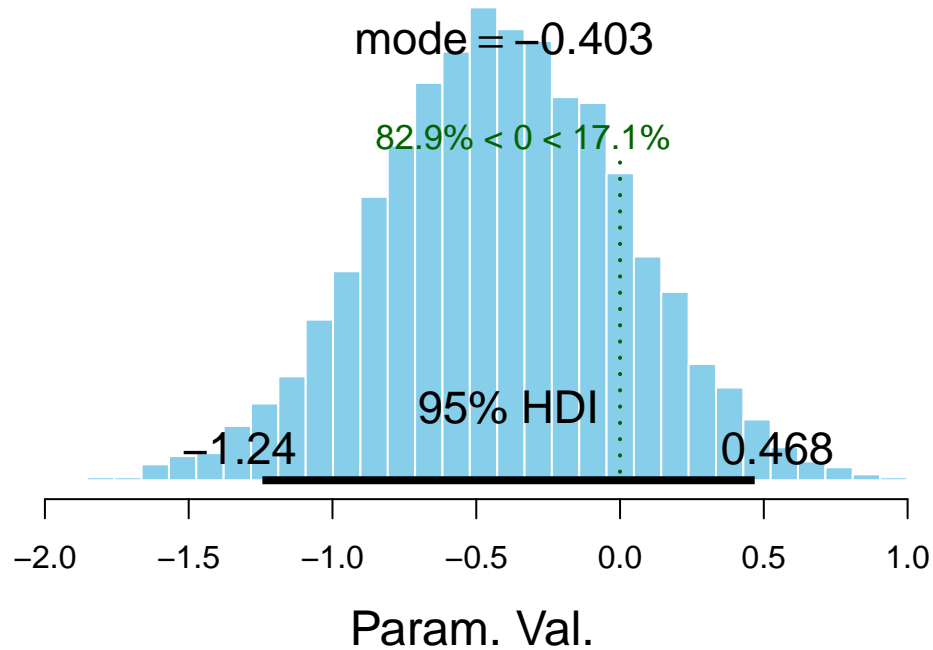
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1884
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 5972.675 9235.749 5972.675 7414.505 6151.740
## [1] "EPI impact in ET3 with a\n probability of -95.8 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in ET3 with a probability of -95.8 %



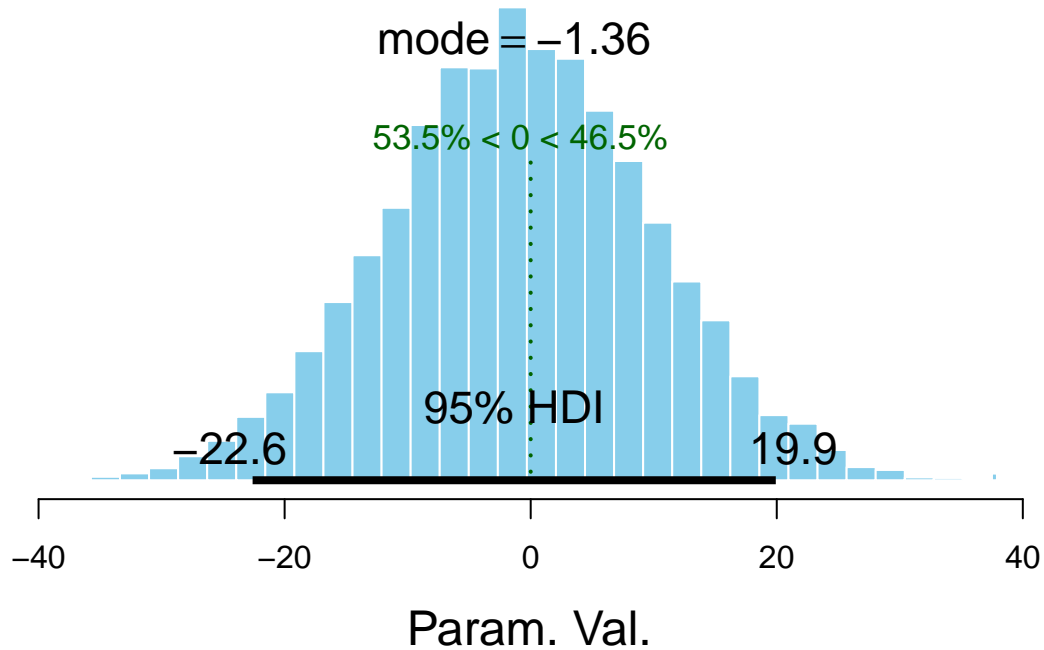
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1883
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 9000.000 9000.000 9000.000 6892.444 6699.944
## [1] "STEW impact in ET3 with a\n probability of -82.89 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ET3 with a probability of -82.89 %



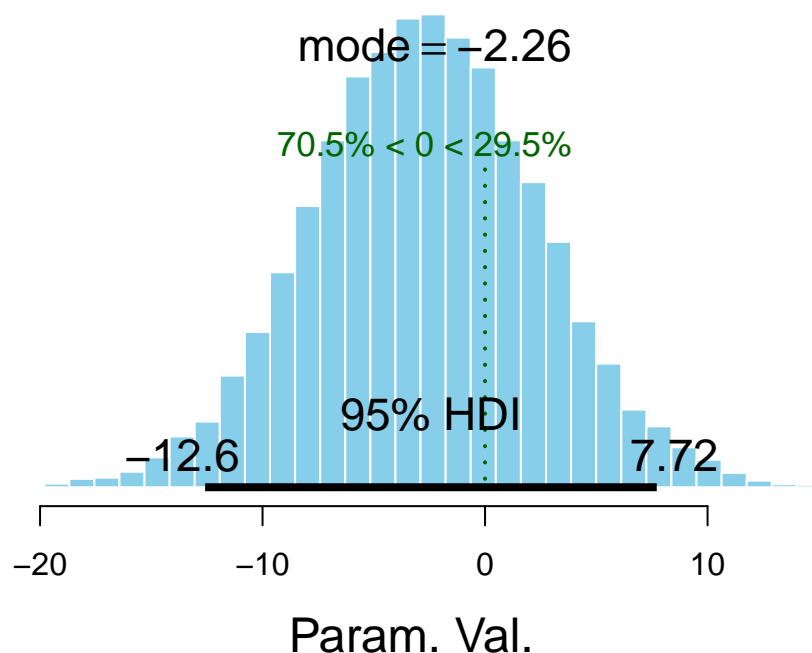
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1802
##
## Initializing model
##
##   alpha1      beta0      beta1      betaGPS      betaSIZE
## 8065.808 10433.887 8065.808 7148.228 6540.760
## [1] "II_10 impact in ET3 with a\n probability of -53.5 %"
## [1] "
## [1] " Analysis of Y= ET3 explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```


II_10 impact in ET3 with a probability of -53.5 %



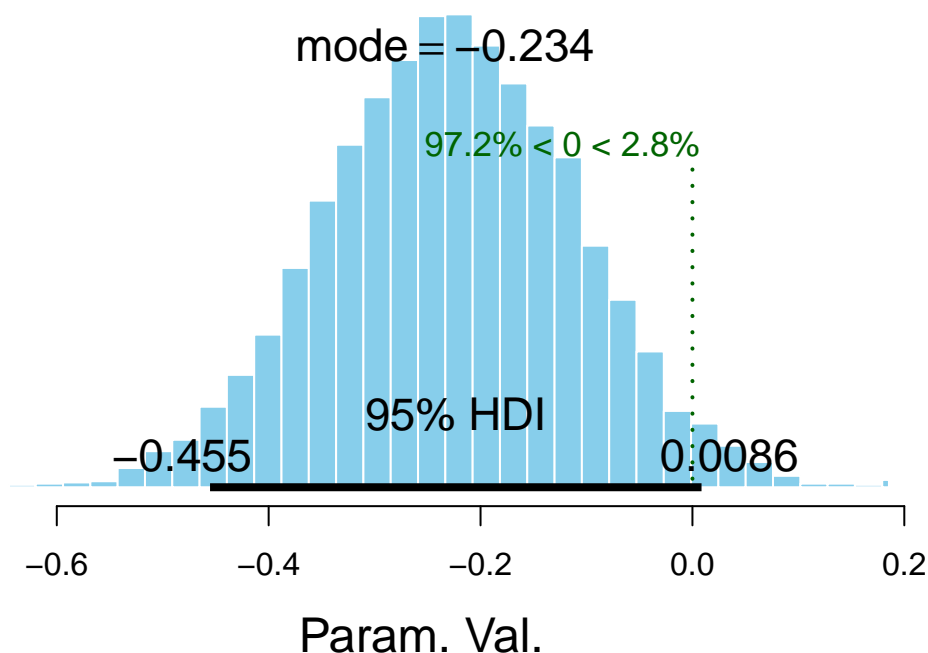
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1880
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7986.618 9218.651 7986.618 7252.549 7485.765
## [1] "FOR_10 impact in ET3 with a\n probability of -70.51 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

FOR_10 impact in ET3 with a probability of -70.51 %



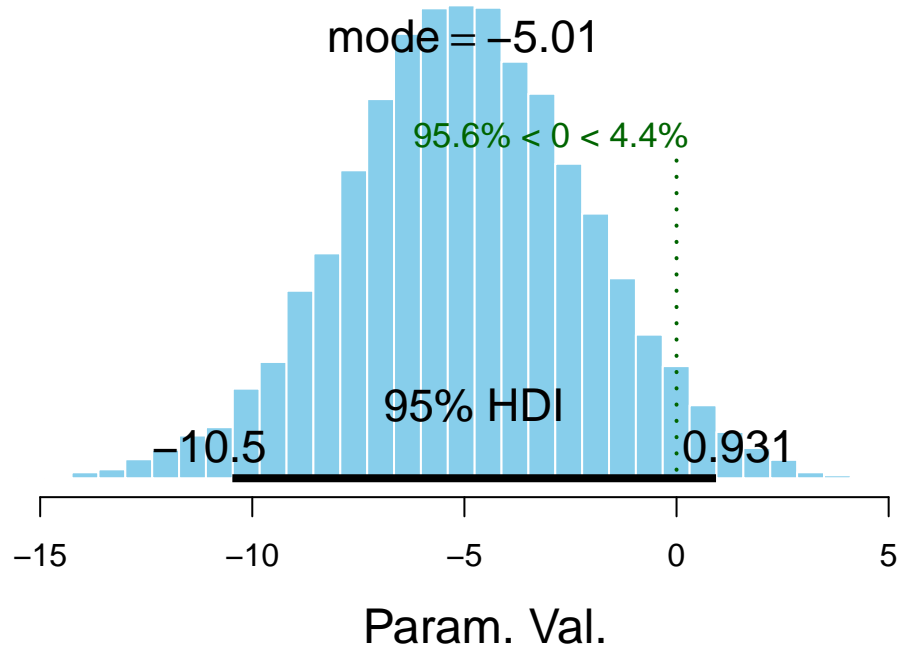
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1891
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8909.320 9000.000 8909.320 6961.858 6846.371
## [1] "PRI impact in ER3 with a\n probability of -97.2 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

PRI impact in ER3 with a probability of -97.2 %



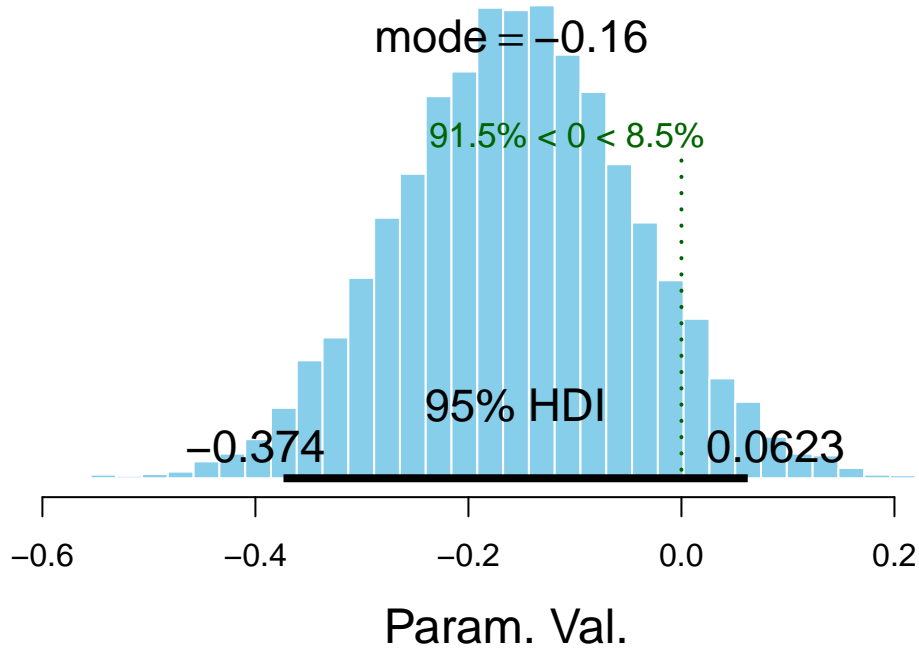
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1890
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS   betaSIZE
## 8381.586 8689.532 8381.586 7111.553 6206.252
## [1] "INIT impact in ER3 with a\n probability of -95.62 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ER3 with a probability of -95.62 %



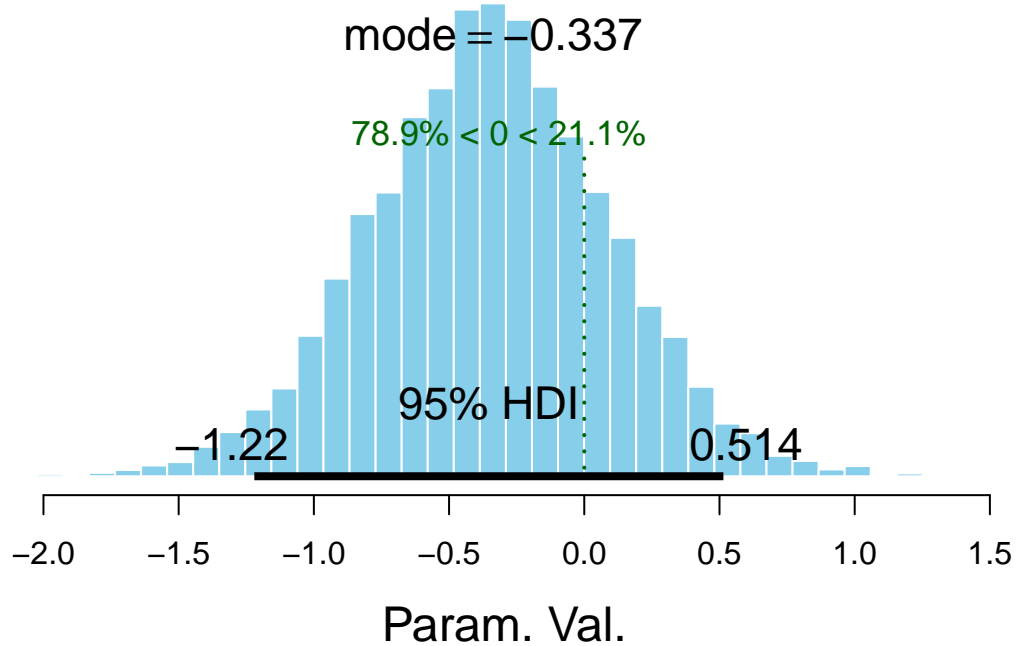
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1884
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 6299.477 8412.233 6299.477 7377.323 6398.791
## [1] "EPI impact in ER3 with a\n probability of -91.53 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in ER3 with a probability of -91.53 %



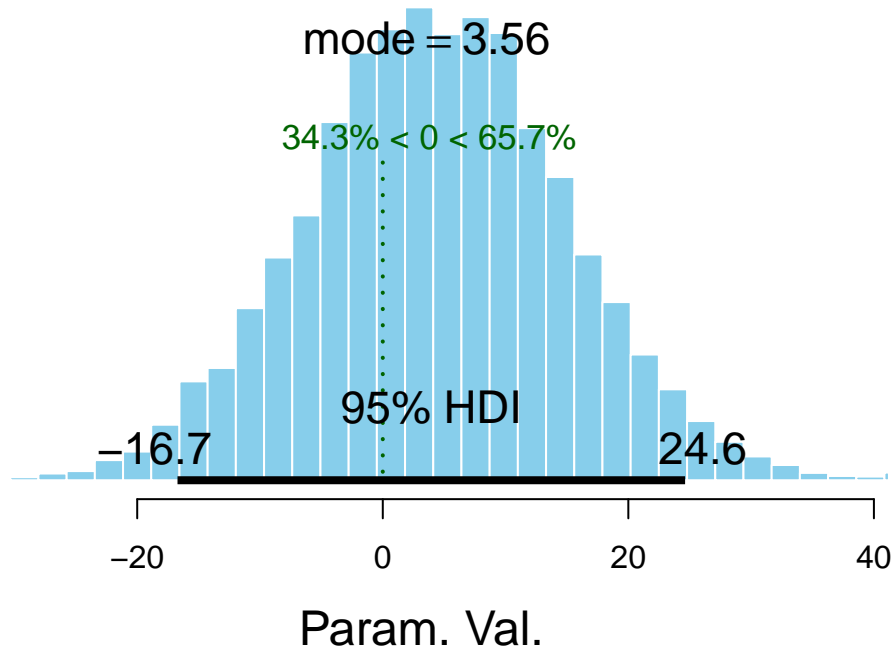
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1883
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8270.231 8903.387 8270.231 6969.170 6754.390
## [1] "STEW impact in ER3 with a\n probability of -78.93 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ER3 with a probability of -78.93 %



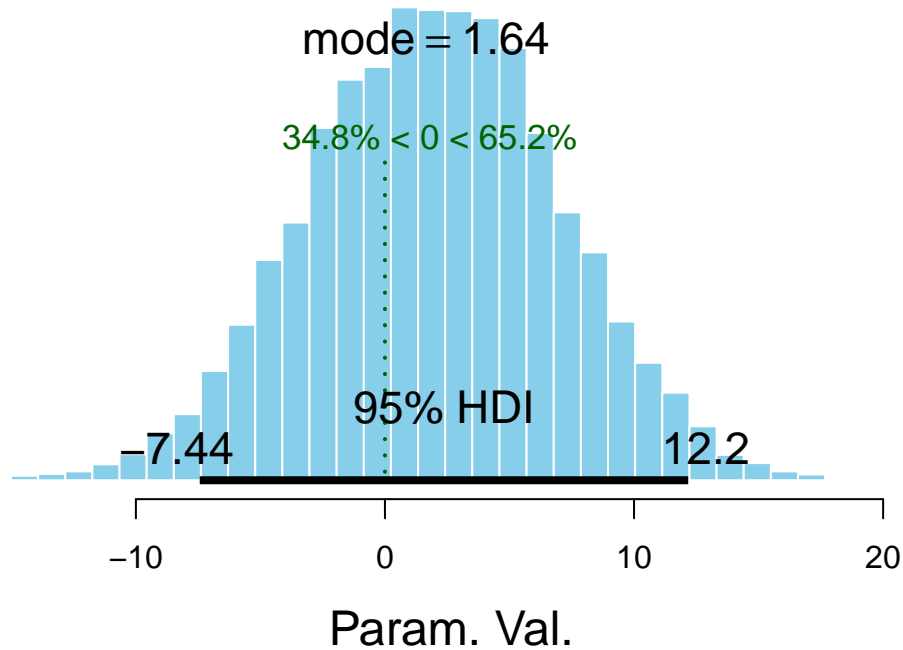
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1802
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8619.473 9244.482 8619.473 7251.883 6691.812
## [1] "II_10 impact in ER3 with a\n probability of 65.72 %"
## [1] "
## [1] " Analysis of Y= ER3 explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in ER3 with a probability of 65.72 %



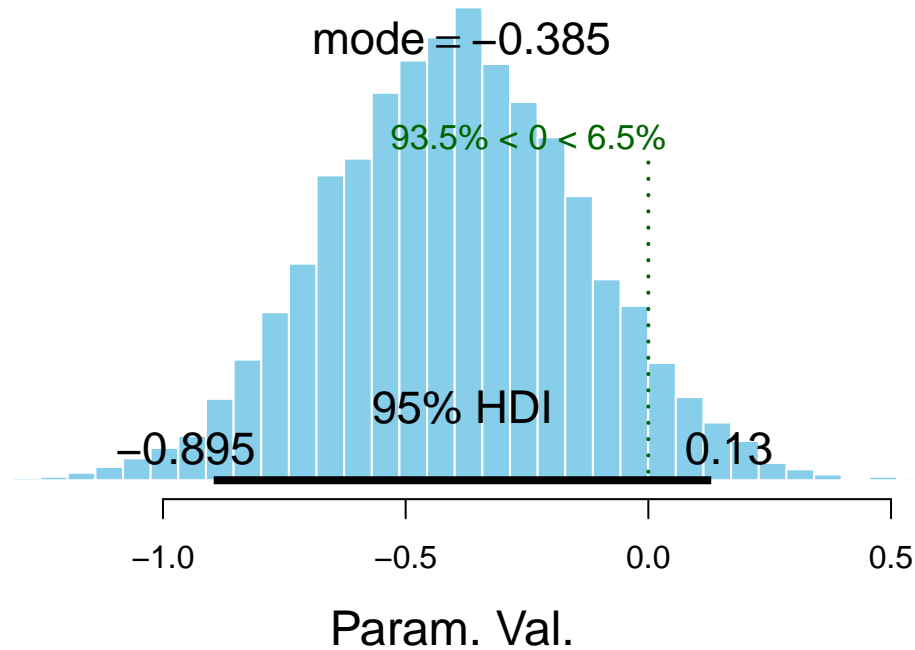
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1880
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7784.973 9037.732 7784.973 6937.210 6708.251
## [1] "FOR_10 impact in ER3 with a\n probability of 65.19 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

FOR_10 impact in ER3 with a probability of 65.19 %



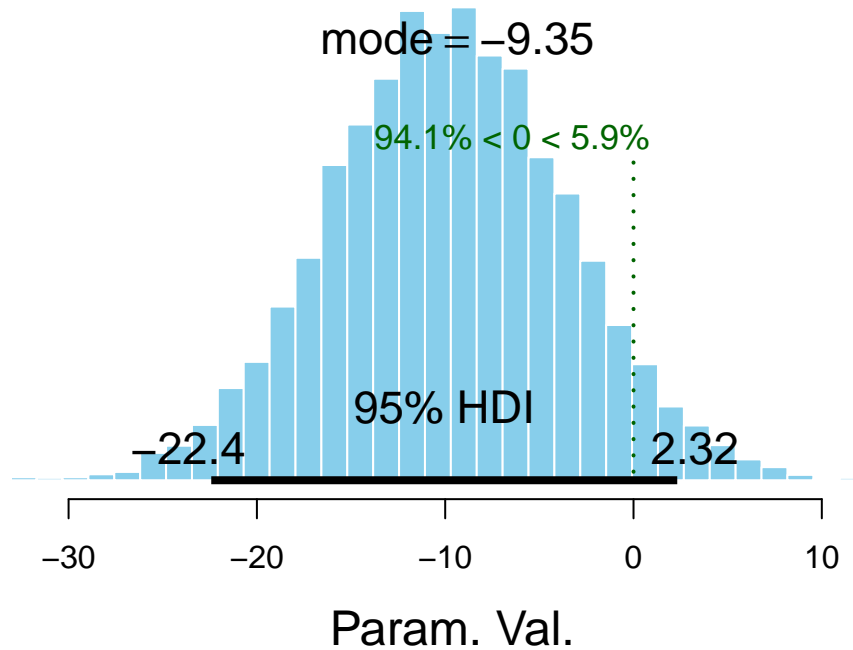
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1891
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7950.215 9216.553 7950.215 7327.820 7321.860
## [1] "PRI  impact in  ER1  with a\n probability of  -93.51 %"
## [1] "
## [1] " Analysis of Y= ER1  explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```


PRI impact in ER1 with a probability of -93.51 %



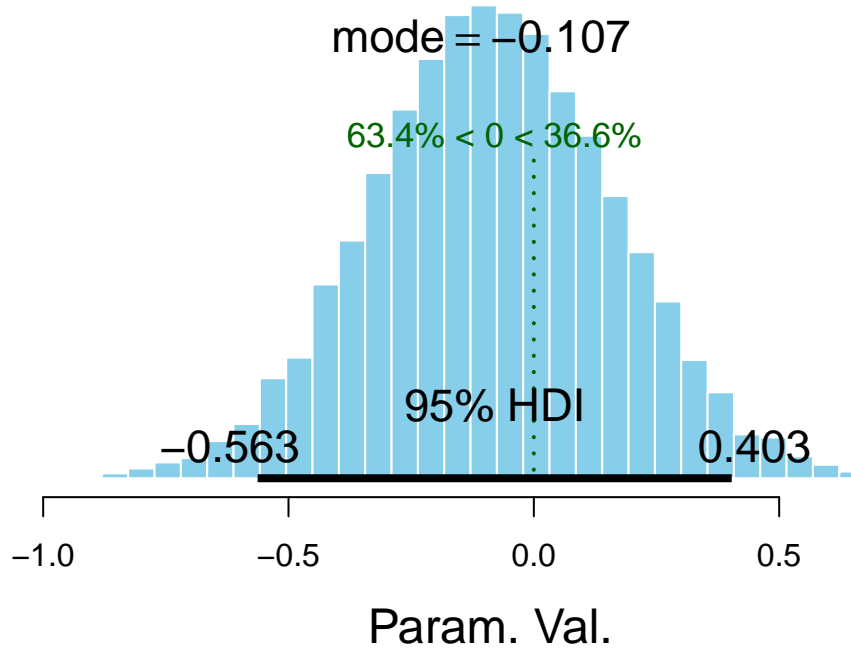
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1890
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 7689.811 9080.506 7689.811 6669.964 6004.932
## [1] "INIT impact in ER1 with a\n probability of -94.06 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ER1 with a probability of -94.06 %



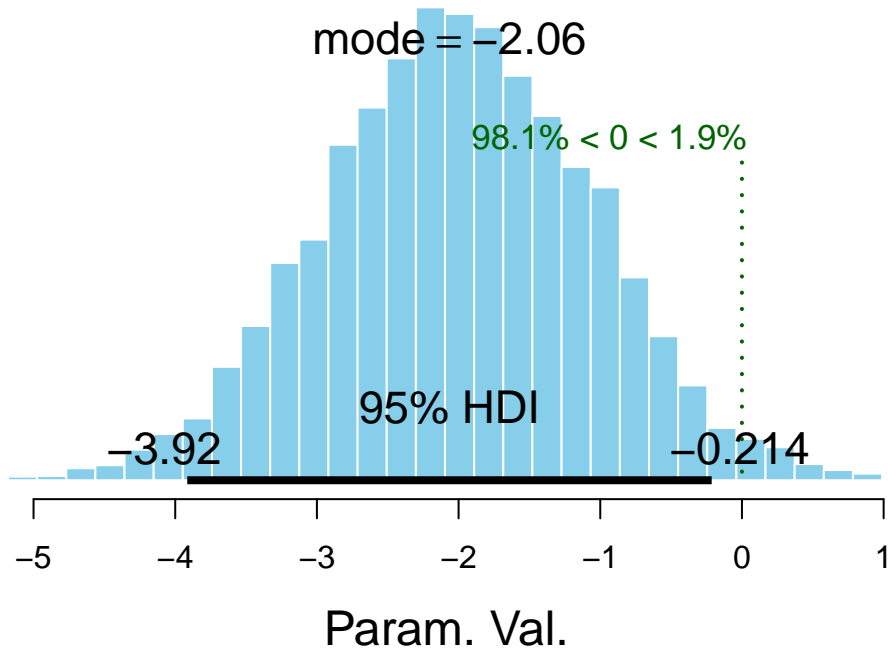
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1884
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 6118.988 9004.598 6118.988 7215.949 6556.202
## [1] "EPI impact in ER1 with a\n probability of -63.37 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

EPI impact in ER1 with a probability of -63.37 %



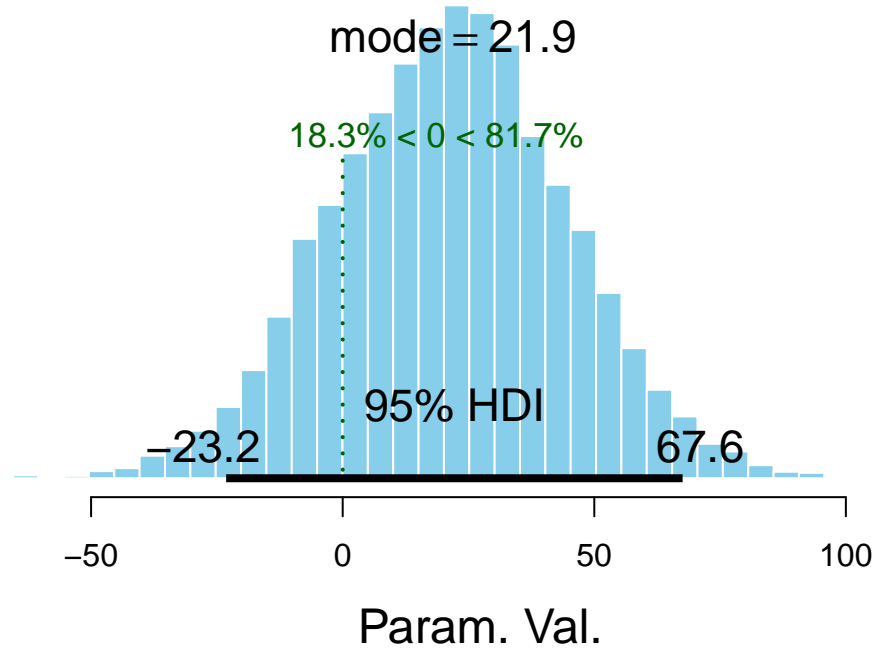
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1883
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8625.486 9090.120 8625.486 6871.033 6981.125
## [1] "STEW impact in ER1 with a\n probability of -98.13 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ER1 with a probability of -98.13 %



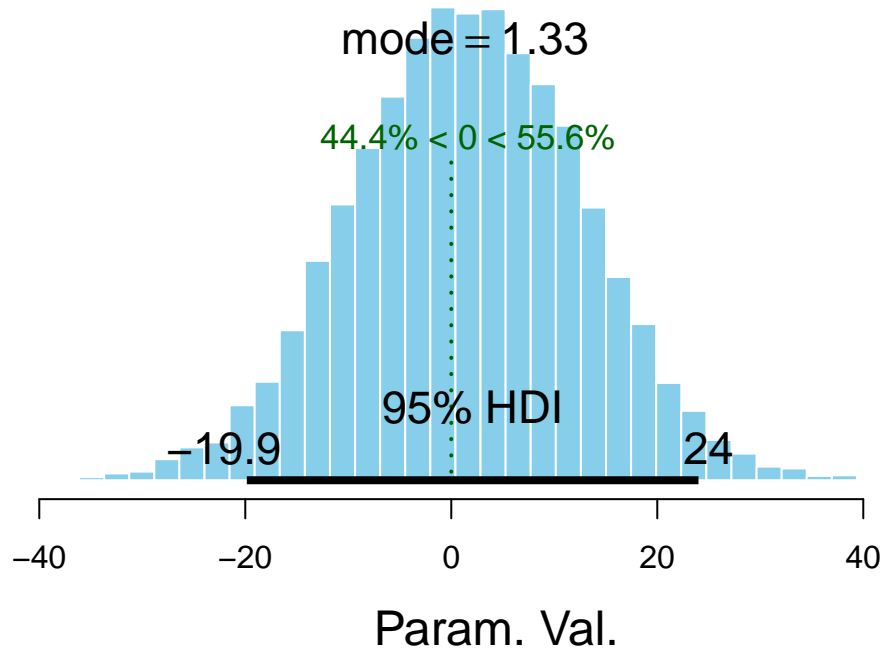
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1802
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8423.593 8716.015 8423.593 7145.816 6982.107
## [1] "II_10 impact in ER1 with a\n probability of 81.67 %"
## [1] "
## [1] " Analysis of Y= ER1 explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in ER1 with a probability of 81.67 %



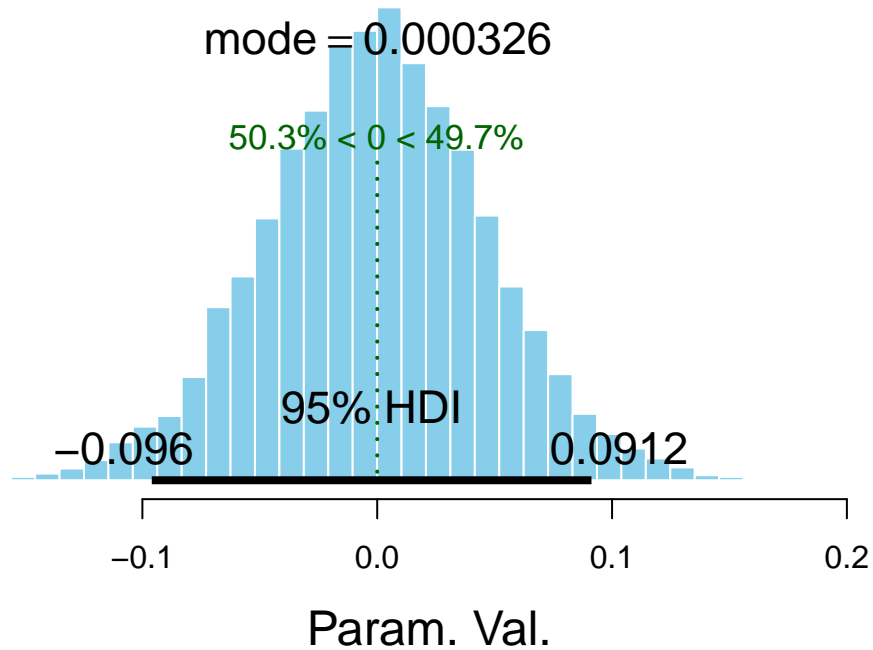
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1880
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8319.162 9201.701 8319.162 7205.432 6977.950
## [1] "FOR_10 impact in ER1 with a\n probability of 55.58 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= PRI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

FOR_10 impact in ER1 with a probability of 55.58 %



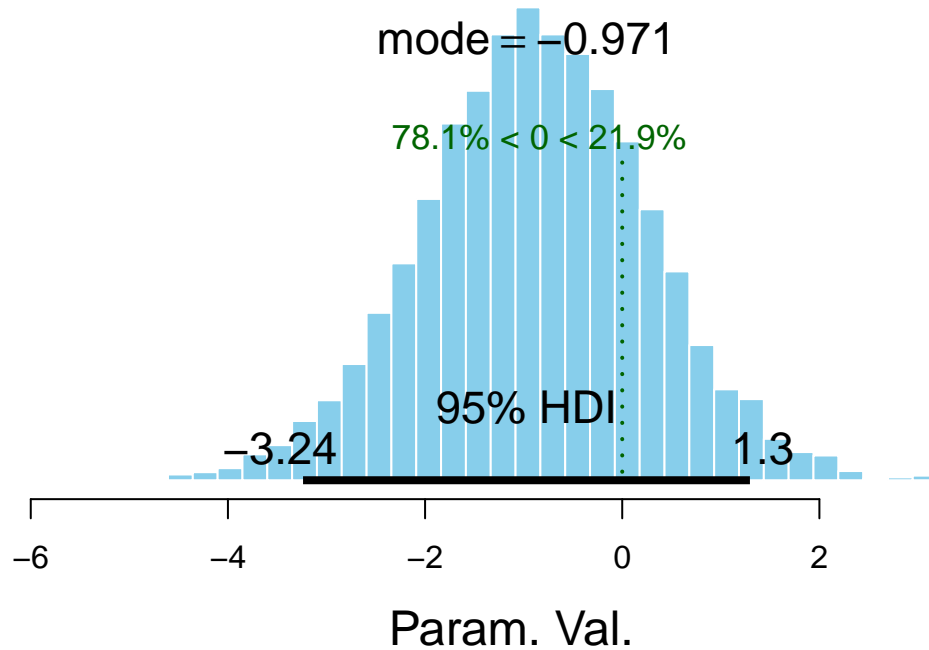
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1891
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS betaSIZE
## 8495.337 8913.260 8495.337 7710.696 7465.001
## [1] "PRI impact in ER with a\n probability of -50.28 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= INIT"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

PRI impact in ER with a probability of -50.28 %



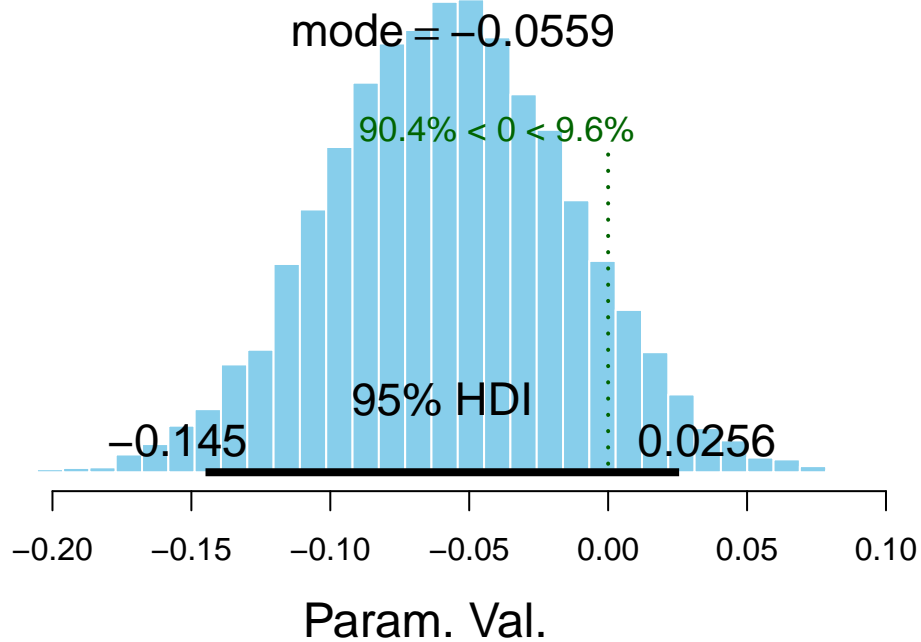
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1890
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8448.375 8610.970 8448.375 6744.814 6830.059
## [1] "INIT impact in ER with a\n probability of -78.12 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= EPI"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

INIT impact in ER with a probability of -78.12 %



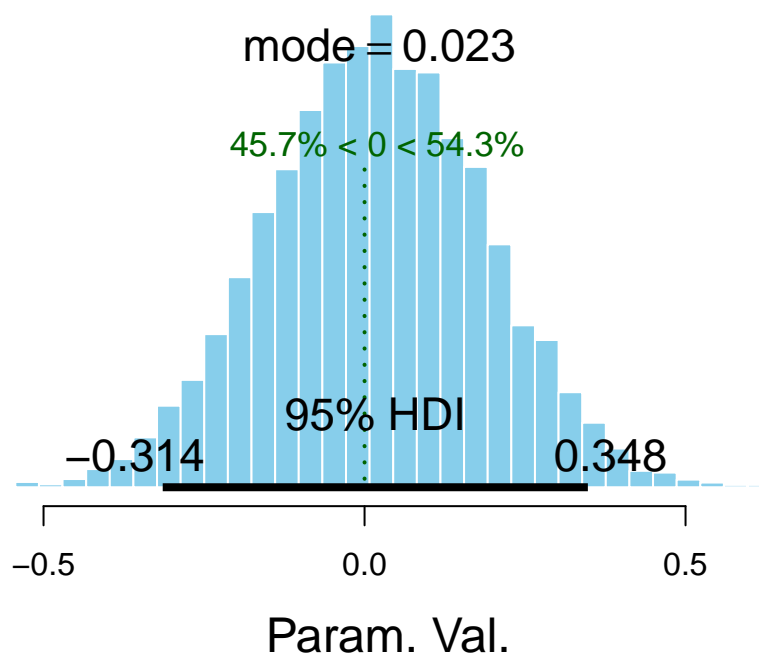
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1884
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 6954.215 8264.884 6954.215 7202.654 6460.996
## [1] "EPI impact in ER with a\n probability of -90.44 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= STEW"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```


EPI impact in ER with a probability of -90.44 %



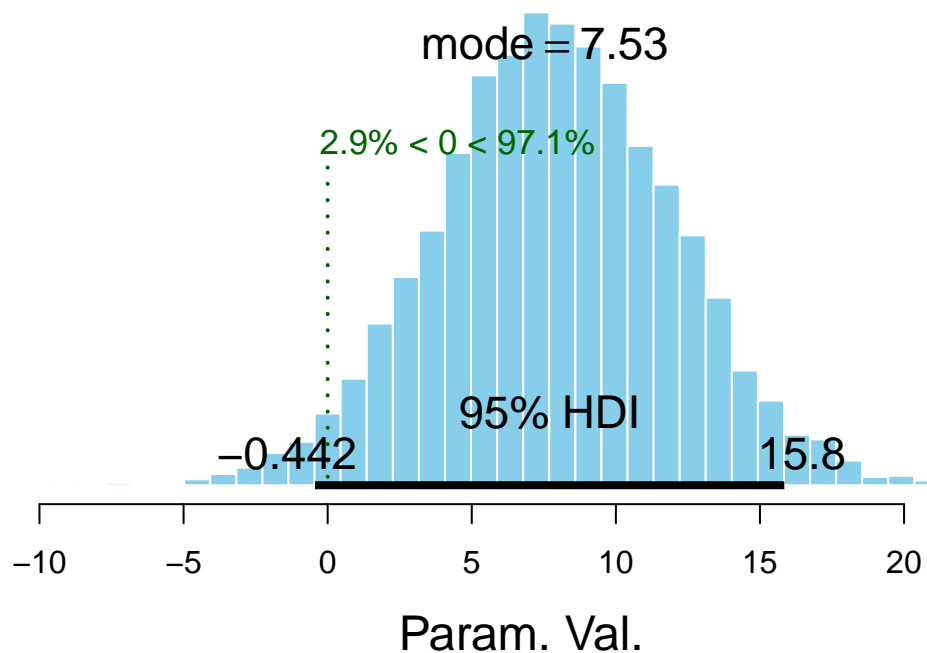
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1883
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8855.202 9000.000 8855.202 8129.102 6861.476
## [1] "STEW impact in ER with a\n probability of 54.27 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= II_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

STEW impact in ER with a probability of 54.27 %



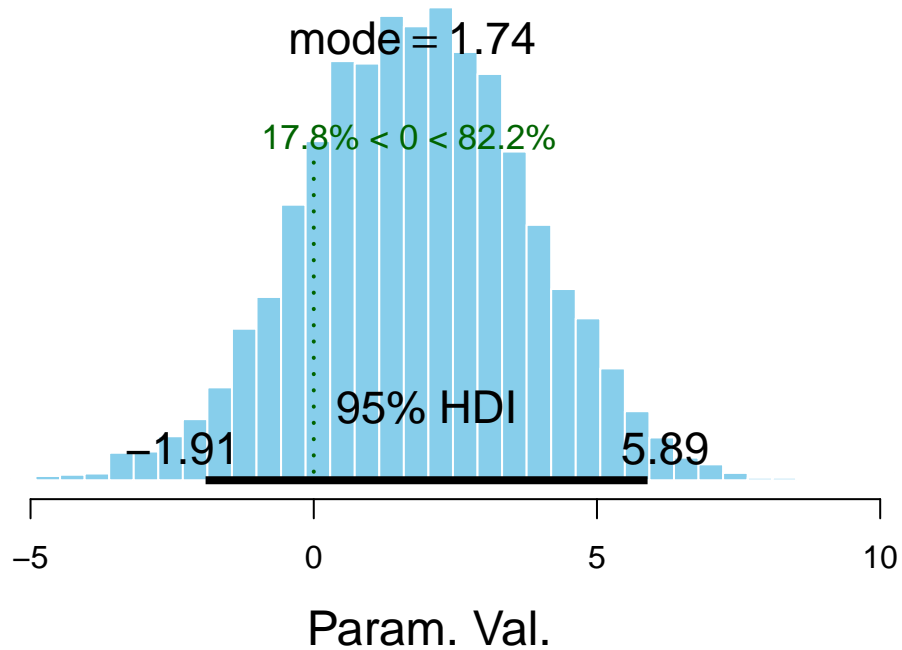
```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1802
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8140.477 9586.373 8140.477 7544.304 6582.555
## [1] "II_10 impact in ER with a\n probability of 97.13 %"
## [1] "
## [1] " Analysis of Y= ER explained by x= FOR_10"
## Warning in jags.model(file = model, data = dataList, n.chains = 3, n.adapt =
## 500): Unused variable "n" in data
```

II_10 impact in ER with a probability of 97.13 %



```
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 6
##   Total graph size: 1880
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS    betaSIZE
## 8380.549 8667.365 8380.549 6578.796 6756.533
## [1] "FOR_10 impact in ER with a\n probability of 82.22 %"
```

FOR_10 impact in ER with a probability of 82.22 %



```
write.csv(BLquanti,
          file=paste(
            'noExtr-quantResults',
            format(Sys.time(), "%d-%b-%H-%M-%S"),
            '.csv')
)
```

Binomial Y

```
x.names <- c('PRI', 'INIT', 'EPI', 'STEW', 'II_10', 'FOR_10')
y.names <- c('CP', 'DISCL')

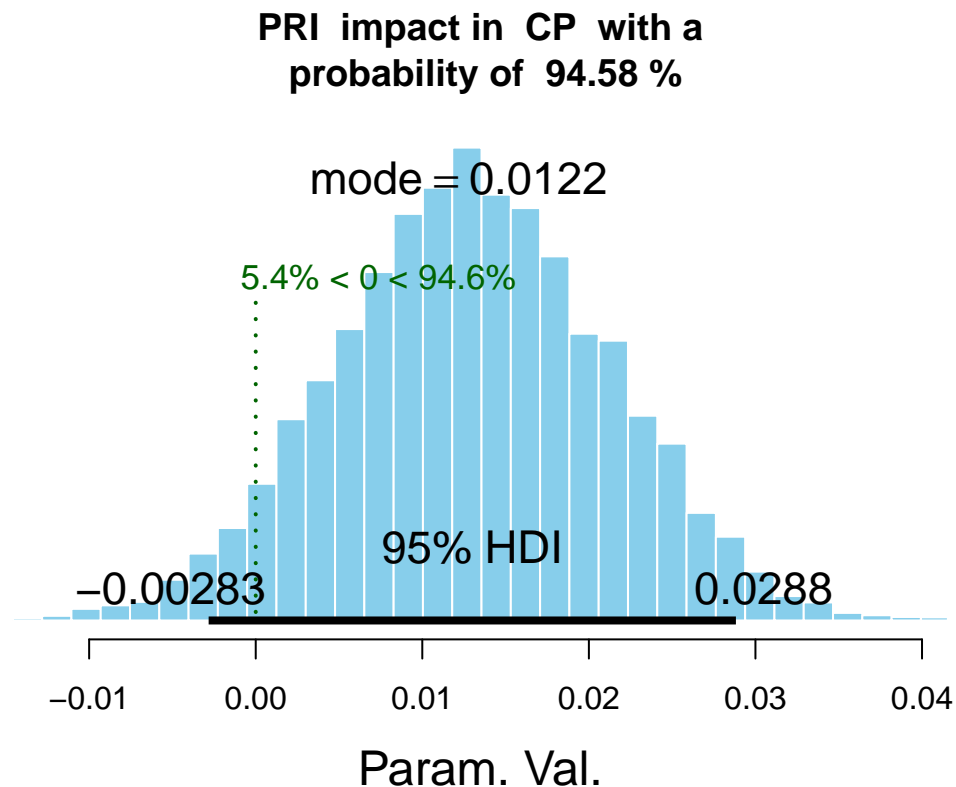
BLbinom <- bayesList(X[-c(5, 18)], x.names, y.names, 'model2.R')

## [1] "
## [1] " Analysis of Y= CP explained by x= PRI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
```

```

##      Unobserved stochastic nodes: 5
##      Total graph size: 1880
##
## Initializing model
##
##      alpha1      beta0      beta1      betaGPS      betaSIZE
## 5217.536 5522.977 5217.536 4088.874 4359.856
## [1] "PRI impact in CP with a\n probability of 94.58 %"

```



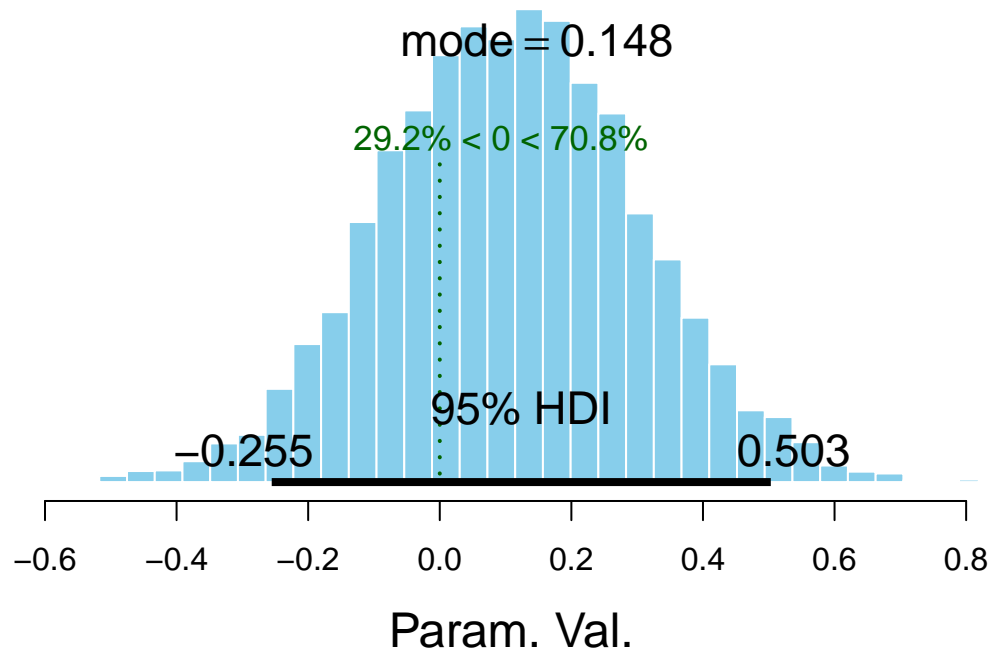
```

## [1] "      -----"
## [1] " Analysis of Y= CP explained by x= INIT"
## Compiling data graph
##      Resolving undeclared variables
##      Allocating nodes
##      Initializing
##      Reading data back into data table
## Compiling model graph
##      Resolving undeclared variables
##      Allocating nodes
## Graph information:
##      Observed stochastic nodes: 129
##      Unobserved stochastic nodes: 5
##      Total graph size: 1879
##
## Initializing model
##

```

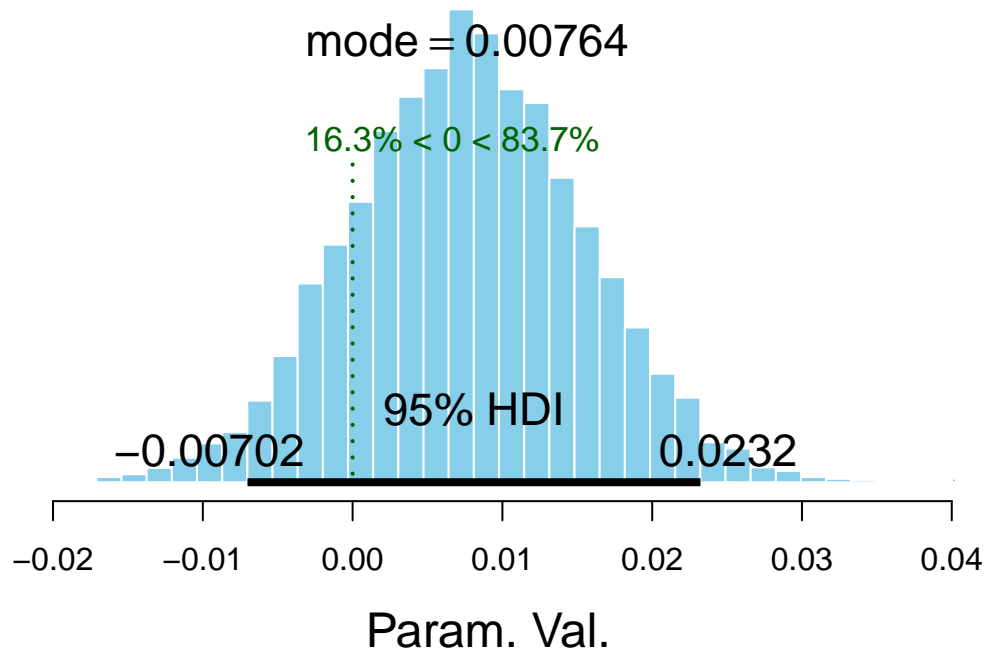
```
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 4899.924 5602.249 4899.924 4373.577 4258.105
## [1] "INIT impact in CP with a\n probability of 70.77 %"
```

INIT impact in CP with a probability of 70.77 %



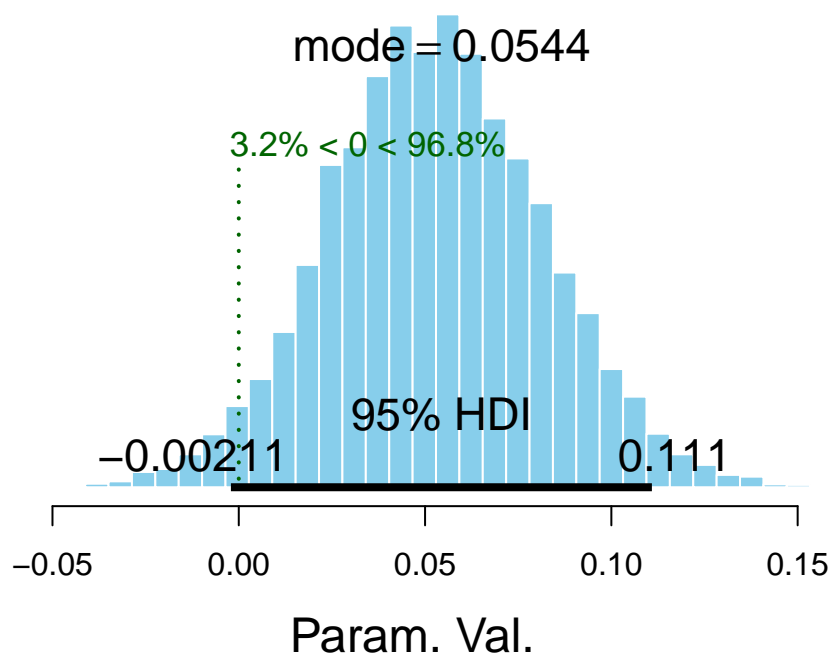
```
## [1] "-----"
## [1] " Analysis of Y= CP explained by x= EPI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 5
##   Total graph size: 1873
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 4210.959 5382.509 4210.959 4391.907 4039.229
## [1] "EPI impact in CP with a\n probability of 83.74 %"
```

EPI impact in CP with a probability of 83.74 %



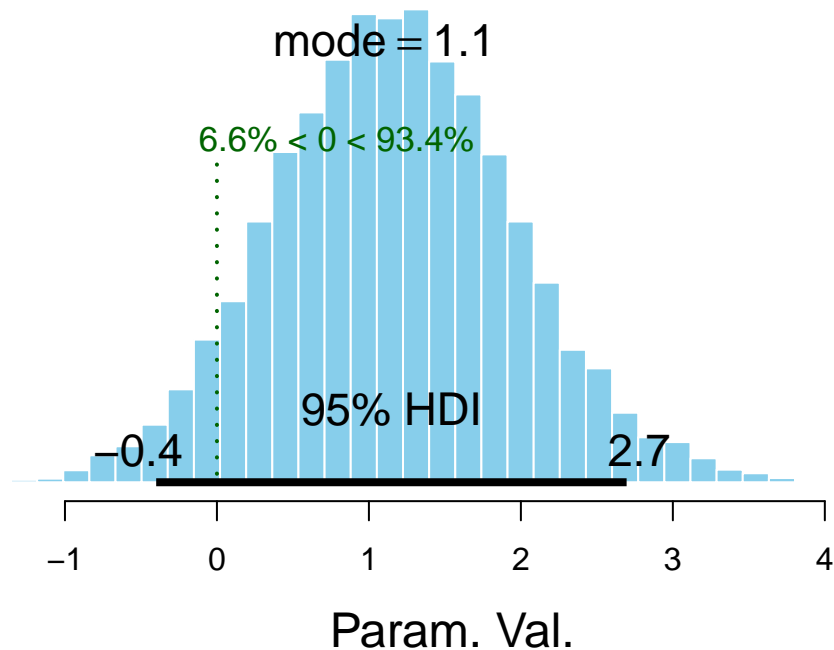
```
## [1] "-----"
## [1] " Analysis of Y= CP explained by x= STEW"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 5
##   Total graph size: 1872
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5704.358 5546.022 5704.358 4349.638 4083.409
## [1] "STEW impact in CP with a\n probability of 96.77 %"
```

STEW impact in CP with a probability of 96.77 %



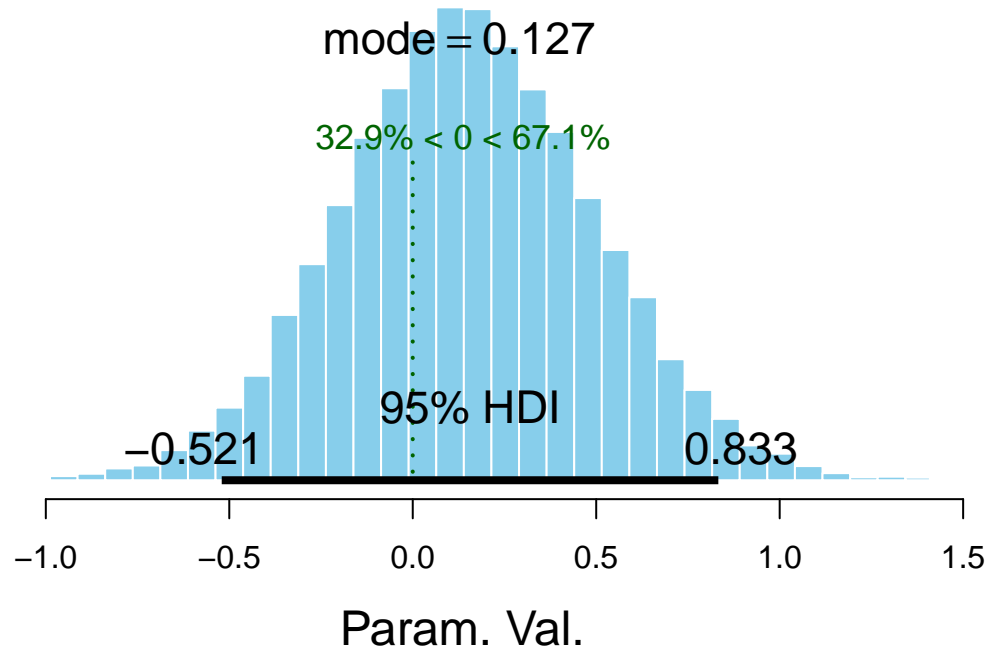
```
## [1] "
## [1] " Analysis of Y= CP explained by x= II_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 5
##   Total graph size: 1791
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5247.758 6472.024 5247.758 4590.180 4541.117
## [1] "II_10 impact in CP with a\n probability of 93.44 %"
```


II_10 impact in CP with a probability of 93.44 %



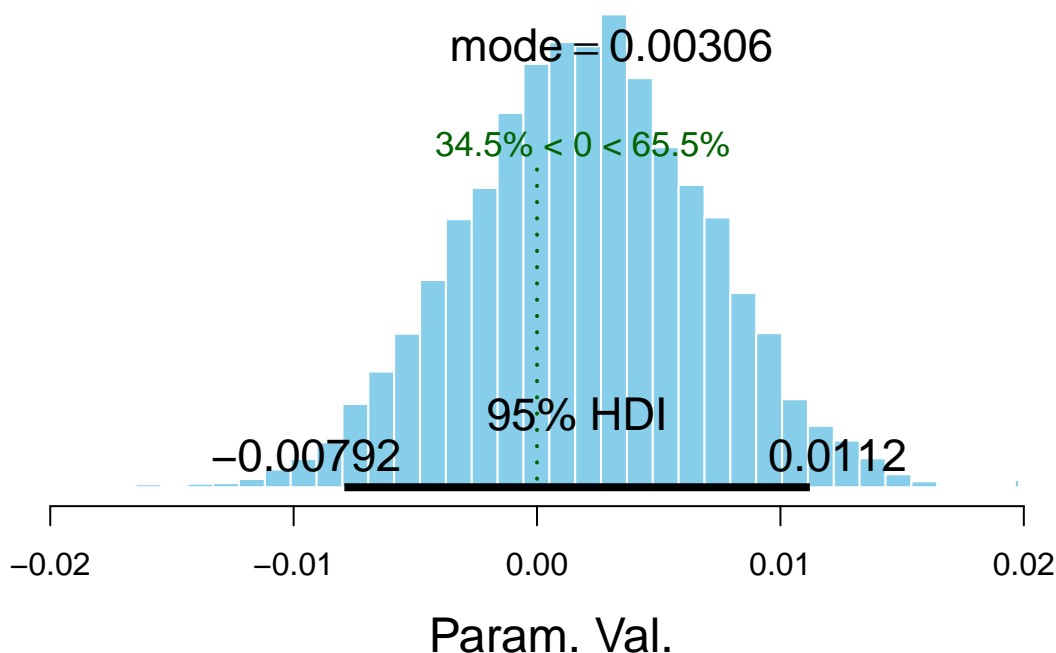
```
## [1] "-----"
## [1] " Analysis of Y= CP explained by x= FOR_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 5
##   Total graph size: 1869
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 4980.676 5468.825 4980.676 4766.693 4269.025
## [1] "FOR_10 impact in CP with a\n probability of 67.07 %"
```

FOR_10 impact in CP with a probability of 67.07 %



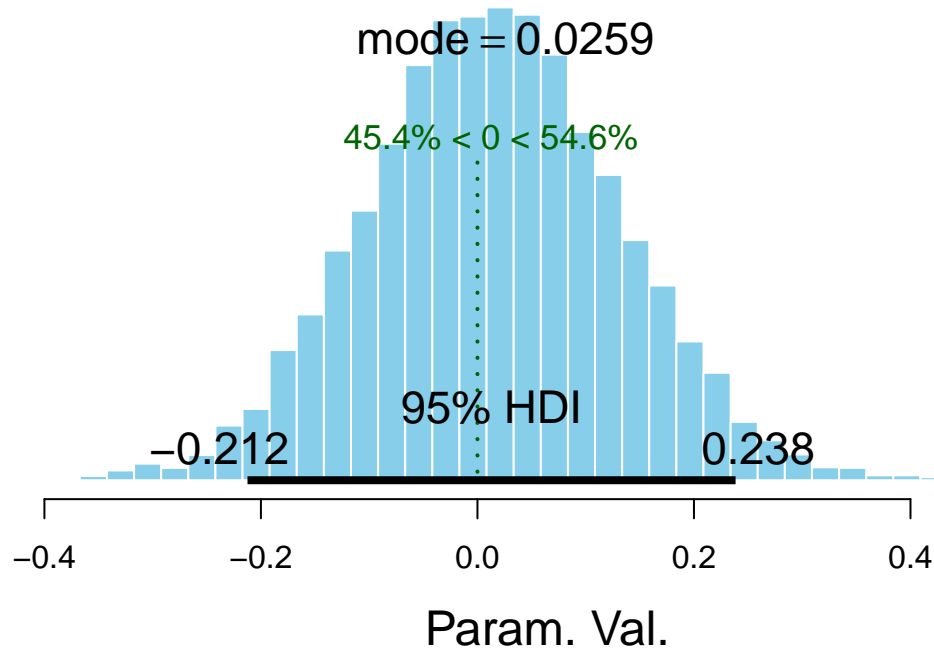
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= PRI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 5
##   Total graph size: 1880
##
## Initializing model
##
##   alpha1    beta0    beta1    betaGPS betaSIZE
## 5422.550 5839.962 5422.550 4950.668 3970.833
## [1] "PRI impact in DISCL with a\n probability of 65.5 %"
```

PRI impact in DISCL with a probability of 65.5 %



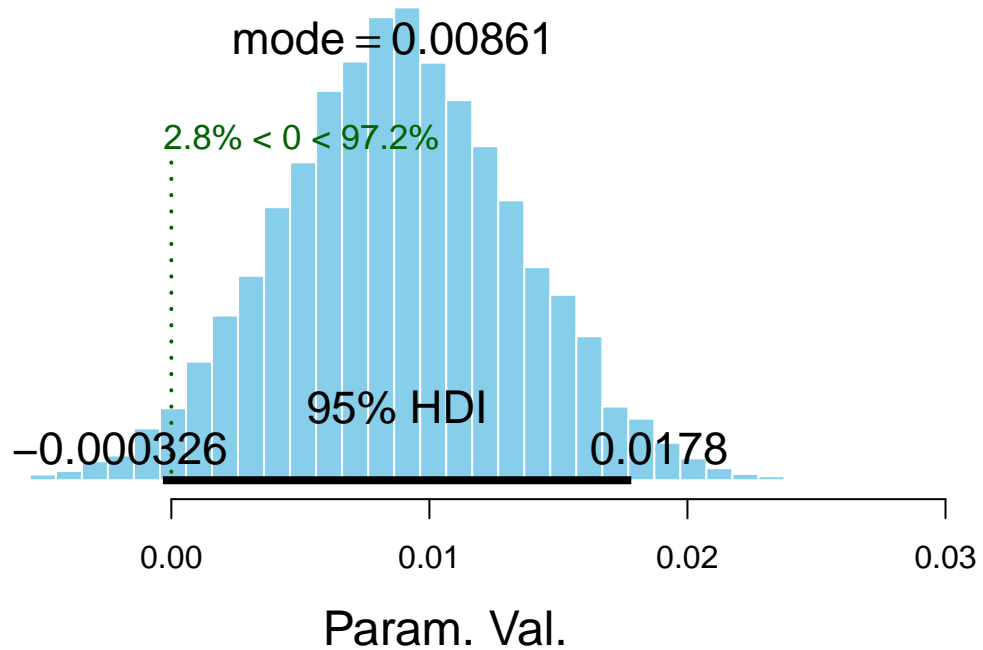
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= INIT"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 5
##   Total graph size: 1879
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 4608.146 5658.114 4608.146 4816.762 4236.805
## [1] "INIT impact in DISCL with a\n probability of 54.58 %"
```

INIT impact in DISCL with a probability of 54.58 %



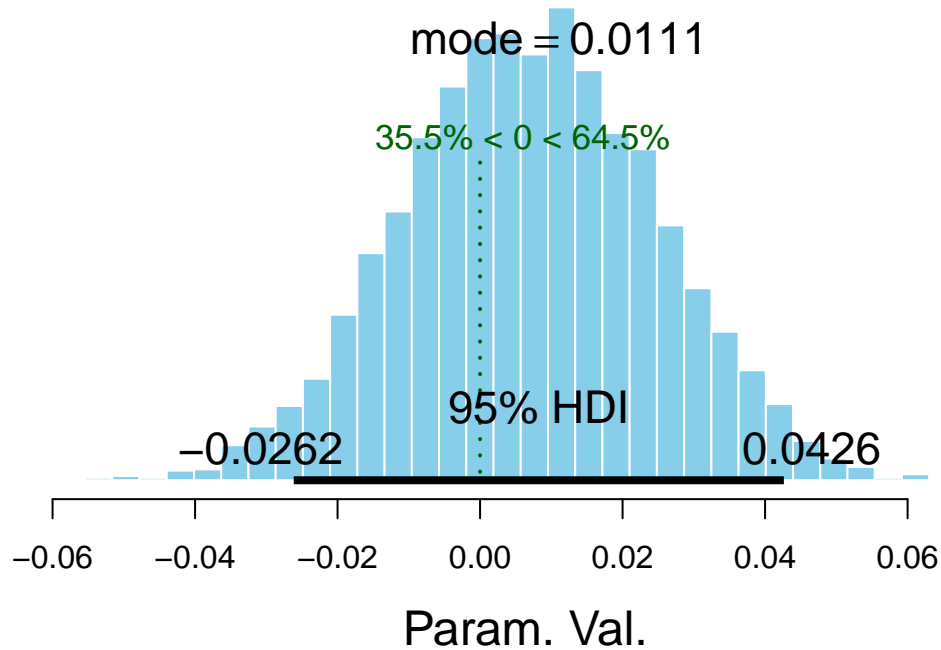
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= EPI"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 5
##   Total graph size: 1873
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 4235.971 4955.826 4235.971 4345.217 3908.256
## [1] "EPI impact in DISCL with a\n probability of 97.19 %"
```

EPI impact in DISCL with a probability of 97.19 %



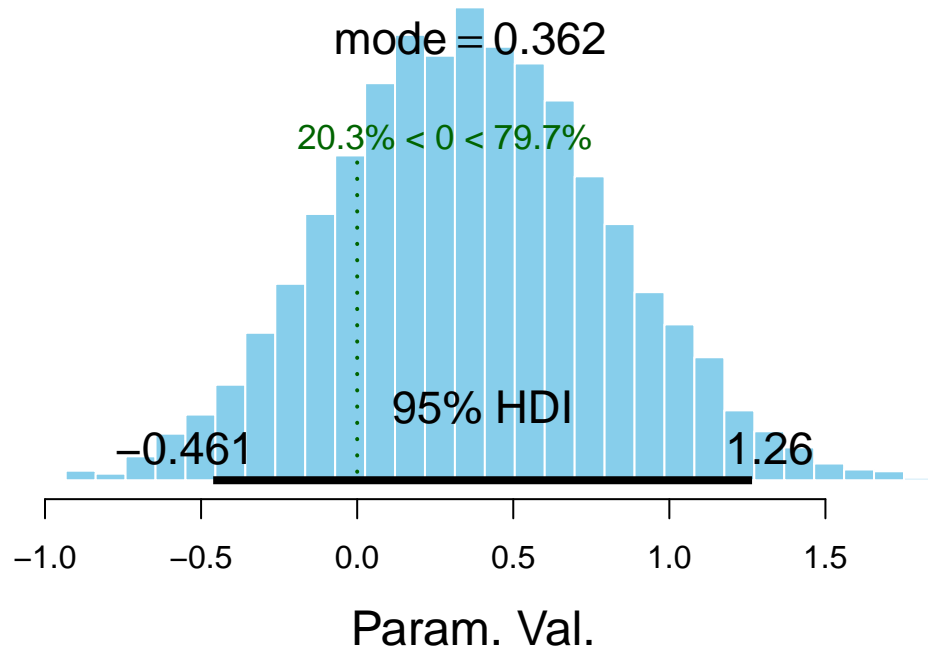
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= STEW"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 5
##   Total graph size: 1872
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5161.024 6372.271 5161.024 4794.992 4613.500
## [1] "STEW impact in DISCL with a\n probability of 64.48 %"
```

STEW impact in DISCL with a probability of 64.48 %



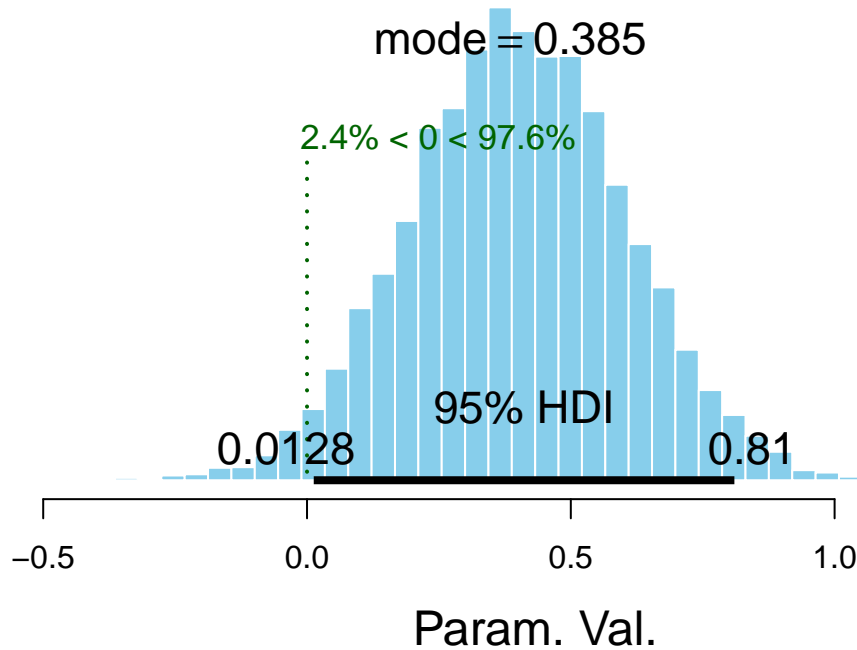
```
## [1] "
## [1] " Analysis of Y= DISCL explained by x= II_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 5
##   Total graph size: 1791
##
## Initializing model
##
##   alpha1   beta0   beta1   betaGPS betaSIZE
## 5190.257 6044.837 5190.257 4629.952 3899.260
## [1] "II_10 impact in DISCL with a\n probability of 79.71 %"
```

II_10 impact in DISCL with a probability of 79.71 %



```
## [1] "-----"
## [1] " Analysis of Y= DISCL  explained by x= FOR_10"
## Compiling data graph
##   Resolving undeclared variables
##   Allocating nodes
##   Initializing
##   Reading data back into data table
## Compiling model graph
##   Resolving undeclared variables
##   Allocating nodes
## Graph information:
##   Observed stochastic nodes: 129
##   Unobserved stochastic nodes: 5
##   Total graph size: 1869
##
## Initializing model
##
##   alpha1    beta0    beta1  betaGPS betaSIZE
## 4672.085 5705.178 4672.085 4723.403 4203.173
## [1] "FOR_10  impact in  DISCL  with a\n probability of  97.58 %"
```

FOR_10 impact in DISCL with a probability of 97.58 %



```
write.csv(BLbinom,
          file=paste(
            'noExtr-binomResults',
            format(Sys.time(), "%d-%b-%H-%M-%S"),
            '.csv')
)
```

Endogeneity

```
xname <- 'PRI' ; yname <- 'ET3'

xnames <- c('PRI', 'INIT', 'STEW')
ynames <- c('ET3', 'ER3', 'ER1')
for(yname in ynames){
  for(xname in xnames){
    form <- paste(yname , '~', xname , '+SIZE + GPS+ GFI')
    f <- formula(form)
    fiv <- formula(paste(form, '| EPI+SIZE + GPS+ GFI'))
    reg <- lm(f, data=X)
    summary(reg)

    cor(X[xname], residuals(reg))
    pval <- cor.test(X$EPI, residuals(reg))$p.value
    cat("Correlation test of EPI with ", xname ,
        ' residuals in' , yname, ' :\n pvalue = ',
```



```

    pval, ' : ',
    ifelse(pval<0.05, 'Presence of correlation', 'No correlation') ,
    '\n'
  )
  regiv <- ivreg(fiv, data=X )
  WuHausman <- summary(regiv,
                        diagnostics=TRUE)[['diagnostics']][2,4]
  cat('Wu-Hausman test asserts that ',
      xname,
      ifelse(WuHausman<0.05,' suffers ', " don't suffer" ),
      ' from endogeneity. p-value = ',
      WuHausman, '\n\n'
  )
}
}

```

```

## Correlation test of EPI with PRI residuals in ET3 :
## pvalue = 0.7989424 : No correlation
## Wu-Hausman test asserts that PRI don't suffer from endogeneity. p-value = 0.7708344
##
## Correlation test of EPI with INIT residuals in ET3 :
## pvalue = 0.9387943 : No correlation
## Wu-Hausman test asserts that INIT don't suffer from endogeneity. p-value = 0.9242102
##
## Correlation test of EPI with STEW residuals in ET3 :
## pvalue = 0.6590881 : No correlation
## Wu-Hausman test asserts that STEW don't suffer from endogeneity. p-value = 0.6106055
##
## Correlation test of EPI with PRI residuals in ER3 :
## pvalue = 0.967391 : No correlation
## Wu-Hausman test asserts that PRI don't suffer from endogeneity. p-value = 0.9627144
##
## Correlation test of EPI with INIT residuals in ER3 :
## pvalue = 0.8994618 : No correlation
## Wu-Hausman test asserts that INIT don't suffer from endogeneity. p-value = 0.8756153
##
## Correlation test of EPI with STEW residuals in ER3 :
## pvalue = 0.8215169 : No correlation
## Wu-Hausman test asserts that STEW don't suffer from endogeneity. p-value = 0.7945878
##
## Correlation test of EPI with PRI residuals in ER1 :
## pvalue = 0.8789292 : No correlation
## Wu-Hausman test asserts that PRI don't suffer from endogeneity. p-value = 0.861716
##
## Correlation test of EPI with INIT residuals in ER1 :
## pvalue = 0.6834877 : No correlation
## Wu-Hausman test asserts that INIT don't suffer from endogeneity. p-value = 0.6134076
##
## Correlation test of EPI with STEW residuals in ER1 :
## pvalue = 0.7054827 : No correlation
## Wu-Hausman test asserts that STEW don't suffer from endogeneity. p-value = 0.6626938
#Suite

```