CFA\_Children\_Blavaan

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# Describing the model and reporting results

We fit the following models:

* 9-factor model: This model treated all tasks as independent factors. This was used as the baseline model.
* MF2012: The “Miyake and Friedman (2012)” model consisted of 3 factors:
  + WM (all WM tasks loaded on this factor)
  + Shifting (all Shifting tasks loaded on this factor)
  + Common factor (all tasks loaded on this factor)
* 3-factor model: This model consisted of:
  + WM (all WM tasks loaded on this factor)
  + Shifting (all Shifting tasks loaded on this factor)
  + Inhibition (all Inhibition tasks loaded on this factor)
* 3 independent factor model:
  + WM (all WM tasks loaded on this factor)
  + Shifting (all Shifting tasks loaded on this factor)
  + Inhibition (all Inhibition tasks loaded on this factor)
* 2 factor model 1:
  + WM+Shifting (all WM and Shifting tasks loaded on this factor)
  + Inhibition (all Inhibition tasks loaded on this factor)
* 2 factor model 2:
  + WM+Inhibition (all WM and Inhibition tasks loaded on this factor)
  + Shifting (all Shifting tasks loaded on this factor)
* 2 factor model 3:
  + Inhibition+Shifting (all Inhibition and Shifting tasks loaded on this factor)
  + WM (all WM tasks loaded on this factor)

When fitting the models, we received the following warnings. First, we received divergent transition warnings for all but the 9-factor model. [describe here what that warning means]. The divergent transitions occurred for between 0.9% and 8.56% (in run 1: between 0.36% and 22.5%) of the samples. These percentages were deemed as very low and thus negligible (we had set 70% of samples as a threshold).

Furthermore, we received warnings that the Bulk/Tail Effective sample sizes were too low for the MF2012, 1-factor, 2factor1 and 2factor2 models (in run 1: for the 3-factor, MF2012, and the 2factor1 models).

We also received a warning about small effective sample sizes for the MF2012, 1-factor and 2factor3 models (in run 1: for 2factor 1 model) [in a previous run we also got warnings for the 1-factor and MF2012 models].

[In previous runs, but not now, we received warnings about too large R hats for the 1-factor and the 2factor1 models.]

[In previous runs, but not now we received the warning that at least one parameter had a psrf > 1.2 for the 1-factor and the 2factor1 models]

When comparing the models to the 9-factor model, we found that the comparison could not be reliably made for the 3-independent factor, 2factor1, 2factor2, and 2factor3 models due to a too large SE (run 1: could not be run for 3 independent factors model). Thus overall, the MF2012, 1 factor and 3 factor models fit the data better than the 9-factor model as indicated by lower WAIC values.

When comparing the 1-factor model against all other models, we found that the comparison could not be reliably made for any models due to a too large SE (in run 1, the comparison could be made between the 1-factor and the MF2012 model (the 1-factor model was better)).

## [1] "R version 3.6.1 (2019-07-05)"

# Selection of task DVs

* All DVs have been scaled to values between 0 and 1 with higher values indicating better performance.
* Inhibition tasks: proportion correct searches in *first trial*. First trial performance shows signature of prepotent response. Comparability to chimpanzees with first session.
* Shifting tasks: Shifting Boxes: Proportion correct in the CD phase (as measure of susceptibility to interference from anonther stimulus dimension); Shifting Shelf task: proportion of platform switches; Shifting Trays task: proportion correct.
* Working memory: WM Boxes and WM Updating (both platforms): proportion of correct choices; WM Grid: proximity of first choice to the baited compartment (ranging between 0 and 1). DVs capture the test performance (in the presence of a secondary task).

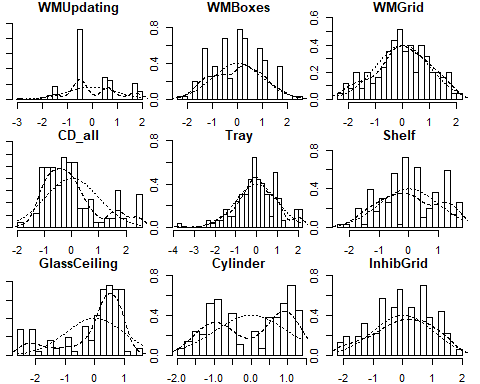
# We scale the variables according to testing location

Edi <- subset(CFA, TestingLocation == "Edinburgh")  
Fife <- subset(CFA, TestingLocation == "Fife")  
Edi$WMUpdating <- scale(Edi$WMUpdating)  
Edi$WMBoxes <- scale(Edi$WMBoxes)  
Edi$WMGrid <- scale(Edi$WMGrid)  
Edi$CD\_all <- scale(Edi$CD\_all)  
Edi$Tray <- scale(Edi$Tray)  
Edi$Shelf <- scale(Edi$Shelf)  
Edi$GlassCeiling <- scale(Edi$GlassCeiling)  
Edi$Cylinder <- scale(Edi$Cylinder)  
Edi$InhibGrid <- scale(Edi$InhibGrid)

Fife$WMUpdating <- scale(Fife$WMUpdating)  
Fife$WMBoxes <- scale(Fife$WMBoxes)  
Fife$WMGrid <- scale(Fife$WMGrid)  
Fife$CD\_all <- scale(Fife$CD\_all)  
Fife$Tray <- scale(Fife$Tray)  
Fife$Shelf <- scale(Fife$Shelf)  
Fife$GlassCeiling <- scale(Fife$GlassCeiling)  
Fife$Cylinder <- scale(Fife$Cylinder)  
Fife$InhibGrid <- scale(Fife$InhibGrid)  
  
CFA\_new <- rbind(Fife, Edi)

# Assumptions

library(psych)  
multi.hist(CFA\_new[-1: -6])



# Fit models

model.3factors <- 'F1\_WM =~ WMUpdating + WMBoxes + WMGrid  
 F2\_Shifting =~ CD\_all + Shelf + Tray  
 F3\_Inhibition =~ Cylinder + InhibGrid + GlassCeiling'  
  
bfit.3factors = bcfa(model.3factors, data = CFA\_new, orthogonal=FALSE, adapt = 500, burnin = 2500, sample = 5000, n.chains = 4, control=list(adapt\_delta=0.95), bcontrol=list(cores=4))

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".

## Warning: There were 154 divergent transitions after warmup. Increasing adapt\_delta above 0.8 may help. See  
## http://mc-stan.org/misc/warnings.html#divergent-transitions-after-warmup

## Warning: Examine the pairs() plot to diagnose sampling problems

## Computing posterior predictives...

## Warning in lav\_object\_post\_check(object): lavaan WARNING: covariance matrix of latent variables  
## is not positive definite;  
## use lavInspect(fit, "cov.lv") to investigate.

return(bfit.3factors)

## blavaan (0.3-10) results of 5000 samples after 2500 adapt/burnin iterations  
##   
## Number of observations 185  
##   
## Number of missing patterns 26  
##   
## Statistic MargLogLik PPP  
## Value -1953.534 0.227

fit\_model = function(model) {  
 fit = bcfa(model, data = CFA\_new, orthogonal=TRUE, adapt = 500, burnin = 2500, sample = 5000, n.chains = 4, control=list(adapt\_delta=0.95), bcontrol=list(cores=4))  
 return(fit)  
}  
  
  
model.9factors <- 'F1 =~ WMUpdating  
 F2 =~ WMBoxes  
 F3 =~ WMGrid  
 F4 =~ CD\_all  
 F5 =~ Shelf  
 F6 =~ Tray  
 F7 =~ InhibGrid  
 F8 =~ Cylinder  
 F9 =~ GlassCeiling'  
  
model.MF2012 <- 'F1\_WM =~ WMUpdating + WMBoxes + WMGrid  
 F2\_Shifting =~ CD\_all + Shelf + Tray  
 F3\_CommonEF =~ Cylinder + InhibGrid + GlassCeiling + Shelf + CD\_all + Tray + WMUpdating+ WMBoxes + WMGrid'  
  
model.1factor <- 'F1\_CommonEF =~ Cylinder + GlassCeiling + InhibGrid + Shelf + CD\_all + Tray + WMUpdating+ WMBoxes + WMGrid'  
  
model.3factors\_ind <- 'F1\_WM =~ WMUpdating + WMBoxes + WMGrid  
 F2\_Shifting =~ CD\_all + Shelf + Tray  
 F3\_Inhibition =~ Cylinder + InhibGrid + GlassCeiling'  
  
model.2factors1 <- 'F1\_2\_WM\_Shifting =~ WMUpdating + WMBoxes + WMGrid+ CD\_all + Shelf + Tray  
 F3\_Inhibition =~ Cylinder + InhibGrid + GlassCeiling'  
  
model.2factors2 <- 'F1\_3\_WM\_Inh =~ WMUpdating + WMBoxes + WMGrid + InhibGrid + Cylinder + GlassCeiling  
 F2\_Shifting =~ CD\_all + Shelf + Tray'  
  
model.2factors3 <- 'F1\_WM =~ WMUpdating + WMBoxes + WMGrid  
 F2\_3\_Shifting\_Inh=~ CD\_all + Shelf + Tray + InhibGrid + Cylinder + GlassCeiling'  
  
  
  
  
  
  
# Fit each of the models  
bfit.9factors = fit\_model(model.9factors)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".  
##   
## Computing posterior predictives...

bfit.MF2012 = fit\_model(model.MF2012)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".

## Warning: There were 91 divergent transitions after warmup. Increasing adapt\_delta above 0.8 may help. See  
## http://mc-stan.org/misc/warnings.html#divergent-transitions-after-warmup

## Warning: Examine the pairs() plot to diagnose sampling problems

## Warning: Bulk Effective Samples Size (ESS) is too low, indicating posterior means and medians may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#bulk-ess

## Warning: Tail Effective Samples Size (ESS) is too low, indicating posterior variances and tail quantiles may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#tail-ess

## Computing posterior predictives...

## Warning in blavaan(model, data = CFA\_new, orthogonal = TRUE, control =  
## list(adapt\_delta = 0.95), : blavaan WARNING: Small effective sample sizes  
## (< 100) for some parameters.

bfit.1factor = fit\_model(model.1factor)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".

## Warning: There were 141 divergent transitions after warmup. Increasing adapt\_delta above 0.8 may help. See  
## http://mc-stan.org/misc/warnings.html#divergent-transitions-after-warmup

## Warning: Examine the pairs() plot to diagnose sampling problems

## Warning: Bulk Effective Samples Size (ESS) is too low, indicating posterior means and medians may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#bulk-ess

## Warning: Tail Effective Samples Size (ESS) is too low, indicating posterior variances and tail quantiles may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#tail-ess

## Computing posterior predictives...

## Warning in blavaan(model, data = CFA\_new, orthogonal = TRUE, control =  
## list(adapt\_delta = 0.95), : blavaan WARNING: Small effective sample sizes  
## (< 100) for some parameters.

bfit.3factors\_ind = fit\_model(model.3factors\_ind)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".

## Warning: There were 95 divergent transitions after warmup. Increasing adapt\_delta above 0.8 may help. See  
## http://mc-stan.org/misc/warnings.html#divergent-transitions-after-warmup

## Warning: Examine the pairs() plot to diagnose sampling problems

## Computing posterior predictives...

bfit.2factors1 = fit\_model(model.2factors1)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".

## Warning: There were 428 divergent transitions after warmup. Increasing adapt\_delta above 0.8 may help. See  
## http://mc-stan.org/misc/warnings.html#divergent-transitions-after-warmup  
  
## Warning: Examine the pairs() plot to diagnose sampling problems

## Computing posterior predictives...

bfit.2factors2 = fit\_model(model.2factors2)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".

## Warning: There were 45 divergent transitions after warmup. Increasing adapt\_delta above 0.8 may help. See  
## http://mc-stan.org/misc/warnings.html#divergent-transitions-after-warmup  
  
## Warning: Examine the pairs() plot to diagnose sampling problems

## Warning: Tail Effective Samples Size (ESS) is too low, indicating posterior variances and tail quantiles may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#tail-ess

## Computing posterior predictives...

bfit.2factors3 = fit\_model(model.2factors3)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".

## Warning: There were 300 divergent transitions after warmup. Increasing adapt\_delta above 0.8 may help. See  
## http://mc-stan.org/misc/warnings.html#divergent-transitions-after-warmup

## Warning: Examine the pairs() plot to diagnose sampling problems

## Warning: Bulk Effective Samples Size (ESS) is too low, indicating posterior means and medians may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#bulk-ess

## Warning: Tail Effective Samples Size (ESS) is too low, indicating posterior variances and tail quantiles may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#tail-ess

## Computing posterior predictives...

## Warning in blavaan(model, data = CFA\_new, orthogonal = TRUE, control =  
## list(adapt\_delta = 0.95), : blavaan WARNING: Small effective sample sizes  
## (< 100) for some parameters.

# Compare models to the 9 factor model

## MF2012

blavCompare(bfit.9factors, bfit.MF2012)

## Warning: 1 (0.5%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

## Warning: 11 (5.9%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## WAIC estimates:   
## object1: 3765.508   
## object2: 3741.056   
##   
## WAIC difference & SE:   
## -12.226 5.805   
##   
## LOO estimates:   
## object1: 3765.537   
## object2: 3741.192   
##   
## LOO difference & SE:   
## -12.173 5.808   
##   
## Laplace approximation to the log-Bayes factor  
## (experimental; positive values favor object1): -2.566

## 3 factors

blavCompare(bfit.9factors, bfit.3factors)

## Warning in lav\_object\_post\_check(object): lavaan WARNING: covariance matrix of latent variables  
## is not positive definite;  
## use lavInspect(fit, "cov.lv") to investigate.

## Warning: 11 (5.9%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## WAIC estimates:   
## object1: 3765.508   
## object2: 3738.701   
##   
## WAIC difference & SE:   
## -13.404 5.845   
##   
## LOO estimates:   
## object1: 3765.537   
## object2: 3738.826   
##   
## LOO difference & SE:   
## -13.355 5.846   
##   
## Laplace approximation to the log-Bayes factor  
## (experimental; positive values favor object1): 12.884

## 1 factor

blavCompare(bfit.9factors, bfit.1factor)

## Warning: 1 (0.5%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## WAIC estimates:   
## object1: 3765.508   
## object2: 3737.886   
##   
## WAIC difference & SE:   
## -13.811 6.020   
##   
## LOO estimates:   
## object1: 3765.537   
## object2: 3737.989   
##   
## LOO difference & SE:   
## -13.774 6.020   
##   
## Laplace approximation to the log-Bayes factor  
## (experimental; positive values favor object1): -5.410

## 3 independent factors

blavCompare(bfit.1factor, bfit.3factors\_ind)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

## Warning: 4 (2.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## WAIC estimates:   
## object1: 3737.555   
## object2: 3752.803   
##   
## WAIC difference & SE:   
## -7.624 4.089   
##   
## LOO estimates:   
## object1: 3737.621   
## object2: 3752.876   
##   
## LOO difference & SE:   
## -7.628 4.088   
##   
## Laplace approximation to the log-Bayes factor  
## (experimental; positive values favor object1): 11.970

## 2 factors (WM+Shifting, Inhibition)

blavCompare(bfit.1factor, bfit.2factors1)

## Warning: Some Pareto k diagnostic values are too high. See help('pareto-k-diagnostic') for details.

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

## Warning: 7 (3.8%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## WAIC estimates:   
## object1: 3737.555   
## object2: 3745.045   
##   
## WAIC difference & SE:   
## -3.745 2.864   
##   
## LOO estimates:   
## object1: 3737.621   
## object2: 3745.325   
##   
## LOO difference & SE:   
## -3.852 2.879   
##   
## Laplace approximation to the log-Bayes factor  
## (experimental; positive values favor object1): 3.171

## 2 factors (WM+Inhibition, Shifting)

blavCompare(bfit.1factor, bfit.2factors2)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

## Warning: 5 (2.7%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## WAIC estimates:   
## object1: 3737.555   
## object2: 3749.04   
##   
## WAIC difference & SE:   
## -5.743 4.277   
##   
## LOO estimates:   
## object1: 3737.621   
## object2: 3749.097   
##   
## LOO difference & SE:   
## -5.738 4.277   
##   
## Laplace approximation to the log-Bayes factor  
## (experimental; positive values favor object1): 14.997

## 2 factors (Inhibition + Shifting, WM)

blavCompare(bfit.1factor, bfit.2factors3)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.  
  
## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## WAIC estimates:   
## object1: 3737.555   
## object2: 3740.205   
##   
## WAIC difference & SE:   
## -1.325 4.074   
##   
## LOO estimates:   
## object1: 3737.621   
## object2: 3740.315   
##   
## LOO difference & SE:   
## -1.347 4.077   
##   
## Laplace approximation to the log-Bayes factor  
## (experimental; positive values favor object1): 15.943

return(bfit.3factors)

## blavaan (0.3-10) results of 5000 samples after 2500 adapt/burnin iterations  
##   
## Number of observations 185  
##   
## Number of missing patterns 26  
##   
## Statistic MargLogLik PPP  
## Value -1953.534 0.227

fit\_model = function(model) {  
 fit = bcfa(model, data = CFA\_new, orthogonal=TRUE, adapt = 500, burnin = 2500, sample = 5000, n.chains = 4, control=list(adapt\_delta=0.95), bcontrol=list(cores=4))  
 return(fit)  
}  
  
  
model.9factors <- 'F1 =~ WMUpdating  
 F2 =~ WMBoxes  
 F3 =~ WMGrid  
 F4 =~ CD\_all  
 F5 =~ Shelf  
 F6 =~ Tray  
 F7 =~ InhibGrid  
 F8 =~ Cylinder  
 F9 =~ GlassCeiling'  
  
model.MF2012 <- 'F1\_WM =~ WMUpdating + WMBoxes + WMGrid  
 F2\_Shifting =~ CD\_all + Shelf + Tray  
 F3\_CommonEF =~ Cylinder + InhibGrid + GlassCeiling + Shelf + CD\_all + Tray + WMUpdating+ WMBoxes + WMGrid'  
  
model.1factor <- 'F1\_CommonEF =~ Cylinder + GlassCeiling + InhibGrid + Shelf + CD\_all + Tray + WMUpdating+ WMBoxes + WMGrid'  
  
model.3factors\_ind <- 'F1\_WM =~ WMUpdating + WMBoxes + WMGrid  
 F2\_Shifting =~ CD\_all + Shelf + Tray  
 F3\_Inhibition =~ Cylinder + InhibGrid + GlassCeiling'  
  
model.2factors1 <- 'F1\_2\_WM\_Shifting =~ WMUpdating + WMBoxes + WMGrid+ CD\_all + Shelf + Tray  
 F3\_Inhibition =~ Cylinder + InhibGrid + GlassCeiling'  
  
model.2factors2 <- 'F1\_3\_WM\_Inh =~ WMUpdating + WMBoxes + WMGrid + InhibGrid + Cylinder + GlassCeiling  
 F2\_Shifting =~ CD\_all + Shelf + Tray'  
  
model.2factors3 <- 'F1\_WM =~ WMUpdating + WMBoxes + WMGrid  
 F2\_3\_Shifting\_Inh=~ CD\_all + Shelf + Tray + InhibGrid + Cylinder + GlassCeiling'  
  
  
  
  
  
  
# Fit each of the models  
bfit.9factors = fit\_model(model.9factors)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".  
##   
## Computing posterior predictives...

bfit.MF2012 = fit\_model(model.MF2012)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".

## Warning: There were 91 divergent transitions after warmup. Increasing adapt\_delta above 0.8 may help. See  
## http://mc-stan.org/misc/warnings.html#divergent-transitions-after-warmup

## Warning: Examine the pairs() plot to diagnose sampling problems

## Warning: Bulk Effective Samples Size (ESS) is too low, indicating posterior means and medians may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#bulk-ess

## Warning: Tail Effective Samples Size (ESS) is too low, indicating posterior variances and tail quantiles may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#tail-ess

## Computing posterior predictives...

## Warning in blavaan(model, data = CFA\_new, orthogonal = TRUE, control =  
## list(adapt\_delta = 0.95), : blavaan WARNING: Small effective sample sizes  
## (< 100) for some parameters.

bfit.1factor = fit\_model(model.1factor)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".

## Warning: There were 141 divergent transitions after warmup. Increasing adapt\_delta above 0.8 may help. See  
## http://mc-stan.org/misc/warnings.html#divergent-transitions-after-warmup

## Warning: Examine the pairs() plot to diagnose sampling problems

## Warning: Bulk Effective Samples Size (ESS) is too low, indicating posterior means and medians may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#bulk-ess

## Warning: Tail Effective Samples Size (ESS) is too low, indicating posterior variances and tail quantiles may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#tail-ess

## Computing posterior predictives...

## Warning in blavaan(model, data = CFA\_new, orthogonal = TRUE, control =  
## list(adapt\_delta = 0.95), : blavaan WARNING: Small effective sample sizes  
## (< 100) for some parameters.

bfit.3factors\_ind = fit\_model(model.3factors\_ind)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".

## Warning: There were 95 divergent transitions after warmup. Increasing adapt\_delta above 0.8 may help. See  
## http://mc-stan.org/misc/warnings.html#divergent-transitions-after-warmup

## Warning: Examine the pairs() plot to diagnose sampling problems

## Computing posterior predictives...

bfit.2factors1 = fit\_model(model.2factors1)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".

## Warning: There were 428 divergent transitions after warmup. Increasing adapt\_delta above 0.8 may help. See  
## http://mc-stan.org/misc/warnings.html#divergent-transitions-after-warmup  
  
## Warning: Examine the pairs() plot to diagnose sampling problems

## Computing posterior predictives...

bfit.2factors2 = fit\_model(model.2factors2)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".

## Warning: There were 45 divergent transitions after warmup. Increasing adapt\_delta above 0.8 may help. See  
## http://mc-stan.org/misc/warnings.html#divergent-transitions-after-warmup  
  
## Warning: Examine the pairs() plot to diagnose sampling problems

## Warning: Tail Effective Samples Size (ESS) is too low, indicating posterior variances and tail quantiles may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#tail-ess

## Computing posterior predictives...

bfit.2factors3 = fit\_model(model.2factors3)

## blavaan NOTE: Posterior predictives with missing data are currently very slow.  
## Consider setting test="none".

## Warning: There were 300 divergent transitions after warmup. Increasing adapt\_delta above 0.8 may help. See  
## http://mc-stan.org/misc/warnings.html#divergent-transitions-after-warmup

## Warning: Examine the pairs() plot to diagnose sampling problems

## Warning: Bulk Effective Samples Size (ESS) is too low, indicating posterior means and medians may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#bulk-ess

## Warning: Tail Effective Samples Size (ESS) is too low, indicating posterior variances and tail quantiles may be unreliable.  
## Running the chains for more iterations may help. See  
## http://mc-stan.org/misc/warnings.html#tail-ess

## Computing posterior predictives...

## Warning in blavaan(model, data = CFA\_new, orthogonal = TRUE, control =  
## list(adapt\_delta = 0.95), : blavaan WARNING: Small effective sample sizes  
## (< 100) for some parameters.

# Calculate WAIC values for the models

get\_waic = function(object1) {  
 lavopt1 <- object1@Options  
 lavopt1$estimator <- "ML"  
 ll1 = case\_lls(object1@external$mcmcout, object1@Model,   
 object1@ParTable, object1@SampleStats, lavopt1, object1@Cache,   
 object1@Data, make\_mcmc(object1@external$mcmcout))  
 return(waic(ll1))  
}  
environment(get\_waic) <- asNamespace('blavaan')  
get\_waic(bfit.9factors)

## Warning: 1 (0.5%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## Computed from 20000 by 185 log-likelihood matrix  
##   
## Estimate SE  
## elpd\_waic -1882.8 56.8  
## p\_waic 16.3 1.1  
## waic 3765.5 113.5

## Warning: 1 (0.5%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

get\_waic(bfit.MF2012)

## Warning: 11 (5.9%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## Computed from 20000 by 185 log-likelihood matrix  
##   
## Estimate SE  
## elpd\_waic -1870.5 56.1  
## p\_waic 27.7 2.1  
## waic 3741.1 112.2

## Warning: 11 (5.9%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

get\_waic(bfit.3factors)

## Warning in lav\_object\_post\_check(object): lavaan WARNING: covariance matrix of latent variables  
## is not positive definite;  
## use lavInspect(fit, "cov.lv") to investigate.

## Warning: 11 (5.9%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## Computed from 20000 by 185 log-likelihood matrix  
##   
## Estimate SE  
## elpd\_waic -1869.4 56.0  
## p\_waic 29.1 2.1  
## waic 3738.7 112.0

## Warning: 11 (5.9%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

get\_waic(bfit.1factor)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## Computed from 20000 by 185 log-likelihood matrix  
##   
## Estimate SE  
## elpd\_waic -1868.9 56.1  
## p\_waic 25.0 1.9  
## waic 3737.9 112.2

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

get\_waic(bfit.3factors\_ind)

## Warning: 4 (2.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## Computed from 20000 by 185 log-likelihood matrix  
##   
## Estimate SE  
## elpd\_waic -1876.3 56.1  
## p\_waic 21.9 1.6  
## waic 3752.6 112.3

## Warning: 4 (2.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

get\_waic(bfit.2factors1)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## Computed from 20000 by 185 log-likelihood matrix  
##   
## Estimate SE  
## elpd\_waic -1872.1 56.1  
## p\_waic 22.3 1.6  
## waic 3744.1 112.2

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

get\_waic(bfit.2factors2)

## Warning: 5 (2.7%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## Computed from 20000 by 185 log-likelihood matrix  
##   
## Estimate SE  
## elpd\_waic -1874.7 56.1  
## p\_waic 23.2 1.7  
## waic 3749.3 112.2

## Warning: 5 (2.7%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

get\_waic(bfit.2factors3)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## Computed from 20000 by 185 log-likelihood matrix  
##   
## Estimate SE  
## elpd\_waic -1870.1 56.1  
## p\_waic 24.4 1.8  
## waic 3740.2 112.1

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

# Get fit measures

fm.MF2012<-fitMeasures(bfit.MF2012)

## Warning: 11 (5.9%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

fm.3factors<-fitMeasures(bfit.3factors)

## Warning in lav\_object\_post\_check(object): lavaan WARNING: covariance matrix of latent variables  
## is not positive definite;  
## use lavInspect(fit, "cov.lv") to investigate.

## Warning: 11 (5.9%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

fm.1factor<-fitMeasures(bfit.1factor)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

fm.3factors\_ind<-fitMeasures(bfit.3factors\_ind)

## Warning: 4 (2.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

fm.2factors1<-fitMeasures(bfit.2factors1)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

fm.2factors2<-fitMeasures(bfit.2factors2)

## Warning: 5 (2.7%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

fm.2factors3<-fitMeasures(bfit.2factors3)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

fm.9factors<-fitMeasures(bfit.9factors)

## Warning: 1 (0.5%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

# Put fit measures into a table

rbind(fm.MF2012, fm.3factors, fm.3factors\_ind, fm.1factor, fm.2factors1, fm.2factors2, fm.2factors3, fm.9factors)

## npar logl ppp bic dic p\_dic  
## fm.MF2012 33 -1846.676 0.15975 3865.444 3731.797 19.2227912  
## fm.3factors 30 -1856.013 0.22705 3868.475 3705.542 -3.2420808  
## fm.3factors\_ind 27 -1869.657 0.00975 3880.117 3721.096 -9.1090086  
## fm.1factor 27 -1844.394 0.15705 3829.591 3735.704 23.4581505  
## fm.2factors1 27 -1851.591 0.04050 3843.986 3739.262 18.0398708  
## fm.2factors2 27 -1863.054 0.02540 3866.911 3724.909 -0.5994469  
## fm.2factors3 27 -1865.660 0.10750 3872.123 3699.154 -16.0827488  
## fm.9factors 18 -1865.544 0.00020 3824.957 3766.777 17.8443838  
## waic p\_waic se\_waic looic p\_loo se\_loo  
## fm.MF2012 3741.056 27.71876 112.2484 3741.191 27.78619 112.2605  
## fm.3factors 3738.701 29.07389 111.9527 3738.826 29.13661 111.9625  
## fm.3factors\_ind 3752.601 21.86147 112.2930 3752.693 21.90752 112.3007  
## fm.1factor 3737.886 25.01781 112.2327 3737.988 25.06885 112.2423  
## fm.2factors1 3744.102 22.27730 112.1618 3744.205 22.32895 112.1716  
## fm.2factors2 3749.311 23.23287 112.2074 3749.367 23.26065 112.2125  
## fm.2factors3 3740.228 24.37421 112.1328 3740.333 24.42677 112.1419  
## fm.9factors 3765.508 16.26500 113.5299 3765.537 16.27946 113.5322  
## margloglik  
## fm.MF2012 -1938.084  
## fm.3factors -1953.534  
## fm.3factors\_ind -1952.520  
## fm.1factor -1935.240  
## fm.2factors1 -1941.310  
## fm.2factors2 -1947.870  
## fm.2factors3 -1952.891  
## fm.9factors -1940.650

# Summaries for all models

## MF 2012

summary(bfit.MF2012, neff=TRUE)

## blavaan (0.3-10) results of 5000 samples after 2500 adapt/burnin iterations  
##   
## Number of observations 185  
##   
## Number of missing patterns 26  
##   
## Statistic MargLogLik PPP  
## Value -1938.084 0.160  
##   
## Latent Variables:  
## Estimate Post.SD pi.lower pi.upper Rhat neff   
## F1\_WM =~   
## WMUpdating 1.000 NA NA  
## WMBoxes -1.976 6.529 -16.111 12.407 1.001 5378.651  
## WMGrid 1.510 6.486 -12.872 15.603 1.001 5558.626  
## F2\_Shifting =~   
## CD\_all 1.000 NA NA  
## Shelf 1.043 7.447 -15.169 16.198 1.001 7088.454  
## Tray 1.183 7.777 -15.617 17.105 1.000 5193.775  
## F3\_CommonEF =~   
## Cylinder 1.000 NA NA  
## InhibGrid -2.950 4.704 -11.198 8.473 1.024 149.158  
## GlassCeiling 3.775 5.345 -9.86 13.012 1.036 96.918  
## Shelf 10.748 11.243 -20.426 26.277 1.053 65.707  
## CD\_all 4.606 5.929 -10.798 14.584 1.031 100.636  
## Tray 6.430 7.484 -13.532 18.169 1.045 76.093  
## WMUpdating 2.007 4.339 -7.953 10.718 1.013 224.014  
## WMBoxes 2.600 4.407 -8.004 10.803 1.023 158.815  
## WMGrid 5.589 6.965 -12.579 17.869 1.039 81.651  
## Prior   
##   
##   
## normal(0,10)  
## normal(0,10)  
##   
##   
## normal(0,10)  
## normal(0,10)  
##   
##   
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
##   
## Covariances:  
## Estimate Post.SD pi.lower pi.upper Rhat neff   
## F1\_WM ~~   
## F2\_Shifting 0.000 NA NA  
## F3\_CommonEF 0.000 NA NA  
## F2\_Shifting ~~   
## F3\_CommonEF 0.000 NA NA  
## Prior   
##   
##   
##   
##   
##   
##   
## Intercepts:  
## Estimate Post.SD pi.lower pi.upper Rhat neff   
## .WMUpdating -0.000 0.075 -0.147 0.146 1.001 15813.217  
## .WMBoxes 0.001 0.083 -0.162 0.161 1.000 17905.084  
## .WMGrid -0.020 0.089 -0.194 0.155 1.000 15477.723  
## .CD\_all -0.010 0.087 -0.182 0.159 1.000 13712.727  
## .Shelf -0.012 0.080 -0.167 0.145 1.000 14140.350  
## .Tray -0.005 0.081 -0.166 0.155 1.000 19008.630  
## .Cylinder -0.001 0.083 -0.165 0.161 1.000 16345.661  
## .InhibGrid -0.001 0.080 -0.158 0.158 1.000 16059.611  
## .GlassCeiling -0.009 0.089 -0.184 0.162 1.000 16266.238  
## F1\_WM 0.000 NA NA  
## F2\_Shifting 0.000 NA NA  
## F3\_CommonEF 0.000 NA NA  
## Prior   
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
##   
##   
##   
##   
## Variances:  
## Estimate Post.SD pi.lower pi.upper Rhat neff   
## .WMUpdating 0.950 0.140 0.618 1.199 1.006 723.580  
## .WMBoxes 0.767 0.330 0.01 1.187 1.002 3081.726  
## .WMGrid 0.709 0.305 0.008 1.138 1.000 2907.039  
## .CD\_all 0.918 0.130 0.684 1.192 1.000 13117.544  
## .Shelf 0.435 0.245 0.005 0.875 1.003 3727.887  
## .Tray 0.698 0.252 0.026 1.061 1.001 2756.383  
## .Cylinder 0.994 0.119 0.787 1.256 1.000 11678.435  
## .InhibGrid 0.975 0.117 0.767 1.223 1.000 10130.964  
## .GlassCeiling 0.959 0.131 0.73 1.243 1.000 11578.811  
## F1\_WM 0.037 0.090 0 0.341 1.012 364.424  
## F2\_Shifting 0.013 0.033 0 0.097 1.002 3750.257  
## F3\_CommonEF 0.003 0.004 0 0.012 1.005 2655.293  
## Prior   
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]

## 3 factors

summary(bfit.3factors, neff=TRUE)

## blavaan (0.3-10) results of 5000 samples after 2500 adapt/burnin iterations  
##   
## Number of observations 185  
##   
## Number of missing patterns 26  
##   
## Statistic MargLogLik PPP  
## Value -1953.534 0.227  
##   
## Latent Variables:  
## Estimate Post.SD pi.lower pi.upper Rhat neff   
## F1\_WM =~   
## WMUpdating 1.000 NA NA  
## WMBoxes 1.355 4.335 -9.146 10.456 1.007 492.005  
## WMGrid 4.860 7.522 -14.094 18.751 1.006 394.991  
## F2\_Shifting =~   
## CD\_all 1.000 NA NA  
## Shelf 4.935 3.351 1.394 14.18 1.001 3062.592  
## Tray 2.574 1.927 0.704 7.951 1.002 2979.876  
## F3\_Inhibition =~   
## Cylinder 1.000 NA NA  
## InhibGrid -0.959 6.471 -14.813 14.729 1.007 903.477  
## GlassCeiling 1.385 4.189 -8.35 11.047 1.004 1692.034  
## Prior   
##   
##   
## normal(0,10)  
## normal(0,10)  
##   
##   
## normal(0,10)  
## normal(0,10)  
##   
##   
## normal(0,10)  
## normal(0,10)  
##   
## Covariances:  
## Estimate Post.SD pi.lower pi.upper Rhat neff   
## F1\_WM ~~   
## F2\_Shifting 0.010 0.014 -0.01 0.045 1.004 698.330  
## F3\_Inhibition 0.007 0.017 -0.01 0.057 1.002 1780.113  
## F2\_Shifting ~~   
## F3\_Inhibition 0.027 0.038 -0.01 0.132 1.003 1435.374  
## Prior   
##   
## beta(1,1)  
## beta(1,1)  
##   
## beta(1,1)  
##   
## Intercepts:  
## Estimate Post.SD pi.lower pi.upper Rhat neff   
## .WMUpdating -0.001 0.074 -0.146 0.146 1.000 12940.111  
## .WMBoxes -0.003 0.083 -0.166 0.158 1.000 16234.016  
## .WMGrid -0.021 0.090 -0.198 0.154 1.000 13400.029  
## .CD\_all -0.007 0.087 -0.178 0.164 1.000 13328.084  
## .Shelf -0.016 0.081 -0.176 0.142 1.000 14259.030  
## .Tray -0.004 0.083 -0.167 0.156 1.000 14801.114  
## .Cylinder -0.004 0.083 -0.168 0.161 1.000 12582.570  
## .InhibGrid -0.000 0.080 -0.159 0.158 1.000 15482.575  
## .GlassCeiling -0.008 0.091 -0.186 0.169 1.000 14066.944  
## F1\_WM 0.000 NA NA  
## F2\_Shifting 0.000 NA NA  
## F3\_Inhibition 0.000 NA NA  
## Prior   
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
##   
##   
##   
##   
## Variances:  
## Estimate Post.SD pi.lower pi.upper Rhat neff   
## .WMUpdating 0.987 0.108 0.796 1.218 1.000 12536.401  
## .WMBoxes 0.963 0.135 0.731 1.23 1.000 3100.114  
## .WMGrid 0.568 0.324 0.003 1.09 1.002 1221.742  
## .CD\_all 0.948 0.126 0.728 1.223 1.000 15086.597  
## .Shelf 0.397 0.233 0.003 0.825 1.001 5323.812  
## .Tray 0.846 0.134 0.584 1.113 1.000 9418.458  
## .Cylinder 0.942 0.156 0.62 1.232 1.002 1469.198  
## .InhibGrid 0.921 0.173 0.469 1.202 1.004 1520.108  
## .GlassCeiling 0.960 0.140 0.706 1.247 1.000 10529.699  
## F1\_WM 0.020 0.030 0 0.105 1.002 2488.885  
## F2\_Shifting 0.054 0.051 0.003 0.191 1.001 5950.470  
## F3\_Inhibition 0.062 0.109 0 0.359 1.004 780.799  
## Prior   
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]

## 1 factor

summary(bfit.1factor, neff=TRUE)

## blavaan (0.3-10) results of 5000 samples after 2500 adapt/burnin iterations  
##   
## Number of observations 185  
##   
## Number of missing patterns 26  
##   
## Statistic MargLogLik PPP  
## Value -1935.240 0.157  
##   
## Latent Variables:  
## Estimate Post.SD pi.lower pi.upper Rhat neff   
## F1\_CommonEF =~   
## Cylinder 1.000 NA NA  
## GlassCeiling 4.602 3.652 -3.246 11.918 1.031 101.070  
## InhibGrid -3.919 3.382 -10.796 3.182 1.026 117.471  
## Shelf 13.803 7.880 -12.076 26.637 1.062 50.035  
## CD\_all 5.928 4.166 -4.119 14.211 1.038 89.866  
## Tray 8.343 5.401 -7.017 18.23 1.049 66.397  
## WMUpdating 2.283 2.752 -2.894 8.176 1.014 271.983  
## WMBoxes 3.355 3.198 -2.867 10.01 1.023 155.971  
## WMGrid 6.618 4.538 -4.739 15.165 1.046 70.005  
## Prior   
##   
##   
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
##   
## Intercepts:  
## Estimate Post.SD pi.lower pi.upper Rhat neff   
## .Cylinder -0.002 0.084 -0.168 0.161 1.000 17383.086  
## .GlassCeiling -0.012 0.089 -0.186 0.163 1.000 24673.401  
## .InhibGrid -0.001 0.081 -0.159 0.159 1.000 18415.565  
## .Shelf -0.016 0.081 -0.176 0.145 1.000 13775.675  
## .CD\_all -0.009 0.087 -0.179 0.162 1.000 17220.976  
## .Tray -0.006 0.082 -0.165 0.158 1.000 17484.389  
## .WMUpdating -0.002 0.075 -0.148 0.145 1.001 5477.434  
## .WMBoxes -0.002 0.083 -0.166 0.161 1.000 20944.477  
## .WMGrid -0.015 0.089 -0.189 0.16 1.000 21500.958  
## F1\_CommonEF 0.000 NA NA  
## Prior   
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
##   
##   
## Variances:  
## Estimate Post.SD pi.lower pi.upper Rhat neff   
## .Cylinder 0.990 0.118 0.784 1.244 1.001 14435.823  
## .GlassCeiling 0.958 0.128 0.736 1.237 1.000 23180.973  
## .InhibGrid 0.973 0.117 0.77 1.226 1.001 5335.548  
## .Shelf 0.511 0.198 0.067 0.867 1.002 1727.631  
## .CD\_all 0.923 0.127 0.698 1.198 1.000 17810.885  
## .Tray 0.836 0.127 0.596 1.096 1.000 15047.440  
## .WMUpdating 0.995 0.107 0.806 1.221 1.000 18741.871  
## .WMBoxes 0.981 0.122 0.77 1.247 1.000 14326.030  
## .WMGrid 0.897 0.133 0.659 1.187 1.000 21470.733  
## F1\_CommonEF 0.004 0.005 0.001 0.02 1.013 319.585  
## Prior   
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]

## 3 independent factors

summary(bfit.3factors\_ind)

## blavaan (0.3-10) results of 5000 samples after 2500 adapt/burnin iterations  
##   
## Number of observations 185  
##   
## Number of missing patterns 26  
##   
## Statistic MargLogLik PPP  
## Value -1952.520 0.010  
##   
## Latent Variables:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## F1\_WM =~   
## WMUpdating 1.000 NA  
## WMBoxes -1.239 6.690 -16.236 12.797 1.001  
## WMGrid 2.553 6.761 -11.993 16.444 1.001  
## F2\_Shifting =~   
## CD\_all 1.000 NA  
## Shelf 4.766 3.572 0.988 14.674 1.000  
## Tray 3.895 3.497 0.722 14.068 1.001  
## F3\_Inhibition =~   
## Cylinder 1.000 NA  
## InhibGrid 1.674 7.226 -14.753 16.694 1.001  
## GlassCeiling 1.847 7.413 -14.947 17.192 1.000  
## Prior   
##   
##   
## normal(0,10)  
## normal(0,10)  
##   
##   
## normal(0,10)  
## normal(0,10)  
##   
##   
## normal(0,10)  
## normal(0,10)  
##   
## Covariances:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## F1\_WM ~~   
## F2\_Shifting 0.000 NA  
## F3\_Inhibition 0.000 NA  
## F2\_Shifting ~~   
## F3\_Inhibition 0.000 NA  
## Prior   
##   
##   
##   
##   
##   
##   
## Intercepts:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## .WMUpdating -0.001 0.074 -0.147 0.145 1.000  
## .WMBoxes 0.003 0.084 -0.16 0.169 1.000  
## .WMGrid -0.009 0.089 -0.185 0.168 1.000  
## .CD\_all -0.004 0.088 -0.179 0.167 1.000  
## .Shelf -0.004 0.081 -0.163 0.155 1.000  
## .Tray -0.004 0.082 -0.166 0.158 1.000  
## .Cylinder -0.001 0.084 -0.164 0.164 1.000  
## .InhibGrid 0.001 0.079 -0.154 0.158 1.000  
## .GlassCeiling 0.002 0.089 -0.17 0.176 1.000  
## F1\_WM 0.000 NA  
## F2\_Shifting 0.000 NA  
## F3\_Inhibition 0.000 NA  
## Prior   
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
##   
##   
##   
##   
## Variances:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## .WMUpdating 0.981 0.119 0.769 1.218 1.000  
## .WMBoxes 0.813 0.324 0.012 1.22 1.002  
## .WMGrid 0.701 0.379 0.003 1.221 1.001  
## .CD\_all 0.959 0.127 0.732 1.234 1.000  
## .Shelf 0.520 0.323 0.002 1.039 1.000  
## .Tray 0.705 0.287 0.015 1.099 1.000  
## .Cylinder 0.998 0.124 0.779 1.263 1.000  
## .InhibGrid 0.875 0.265 0.046 1.22 1.002  
## .GlassCeiling 0.858 0.290 0.034 1.257 1.002  
## F1\_WM 0.027 0.058 0 0.166 1.001  
## F2\_Shifting 0.046 0.052 0.002 0.189 1.000  
## F3\_Inhibition 0.014 0.035 0 0.102 1.000  
## Prior   
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]

## 2 factors (WM+Shifting, Inhibition)

summary(bfit.2factors1)

## blavaan (0.3-10) results of 5000 samples after 2500 adapt/burnin iterations  
##   
## Number of observations 185  
##   
## Number of missing patterns 26  
##   
## Statistic MargLogLik PPP  
## Value -1941.310 0.040  
##   
## Latent Variables:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## F1\_2\_WM\_Shifting =~   
## WMUpdating 1.000 NA  
## WMBoxes 3.938 2.810 -0.391 10.433 1.000  
## WMGrid 7.069 3.589 1.747 15.449 1.001  
## CD\_all 5.620 3.227 0.909 13.49 1.001  
## Shelf 11.994 5.078 3.884 23.683 1.002  
## Tray 8.441 4.080 2.397 18.034 1.002  
## F3\_Inhibition =~   
## Cylinder 1.000 NA  
## InhibGrid 1.420 7.297 -15.367 16.792 1.001  
## GlassCeiling 1.751 7.262 -14.645 16.776 1.002  
## Prior   
##   
##   
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
##   
##   
## normal(0,10)  
## normal(0,10)  
##   
## Covariances:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## F1\_2\_WM\_Shifting ~~   
## F3\_Inhibition 0.000 NA  
## Prior   
##   
##   
##   
## Intercepts:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## .WMUpdating -0.001 0.074 -0.149 0.144 1.000  
## .WMBoxes -0.004 0.081 -0.165 0.158 1.000  
## .WMGrid -0.014 0.089 -0.188 0.158 1.000  
## .CD\_all -0.008 0.087 -0.179 0.163 1.000  
## .Shelf -0.018 0.081 -0.173 0.14 1.000  
## .Tray -0.002 0.082 -0.163 0.158 1.000  
## .Cylinder 0.001 0.083 -0.164 0.162 1.000  
## .InhibGrid -0.000 0.079 -0.154 0.154 1.000  
## .GlassCeiling 0.002 0.089 -0.176 0.176 1.000  
## F1\_2\_WM\_Shftng 0.000 NA  
## F3\_Inhibition 0.000 NA  
## Prior   
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
##   
##   
##   
## Variances:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## .WMUpdating 1.003 0.106 0.817 1.232 1.000  
## .WMBoxes 0.967 0.123 0.753 1.237 1.000  
## .WMGrid 0.867 0.137 0.614 1.153 1.001  
## .CD\_all 0.923 0.128 0.695 1.195 1.000  
## .Shelf 0.597 0.203 0.092 0.944 1.001  
## .Tray 0.813 0.138 0.546 1.096 1.000  
## .Cylinder 0.999 0.123 0.785 1.27 1.001  
## .InhibGrid 0.885 0.245 0.148 1.22 1.008  
## .GlassCeiling 0.869 0.272 0.079 1.255 1.004  
## F1\_2\_WM\_Shftng 0.004 0.006 0.001 0.019 1.002  
## F3\_Inhibition 0.013 0.027 0 0.089 1.002  
## Prior   
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]

## 2 factors (WM+Inhibition, Shifting)

summary(bfit.2factors2)

## blavaan (0.3-10) results of 5000 samples after 2500 adapt/burnin iterations  
##   
## Number of observations 185  
##   
## Number of missing patterns 26  
##   
## Statistic MargLogLik PPP  
## Value -1947.870 0.025  
##   
## Latent Variables:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## F1\_3\_WM\_Inh =~   
## WMUpdating 1.000 NA  
## WMBoxes 0.739 6.776 -13.933 13.615 1.002  
## WMGrid 3.194 11.379 -19.453 21.772 1.003  
## InhibGrid 1.248 7.278 -14.167 14.712 1.002  
## Cylinder 2.198 10.354 -18.659 19.676 1.004  
## GlassCeiling 1.108 6.601 -12.851 14.023 1.002  
## F2\_Shifting =~   
## CD\_all 1.000 NA  
## Shelf 4.302 4.336 -4.088 14.348 1.012  
## Tray 3.513 4.282 -4.675 13.58 1.014  
## Prior   
##   
##   
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
##   
##   
## normal(0,10)  
## normal(0,10)  
##   
## Covariances:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## F1\_3\_WM\_Inh ~~   
## F2\_Shifting 0.000 NA  
## Prior   
##   
##   
##   
## Intercepts:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## .WMUpdating -0.000 0.074 -0.146 0.144 1.000  
## .WMBoxes -0.002 0.082 -0.162 0.158 1.000  
## .WMGrid 0.003 0.088 -0.167 0.177 1.000  
## .InhibGrid 0.000 0.081 -0.16 0.157 1.000  
## .Cylinder -0.000 0.085 -0.168 0.163 1.000  
## .GlassCeiling 0.004 0.089 -0.171 0.179 1.000  
## .CD\_all -0.004 0.088 -0.176 0.166 1.000  
## .Shelf -0.007 0.081 -0.166 0.151 1.000  
## .Tray -0.006 0.083 -0.168 0.157 1.000  
## F1\_3\_WM\_Inh 0.000 NA  
## F2\_Shifting 0.000 NA  
## Prior   
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
##   
##   
##   
## Variances:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## .WMUpdating 1.004 0.107 0.816 1.236 1.000  
## .WMBoxes 0.970 0.128 0.743 1.237 1.000  
## .WMGrid 0.809 0.226 0.214 1.186 1.001  
## .InhibGrid 0.958 0.129 0.716 1.221 1.000  
## .Cylinder 0.869 0.169 0.502 1.178 1.001  
## .GlassCeiling 0.977 0.140 0.725 1.271 1.000  
## .CD\_all 0.960 0.127 0.735 1.228 1.001  
## .Shelf 0.529 0.321 0.003 1.042 1.000  
## .Tray 0.702 0.288 0.018 1.104 1.000  
## F1\_3\_WM\_Inh 0.002 0.004 0 0.012 1.001  
## F2\_Shifting 0.045 0.053 0.002 0.187 1.002  
## Prior   
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]

## 2 factors (Inhibition + Shifting, WM)

summary(bfit.2factors3)

## blavaan (0.3-10) results of 5000 samples after 2500 adapt/burnin iterations  
##   
## Number of observations 185  
##   
## Number of missing patterns 26  
##   
## Statistic MargLogLik PPP  
## Value -1952.891 0.107  
##   
## Latent Variables:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## F1\_WM =~   
## WMUpdating 1.000 NA  
## WMBoxes -1.433 6.570 -16.361 12.006 1.002  
## WMGrid 2.364 6.566 -12.079 16.153 1.001  
## F2\_3\_Shifting\_Inh =~   
## CD\_all 1.000 NA  
## Shelf 11.327 5.679 2.649 24.213 1.003  
## Tray 5.767 3.462 1.236 13.866 1.012  
## InhibGrid -3.222 2.291 -8.853 -0.119 1.004  
## Cylinder 4.459 2.835 0.778 11.364 1.005  
## GlassCeiling 3.396 2.476 0.099 9.459 1.003  
## Prior   
##   
##   
## normal(0,10)  
## normal(0,10)  
##   
##   
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
## normal(0,10)  
##   
## Covariances:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## F1\_WM ~~   
## F2\_3\_Shftng\_In 0.000 NA  
## Prior   
##   
##   
##   
## Intercepts:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## .WMUpdating 0.001 0.075 -0.148 0.141 1.006  
## .WMBoxes -0.000 0.082 -0.159 0.161 1.001  
## .WMGrid -0.003 0.091 -0.183 0.168 1.007  
## .CD\_all -0.002 0.084 -0.166 0.164 1.000  
## .Shelf -0.009 0.080 -0.17 0.146 1.000  
## .Tray -0.003 0.082 -0.163 0.157 1.000  
## .InhibGrid -0.001 0.079 -0.157 0.152 1.002  
## .Cylinder -0.012 0.085 -0.181 0.157 1.002  
## .GlassCeiling -0.009 0.088 -0.182 0.164 1.000  
## F1\_WM 0.000 NA  
## F2\_3\_Shftng\_In 0.000 NA  
## Prior   
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
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##   
## Variances:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## .WMUpdating 0.952 0.179 0.267 1.21 1.121  
## .WMBoxes 0.813 0.329 0.008 1.223 1.006  
## .WMGrid 0.721 0.375 0.007 1.238 1.004  
## .CD\_all 0.976 0.129 0.74 1.261 1.005  
## .Shelf 0.391 0.230 0.004 0.816 1.003  
## .Tray 0.860 0.130 0.611 1.124 1.001  
## .InhibGrid 0.959 0.115 0.763 1.211 1.005  
## .Cylinder 0.919 0.121 0.699 1.178 1.000  
## .GlassCeiling 0.963 0.131 0.737 1.257 1.003  
## F1\_WM 0.055 0.151 0 0.708 1.186  
## F2\_3\_Shftng\_In 0.012 0.020 0.001 0.067 1.002  
## Prior   
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
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## gamma(1,.5)[sd]  
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## gamma(1,.5)[sd]

## 9 factors

summary(bfit.9factors)

## blavaan (0.3-10) results of 5000 samples after 2500 adapt/burnin iterations  
##   
## Number of observations 185  
##   
## Number of missing patterns 26  
##   
## Statistic MargLogLik PPP  
## Value -1940.650 0.000  
##   
## Latent Variables:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## F1 =~   
## WMUpdating 1.000 NA  
## F2 =~   
## WMBoxes 1.000 NA  
## F3 =~   
## WMGrid 1.000 NA  
## F4 =~   
## CD\_all 1.000 NA  
## F5 =~   
## Shelf 1.000 NA  
## F6 =~   
## Tray 1.000 NA  
## F7 =~   
## InhibGrid 1.000 NA  
## F8 =~   
## Cylinder 1.000 NA  
## F9 =~   
## GlassCeiling 1.000 NA  
## Prior   
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##   
## Covariances:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## F1 ~~   
## F2 0.000 NA  
## F3 0.000 NA  
## F4 0.000 NA  
## F5 0.000 NA  
## F6 0.000 NA  
## F7 0.000 NA  
## F8 0.000 NA  
## F9 0.000 NA  
## F2 ~~   
## F3 0.000 NA  
## F4 0.000 NA  
## F5 0.000 NA  
## F6 0.000 NA  
## F7 0.000 NA  
## F8 0.000 NA  
## F9 0.000 NA  
## F3 ~~   
## F4 0.000 NA  
## F5 0.000 NA  
## F6 0.000 NA  
## F7 0.000 NA  
## F8 0.000 NA  
## F9 0.000 NA  
## F4 ~~   
## F5 0.000 NA  
## F6 0.000 NA  
## F7 0.000 NA  
## F8 0.000 NA  
## F9 0.000 NA  
## F5 ~~   
## F6 0.000 NA  
## F7 0.000 NA  
## F8 0.000 NA  
## F9 0.000 NA  
## F6 ~~   
## F7 0.000 NA  
## F8 0.000 NA  
## F9 0.000 NA  
## F7 ~~   
## F8 0.000 NA  
## F9 0.000 NA  
## F8 ~~   
## F9 0.000 NA  
## Prior   
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##   
## Intercepts:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## .WMUpdating -0.000 0.074 -0.145 0.146 1.000  
## .WMBoxes 0.000 0.082 -0.161 0.162 1.000  
## .WMGrid 0.001 0.089 -0.173 0.173 1.000  
## .CD\_all -0.000 0.088 -0.176 0.173 1.000  
## .Shelf 0.000 0.081 -0.158 0.159 1.000  
## .Tray -0.000 0.082 -0.16 0.159 1.000  
## .InhibGrid 0.001 0.080 -0.158 0.161 1.000  
## .Cylinder 0.000 0.084 -0.164 0.163 1.000  
## .GlassCeiling -0.000 0.089 -0.176 0.173 1.000  
## F1 0.000 NA  
## F2 0.000 NA  
## F3 0.000 NA  
## F4 0.000 NA  
## F5 0.000 NA  
## F6 0.000 NA  
## F7 0.000 NA  
## F8 0.000 NA  
## F9 0.000 NA  
## Prior   
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
## normal(0,32)  
##   
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##   
##   
##   
## Variances:  
## Estimate Post.SD pi.lower pi.upper Rhat  
## .WMUpdating 0.000 NA  
## .WMBoxes 0.000 NA  
## .WMGrid 0.000 NA  
## .CD\_all 0.000 NA  
## .Shelf 0.000 NA  
## .Tray 0.000 NA  
## .InhibGrid 0.000 NA  
## .Cylinder 0.000 NA  
## .GlassCeiling 0.000 NA  
## F1 1.008 0.107 0.822 1.236 1.000  
## F2 1.010 0.120 0.803 1.27 1.000  
## F3 1.012 0.131 0.786 1.302 1.000  
## F4 1.012 0.129 0.79 1.293 1.000  
## F5 1.010 0.118 0.805 1.267 1.000  
## F6 1.010 0.120 0.803 1.269 1.000  
## F7 1.010 0.114 0.81 1.256 1.000  
## F8 1.009 0.123 0.796 1.279 1.000  
## F9 1.012 0.130 0.789 1.295 1.000  
## Prior   
##   
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##   
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##   
##   
##   
##   
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]  
## gamma(1,.5)[sd]

# Take a look at the effective sample sizes by looking at the underlying stan object

highlights which parameters have a small effective sample size (and how small it is)

## bfit.MF2012

tmp1 = blavInspect(bfit.MF2012, "mcobj")  
summary(tmp1)

## $summary  
## mean se\_mean sd 2.5%  
## ly\_sign[1] -1.975530e+00 0.0890233935 6.528911999 -1.611097e+01  
## ly\_sign[2] 1.510118e+00 0.0869921407 6.485803128 -1.287207e+01  
## ly\_sign[3] 1.042603e+00 0.0884456574 7.446501226 -1.516935e+01  
## ly\_sign[4] 1.183484e+00 0.1079142367 7.777147266 -1.561680e+01  
## ly\_sign[5] 2.006527e+00 0.2898866740 4.338763983 -7.952614e+00  
## ly\_sign[6] 2.600404e+00 0.3496940885 4.406907315 -8.003639e+00  
## ly\_sign[7] 5.588580e+00 0.7708483872 6.965475349 -1.257901e+01  
## ly\_sign[8] 4.606065e+00 0.5909938317 5.928691797 -1.079781e+01  
## ly\_sign[9] 1.074751e+01 1.3870222380 11.243214842 -2.042581e+01  
## ly\_sign[10] 6.430054e+00 0.8579853831 7.484332617 -1.353205e+01  
## ly\_sign[11] -2.949577e+00 0.3851552923 4.703917384 -1.119848e+01  
## ly\_sign[12] 3.774749e+00 0.5428951943 5.344638256 -9.859980e+00  
## Theta\_var[1] 9.497752e-01 0.0052000818 0.139879338 6.175149e-01  
## Theta\_var[2] 7.670683e-01 0.0059374389 0.329606806 1.044828e-02  
## Theta\_var[3] 7.094708e-01 0.0056566077 0.304987111 8.309013e-03  
## Theta\_var[4] 9.181978e-01 0.0011348483 0.129976269 6.836838e-01  
## Theta\_var[5] 4.349755e-01 0.0040158505 0.245193475 5.303505e-03  
## Theta\_var[6] 6.977121e-01 0.0048047573 0.252255851 2.592669e-02  
## Theta\_var[7] 9.940375e-01 0.0011033141 0.119231635 7.869380e-01  
## Theta\_var[8] 9.748976e-01 0.0011652850 0.117289073 7.667406e-01  
## Theta\_var[9] 9.586977e-01 0.0012169868 0.130953725 7.304368e-01  
## Psi\_var[1] 3.703839e-02 0.0047056753 0.089830890 1.967050e-05  
## Psi\_var[2] 1.347995e-02 0.0005408499 0.033121289 1.034331e-05  
## Psi\_var[3] 2.856093e-03 0.0000832143 0.004287994 2.918874e-04  
## Nu\_free[1] -2.801643e-04 0.0005943092 0.074734748 -1.472340e-01  
## Nu\_free[2] 5.647263e-04 0.0006175102 0.082628963 -1.619337e-01  
## Nu\_free[3] -1.969760e-02 0.0007174079 0.089252355 -1.937311e-01  
## Nu\_free[4] -9.955839e-03 0.0007418690 0.086873860 -1.816946e-01  
## Nu\_free[5] -1.229841e-02 0.0006711145 0.079804371 -1.672202e-01  
## Nu\_free[6] -5.067232e-03 0.0005888392 0.081184318 -1.658305e-01  
## Nu\_free[7] -8.327739e-04 0.0006486454 0.082929417 -1.652690e-01  
## Nu\_free[8] -1.158583e-03 0.0006312751 0.079999294 -1.584670e-01  
## Nu\_free[9] -9.153076e-03 0.0006956197 0.088718752 -1.843802e-01  
## lp\_\_ -1.961257e+03 0.2368512198 5.693400054 -1.973270e+03  
## 25% 50% 75% 97.5%  
## ly\_sign[1] -5.537973e+00 -9.253273e-01 1.050010e+00 1.240672e+01  
## ly\_sign[2] -1.258744e+00 4.768735e-01 4.900106e+00 1.560268e+01  
## ly\_sign[3] -2.800496e+00 1.335402e+00 5.034597e+00 1.619842e+01  
## ly\_sign[4] -2.787311e+00 1.381443e+00 5.373816e+00 1.710481e+01  
## ly\_sign[5] 1.737360e-01 1.931205e+00 4.105456e+00 1.071772e+01  
## ly\_sign[6] 8.091022e-01 2.758872e+00 4.971907e+00 1.080345e+01  
## ly\_sign[7] 3.549024e+00 6.218230e+00 9.274168e+00 1.786886e+01  
## ly\_sign[8] 2.672879e+00 5.222315e+00 7.903924e+00 1.458366e+01  
## ly\_sign[9] 8.429780e+00 1.299375e+01 1.725051e+01 2.627659e+01  
## ly\_sign[10] 4.236836e+00 7.429776e+00 1.077586e+01 1.816867e+01  
## ly\_sign[11] -5.592187e+00 -3.290609e+00 -1.118312e+00 8.473373e+00  
## ly\_sign[12] 1.939847e+00 4.166838e+00 6.741411e+00 1.301150e+01  
## Theta\_var[1] 8.773856e-01 9.551718e-01 1.034713e+00 1.198762e+00  
## Theta\_var[2] 6.343144e-01 8.762613e-01 9.894550e-01 1.187023e+00  
## Theta\_var[3] 5.829317e-01 7.933172e-01 9.167522e-01 1.137592e+00  
## Theta\_var[4] 8.298552e-01 9.113039e-01 9.989229e-01 1.192177e+00  
## Theta\_var[5] 2.437139e-01 4.585423e-01 6.178833e-01 8.746287e-01  
## Theta\_var[6] 6.015923e-01 7.563703e-01 8.620973e-01 1.060706e+00  
## Theta\_var[7] 9.104799e-01 9.837319e-01 1.067836e+00 1.255803e+00  
## Theta\_var[8] 8.935301e-01 9.674986e-01 1.049320e+00 1.223378e+00  
## Theta\_var[9] 8.668112e-01 9.489754e-01 1.038942e+00 1.243142e+00  
## Psi\_var[1] 1.789236e-03 8.097526e-03 2.962574e-02 3.410606e-01  
## Psi\_var[2] 7.650175e-04 3.049117e-03 1.087618e-02 9.689001e-02  
## Psi\_var[3] 1.084156e-03 1.774014e-03 3.078239e-03 1.212351e-02  
## Nu\_free[1] -4.985008e-02 1.707001e-04 4.947725e-02 1.462791e-01  
## Nu\_free[2] -5.513508e-02 9.419818e-04 5.653451e-02 1.605135e-01  
## Nu\_free[3] -8.012678e-02 -1.884664e-02 4.007042e-02 1.550810e-01  
## Nu\_free[4] -6.629343e-02 -9.662320e-03 4.775789e-02 1.585010e-01  
## Nu\_free[5] -6.627717e-02 -1.191656e-02 4.088824e-02 1.447606e-01  
## Nu\_free[6] -5.955401e-02 -4.962878e-03 4.907734e-02 1.545633e-01  
## Nu\_free[7] -5.646693e-02 -1.226450e-03 5.534230e-02 1.609604e-01  
## Nu\_free[8] -5.430387e-02 -1.535906e-03 5.170141e-02 1.576897e-01  
## Nu\_free[9] -6.930743e-02 -8.357585e-03 5.187479e-02 1.624061e-01  
## lp\_\_ -1.964940e+03 -1.960934e+03 -1.957190e+03 -1.951005e+03  
## n\_eff Rhat  
## ly\_sign[1] 5378.65068 1.0010792  
## ly\_sign[2] 5558.62642 1.0011665  
## ly\_sign[3] 7088.45363 1.0007478  
## ly\_sign[4] 5193.77533 1.0000175  
## ly\_sign[5] 224.01420 1.0134758  
## ly\_sign[6] 158.81490 1.0232324  
## ly\_sign[7] 81.65139 1.0386532  
## ly\_sign[8] 100.63565 1.0310859  
## ly\_sign[9] 65.70738 1.0525718  
## ly\_sign[10] 76.09329 1.0452459  
## ly\_sign[11] 149.15837 1.0237469  
## ly\_sign[12] 96.91804 1.0359835  
## Theta\_var[1] 723.58040 1.0058889  
## Theta\_var[2] 3081.72613 1.0016136  
## Theta\_var[3] 2907.03894 1.0004918  
## Theta\_var[4] 13117.54395 1.0000058  
## Theta\_var[5] 3727.88698 1.0034737  
## Theta\_var[6] 2756.38317 1.0010073  
## Theta\_var[7] 11678.43461 1.0004773  
## Theta\_var[8] 10130.96403 1.0004973  
## Theta\_var[9] 11578.81098 1.0000869  
## Psi\_var[1] 364.42444 1.0121991  
## Psi\_var[2] 3750.25651 1.0016790  
## Psi\_var[3] 2655.29336 1.0051178  
## Nu\_free[1] 15813.21739 1.0006140  
## Nu\_free[2] 17905.08421 0.9999746  
## Nu\_free[3] 15477.72266 1.0002554  
## Nu\_free[4] 13712.72710 1.0000704  
## Nu\_free[5] 14140.35024 0.9999524  
## Nu\_free[6] 19008.62980 0.9999563  
## Nu\_free[7] 16345.66126 1.0001252  
## Nu\_free[8] 16059.61089 1.0003289  
## Nu\_free[9] 16266.23760 0.9998934  
## lp\_\_ 577.81944 1.0093381  
##   
## $c\_summary  
## , , chains = chain:1  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] -2.325108e+00 6.625787126 -1.699433e+01 -6.033812e+00  
## ly\_sign[2] 1.176041e+00 6.848786022 -1.436705e+01 -1.647519e+00  
## ly\_sign[3] 1.137390e+00 7.412792957 -1.499555e+01 -2.552218e+00  
## ly\_sign[4] 1.155831e+00 7.935486473 -1.578086e+01 -2.911667e+00  
## ly\_sign[5] 1.941890e+00 4.269270222 -8.113094e+00 1.699064e-01  
## ly\_sign[6] 2.595226e+00 4.357222732 -8.465353e+00 8.266491e-01  
## ly\_sign[7] 5.344222e+00 6.738334445 -1.270418e+01 3.373186e+00  
## ly\_sign[8] 4.582327e+00 5.776296767 -1.083998e+01 2.770450e+00  
## ly\_sign[9] 1.055477e+01 11.027868759 -1.983679e+01 8.185921e+00  
## ly\_sign[10] 6.297448e+00 7.427574699 -1.344899e+01 4.152154e+00  
## ly\_sign[11] -2.973118e+00 4.599633493 -1.141200e+01 -5.437977e+00  
## ly\_sign[12] 3.631211e+00 5.309519280 -1.031803e+01 1.948962e+00  
## Theta\_var[1] 9.660673e-01 0.117880334 7.475965e-01 8.853922e-01  
## Theta\_var[2] 7.657695e-01 0.325937049 1.770375e-02 6.271141e-01  
## Theta\_var[3] 7.159216e-01 0.304295871 1.352579e-02 5.861840e-01  
## Theta\_var[4] 9.206466e-01 0.129383282 6.856504e-01 8.309500e-01  
## Theta\_var[5] 4.334066e-01 0.247285708 4.664206e-03 2.378530e-01  
## Theta\_var[6] 6.905330e-01 0.260386313 1.329672e-02 5.936678e-01  
## Theta\_var[7] 9.940147e-01 0.116605209 7.944257e-01 9.083405e-01  
## Theta\_var[8] 9.703473e-01 0.116350678 7.620601e-01 8.881737e-01  
## Theta\_var[9] 9.557919e-01 0.129297831 7.313804e-01 8.648402e-01  
## Psi\_var[1] 2.286541e-02 0.043294503 1.517254e-05 1.488854e-03  
## Psi\_var[2] 1.324627e-02 0.034647371 9.618442e-06 8.023297e-04  
## Psi\_var[3] 3.142463e-03 0.005305389 2.487453e-04 1.110816e-03  
## Nu\_free[1] -3.346883e-03 0.075487348 -1.484752e-01 -5.344272e-02  
## Nu\_free[2] 1.809029e-03 0.083296377 -1.629792e-01 -5.409264e-02  
## Nu\_free[3] -1.898755e-02 0.087643354 -1.894553e-01 -7.766507e-02  
## Nu\_free[4] -8.455720e-03 0.087119158 -1.793756e-01 -6.677055e-02  
## Nu\_free[5] -1.185612e-02 0.080031047 -1.665900e-01 -6.648327e-02  
## Nu\_free[6] -5.285338e-03 0.081034628 -1.673063e-01 -5.990714e-02  
## Nu\_free[7] -1.440659e-03 0.082505099 -1.649365e-01 -5.699601e-02  
## Nu\_free[8] -8.476800e-04 0.077875234 -1.518527e-01 -5.302819e-02  
## Nu\_free[9] -9.727990e-03 0.088988297 -1.870115e-01 -6.942947e-02  
## lp\_\_ -1.961283e+03 5.718666613 -1.973271e+03 -1.965027e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] -1.480468e+00 1.000605e+00 1.225636e+01  
## ly\_sign[2] 3.798734e-01 4.671130e+00 1.601327e+01  
## ly\_sign[3] 1.457654e+00 4.938040e+00 1.638263e+01  
## ly\_sign[4] 1.388415e+00 5.498534e+00 1.716249e+01  
## ly\_sign[5] 1.861508e+00 3.973188e+00 1.060296e+01  
## ly\_sign[6] 2.729160e+00 4.861086e+00 1.091471e+01  
## ly\_sign[7] 5.927430e+00 8.918035e+00 1.646135e+01  
## ly\_sign[8] 5.137731e+00 7.734906e+00 1.431745e+01  
## ly\_sign[9] 1.260145e+01 1.696530e+01 2.600622e+01  
## ly\_sign[10] 7.250774e+00 1.053877e+01 1.815031e+01  
## ly\_sign[11] -3.281589e+00 -1.226773e+00 8.175543e+00  
## ly\_sign[12] 4.092782e+00 6.474278e+00 1.275236e+01  
## Theta\_var[1] 9.630386e-01 1.038150e+00 1.210622e+00  
## Theta\_var[2] 8.711713e-01 9.901320e-01 1.186039e+00  
## Theta\_var[3] 8.008924e-01 9.216844e-01 1.146105e+00  
## Theta\_var[4] 9.148267e-01 1.001735e+00 1.199176e+00  
## Theta\_var[5] 4.585238e-01 6.156753e-01 8.854236e-01  
## Theta\_var[6] 7.560628e-01 8.569656e-01 1.054444e+00  
## Theta\_var[7] 9.840888e-01 1.069832e+00 1.250139e+00  
## Theta\_var[8] 9.643354e-01 1.044606e+00 1.218724e+00  
## Theta\_var[9] 9.463308e-01 1.036411e+00 1.236967e+00  
## Psi\_var[1] 6.757377e-03 2.456743e-02 1.509579e-01  
## Psi\_var[2] 3.092567e-03 1.039101e-02 9.176694e-02  
## Psi\_var[3] 1.857671e-03 3.338213e-03 1.367437e-02  
## Nu\_free[1] -4.336978e-03 4.654155e-02 1.471774e-01  
## Nu\_free[2] 1.566058e-03 5.804841e-02 1.633909e-01  
## Nu\_free[3] -1.837797e-02 3.923767e-02 1.545923e-01  
## Nu\_free[4] -8.037132e-03 5.130150e-02 1.628564e-01  
## Nu\_free[5] -1.244319e-02 4.239348e-02 1.449322e-01  
## Nu\_free[6] -4.578573e-03 4.968852e-02 1.541803e-01  
## Nu\_free[7] -6.987806e-04 5.419361e-02 1.602046e-01  
## Nu\_free[8] -1.732557e-03 5.199215e-02 1.509757e-01  
## Nu\_free[9] -8.226942e-03 5.118610e-02 1.602751e-01  
## lp\_\_ -1.961030e+03 -1.957165e+03 -1.951152e+03  
##   
## , , chains = chain:2  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] -1.611041e+00 6.332976564 -1.542817e+01 -4.930031e+00  
## ly\_sign[2] 1.856783e+00 6.282578487 -1.170958e+01 -8.420703e-01  
## ly\_sign[3] 1.193768e+00 7.355707572 -1.465737e+01 -2.782610e+00  
## ly\_sign[4] 1.018532e+00 7.810593361 -1.569695e+01 -2.998597e+00  
## ly\_sign[5] 2.543249e+00 3.953393361 -3.807153e+00 5.871823e-01  
## ly\_sign[6] 3.415668e+00 3.763831332 -4.037763e+00 1.467740e+00  
## ly\_sign[7] 7.353166e+00 5.421591002 -3.409467e+00 4.375100e+00  
## ly\_sign[8] 5.768797e+00 4.583829498 -3.571835e+00 3.386191e+00  
## ly\_sign[9] 1.368579e+01 7.284616876 -5.652839e+00 9.976040e+00  
## ly\_sign[10] 8.341161e+00 5.359410930 -3.381035e+00 5.447629e+00  
## ly\_sign[11] -3.661573e+00 4.000218989 -1.124813e+01 -5.819343e+00  
## ly\_sign[12] 5.106959e+00 4.180880805 -3.046469e+00 2.753242e+00  
## Theta\_var[1] 9.339090e-01 0.156286192 4.561404e-01 8.665922e-01  
## Theta\_var[2] 7.877296e-01 0.317424339 1.495025e-02 6.908779e-01  
## Theta\_var[3] 6.974538e-01 0.308163308 5.068336e-03 5.653101e-01  
## Theta\_var[4] 9.177170e-01 0.126641647 6.834868e-01 8.337946e-01  
## Theta\_var[5] 4.207670e-01 0.242806364 7.118354e-03 2.237652e-01  
## Theta\_var[6] 6.937611e-01 0.252812224 2.948271e-02 6.019563e-01  
## Theta\_var[7] 9.945967e-01 0.122295046 7.786269e-01 9.111471e-01  
## Theta\_var[8] 9.792764e-01 0.119373438 7.639951e-01 8.950520e-01  
## Theta\_var[9] 9.599668e-01 0.130481595 7.322991e-01 8.688522e-01  
## Psi\_var[1] 5.152765e-02 0.112921147 2.160387e-05 2.085530e-03  
## Psi\_var[2] 1.201396e-02 0.026899303 1.199089e-05 7.963842e-04  
## Psi\_var[3] 2.843419e-03 0.003556589 3.387473e-04 1.126448e-03  
## Nu\_free[1] 3.226489e-03 0.074533458 -1.470785e-01 -4.670311e-02  
## Nu\_free[2] -1.255169e-03 0.082900956 -1.614534e-01 -5.731019e-02  
## Nu\_free[3] -2.141336e-02 0.089249592 -1.999960e-01 -8.251056e-02  
## Nu\_free[4] -1.094863e-02 0.087004198 -1.817005e-01 -6.759283e-02  
## Nu\_free[5] -1.355387e-02 0.081741221 -1.713781e-01 -6.921710e-02  
## Nu\_free[6] -6.382394e-03 0.081133302 -1.737954e-01 -5.844984e-02  
## Nu\_free[7] 9.204812e-04 0.083682951 -1.690099e-01 -5.347113e-02  
## Nu\_free[8] -3.746140e-03 0.080638786 -1.591125e-01 -5.843481e-02  
## Nu\_free[9] -8.591141e-03 0.087939122 -1.858806e-01 -6.736845e-02  
## lp\_\_ -1.960869e+03 5.559421764 -1.972687e+03 -1.964406e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] -4.571199e-01 1.084103e+00 1.201492e+01  
## ly\_sign[2] 5.904503e-01 5.106742e+00 1.571712e+01  
## ly\_sign[3] 1.398508e+00 5.449818e+00 1.570350e+01  
## ly\_sign[4] 1.249961e+00 5.111331e+00 1.699249e+01  
## ly\_sign[5] 2.199304e+00 4.345925e+00 1.083108e+01  
## ly\_sign[6] 3.198696e+00 5.383472e+00 1.090330e+01  
## ly\_sign[7] 6.958742e+00 1.005114e+01 1.900446e+01  
## ly\_sign[8] 5.580429e+00 8.228611e+00 1.481056e+01  
## ly\_sign[9] 1.394995e+01 1.780149e+01 2.695114e+01  
## ly\_sign[10] 8.244646e+00 1.151086e+01 1.858097e+01  
## ly\_sign[11] -3.633631e+00 -1.657242e+00 4.579954e+00  
## ly\_sign[12] 4.803753e+00 7.505362e+00 1.342025e+01  
## Theta\_var[1] 9.478290e-01 1.031294e+00 1.191855e+00  
## Theta\_var[2] 8.890283e-01 9.964094e-01 1.188853e+00  
## Theta\_var[3] 7.834001e-01 9.076429e-01 1.130344e+00  
## Theta\_var[4] 9.106402e-01 9.963331e-01 1.177117e+00  
## Theta\_var[5] 4.426465e-01 6.029256e-01 8.612012e-01  
## Theta\_var[6] 7.516181e-01 8.605408e-01 1.052725e+00  
## Theta\_var[7] 9.837956e-01 1.068915e+00 1.259575e+00  
## Theta\_var[8] 9.703297e-01 1.057471e+00 1.227012e+00  
## Theta\_var[9] 9.514639e-01 1.039618e+00 1.244770e+00  
## Psi\_var[1] 9.538254e-03 3.535201e-02 4.909511e-01  
## Psi\_var[2] 3.005453e-03 1.052348e-02 8.614473e-02  
## Psi\_var[3] 1.791059e-03 3.152942e-03 1.212351e-02  
## Nu\_free[1] 5.647440e-03 5.348842e-02 1.425975e-01  
## Nu\_free[2] -3.592309e-04 5.440443e-02 1.594320e-01  
## Nu\_free[3] -2.042124e-02 3.750795e-02 1.540619e-01  
## Nu\_free[4] -1.306778e-02 4.662797e-02 1.581721e-01  
## Nu\_free[5] -1.147578e-02 3.913756e-02 1.498365e-01  
## Nu\_free[6] -6.413300e-03 4.581844e-02 1.541571e-01  
## Nu\_free[7] 3.653865e-04 5.677537e-02 1.632487e-01  
## Nu\_free[8] -3.598670e-03 4.831762e-02 1.588179e-01  
## Nu\_free[9] -7.441262e-03 5.278063e-02 1.605498e-01  
## lp\_\_ -1.960432e+03 -1.956857e+03 -1.951076e+03  
##   
## , , chains = chain:3  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] -1.924381e+00 6.63830310 -1.562754e+01 -5.501903e+00  
## ly\_sign[2] 1.420494e+00 6.48788561 -1.308651e+01 -1.343843e+00  
## ly\_sign[3] 8.914193e-01 7.48189817 -1.546633e+01 -2.944257e+00  
## ly\_sign[4] 1.309279e+00 7.53822397 -1.526840e+01 -2.355169e+00  
## ly\_sign[5] 1.335158e+00 4.90994243 -1.031901e+01 -6.178280e-01  
## ly\_sign[6] 1.637870e+00 5.00313402 -9.865713e+00 -5.801054e-01  
## ly\_sign[7] 3.767142e+00 8.24875145 -1.522550e+01 1.450703e+00  
## ly\_sign[8] 3.198802e+00 7.15467124 -1.320969e+01 5.978723e-01  
## ly\_sign[9] 7.535801e+00 13.95263843 -2.368947e+01 4.556304e+00  
## ly\_sign[10] 4.375069e+00 8.95616893 -1.621041e+01 1.321251e+00  
## ly\_sign[11] -2.053980e+00 5.44827774 -1.113025e+01 -5.382845e+00  
## ly\_sign[12] 2.499226e+00 6.30357752 -1.254400e+01 2.338478e-01  
## Theta\_var[1] 9.594568e-01 0.12185990 7.228131e-01 8.832930e-01  
## Theta\_var[2] 7.604428e-01 0.33358961 6.529117e-03 6.186217e-01  
## Theta\_var[3] 7.098693e-01 0.30593861 8.919633e-03 5.803751e-01  
## Theta\_var[4] 9.152566e-01 0.13057858 6.851815e-01 8.245941e-01  
## Theta\_var[5] 4.462900e-01 0.24877397 4.244980e-03 2.580856e-01  
## Theta\_var[6] 7.035581e-01 0.24802795 4.778918e-02 6.058845e-01  
## Theta\_var[7] 9.962999e-01 0.11830344 7.905096e-01 9.156207e-01  
## Theta\_var[8] 9.750927e-01 0.11606622 7.695941e-01 8.960869e-01  
## Theta\_var[9] 9.581628e-01 0.13253197 7.243078e-01 8.665793e-01  
## Psi\_var[1] 2.771366e-02 0.05598070 1.926521e-05 1.745818e-03  
## Psi\_var[2] 1.444086e-02 0.03308784 1.024211e-05 7.766900e-04  
## Psi\_var[3] 2.544550e-03 0.00353767 2.607616e-04 9.895968e-04  
## Nu\_free[1] -1.500429e-03 0.07441512 -1.457895e-01 -5.152937e-02  
## Nu\_free[2] 1.383370e-03 0.08314144 -1.611271e-01 -5.554459e-02  
## Nu\_free[3] -1.760981e-02 0.09073524 -1.928624e-01 -7.920964e-02  
## Nu\_free[4] -8.894280e-03 0.08715786 -1.848193e-01 -6.540466e-02  
## Nu\_free[5] -1.201013e-02 0.07906565 -1.669949e-01 -6.593764e-02  
## Nu\_free[6] -4.998382e-03 0.08115730 -1.632240e-01 -5.937378e-02  
## Nu\_free[7] -2.493393e-03 0.08312472 -1.664993e-01 -5.883168e-02  
## Nu\_free[8] -1.789083e-03 0.08112790 -1.602199e-01 -5.543510e-02  
## Nu\_free[9] -9.298282e-03 0.08958160 -1.859643e-01 -6.951029e-02  
## lp\_\_ -1.961909e+03 5.71620484 -1.973789e+03 -1.965551e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] -1.158981e+00 1.062510e+00 1.302224e+01  
## ly\_sign[2] 5.172511e-01 4.878620e+00 1.508362e+01  
## ly\_sign[3] 1.299869e+00 4.854751e+00 1.621575e+01  
## ly\_sign[4] 1.532026e+00 5.486575e+00 1.654810e+01  
## ly\_sign[5] 1.616950e+00 3.912641e+00 1.031829e+01  
## ly\_sign[6] 2.197295e+00 4.590435e+00 1.049330e+01  
## ly\_sign[7] 5.627643e+00 8.721671e+00 1.685831e+01  
## ly\_sign[8] 4.688367e+00 7.736523e+00 1.450340e+01  
## ly\_sign[9] 1.200174e+01 1.666638e+01 2.594888e+01  
## ly\_sign[10] 6.593503e+00 1.021325e+01 1.783163e+01  
## ly\_sign[11] -2.926050e+00 2.710479e-01 1.049246e+01  
## ly\_sign[12] 3.647314e+00 6.313631e+00 1.252242e+01  
## Theta\_var[1] 9.585189e-01 1.037052e+00 1.198861e+00  
## Theta\_var[2] 8.722974e-01 9.863755e-01 1.182341e+00  
## Theta\_var[3] 7.925013e-01 9.211827e-01 1.137090e+00  
## Theta\_var[4] 9.067576e-01 9.993222e-01 1.193908e+00  
## Theta\_var[5] 4.697197e-01 6.305119e-01 8.796144e-01  
## Theta\_var[6] 7.606814e-01 8.653664e-01 1.075530e+00  
## Theta\_var[7] 9.858547e-01 1.067964e+00 1.259022e+00  
## Theta\_var[8] 9.687869e-01 1.048888e+00 1.212206e+00  
## Theta\_var[9] 9.478581e-01 1.038070e+00 1.251208e+00  
## Psi\_var[1] 7.988292e-03 2.762072e-02 1.906363e-01  
## Psi\_var[2] 3.216814e-03 1.174651e-02 1.068866e-01  
## Psi\_var[3] 1.639934e-03 2.767047e-03 1.081009e-02  
## Nu\_free[1] -2.370037e-03 4.821299e-02 1.476280e-01  
## Nu\_free[2] 9.658844e-04 5.735962e-02 1.663702e-01  
## Nu\_free[3] -1.741647e-02 4.265458e-02 1.599866e-01  
## Nu\_free[4] -7.683624e-03 4.913848e-02 1.585010e-01  
## Nu\_free[5] -1.202313e-02 4.066141e-02 1.436065e-01  
## Nu\_free[6] -5.005315e-03 4.910916e-02 1.558532e-01  
## Nu\_free[7] -2.915930e-03 5.397961e-02 1.595834e-01  
## Nu\_free[8] -2.081994e-03 5.237881e-02 1.581348e-01  
## Nu\_free[9] -9.588001e-03 5.073189e-02 1.690268e-01  
## lp\_\_ -1.961688e+03 -1.957877e+03 -1.951373e+03  
##   
## , , chains = chain:4  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] -2.041591e+00 6.495809694 -1.622097e+01 -5.629778e+00  
## ly\_sign[2] 1.587155e+00 6.290682863 -1.163910e+01 -1.144008e+00  
## ly\_sign[3] 9.478338e-01 7.532355526 -1.540759e+01 -2.844280e+00  
## ly\_sign[4] 1.250295e+00 7.818054092 -1.563959e+01 -2.756535e+00  
## ly\_sign[5] 2.205812e+00 4.069939812 -6.995760e+00 3.003919e-01  
## ly\_sign[6] 2.752851e+00 4.230496317 -7.058374e+00 9.019006e-01  
## ly\_sign[7] 5.889791e+00 6.684059093 -1.192680e+01 3.822642e+00  
## ly\_sign[8] 4.874335e+00 5.625537517 -9.597498e+00 2.898531e+00  
## ly\_sign[9] 1.121368e+01 10.823717836 -1.979645e+01 8.740669e+00  
## ly\_sign[10] 6.706537e+00 7.212387141 -1.297806e+01 4.458901e+00  
## ly\_sign[11] -3.109638e+00 4.510327021 -1.109523e+01 -5.685130e+00  
## ly\_sign[12] 3.861600e+00 5.043941958 -8.775715e+00 1.936117e+00  
## Theta\_var[1] 9.396676e-01 0.156180875 4.759491e-01 8.731201e-01  
## Theta\_var[2] 7.543315e-01 0.340173136 5.637463e-03 5.976750e-01  
## Theta\_var[3] 7.146383e-01 0.301251406 7.490835e-03 5.984934e-01  
## Theta\_var[4] 9.191710e-01 0.133194318 6.799683e-01 8.317109e-01  
## Theta\_var[5] 4.394385e-01 0.241183440 5.701660e-03 2.576412e-01  
## Theta\_var[6] 7.029961e-01 0.247402624 2.738286e-02 6.033265e-01  
## Theta\_var[7] 9.912389e-01 0.119630422 7.808048e-01 9.078332e-01  
## Theta\_var[8] 9.748739e-01 0.117202268 7.719532e-01 8.947240e-01  
## Theta\_var[9] 9.608693e-01 0.131463478 7.353580e-01 8.671431e-01  
## Psi\_var[1] 4.604687e-02 0.118087801 2.687150e-05 1.963602e-03  
## Psi\_var[2] 1.421870e-02 0.036962761 1.009070e-05 6.935786e-04  
## Psi\_var[3] 2.893941e-03 0.004479546 3.080216e-04 1.097992e-03  
## Nu\_free[1] 5.001661e-04 0.074360550 -1.470187e-01 -4.828505e-02  
## Nu\_free[2] 3.216756e-04 0.081150073 -1.631452e-01 -5.387268e-02  
## Nu\_free[3] -2.077969e-02 0.089330855 -1.946474e-01 -8.088374e-02  
## Nu\_free[4] -1.152473e-02 0.086197465 -1.821248e-01 -6.584554e-02  
## Nu\_free[5] -1.177354e-02 0.078349655 -1.617795e-01 -6.468348e-02  
## Nu\_free[6] -3.602815e-03 0.081411743 -1.618647e-01 -6.058996e-02  
## Nu\_free[7] -3.175244e-04 0.082384257 -1.623974e-01 -5.673511e-02  
## Nu\_free[8] 1.748573e-03 0.080242396 -1.566397e-01 -5.059478e-02  
## Nu\_free[9] -8.994893e-03 0.088380033 -1.774665e-01 -7.037636e-02  
## lp\_\_ -1.960966e+03 5.721169942 -1.973183e+03 -1.964676e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] -9.359886e-01 1.037809e+00 1.215807e+01  
## ly\_sign[2] 4.096074e-01 4.833616e+00 1.571434e+01  
## ly\_sign[3] 1.193034e+00 4.933678e+00 1.676425e+01  
## ly\_sign[4] 1.322396e+00 5.412378e+00 1.757270e+01  
## ly\_sign[5] 2.011113e+00 4.181132e+00 1.084936e+01  
## ly\_sign[6] 2.785543e+00 5.005359e+00 1.082063e+01  
## ly\_sign[7] 6.397294e+00 9.371226e+00 1.775656e+01  
## ly\_sign[8] 5.305452e+00 7.905673e+00 1.480239e+01  
## ly\_sign[9] 1.316517e+01 1.745180e+01 2.602611e+01  
## ly\_sign[10] 7.477017e+00 1.078894e+01 1.825795e+01  
## ly\_sign[11] -3.318133e+00 -1.290385e+00 7.721884e+00  
## ly\_sign[12] 4.104465e+00 6.648316e+00 1.301150e+01  
## Theta\_var[1] 9.508939e-01 1.031158e+00 1.193162e+00  
## Theta\_var[2] 8.707903e-01 9.837670e-01 1.187968e+00  
## Theta\_var[3] 7.946432e-01 9.164157e-01 1.131923e+00  
## Theta\_var[4] 9.133663e-01 1.000500e+00 1.196664e+00  
## Theta\_var[5] 4.618202e-01 6.205853e-01 8.660544e-01  
## Theta\_var[6] 7.571651e-01 8.649769e-01 1.058639e+00  
## Theta\_var[7] 9.811910e-01 1.063719e+00 1.259777e+00  
## Theta\_var[8] 9.658362e-01 1.048421e+00 1.229931e+00  
## Theta\_var[9] 9.501772e-01 1.041906e+00 1.241955e+00  
## Psi\_var[1] 8.445111e-03 3.222279e-02 4.771994e-01  
## Psi\_var[2] 2.888117e-03 1.098364e-02 1.066441e-01  
## Psi\_var[3] 1.814828e-03 3.102626e-03 1.197637e-02  
## Nu\_free[1] 7.904433e-04 4.978899e-02 1.464198e-01  
## Nu\_free[2] 1.059512e-03 5.633105e-02 1.547046e-01  
## Nu\_free[3] -1.953618e-02 4.038446e-02 1.539552e-01  
## Nu\_free[4] -1.027034e-02 4.282091e-02 1.547694e-01  
## Nu\_free[5] -1.221166e-02 4.089537e-02 1.409404e-01  
## Nu\_free[6] -3.673752e-03 5.133844e-02 1.537010e-01  
## Nu\_free[7] -1.725380e-03 5.677420e-02 1.610071e-01  
## Nu\_free[8] 1.096181e-03 5.425018e-02 1.605200e-01  
## Nu\_free[9] -7.659540e-03 5.254451e-02 1.597219e-01  
## lp\_\_ -1.960585e+03 -1.956988e+03 -1.950388e+03

## bfit.3factors

tmp2 = blavInspect(bfit.3factors, "mcobj")  
summary(tmp2)

## $summary  
## mean se\_mean sd 2.5%  
## ly\_sign[1] 1.354524e+00 0.1954504251 4.33532111 -9.145753e+00  
## ly\_sign[2] 4.859798e+00 0.3784654038 7.52177000 -1.409392e+01  
## ly\_sign[3] 4.935105e+00 0.0605472627 3.35072711 1.393824e+00  
## ly\_sign[4] 2.574428e+00 0.0353039916 1.92718281 7.043932e-01  
## ly\_sign[5] -9.592566e-01 0.2152944732 6.47129675 -1.481303e+01  
## ly\_sign[6] 1.384711e+00 0.1018350421 4.18891736 -8.349543e+00  
## Theta\_var[1] 9.873628e-01 0.0009687007 0.10846161 7.955878e-01  
## Theta\_var[2] 9.633324e-01 0.0024231663 0.13491866 7.308459e-01  
## Theta\_var[3] 5.683891e-01 0.0092798253 0.32436166 2.855246e-03  
## Theta\_var[4] 9.477345e-01 0.0010228488 0.12563397 7.275023e-01  
## Theta\_var[5] 3.972868e-01 0.0031938856 0.23304013 3.284184e-03  
## Theta\_var[6] 8.456695e-01 0.0013835914 0.13427580 5.843129e-01  
## Theta\_var[7] 9.416347e-01 0.0040794461 0.15636566 6.197006e-01  
## Theta\_var[8] 9.214965e-01 0.0044366971 0.17298046 4.687489e-01  
## Theta\_var[9] 9.602973e-01 0.0013622302 0.13978433 7.060427e-01  
## Psi\_cov[1] 1.003962e-02 0.0005159838 0.01363536 -9.888211e-03  
## Psi\_cov[2] 6.980726e-03 0.0004010852 0.01692234 -1.047264e-02  
## Psi\_cov[3] 2.745718e-02 0.0009963787 0.03774913 -9.578360e-03  
## Psi\_var[1] 2.046331e-02 0.0005947129 0.02966947 2.907956e-04  
## Psi\_var[2] 5.405203e-02 0.0006626937 0.05111972 3.030577e-03  
## Psi\_var[3] 6.221343e-02 0.0039090658 0.10923020 1.599842e-04  
## Nu\_free[1] -8.241997e-04 0.0006478665 0.07369780 -1.457324e-01  
## Nu\_free[2] -3.006532e-03 0.0006494762 0.08275157 -1.655037e-01  
## Nu\_free[3] -2.109230e-02 0.0007757347 0.08979788 -1.979288e-01  
## Nu\_free[4] -6.779408e-03 0.0007520579 0.08682307 -1.784953e-01  
## Nu\_free[5] -1.575712e-02 0.0006783610 0.08100389 -1.755925e-01  
## Nu\_free[6] -3.557816e-03 0.0006803025 0.08276549 -1.668938e-01  
## Nu\_free[7] -3.693032e-03 0.0007427939 0.08332072 -1.679348e-01  
## Nu\_free[8] -4.252396e-04 0.0006449525 0.08025079 -1.594698e-01  
## Nu\_free[9] -7.550181e-03 0.0007646164 0.09068668 -1.862119e-01  
## lp\_\_ -1.940982e+03 0.1732656085 5.62298870 -1.952579e+03  
## 25% 50% 75% 97.5%  
## ly\_sign[1] 3.663516e-01 1.289626e+00 2.935882e+00 1.045605e+01  
## ly\_sign[2] 2.878266e+00 5.257518e+00 8.681338e+00 1.875142e+01  
## ly\_sign[3] 2.636754e+00 3.920839e+00 6.210577e+00 1.417996e+01  
## ly\_sign[4] 1.366204e+00 1.994195e+00 3.088109e+00 7.950630e+00  
## ly\_sign[5] -3.217348e+00 -7.956915e-01 4.296323e-02 1.472862e+01  
## ly\_sign[6] 3.519649e-01 1.003572e+00 2.472278e+00 1.104660e+01  
## Theta\_var[1] 9.122167e-01 9.800381e-01 1.055481e+00 1.218372e+00  
## Theta\_var[2] 8.793143e-01 9.593812e-01 1.044598e+00 1.230291e+00  
## Theta\_var[3] 2.966932e-01 6.308744e-01 8.228666e-01 1.089984e+00  
## Theta\_var[4] 8.607413e-01 9.382392e-01 1.023439e+00 1.222858e+00  
## Theta\_var[5] 2.106374e-01 4.136144e-01 5.708307e-01 8.254796e-01  
## Theta\_var[6] 7.615152e-01 8.438122e-01 9.307084e-01 1.113437e+00  
## Theta\_var[7] 8.550220e-01 9.454325e-01 1.037804e+00 1.231600e+00  
## Theta\_var[8] 8.489624e-01 9.340212e-01 1.020872e+00 1.202434e+00  
## Theta\_var[9] 8.694283e-01 9.551875e-01 1.045481e+00 1.246638e+00  
## Psi\_cov[1] 2.724426e-03 7.200617e-03 1.472670e-02 4.487811e-02  
## Psi\_cov[2] -7.158860e-04 1.222729e-03 8.726140e-03 5.651922e-02  
## Psi\_cov[3] 2.742138e-03 1.348405e-02 4.061003e-02 1.316865e-01  
## Psi\_var[1] 2.589078e-03 8.740909e-03 2.598808e-02 1.054764e-01  
## Psi\_var[2] 1.637940e-02 3.873749e-02 7.583357e-02 1.913043e-01  
## Psi\_var[3] 2.124049e-03 1.507663e-02 8.016532e-02 3.591349e-01  
## Nu\_free[1] -5.080658e-02 -1.424229e-03 4.887923e-02 1.458804e-01  
## Nu\_free[2] -5.815070e-02 -2.770761e-03 5.249559e-02 1.583788e-01  
## Nu\_free[3] -8.109559e-02 -2.148214e-02 3.887012e-02 1.537099e-01  
## Nu\_free[4] -6.563285e-02 -6.403223e-03 5.237073e-02 1.644742e-01  
## Nu\_free[5] -6.931067e-02 -1.599730e-02 3.866223e-02 1.419519e-01  
## Nu\_free[6] -5.838010e-02 -3.014676e-03 5.258338e-02 1.560009e-01  
## Nu\_free[7] -6.006761e-02 -3.257018e-03 5.225162e-02 1.610549e-01  
## Nu\_free[8] -5.505714e-02 3.917255e-05 5.305933e-02 1.575061e-01  
## Nu\_free[9] -6.767888e-02 -6.592166e-03 5.290319e-02 1.693893e-01  
## lp\_\_ -1.944699e+03 -1.940757e+03 -1.936982e+03 -1.930726e+03  
## n\_eff Rhat  
## ly\_sign[1] 492.0048 1.0069151  
## ly\_sign[2] 394.9915 1.0058524  
## ly\_sign[3] 3062.5916 1.0012577  
## ly\_sign[4] 2979.8761 1.0018605  
## ly\_sign[5] 903.4765 1.0067664  
## ly\_sign[6] 1692.0340 1.0039566  
## Theta\_var[1] 12536.4011 1.0003088  
## Theta\_var[2] 3100.1137 1.0004204  
## Theta\_var[3] 1221.7418 1.0015409  
## Theta\_var[4] 15086.5972 1.0002124  
## Theta\_var[5] 5323.8119 1.0008097  
## Theta\_var[6] 9418.4577 1.0003248  
## Theta\_var[7] 1469.1981 1.0020331  
## Theta\_var[8] 1520.1084 1.0043937  
## Theta\_var[9] 10529.6986 1.0004262  
## Psi\_cov[1] 698.3304 1.0044073  
## Psi\_cov[2] 1780.1133 1.0018961  
## Psi\_cov[3] 1435.3737 1.0027069  
## Psi\_var[1] 2488.8846 1.0020470  
## Psi\_var[2] 5950.4695 1.0005400  
## Psi\_var[3] 780.7995 1.0038079  
## Nu\_free[1] 12940.1114 1.0002503  
## Nu\_free[2] 16234.0157 1.0000609  
## Nu\_free[3] 13400.0286 1.0002729  
## Nu\_free[4] 13328.0844 1.0002650  
## Nu\_free[5] 14259.0305 1.0001812  
## Nu\_free[6] 14801.1142 1.0001336  
## Nu\_free[7] 12582.5705 0.9999322  
## Nu\_free[8] 15482.5746 1.0004191  
## Nu\_free[9] 14066.9437 1.0004131  
## lp\_\_ 1053.1972 1.0044920  
##   
## $c\_summary  
## , , chains = chain:1  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 9.187722e-01 4.65979430 -1.071494e+01 1.889140e-01  
## ly\_sign[2] 4.161605e+00 8.00989373 -1.557421e+01 2.447715e+00  
## ly\_sign[3] 5.038573e+00 3.43510803 1.419024e+00 2.684694e+00  
## ly\_sign[4] 2.599061e+00 2.06334789 7.058854e-01 1.354374e+00  
## ly\_sign[5] -1.581805e+00 5.90256056 -1.444222e+01 -3.601190e+00  
## ly\_sign[6] 1.808154e+00 3.77731547 -5.506764e+00 4.775430e-01  
## Theta\_var[1] 9.889707e-01 0.10756107 7.947850e-01 9.156869e-01  
## Theta\_var[2] 9.649896e-01 0.13471042 7.258301e-01 8.766592e-01  
## Theta\_var[3] 5.827243e-01 0.32688479 1.553074e-03 3.127299e-01  
## Theta\_var[4] 9.478509e-01 0.12373335 7.274526e-01 8.625572e-01  
## Theta\_var[5] 3.844518e-01 0.23499407 2.905560e-03 1.859935e-01  
## Theta\_var[6] 8.495862e-01 0.13192945 5.921328e-01 7.660068e-01  
## Theta\_var[7] 9.403461e-01 0.15447323 6.078188e-01 8.497794e-01  
## Theta\_var[8] 9.236638e-01 0.17129039 4.956790e-01 8.506822e-01  
## Theta\_var[9] 9.562188e-01 0.13377222 7.132098e-01 8.658049e-01  
## Psi\_cov[1] 9.129216e-03 0.01387267 -1.046952e-02 2.044232e-03  
## Psi\_cov[2] 7.088506e-03 0.01756440 -1.102666e-02 -7.774688e-04  
## Psi\_cov[3] 2.927820e-02 0.03821579 -8.188567e-03 4.152415e-03  
## Psi\_var[1] 1.887627e-02 0.02736280 2.956536e-04 2.447272e-03  
## Psi\_var[2] 5.337835e-02 0.05101671 2.994407e-03 1.625848e-02  
## Psi\_var[3] 6.553543e-02 0.10645437 2.037040e-04 2.626825e-03  
## Nu\_free[1] -2.604468e-03 0.07437161 -1.514508e-01 -5.393643e-02  
## Nu\_free[2] -4.479128e-03 0.08163481 -1.675655e-01 -5.825419e-02  
## Nu\_free[3] -2.280641e-02 0.09024122 -2.080573e-01 -8.197798e-02  
## Nu\_free[4] -7.538962e-03 0.08524899 -1.752485e-01 -6.537444e-02  
## Nu\_free[5] -1.687530e-02 0.08155412 -1.770837e-01 -7.123403e-02  
## Nu\_free[6] -2.596719e-03 0.08147075 -1.597159e-01 -5.662244e-02  
## Nu\_free[7] -4.645894e-03 0.08622629 -1.780269e-01 -6.170373e-02  
## Nu\_free[8] 2.655182e-04 0.07883499 -1.538543e-01 -5.339256e-02  
## Nu\_free[9] -1.016961e-02 0.09123194 -1.893615e-01 -7.018459e-02  
## lp\_\_ -1.940928e+03 5.50021527 -1.952068e+03 -1.944653e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 1.186028e+00 2.765191e+00 9.955255e+00  
## ly\_sign[2] 5.043565e+00 8.527164e+00 1.790950e+01  
## ly\_sign[3] 4.002655e+00 6.362711e+00 1.461906e+01  
## ly\_sign[4] 1.969053e+00 3.131126e+00 8.166375e+00  
## ly\_sign[5] -9.428719e-01 -1.409417e-01 1.346095e+01  
## ly\_sign[6] 1.092675e+00 2.617835e+00 1.142135e+01  
## Theta\_var[1] 9.815108e-01 1.058445e+00 1.220085e+00  
## Theta\_var[2] 9.619440e-01 1.050308e+00 1.233677e+00  
## Theta\_var[3] 6.554877e-01 8.312142e-01 1.101762e+00  
## Theta\_var[4] 9.395325e-01 1.020363e+00 1.213033e+00  
## Theta\_var[5] 4.012858e-01 5.629853e-01 8.068988e-01  
## Theta\_var[6] 8.471781e-01 9.321919e-01 1.118762e+00  
## Theta\_var[7] 9.430472e-01 1.041483e+00 1.231141e+00  
## Theta\_var[8] 9.341987e-01 1.023889e+00 1.194925e+00  
## Theta\_var[9] 9.508808e-01 1.039661e+00 1.234649e+00  
## Psi\_cov[1] 6.439300e-03 1.376868e-02 4.355747e-02  
## Psi\_cov[2] 1.170708e-03 8.923832e-03 5.882666e-02  
## Psi\_cov[3] 1.554268e-02 4.198703e-02 1.328719e-01  
## Psi\_var[1] 7.902901e-03 2.422893e-02 9.614679e-02  
## Psi\_var[2] 3.844778e-02 7.399239e-02 1.866522e-01  
## Psi\_var[3] 1.814049e-02 8.690962e-02 3.725675e-01  
## Nu\_free[1] -2.964472e-03 4.718673e-02 1.424026e-01  
## Nu\_free[2] -2.569422e-03 4.949135e-02 1.555407e-01  
## Nu\_free[3] -2.467603e-02 3.709397e-02 1.526842e-01  
## Nu\_free[4] -6.258362e-03 5.090919e-02 1.571423e-01  
## Nu\_free[5] -1.665208e-02 3.800520e-02 1.435252e-01  
## Nu\_free[6] -2.301077e-03 5.299975e-02 1.546799e-01  
## Nu\_free[7] -4.611579e-03 5.168441e-02 1.684284e-01  
## Nu\_free[8] 1.559946e-03 5.359738e-02 1.548003e-01  
## Nu\_free[9] -8.591403e-03 5.023622e-02 1.706829e-01  
## lp\_\_ -1.940703e+03 -1.937040e+03 -1.930810e+03  
##   
## , , chains = chain:2  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 1.010398e+00 4.35063160 -9.682317e+00 1.969265e-01  
## ly\_sign[2] 4.283002e+00 7.82101040 -1.437526e+01 2.494375e+00  
## ly\_sign[3] 5.072766e+00 3.44269555 1.395835e+00 2.675281e+00  
## ly\_sign[4] 2.683372e+00 1.97819650 6.949316e-01 1.410518e+00  
## ly\_sign[5] -6.546900e-01 6.90026697 -1.547466e+01 -3.316606e+00  
## ly\_sign[6] 1.128838e+00 4.47196975 -9.856506e+00 2.641879e-01  
## Theta\_var[1] 9.848502e-01 0.10967413 7.945562e-01 9.101882e-01  
## Theta\_var[2] 9.593645e-01 0.14832597 7.286837e-01 8.812654e-01  
## Theta\_var[3] 5.748599e-01 0.32603645 1.295275e-03 3.040623e-01  
## Theta\_var[4] 9.502063e-01 0.12713881 7.294797e-01 8.642224e-01  
## Theta\_var[5] 4.050231e-01 0.23241456 3.667299e-03 2.241709e-01  
## Theta\_var[6] 8.436155e-01 0.13360507 5.852832e-01 7.585090e-01  
## Theta\_var[7] 9.525127e-01 0.14114294 6.695761e-01 8.647240e-01  
## Theta\_var[8] 9.079162e-01 0.19611301 2.978899e-01 8.430886e-01  
## Theta\_var[9] 9.671570e-01 0.14093424 7.157220e-01 8.741475e-01  
## Psi\_cov[1] 9.307798e-03 0.01367102 -1.111757e-02 2.155202e-03  
## Psi\_cov[2] 6.199291e-03 0.01577359 -1.062250e-02 -8.106499e-04  
## Psi\_cov[3] 2.434901e-02 0.03552397 -9.987930e-03 1.545983e-03  
## Psi\_var[1] 2.070085e-02 0.03010889 2.703992e-04 2.421651e-03  
## Psi\_var[2] 5.209803e-02 0.05115999 2.822454e-03 1.489540e-02  
## Psi\_var[3] 5.196775e-02 0.08294427 1.518679e-04 1.804826e-03  
## Nu\_free[1] 1.681723e-03 0.07534627 -1.410555e-01 -5.091044e-02  
## Nu\_free[2] -9.885279e-04 0.08237183 -1.572451e-01 -5.795997e-02  
## Nu\_free[3] -1.993617e-02 0.08919817 -1.912610e-01 -8.282156e-02  
## Nu\_free[4] -8.601768e-03 0.08756537 -1.764884e-01 -6.852901e-02  
## Nu\_free[5] -1.614963e-02 0.08149731 -1.743000e-01 -6.985043e-02  
## Nu\_free[6] -2.956202e-03 0.08278904 -1.696683e-01 -5.739600e-02  
## Nu\_free[7] -3.544994e-03 0.08143497 -1.633859e-01 -6.079197e-02  
## Nu\_free[8] 1.347294e-03 0.08093494 -1.586401e-01 -5.483983e-02  
## Nu\_free[9] -9.549462e-03 0.09173164 -1.894640e-01 -6.966051e-02  
## lp\_\_ -1.941501e+03 5.72755526 -1.953339e+03 -1.945208e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 1.169856e+00 2.719425e+00 9.862065e+00  
## ly\_sign[2] 5.020772e+00 8.394884e+00 1.849728e+01  
## ly\_sign[3] 4.034388e+00 6.491535e+00 1.449578e+01  
## ly\_sign[4] 2.077812e+00 3.242013e+00 8.376096e+00  
## ly\_sign[5] -7.736338e-01 2.513192e-01 1.521409e+01  
## ly\_sign[6] 9.618311e-01 2.466724e+00 1.086336e+01  
## Theta\_var[1] 9.777616e-01 1.051869e+00 1.223210e+00  
## Theta\_var[2] 9.578789e-01 1.043023e+00 1.226808e+00  
## Theta\_var[3] 6.388971e-01 8.322787e-01 1.090361e+00  
## Theta\_var[4] 9.393545e-01 1.023747e+00 1.238838e+00  
## Theta\_var[5] 4.184032e-01 5.758587e-01 8.325526e-01  
## Theta\_var[6] 8.420658e-01 9.301765e-01 1.103226e+00  
## Theta\_var[7] 9.515052e-01 1.042660e+00 1.235225e+00  
## Theta\_var[8] 9.306680e-01 1.015242e+00 1.195658e+00  
## Theta\_var[9] 9.626064e-01 1.050465e+00 1.261647e+00  
## Psi\_cov[1] 6.648194e-03 1.406526e-02 4.371729e-02  
## Psi\_cov[2] 9.728066e-04 7.615013e-03 5.643830e-02  
## Psi\_cov[3] 1.087206e-02 3.651803e-02 1.221622e-01  
## Psi\_var[1] 8.676476e-03 2.588058e-02 1.127606e-01  
## Psi\_var[2] 3.557049e-02 7.226376e-02 1.901319e-01  
## Psi\_var[3] 1.158550e-02 7.083124e-02 3.011807e-01  
## Nu\_free[1] 9.436281e-04 5.282085e-02 1.495621e-01  
## Nu\_free[2] -2.488296e-03 5.487968e-02 1.615704e-01  
## Nu\_free[3] -2.044498e-02 4.144021e-02 1.536969e-01  
## Nu\_free[4] -8.997660e-03 5.123925e-02 1.654764e-01  
## Nu\_free[5] -1.691139e-02 3.918508e-02 1.419519e-01  
## Nu\_free[6] -2.343943e-03 5.267709e-02 1.547537e-01  
## Nu\_free[7] -2.136448e-03 5.172736e-02 1.555758e-01  
## Nu\_free[8] 4.280748e-03 5.476055e-02 1.623435e-01  
## Nu\_free[9] -8.673279e-03 5.107207e-02 1.648340e-01  
## lp\_\_ -1.941257e+03 -1.937426e+03 -1.931203e+03  
##   
## , , chains = chain:3  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 1.794251e+00 4.16889598 -7.762085e+00 5.175906e-01  
## ly\_sign[2] 5.546242e+00 6.96505862 -1.253943e+01 3.186384e+00  
## ly\_sign[3] 4.853885e+00 3.29681679 1.412570e+00 2.623518e+00  
## ly\_sign[4] 2.521966e+00 1.88348091 7.089766e-01 1.340740e+00  
## ly\_sign[5] -8.993021e-01 6.31117707 -1.431367e+01 -2.981550e+00  
## ly\_sign[6] 1.452706e+00 4.12728684 -8.263333e+00 3.928061e-01  
## Theta\_var[1] 9.872316e-01 0.10951063 7.921762e-01 9.112353e-01  
## Theta\_var[2] 9.648690e-01 0.13070098 7.262569e-01 8.785253e-01  
## Theta\_var[3] 5.610513e-01 0.31942374 5.210638e-03 2.934943e-01  
## Theta\_var[4] 9.478011e-01 0.12554158 7.269755e-01 8.602994e-01  
## Theta\_var[5] 3.954979e-01 0.23215355 2.839201e-03 2.097733e-01  
## Theta\_var[6] 8.455047e-01 0.13714214 5.756650e-01 7.620186e-01  
## Theta\_var[7] 9.425586e-01 0.14288072 6.452703e-01 8.546320e-01  
## Theta\_var[8] 9.322967e-01 0.15048387 5.885865e-01 8.508448e-01  
## Theta\_var[9] 9.567581e-01 0.14507639 6.837062e-01 8.680172e-01  
## Psi\_cov[1] 1.094045e-02 0.01361839 -8.689942e-03 3.331779e-03  
## Psi\_cov[2] 7.102251e-03 0.01660802 -1.022433e-02 -6.577669e-04  
## Psi\_cov[3] 2.858093e-02 0.03758672 -9.441869e-03 3.030087e-03  
## Psi\_var[1] 2.153302e-02 0.03177578 2.981526e-04 2.795042e-03  
## Psi\_var[2] 5.470349e-02 0.05047467 3.133309e-03 1.728161e-02  
## Psi\_var[3] 5.948857e-02 0.08913435 1.637999e-04 2.201580e-03  
## Nu\_free[1] -5.231264e-04 0.07269361 -1.449703e-01 -4.854217e-02  
## Nu\_free[2] -4.029674e-03 0.08476400 -1.710720e-01 -5.966555e-02  
## Nu\_free[3] -2.038041e-02 0.08958714 -2.005691e-01 -7.874180e-02  
## Nu\_free[4] -7.097582e-03 0.08574707 -1.810215e-01 -6.490251e-02  
## Nu\_free[5] -1.575047e-02 0.08046654 -1.731386e-01 -6.992800e-02  
## Nu\_free[6] -4.747832e-03 0.08281032 -1.673379e-01 -6.065605e-02  
## Nu\_free[7] -4.090714e-03 0.08330859 -1.657101e-01 -5.960967e-02  
## Nu\_free[8] -2.535047e-03 0.07829149 -1.598595e-01 -5.613826e-02  
## Nu\_free[9] -4.164063e-03 0.08943296 -1.812441e-01 -6.496162e-02  
## lp\_\_ -1.940628e+03 5.57109273 -1.952294e+03 -1.944277e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 1.417846e+00 3.148337e+00 1.139754e+01  
## ly\_sign[2] 5.426277e+00 8.913759e+00 1.940025e+01  
## ly\_sign[3] 3.868362e+00 5.978877e+00 1.411424e+01  
## ly\_sign[4] 1.969921e+00 3.017425e+00 7.719403e+00  
## ly\_sign[5] -7.594128e-01 1.732112e-02 1.466227e+01  
## ly\_sign[6] 1.014350e+00 2.482549e+00 1.141334e+01  
## Theta\_var[1] 9.811539e-01 1.056995e+00 1.215328e+00  
## Theta\_var[2] 9.604673e-01 1.044341e+00 1.233700e+00  
## Theta\_var[3] 6.142098e-01 8.139501e-01 1.079578e+00  
## Theta\_var[4] 9.391240e-01 1.026888e+00 1.219597e+00  
## Theta\_var[5] 4.080316e-01 5.657520e-01 8.330315e-01  
## Theta\_var[6] 8.431476e-01 9.329165e-01 1.107421e+00  
## Theta\_var[7] 9.440300e-01 1.032327e+00 1.222101e+00  
## Theta\_var[8] 9.368413e-01 1.026471e+00 1.208207e+00  
## Theta\_var[9] 9.532134e-01 1.045689e+00 1.244985e+00  
## Psi\_cov[1] 7.754779e-03 1.571827e-02 4.630821e-02  
## Psi\_cov[2] 1.482039e-03 9.282531e-03 5.464721e-02  
## Psi\_cov[3] 1.454744e-02 4.283796e-02 1.304899e-01  
## Psi\_var[1] 9.269597e-03 2.722410e-02 1.063553e-01  
## Psi\_var[2] 4.011991e-02 7.715598e-02 1.884016e-01  
## Psi\_var[3] 1.719780e-02 8.368389e-02 3.228492e-01  
## Nu\_free[1] -1.787924e-03 4.665415e-02 1.466636e-01  
## Nu\_free[2] -4.158614e-03 5.384325e-02 1.588162e-01  
## Nu\_free[3] -1.932227e-02 3.804899e-02 1.558586e-01  
## Nu\_free[4] -5.759511e-03 5.201044e-02 1.581099e-01  
## Nu\_free[5] -1.587180e-02 3.791598e-02 1.405631e-01  
## Nu\_free[6] -4.384696e-03 5.229513e-02 1.525329e-01  
## Nu\_free[7] -4.559709e-03 5.101601e-02 1.628526e-01  
## Nu\_free[8] -2.909715e-03 5.065796e-02 1.462970e-01  
## Nu\_free[9] -4.559276e-03 5.577120e-02 1.720004e-01  
## lp\_\_ -1.940424e+03 -1.936669e+03 -1.930549e+03  
##   
## , , chains = chain:4  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 1.694675e+00 4.06847096 -8.126386e+00 5.130025e-01  
## ly\_sign[2] 5.448345e+00 7.13199262 -1.338462e+01 3.225809e+00  
## ly\_sign[3] 4.775196e+00 3.21454032 1.344952e+00 2.575155e+00  
## ly\_sign[4] 2.493314e+00 1.76589505 7.035817e-01 1.362968e+00  
## ly\_sign[5] -7.012294e-01 6.68583481 -1.529915e+01 -2.938737e+00  
## ly\_sign[6] 1.149145e+00 4.31191045 -9.104334e+00 2.356708e-01  
## Theta\_var[1] 9.883990e-01 0.10706248 8.029171e-01 9.125604e-01  
## Theta\_var[2] 9.641063e-01 0.12478549 7.456054e-01 8.803620e-01  
## Theta\_var[3] 5.549210e-01 0.32440319 4.359755e-03 2.719899e-01  
## Theta\_var[4] 9.450797e-01 0.12608318 7.274722e-01 8.557769e-01  
## Theta\_var[5] 4.041743e-01 0.23206487 3.964905e-03 2.242566e-01  
## Theta\_var[6] 8.439716e-01 0.13433037 5.790392e-01 7.587747e-01  
## Theta\_var[7] 9.311212e-01 0.18271815 4.523338e-01 8.512833e-01  
## Theta\_var[8] 9.221093e-01 0.17016055 4.845684e-01 8.494375e-01  
## Theta\_var[9] 9.610554e-01 0.13888458 7.095286e-01 8.705262e-01  
## Psi\_cov[1] 1.078100e-02 0.01327664 -8.422994e-03 3.263326e-03  
## Psi\_cov[2] 7.532854e-03 0.01765083 -9.442878e-03 -5.895445e-04  
## Psi\_cov[3] 2.762058e-02 0.03938795 -1.083155e-02 2.143220e-03  
## Psi\_var[1] 2.074310e-02 0.02920395 3.009841e-04 2.760028e-03  
## Psi\_var[2] 5.602824e-02 0.05175063 3.366994e-03 1.726181e-02  
## Psi\_var[3] 7.186198e-02 0.14614486 1.268777e-04 2.002544e-03  
## Nu\_free[1] -1.850928e-03 0.07228812 -1.456727e-01 -5.005078e-02  
## Nu\_free[2] -2.528797e-03 0.08218020 -1.622179e-01 -5.733939e-02  
## Nu\_free[3] -2.124622e-02 0.09016111 -1.959138e-01 -8.074698e-02  
## Nu\_free[4] -3.879318e-03 0.08864223 -1.801197e-01 -6.260246e-02  
## Nu\_free[5] -1.425309e-02 0.08049247 -1.770242e-01 -6.592305e-02  
## Nu\_free[6] -3.930510e-03 0.08398045 -1.704198e-01 -5.899144e-02  
## Nu\_free[7] -2.490527e-03 0.08224384 -1.658529e-01 -5.833787e-02  
## Nu\_free[8] -7.787241e-04 0.08283388 -1.632133e-01 -5.540565e-02  
## Nu\_free[9] -6.317593e-03 0.09022842 -1.842986e-01 -6.639068e-02  
## lp\_\_ -1.940870e+03 5.65559881 -1.952607e+03 -1.944582e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 1.395442e+00 3.075928e+00 1.071582e+01  
## ly\_sign[2] 5.484743e+00 8.883379e+00 1.904281e+01  
## ly\_sign[3] 3.795476e+00 6.035788e+00 1.368099e+01  
## ly\_sign[4] 1.971150e+00 2.989857e+00 7.460909e+00  
## ly\_sign[5] -7.099616e-01 1.429558e-01 1.536065e+01  
## ly\_sign[6] 9.449170e-01 2.311017e+00 1.053940e+01  
## Theta\_var[1] 9.798160e-01 1.054996e+00 1.214923e+00  
## Theta\_var[2] 9.572825e-01 1.039873e+00 1.226053e+00  
## Theta\_var[3] 6.113344e-01 8.122186e-01 1.084244e+00  
## Theta\_var[4] 9.348895e-01 1.022403e+00 1.218364e+00  
## Theta\_var[5] 4.252136e-01 5.778030e-01 8.232264e-01  
## Theta\_var[6] 8.429172e-01 9.274828e-01 1.121876e+00  
## Theta\_var[7] 9.435112e-01 1.034757e+00 1.239334e+00  
## Theta\_var[8] 9.343623e-01 1.019781e+00 1.205299e+00  
## Theta\_var[9] 9.536176e-01 1.044248e+00 1.248919e+00  
## Psi\_cov[1] 7.889243e-03 1.551840e-02 4.503196e-02  
## Psi\_cov[2] 1.312198e-03 9.253015e-03 5.735244e-02  
## Psi\_cov[3] 1.247301e-02 4.016147e-02 1.355768e-01  
## Psi\_var[1] 9.155963e-03 2.688658e-02 1.023923e-01  
## Psi\_var[2] 4.068531e-02 7.986962e-02 2.007583e-01  
## Psi\_var[3] 1.351462e-02 7.942422e-02 5.548765e-01  
## Nu\_free[1] -1.921398e-03 4.775262e-02 1.416310e-01  
## Nu\_free[2] -2.066856e-03 5.219980e-02 1.560027e-01  
## Nu\_free[3] -2.119396e-02 3.884927e-02 1.523017e-01  
## Nu\_free[4] -4.723083e-03 5.540583e-02 1.716399e-01  
## Nu\_free[5] -1.407951e-02 3.915250e-02 1.422903e-01  
## Nu\_free[6] -2.344523e-03 5.241257e-02 1.624348e-01  
## Nu\_free[7] -2.203416e-03 5.509572e-02 1.582249e-01  
## Nu\_free[8] -2.665268e-03 5.432527e-02 1.661473e-01  
## Nu\_free[9] -4.613972e-03 5.355339e-02 1.696725e-01  
## lp\_\_ -1.940721e+03 -1.936856e+03 -1.930506e+03

## bfit.1factor

tmp3 = blavInspect(bfit.1factor, "mcobj")  
summary(tmp3)

## $summary  
## mean se\_mean sd 2.5%  
## ly\_sign[1] 4.601801e+00 0.3632650314 3.652026658 -3.246024e+00  
## ly\_sign[2] -3.919365e+00 0.3119977934 3.381562117 -1.079587e+01  
## ly\_sign[3] 1.380283e+01 1.1140432487 7.880237071 -1.207623e+01  
## ly\_sign[4] 5.928366e+00 0.4394907181 4.166260030 -4.118630e+00  
## ly\_sign[5] 8.342687e+00 0.6628344845 5.401067165 -7.016693e+00  
## ly\_sign[6] 2.283376e+00 0.1668968462 2.752445769 -2.893953e+00  
## ly\_sign[7] 3.355036e+00 0.2560661358 3.197965097 -2.867146e+00  
## ly\_sign[8] 6.617799e+00 0.5423240771 4.537562955 -4.739039e+00  
## Theta\_var[1] 9.896846e-01 0.0009804021 0.117794500 7.839384e-01  
## Theta\_var[2] 9.583689e-01 0.0008395422 0.127822815 7.360376e-01  
## Theta\_var[3] 9.727484e-01 0.0015949255 0.116501070 7.696495e-01  
## Theta\_var[4] 5.111968e-01 0.0047711116 0.198310234 6.730761e-02  
## Theta\_var[5] 9.228915e-01 0.0009504165 0.126840144 6.983414e-01  
## Theta\_var[6] 8.359628e-01 0.0010315076 0.126532982 5.964986e-01  
## Theta\_var[7] 9.951172e-01 0.0007784191 0.106566314 8.062029e-01  
## Theta\_var[8] 9.806436e-01 0.0010169245 0.121717108 7.701070e-01  
## Theta\_var[9] 8.974184e-01 0.0009074020 0.132960657 6.589607e-01  
## Psi\_var[1] 3.533128e-03 0.0002729118 0.004878828 6.128461e-04  
## Nu\_free[1] -1.969286e-03 0.0006337586 0.083557858 -1.677180e-01  
## Nu\_free[2] -1.200580e-02 0.0005671930 0.089093374 -1.861418e-01  
## Nu\_free[3] -5.771477e-04 0.0005941709 0.080631344 -1.591349e-01  
## Nu\_free[4] -1.589120e-02 0.0006927199 0.081304412 -1.760882e-01  
## Nu\_free[5] -8.894700e-03 0.0006640428 0.087141489 -1.788021e-01  
## Nu\_free[6] -5.592413e-03 0.0006214285 0.082170589 -1.653844e-01  
## Nu\_free[7] -1.627577e-03 0.0010100836 0.074755969 -1.475748e-01  
## Nu\_free[8] -2.194380e-03 0.0005741064 0.083085871 -1.655745e-01  
## Nu\_free[9] -1.518588e-02 0.0006099175 0.089433450 -1.887773e-01  
## lp\_\_ -1.939075e+03 0.1714000223 4.769837360 -1.948994e+03  
## 25% 50% 75% 97.5%  
## ly\_sign[1] 2.540483e+00 4.476291e+00 6.660311e+00 1.191797e+01  
## ly\_sign[2] -5.801057e+00 -3.772885e+00 -1.989942e+00 3.182160e+00  
## ly\_sign[3] 1.036038e+01 1.413894e+01 1.823595e+01 2.663656e+01  
## ly\_sign[4] 3.658827e+00 5.758175e+00 8.241150e+00 1.421129e+01  
## ly\_sign[5] 5.754150e+00 8.309183e+00 1.127976e+01 1.823025e+01  
## ly\_sign[6] 6.469582e-01 2.056267e+00 3.827480e+00 8.176379e+00  
## ly\_sign[7] 1.467389e+00 3.176233e+00 5.158283e+00 1.001020e+01  
## ly\_sign[8] 4.279665e+00 6.542388e+00 9.095430e+00 1.516480e+01  
## Theta\_var[1] 9.072385e-01 9.808546e-01 1.063591e+00 1.243623e+00  
## Theta\_var[2] 8.684706e-01 9.483716e-01 1.036649e+00 1.236815e+00  
## Theta\_var[3] 8.922626e-01 9.627516e-01 1.042990e+00 1.226156e+00  
## Theta\_var[4] 3.931714e-01 5.265991e-01 6.461692e-01 8.668651e-01  
## Theta\_var[5] 8.349316e-01 9.133691e-01 1.001025e+00 1.198347e+00  
## Theta\_var[6] 7.521443e-01 8.319758e-01 9.158388e-01 1.096217e+00  
## Theta\_var[7] 9.214562e-01 9.878328e-01 1.062724e+00 1.221107e+00  
## Theta\_var[8] 8.949461e-01 9.712219e-01 1.055061e+00 1.247082e+00  
## Theta\_var[9] 8.066986e-01 8.887709e-01 9.781528e-01 1.187171e+00  
## Psi\_var[1] 1.309987e-03 2.082542e-03 3.588895e-03 1.959905e-02  
## Nu\_free[1] -5.777637e-02 -2.068476e-03 5.417544e-02 1.608176e-01  
## Nu\_free[2] -7.199299e-02 -1.307845e-02 4.744852e-02 1.628226e-01  
## Nu\_free[3] -5.404866e-02 -7.045018e-04 5.186959e-02 1.588183e-01  
## Nu\_free[4] -6.969273e-02 -1.550911e-02 3.871152e-02 1.445829e-01  
## Nu\_free[5] -6.766973e-02 -9.260621e-03 4.986299e-02 1.617725e-01  
## Nu\_free[6] -6.244630e-02 -6.484865e-03 5.001777e-02 1.583592e-01  
## Nu\_free[7] -5.212910e-02 -1.250007e-03 4.813602e-02 1.453770e-01  
## Nu\_free[8] -5.735241e-02 -2.075713e-03 5.302968e-02 1.609497e-01  
## Nu\_free[9] -7.552771e-02 -1.497177e-02 4.457464e-02 1.598479e-01  
## lp\_\_ -1.942080e+03 -1.938789e+03 -1.935855e+03 -1.930377e+03  
## n\_eff Rhat  
## ly\_sign[1] 101.06963 1.0311676  
## ly\_sign[2] 117.47128 1.0264322  
## ly\_sign[3] 50.03506 1.0622607  
## ly\_sign[4] 89.86557 1.0381655  
## ly\_sign[5] 66.39708 1.0485248  
## ly\_sign[6] 271.98270 1.0138384  
## ly\_sign[7] 155.97074 1.0233118  
## ly\_sign[8] 70.00476 1.0459756  
## Theta\_var[1] 14435.82301 1.0006797  
## Theta\_var[2] 23180.97268 0.9999447  
## Theta\_var[3] 5335.54760 1.0006135  
## Theta\_var[4] 1727.63148 1.0020943  
## Theta\_var[5] 17810.88523 0.9999995  
## Theta\_var[6] 15047.44020 1.0000064  
## Theta\_var[7] 18741.87128 1.0001200  
## Theta\_var[8] 14326.03011 1.0002517  
## Theta\_var[9] 21470.73280 1.0002067  
## Psi\_var[1] 319.58502 1.0130968  
## Nu\_free[1] 17383.08576 0.9999908  
## Nu\_free[2] 24673.40104 1.0000278  
## Nu\_free[3] 18415.56468 1.0002049  
## Nu\_free[4] 13775.67524 1.0003396  
## Nu\_free[5] 17220.97646 1.0002104  
## Nu\_free[6] 17484.38857 0.9999025  
## Nu\_free[7] 5477.43376 1.0005925  
## Nu\_free[8] 20944.47684 0.9999573  
## Nu\_free[9] 21500.95756 0.9998866  
## lp\_\_ 774.43575 1.0083486  
##   
## $c\_summary  
## , , chains = chain:1  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 3.689536e+00 4.800985876 -8.980806e+00 2.024573e+00  
## ly\_sign[2] -3.138648e+00 4.382009556 -1.058409e+01 -5.689570e+00  
## ly\_sign[3] 1.111068e+01 12.062962681 -2.259080e+01 9.265586e+00  
## ly\_sign[4] 4.816045e+00 5.753166277 -1.037010e+01 3.070194e+00  
## ly\_sign[5] 6.701945e+00 7.927704472 -1.515249e+01 5.053645e+00  
## ly\_sign[6] 1.810719e+00 3.267665940 -5.556196e+00 2.016370e-01  
## ly\_sign[7] 2.679131e+00 3.999896308 -7.463705e+00 8.709082e-01  
## ly\_sign[8] 5.260808e+00 6.401342036 -1.204943e+01 3.609614e+00  
## Theta\_var[1] 9.943234e-01 0.118482320 7.831386e-01 9.131139e-01  
## Theta\_var[2] 9.599209e-01 0.129322853 7.341432e-01 8.692398e-01  
## Theta\_var[3] 9.692833e-01 0.115997460 7.712158e-01 8.866744e-01  
## Theta\_var[4] 5.246335e-01 0.194207075 9.148955e-02 4.086711e-01  
## Theta\_var[5] 9.243641e-01 0.125937911 7.006982e-01 8.356087e-01  
## Theta\_var[6] 8.349659e-01 0.128189981 5.920555e-01 7.491250e-01  
## Theta\_var[7] 9.937261e-01 0.105950040 8.035914e-01 9.211919e-01  
## Theta\_var[8] 9.806594e-01 0.121603486 7.708967e-01 8.944949e-01  
## Theta\_var[9] 9.009471e-01 0.136308078 6.593346e-01 8.068068e-01  
## Psi\_var[1] 2.950438e-03 0.003812463 5.693820e-04 1.215134e-03  
## Nu\_free[1] -1.642051e-03 0.085102087 -1.680351e-01 -5.838593e-02  
## Nu\_free[2] -1.042782e-02 0.090103876 -1.890426e-01 -7.105253e-02  
## Nu\_free[3] -1.398740e-04 0.079553690 -1.568901e-01 -5.410634e-02  
## Nu\_free[4] -1.367097e-02 0.080719079 -1.714961e-01 -6.749812e-02  
## Nu\_free[5] -8.453310e-03 0.089795021 -1.858678e-01 -6.805387e-02  
## Nu\_free[6] -4.338384e-03 0.081640723 -1.656301e-01 -5.823000e-02  
## Nu\_free[7] 3.899792e-04 0.074761724 -1.451922e-01 -5.012544e-02  
## Nu\_free[8] -3.315507e-03 0.086225800 -1.718769e-01 -6.106910e-02  
## Nu\_free[9] -1.635027e-02 0.091116898 -1.929396e-01 -7.709330e-02  
## lp\_\_ -1.939856e+03 4.819996458 -1.950047e+03 -1.942950e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 4.191397e+00 6.487088e+00 1.148808e+01  
## ly\_sign[2] -3.547975e+00 -1.473711e+00 8.164605e+00  
## ly\_sign[3] 1.370630e+01 1.810460e+01 2.654633e+01  
## ly\_sign[4] 5.467083e+00 8.046243e+00 1.415268e+01  
## ly\_sign[5] 8.005013e+00 1.108617e+01 1.848909e+01  
## ly\_sign[6] 1.876953e+00 3.674255e+00 8.096151e+00  
## ly\_sign[7] 2.902897e+00 5.037690e+00 1.000601e+01  
## ly\_sign[8] 6.172589e+00 8.903599e+00 1.500191e+01  
## Theta\_var[1] 9.869582e-01 1.068413e+00 1.247160e+00  
## Theta\_var[2] 9.496727e-01 1.040876e+00 1.235813e+00  
## Theta\_var[3] 9.590594e-01 1.042416e+00 1.219836e+00  
## Theta\_var[4] 5.379915e-01 6.537092e-01 8.773493e-01  
## Theta\_var[5] 9.155440e-01 1.003275e+00 1.203223e+00  
## Theta\_var[6] 8.306364e-01 9.165066e-01 1.101275e+00  
## Theta\_var[7] 9.879127e-01 1.058941e+00 1.221313e+00  
## Theta\_var[8] 9.721707e-01 1.055905e+00 1.245165e+00  
## Theta\_var[9] 8.904355e-01 9.831952e-01 1.196990e+00  
## Psi\_var[1] 1.902405e-03 3.228527e-03 1.178498e-02  
## Nu\_free[1] -1.469850e-03 5.477728e-02 1.649812e-01  
## Nu\_free[2] -1.080210e-02 4.835747e-02 1.673805e-01  
## Nu\_free[3] -1.007920e-03 5.159216e-02 1.555488e-01  
## Nu\_free[4] -1.280038e-02 4.076988e-02 1.449204e-01  
## Nu\_free[5] -7.551535e-03 5.228242e-02 1.671157e-01  
## Nu\_free[6] -4.939884e-03 4.983422e-02 1.577188e-01  
## Nu\_free[7] 2.509036e-04 5.024978e-02 1.495530e-01  
## Nu\_free[8] -1.671716e-03 5.334776e-02 1.650120e-01  
## Nu\_free[9] -1.736340e-02 4.469202e-02 1.598613e-01  
## lp\_\_ -1.939568e+03 -1.936468e+03 -1.931299e+03  
##   
## , , chains = chain:2  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 4.931412e+00 3.060785616 -1.277558e-01 2.786585e+00  
## ly\_sign[2] -4.194164e+00 2.937323920 -1.089082e+01 -5.846591e+00  
## ly\_sign[3] 1.469498e+01 5.355011175 5.681435e+00 1.080194e+01  
## ly\_sign[4] 6.331146e+00 3.308952707 1.238427e+00 3.970686e+00  
## ly\_sign[5] 8.904019e+00 3.914434007 2.608288e+00 6.113954e+00  
## ly\_sign[6] 2.467957e+00 2.494016759 -1.788731e+00 8.390609e-01  
## ly\_sign[7] 3.592403e+00 2.810746217 -1.030699e+00 1.655760e+00  
## ly\_sign[8] 7.096357e+00 3.613530125 1.531055e+00 4.488390e+00  
## Theta\_var[1] 9.874045e-01 0.120678889 7.745711e-01 9.021424e-01  
## Theta\_var[2] 9.589977e-01 0.127079029 7.343746e-01 8.701414e-01  
## Theta\_var[3] 9.705339e-01 0.116115189 7.648072e-01 8.908592e-01  
## Theta\_var[4] 5.119952e-01 0.191512236 6.386654e-02 3.995894e-01  
## Theta\_var[5] 9.229287e-01 0.127569231 7.029057e-01 8.347435e-01  
## Theta\_var[6] 8.355753e-01 0.126533950 6.035070e-01 7.521251e-01  
## Theta\_var[7] 9.954169e-01 0.108937584 8.005160e-01 9.203657e-01  
## Theta\_var[8] 9.833413e-01 0.119282044 7.789297e-01 8.995294e-01  
## Theta\_var[9] 8.976380e-01 0.134228862 6.576436e-01 8.065298e-01  
## Psi\_var[1] 3.333411e-03 0.003769146 6.522335e-04 1.368921e-03  
## Nu\_free[1] -8.640635e-04 0.082833644 -1.674520e-01 -5.541239e-02  
## Nu\_free[2] -1.196925e-02 0.087731747 -1.837078e-01 -7.092753e-02  
## Nu\_free[3] -3.830010e-04 0.083088976 -1.635362e-01 -5.527686e-02  
## Nu\_free[4] -1.557145e-02 0.082926604 -1.773268e-01 -7.189511e-02  
## Nu\_free[5] -7.523481e-03 0.086052660 -1.769454e-01 -6.662643e-02  
## Nu\_free[6] -5.117113e-03 0.083575301 -1.710817e-01 -6.204702e-02  
## Nu\_free[7] -5.768435e-05 0.074091642 -1.494150e-01 -4.860141e-02  
## Nu\_free[8] -1.667747e-03 0.083719589 -1.652576e-01 -5.848928e-02  
## Nu\_free[9] -1.493555e-02 0.089938104 -1.844884e-01 -7.491357e-02  
## lp\_\_ -1.938894e+03 4.555651922 -1.948504e+03 -1.941751e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 4.597108e+00 6.695872e+00 1.179764e+01  
## ly\_sign[2] -3.898225e+00 -2.156203e+00 6.960549e-01  
## ly\_sign[3] 1.420592e+01 1.806499e+01 2.616209e+01  
## ly\_sign[4] 5.885599e+00 8.232452e+00 1.387459e+01  
## ly\_sign[5] 8.368041e+00 1.123912e+01 1.788936e+01  
## ly\_sign[6] 2.157062e+00 3.908425e+00 8.053407e+00  
## ly\_sign[7] 3.251283e+00 5.133162e+00 9.866348e+00  
## ly\_sign[8] 6.653220e+00 9.221744e+00 1.513072e+01  
## Theta\_var[1] 9.776450e-01 1.062784e+00 1.250707e+00  
## Theta\_var[2] 9.501717e-01 1.035283e+00 1.242554e+00  
## Theta\_var[3] 9.597269e-01 1.040954e+00 1.221555e+00  
## Theta\_var[4] 5.231369e-01 6.401285e-01 8.601566e-01  
## Theta\_var[5] 9.111683e-01 1.000126e+00 1.199391e+00  
## Theta\_var[6] 8.295847e-01 9.128719e-01 1.096540e+00  
## Theta\_var[7] 9.855494e-01 1.064807e+00 1.226127e+00  
## Theta\_var[8] 9.756103e-01 1.056827e+00 1.244664e+00  
## Theta\_var[9] 8.859257e-01 9.813394e-01 1.197485e+00  
## Psi\_var[1] 2.142099e-03 3.650640e-03 1.449493e-02  
## Nu\_free[1] -1.396956e-03 5.384719e-02 1.640357e-01  
## Nu\_free[2] -1.216908e-02 4.820085e-02 1.570551e-01  
## Nu\_free[3] -5.156973e-04 5.434561e-02 1.610092e-01  
## Nu\_free[4] -1.564977e-02 4.010828e-02 1.473398e-01  
## Nu\_free[5] -6.596051e-03 5.066253e-02 1.607756e-01  
## Nu\_free[6] -4.410752e-03 5.069587e-02 1.612414e-01  
## Nu\_free[7] 5.704837e-04 4.764470e-02 1.460481e-01  
## Nu\_free[8] -1.234774e-03 5.275496e-02 1.631861e-01  
## Nu\_free[9] -1.566080e-02 4.487972e-02 1.625404e-01  
## lp\_\_ -1.938565e+03 -1.935705e+03 -1.930918e+03  
##   
## , , chains = chain:3  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 4.849930e+00 3.127607025 -8.576251e-03 2.562438e+00  
## ly\_sign[2] -4.136305e+00 2.930485579 -1.079587e+01 -5.804579e+00  
## ly\_sign[3] 1.471575e+01 5.715673792 5.640807e+00 1.036278e+01  
## ly\_sign[4] 6.218810e+00 3.484324441 1.089257e+00 3.613439e+00  
## ly\_sign[5] 8.821728e+00 4.201528307 1.896747e+00 5.797226e+00  
## ly\_sign[6] 2.415051e+00 2.603983390 -1.972295e+00 7.081844e-01  
## ly\_sign[7] 3.504368e+00 2.877892608 -1.276187e+00 1.524964e+00  
## ly\_sign[8] 7.020030e+00 3.616221211 1.510744e+00 4.381140e+00  
## Theta\_var[1] 9.916939e-01 0.114452235 7.907050e-01 9.114774e-01  
## Theta\_var[2] 9.564701e-01 0.126090017 7.424526e-01 8.656018e-01  
## Theta\_var[3] 9.778758e-01 0.119087470 7.690190e-01 8.964868e-01  
## Theta\_var[4] 4.949741e-01 0.208588980 5.236545e-02 3.725660e-01  
## Theta\_var[5] 9.223917e-01 0.126074000 6.982645e-01 8.347678e-01  
## Theta\_var[6] 8.376357e-01 0.124702842 5.970272e-01 7.555527e-01  
## Theta\_var[7] 9.979470e-01 0.103877585 8.124909e-01 9.248607e-01  
## Theta\_var[8] 9.805643e-01 0.119975972 7.746888e-01 8.973395e-01  
## Theta\_var[9] 8.983847e-01 0.132129129 6.601115e-01 8.075921e-01  
## Psi\_var[1] 3.959665e-03 0.005371772 6.388168e-04 1.341588e-03  
## Nu\_free[1] -1.866206e-03 0.082917428 -1.670076e-01 -5.774121e-02  
## Nu\_free[2] -1.411061e-02 0.086435930 -1.848659e-01 -7.005602e-02  
## Nu\_free[3] -2.543799e-03 0.079954773 -1.584193e-01 -5.535698e-02  
## Nu\_free[4] -1.884303e-02 0.079717071 -1.746382e-01 -6.978608e-02  
## Nu\_free[5] -1.119206e-02 0.087745360 -1.766617e-01 -7.056486e-02  
## Nu\_free[6] -6.991500e-03 0.081778152 -1.639104e-01 -6.375664e-02  
## Nu\_free[7] -4.546678e-03 0.075392675 -1.494905e-01 -5.725706e-02  
## Nu\_free[8] -2.061837e-03 0.081563693 -1.662480e-01 -5.567140e-02  
## Nu\_free[9] -1.444841e-02 0.088025796 -1.850194e-01 -7.454459e-02  
## lp\_\_ -1.938745e+03 4.717252824 -1.948620e+03 -1.941739e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 4.493216e+00 6.629466e+00 1.197596e+01  
## ly\_sign[2] -3.779858e+00 -2.024202e+00 6.406042e-01  
## ly\_sign[3] 1.432543e+01 1.854239e+01 2.683405e+01  
## ly\_sign[4] 5.732893e+00 8.269143e+00 1.454840e+01  
## ly\_sign[5] 8.406298e+00 1.128981e+01 1.828119e+01  
## ly\_sign[6] 2.058606e+00 3.808815e+00 8.489866e+00  
## ly\_sign[7] 3.194082e+00 5.127990e+00 9.917569e+00  
## ly\_sign[8] 6.649351e+00 9.100994e+00 1.511824e+01  
## Theta\_var[1] 9.842002e-01 1.064644e+00 1.236029e+00  
## Theta\_var[2] 9.468046e-01 1.035025e+00 1.227649e+00  
## Theta\_var[3] 9.696833e-01 1.046867e+00 1.240022e+00  
## Theta\_var[4] 5.179838e-01 6.408302e-01 8.569852e-01  
## Theta\_var[5] 9.122614e-01 1.000475e+00 1.195925e+00  
## Theta\_var[6] 8.341232e-01 9.181462e-01 1.095845e+00  
## Theta\_var[7] 9.926680e-01 1.068224e+00 1.208895e+00  
## Theta\_var[8] 9.691393e-01 1.052817e+00 1.243126e+00  
## Theta\_var[9] 8.940384e-01 9.757195e-01 1.188797e+00  
## Psi\_var[1] 2.155675e-03 3.943148e-03 2.250588e-02  
## Nu\_free[1] -1.617651e-03 5.420815e-02 1.575586e-01  
## Nu\_free[2] -1.485834e-02 4.229482e-02 1.538851e-01  
## Nu\_free[3] -3.791425e-03 4.975566e-02 1.580445e-01  
## Nu\_free[4] -1.771892e-02 3.344917e-02 1.347530e-01  
## Nu\_free[5] -1.166317e-02 4.691536e-02 1.607155e-01  
## Nu\_free[6] -8.927436e-03 4.757741e-02 1.553574e-01  
## Nu\_free[7] -4.182119e-03 4.627775e-02 1.417393e-01  
## Nu\_free[8] -2.220982e-03 5.422146e-02 1.554092e-01  
## Nu\_free[9] -1.380485e-02 4.434637e-02 1.592251e-01  
## lp\_\_ -1.938532e+03 -1.935610e+03 -1.929543e+03  
##   
## , , chains = chain:4  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 4.936325e+00 3.16904262 -1.799494e-01 2.686709e+00  
## ly\_sign[2] -4.208345e+00 2.91775889 -1.098195e+01 -5.886626e+00  
## ly\_sign[3] 1.468991e+01 5.64834574 4.489389e+00 1.074424e+01  
## ly\_sign[4] 6.347463e+00 3.40483164 1.214704e+00 3.864940e+00  
## ly\_sign[5] 8.943055e+00 4.15712768 2.221287e+00 5.933081e+00  
## ly\_sign[6] 2.439776e+00 2.51605915 -1.885410e+00 7.587920e-01  
## ly\_sign[7] 3.644242e+00 2.84834601 -1.036911e+00 1.626363e+00  
## ly\_sign[8] 7.093999e+00 3.57756069 1.481253e+00 4.526482e+00  
## Theta\_var[1] 9.853165e-01 0.11730256 7.863470e-01 9.026861e-01  
## Theta\_var[2] 9.580870e-01 0.12878599 7.353005e-01 8.692264e-01  
## Theta\_var[3] 9.733005e-01 0.11460652 7.737148e-01 8.951081e-01  
## Theta\_var[4] 5.131844e-01 0.19743432 6.621113e-02 3.912857e-01  
## Theta\_var[5] 9.218817e-01 0.12779274 6.915215e-01 8.350991e-01  
## Theta\_var[6] 8.356745e-01 0.12670301 5.958827e-01 7.526990e-01  
## Theta\_var[7] 9.933788e-01 0.10740537 8.053645e-01 9.192218e-01  
## Theta\_var[8] 9.780095e-01 0.12587706 7.586546e-01 8.887277e-01  
## Theta\_var[9] 8.927038e-01 0.12897170 6.601811e-01 8.054385e-01  
## Psi\_var[1] 3.888997e-03 0.00607789 6.165967e-04 1.318684e-03  
## Nu\_free[1] -3.504824e-03 0.08336113 -1.677192e-01 -6.054564e-02  
## Nu\_free[2] -1.151552e-02 0.09198576 -1.847380e-01 -7.498995e-02  
## Nu\_free[3] 7.580834e-04 0.07986453 -1.564593e-01 -5.204647e-02  
## Nu\_free[4] -1.547937e-02 0.08175865 -1.781813e-01 -6.924306e-02  
## Nu\_free[5] -8.409950e-03 0.08487679 -1.732777e-01 -6.497697e-02  
## Nu\_free[6] -5.922657e-03 0.08167315 -1.632510e-01 -6.430029e-02  
## Nu\_free[7] -2.295924e-03 0.07469086 -1.473033e-01 -5.220811e-02  
## Nu\_free[8] -1.732429e-03 0.08073990 -1.580736e-01 -5.564993e-02  
## Nu\_free[9] -1.500929e-02 0.08863679 -1.902190e-01 -7.436051e-02  
## lp\_\_ -1.938805e+03 4.89445328 -1.948558e+03 -1.941842e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 4.583220e+00 6.808242e+00 1.223802e+01  
## ly\_sign[2] -3.860450e+00 -2.181731e+00 5.855715e-01  
## ly\_sign[3] 1.424320e+01 1.823982e+01 2.689494e+01  
## ly\_sign[4] 5.900078e+00 8.368159e+00 1.421519e+01  
## ly\_sign[5] 8.423301e+00 1.148604e+01 1.839165e+01  
## ly\_sign[6] 2.149544e+00 3.909664e+00 8.108160e+00  
## ly\_sign[7] 3.309243e+00 5.320312e+00 1.020757e+01  
## ly\_sign[8] 6.628295e+00 9.138757e+00 1.539925e+01  
## Theta\_var[1] 9.729870e-01 1.058991e+00 1.241302e+00  
## Theta\_var[2] 9.471234e-01 1.036903e+00 1.247002e+00  
## Theta\_var[3] 9.624061e-01 1.041755e+00 1.226103e+00  
## Theta\_var[4] 5.263776e-01 6.488781e-01 8.683507e-01  
## Theta\_var[5] 9.138011e-01 1.000880e+00 1.197226e+00  
## Theta\_var[6] 8.327584e-01 9.158631e-01 1.093253e+00  
## Theta\_var[7] 9.840358e-01 1.058844e+00 1.222442e+00  
## Theta\_var[8] 9.678977e-01 1.054456e+00 1.253755e+00  
## Theta\_var[9] 8.849381e-01 9.725653e-01 1.170560e+00  
## Psi\_var[1] 2.136423e-03 3.672319e-03 2.921302e-02  
## Nu\_free[1] -3.671033e-03 5.389424e-02 1.566793e-01  
## Nu\_free[2] -1.394592e-02 4.988389e-02 1.714197e-01  
## Nu\_free[3] 2.137918e-03 5.113783e-02 1.590309e-01  
## Nu\_free[4] -1.539098e-02 3.965866e-02 1.473336e-01  
## Nu\_free[5] -1.029823e-02 4.957938e-02 1.571792e-01  
## Nu\_free[6] -7.766793e-03 5.124821e-02 1.568647e-01  
## Nu\_free[7] -1.954161e-03 4.782483e-02 1.448964e-01  
## Nu\_free[8] -3.011806e-03 5.146124e-02 1.574092e-01  
## Nu\_free[9] -1.312530e-02 4.426602e-02 1.590665e-01  
## lp\_\_ -1.938600e+03 -1.935684e+03 -1.929760e+03

## bfit.3factors\_ind

tmp4 = blavInspect(bfit.3factors\_ind, "mcobj")  
summary(tmp4)

## $summary  
## mean se\_mean sd 2.5%  
## ly\_sign[1] -1.238659e+00 0.1135165450 6.69044840 -1.623551e+01  
## ly\_sign[2] 2.553194e+00 0.1003407323 6.76107176 -1.199337e+01  
## ly\_sign[3] 4.766205e+00 0.0481209184 3.57171283 9.883563e-01  
## ly\_sign[4] 3.895237e+00 0.0547166654 3.49703988 7.220780e-01  
## ly\_sign[5] 1.673823e+00 0.0994566501 7.22550305 -1.475298e+01  
## ly\_sign[6] 1.846580e+00 0.0876888987 7.41289620 -1.494720e+01  
## Theta\_var[1] 9.812971e-01 0.0017082443 0.11889847 7.688509e-01  
## Theta\_var[2] 8.125203e-01 0.0069147691 0.32427304 1.160646e-02  
## Theta\_var[3] 7.008515e-01 0.0065486496 0.37894192 3.114267e-03  
## Theta\_var[4] 9.585651e-01 0.0010549712 0.12738209 7.324518e-01  
## Theta\_var[5] 5.202334e-01 0.0037125064 0.32346975 2.187874e-03  
## Theta\_var[6] 7.053796e-01 0.0039134976 0.28728165 1.461809e-02  
## Theta\_var[7] 9.982765e-01 0.0009701089 0.12397571 7.794286e-01  
## Theta\_var[8] 8.752501e-01 0.0065425883 0.26461851 4.591036e-02  
## Theta\_var[9] 8.578501e-01 0.0058718693 0.29014059 3.358657e-02  
## Psi\_var[1] 2.717529e-02 0.0014609464 0.05842937 3.789152e-05  
## Psi\_var[2] 4.596343e-02 0.0005920510 0.05172273 2.258298e-03  
## Psi\_var[3] 1.413967e-02 0.0004179964 0.03477492 7.466454e-06  
## Nu\_free[1] -1.027567e-03 0.0005335190 0.07435501 -1.469735e-01  
## Nu\_free[2] 2.966801e-03 0.0006099741 0.08362696 -1.595315e-01  
## Nu\_free[3] -8.734021e-03 0.0006659535 0.08923853 -1.848495e-01  
## Nu\_free[4] -3.770064e-03 0.0006468519 0.08778204 -1.792440e-01  
## Nu\_free[5] -4.482460e-03 0.0006043872 0.08068995 -1.634499e-01  
## Nu\_free[6] -3.674575e-03 0.0006043822 0.08235776 -1.660861e-01  
## Nu\_free[7] -5.817488e-04 0.0006171354 0.08425287 -1.641881e-01  
## Nu\_free[8] 7.714797e-04 0.0005681907 0.07946596 -1.539279e-01  
## Nu\_free[9] 2.247699e-03 0.0006336474 0.08888850 -1.696104e-01  
## lp\_\_ -1.947030e+03 0.0679150377 4.56402191 -1.956785e+03  
## 25% 50% 75% 97.5%  
## ly\_sign[1] -4.975123e+00 1.990932e-01 1.733359e+00 12.7970896  
## ly\_sign[2] -1.152486e+00 2.448238e+00 6.444566e+00 16.4443736  
## ly\_sign[3] 2.288386e+00 3.752399e+00 6.097517e+00 14.6738045  
## ly\_sign[4] 1.609523e+00 2.678781e+00 4.916438e+00 14.0681635  
## ly\_sign[5] -1.148422e+00 1.310384e+00 5.393860e+00 16.6938738  
## ly\_sign[6] -1.213305e+00 1.586069e+00 5.746206e+00 17.1919480  
## Theta\_var[1] 9.084794e-01 9.781023e-01 1.053376e+00 1.2179175  
## Theta\_var[2] 7.355669e-01 9.135591e-01 1.020065e+00 1.2195598  
## Theta\_var[3] 3.807828e-01 8.378781e-01 9.887136e-01 1.2213394  
## Theta\_var[4] 8.706280e-01 9.503127e-01 1.036258e+00 1.2343336  
## Theta\_var[5] 2.267406e-01 5.623360e-01 7.941381e-01 1.0394389  
## Theta\_var[6] 5.793530e-01 7.841961e-01 9.024390e-01 1.0988457  
## Theta\_var[7] 9.117032e-01 9.905299e-01 1.075425e+00 1.2634179  
## Theta\_var[8] 8.162852e-01 9.354044e-01 1.032232e+00 1.2200129  
## Theta\_var[9] 7.854426e-01 9.241899e-01 1.034686e+00 1.2571024  
## Psi\_var[1] 2.493328e-03 9.042840e-03 2.730376e-02 0.1660180  
## Psi\_var[2] 1.169083e-02 2.872291e-02 6.093790e-02 0.1893519  
## Psi\_var[3] 7.262909e-04 3.271936e-03 1.199989e-02 0.1022216  
## Nu\_free[1] -5.132566e-02 -1.154110e-03 4.938940e-02 0.1446939  
## Nu\_free[2] -5.297247e-02 3.289510e-03 5.813397e-02 0.1689807  
## Nu\_free[3] -6.809760e-02 -9.251629e-03 5.098980e-02 0.1679953  
## Nu\_free[4] -6.282297e-02 -3.131384e-03 5.553026e-02 0.1669077  
## Nu\_free[5] -5.856673e-02 -4.256449e-03 4.944096e-02 0.1549147  
## Nu\_free[6] -5.847781e-02 -2.599955e-03 5.111232e-02 0.1582638  
## Nu\_free[7] -5.730260e-02 -8.780943e-04 5.604029e-02 0.1643337  
## Nu\_free[8] -5.224416e-02 5.921585e-04 5.388095e-02 0.1579228  
## Nu\_free[9] -5.746131e-02 2.411213e-03 6.198204e-02 0.1762636  
## lp\_\_ -1.949924e+03 -1.946761e+03 -1.943820e+03 -1938.9192232  
## n\_eff Rhat  
## ly\_sign[1] 3473.699 1.0013703  
## ly\_sign[2] 4540.216 1.0012002  
## ly\_sign[3] 5509.158 1.0004330  
## ly\_sign[4] 4084.717 1.0013980  
## ly\_sign[5] 5277.990 1.0007032  
## ly\_sign[6] 7146.388 1.0002214  
## Theta\_var[1] 4844.541 1.0004509  
## Theta\_var[2] 2199.208 1.0024495  
## Theta\_var[3] 3348.434 1.0014214  
## Theta\_var[4] 14579.263 1.0000096  
## Theta\_var[5] 7591.593 1.0003270  
## Theta\_var[6] 5388.720 1.0003078  
## Theta\_var[7] 16331.731 1.0000124  
## Theta\_var[8] 1635.842 1.0022683  
## Theta\_var[9] 2441.542 1.0022807  
## Psi\_var[1] 1599.536 1.0011563  
## Psi\_var[2] 7632.111 1.0004480  
## Psi\_var[3] 6921.291 1.0001399  
## Nu\_free[1] 19423.195 0.9999847  
## Nu\_free[2] 18796.192 1.0000321  
## Nu\_free[3] 17956.305 0.9999895  
## Nu\_free[4] 18416.270 1.0000363  
## Nu\_free[5] 17824.131 0.9999720  
## Nu\_free[6] 18568.884 0.9999713  
## Nu\_free[7] 18638.397 0.9998776  
## Nu\_free[8] 19560.233 1.0001043  
## Nu\_free[9] 19678.674 1.0001204  
## lp\_\_ 4516.100 1.0000764  
##   
## $c\_summary  
## , , chains = chain:1  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] -1.175254e+00 7.04898075 -1.643556e+01 -5.136309e+00  
## ly\_sign[2] 2.372797e+00 6.74407960 -1.216950e+01 -1.217684e+00  
## ly\_sign[3] 4.830812e+00 3.60154459 9.943498e-01 2.315782e+00  
## ly\_sign[4] 4.164450e+00 3.83900789 7.168944e-01 1.630270e+00  
## ly\_sign[5] 1.337571e+00 7.11489032 -1.533705e+01 -1.290183e+00  
## ly\_sign[6] 1.877843e+00 7.49112494 -1.576834e+01 -1.089897e+00  
## Theta\_var[1] 9.833427e-01 0.11507740 7.773675e-01 9.107880e-01  
## Theta\_var[2] 8.044387e-01 0.33450430 1.228162e-02 7.186803e-01  
## Theta\_var[3] 7.185112e-01 0.37332320 9.322908e-03 4.288819e-01  
## Theta\_var[4] 9.584997e-01 0.12736922 7.299155e-01 8.711734e-01  
## Theta\_var[5] 5.310080e-01 0.32016523 2.821641e-03 2.433324e-01  
## Theta\_var[6] 6.931638e-01 0.29485409 7.370341e-03 5.545812e-01  
## Theta\_var[7] 9.973544e-01 0.12505450 7.768673e-01 9.112956e-01  
## Theta\_var[8] 8.821249e-01 0.25476604 1.036017e-01 8.250318e-01  
## Theta\_var[9] 8.373514e-01 0.31297495 1.241417e-02 7.607431e-01  
## Psi\_var[1] 2.633901e-02 0.05509584 3.752346e-05 2.346205e-03  
## Psi\_var[2] 4.492735e-02 0.05188932 2.052946e-03 1.069943e-02  
## Psi\_var[3] 1.444239e-02 0.03395336 9.294812e-06 7.978590e-04  
## Nu\_free[1] -1.654134e-03 0.07305501 -1.417019e-01 -5.346770e-02  
## Nu\_free[2] 2.595399e-03 0.08471934 -1.637475e-01 -5.277728e-02  
## Nu\_free[3] -6.496179e-03 0.08845271 -1.761514e-01 -6.587091e-02  
## Nu\_free[4] -2.886372e-03 0.08670602 -1.747610e-01 -6.281941e-02  
## Nu\_free[5] -5.092303e-03 0.08102778 -1.649425e-01 -5.933126e-02  
## Nu\_free[6] -3.224584e-03 0.08181209 -1.640228e-01 -5.905699e-02  
## Nu\_free[7] -4.659481e-05 0.08229585 -1.579416e-01 -5.566724e-02  
## Nu\_free[8] 1.528741e-03 0.07994150 -1.553211e-01 -5.178040e-02  
## Nu\_free[9] 1.097369e-03 0.09080670 -1.736368e-01 -5.886605e-02  
## lp\_\_ -1.947075e+03 4.53726362 -1.956680e+03 -1.949957e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 1.594871e-01 1.907554e+00 1.348914e+01  
## ly\_sign[2] 2.155093e+00 6.308789e+00 1.592179e+01  
## ly\_sign[3] 3.826211e+00 6.208019e+00 1.478247e+01  
## ly\_sign[4] 2.785192e+00 5.396040e+00 1.517987e+01  
## ly\_sign[5] 1.174908e+00 4.743556e+00 1.624038e+01  
## ly\_sign[6] 1.634915e+00 5.933442e+00 1.683739e+01  
## Theta\_var[1] 9.774304e-01 1.052628e+00 1.218591e+00  
## Theta\_var[2] 9.105818e-01 1.020637e+00 1.219368e+00  
## Theta\_var[3] 8.536650e-01 9.939115e-01 1.225947e+00  
## Theta\_var[4] 9.517185e-01 1.036067e+00 1.240273e+00  
## Theta\_var[5] 5.851697e-01 7.993991e-01 1.033903e+00  
## Theta\_var[6] 7.731420e-01 8.988553e-01 1.091614e+00  
## Theta\_var[7] 9.900506e-01 1.075084e+00 1.267628e+00  
## Theta\_var[8] 9.392252e-01 1.033362e+00 1.210921e+00  
## Theta\_var[9] 9.170383e-01 1.031943e+00 1.252047e+00  
## Psi\_var[1] 8.614332e-03 2.650368e-02 1.698159e-01  
## Psi\_var[2] 2.693270e-02 5.954495e-02 1.834257e-01  
## Psi\_var[3] 3.610884e-03 1.281554e-02 9.673718e-02  
## Nu\_free[1] -2.368843e-03 5.027335e-02 1.390792e-01  
## Nu\_free[2] 2.231615e-03 5.838034e-02 1.659374e-01  
## Nu\_free[3] -6.410843e-03 5.376773e-02 1.694996e-01  
## Nu\_free[4] -1.755091e-03 5.599577e-02 1.611235e-01  
## Nu\_free[5] -4.553137e-03 5.003937e-02 1.575070e-01  
## Nu\_free[6] -3.210954e-03 5.131129e-02 1.616664e-01  
## Nu\_free[7] -1.261141e-03 5.464702e-02 1.643043e-01  
## Nu\_free[8] 2.228444e-03 5.439747e-02 1.599624e-01  
## Nu\_free[9] 8.635164e-04 6.265703e-02 1.790817e-01  
## lp\_\_ -1.946852e+03 -1.943848e+03 -1.939053e+03  
##   
## , , chains = chain:2  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] -1.028613e+00 6.44491640 -1.600441e+01 -4.415972e+00  
## ly\_sign[2] 2.812126e+00 6.73039432 -1.139772e+01 -1.018151e+00  
## ly\_sign[3] 4.777578e+00 3.52124568 1.031322e+00 2.289014e+00  
## ly\_sign[4] 3.921753e+00 3.56566729 7.229055e-01 1.603310e+00  
## ly\_sign[5] 1.875067e+00 7.31319288 -1.451260e+01 -1.128119e+00  
## ly\_sign[6] 1.852497e+00 7.30432679 -1.464020e+01 -1.092264e+00  
## Theta\_var[1] 9.775902e-01 0.12342212 7.425175e-01 9.059972e-01  
## Theta\_var[2] 8.362600e-01 0.30024856 3.036255e-02 7.694877e-01  
## Theta\_var[3] 6.832526e-01 0.38599040 2.580640e-03 3.254919e-01  
## Theta\_var[4] 9.577483e-01 0.12918182 7.328926e-01 8.677561e-01  
## Theta\_var[5] 5.169914e-01 0.32339871 1.253215e-03 2.171858e-01  
## Theta\_var[6] 7.042788e-01 0.28918953 1.228196e-02 5.886077e-01  
## Theta\_var[7] 9.974291e-01 0.12173955 7.796653e-01 9.112017e-01  
## Theta\_var[8] 8.621263e-01 0.27374221 1.494977e-02 8.026755e-01  
## Theta\_var[9] 8.739523e-01 0.27394565 7.160999e-02 8.001066e-01  
## Psi\_var[1] 2.938123e-02 0.06514627 3.789533e-05 2.529334e-03  
## Psi\_var[2] 4.565167e-02 0.04944349 2.232874e-03 1.172248e-02  
## Psi\_var[3] 1.365129e-02 0.03315248 6.924024e-06 7.147791e-04  
## Nu\_free[1] -4.818867e-04 0.07553620 -1.486902e-01 -4.951094e-02  
## Nu\_free[2] 2.991955e-03 0.08346950 -1.590630e-01 -5.346624e-02  
## Nu\_free[3] -1.030977e-02 0.08929360 -1.899910e-01 -7.023786e-02  
## Nu\_free[4] -5.117854e-03 0.08690801 -1.794018e-01 -6.307708e-02  
## Nu\_free[5] -3.415497e-03 0.08175251 -1.607260e-01 -5.938420e-02  
## Nu\_free[6] -2.800230e-03 0.08300783 -1.636752e-01 -5.916871e-02  
## Nu\_free[7] -1.124946e-03 0.08463689 -1.667802e-01 -5.822791e-02  
## Nu\_free[8] 1.423722e-03 0.07823177 -1.529236e-01 -5.015066e-02  
## Nu\_free[9] 3.419531e-03 0.08927109 -1.716182e-01 -5.777157e-02  
## lp\_\_ -1.946997e+03 4.61398304 -1.957051e+03 -1.949915e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 3.287385e-01 1.774185e+00 12.2274147  
## ly\_sign[2] 2.794988e+00 6.794155e+00 16.6342113  
## ly\_sign[3] 3.786099e+00 6.158656e+00 14.5005261  
## ly\_sign[4] 2.690344e+00 4.825490e+00 14.4624971  
## ly\_sign[5] 1.464519e+00 5.841679e+00 17.0026254  
## ly\_sign[6] 1.501447e+00 5.574550e+00 17.4876197  
## Theta\_var[1] 9.759833e-01 1.051692e+00 1.2152132  
## Theta\_var[2] 9.206351e-01 1.022957e+00 1.2266830  
## Theta\_var[3] 8.220624e-01 9.836033e-01 1.2256727  
## Theta\_var[4] 9.474949e-01 1.035552e+00 1.2393735  
## Theta\_var[5] 5.626645e-01 7.924089e-01 1.0385860  
## Theta\_var[6] 7.837162e-01 9.015677e-01 1.0934093  
## Theta\_var[7] 9.910241e-01 1.074501e+00 1.2501784  
## Theta\_var[8] 9.258446e-01 1.025759e+00 1.2231393  
## Theta\_var[9] 9.303035e-01 1.043250e+00 1.2585389  
## Psi\_var[1] 8.975388e-03 2.807946e-02 0.2062702  
## Psi\_var[2] 2.882966e-02 6.094055e-02 0.1863946  
## Psi\_var[3] 3.306046e-03 1.220475e-02 0.0945238  
## Nu\_free[1] -8.537835e-04 5.005611e-02 0.1440920  
## Nu\_free[2] 3.657892e-03 5.679471e-02 0.1690879  
## Nu\_free[3] -1.110534e-02 4.813113e-02 0.1686648  
## Nu\_free[4] -6.275040e-03 5.306872e-02 0.1669819  
## Nu\_free[5] -3.782546e-03 5.102569e-02 0.1539060  
## Nu\_free[6] -1.506345e-03 5.353044e-02 0.1589478  
## Nu\_free[7] -3.766110e-04 5.558101e-02 0.1636603  
## Nu\_free[8] 1.496202e-03 5.354402e-02 0.1531543  
## Nu\_free[9] 4.832501e-03 6.347725e-02 0.1729147  
## lp\_\_ -1.946662e+03 -1.943707e+03 -1938.8675299  
##   
## , , chains = chain:3  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] -1.079690e+00 6.65907233 -1.601666e+01 -4.662616e+00  
## ly\_sign[2] 2.738177e+00 6.73257791 -1.169422e+01 -1.063772e+00  
## ly\_sign[3] 4.710507e+00 3.54499412 9.632271e-01 2.270441e+00  
## ly\_sign[4] 3.724831e+00 3.31220503 7.226149e-01 1.593786e+00  
## ly\_sign[5] 1.823013e+00 7.27850663 -1.465317e+01 -1.065065e+00  
## ly\_sign[6] 1.942195e+00 7.43456313 -1.457553e+01 -1.214211e+00  
## Theta\_var[1] 9.802147e-01 0.11954022 7.643751e-01 9.079904e-01  
## Theta\_var[2] 8.216200e-01 0.31622006 1.300017e-02 7.566591e-01  
## Theta\_var[3] 6.911955e-01 0.38576732 9.621417e-04 3.586238e-01  
## Theta\_var[4] 9.591453e-01 0.12791749 7.341560e-01 8.701670e-01  
## Theta\_var[5] 5.134238e-01 0.32269062 2.333473e-03 2.211094e-01  
## Theta\_var[6] 7.136649e-01 0.28140352 2.136905e-02 5.942449e-01  
## Theta\_var[7] 1.001256e+00 0.12406080 7.841104e-01 9.120563e-01  
## Theta\_var[8] 8.786602e-01 0.26218976 7.087355e-02 8.189450e-01  
## Theta\_var[9] 8.552172e-01 0.29080410 4.054703e-02 7.811522e-01  
## Psi\_var[1] 2.814617e-02 0.06170261 3.337862e-05 2.450784e-03  
## Psi\_var[2] 4.717040e-02 0.05270392 2.374090e-03 1.209213e-02  
## Psi\_var[3] 1.338808e-02 0.03174148 8.364786e-06 7.163381e-04  
## Nu\_free[1] -2.428665e-03 0.07576792 -1.509064e-01 -5.378850e-02  
## Nu\_free[2] 1.761090e-03 0.08340967 -1.584437e-01 -5.334191e-02  
## Nu\_free[3] -8.349765e-03 0.08791718 -1.831806e-01 -6.577897e-02  
## Nu\_free[4] -2.140476e-03 0.08973860 -1.771636e-01 -6.315289e-02  
## Nu\_free[5] -4.789327e-03 0.07821065 -1.609998e-01 -5.681621e-02  
## Nu\_free[6] -4.008972e-03 0.08207528 -1.699612e-01 -5.681651e-02  
## Nu\_free[7] 9.827916e-05 0.08464151 -1.655823e-01 -5.706780e-02  
## Nu\_free[8] 8.272452e-04 0.07989907 -1.525524e-01 -5.258110e-02  
## Nu\_free[9] 3.169734e-03 0.08894729 -1.680280e-01 -5.535927e-02  
## lp\_\_ -1.947060e+03 4.54445693 -1.956695e+03 -1.950004e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 2.592428e-01 1.758104e+00 13.5211568  
## ly\_sign[2] 2.722631e+00 6.556082e+00 16.7069693  
## ly\_sign[3] 3.728604e+00 6.033550e+00 14.2285828  
## ly\_sign[4] 2.601151e+00 4.648692e+00 13.2079201  
## ly\_sign[5] 1.281606e+00 5.601440e+00 16.8519521  
## ly\_sign[6] 1.692458e+00 5.724505e+00 17.5722328  
## Theta\_var[1] 9.781098e-01 1.052629e+00 1.2151518  
## Theta\_var[2] 9.191426e-01 1.021029e+00 1.2204412  
## Theta\_var[3] 8.319730e-01 9.895962e-01 1.2205296  
## Theta\_var[4] 9.521297e-01 1.037193e+00 1.2295113  
## Theta\_var[5] 5.421694e-01 7.886759e-01 1.0374474  
## Theta\_var[6] 7.928825e-01 9.075085e-01 1.0971305  
## Theta\_var[7] 9.934108e-01 1.079148e+00 1.2663034  
## Theta\_var[8] 9.367475e-01 1.033251e+00 1.2243993  
## Theta\_var[9] 9.208262e-01 1.030066e+00 1.2536149  
## Psi\_var[1] 9.176596e-03 2.773122e-02 0.1696822  
## Psi\_var[2] 2.958099e-02 6.320653e-02 0.1973794  
## Psi\_var[3] 3.013902e-03 1.100069e-02 0.1028415  
## Nu\_free[1] -3.077569e-03 4.804556e-02 0.1492876  
## Nu\_free[2] 2.956703e-03 5.650379e-02 0.1702219  
## Nu\_free[3] -9.269700e-03 4.814866e-02 0.1669723  
## Nu\_free[4] -5.572154e-04 5.975132e-02 0.1719447  
## Nu\_free[5] -2.916370e-03 4.867109e-02 0.1473906  
## Nu\_free[6] -2.203865e-03 4.996168e-02 0.1544533  
## Nu\_free[7] 3.961911e-04 5.747740e-02 0.1654305  
## Nu\_free[8] 4.816202e-04 5.355700e-02 0.1614940  
## Nu\_free[9] 3.328726e-03 6.195018e-02 0.1806774  
## lp\_\_ -1.946822e+03 -1.943875e+03 -1938.8510289  
##   
## , , chains = chain:4  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] -1.671082e+00 6.57620623 -1.626872e+01 -5.625937e+00  
## ly\_sign[2] 2.289679e+00 6.82378832 -1.239007e+01 -1.296680e+00  
## ly\_sign[3] 4.745923e+00 3.61816105 9.658155e-01 2.270000e+00  
## ly\_sign[4] 3.769914e+00 3.22240242 7.270739e-01 1.609835e+00  
## ly\_sign[5] 1.659642e+00 7.18371328 -1.451025e+01 -1.126185e+00  
## ly\_sign[6] 1.713784e+00 7.42067589 -1.475701e+01 -1.441835e+00  
## Theta\_var[1] 9.840409e-01 0.11731815 7.799493e-01 9.084243e-01  
## Theta\_var[2] 7.877623e-01 0.34250951 4.861582e-03 6.808072e-01  
## Theta\_var[3] 7.104469e-01 0.36944796 5.210213e-03 4.096835e-01  
## Theta\_var[4] 9.588669e-01 0.12505872 7.376844e-01 8.729400e-01  
## Theta\_var[5] 5.195104e-01 0.32741143 2.775309e-03 2.233719e-01  
## Theta\_var[6] 7.104108e-01 0.28314413 2.676829e-02 5.747408e-01  
## Theta\_var[7] 9.970670e-01 0.12500795 7.769230e-01 9.120646e-01  
## Theta\_var[8] 8.780890e-01 0.26704047 3.122592e-02 8.191156e-01  
## Theta\_var[9] 8.648797e-01 0.28013251 6.704517e-02 7.911221e-01  
## Psi\_var[1] 2.483476e-02 0.05058879 4.642914e-05 2.679476e-03  
## Psi\_var[2] 4.610428e-02 0.05277364 2.474409e-03 1.229568e-02  
## Psi\_var[3] 1.507690e-02 0.03970759 5.693850e-06 6.598553e-04  
## Nu\_free[1] 4.544175e-04 0.07300415 -1.466699e-01 -4.971760e-02  
## Nu\_free[2] 4.518761e-03 0.08289977 -1.575154e-01 -5.191120e-02  
## Nu\_free[3] -9.780368e-03 0.09123291 -1.931435e-01 -7.069120e-02  
## Nu\_free[4] -4.935556e-03 0.08773143 -1.840179e-01 -6.203778e-02  
## Nu\_free[5] -4.632712e-03 0.08173048 -1.667268e-01 -5.806607e-02  
## Nu\_free[6] -4.664514e-03 0.08254299 -1.657487e-01 -5.992057e-02  
## Nu\_free[7] -1.253734e-03 0.08542104 -1.675713e-01 -5.860844e-02  
## Nu\_free[8] -6.937889e-04 0.07978273 -1.557675e-01 -5.456162e-02  
## Nu\_free[9] 1.304160e-03 0.08647636 -1.649556e-01 -5.727803e-02  
## lp\_\_ -1.946988e+03 4.56072373 -1.956722e+03 -1.949857e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 3.317553e-02 1.541735e+00 11.6239727  
## ly\_sign[2] 2.025880e+00 6.110042e+00 16.5656856  
## ly\_sign[3] 3.682287e+00 6.007695e+00 14.9767389  
## ly\_sign[4] 2.647297e+00 4.813880e+00 12.9997017  
## ly\_sign[5] 1.384448e+00 5.330350e+00 16.5536445  
## ly\_sign[6] 1.542743e+00 5.668478e+00 17.1373781  
## Theta\_var[1] 9.806905e-01 1.055933e+00 1.2197563  
## Theta\_var[2] 9.045367e-01 1.013924e+00 1.2108364  
## Theta\_var[3] 8.415377e-01 9.873204e-01 1.2133771  
## Theta\_var[4] 9.508639e-01 1.035778e+00 1.2265435  
## Theta\_var[5] 5.632413e-01 7.963888e-01 1.0473298  
## Theta\_var[6] 7.870121e-01 9.032345e-01 1.1173213  
## Theta\_var[7] 9.883735e-01 1.074457e+00 1.2657330  
## Theta\_var[8] 9.400230e-01 1.035469e+00 1.2178667  
## Theta\_var[9] 9.276678e-01 1.032348e+00 1.2649039  
## Psi\_var[1] 9.462194e-03 2.688506e-02 0.1418902  
## Psi\_var[2] 2.965080e-02 6.044626e-02 0.1899050  
## Psi\_var[3] 3.189495e-03 1.149880e-02 0.1190257  
## Nu\_free[1] 1.029684e-03 4.945311e-02 0.1456055  
## Nu\_free[2] 4.056371e-03 6.118821e-02 0.1684994  
## Nu\_free[3] -1.097181e-02 5.340912e-02 0.1663038  
## Nu\_free[4] -3.630642e-03 5.335984e-02 0.1641165  
## Nu\_free[5] -5.685204e-03 4.794157e-02 0.1605079  
## Nu\_free[6] -3.557945e-03 4.874302e-02 0.1557153  
## Nu\_free[7] -1.433238e-03 5.579195e-02 0.1640486  
## Nu\_free[8] -1.235936e-03 5.388497e-02 0.1544775  
## Nu\_free[9] 1.441008e-03 5.930693e-02 0.1712346  
## lp\_\_ -1.946722e+03 -1.943838e+03 -1938.8550729

## bfit.2factors1

tmp4 = blavInspect(bfit.2factors1, "mcobj")  
summary(tmp4)

## $summary  
## mean se\_mean sd 2.5%  
## ly\_sign[1] 3.937947e+00 0.0397424071 2.810110608 -3.906139e-01  
## ly\_sign[2] 7.069293e+00 0.0587544859 3.588585190 1.747404e+00  
## ly\_sign[3] 5.619896e+00 0.0654635367 3.226638522 9.094230e-01  
## ly\_sign[4] 1.199398e+01 0.0853135904 5.078096481 3.884395e+00  
## ly\_sign[5] 8.441121e+00 0.0695327261 4.080217762 2.397394e+00  
## ly\_sign[6] 1.420391e+00 0.1263097615 7.296931424 -1.536737e+01  
## ly\_sign[7] 1.751311e+00 0.0962756413 7.262314430 -1.464506e+01  
## Theta\_var[1] 1.003182e+00 0.0012039427 0.106345921 8.167330e-01  
## Theta\_var[2] 9.673958e-01 0.0013348977 0.123438630 7.525667e-01  
## Theta\_var[3] 8.667656e-01 0.0016415718 0.137250489 6.139833e-01  
## Theta\_var[4] 9.234386e-01 0.0012311692 0.127690234 6.951207e-01  
## Theta\_var[5] 5.965276e-01 0.0044566370 0.202635076 9.195174e-02  
## Theta\_var[6] 8.131610e-01 0.0019156775 0.138127383 5.460627e-01  
## Theta\_var[7] 9.992864e-01 0.0016682086 0.123497940 7.848243e-01  
## Theta\_var[8] 8.851892e-01 0.0091941982 0.245266013 1.480694e-01  
## Theta\_var[9] 8.685815e-01 0.0088050611 0.272321086 7.949903e-02  
## Psi\_var[1] 4.457541e-03 0.0001056939 0.005536607 6.994412e-04  
## Psi\_var[2] 1.258599e-02 0.0006806864 0.027314940 7.402070e-06  
## Nu\_free[1] -6.255393e-04 0.0007598530 0.074152530 -1.485453e-01  
## Nu\_free[2] -4.069398e-03 0.0007606209 0.081166887 -1.647584e-01  
## Nu\_free[3] -1.449858e-02 0.0009408737 0.088929391 -1.876405e-01  
## Nu\_free[4] -7.994600e-03 0.0008435405 0.087113922 -1.789674e-01  
## Nu\_free[5] -1.764142e-02 0.0008851326 0.080849331 -1.725006e-01  
## Nu\_free[6] -2.470906e-03 0.0008996169 0.081893793 -1.633510e-01  
## Nu\_free[7] 1.192520e-03 0.0009898911 0.083150971 -1.640567e-01  
## Nu\_free[8] -2.734686e-04 0.0009377753 0.079209939 -1.544099e-01  
## Nu\_free[9] 1.689622e-03 0.0008097024 0.089452854 -1.758924e-01  
## lp\_\_ -1.943763e+03 0.0676897470 4.308274766 -1.953023e+03  
## 25% 50% 75% 97.5%  
## ly\_sign[1] 1.980638e+00 3.502403e+00 5.497443e+00 1.043341e+01  
## ly\_sign[2] 4.475169e+00 6.534911e+00 9.020580e+00 1.544927e+01  
## ly\_sign[3] 3.324648e+00 5.095327e+00 7.338490e+00 1.348962e+01  
## ly\_sign[4] 8.267822e+00 1.138107e+01 1.507503e+01 2.368265e+01  
## ly\_sign[5] 5.497898e+00 7.794894e+00 1.071131e+01 1.803362e+01  
## ly\_sign[6] -1.476602e+00 1.249772e+00 5.129061e+00 1.679239e+01  
## ly\_sign[7] -1.303465e+00 1.542381e+00 5.456709e+00 1.677578e+01  
## Theta\_var[1] 9.274282e-01 9.968985e-01 1.070546e+00 1.232267e+00  
## Theta\_var[2] 8.815587e-01 9.590313e-01 1.041947e+00 1.236899e+00  
## Theta\_var[3] 7.734691e-01 8.601754e-01 9.535738e-01 1.152707e+00  
## Theta\_var[4] 8.344127e-01 9.142461e-01 1.002761e+00 1.194591e+00  
## Theta\_var[5] 4.814476e-01 6.166491e-01 7.344930e-01 9.439613e-01  
## Theta\_var[6] 7.270420e-01 8.118200e-01 8.996000e-01 1.095686e+00  
## Theta\_var[7] 9.139733e-01 9.909100e-01 1.075691e+00 1.269952e+00  
## Theta\_var[8] 8.197606e-01 9.346225e-01 1.032144e+00 1.220386e+00  
## Theta\_var[9] 7.904597e-01 9.256424e-01 1.033691e+00 1.255242e+00  
## Psi\_var[1] 1.692657e-03 2.827509e-03 4.995606e-03 1.910430e-02  
## Psi\_var[2] 6.772212e-04 3.058073e-03 1.148052e-02 8.870605e-02  
## Nu\_free[1] -4.952219e-02 -1.776846e-04 4.873372e-02 1.443794e-01  
## Nu\_free[2] -5.750344e-02 -3.169543e-03 4.894924e-02 1.575946e-01  
## Nu\_free[3] -7.466495e-02 -1.575248e-02 4.605897e-02 1.583833e-01  
## Nu\_free[4] -6.787226e-02 -7.709242e-03 5.075185e-02 1.626790e-01  
## Nu\_free[5] -7.309699e-02 -1.865586e-02 3.754033e-02 1.399573e-01  
## Nu\_free[6] -5.791893e-02 -2.603735e-03 5.331746e-02 1.579203e-01  
## Nu\_free[7] -5.558137e-02 1.611481e-03 5.791459e-02 1.623052e-01  
## Nu\_free[8] -5.367244e-02 1.693016e-04 5.329219e-02 1.541523e-01  
## Nu\_free[9] -5.821203e-02 2.555964e-03 6.164133e-02 1.762428e-01  
## lp\_\_ -1.946436e+03 -1.943437e+03 -1.940743e+03 -1.936220e+03  
## n\_eff Rhat  
## ly\_sign[1] 4999.6372 1.0004790  
## ly\_sign[2] 3730.4778 1.0009343  
## ly\_sign[3] 2429.4150 1.0011722  
## ly\_sign[4] 3542.9535 1.0019329  
## ly\_sign[5] 3443.4055 1.0018051  
## ly\_sign[6] 3337.3880 1.0005659  
## ly\_sign[7] 5690.0654 1.0015268  
## Theta\_var[1] 7802.4327 1.0002270  
## Theta\_var[2] 8550.7902 1.0004888  
## Theta\_var[3] 6990.4969 1.0008392  
## Theta\_var[4] 10756.7209 1.0000504  
## Theta\_var[5] 2067.3534 1.0010446  
## Theta\_var[6] 5198.9393 0.9999188  
## Theta\_var[7] 5480.4817 1.0008760  
## Theta\_var[8] 711.6182 1.0084347  
## Theta\_var[9] 956.5282 1.0043822  
## Psi\_var[1] 2744.0193 1.0017510  
## Psi\_var[2] 1610.2985 1.0022481  
## Nu\_free[1] 9523.4165 1.0003790  
## Nu\_free[2] 11387.3125 0.9999067  
## Nu\_free[3] 8933.6312 1.0000080  
## Nu\_free[4] 10665.0594 1.0002747  
## Nu\_free[5] 8343.2679 1.0002197  
## Nu\_free[6] 8286.7980 1.0002153  
## Nu\_free[7] 7056.0208 1.0004143  
## Nu\_free[8] 7134.4712 1.0002124  
## Nu\_free[9] 12204.9930 0.9999415  
## lp\_\_ 4050.9885 1.0006313  
##   
## $c\_summary  
## , , chains = chain:1  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 3.998069e+00 2.872534873 -3.861275e-01 2.052113e+00  
## ly\_sign[2] 7.148650e+00 3.571811447 1.793361e+00 4.583751e+00  
## ly\_sign[3] 5.752716e+00 3.276072437 8.861964e-01 3.422263e+00  
## ly\_sign[4] 1.215499e+01 5.091020095 4.186974e+00 8.452123e+00  
## ly\_sign[5] 8.548963e+00 3.999726321 2.602392e+00 5.657402e+00  
## ly\_sign[6] 1.473401e+00 7.077758394 -1.466413e+01 -1.350230e+00  
## ly\_sign[7] 1.969509e+00 7.197557009 -1.438897e+01 -1.013216e+00  
## Theta\_var[1] 1.000567e+00 0.104248394 8.209829e-01 9.257952e-01  
## Theta\_var[2] 9.703608e-01 0.124760903 7.554502e-01 8.840523e-01  
## Theta\_var[3] 8.648679e-01 0.136065487 6.107320e-01 7.729733e-01  
## Theta\_var[4] 9.246161e-01 0.129212963 6.976600e-01 8.343923e-01  
## Theta\_var[5] 5.976564e-01 0.200615854 1.089880e-01 4.867105e-01  
## Theta\_var[6] 8.136693e-01 0.135601907 5.470646e-01 7.312076e-01  
## Theta\_var[7] 1.004913e+00 0.125420186 7.845985e-01 9.197117e-01  
## Theta\_var[8] 8.720312e-01 0.256653343 8.743897e-02 8.142958e-01  
## Theta\_var[9] 8.513464e-01 0.294388729 4.794887e-02 7.799872e-01  
## Psi\_var[1] 4.108891e-03 0.004644199 7.069808e-04 1.684045e-03  
## Psi\_var[2] 1.428322e-02 0.029699616 6.956491e-06 7.824435e-04  
## Nu\_free[1] 2.910958e-05 0.075172938 -1.500861e-01 -5.079144e-02  
## Nu\_free[2] -4.843540e-03 0.079569530 -1.616448e-01 -5.688908e-02  
## Nu\_free[3] -1.466368e-02 0.088278834 -1.919219e-01 -7.466340e-02  
## Nu\_free[4] -1.083246e-02 0.087231350 -1.815403e-01 -7.103250e-02  
## Nu\_free[5] -1.925575e-02 0.081253120 -1.792543e-01 -7.711863e-02  
## Nu\_free[6] -2.923483e-03 0.082031351 -1.654244e-01 -5.778184e-02  
## Nu\_free[7] -8.149694e-05 0.086632620 -1.761860e-01 -5.860427e-02  
## Nu\_free[8] 2.051732e-03 0.080316985 -1.524263e-01 -5.199678e-02  
## Nu\_free[9] 1.551138e-03 0.087322167 -1.698544e-01 -5.683876e-02  
## lp\_\_ -1.943727e+03 4.291242772 -1.953309e+03 -1.946346e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 3.558742e+00 5.467355e+00 1.095193e+01  
## ly\_sign[2] 6.691556e+00 9.032942e+00 1.556767e+01  
## ly\_sign[3] 5.241218e+00 7.606953e+00 1.353402e+01  
## ly\_sign[4] 1.141777e+01 1.511817e+01 2.411927e+01  
## ly\_sign[5] 7.985927e+00 1.066441e+01 1.803385e+01  
## ly\_sign[6] 1.241899e+00 5.088767e+00 1.620299e+01  
## ly\_sign[7] 1.584962e+00 5.524989e+00 1.736260e+01  
## Theta\_var[1] 9.922021e-01 1.064397e+00 1.225517e+00  
## Theta\_var[2] 9.600494e-01 1.042982e+00 1.247078e+00  
## Theta\_var[3] 8.609062e-01 9.510755e-01 1.140488e+00  
## Theta\_var[4] 9.140831e-01 1.005664e+00 1.203404e+00  
## Theta\_var[5] 6.201100e-01 7.328447e-01 9.372925e-01  
## Theta\_var[6] 8.101749e-01 8.967675e-01 1.089645e+00  
## Theta\_var[7] 9.955327e-01 1.078163e+00 1.293472e+00  
## Theta\_var[8] 9.324237e-01 1.024198e+00 1.204138e+00  
## Theta\_var[9] 9.253413e-01 1.031185e+00 1.243015e+00  
## Psi\_var[1] 2.745032e-03 4.869175e-03 1.585086e-02  
## Psi\_var[2] 3.381953e-03 1.321770e-02 1.043517e-01  
## Nu\_free[1] 8.389485e-04 5.055366e-02 1.504053e-01  
## Nu\_free[2] -4.256991e-03 4.799904e-02 1.510726e-01  
## Nu\_free[3] -1.606818e-02 4.739138e-02 1.566915e-01  
## Nu\_free[4] -1.072499e-02 4.819409e-02 1.612021e-01  
## Nu\_free[5] -1.997705e-02 3.587655e-02 1.440158e-01  
## Nu\_free[6] -4.560721e-03 5.166093e-02 1.616685e-01  
## Nu\_free[7] 4.555059e-04 5.949580e-02 1.693215e-01  
## Nu\_free[8] 1.827076e-03 5.651291e-02 1.587769e-01  
## Nu\_free[9] 2.532510e-03 5.843213e-02 1.722231e-01  
## lp\_\_ -1.943310e+03 -1.940675e+03 -1.936354e+03  
##   
## , , chains = chain:2  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 3.987417e+00 2.906598983 -4.546143e-01 1.955270e+00  
## ly\_sign[2] 7.209753e+00 3.676037522 1.797443e+00 4.545020e+00  
## ly\_sign[3] 5.762765e+00 3.389461559 1.010638e+00 3.345617e+00  
## ly\_sign[4] 1.221301e+01 5.056424150 3.876427e+00 8.469959e+00  
## ly\_sign[5] 8.600876e+00 4.199633706 2.229289e+00 5.519245e+00  
## ly\_sign[6] 1.458455e+00 7.045297628 -1.527445e+01 -1.138970e+00  
## ly\_sign[7] 2.048627e+00 7.143065507 -1.401692e+01 -9.586043e-01  
## Theta\_var[1] 1.007017e+00 0.108349452 8.222156e-01 9.273106e-01  
## Theta\_var[2] 9.629318e-01 0.120095068 7.543345e-01 8.781373e-01  
## Theta\_var[3] 8.638046e-01 0.136650770 6.226258e-01 7.688084e-01  
## Theta\_var[4] 9.241304e-01 0.126118933 6.980045e-01 8.357910e-01  
## Theta\_var[5] 5.951602e-01 0.213330272 4.537425e-02 4.813272e-01  
## Theta\_var[6] 8.137651e-01 0.138383335 5.532651e-01 7.189026e-01  
## Theta\_var[7] 9.942601e-01 0.122934771 7.862074e-01 9.060137e-01  
## Theta\_var[8] 8.859745e-01 0.235345661 2.240037e-01 8.155826e-01  
## Theta\_var[9] 8.556792e-01 0.289751771 7.577052e-02 7.777631e-01  
## Psi\_var[1] 4.443888e-03 0.005948746 6.302855e-04 1.616405e-03  
## Psi\_var[2] 1.344099e-02 0.030082914 8.560773e-06 7.185151e-04  
## Nu\_free[1] -3.460427e-03 0.073817606 -1.544003e-01 -5.140301e-02  
## Nu\_free[2] -3.884501e-03 0.078153614 -1.609874e-01 -5.558633e-02  
## Nu\_free[3] -1.257730e-02 0.088134922 -1.822487e-01 -7.154690e-02  
## Nu\_free[4] -4.193951e-03 0.086080949 -1.767372e-01 -6.231312e-02  
## Nu\_free[5] -1.893211e-02 0.081988350 -1.735559e-01 -7.651565e-02  
## Nu\_free[6] -1.111105e-03 0.081087926 -1.628302e-01 -5.543718e-02  
## Nu\_free[7] 4.254385e-03 0.080481259 -1.565457e-01 -5.208764e-02  
## Nu\_free[8] -1.617155e-03 0.077893809 -1.498544e-01 -5.418234e-02  
## Nu\_free[9] 2.505457e-03 0.088793205 -1.744531e-01 -5.554265e-02  
## lp\_\_ -1.943657e+03 4.341684343 -1.952914e+03 -1.946413e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 3.482751e+00 5.688366e+00 1.049788e+01  
## ly\_sign[2] 6.656480e+00 9.295775e+00 1.532512e+01  
## ly\_sign[3] 5.163763e+00 7.463940e+00 1.498550e+01  
## ly\_sign[4] 1.183753e+01 1.545623e+01 2.357594e+01  
## ly\_sign[5] 7.962742e+00 1.105792e+01 1.845068e+01  
## ly\_sign[6] 1.289698e+00 5.176514e+00 1.616287e+01  
## ly\_sign[7] 1.650217e+00 5.627943e+00 1.667965e+01  
## Theta\_var[1] 9.986630e-01 1.075758e+00 1.243802e+00  
## Theta\_var[2] 9.590036e-01 1.036853e+00 1.209013e+00  
## Theta\_var[3] 8.547263e-01 9.477968e-01 1.155463e+00  
## Theta\_var[4] 9.150781e-01 1.000344e+00 1.196557e+00  
## Theta\_var[5] 6.226736e-01 7.379151e-01 9.507876e-01  
## Theta\_var[6] 8.113751e-01 9.025723e-01 1.100874e+00  
## Theta\_var[7] 9.863594e-01 1.071099e+00 1.253894e+00  
## Theta\_var[8] 9.318682e-01 1.033714e+00 1.213656e+00  
## Theta\_var[9] 9.242424e-01 1.033121e+00 1.245382e+00  
## Psi\_var[1] 2.726835e-03 4.689963e-03 2.036213e-02  
## Psi\_var[2] 3.620771e-03 1.278218e-02 8.875840e-02  
## Nu\_free[1] -3.372743e-03 4.446188e-02 1.406890e-01  
## Nu\_free[2] -8.986936e-04 4.479216e-02 1.518368e-01  
## Nu\_free[3] -1.531019e-02 4.756350e-02 1.543624e-01  
## Nu\_free[4] -2.666538e-03 5.304300e-02 1.590354e-01  
## Nu\_free[5] -2.028902e-02 3.845941e-02 1.367123e-01  
## Nu\_free[6] -5.782468e-04 5.583385e-02 1.528576e-01  
## Nu\_free[7] 5.872355e-03 6.058394e-02 1.513235e-01  
## Nu\_free[8] -1.302565e-03 5.024484e-02 1.496486e-01  
## Nu\_free[9] 3.261660e-03 6.431918e-02 1.715984e-01  
## lp\_\_ -1.943335e+03 -1.940618e+03 -1.936017e+03  
##   
## , , chains = chain:3  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 3.929833e+00 2.761780661 -3.695440e-01 1.998164e+00  
## ly\_sign[2] 7.047340e+00 3.585267661 1.651206e+00 4.457481e+00  
## ly\_sign[3] 5.488803e+00 3.096841133 8.328326e-01 3.269475e+00  
## ly\_sign[4] 1.197279e+01 5.138779447 3.758838e+00 8.223794e+00  
## ly\_sign[5] 8.440305e+00 4.205075462 2.284716e+00 5.391597e+00  
## ly\_sign[6] 1.431225e+00 7.763006109 -1.644522e+01 -1.513519e+00  
## ly\_sign[7] 1.615646e+00 7.242892867 -1.474877e+01 -1.249481e+00  
## Theta\_var[1] 1.002675e+00 0.108274885 8.114924e-01 9.269766e-01  
## Theta\_var[2] 9.652057e-01 0.122147005 7.496904e-01 8.788820e-01  
## Theta\_var[3] 8.694141e-01 0.141933820 6.060040e-01 7.747804e-01  
## Theta\_var[4] 9.250191e-01 0.126319135 6.970477e-01 8.361677e-01  
## Theta\_var[5] 5.946228e-01 0.202575044 9.030271e-02 4.822567e-01  
## Theta\_var[6] 8.123567e-01 0.143939973 5.272611e-01 7.277907e-01  
## Theta\_var[7] 1.001501e+00 0.121189833 7.867701e-01 9.180620e-01  
## Theta\_var[8] 8.570237e-01 0.287160378 1.088665e-02 7.965662e-01  
## Theta\_var[9] 8.674571e-01 0.276488483 6.976445e-02 7.948058e-01  
## Psi\_var[1] 4.514982e-03 0.005446709 7.349021e-04 1.691208e-03  
## Psi\_var[2] 1.238608e-02 0.026730358 6.484280e-06 7.209509e-04  
## Nu\_free[1] 2.155101e-03 0.074792531 -1.430003e-01 -4.720040e-02  
## Nu\_free[2] -4.380450e-03 0.081427059 -1.650667e-01 -5.778982e-02  
## Nu\_free[3] -1.385661e-02 0.090400915 -1.850562e-01 -7.622191e-02  
## Nu\_free[4] -8.009719e-03 0.088075162 -1.800530e-01 -6.848150e-02  
## Nu\_free[5] -1.554638e-02 0.080417941 -1.719079e-01 -7.002426e-02  
## Nu\_free[6] -3.235282e-03 0.082531610 -1.644284e-01 -5.963898e-02  
## Nu\_free[7] 1.146263e-03 0.081998981 -1.603263e-01 -5.452700e-02  
## Nu\_free[8] 3.889418e-06 0.078426979 -1.535390e-01 -5.265772e-02  
## Nu\_free[9] 2.344640e-03 0.089571908 -1.734915e-01 -5.852409e-02  
## lp\_\_ -1.943949e+03 4.338195337 -1.953329e+03 -1.946667e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 3.538543e+00 5.520197e+00 1.028640e+01  
## ly\_sign[2] 6.500834e+00 9.049991e+00 1.544985e+01  
## ly\_sign[3] 5.016932e+00 7.187982e+00 1.261911e+01  
## ly\_sign[4] 1.127407e+01 1.511601e+01 2.370372e+01  
## ly\_sign[5] 7.725762e+00 1.078189e+01 1.838321e+01  
## ly\_sign[6] 1.244765e+00 5.398225e+00 1.749118e+01  
## ly\_sign[7] 1.398194e+00 5.358994e+00 1.655560e+01  
## Theta\_var[1] 9.971610e-01 1.071588e+00 1.233233e+00  
## Theta\_var[2] 9.581653e-01 1.040669e+00 1.227566e+00  
## Theta\_var[3] 8.626280e-01 9.569962e-01 1.169880e+00  
## Theta\_var[4] 9.162894e-01 1.007241e+00 1.188649e+00  
## Theta\_var[5] 6.146095e-01 7.357138e-01 9.375967e-01  
## Theta\_var[6] 8.131893e-01 9.002617e-01 1.099963e+00  
## Theta\_var[7] 9.930266e-01 1.077673e+00 1.266268e+00  
## Theta\_var[8] 9.309217e-01 1.031365e+00 1.218838e+00  
## Theta\_var[9] 9.312165e-01 1.034733e+00 1.248545e+00  
## Psi\_var[1] 2.808753e-03 5.091195e-03 1.951438e-02  
## Psi\_var[2] 3.141094e-03 1.169312e-02 8.405934e-02  
## Nu\_free[1] 1.881998e-03 5.369354e-02 1.477036e-01  
## Nu\_free[2] -4.118609e-03 4.941838e-02 1.602371e-01  
## Nu\_free[3] -1.441515e-02 4.877756e-02 1.613907e-01  
## Nu\_free[4] -9.237655e-03 5.185842e-02 1.670215e-01  
## Nu\_free[5] -1.617572e-02 3.996775e-02 1.396255e-01  
## Nu\_free[6] -2.881974e-03 5.219310e-02 1.588792e-01  
## Nu\_free[7] 1.374039e-03 5.666413e-02 1.634676e-01  
## Nu\_free[8] 5.967932e-04 5.393999e-02 1.516066e-01  
## Nu\_free[9] 3.639127e-03 6.264929e-02 1.766995e-01  
## lp\_\_ -1.943617e+03 -1.940935e+03 -1.936296e+03  
##   
## , , chains = chain:4  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 3.836469e+00 2.692209125 -3.534445e-01 1.932022e+00  
## ly\_sign[2] 6.871428e+00 3.511210312 1.743912e+00 4.321481e+00  
## ly\_sign[3] 5.475299e+00 3.124635304 9.086876e-01 3.278592e+00  
## ly\_sign[4] 1.163514e+01 5.006756424 3.727213e+00 7.958533e+00  
## ly\_sign[5] 8.174339e+00 3.895761599 2.468710e+00 5.402524e+00  
## ly\_sign[6] 1.318482e+00 7.280307354 -1.460340e+01 -1.938695e+00  
## ly\_sign[7] 1.371462e+00 7.443791262 -1.525581e+01 -2.216922e+00  
## Theta\_var[1] 1.002468e+00 0.104362403 8.137408e-01 9.298437e-01  
## Theta\_var[2] 9.710848e-01 0.126500570 7.491746e-01 8.847064e-01  
## Theta\_var[3] 8.689760e-01 0.134184048 6.224362e-01 7.776892e-01  
## Theta\_var[4] 9.199890e-01 0.129051167 6.882521e-01 8.312040e-01  
## Theta\_var[5] 5.986709e-01 0.193556180 1.784385e-01 4.770097e-01  
## Theta\_var[6] 8.128528e-01 0.134425590 5.479579e-01 7.274881e-01  
## Theta\_var[7] 9.964710e-01 0.124161967 7.805828e-01 9.120286e-01  
## Theta\_var[8] 9.257273e-01 0.185276172 4.491016e-01 8.438821e-01  
## Theta\_var[9] 8.998433e-01 0.219477870 3.394536e-01 8.048420e-01  
## Psi\_var[1] 4.762403e-03 0.005982776 7.404320e-04 1.805323e-03  
## Psi\_var[2] 1.023367e-02 0.021774382 7.898177e-06 5.311537e-04  
## Nu\_free[1] -1.225941e-03 0.072713117 -1.461995e-01 -4.849106e-02  
## Nu\_free[2] -3.169102e-03 0.085352232 -1.727565e-01 -6.051768e-02  
## Nu\_free[3] -1.689673e-02 0.088855871 -1.928921e-01 -7.509250e-02  
## Nu\_free[4] -8.942276e-03 0.086948388 -1.762440e-01 -6.906046e-02  
## Nu\_free[5] -1.683145e-02 0.079685990 -1.683222e-01 -6.954070e-02  
## Nu\_free[6] -2.613755e-03 0.081926054 -1.612247e-01 -5.910348e-02  
## Nu\_free[7] -5.490715e-04 0.083307694 -1.609392e-01 -5.769672e-02  
## Nu\_free[8] -1.532342e-03 0.080141706 -1.607924e-01 -5.665102e-02  
## Nu\_free[9] 3.572525e-04 0.092068692 -1.843272e-01 -6.195660e-02  
## lp\_\_ -1.943721e+03 4.257029674 -1.952808e+03 -1.946319e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 3.435321e+00 5.338369e+00 1.008997e+01  
## ly\_sign[2] 6.317817e+00 8.731247e+00 1.542881e+01  
## ly\_sign[3] 4.960772e+00 7.162600e+00 1.291975e+01  
## ly\_sign[4] 1.102482e+01 1.458070e+01 2.323962e+01  
## ly\_sign[5] 7.530811e+00 1.034404e+01 1.733623e+01  
## ly\_sign[6] 1.217307e+00 4.808089e+00 1.681737e+01  
## ly\_sign[7] 1.506989e+00 5.276102e+00 1.664994e+01  
## Theta\_var[1] 9.994635e-01 1.069435e+00 1.219488e+00  
## Theta\_var[2] 9.590574e-01 1.048072e+00 1.255172e+00  
## Theta\_var[3] 8.619817e-01 9.573160e-01 1.148324e+00  
## Theta\_var[4] 9.120160e-01 1.000604e+00 1.194192e+00  
## Theta\_var[5] 6.102922e-01 7.314555e-01 9.506329e-01  
## Theta\_var[6] 8.127383e-01 8.985089e-01 1.084340e+00  
## Theta\_var[7] 9.862493e-01 1.073572e+00 1.269966e+00  
## Theta\_var[8] 9.445630e-01 1.039512e+00 1.232023e+00  
## Theta\_var[9] 9.232148e-01 1.036940e+00 1.272126e+00  
## Psi\_var[1] 3.008614e-03 5.331209e-03 2.122854e-02  
## Psi\_var[2] 2.239379e-03 8.617425e-03 8.273966e-02  
## Nu\_free[1] -4.217167e-04 4.576876e-02 1.434321e-01  
## Nu\_free[2] -2.676530e-03 5.290000e-02 1.689625e-01  
## Nu\_free[3] -1.709130e-02 4.043970e-02 1.601331e-01  
## Nu\_free[4] -8.553895e-03 5.015766e-02 1.629213e-01  
## Nu\_free[5] -1.827494e-02 3.578918e-02 1.401972e-01  
## Nu\_free[6] -2.580101e-03 5.362084e-02 1.592324e-01  
## Nu\_free[7] -1.451418e-04 5.491769e-02 1.630515e-01  
## Nu\_free[8] -5.745758e-05 5.197535e-02 1.555808e-01  
## Nu\_free[9] 9.726205e-04 6.271290e-02 1.826210e-01  
## lp\_\_ -1.943467e+03 -1.940732e+03 -1.936051e+03

## bfit.2factors2

tmp5 = blavInspect(bfit.2factors2, "mcobj")  
summary(tmp5)

## $summary  
## mean se\_mean sd 2.5%  
## ly\_sign[1] 7.386763e-01 2.217393e-01 6.775872368 -1.393339e+01  
## ly\_sign[2] 3.193619e+00 4.692633e-01 11.378985397 -1.945297e+01  
## ly\_sign[3] 1.247825e+00 2.466206e-01 7.278317781 -1.416721e+01  
## ly\_sign[4] 2.198002e+00 4.251631e-01 10.353781819 -1.865913e+01  
## ly\_sign[5] 1.108312e+00 2.113753e-01 6.600912509 -1.285118e+01  
## ly\_sign[6] 4.301520e+00 2.728539e-01 4.336315417 -4.088305e+00  
## ly\_sign[7] 3.512876e+00 2.721674e-01 4.281778519 -4.675262e+00  
## Theta\_var[1] 1.004490e+00 7.244400e-04 0.107282630 8.159748e-01  
## Theta\_var[2] 9.702807e-01 1.274103e-03 0.128445012 7.429291e-01  
## Theta\_var[3] 8.085596e-01 4.016256e-03 0.225839107 2.135139e-01  
## Theta\_var[4] 9.575033e-01 1.015828e-03 0.129234330 7.163938e-01  
## Theta\_var[5] 8.692911e-01 2.357557e-03 0.169491183 5.020340e-01  
## Theta\_var[6] 9.766924e-01 1.044057e-03 0.139565573 7.252994e-01  
## Theta\_var[7] 9.596022e-01 1.226553e-03 0.126957088 7.347696e-01  
## Theta\_var[8] 5.289436e-01 4.827814e-03 0.321441711 3.079749e-03  
## Theta\_var[9] 7.015380e-01 5.520735e-03 0.287630025 1.825487e-02  
## Psi\_var[1] 2.386175e-03 5.519787e-05 0.003516094 2.610512e-05  
## Psi\_var[2] 4.516151e-02 7.740996e-04 0.052567894 1.971918e-03  
## Nu\_free[1] -4.630250e-05 5.079649e-04 0.073771848 -1.458166e-01  
## Nu\_free[2] -1.965404e-03 5.550946e-04 0.081731897 -1.617064e-01  
## Nu\_free[3] 3.337332e-03 6.240465e-04 0.088106688 -1.668331e-01  
## Nu\_free[4] 3.193838e-05 5.406353e-04 0.081268323 -1.603869e-01  
## Nu\_free[5] -4.409940e-04 6.231856e-04 0.084807852 -1.678070e-01  
## Nu\_free[6] 3.757924e-03 6.094249e-04 0.089089663 -1.705631e-01  
## Nu\_free[7] -4.457912e-03 6.290598e-04 0.087692046 -1.758289e-01  
## Nu\_free[8] -7.113857e-03 5.372489e-04 0.081215960 -1.662703e-01  
## Nu\_free[9] -5.881698e-03 5.652476e-04 0.083075651 -1.680230e-01  
## lp\_\_ -1.945388e+03 1.318813e-01 4.911911699 -1.955803e+03  
## 25% 50% 75% 97.5%  
## ly\_sign[1] -3.304326e+00 1.474664e+00 4.770351e+00 1.361494e+01  
## ly\_sign[2] -6.409126e+00 5.952484e+00 1.130031e+01 2.177153e+01  
## ly\_sign[3] -3.515981e+00 2.123381e+00 5.776466e+00 1.471164e+01  
## ly\_sign[4] -6.191274e+00 4.452605e+00 9.496762e+00 1.967592e+01  
## ly\_sign[5] -2.658654e+00 1.543191e+00 4.927720e+00 1.402336e+01  
## ly\_sign[6] 2.147039e+00 3.603465e+00 5.902423e+00 1.434756e+01  
## ly\_sign[7] 1.542860e+00 2.601911e+00 4.830432e+00 1.357951e+01  
## Theta\_var[1] 9.285217e-01 9.965577e-01 1.072306e+00 1.236410e+00  
## Theta\_var[2] 8.849674e-01 9.634089e-01 1.050331e+00 1.236997e+00  
## Theta\_var[3] 6.997821e-01 8.333698e-01 9.520823e-01 1.186340e+00  
## Theta\_var[4] 8.720149e-01 9.532756e-01 1.038930e+00 1.221446e+00  
## Theta\_var[5] 7.736707e-01 8.776357e-01 9.778906e-01 1.177719e+00  
## Theta\_var[6] 8.826908e-01 9.687974e-01 1.061903e+00 1.270742e+00  
## Theta\_var[7] 8.722031e-01 9.513172e-01 1.038925e+00 1.227731e+00  
## Theta\_var[8] 2.376071e-01 5.787959e-01 7.972414e-01 1.041572e+00  
## Theta\_var[9] 5.668184e-01 7.810855e-01 8.986531e-01 1.104268e+00  
## Psi\_var[1] 6.771477e-04 1.354291e-03 2.684073e-03 1.184551e-02  
## Psi\_var[2] 1.062600e-02 2.733598e-02 6.023489e-02 1.865682e-01  
## Nu\_free[1] -4.985968e-02 4.396670e-04 4.987676e-02 1.441998e-01  
## Nu\_free[2] -5.756355e-02 -1.499578e-03 5.311083e-02 1.575469e-01  
## Nu\_free[3] -5.645020e-02 3.540615e-03 6.235328e-02 1.770968e-01  
## Nu\_free[4] -5.355740e-02 7.758938e-04 5.404843e-02 1.574588e-01  
## Nu\_free[5] -5.731009e-02 2.586265e-04 5.772008e-02 1.632326e-01  
## Nu\_free[6] -5.694625e-02 4.035797e-03 6.356142e-02 1.793502e-01  
## Nu\_free[7] -6.391147e-02 -4.926812e-03 5.525829e-02 1.662696e-01  
## Nu\_free[8] -6.216779e-02 -6.987949e-03 4.775067e-02 1.512735e-01  
## Nu\_free[9] -6.114720e-02 -5.722716e-03 5.035105e-02 1.571964e-01  
## lp\_\_ -1.948522e+03 -1.945088e+03 -1.941873e+03 -1.936805e+03  
## n\_eff Rhat  
## ly\_sign[1] 933.7812 1.0020548  
## ly\_sign[2] 587.9952 1.0032281  
## ly\_sign[3] 870.9703 1.0024170  
## ly\_sign[4] 593.0439 1.0042433  
## ly\_sign[5] 975.2127 1.0017776  
## ly\_sign[6] 252.5697 1.0122822  
## ly\_sign[7] 247.5006 1.0136010  
## Theta\_var[1] 21930.7769 1.0000115  
## Theta\_var[2] 10163.0792 1.0004246  
## Theta\_var[3] 3161.9537 1.0011863  
## Theta\_var[4] 16185.0975 1.0000737  
## Theta\_var[5] 5168.5610 1.0006061  
## Theta\_var[6] 17869.3361 1.0001197  
## Theta\_var[7] 10713.7487 1.0007902  
## Theta\_var[8] 4433.0582 1.0003165  
## Theta\_var[9] 2714.4049 1.0003481  
## Psi\_var[1] 4057.6672 1.0009009  
## Psi\_var[2] 4611.5561 1.0021659  
## Nu\_free[1] 21091.8142 1.0002712  
## Nu\_free[2] 21679.4915 0.9999641  
## Nu\_free[3] 19933.5137 0.9998554  
## Nu\_free[4] 22596.1175 1.0000748  
## Nu\_free[5] 18519.8454 0.9999157  
## Nu\_free[6] 21370.4759 0.9998219  
## Nu\_free[7] 19432.8542 1.0002640  
## Nu\_free[8] 22852.3898 0.9999563  
## Nu\_free[9] 21600.8118 1.0001789  
## lp\_\_ 1387.1858 1.0036828  
##   
## $c\_summary  
## , , chains = chain:1  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 1.294645e+00 6.628249120 -1.294135e+01 -2.136901e+00  
## ly\_sign[2] 4.362763e+00 11.081655937 -1.911406e+01 -4.088673e+00  
## ly\_sign[3] 1.987975e+00 7.061766297 -1.340521e+01 -2.249415e+00  
## ly\_sign[4] 3.496013e+00 10.064547523 -1.764747e+01 -4.251654e+00  
## ly\_sign[5] 1.685920e+00 6.430448841 -1.235079e+01 -1.678613e+00  
## ly\_sign[6] 4.783217e+00 3.634614685 9.933336e-01 2.270716e+00  
## ly\_sign[7] 3.995374e+00 3.622805933 7.258622e-01 1.651620e+00  
## Theta\_var[1] 1.003794e+00 0.109440273 8.117213e-01 9.248253e-01  
## Theta\_var[2] 9.706236e-01 0.125287538 7.379697e-01 8.835963e-01  
## Theta\_var[3] 8.012082e-01 0.223368097 2.135754e-01 6.928669e-01  
## Theta\_var[4] 9.584912e-01 0.131599216 7.184587e-01 8.706196e-01  
## Theta\_var[5] 8.602285e-01 0.182024769 4.522871e-01 7.661427e-01  
## Theta\_var[6] 9.766120e-01 0.138900393 7.242074e-01 8.839165e-01  
## Theta\_var[7] 9.564470e-01 0.124243259 7.314287e-01 8.689988e-01  
## Theta\_var[8] 5.241791e-01 0.325069430 2.786670e-03 2.249848e-01  
## Theta\_var[9] 7.007279e-01 0.292599865 9.271348e-03 5.609117e-01  
## Psi\_var[1] 2.394617e-03 0.003434092 3.882850e-05 7.127533e-04  
## Psi\_var[2] 4.591698e-02 0.051555332 2.270942e-03 1.136151e-02  
## Nu\_free[1] 8.233175e-04 0.074654511 -1.463982e-01 -5.101175e-02  
## Nu\_free[2] -2.636459e-03 0.081714384 -1.608347e-01 -5.863368e-02  
## Nu\_free[3] 3.107443e-03 0.085869348 -1.652138e-01 -5.531086e-02  
## Nu\_free[4] -6.029146e-04 0.080477624 -1.612090e-01 -5.278089e-02  
## Nu\_free[5] 2.806206e-04 0.084178679 -1.653557e-01 -5.685835e-02  
## Nu\_free[6] 3.040371e-03 0.090153282 -1.732680e-01 -5.911842e-02  
## Nu\_free[7] -6.724367e-03 0.088701784 -1.797891e-01 -6.816757e-02  
## Nu\_free[8] -5.713572e-03 0.079391237 -1.614415e-01 -5.899394e-02  
## Nu\_free[9] -4.665358e-03 0.084943335 -1.702901e-01 -6.179514e-02  
## lp\_\_ -1.945182e+03 4.779562670 -1.955400e+03 -1.948244e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 1.937748e+00 5.162762e+00 1.418830e+01  
## ly\_sign[2] 7.012381e+00 1.180524e+01 2.216558e+01  
## ly\_sign[3] 2.669545e+00 6.329543e+00 1.510753e+01  
## ly\_sign[4] 5.582497e+00 1.033482e+01 2.027593e+01  
## ly\_sign[5] 2.045056e+00 5.375426e+00 1.401667e+01  
## ly\_sign[6] 3.712933e+00 6.078250e+00 1.519175e+01  
## ly\_sign[7] 2.732866e+00 4.999871e+00 1.424333e+01  
## Theta\_var[1] 9.960598e-01 1.073519e+00 1.236310e+00  
## Theta\_var[2] 9.664868e-01 1.049789e+00 1.234886e+00  
## Theta\_var[3] 8.251719e-01 9.404990e-01 1.171649e+00  
## Theta\_var[4] 9.526376e-01 1.039844e+00 1.231176e+00  
## Theta\_var[5] 8.717294e-01 9.744787e-01 1.173052e+00  
## Theta\_var[6] 9.675534e-01 1.060709e+00 1.280029e+00  
## Theta\_var[7] 9.498292e-01 1.034447e+00 1.214302e+00  
## Theta\_var[8] 5.771712e-01 7.951536e-01 1.047283e+00  
## Theta\_var[9] 7.810116e-01 9.018125e-01 1.112515e+00  
## Psi\_var[1] 1.374130e-03 2.714124e-03 1.148219e-02  
## Psi\_var[2] 2.779298e-02 6.170484e-02 1.890479e-01  
## Nu\_free[1] 1.502657e-03 5.180383e-02 1.451485e-01  
## Nu\_free[2] -2.710500e-03 5.185570e-02 1.580446e-01  
## Nu\_free[3] 2.973914e-03 6.238580e-02 1.712903e-01  
## Nu\_free[4] -2.230227e-04 5.289172e-02 1.554479e-01  
## Nu\_free[5] 1.930455e-03 5.761404e-02 1.618657e-01  
## Nu\_free[6] 2.504933e-03 6.357378e-02 1.849502e-01  
## Nu\_free[7] -8.765731e-03 5.520190e-02 1.650210e-01  
## Nu\_free[8] -6.205639e-03 4.748004e-02 1.481003e-01  
## Nu\_free[9] -6.048676e-03 5.257414e-02 1.628195e-01  
## lp\_\_ -1.944904e+03 -1.941824e+03 -1.936701e+03  
##   
## , , chains = chain:2  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 5.449922e-01 6.961467503 -1.421236e+01 -3.828814e+00  
## ly\_sign[2] 2.477512e+00 11.524282984 -1.928436e+01 -7.404407e+00  
## ly\_sign[3] 8.066209e-01 7.425910341 -1.488241e+01 -4.191378e+00  
## ly\_sign[4] 1.559985e+00 10.543891866 -1.926017e+01 -7.094567e+00  
## ly\_sign[5] 8.999275e-01 6.772295427 -1.275990e+01 -3.184255e+00  
## ly\_sign[6] 4.641070e+00 3.474552275 9.970045e-01 2.235841e+00  
## ly\_sign[7] 3.788788e+00 3.323427395 7.472542e-01 1.586297e+00  
## Theta\_var[1] 1.004661e+00 0.105114158 8.189972e-01 9.296568e-01  
## Theta\_var[2] 9.656665e-01 0.132570192 7.418826e-01 8.851907e-01  
## Theta\_var[3] 8.175458e-01 0.220978273 2.623280e-01 7.062521e-01  
## Theta\_var[4] 9.605429e-01 0.128721609 7.175206e-01 8.752051e-01  
## Theta\_var[5] 8.757266e-01 0.164120874 5.311152e-01 7.743327e-01  
## Theta\_var[6] 9.784175e-01 0.136939765 7.362570e-01 8.847268e-01  
## Theta\_var[7] 9.564805e-01 0.128105588 7.325307e-01 8.686678e-01  
## Theta\_var[8] 5.234043e-01 0.313343252 3.556442e-03 2.452219e-01  
## Theta\_var[9] 7.095090e-01 0.277931915 2.045511e-02 5.934235e-01  
## Psi\_var[1] 2.319692e-03 0.003594659 1.082216e-05 6.405096e-04  
## Psi\_var[2] 4.818039e-02 0.054280755 2.417730e-03 1.221337e-02  
## Nu\_free[1] 1.702837e-03 0.073705606 -1.430780e-01 -4.730509e-02  
## Nu\_free[2] -1.156718e-03 0.081315383 -1.563469e-01 -5.655694e-02  
## Nu\_free[3] 3.458580e-03 0.088193929 -1.672578e-01 -5.588746e-02  
## Nu\_free[4] 8.670323e-04 0.083076343 -1.632302e-01 -5.491600e-02  
## Nu\_free[5] 1.243422e-05 0.085565979 -1.647210e-01 -5.862257e-02  
## Nu\_free[6] 4.072012e-03 0.088863812 -1.705276e-01 -5.549712e-02  
## Nu\_free[7] -3.180294e-03 0.086393392 -1.690930e-01 -6.058171e-02  
## Nu\_free[8] -6.448562e-03 0.082739033 -1.701288e-01 -6.194179e-02  
## Nu\_free[9] -6.755508e-03 0.082025749 -1.646747e-01 -6.133233e-02  
## lp\_\_ -1.945230e+03 4.871383976 -1.955553e+03 -1.948364e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 1.149124e+00 4.806484e+00 1.395982e+01  
## ly\_sign[2] 5.169618e+00 1.089717e+01 2.174124e+01  
## ly\_sign[3] 1.761055e+00 5.603923e+00 1.444799e+01  
## ly\_sign[4] 3.865139e+00 9.154865e+00 1.940595e+01  
## ly\_sign[5] 1.280398e+00 4.759984e+00 1.467343e+01  
## ly\_sign[6] 3.624988e+00 5.860863e+00 1.419624e+01  
## ly\_sign[7] 2.628125e+00 4.774436e+00 1.306513e+01  
## Theta\_var[1] 9.978090e-01 1.072966e+00 1.237573e+00  
## Theta\_var[2] 9.614410e-01 1.046983e+00 1.226172e+00  
## Theta\_var[3] 8.372104e-01 9.548982e-01 1.198234e+00  
## Theta\_var[4] 9.578379e-01 1.042572e+00 1.217021e+00  
## Theta\_var[5] 8.807308e-01 9.842404e-01 1.179840e+00  
## Theta\_var[6] 9.711377e-01 1.061093e+00 1.265954e+00  
## Theta\_var[7] 9.471725e-01 1.035666e+00 1.233562e+00  
## Theta\_var[8] 5.649695e-01 7.833928e-01 1.031587e+00  
## Theta\_var[9] 7.867592e-01 8.986603e-01 1.090201e+00  
## Psi\_var[1] 1.292652e-03 2.625920e-03 1.138901e-02  
## Psi\_var[2] 2.987356e-02 6.463694e-02 1.890256e-01  
## Nu\_free[1] 1.946569e-03 5.142527e-02 1.487412e-01  
## Nu\_free[2] -9.424653e-04 5.328087e-02 1.574068e-01  
## Nu\_free[3] 3.347722e-03 6.097429e-02 1.769044e-01  
## Nu\_free[4] 1.439575e-03 5.522964e-02 1.645021e-01  
## Nu\_free[5] -6.082865e-04 5.846788e-02 1.646307e-01  
## Nu\_free[6] 4.196425e-03 6.282867e-02 1.764845e-01  
## Nu\_free[7] -2.630124e-03 5.409506e-02 1.658424e-01  
## Nu\_free[8] -5.927986e-03 4.882948e-02 1.575161e-01  
## Nu\_free[9] -6.493152e-03 4.811317e-02 1.544957e-01  
## lp\_\_ -1.945012e+03 -1.941716e+03 -1.936713e+03  
##   
## , , chains = chain:3  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 4.067144e-01 6.840504996 -1.520192e+01 -3.674949e+00  
## ly\_sign[2] 2.638499e+00 11.446068251 -1.983348e+01 -7.189277e+00  
## ly\_sign[3] 1.075498e+00 7.395415624 -1.400407e+01 -3.829551e+00  
## ly\_sign[4] 1.635851e+00 10.404852362 -1.895075e+01 -6.979263e+00  
## ly\_sign[5] 8.107086e-01 6.715637260 -1.365232e+01 -3.069802e+00  
## ly\_sign[6] 3.926041e+00 4.852069509 -9.106934e+00 2.019691e+00  
## ly\_sign[7] 3.311334e+00 4.958240719 -9.348587e+00 1.483363e+00  
## Theta\_var[1] 1.005507e+00 0.108259540 8.159287e-01 9.291094e-01  
## Theta\_var[2] 9.724172e-01 0.129873976 7.430975e-01 8.830958e-01  
## Theta\_var[3] 8.151633e-01 0.224754406 2.223958e-01 7.048632e-01  
## Theta\_var[4] 9.547633e-01 0.129693798 7.049677e-01 8.719579e-01  
## Theta\_var[5] 8.713530e-01 0.164774968 5.112937e-01 7.792691e-01  
## Theta\_var[6] 9.741305e-01 0.138541753 7.211368e-01 8.821375e-01  
## Theta\_var[7] 9.598963e-01 0.127863485 7.360801e-01 8.725792e-01  
## Theta\_var[8] 5.432911e-01 0.324727072 2.186085e-03 2.532252e-01  
## Theta\_var[9] 6.885374e-01 0.298229028 1.410621e-02 5.423253e-01  
## Psi\_var[1] 2.282688e-03 0.003395292 2.570714e-05 6.580566e-04  
## Psi\_var[2] 4.404013e-02 0.053824122 1.693811e-03 9.592218e-03  
## Nu\_free[1] -1.628937e-03 0.073043759 -1.478487e-01 -5.021652e-02  
## Nu\_free[2] -2.142688e-03 0.081058205 -1.625035e-01 -5.610947e-02  
## Nu\_free[3] 2.984632e-03 0.089734295 -1.672297e-01 -5.919538e-02  
## Nu\_free[4] 2.474610e-04 0.080407422 -1.571838e-01 -5.353600e-02  
## Nu\_free[5] -2.316269e-03 0.084935427 -1.734361e-01 -5.886600e-02  
## Nu\_free[6] 3.565309e-03 0.087768279 -1.644333e-01 -5.727037e-02  
## Nu\_free[7] -5.907107e-03 0.090070527 -1.855660e-01 -6.561163e-02  
## Nu\_free[8] -8.655396e-03 0.080626132 -1.633873e-01 -6.362563e-02  
## Nu\_free[9] -5.503384e-03 0.081846666 -1.683992e-01 -5.975188e-02  
## lp\_\_ -1.945712e+03 5.001164084 -1.956581e+03 -1.948941e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 1.300979e+00 4.510558e+00 12.9189892  
## ly\_sign[2] 5.476207e+00 1.112845e+01 21.3987667  
## ly\_sign[3] 1.897052e+00 5.738106e+00 14.7015881  
## ly\_sign[4] 4.079396e+00 9.189900e+00 19.3936190  
## ly\_sign[5] 1.374203e+00 4.803208e+00 13.4735969  
## ly\_sign[6] 3.491313e+00 5.817963e+00 13.8046270  
## ly\_sign[7] 2.545553e+00 4.966903e+00 13.9704769  
## Theta\_var[1] 9.974074e-01 1.072973e+00 1.2411814  
## Theta\_var[2] 9.655458e-01 1.053109e+00 1.2430517  
## Theta\_var[3] 8.396314e-01 9.593736e-01 1.1972510  
## Theta\_var[4] 9.521826e-01 1.036562e+00 1.2168774  
## Theta\_var[5] 8.797661e-01 9.775609e-01 1.1765783  
## Theta\_var[6] 9.687938e-01 1.061201e+00 1.2591320  
## Theta\_var[7] 9.516450e-01 1.038190e+00 1.2274887  
## Theta\_var[8] 6.032661e-01 8.136317e-01 1.0418930  
## Theta\_var[9] 7.745605e-01 8.962874e-01 1.1027083  
## Psi\_var[1] 1.322346e-03 2.530440e-03 0.0108072  
## Psi\_var[2] 2.577241e-02 5.863723e-02 0.1837514  
## Nu\_free[1] -9.747822e-04 4.788624e-02 0.1406368  
## Nu\_free[2] -1.378277e-03 5.297452e-02 0.1521732  
## Nu\_free[3] 2.861557e-03 6.322848e-02 0.1789566  
## Nu\_free[4] 1.712153e-03 5.459680e-02 0.1551604  
## Nu\_free[5] -1.191991e-03 5.740619e-02 0.1592815  
## Nu\_free[6] 2.632731e-03 6.340212e-02 0.1711669  
## Nu\_free[7] -5.649896e-03 5.384886e-02 0.1726031  
## Nu\_free[8] -8.839814e-03 4.717616e-02 0.1498931  
## Nu\_free[9] -4.193269e-03 5.128109e-02 0.1504296  
## lp\_\_ -1.945339e+03 -1.942095e+03 -1937.0319443  
##   
## , , chains = chain:4  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] 7.083536e-01 6.63560766 -1.373469e+01 -3.271355e+00  
## ly\_sign[2] 3.295703e+00 11.36571766 -1.936345e+01 -6.342555e+00  
## ly\_sign[3] 1.121207e+00 7.17176410 -1.418226e+01 -3.580631e+00  
## ly\_sign[4] 2.100158e+00 10.28201491 -1.873224e+01 -6.083214e+00  
## ly\_sign[5] 1.036694e+00 6.44430330 -1.232361e+01 -2.691652e+00  
## ly\_sign[6] 3.855751e+00 5.07081214 -9.671975e+00 2.039444e+00  
## ly\_sign[7] 2.956008e+00 4.89200200 -1.119094e+01 1.451975e+00  
## Theta\_var[1] 1.003999e+00 0.10628772 8.168682e-01 9.314598e-01  
## Theta\_var[2] 9.724154e-01 0.12582837 7.452411e-01 8.887955e-01  
## Theta\_var[3] 8.003213e-01 0.23357707 1.541036e-01 6.905898e-01  
## Theta\_var[4] 9.562157e-01 0.12684084 7.183102e-01 8.701556e-01  
## Theta\_var[5] 8.698564e-01 0.16606828 4.960177e-01 7.745353e-01  
## Theta\_var[6] 9.776095e-01 0.14379103 7.170446e-01 8.794316e-01  
## Theta\_var[7] 9.655851e-01 0.12739697 7.396907e-01 8.775140e-01  
## Theta\_var[8] 5.249000e-01 0.32215472 4.570846e-03 2.297795e-01  
## Theta\_var[9] 7.073776e-01 0.28090039 2.899067e-02 5.793107e-01  
## Psi\_var[1] 2.547702e-03 0.00362977 3.172473e-05 7.003202e-04  
## Psi\_var[2] 4.250855e-02 0.05035693 1.719771e-03 9.401522e-03  
## Nu\_free[1] -1.082428e-03 0.07364652 -1.463668e-01 -5.057478e-02  
## Nu\_free[2] -1.925753e-03 0.08284575 -1.669296e-01 -5.818311e-02  
## Nu\_free[3] 3.798671e-03 0.08860841 -1.706062e-01 -5.556814e-02  
## Nu\_free[4] -3.838252e-04 0.08109947 -1.586912e-01 -5.299123e-02  
## Nu\_free[5] 2.592385e-04 0.08454262 -1.693475e-01 -5.547093e-02  
## Nu\_free[6] 4.354005e-03 0.08957660 -1.721175e-01 -5.564674e-02  
## Nu\_free[7] -2.019880e-03 0.08546844 -1.649352e-01 -6.126450e-02  
## Nu\_free[8] -7.637898e-03 0.08205938 -1.684161e-01 -6.348534e-02  
## Nu\_free[9] -6.602544e-03 0.08345670 -1.684363e-01 -6.168770e-02  
## lp\_\_ -1.945427e+03 4.97612184 -1.956020e+03 -1.948564e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 1.414143e+00 4.579670e+00 1.351338e+01  
## ly\_sign[2] 5.971292e+00 1.137544e+01 2.177360e+01  
## ly\_sign[3] 2.045868e+00 5.484446e+00 1.449107e+01  
## ly\_sign[4] 4.351204e+00 9.248953e+00 1.977706e+01  
## ly\_sign[5] 1.464853e+00 4.724628e+00 1.381411e+01  
## ly\_sign[6] 3.586042e+00 5.889341e+00 1.421654e+01  
## ly\_sign[7] 2.480875e+00 4.581194e+00 1.319862e+01  
## Theta\_var[1] 9.948108e-01 1.068008e+00 1.232996e+00  
## Theta\_var[2] 9.610842e-01 1.051819e+00 1.240222e+00  
## Theta\_var[3] 8.276482e-01 9.518780e-01 1.180292e+00  
## Theta\_var[4] 9.511885e-01 1.037157e+00 1.217207e+00  
## Theta\_var[5] 8.779058e-01 9.754797e-01 1.178208e+00  
## Theta\_var[6] 9.671011e-01 1.065059e+00 1.276571e+00  
## Theta\_var[7] 9.563312e-01 1.046006e+00 1.240105e+00  
## Theta\_var[8] 5.685065e-01 7.973969e-01 1.041073e+00  
## Theta\_var[9] 7.822118e-01 8.972360e-01 1.106193e+00  
## Psi\_var[1] 1.414862e-03 2.810037e-03 1.298224e-02  
## Psi\_var[2] 2.583899e-02 5.589316e-02 1.798719e-01  
## Nu\_free[1] -6.409501e-04 4.864644e-02 1.422957e-01  
## Nu\_free[2] -1.295426e-03 5.402528e-02 1.613620e-01  
## Nu\_free[3] 4.688181e-03 6.257059e-02 1.802687e-01  
## Nu\_free[4] 5.136803e-05 5.345633e-02 1.526013e-01  
## Nu\_free[5] 9.107912e-04 5.746738e-02 1.640111e-01  
## Nu\_free[6] 5.953869e-03 6.454665e-02 1.840426e-01  
## Nu\_free[7] -2.145405e-03 5.771822e-02 1.615330e-01  
## Nu\_free[8] -7.225555e-03 4.828085e-02 1.516173e-01  
## Nu\_free[9] -6.503027e-03 4.914282e-02 1.602079e-01  
## lp\_\_ -1.945062e+03 -1.941857e+03 -1.936768e+03

## bfit.2factors3

tmp6 = blavInspect(bfit.2factors3, "mcobj")  
summary(tmp6)

## $summary  
## mean se\_mean sd 2.5%  
## ly\_sign[1] -1.433014e+00 0.1226630898 6.57002959 -1.636127e+01  
## ly\_sign[2] 2.363824e+00 0.1116824976 6.56568671 -1.207870e+01  
## ly\_sign[3] 1.132710e+01 0.1072656064 5.67867637 2.648617e+00  
## ly\_sign[4] 5.767013e+00 0.1568181192 3.46164056 1.235837e+00  
## ly\_sign[5] -3.222232e+00 0.0413871804 2.29115958 -8.852845e+00  
## ly\_sign[6] 4.458846e+00 0.0575473595 2.83526505 7.784342e-01  
## ly\_sign[7] 3.395893e+00 0.0452266388 2.47553868 9.932067e-02  
## Theta\_var[1] 9.516099e-01 0.0284946869 0.17874035 2.668717e-01  
## Theta\_var[2] 8.131812e-01 0.0088498760 0.32890529 7.757259e-03  
## Theta\_var[3] 7.214060e-01 0.0091295007 0.37492658 6.888795e-03  
## Theta\_var[4] 9.757619e-01 0.0047124132 0.12869831 7.399252e-01  
## Theta\_var[5] 3.907888e-01 0.0051456551 0.22976994 4.377593e-03  
## Theta\_var[6] 8.604294e-01 0.0017056991 0.12955238 6.108236e-01  
## Theta\_var[7] 9.589103e-01 0.0033618962 0.11457139 7.630741e-01  
## Theta\_var[8] 9.187738e-01 0.0011505746 0.12075556 6.985327e-01  
## Theta\_var[9] 9.634924e-01 0.0029232724 0.13147981 7.372292e-01  
## Psi\_var[1] 5.501033e-02 0.0286862692 0.15093487 3.959679e-05  
## Psi\_var[2] 1.157864e-02 0.0003461254 0.01966432 9.625100e-04  
## Nu\_free[1] 8.081882e-04 0.0024280137 0.07493631 -1.477668e-01  
## Nu\_free[2] -1.052759e-04 0.0009134576 0.08219935 -1.590874e-01  
## Nu\_free[3] -3.468509e-03 0.0032838726 0.09131212 -1.831909e-01  
## Nu\_free[4] -2.132989e-03 0.0007493790 0.08442499 -1.660763e-01  
## Nu\_free[5] -9.479399e-03 0.0008679653 0.08000697 -1.696729e-01  
## Nu\_free[6] -3.297954e-03 0.0007076614 0.08154760 -1.632080e-01  
## Nu\_free[7] -7.657151e-04 0.0011947169 0.07871314 -1.572104e-01  
## Nu\_free[8] -1.231177e-02 0.0013019778 0.08527566 -1.807792e-01  
## Nu\_free[9] -8.836013e-03 0.0007056447 0.08804190 -1.819342e-01  
## lp\_\_ -1.939745e+03 0.1046529311 4.76553765 -1.949931e+03  
## 25% 50% 75% 97.5%  
## ly\_sign[1] -4.923151e+00 -1.066817e-02 1.540212e+00 1.200587e+01  
## ly\_sign[2] -1.109581e+00 1.810777e+00 6.077830e+00 1.615252e+01  
## ly\_sign[3] 6.945190e+00 1.081532e+01 1.468251e+01 2.421256e+01  
## ly\_sign[4] 3.152268e+00 5.030457e+00 7.760986e+00 1.386590e+01  
## ly\_sign[5] -4.496531e+00 -2.753507e+00 -1.548171e+00 -1.191825e-01  
## ly\_sign[6] 2.330471e+00 3.893494e+00 6.020443e+00 1.136447e+01  
## ly\_sign[7] 1.625316e+00 2.884135e+00 4.656514e+00 9.459045e+00  
## Theta\_var[1] 8.976114e-01 9.720478e-01 1.048166e+00 1.209611e+00  
## Theta\_var[2] 7.379810e-01 9.175517e-01 1.022970e+00 1.223366e+00  
## Theta\_var[3] 4.148481e-01 8.553810e-01 1.000423e+00 1.237739e+00  
## Theta\_var[4] 8.872413e-01 9.673005e-01 1.054128e+00 1.260674e+00  
## Theta\_var[5] 2.049490e-01 4.055276e-01 5.635034e-01 8.161111e-01  
## Theta\_var[6] 7.780943e-01 8.546540e-01 9.421728e-01 1.124177e+00  
## Theta\_var[7] 8.766897e-01 9.507579e-01 1.029830e+00 1.210689e+00  
## Theta\_var[8] 8.388784e-01 9.105305e-01 9.919890e-01 1.178266e+00  
## Theta\_var[9] 8.707361e-01 9.542874e-01 1.044211e+00 1.257000e+00  
## Psi\_var[1] 2.723980e-03 1.008051e-02 3.217549e-02 7.078869e-01  
## Psi\_var[2] 2.479112e-03 4.933294e-03 1.158645e-02 6.694181e-02  
## Nu\_free[1] -5.115960e-02 2.841172e-03 5.284550e-02 1.409968e-01  
## Nu\_free[2] -5.464138e-02 -1.542399e-03 5.474020e-02 1.613983e-01  
## Nu\_free[3] -6.527650e-02 -3.658754e-03 5.962859e-02 1.679062e-01  
## Nu\_free[4] -5.765341e-02 -4.035056e-03 5.451459e-02 1.640997e-01  
## Nu\_free[5] -6.279398e-02 -8.701197e-03 4.546150e-02 1.455847e-01  
## Nu\_free[6] -5.699203e-02 -2.627080e-03 5.002687e-02 1.572469e-01  
## Nu\_free[7] -5.290465e-02 8.797546e-04 5.147766e-02 1.519834e-01  
## Nu\_free[8] -6.918064e-02 -1.311815e-02 4.422983e-02 1.574824e-01  
## Nu\_free[9] -6.606999e-02 -9.336965e-03 4.952811e-02 1.637309e-01  
## lp\_\_ -1.942754e+03 -1.939470e+03 -1.936417e+03 -1.931299e+03  
## n\_eff Rhat  
## ly\_sign[1] 2868.84346 1.0017019  
## ly\_sign[2] 3456.13006 1.0013894  
## ly\_sign[3] 2802.67832 1.0029812  
## ly\_sign[4] 487.27200 1.0121141  
## ly\_sign[5] 3064.63669 1.0035587  
## ly\_sign[6] 2427.37305 1.0045969  
## ly\_sign[7] 2996.06207 1.0030809  
## Theta\_var[1] 39.34753 1.1210724  
## Theta\_var[2] 1381.23425 1.0055823  
## Theta\_var[3] 1686.54686 1.0037032  
## Theta\_var[4] 745.86286 1.0048440  
## Theta\_var[5] 1993.90777 1.0034000  
## Theta\_var[6] 5768.80624 1.0009671  
## Theta\_var[7] 1161.40513 1.0047897  
## Theta\_var[8] 11015.00531 1.0004238  
## Theta\_var[9] 2022.92388 1.0033570  
## Psi\_var[1] 27.68414 1.1855404  
## Psi\_var[2] 3227.68403 1.0024517  
## Nu\_free[1] 952.53797 1.0058995  
## Nu\_free[2] 8097.66828 1.0008202  
## Nu\_free[3] 773.18649 1.0071053  
## Nu\_free[4] 12692.26105 0.9998743  
## Nu\_free[5] 8496.71311 1.0001583  
## Nu\_free[6] 13279.18462 0.9998909  
## Nu\_free[7] 4340.74721 1.0016552  
## Nu\_free[8] 4289.85909 1.0018816  
## Nu\_free[9] 15567.05892 1.0000125  
## lp\_\_ 2073.58106 1.0061206  
##   
## $c\_summary  
## , , chains = chain:1  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] -1.614213e+00 6.79504805 -1.681696e+01 -5.435610e+00  
## ly\_sign[2] 2.340138e+00 6.84291693 -1.313445e+01 -1.302525e+00  
## ly\_sign[3] 1.077366e+01 5.53270772 2.636491e+00 6.539879e+00  
## ly\_sign[4] 5.376644e+00 3.36149740 1.127440e+00 2.933456e+00  
## ly\_sign[5] -3.017013e+00 2.21934525 -8.678151e+00 -4.149065e+00  
## ly\_sign[6] 4.177420e+00 2.79212637 8.022293e-01 2.198329e+00  
## ly\_sign[7] 3.297890e+00 2.35093054 1.328418e-01 1.601366e+00  
## Theta\_var[1] 9.841540e-01 0.11260405 7.771677e-01 9.120977e-01  
## Theta\_var[2] 8.047924e-01 0.33611297 7.755616e-03 7.180083e-01  
## Theta\_var[3] 7.089490e-01 0.38175701 3.747552e-03 3.768015e-01  
## Theta\_var[4] 9.780095e-01 0.12592489 7.566641e-01 8.890760e-01  
## Theta\_var[5] 3.795060e-01 0.22938956 4.285566e-03 1.906084e-01  
## Theta\_var[6] 8.635091e-01 0.13094372 6.165974e-01 7.772659e-01  
## Theta\_var[7] 9.629949e-01 0.11246600 7.641496e-01 8.845171e-01  
## Theta\_var[8] 9.218249e-01 0.11831096 7.096365e-01 8.403908e-01  
## Theta\_var[9] 9.562349e-01 0.12960641 7.341897e-01 8.640919e-01  
## Psi\_var[1] 2.332429e-02 0.04474547 2.195686e-05 2.307814e-03  
## Psi\_var[2] 1.275864e-02 0.02022978 1.005639e-03 2.917135e-03  
## Nu\_free[1] 1.951505e-04 0.07362782 -1.432212e-01 -4.897495e-02  
## Nu\_free[2] -3.857207e-04 0.08117826 -1.559180e-01 -5.455718e-02  
## Nu\_free[3] -7.252997e-03 0.09036976 -1.862242e-01 -6.940123e-02  
## Nu\_free[4] -2.273247e-03 0.08581057 -1.738639e-01 -5.894148e-02  
## Nu\_free[5] -8.056953e-03 0.08137817 -1.704398e-01 -6.180781e-02  
## Nu\_free[6] -3.667002e-03 0.08402713 -1.652429e-01 -5.864674e-02  
## Nu\_free[7] -2.466425e-03 0.07893350 -1.582662e-01 -5.485589e-02  
## Nu\_free[8] -1.131230e-02 0.08799723 -1.859059e-01 -7.071773e-02  
## Nu\_free[9] -9.303349e-03 0.08866051 -1.789384e-01 -6.918426e-02  
## lp\_\_ -1.939726e+03 4.84446788 -1.950070e+03 -1.942820e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 9.103250e-02 1.596243e+00 1.226128e+01  
## ly\_sign[2] 2.227820e+00 6.292815e+00 1.634336e+01  
## ly\_sign[3] 1.001293e+01 1.416856e+01 2.348183e+01  
## ly\_sign[4] 4.611731e+00 7.039015e+00 1.372068e+01  
## ly\_sign[5] -2.503271e+00 -1.427186e+00 -1.499747e-01  
## ly\_sign[6] 3.526091e+00 5.425911e+00 1.134015e+01  
## ly\_sign[7] 2.803125e+00 4.512794e+00 9.150688e+00  
## Theta\_var[1] 9.806515e-01 1.055417e+00 1.215616e+00  
## Theta\_var[2] 9.134549e-01 1.020477e+00 1.219899e+00  
## Theta\_var[3] 8.515673e-01 9.940687e-01 1.233973e+00  
## Theta\_var[4] 9.682616e-01 1.057091e+00 1.251309e+00  
## Theta\_var[5] 3.895539e-01 5.491301e-01 8.158664e-01  
## Theta\_var[6] 8.609233e-01 9.441005e-01 1.135854e+00  
## Theta\_var[7] 9.566544e-01 1.033196e+00 1.208307e+00  
## Theta\_var[8] 9.148540e-01 9.969383e-01 1.169562e+00  
## Theta\_var[9] 9.433146e-01 1.035767e+00 1.246220e+00  
## Psi\_var[1] 8.685757e-03 2.614547e-02 1.316923e-01  
## Psi\_var[2] 5.945182e-03 1.349783e-02 7.189096e-02  
## Nu\_free[1] 1.153665e-03 4.895261e-02 1.405034e-01  
## Nu\_free[2] -1.141124e-04 5.383050e-02 1.537965e-01  
## Nu\_free[3] -6.673545e-03 5.335972e-02 1.689046e-01  
## Nu\_free[4] -2.698455e-03 5.423268e-02 1.678165e-01  
## Nu\_free[5] -9.231662e-03 4.645806e-02 1.518378e-01  
## Nu\_free[6] -4.129585e-03 5.159890e-02 1.636356e-01  
## Nu\_free[7] -2.046021e-03 5.049800e-02 1.492758e-01  
## Nu\_free[8] -1.059593e-02 4.927852e-02 1.622466e-01  
## Nu\_free[9] -1.063757e-02 5.193561e-02 1.594345e-01  
## lp\_\_ -1.939440e+03 -1.936387e+03 -1.931040e+03  
##   
## , , chains = chain:2  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] -1.348455e+00 6.20830736 -1.560791e+01 -4.254094e+00  
## ly\_sign[2] 1.969529e+00 5.93464693 -1.028495e+01 -8.766335e-01  
## ly\_sign[3] 1.167883e+01 5.46121239 2.687810e+00 7.661791e+00  
## ly\_sign[4] 6.313390e+00 3.52485189 1.305878e+00 3.426108e+00  
## ly\_sign[5] -3.394476e+00 2.21377392 -8.654464e+00 -4.807247e+00  
## ly\_sign[6] 4.734178e+00 2.77982902 7.907028e-01 2.618672e+00  
## ly\_sign[7] 3.246782e+00 2.41555642 -9.186163e-02 1.547002e+00  
## Theta\_var[1] 8.638173e-01 0.28093695 2.528900e-01 8.453306e-01  
## Theta\_var[2] 8.250049e-01 0.31793622 7.709044e-03 7.691102e-01  
## Theta\_var[3] 7.575945e-01 0.36541986 7.638271e-03 5.301225e-01  
## Theta\_var[4] 9.599162e-01 0.13064462 7.134856e-01 8.741806e-01  
## Theta\_var[5] 4.126515e-01 0.22921148 4.160998e-03 2.361579e-01  
## Theta\_var[6] 8.547797e-01 0.12468085 6.063518e-01 7.740795e-01  
## Theta\_var[7] 9.467815e-01 0.11578184 7.680845e-01 8.559500e-01  
## Theta\_var[8] 9.134799e-01 0.12138425 6.881967e-01 8.393907e-01  
## Theta\_var[9] 9.732620e-01 0.12450235 7.489004e-01 8.863307e-01  
## Psi\_var[1] 1.434456e-01 0.27014791 7.012584e-05 3.834695e-03  
## Psi\_var[2] 1.025804e-02 0.01847739 9.897675e-04 2.217162e-03  
## Nu\_free[1] 1.005107e-02 0.07383095 -1.399222e-01 -4.256251e-02  
## Nu\_free[2] -3.458784e-03 0.08079729 -1.588660e-01 -5.648079e-02  
## Nu\_free[3] 7.950373e-03 0.09536031 -1.851457e-01 -5.704669e-02  
## Nu\_free[4] -2.450621e-03 0.07947728 -1.584448e-01 -4.916859e-02  
## Nu\_free[5] -1.039690e-02 0.07768199 -1.604115e-01 -6.289471e-02  
## Nu\_free[6] -3.253909e-03 0.07904994 -1.590694e-01 -5.296456e-02  
## Nu\_free[7] 4.743044e-03 0.07506415 -1.465433e-01 -4.498877e-02  
## Nu\_free[8] -1.815362e-02 0.08247224 -1.778967e-01 -7.199895e-02  
## Nu\_free[9] -7.284643e-03 0.08486010 -1.757063e-01 -5.737615e-02  
## lp\_\_ -1.939299e+03 4.68458631 -1.949787e+03 -1.942168e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] -1.530056e-01 1.151580e+00 1.134180e+01  
## ly\_sign[2] 3.916293e-01 5.208463e+00 1.515147e+01  
## ly\_sign[3] 1.168285e+01 1.448781e+01 2.424569e+01  
## ly\_sign[4] 5.662390e+00 8.923145e+00 1.338635e+01  
## ly\_sign[5] -3.074099e+00 -1.696710e+00 -1.949460e-01  
## ly\_sign[6] 4.372015e+00 6.352996e+00 1.127914e+01  
## ly\_sign[7] 2.828006e+00 4.395786e+00 9.136248e+00  
## Theta\_var[1] 9.468034e-01 1.035872e+00 1.195821e+00  
## Theta\_var[2] 9.242978e-01 1.022403e+00 1.221223e+00  
## Theta\_var[3] 8.822698e-01 1.016519e+00 1.252507e+00  
## Theta\_var[4] 9.593676e-01 1.042387e+00 1.231099e+00  
## Theta\_var[5] 4.400104e-01 5.888726e-01 8.064787e-01  
## Theta\_var[6] 8.437478e-01 9.333554e-01 1.109508e+00  
## Theta\_var[7] 9.330157e-01 1.016022e+00 1.209840e+00  
## Theta\_var[8] 9.027689e-01 9.818259e-01 1.179380e+00  
## Theta\_var[9] 9.725565e-01 1.049342e+00 1.249542e+00  
## Psi\_var[1] 1.525831e-02 6.402972e-02 8.359992e-01  
## Psi\_var[2] 4.025675e-03 9.499138e-03 6.578073e-02  
## Nu\_free[1] 1.717751e-02 6.667287e-02 1.388827e-01  
## Nu\_free[2] -9.304115e-03 4.834110e-02 1.600715e-01  
## Nu\_free[3] 9.977382e-03 7.434502e-02 1.738342e-01  
## Nu\_free[4] -7.432540e-03 4.772563e-02 1.614743e-01  
## Nu\_free[5] -9.084732e-03 4.151251e-02 1.455878e-01  
## Nu\_free[6] -8.538451e-04 4.513379e-02 1.539106e-01  
## Nu\_free[7] 8.714157e-03 5.231459e-02 1.486143e-01  
## Nu\_free[8] -2.248718e-02 3.751480e-02 1.453882e-01  
## Nu\_free[9] -5.816208e-03 4.378876e-02 1.636623e-01  
## lp\_\_ -1.938996e+03 -1.936007e+03 -1.931268e+03  
##   
## , , chains = chain:3  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] -1.509225e+00 6.55457848 -1.638723e+01 -5.113056e+00  
## ly\_sign[2] 2.508471e+00 6.58815659 -1.223790e+01 -1.125582e+00  
## ly\_sign[3] 1.144390e+01 5.99125683 2.587290e+00 6.676371e+00  
## ly\_sign[4] 5.791427e+00 3.51258895 1.240225e+00 3.186044e+00  
## ly\_sign[5] -3.297085e+00 2.40077506 -9.271546e+00 -4.484320e+00  
## ly\_sign[6] 4.469915e+00 2.88464858 7.678902e-01 2.288565e+00  
## ly\_sign[7] 3.516119e+00 2.53873826 1.786130e-01 1.683791e+00  
## Theta\_var[1] 9.752703e-01 0.11966876 7.247895e-01 9.049467e-01  
## Theta\_var[2] 8.102243e-01 0.33402918 2.749866e-03 7.328516e-01  
## Theta\_var[3] 7.157614e-01 0.37436518 4.588790e-03 3.973432e-01  
## Theta\_var[4] 9.827575e-01 0.12579766 7.661706e-01 8.954976e-01  
## Theta\_var[5] 3.912683e-01 0.22956527 5.765973e-03 2.073539e-01  
## Theta\_var[6] 8.582781e-01 0.13344127 6.052203e-01 7.725026e-01  
## Theta\_var[7] 9.668642e-01 0.11393683 7.654476e-01 8.848748e-01  
## Theta\_var[8] 9.194591e-01 0.12008981 7.061961e-01 8.363462e-01  
## Theta\_var[9] 9.631495e-01 0.13687924 7.316322e-01 8.671865e-01  
## Psi\_var[1] 3.052875e-02 0.06554877 4.615138e-05 2.581883e-03  
## Psi\_var[2] 1.195246e-02 0.02105200 9.094161e-04 2.469611e-03  
## Nu\_free[1] -1.626891e-03 0.07613775 -1.450158e-01 -5.405275e-02  
## Nu\_free[2] 1.360601e-03 0.08276123 -1.592948e-01 -5.340590e-02  
## Nu\_free[3] -7.378844e-03 0.08820219 -1.785561e-01 -6.774532e-02  
## Nu\_free[4] -9.260777e-04 0.08741306 -1.707035e-01 -6.010586e-02  
## Nu\_free[5] -8.357082e-03 0.08115950 -1.708699e-01 -6.302920e-02  
## Nu\_free[6] -2.918211e-03 0.08020217 -1.604706e-01 -5.712162e-02  
## Nu\_free[7] -4.362405e-03 0.08080557 -1.672351e-01 -5.691190e-02  
## Nu\_free[8] -1.072131e-02 0.08451971 -1.805281e-01 -6.739382e-02  
## Nu\_free[9] -8.891069e-03 0.08990392 -1.853840e-01 -6.878396e-02  
## lp\_\_ -1.939859e+03 4.79067122 -1.949814e+03 -1.942911e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 5.998583e-02 1.627885e+00 1.184994e+01  
## ly\_sign[2] 2.114224e+00 6.213489e+00 1.625084e+01  
## ly\_sign[3] 1.077161e+01 1.517317e+01 2.493325e+01  
## ly\_sign[4] 5.143042e+00 7.565575e+00 1.433693e+01  
## ly\_sign[5] -2.750826e+00 -1.558504e+00 -1.216233e-01  
## ly\_sign[6] 3.815273e+00 6.060731e+00 1.136469e+01  
## ly\_sign[7] 2.981269e+00 4.825179e+00 9.765492e+00  
## Theta\_var[1] 9.750529e-01 1.049694e+00 1.208262e+00  
## Theta\_var[2] 9.158054e-01 1.025025e+00 1.224151e+00  
## Theta\_var[3] 8.482888e-01 9.974434e-01 1.239430e+00  
## Theta\_var[4] 9.711901e-01 1.058060e+00 1.264803e+00  
## Theta\_var[5] 4.034097e-01 5.584938e-01 8.336973e-01  
## Theta\_var[6] 8.570412e-01 9.435813e-01 1.122012e+00  
## Theta\_var[7] 9.595379e-01 1.036957e+00 1.219259e+00  
## Theta\_var[8] 9.125209e-01 9.940484e-01 1.170541e+00  
## Theta\_var[9] 9.500367e-01 1.047321e+00 1.288700e+00  
## Psi\_var[1] 9.403732e-03 2.915045e-02 2.072054e-01  
## Psi\_var[2] 5.023513e-03 1.218030e-02 6.741024e-02  
## Nu\_free[1] -9.929068e-04 4.912736e-02 1.487470e-01  
## Nu\_free[2] 1.821900e-03 5.682794e-02 1.660133e-01  
## Nu\_free[3] -7.195042e-03 5.112588e-02 1.655304e-01  
## Nu\_free[4] -1.683057e-03 6.228852e-02 1.661922e-01  
## Nu\_free[5] -7.404368e-03 4.947247e-02 1.441398e-01  
## Nu\_free[6] -4.518020e-03 5.142502e-02 1.542355e-01  
## Nu\_free[7] -2.759345e-03 4.977399e-02 1.548105e-01  
## Nu\_free[8] -1.026858e-02 4.515243e-02 1.599280e-01  
## Nu\_free[9] -1.106364e-02 5.112922e-02 1.637424e-01  
## lp\_\_ -1.939638e+03 -1.936537e+03 -1.931141e+03  
##   
## , , chains = chain:4  
##   
## stats  
## parameter mean sd 2.5% 25%  
## ly\_sign[1] -1.260163e+00 6.70321699 -1.610392e+01 -4.814729e+00  
## ly\_sign[2] 2.637160e+00 6.83796527 -1.239452e+01 -1.165355e+00  
## ly\_sign[3] 1.141203e+01 5.67688323 2.721460e+00 7.045493e+00  
## ly\_sign[4] 5.586590e+00 3.37525171 1.273691e+00 3.076150e+00  
## ly\_sign[5] -3.180355e+00 2.30903321 -8.930373e+00 -4.380707e+00  
## ly\_sign[6] 4.453869e+00 2.85655957 7.637471e-01 2.308476e+00  
## ly\_sign[7] 3.522780e+00 2.57826685 1.266194e-01 1.674660e+00  
## Theta\_var[1] 9.831981e-01 0.10751472 7.782612e-01 9.125574e-01  
## Theta\_var[2] 8.127032e-01 0.32700096 1.927019e-02 7.297751e-01  
## Theta\_var[3] 7.033192e-01 0.37566022 9.931526e-03 3.868908e-01  
## Theta\_var[4] 9.823643e-01 0.13101176 7.513818e-01 8.908888e-01  
## Theta\_var[5] 3.797292e-01 0.22939688 4.185096e-03 1.944897e-01  
## Theta\_var[6] 8.651508e-01 0.12875896 6.209229e-01 7.841960e-01  
## Theta\_var[7] 9.590005e-01 0.11511535 7.556869e-01 8.826925e-01  
## Theta\_var[8] 9.203313e-01 0.12305672 6.958467e-01 8.373707e-01  
## Theta\_var[9] 9.613231e-01 0.13405439 7.379351e-01 8.682127e-01  
## Psi\_var[1] 2.274266e-02 0.03732120 3.712020e-05 2.509318e-03  
## Psi\_var[2] 1.134539e-02 0.01870291 9.696153e-04 2.594376e-03  
## Nu\_free[1] -5.386572e-03 0.07527291 -1.564549e-01 -5.746024e-02  
## Nu\_free[2] 2.062799e-03 0.08393613 -1.609237e-01 -5.248013e-02  
## Nu\_free[3] -7.192569e-03 0.09023748 -1.825993e-01 -6.667712e-02  
## Nu\_free[4] -2.882011e-03 0.08480164 -1.608186e-01 -6.168390e-02  
## Nu\_free[5] -1.110666e-02 0.07973559 -1.757053e-01 -6.387665e-02  
## Nu\_free[6] -3.352695e-03 0.08283666 -1.649397e-01 -5.887021e-02  
## Nu\_free[7] -9.770747e-04 0.07966090 -1.564650e-01 -5.533227e-02  
## Nu\_free[8] -9.059849e-03 0.08576195 -1.791039e-01 -6.691775e-02  
## Nu\_free[9] -9.864991e-03 0.08866696 -1.849133e-01 -6.718702e-02  
## lp\_\_ -1.940095e+03 4.70694220 -1.950047e+03 -1.943114e+03  
## stats  
## parameter 50% 75% 97.5%  
## ly\_sign[1] 2.359163e-01 1.800474e+00 1.241058e+01  
## ly\_sign[2] 2.544207e+00 6.547665e+00 1.677503e+01  
## ly\_sign[3] 1.089569e+01 1.506206e+01 2.421348e+01  
## ly\_sign[4] 4.873097e+00 7.343065e+00 1.402768e+01  
## ly\_sign[5] -2.727510e+00 -1.532752e+00 -6.257146e-02  
## ly\_sign[6] 3.918454e+00 5.903929e+00 1.143038e+01  
## ly\_sign[7] 2.965071e+00 4.842290e+00 9.681186e+00  
## Theta\_var[1] 9.782133e-01 1.050007e+00 1.217557e+00  
## Theta\_var[2] 9.160949e-01 1.023726e+00 1.228360e+00  
## Theta\_var[3] 8.378542e-01 9.939771e-01 1.216044e+00  
## Theta\_var[4] 9.723640e-01 1.059733e+00 1.278114e+00  
## Theta\_var[5] 3.880377e-01 5.518477e-01 8.121709e-01  
## Theta\_var[6] 8.609054e-01 9.458812e-01 1.131186e+00  
## Theta\_var[7] 9.513773e-01 1.030278e+00 1.205731e+00  
## Theta\_var[8] 9.108510e-01 9.963399e-01 1.191379e+00  
## Theta\_var[9] 9.505497e-01 1.043903e+00 1.252604e+00  
## Psi\_var[1] 8.691827e-03 2.658234e-02 1.265832e-01  
## Psi\_var[2] 4.910142e-03 1.133595e-02 6.174483e-02  
## Nu\_free[1] -4.439133e-03 4.714106e-02 1.377848e-01  
## Nu\_free[2] 1.169143e-03 5.947881e-02 1.626870e-01  
## Nu\_free[3] -8.963960e-03 5.531223e-02 1.665722e-01  
## Nu\_free[4] -3.367657e-03 5.449965e-02 1.641649e-01  
## Nu\_free[5] -8.827671e-03 4.446641e-02 1.376296e-01  
## Nu\_free[6] -2.183036e-03 5.259496e-02 1.586839e-01  
## Nu\_free[7] -1.505699e-03 5.307973e-02 1.559757e-01  
## Nu\_free[8] -8.020151e-03 4.512970e-02 1.597687e-01  
## Nu\_free[9] -1.064371e-02 4.988339e-02 1.675213e-01  
## lp\_\_ -1.939784e+03 -1.936802e+03 -1.931703e+03

## bfit.9factors

tmp7 = blavInspect(bfit.9factors, "mcobj")  
summary(tmp7)

## $summary  
## mean se\_mean sd 2.5%  
## Psi\_var[1] 1.008255e+00 0.0005588739 0.10652131 0.8219324  
## Psi\_var[2] 1.009641e+00 0.0005684916 0.11955545 0.8031605  
## Psi\_var[3] 1.011967e+00 0.0006604432 0.13129952 0.7858018  
## Psi\_var[4] 1.012357e+00 0.0006088185 0.12874860 0.7904641  
## Psi\_var[5] 1.010104e+00 0.0005611798 0.11841666 0.8051612  
## Psi\_var[6] 1.009684e+00 0.0005579958 0.11950544 0.8027058  
## Psi\_var[7] 1.009821e+00 0.0005600304 0.11400949 0.8097798  
## Psi\_var[8] 1.009238e+00 0.0005894324 0.12270397 0.7955563  
## Psi\_var[9] 1.011661e+00 0.0006747118 0.12957263 0.7890345  
## Nu\_free[1] -3.928227e-05 0.0003380155 0.07444263 -0.1447348  
## Nu\_free[2] 2.296838e-04 0.0003845172 0.08218861 -0.1614683  
## Nu\_free[3] 5.997142e-04 0.0004205108 0.08909148 -0.1728774  
## Nu\_free[4] -4.761059e-04 0.0004303187 0.08820767 -0.1759287  
## Nu\_free[5] 6.138204e-05 0.0003835213 0.08051431 -0.1578811  
## Nu\_free[6] -1.926516e-04 0.0003838023 0.08217426 -0.1599763  
## Nu\_free[7] 5.662348e-04 0.0003814714 0.08035248 -0.1575315  
## Nu\_free[8] 4.390031e-04 0.0003959982 0.08404058 -0.1641181  
## Nu\_free[9] -2.764934e-04 0.0004147244 0.08910867 -0.1762094  
## lp\_\_ -1.924667e+03 0.0339438778 2.95864542 -1931.2250715  
## 25% 50% 75% 97.5%  
## Psi\_var[1] 9.327065e-01 1.001065e+00 1.075776e+00 1.2357588  
## Psi\_var[2] 9.261856e-01 1.000647e+00 1.083162e+00 1.2699595  
## Psi\_var[3] 9.184908e-01 9.992857e-01 1.091950e+00 1.3020970  
## Psi\_var[4] 9.219564e-01 1.001299e+00 1.092279e+00 1.2928574  
## Psi\_var[5] 9.264735e-01 1.001151e+00 1.083923e+00 1.2670306  
## Psi\_var[6] 9.258315e-01 1.000157e+00 1.084665e+00 1.2685567  
## Psi\_var[7] 9.303471e-01 1.001405e+00 1.080485e+00 1.2563027  
## Psi\_var[8] 9.228492e-01 9.991922e-01 1.084655e+00 1.2793369  
## Psi\_var[9] 9.207097e-01 1.001479e+00 1.091471e+00 1.2949549  
## Nu\_free[1] -5.037004e-02 -2.661050e-04 5.004749e-02 0.1461254  
## Nu\_free[2] -5.556738e-02 5.971993e-04 5.498549e-02 0.1620936  
## Nu\_free[3] -5.936954e-02 1.462973e-04 6.115105e-02 0.1734986  
## Nu\_free[4] -5.955886e-02 -8.567878e-04 5.890936e-02 0.1725636  
## Nu\_free[5] -5.398510e-02 -1.609751e-04 5.385477e-02 0.1589374  
## Nu\_free[6] -5.600988e-02 -4.612970e-04 5.592223e-02 0.1593678  
## Nu\_free[7] -5.300586e-02 5.769774e-04 5.446283e-02 0.1606774  
## Nu\_free[8] -5.690884e-02 8.562040e-04 5.784622e-02 0.1628878  
## Nu\_free[9] -6.019324e-02 2.728619e-04 5.930880e-02 0.1731164  
## lp\_\_ -1.926455e+03 -1.924360e+03 -1.922535e+03 -1919.7638268  
## n\_eff Rhat  
## Psi\_var[1] 36328.315 0.9999333  
## Psi\_var[2] 44227.332 0.9999346  
## Psi\_var[3] 39523.501 0.9998247  
## Psi\_var[4] 44720.775 0.9998290  
## Psi\_var[5] 44526.815 0.9999129  
## Psi\_var[6] 45868.392 0.9998999  
## Psi\_var[7] 41443.724 0.9999356  
## Psi\_var[8] 43336.032 0.9998344  
## Psi\_var[9] 36879.919 1.0000156  
## Nu\_free[1] 48503.183 0.9998372  
## Nu\_free[2] 45686.902 0.9998790  
## Nu\_free[3] 44886.736 0.9998906  
## Nu\_free[4] 42017.690 0.9998485  
## Nu\_free[5] 44072.437 1.0000056  
## Nu\_free[6] 45841.241 0.9999220  
## Nu\_free[7] 44368.482 0.9998906  
## Nu\_free[8] 45039.309 0.9998276  
## Nu\_free[9] 46165.842 1.0000383  
## lp\_\_ 7597.364 1.0006628  
##   
## $c\_summary  
## , , chains = chain:1  
##   
## stats  
## parameter mean sd 2.5% 25%  
## Psi\_var[1] 1.006335e+00 0.10605854 0.8183066 9.299327e-01  
## Psi\_var[2] 1.009456e+00 0.11794639 0.8006957 9.272325e-01  
## Psi\_var[3] 1.011155e+00 0.13083182 0.7871942 9.186251e-01  
## Psi\_var[4] 1.012539e+00 0.12847041 0.7935289 9.224894e-01  
## Psi\_var[5] 1.009748e+00 0.11826191 0.8054113 9.266664e-01  
## Psi\_var[6] 1.010142e+00 0.11932429 0.8021776 9.267737e-01  
## Psi\_var[7] 1.008917e+00 0.11068613 0.8119815 9.338425e-01  
## Psi\_var[8] 1.010143e+00 0.12409128 0.7914693 9.262086e-01  
## Psi\_var[9] 1.012384e+00 0.12847226 0.7926119 9.211451e-01  
## Nu\_free[1] 2.051005e-04 0.07409941 -0.1425468 -5.096496e-02  
## Nu\_free[2] -4.459727e-04 0.08325710 -0.1630514 -5.752810e-02  
## Nu\_free[3] -5.215594e-04 0.08646600 -0.1666593 -5.863773e-02  
## Nu\_free[4] -2.940497e-04 0.08860195 -0.1723035 -5.939040e-02  
## Nu\_free[5] -1.433981e-03 0.08015694 -0.1567978 -5.526970e-02  
## Nu\_free[6] 3.590184e-04 0.08260875 -0.1593351 -5.451002e-02  
## Nu\_free[7] 1.498615e-04 0.08139997 -0.1629528 -5.427048e-02  
## Nu\_free[8] -6.641276e-06 0.08606191 -0.1660344 -6.007972e-02  
## Nu\_free[9] -6.190473e-04 0.09034738 -0.1791081 -6.000914e-02  
## lp\_\_ -1.924651e+03 2.97636781 -1931.2306418 -1.926540e+03  
## stats  
## parameter 50% 75% 97.5%  
## Psi\_var[1] 9.993657e-01 1.074185e+00 1.2306623  
## Psi\_var[2] 1.001268e+00 1.081837e+00 1.2622719  
## Psi\_var[3] 9.984093e-01 1.091619e+00 1.3062577  
## Psi\_var[4] 1.001597e+00 1.091758e+00 1.2938871  
## Psi\_var[5] 9.991120e-01 1.084420e+00 1.2689549  
## Psi\_var[6] 1.000115e+00 1.083447e+00 1.2699399  
## Psi\_var[7] 1.001876e+00 1.075880e+00 1.2499240  
## Psi\_var[8] 1.000456e+00 1.082771e+00 1.2888661  
## Psi\_var[9] 1.002723e+00 1.092493e+00 1.2927508  
## Nu\_free[1] -9.606422e-06 5.147414e-02 0.1481782  
## Nu\_free[2] -5.636288e-04 5.521988e-02 0.1636050  
## Nu\_free[3] -5.509307e-04 5.919276e-02 0.1681590  
## Nu\_free[4] -2.740400e-04 5.879581e-02 0.1751155  
## Nu\_free[5] -2.187808e-03 5.237232e-02 0.1535819  
## Nu\_free[6] -2.006932e-05 5.718965e-02 0.1627649  
## Nu\_free[7] 9.269222e-04 5.508652e-02 0.1598121  
## Nu\_free[8] 1.127057e-04 5.934897e-02 0.1651849  
## Nu\_free[9] 6.064715e-04 5.973583e-02 0.1707005  
## lp\_\_ -1.924325e+03 -1.922478e+03 -1919.7665310  
##   
## , , chains = chain:2  
##   
## stats  
## parameter mean sd 2.5% 25%  
## Psi\_var[1] 1.008271e+00 0.10677707 0.8224659 9.339969e-01  
## Psi\_var[2] 1.008414e+00 0.11863098 0.8079021 9.256284e-01  
## Psi\_var[3] 1.012192e+00 0.13004821 0.7885632 9.194480e-01  
## Psi\_var[4] 1.012940e+00 0.12790913 0.7922000 9.238815e-01  
## Psi\_var[5] 1.010237e+00 0.11731675 0.8101663 9.272692e-01  
## Psi\_var[6] 1.010085e+00 0.12017323 0.8047806 9.250142e-01  
## Psi\_var[7] 1.012209e+00 0.11702457 0.8099548 9.302604e-01  
## Psi\_var[8] 1.009284e+00 0.12174785 0.8014178 9.209149e-01  
## Psi\_var[9] 1.012022e+00 0.12935749 0.7896266 9.223394e-01  
## Nu\_free[1] 4.831689e-04 0.07404306 -0.1406028 -5.041788e-02  
## Nu\_free[2] -4.053681e-04 0.08187064 -0.1625557 -5.485378e-02  
## Nu\_free[3] 7.910659e-04 0.09125739 -0.1775341 -6.033313e-02  
## Nu\_free[4] 1.568056e-05 0.08836736 -0.1756272 -5.825898e-02  
## Nu\_free[5] 8.778042e-04 0.08119964 -0.1552621 -5.456688e-02  
## Nu\_free[6] -1.035921e-04 0.08165166 -0.1574136 -5.763465e-02  
## Nu\_free[7] 1.127787e-03 0.07858150 -0.1512709 -5.209772e-02  
## Nu\_free[8] 1.251385e-04 0.08386682 -0.1654672 -5.629294e-02  
## Nu\_free[9] 1.007964e-03 0.08881588 -0.1710191 -6.004486e-02  
## lp\_\_ -1.924641e+03 2.90302395 -1931.0017329 -1.926410e+03  
## stats  
## parameter 50% 75% 97.5%  
## Psi\_var[1] 1.000975e+00 1.074995e+00 1.2350310  
## Psi\_var[2] 9.996294e-01 1.080076e+00 1.2659828  
## Psi\_var[3] 1.000836e+00 1.091458e+00 1.2952697  
## Psi\_var[4] 1.003631e+00 1.092010e+00 1.2861160  
## Psi\_var[5] 1.002503e+00 1.081652e+00 1.2677082  
## Psi\_var[6] 9.997673e-01 1.088095e+00 1.2687650  
## Psi\_var[7] 1.004340e+00 1.084728e+00 1.2650568  
## Psi\_var[8] 9.994923e-01 1.086434e+00 1.2768796  
## Psi\_var[9] 1.002567e+00 1.091305e+00 1.2999474  
## Nu\_free[1] 2.633166e-04 5.006813e-02 0.1459764  
## Nu\_free[2] -5.393510e-04 5.317326e-02 0.1641660  
## Nu\_free[3] 7.111947e-04 6.254262e-02 0.1773303  
## Nu\_free[4] -1.263335e-03 6.106690e-02 0.1712723  
## Nu\_free[5] 8.607692e-04 5.498255e-02 0.1609550  
## Nu\_free[6] 4.265462e-04 5.516610e-02 0.1585267  
## Nu\_free[7] 1.062519e-03 5.476469e-02 0.1575127  
## Nu\_free[8] 8.857547e-04 5.736135e-02 0.1642834  
## Nu\_free[9] 1.451647e-03 6.203441e-02 0.1709604  
## lp\_\_ -1.924342e+03 -1.922579e+03 -1919.7540985  
##   
## , , chains = chain:3  
##   
## stats  
## parameter mean sd 2.5% 25%  
## Psi\_var[1] 1.008379e+00 0.10599472 0.8238615 9.347825e-01  
## Psi\_var[2] 1.012063e+00 0.12397084 0.7961076 9.253228e-01  
## Psi\_var[3] 1.013073e+00 0.13242221 0.7909729 9.166972e-01  
## Psi\_var[4] 1.011162e+00 0.12932409 0.7904641 9.177805e-01  
## Psi\_var[5] 1.011736e+00 0.12124750 0.7996480 9.253120e-01  
## Psi\_var[6] 1.010996e+00 0.12090563 0.8019137 9.268687e-01  
## Psi\_var[7] 1.008553e+00 0.11263708 0.8109280 9.305569e-01  
## Psi\_var[8] 1.009182e+00 0.12279465 0.7930630 9.233731e-01  
## Psi\_var[9] 1.011814e+00 0.13047028 0.7849093 9.207809e-01  
## Nu\_free[1] -9.369767e-04 0.07546448 -0.1482814 -5.123179e-02  
## Nu\_free[2] 3.665858e-05 0.08174506 -0.1607890 -5.538566e-02  
## Nu\_free[3] 1.255927e-04 0.08994034 -0.1712033 -6.054932e-02  
## Nu\_free[4] -1.139065e-03 0.08775779 -0.1782818 -6.053465e-02  
## Nu\_free[5] -1.280083e-04 0.07966551 -0.1578099 -5.259123e-02  
## Nu\_free[6] 2.497689e-04 0.08293450 -0.1619073 -5.669301e-02  
## Nu\_free[7] 7.469566e-04 0.08211018 -0.1604013 -5.330996e-02  
## Nu\_free[8] 1.244593e-03 0.08304203 -0.1620619 -5.539906e-02  
## Nu\_free[9] -1.646862e-03 0.08856155 -0.1792973 -6.125594e-02  
## lp\_\_ -1.924756e+03 3.04179540 -1931.5514864 -1.926503e+03  
## stats  
## parameter 50% 75% 97.5%  
## Psi\_var[1] 1.000849e+00 1.074009e+00 1.2382205  
## Psi\_var[2] 1.002977e+00 1.090516e+00 1.2852400  
## Psi\_var[3] 1.000910e+00 1.095857e+00 1.2997777  
## Psi\_var[4] 9.989302e-01 1.092295e+00 1.2929379  
## Psi\_var[5] 1.001645e+00 1.088088e+00 1.2688451  
## Psi\_var[6] 1.001425e+00 1.084304e+00 1.2792404  
## Psi\_var[7] 9.984674e-01 1.078024e+00 1.2497902  
## Psi\_var[8] 9.981066e-01 1.085274e+00 1.2795430  
## Psi\_var[9] 1.003200e+00 1.091317e+00 1.2959921  
## Nu\_free[1] -1.135402e-03 4.907067e-02 0.1454651  
## Nu\_free[2] 1.079261e-03 5.439149e-02 0.1591546  
## Nu\_free[3] -1.511571e-03 6.071549e-02 0.1753518  
## Nu\_free[4] -6.216152e-04 5.828743e-02 0.1700150  
## Nu\_free[5] -4.445686e-04 5.293991e-02 0.1594181  
## Nu\_free[6] 1.101054e-03 5.751023e-02 0.1576087  
## Nu\_free[7] 2.260544e-05 5.513729e-02 0.1664787  
## Nu\_free[8] 1.092334e-03 5.837993e-02 0.1622859  
## Nu\_free[9] -5.954068e-04 5.834236e-02 0.1698533  
## lp\_\_ -1.924474e+03 -1.922556e+03 -1919.7824316  
##   
## , , chains = chain:4  
##   
## stats  
## parameter mean sd 2.5% 25%  
## Psi\_var[1] 1.010033e+00 0.10724955 0.8213731 9.326419e-01  
## Psi\_var[2] 1.008631e+00 0.11756166 0.8042287 9.265278e-01  
## Psi\_var[3] 1.011448e+00 0.13191382 0.7810089 9.197325e-01  
## Psi\_var[4] 1.012787e+00 0.12931612 0.7878762 9.230053e-01  
## Psi\_var[5] 1.008696e+00 0.11680580 0.8056378 9.267758e-01  
## Psi\_var[6] 1.007513e+00 0.11760060 0.8027638 9.247067e-01  
## Psi\_var[7] 1.009605e+00 0.11558111 0.8072738 9.277835e-01  
## Psi\_var[8] 1.008344e+00 0.12219965 0.7984964 9.212603e-01  
## Psi\_var[9] 1.010423e+00 0.13001213 0.7876219 9.190600e-01  
## Nu\_free[1] 9.157817e-05 0.07416874 -0.1474507 -4.910263e-02  
## Nu\_free[2] 1.733417e-03 0.08187774 -0.1584036 -5.454304e-02  
## Nu\_free[3] 2.003758e-03 0.08863914 -0.1722823 -5.797886e-02  
## Nu\_free[4] -4.869889e-04 0.08812380 -0.1748326 -5.945876e-02  
## Nu\_free[5] 9.297132e-04 0.08102654 -0.1604353 -5.339180e-02  
## Nu\_free[6] -1.275802e-03 0.08150752 -0.1605713 -5.526359e-02  
## Nu\_free[7] 2.403346e-04 0.07928582 -0.1540693 -5.226372e-02  
## Nu\_free[8] 3.929221e-04 0.08317628 -0.1617450 -5.597178e-02  
## Nu\_free[9] 1.519716e-04 0.08870344 -0.1729408 -5.938763e-02  
## lp\_\_ -1.924622e+03 2.91029910 -1931.0966979 -1.926418e+03  
## stats  
## parameter 50% 75% 97.5%  
## Psi\_var[1] 1.003390e+00 1.079543e+00 1.2385076  
## Psi\_var[2] 9.985921e-01 1.080417e+00 1.2629485  
## Psi\_var[3] 9.972438e-01 1.090092e+00 1.3035565  
## Psi\_var[4] 1.001146e+00 1.092697e+00 1.2974961  
## Psi\_var[5] 1.001090e+00 1.082110e+00 1.2616946  
## Psi\_var[6] 9.987199e-01 1.083146e+00 1.2575233  
## Psi\_var[7] 1.001119e+00 1.081483e+00 1.2566356  
## Psi\_var[8] 9.981592e-01 1.083857e+00 1.2740130  
## Psi\_var[9] 9.978583e-01 1.089921e+00 1.2935722  
## Nu\_free[1] -2.898972e-04 4.970633e-02 0.1442015  
## Nu\_free[2] 1.802894e-03 5.743536e-02 0.1625240  
## Nu\_free[3] 1.369533e-03 6.236093e-02 0.1733936  
## Nu\_free[4] -1.242590e-03 5.761874e-02 0.1741967  
## Nu\_free[5] 8.769555e-04 5.465870e-02 0.1627705  
## Nu\_free[6] -2.282369e-03 5.350308e-02 0.1577499  
## Nu\_free[7] -1.537114e-04 5.236336e-02 0.1558452  
## Nu\_free[8] 1.052180e-03 5.560112e-02 0.1579443  
## Nu\_free[9] -3.174704e-04 5.807440e-02 0.1796570  
## lp\_\_ -1.924319e+03 -1.922504e+03 -1919.7543473

# Compare models to the 1 factor model

## MF2012

blavCompare(bfit.1factor, bfit.MF2012)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

## Warning: 11 (5.9%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## WAIC estimates:   
## object1: 3737.886   
## object2: 3741.056   
##   
## WAIC difference & SE:   
## -1.585 0.870   
##   
## LOO estimates:   
## object1: 3737.989   
## object2: 3741.192   
##   
## LOO difference & SE:   
## -1.601 0.869   
##   
## Laplace approximation to the log-Bayes factor  
## (experimental; positive values favor object1): 2.844

## 3 factors

blavCompare(bfit.1factor, bfit.3factors)

## Warning in lav\_object\_post\_check(object): lavaan WARNING: covariance matrix of latent variables  
## is not positive definite;  
## use lavInspect(fit, "cov.lv") to investigate.  
## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

## Warning: 11 (5.9%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## WAIC estimates:   
## object1: 3737.886   
## object2: 3738.701   
##   
## WAIC difference & SE:   
## -0.407 1.815   
##   
## LOO estimates:   
## object1: 3737.989   
## object2: 3738.826   
##   
## LOO difference & SE:   
## -0.419 1.812   
##   
## Laplace approximation to the log-Bayes factor  
## (experimental; positive values favor object1): 18.295

## 3 independent factors

blavCompare(bfit.1factor, bfit.3factors\_ind)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

## Warning: 4 (2.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## WAIC estimates:   
## object1: 3737.886   
## object2: 3752.601   
##   
## WAIC difference & SE:   
## -7.357 4.054   
##   
## LOO estimates:   
## object1: 3737.989   
## object2: 3752.693   
##   
## LOO difference & SE:   
## -7.352 4.053   
##   
## Laplace approximation to the log-Bayes factor  
## (experimental; positive values favor object1): 17.281

## 2 factors (WM+Shifting, Inhibition)

blavCompare(bfit.1factor, bfit.2factors1)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.  
  
## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## WAIC estimates:   
## object1: 3737.886   
## object2: 3744.102   
##   
## WAIC difference & SE:   
## -3.108 2.846   
##   
## LOO estimates:   
## object1: 3737.989   
## object2: 3744.205   
##   
## LOO difference & SE:   
## -3.108 2.848   
##   
## Laplace approximation to the log-Bayes factor  
## (experimental; positive values favor object1): 6.071

## 2 factors (WM+Inhibition, Shifting)

blavCompare(bfit.1factor, bfit.2factors2)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

## Warning: 5 (2.7%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.

##   
## WAIC estimates:   
## object1: 3737.886   
## object2: 3749.311   
##   
## WAIC difference & SE:   
## -5.713 4.263   
##   
## LOO estimates:   
## object1: 3737.989   
## object2: 3749.367   
##   
## LOO difference & SE:   
## -5.689 4.263   
##   
## Laplace approximation to the log-Bayes factor  
## (experimental; positive values favor object1): 12.630

## 2 factors (Inhibition + Shifting, WM)

blavCompare(bfit.1factor, bfit.2factors3)

## Warning: 6 (3.2%) p\_waic estimates greater than 0.4. We recommend trying  
## loo instead.  
  
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## loo instead.

##   
## WAIC estimates:   
## object1: 3737.886   
## object2: 3740.228   
##   
## WAIC difference & SE:   
## -1.171 4.034   
##   
## LOO estimates:   
## object1: 3737.989   
## object2: 3740.336   
##   
## LOO difference & SE:   
## -1.173 4.033   
##   
## Laplace approximation to the log-Bayes factor  
## (experimental; positive values favor object1): 17.651