Online appendix for "Extracting configurations of values mixing scores from experts and ignoramus using Bayesian modelling"

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Technical documentation of the article "Extracting configurations of values mixing scores from experts and ignoramus using Bayesian modelling" submitted to *Frontiers*.

Web application

Figure 1 shows a screenshot of the web application used to retrieve the data from the raters. It gives an idea of the procedure used to collect the dataset. Recall from the main text that the values appeared randomly on the screen for every company and rater, therefore avoiding possible biases caused by raters focusing only on the first shown values.

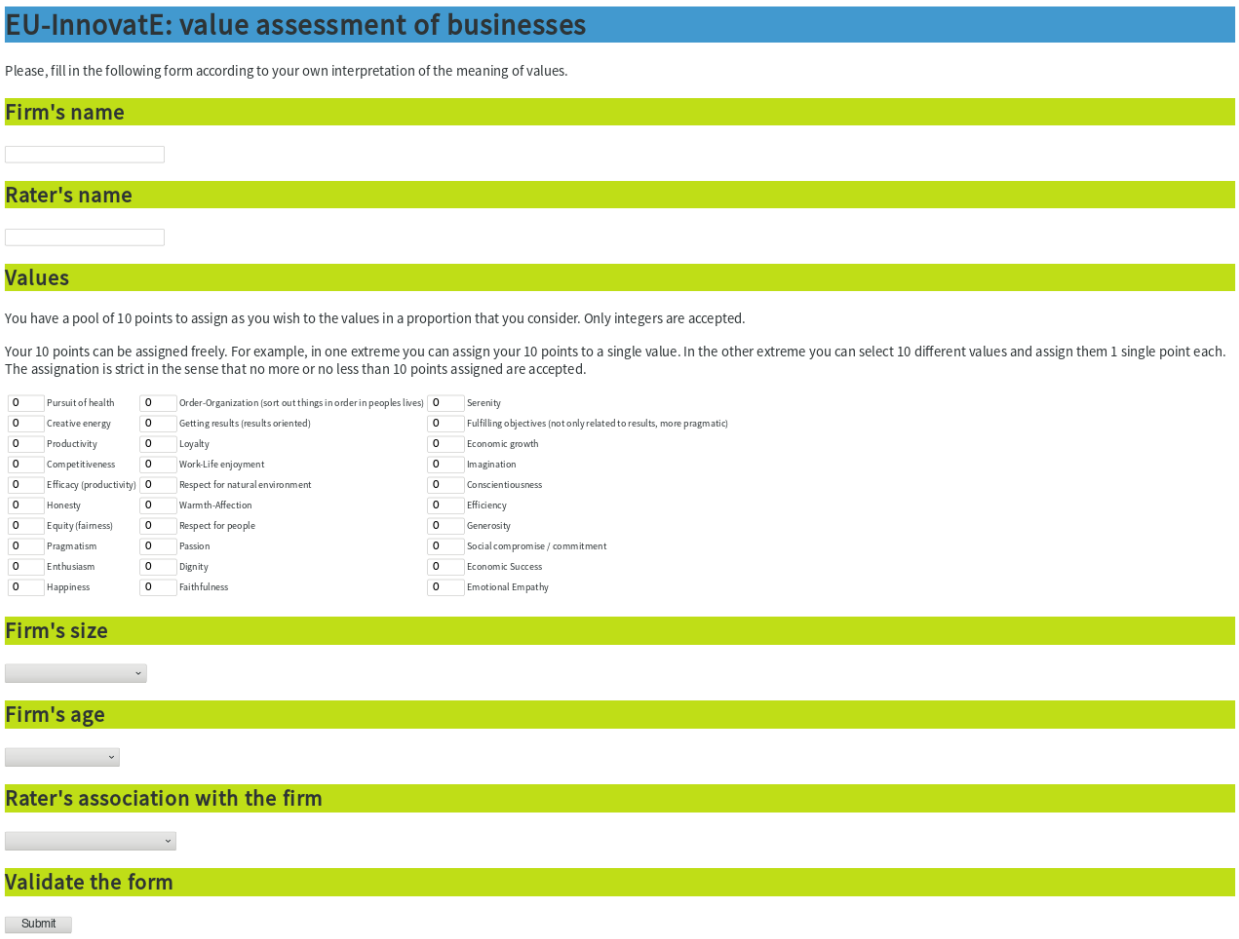


Figure 1: Web application used to gather the values of each case by the raters.

Values and groups

Table 1 presents the individual values and the group to which they belong to.

Group	Value
Economic-Pragmatic	Competitiveness
Economic-Pragmatic	Economic Success
Economic-Pragmatic	Economic growth
Economic-Pragmatic	Efficacy
Economic-Pragmatic	Efficiency
Economic-Pragmatic	Fulfilling objectives
Economic-Pragmatic	Getting results
Economic-Pragmatic	Order-Organization
Economic-Pragmatic	Pragmatism
Economic-Pragmatic	Productivity
Emotional-Developmental	Creative energy
Emotional-Developmental	Emotional Empathy
Emotional-Developmental	Enthusiasm
Emotional-Developmental	Happiness
Emotional-Developmental	Imagination
Emotional-Developmental	Passion
Emotional-Developmental	Pursuit of health
Emotional-Developmental	Serenity
Emotional-Developmental	Warmth-Affection
Emotional-Developmental	Work-Life enjoyment
Ethical-Social	Conscientiousness
Ethical-Social	Dignity
Ethical-Social	Equity
Ethical-Social	Faithfulness
Ethical-Social	Generosity
Ethical-Social	Honesty
Ethical-Social	Loyalty
Ethical-Social	Respect for natural environment
Ethical-Social	Respect for people
Ethical-Social	Social compromise

Table 1: Values and dimension to which they belong to.

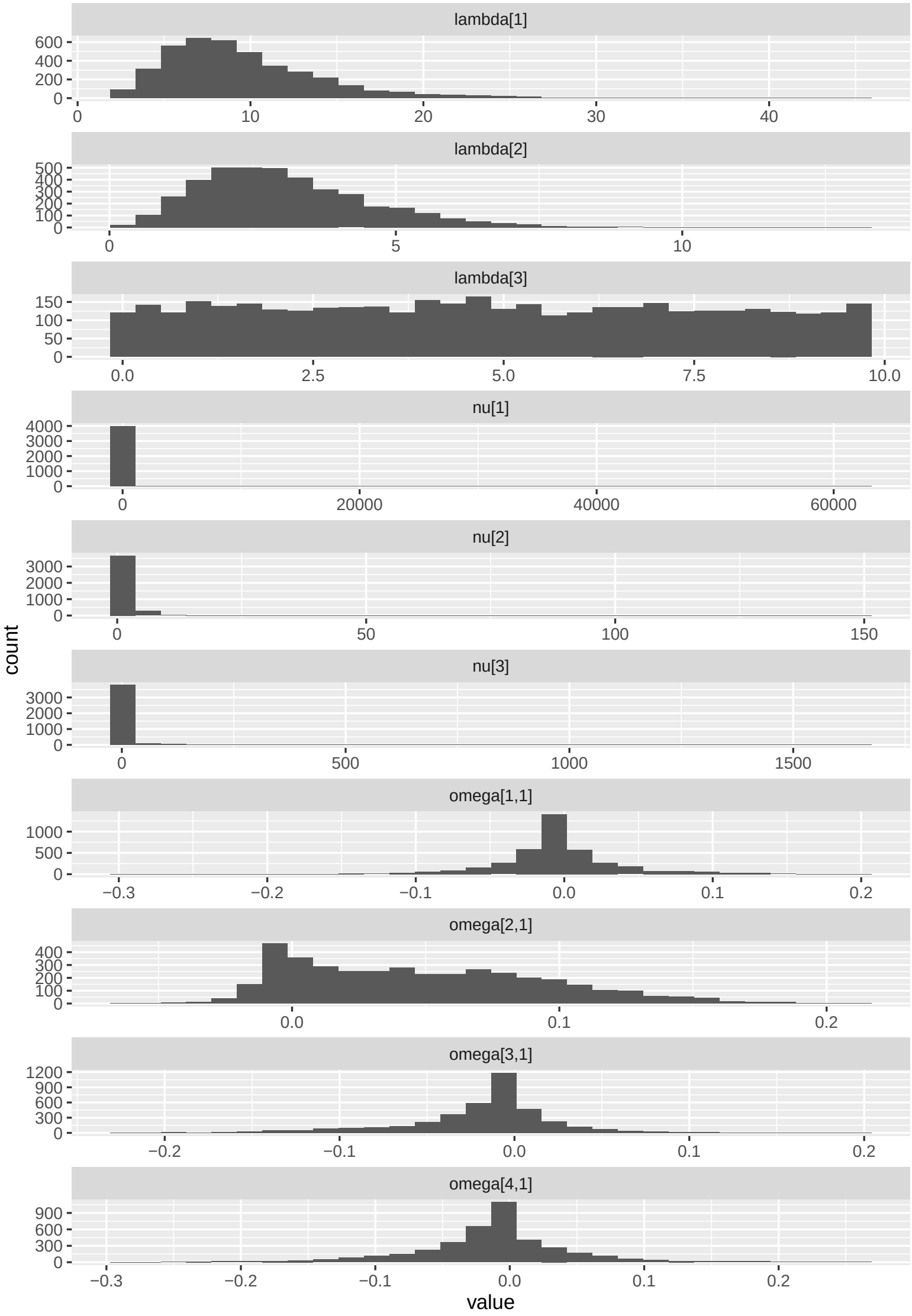
Code

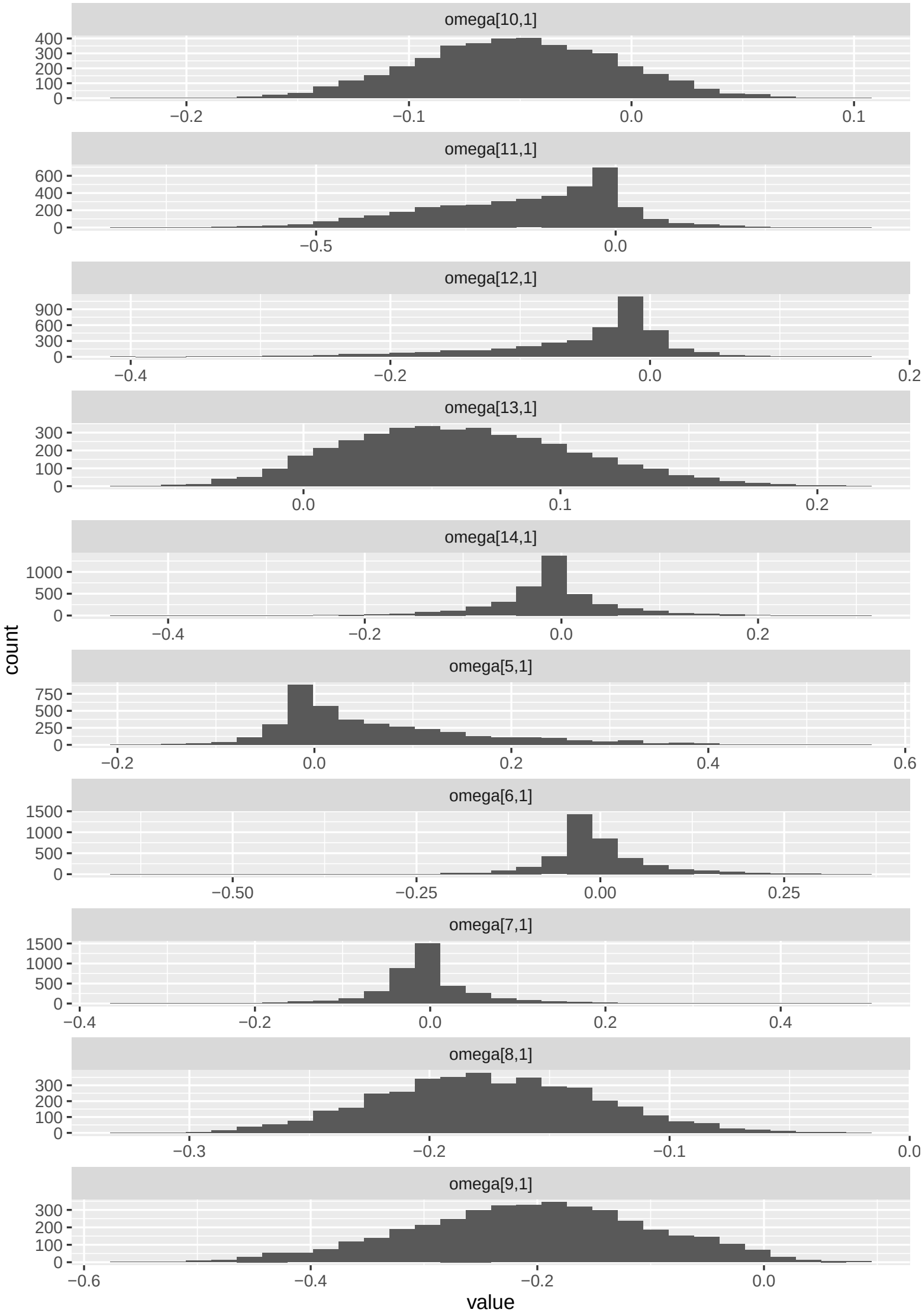
The JAGS code for the model is the following.

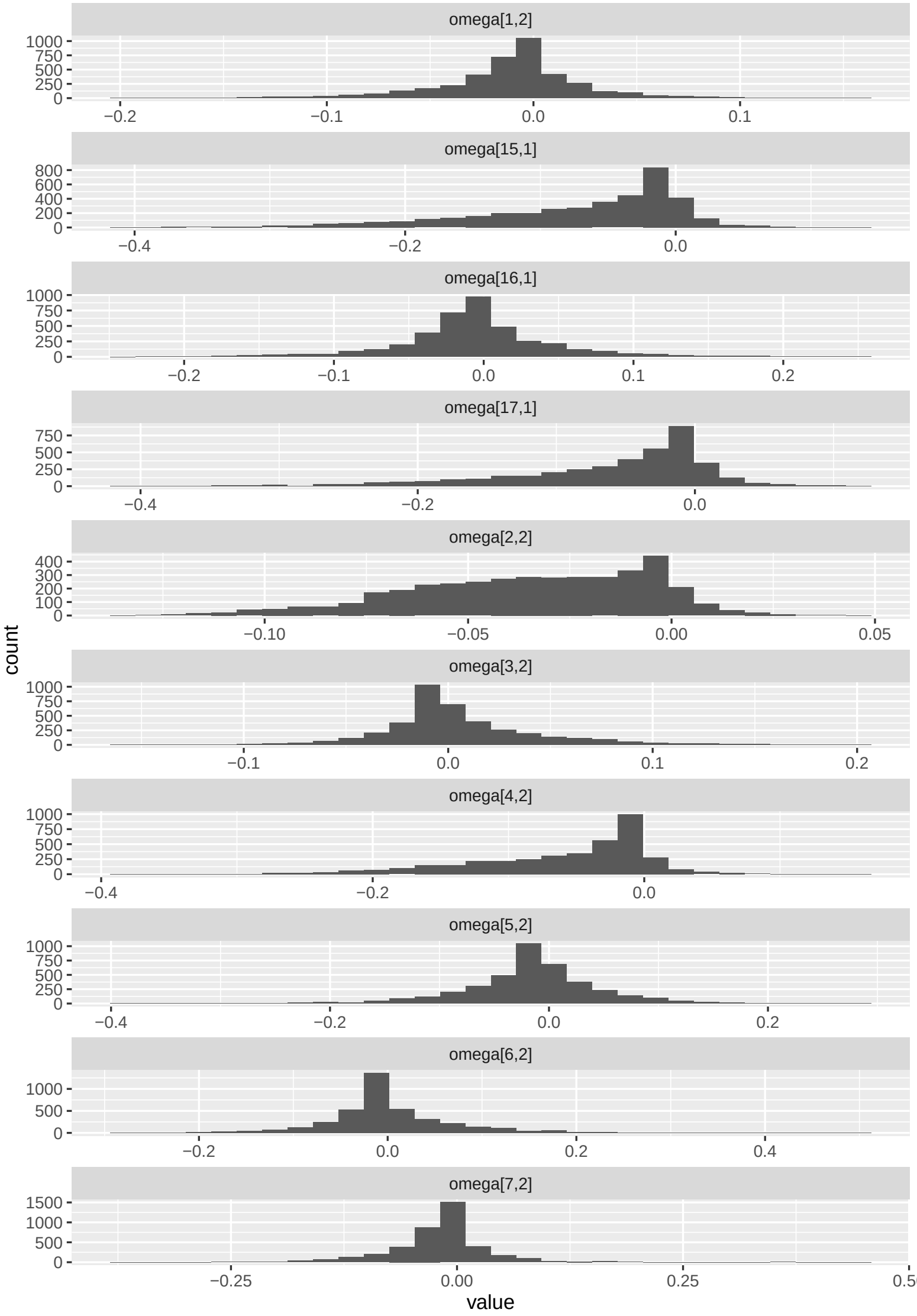
```
model {
  # Observational part
  for (o in 1:nO.wide) {
    for (g in 1:nGroups) {
      y[o,g] ~ dt(theta[id.case[o],g] + omega[id.rater[o],g], tau[g], nu[g])
    }
  }
  for (g in 1:nGroups) {
    tau[g] <- pow(sigma[g], -2)
    sigma[g] ~ dunif(0, 0.5)
    nu[g] <- 1 / nu.inv[g] # Gelman style
    nu.inv[g] ~ dunif(0, 1)
  }
  # Measurement part
  for (c in 1:nCases) {
    theta[c,1:3] ~ ddirch(c(1, 1, 1))
  }
  for (r in 1:nRaters) {
    for (g in 1:nGroups) {
      omega[r,g] ~ dnorm(0, tau.omega[r])
    }
    tau.omega[r] <- pow(sigma.omega[r], -2)
    sigma.omega[r] ~ dgamma(1, lambda[rater.type[r]])
  }
  # Rate
  lambda[2] <- 10
  lambda[1] <- lambda[2] * rho
  rho <- exp(rho.log)
  rho.log ~ dunif(-2, 2)
}
```

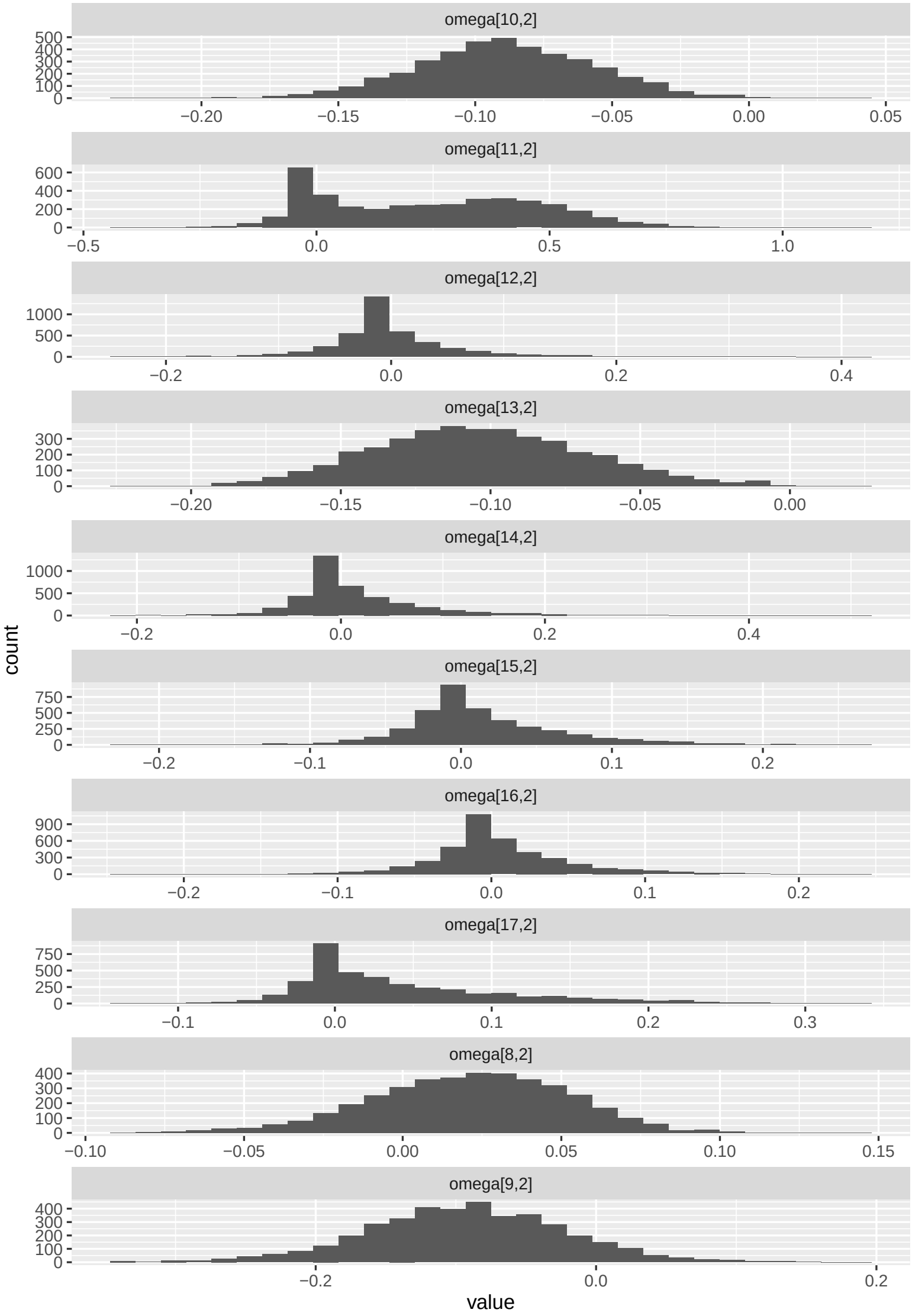
Convergence tests

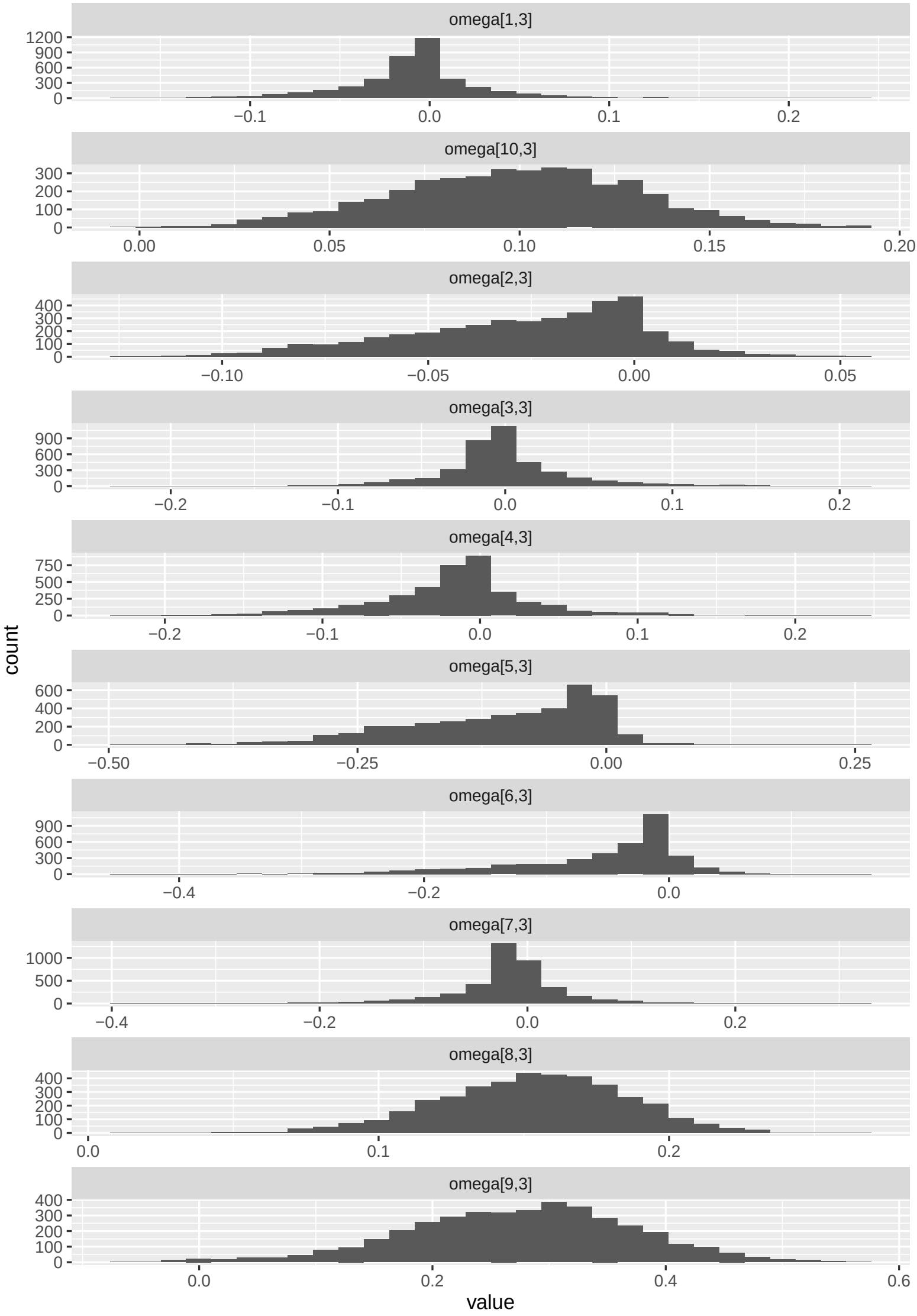
This section includes Bayesian convergence tests for all parameters in the model. It employs the function `ggmcmc()` from `R`'s package `ggmcmc`.

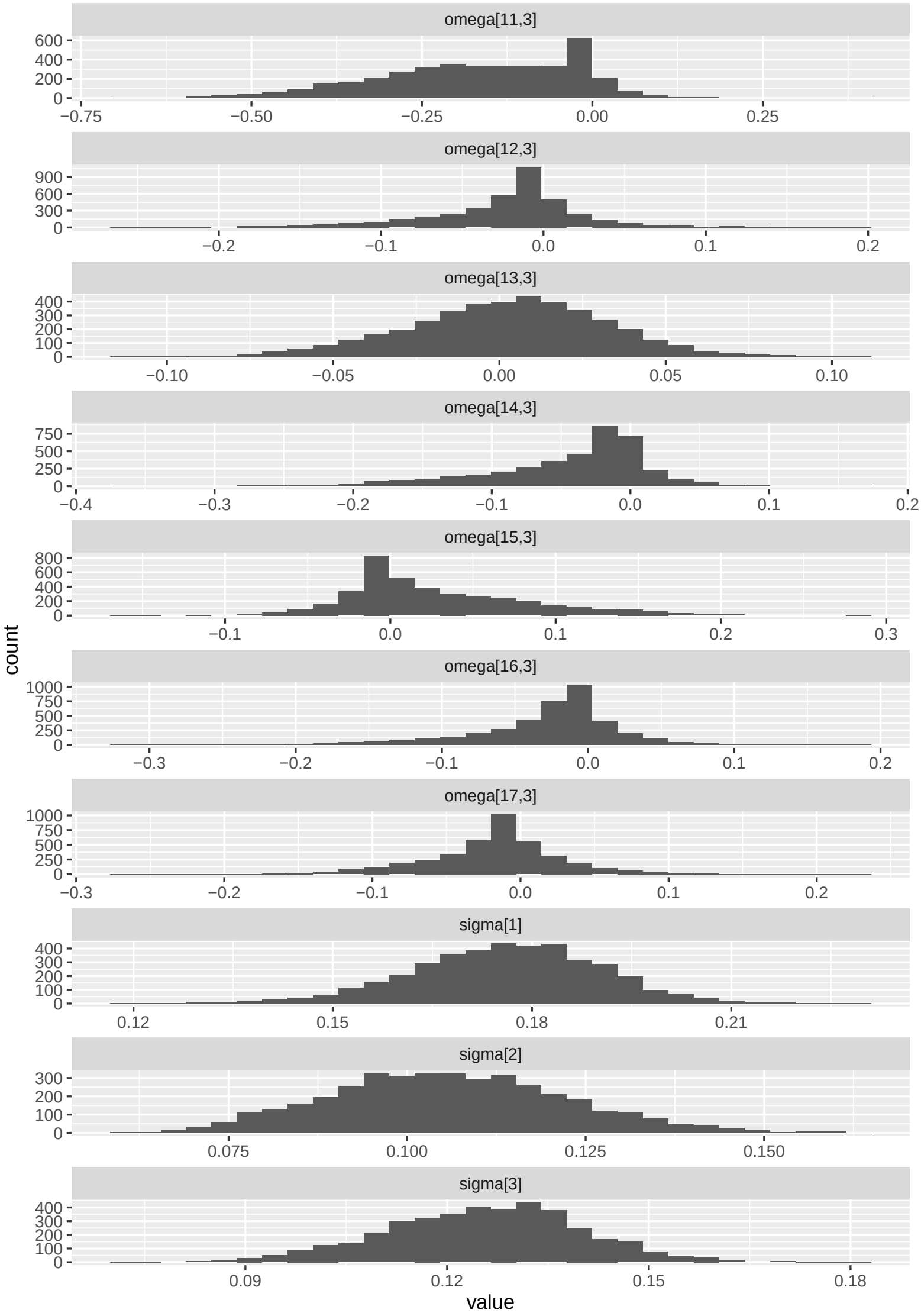

lambda[1]
lambda[2]
lambda[3]
nu[1]
nu[2]
nu[3]
omega[1,1]
omega[2,1]
omega[3,1]
omega[4,1]
count
value

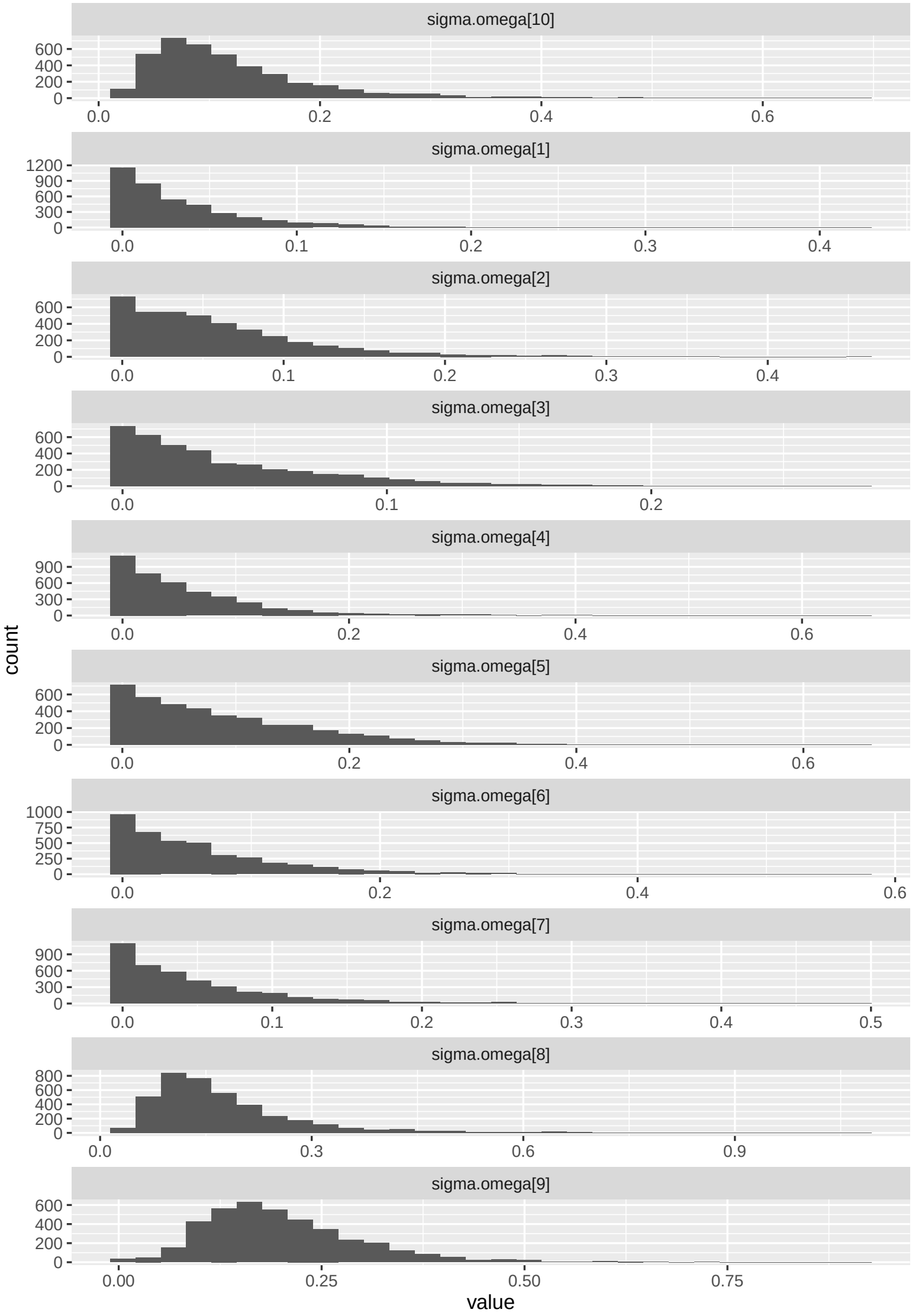

omega[10,1]
omega[11,1]
omega[12,1]
omega[13,1]
omega[14,1]
omega[5,1]
omega[6,1]
omega[7,1]
omega[8,1]
omega[9,1]
count
value

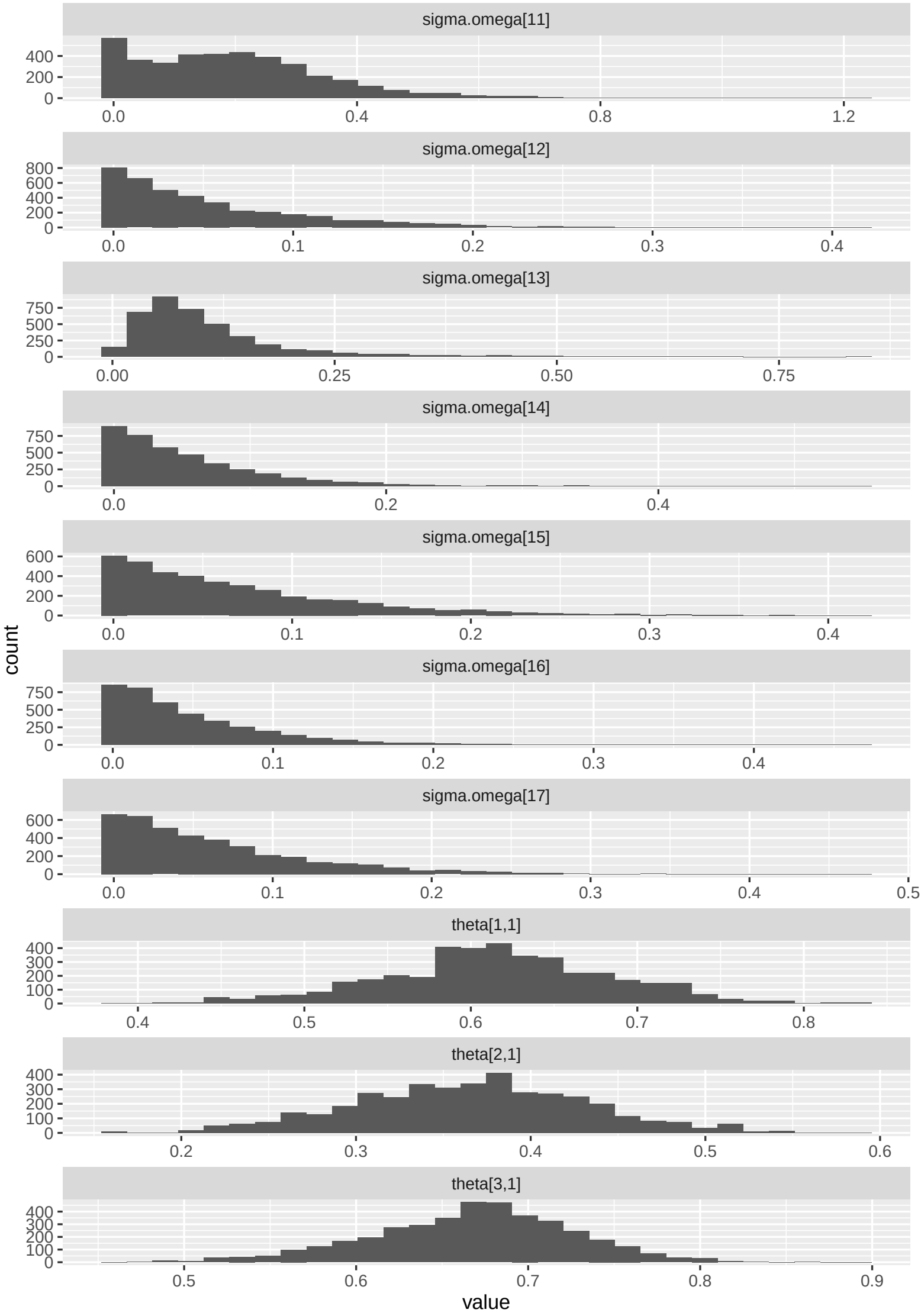

omega[1,2]
omega[15,1]
omega[16,1]
omega[17,1]
omega[2,2]
omega[3,2]
omega[4,2]
omega[5,2]
omega[6,2]
omega[7,2]
count
value

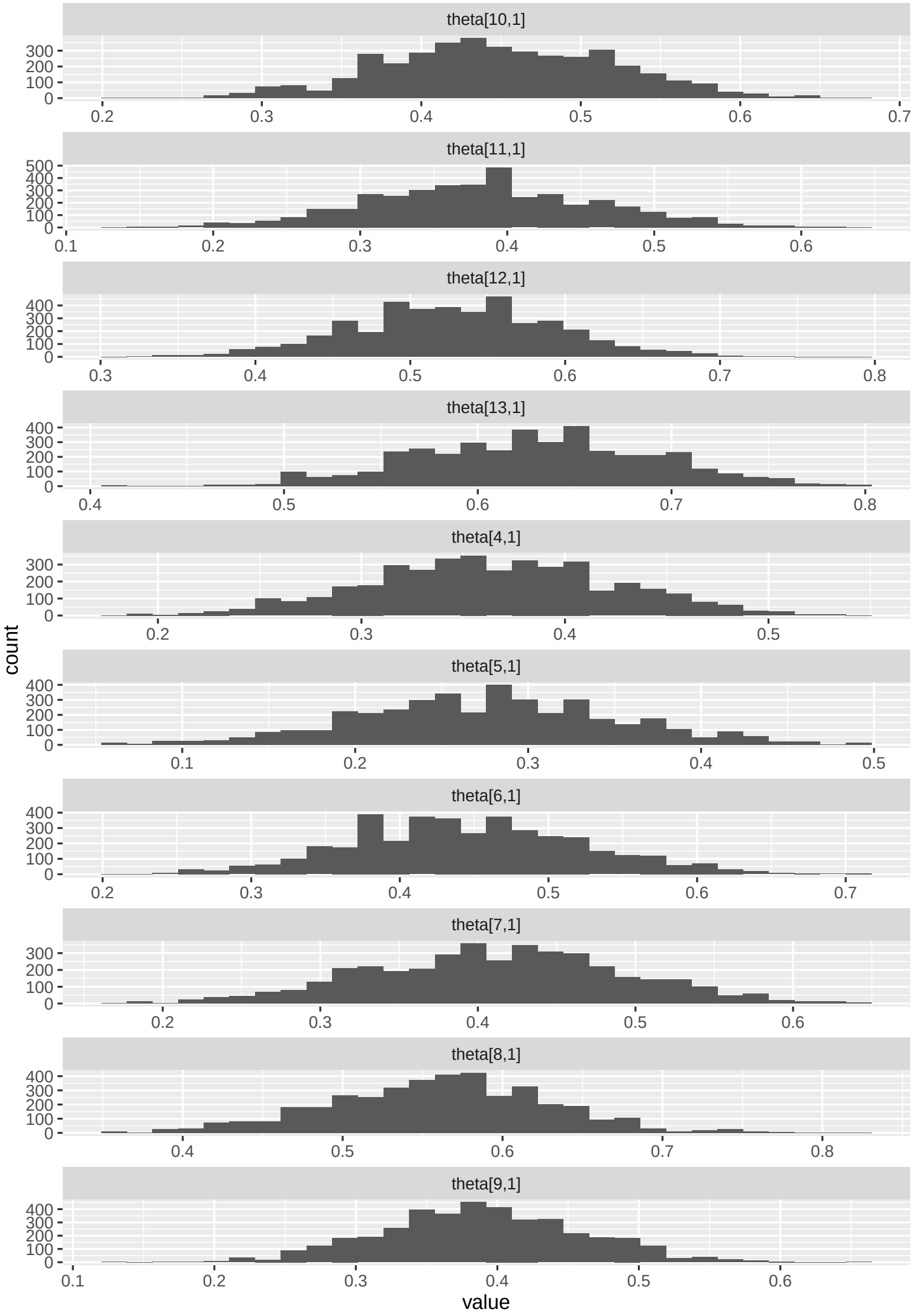

omega[10,2]
omega[11,2]
omega[12,2]
omega[13,2]
omega[14,2]
omega[15,2]
omega[16,2]
omega[17,2]
omega[8,2]
omega[9,2]
count
value

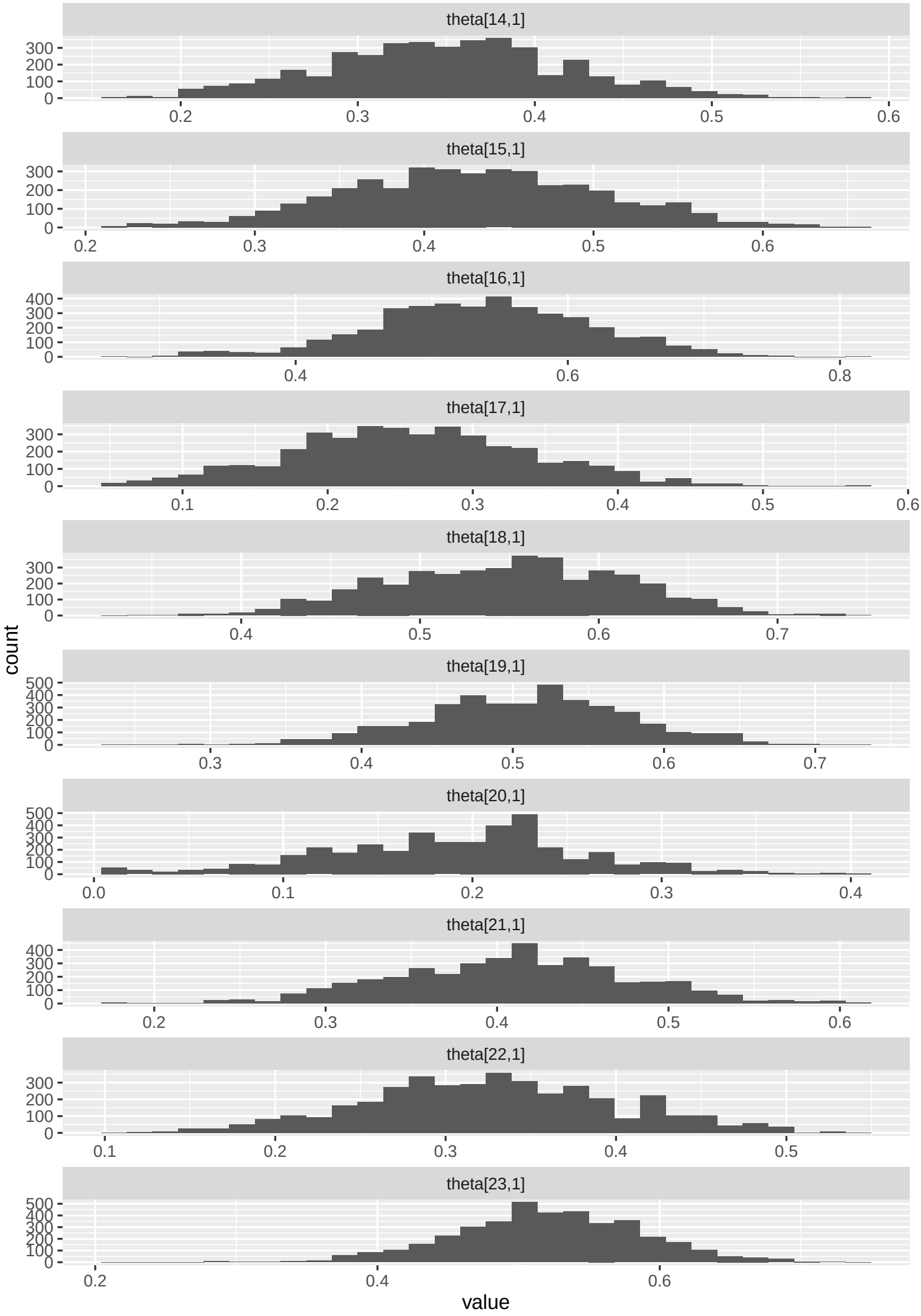

omega[1,3]
1200
900
600
300
0
−0.1
0.0
0.1
0.2
omega[10,3]
300
200
100
0
0.00
0.05
0.10
0.15
0.20
omega[2,3]
400
300
200
100
0
−0.10
−0.05
0.00
0.05
omega[3,3]
900
600
300
0
−0.2
−0.1
0.0
0.1
0.2
omega[4,3]
750
500
250
0
−0.2
−0.1
0.0
0.1
0.2
omega[5,3]
600
400
200
0
−0.50
−0.25
0.00
0.25
omega[6,3]
900
600
300
0
−0.4
−0.2
0.0
omega[7,3]
1000
500
0
−0.4
−0.2
0.0
0.2
omega[8,3]
400
300
200
100
0
0.0
0.1
0.2
omega[9,3]
400
300
200
100
0
0.0
0.2
0.4
0.6
count
value

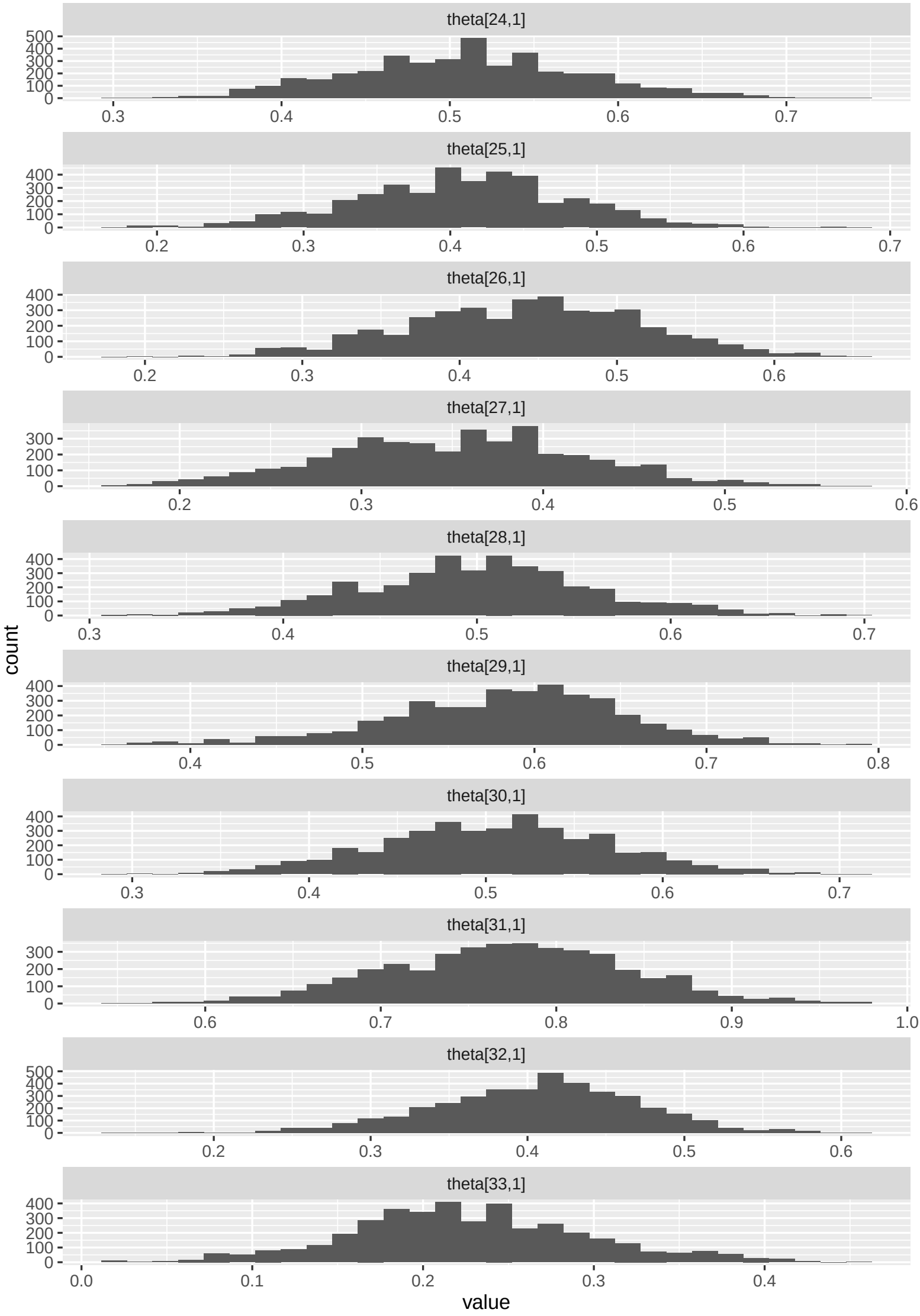

omega[11,3]
omega[12,3]
omega[13,3]
omega[14,3]
omega[15,3]
omega[16,3]
omega[17,3]
sigma[1]
sigma[2]
sigma[3]
count
value

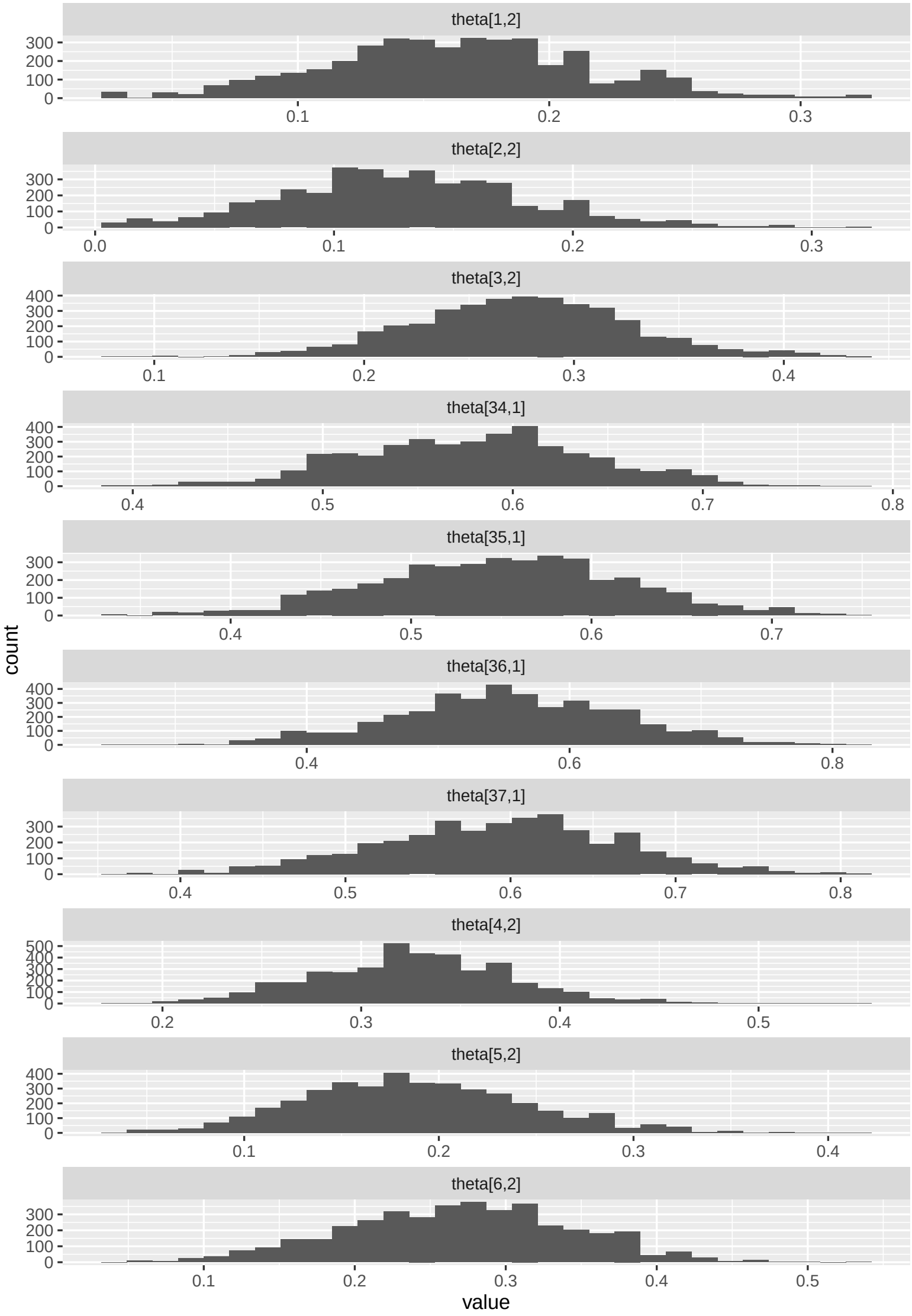

sigma.omega[10]
sigma.omega[1]
sigma.omega[2]
sigma.omega[3]
sigma.omega[4]
sigma.omega[5]
sigma.omega[6]
sigma.omega[7]
sigma.omega[8]
sigma.omega[9]
count
value

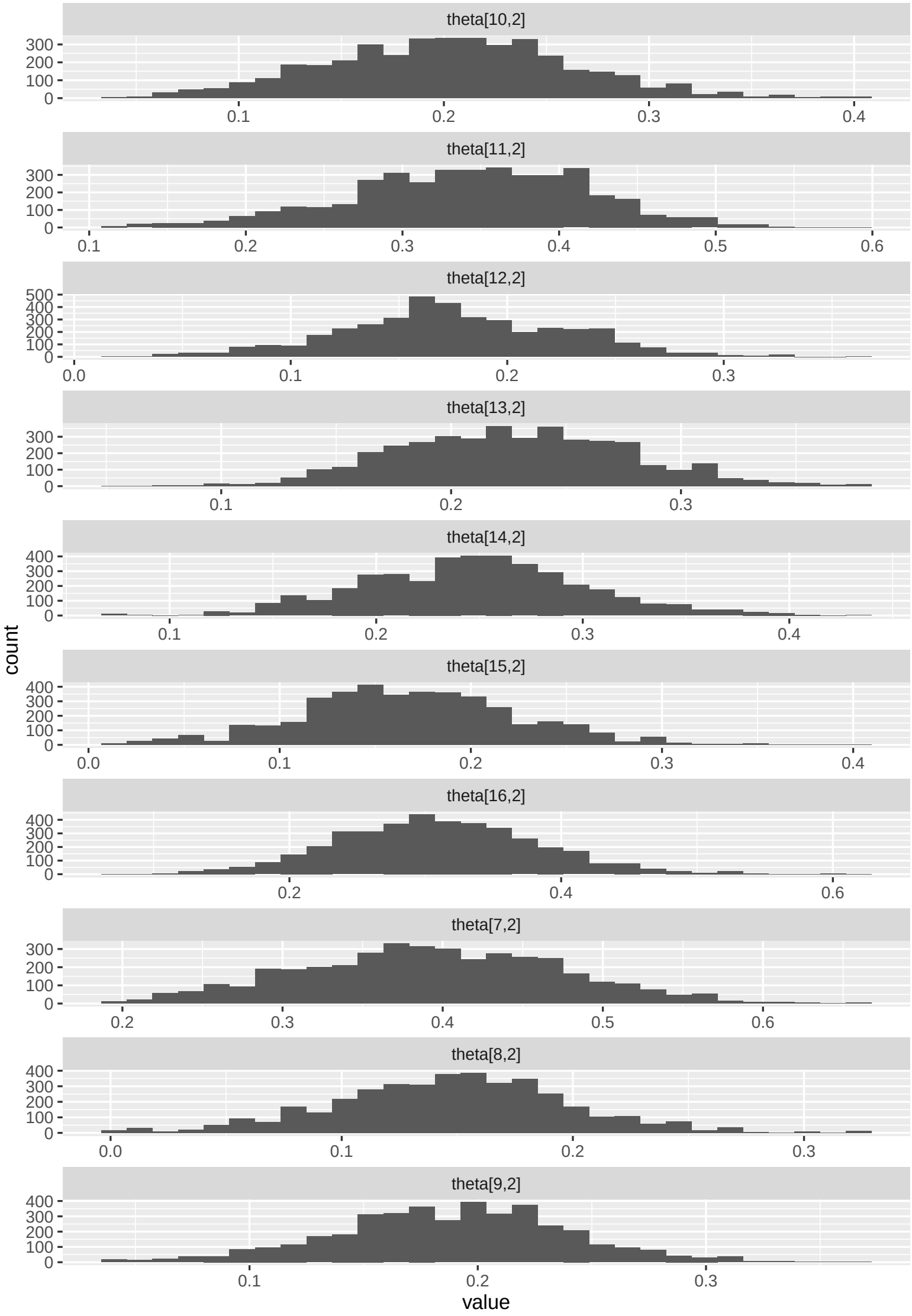

sigma.omega[11]
sigma.omega[12]
sigma.omega[13]
sigma.omega[14]
sigma.omega[15]
sigma.omega[16]
sigma.omega[17]
theta[1,1]
theta[2,1]
theta[3,1]
count
value

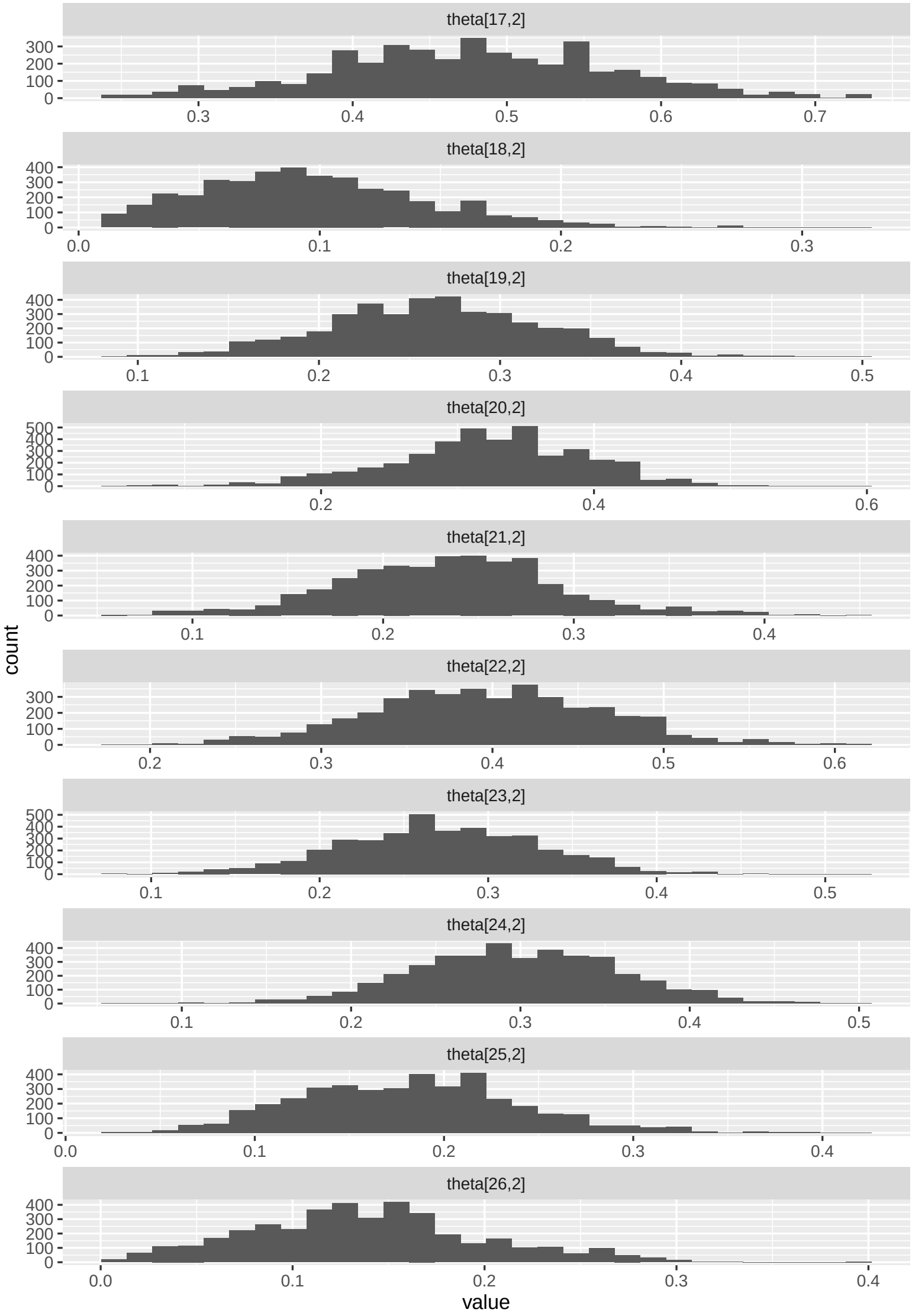

theta[10,1]
theta[11,1]
theta[12,1]
theta[13,1]
theta[4,1]
theta[5,1]
theta[6,1]
theta[7,1]
theta[8,1]
theta[9,1]
count
value

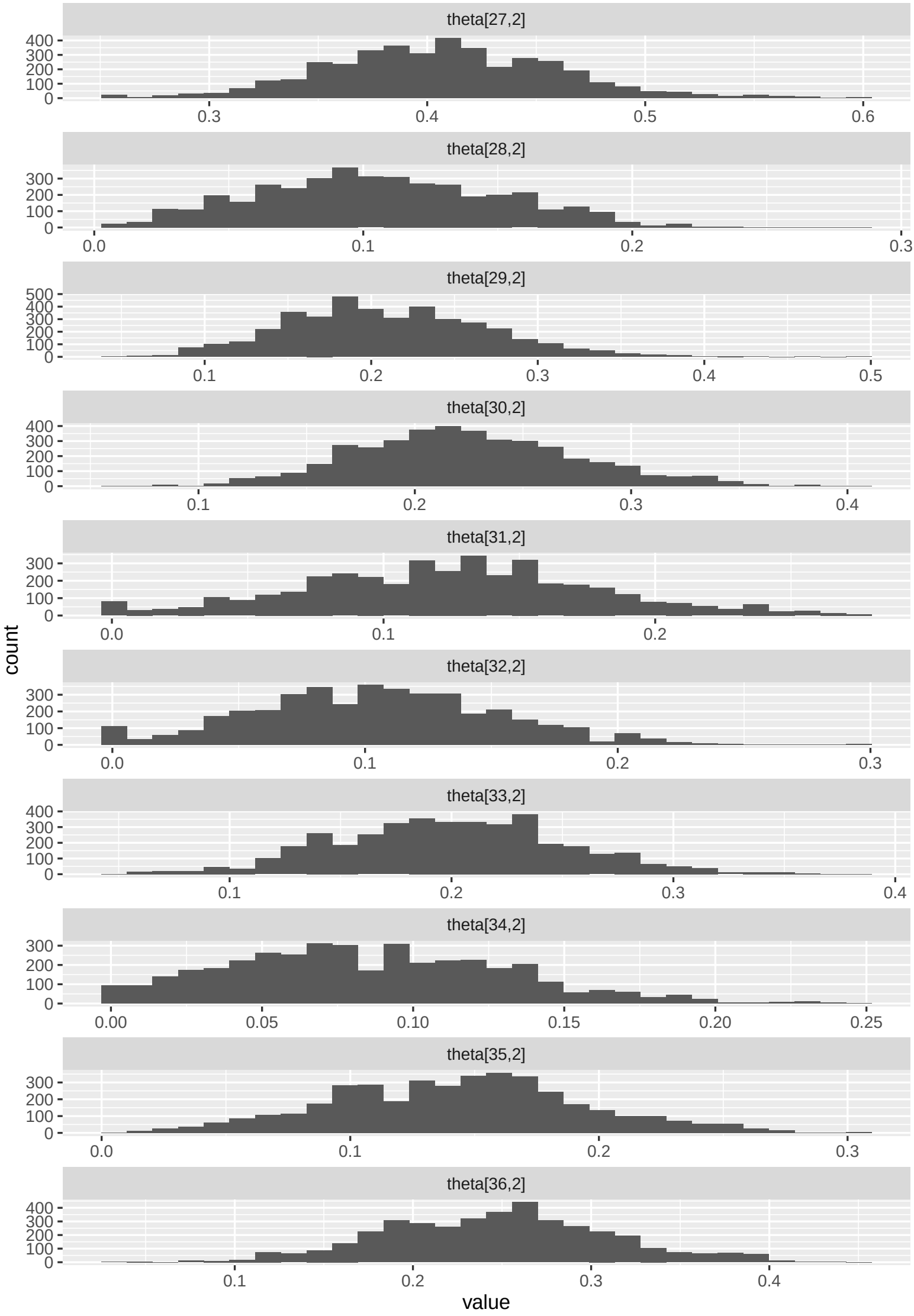

theta[14,1]
theta[15,1]
theta[16,1]
theta[17,1]
theta[18,1]
theta[19,1]
theta[20,1]
theta[21,1]
theta[22,1]
theta[23,1]
count
value

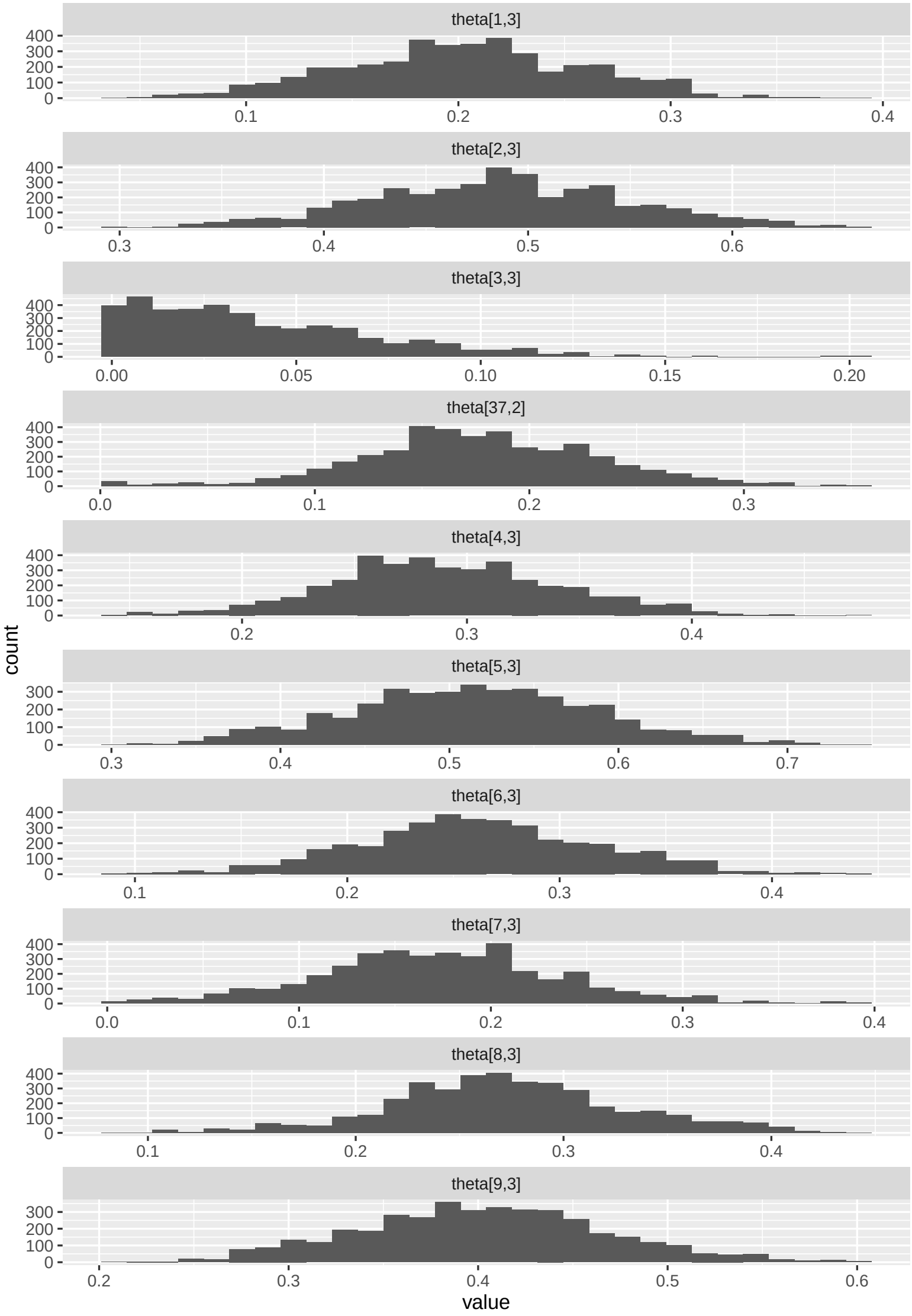

theta[24,1]
theta[25,1]
theta[26,1]
theta[27,1]
theta[28,1]
theta[29,1]
theta[30,1]
theta[31,1]
theta[32,1]
theta[33,1]
count
value

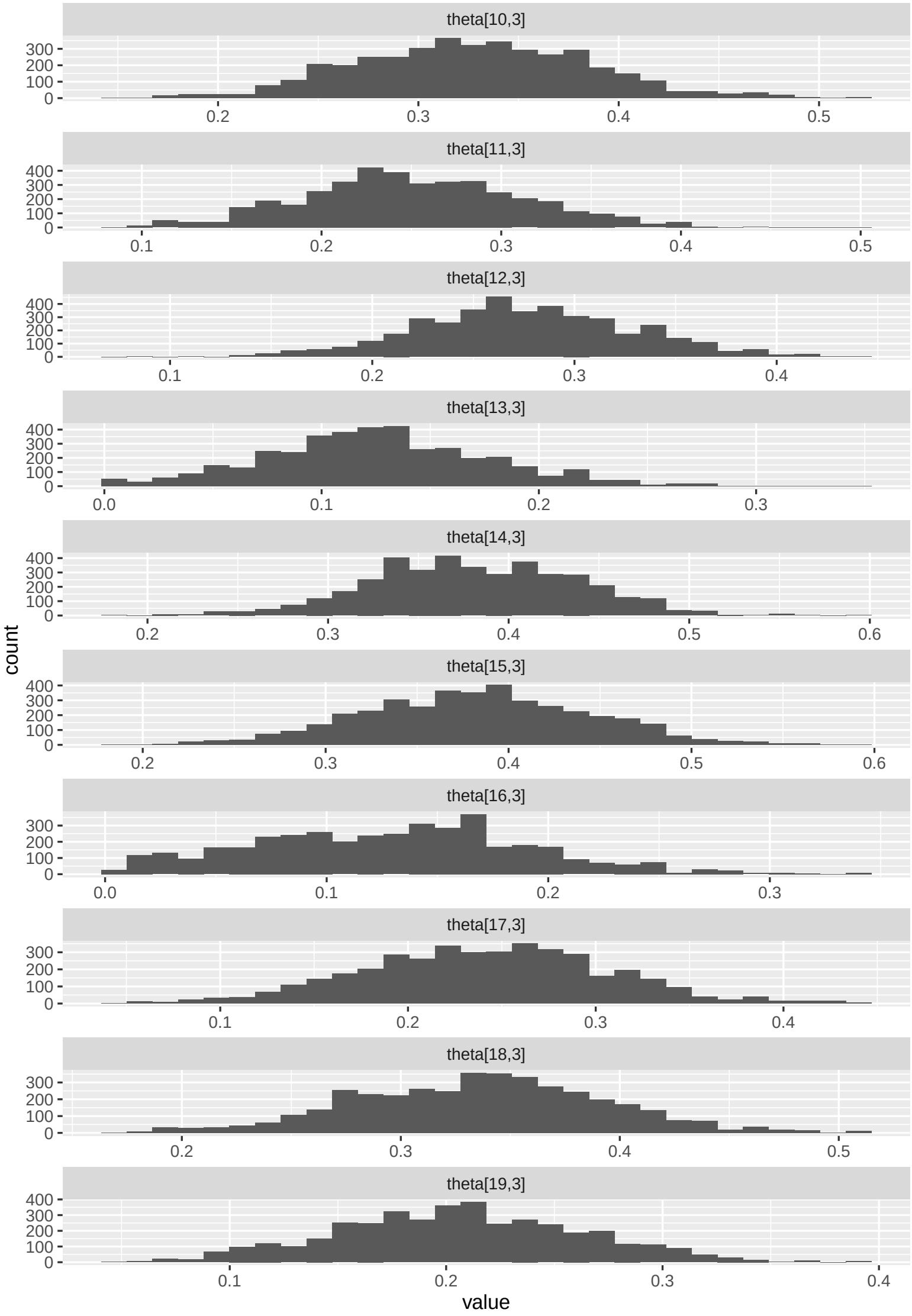

theta[1,2]
theta[2,2]
theta[3,2]
theta[34,1]
theta[35,1]
theta[36,1]
theta[37,1]
theta[4,2]
theta[5,2]
theta[6,2]
count
value

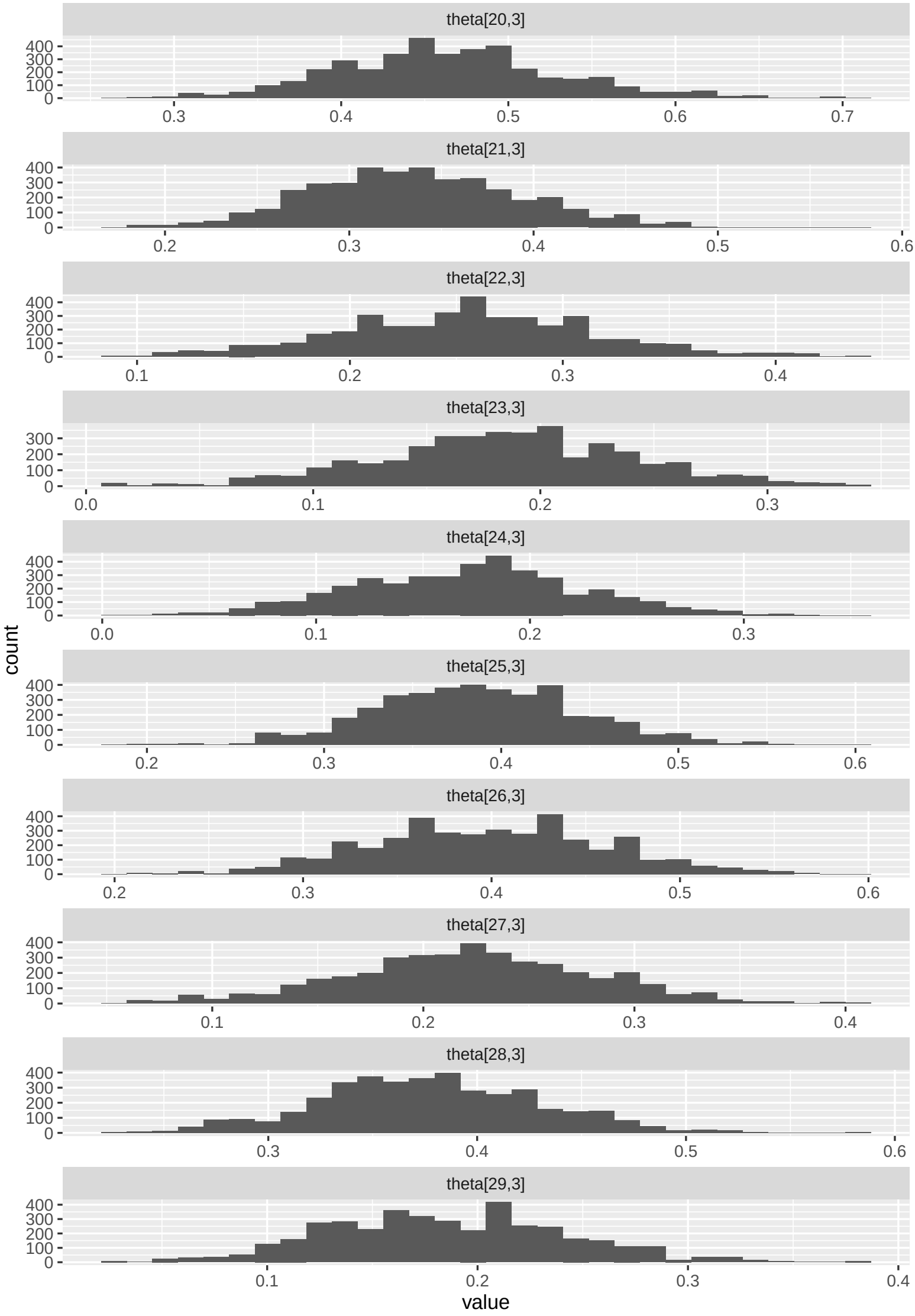

theta[10,2]
theta[11,2]
theta[12,2]
theta[13,2]
theta[14,2]
theta[15,2]
theta[16,2]
theta[7,2]
theta[8,2]
theta[9,2]
count
value

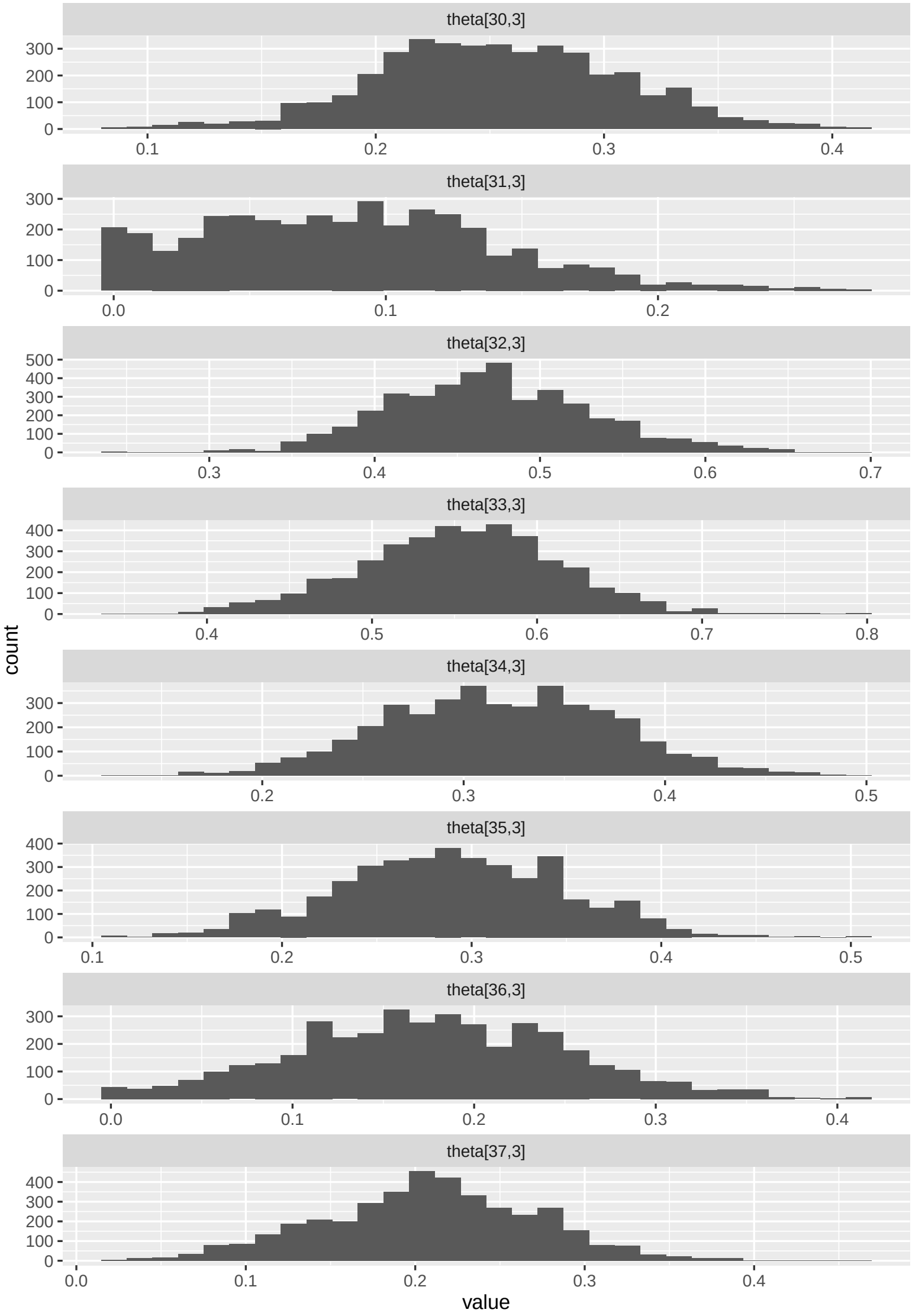

theta[17,2]
theta[18,2]
theta[19,2]
theta[20,2]
theta[21,2]
theta[22,2]
theta[23,2]
theta[24,2]
theta[25,2]
theta[26,2]
count
value

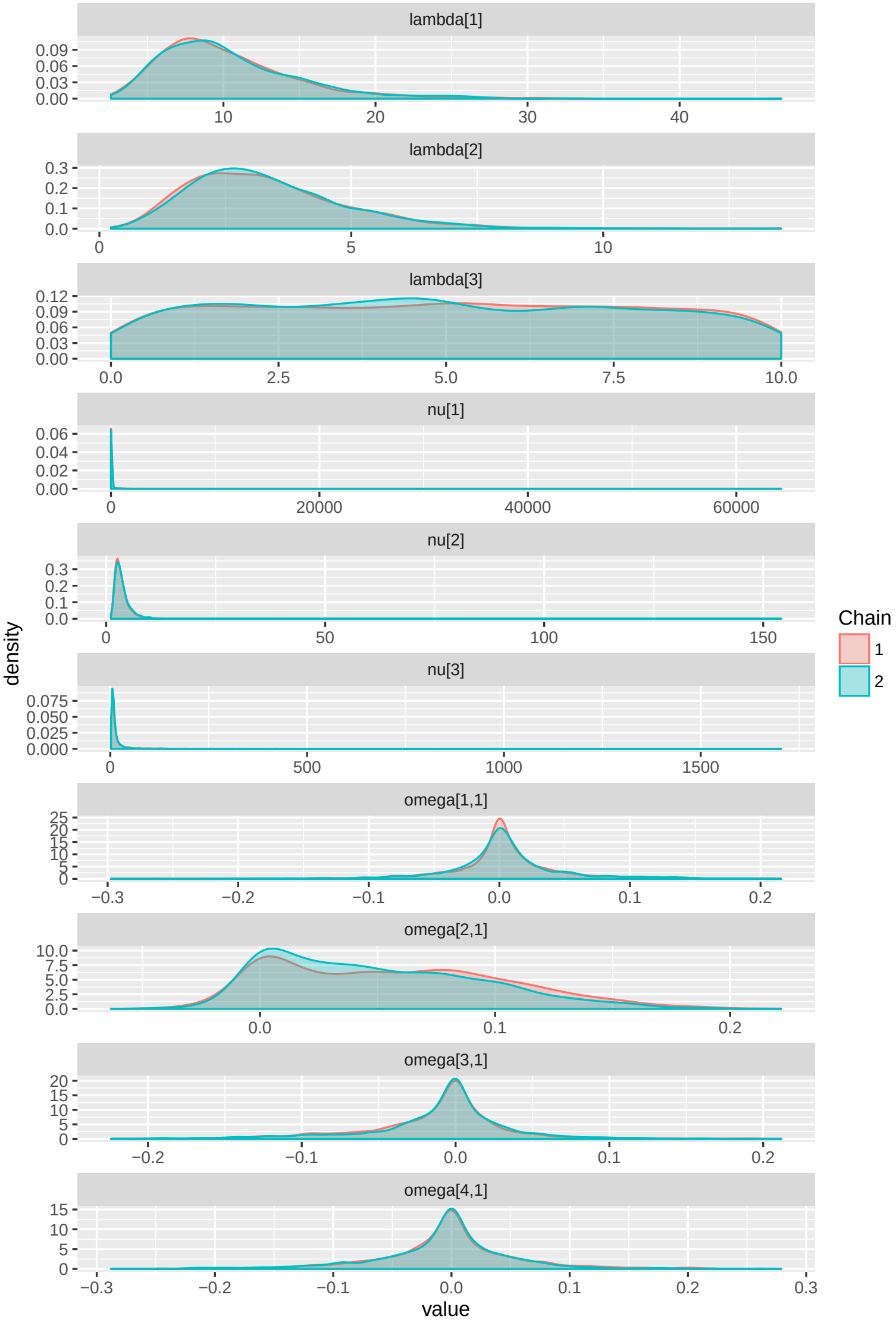

theta[27,2]
theta[28,2]
theta[29,2]
theta[30,2]
theta[31,2]
theta[32,2]
theta[33,2]
theta[34,2]
theta[35,2]
theta[36,2]
count
value

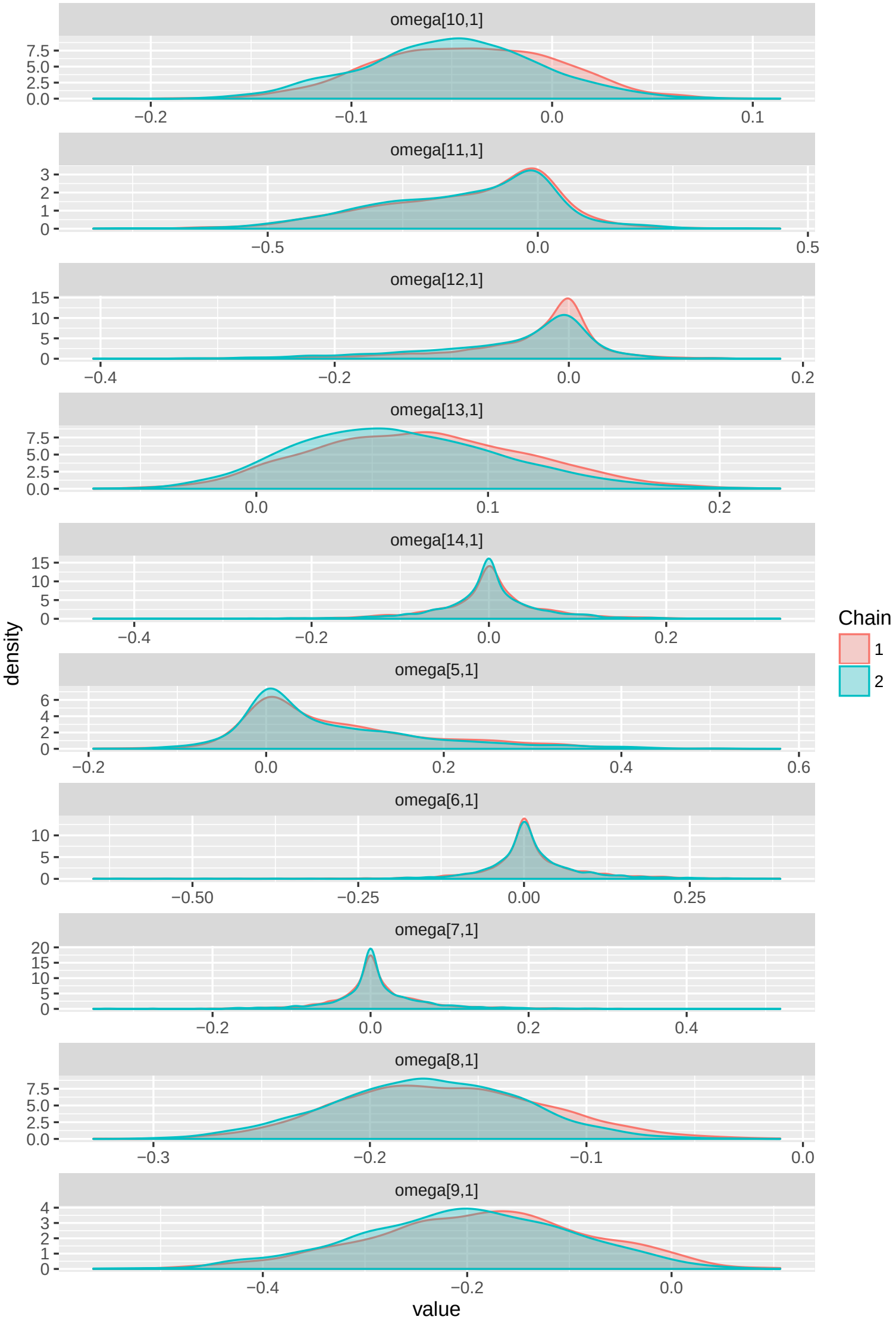

theta[1,3]
theta[2,3]
theta[3,3]
theta[37,2]
theta[4,3]
theta[5,3]
theta[6,3]
theta[7,3]
theta[8,3]
theta[9,3]
count
value

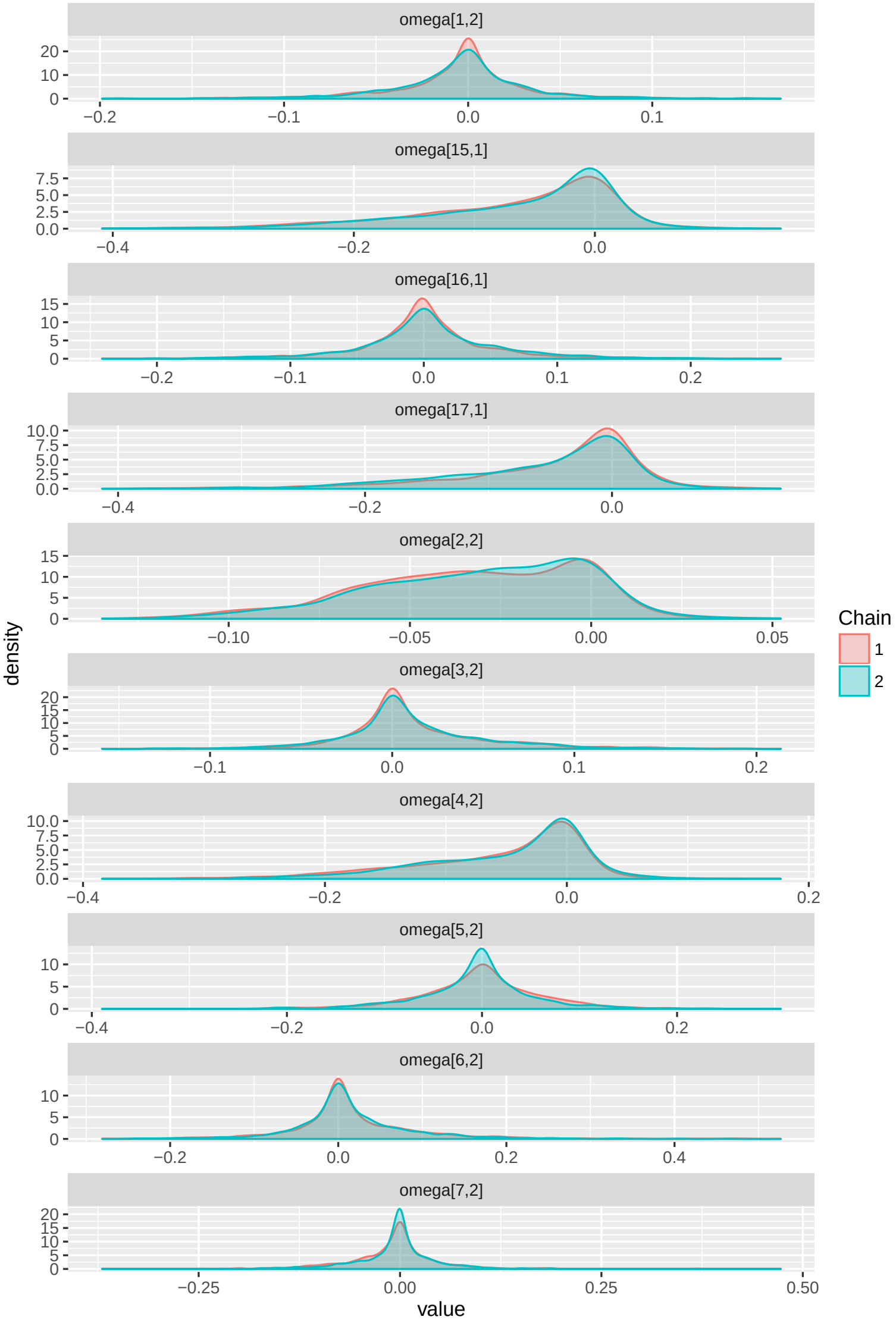

theta[10,3]
theta[11,3]
theta[12,3]
theta[13,3]
theta[14,3]
theta[15,3]
theta[16,3]
theta[17,3]
theta[18,3]
theta[19,3]
count
value

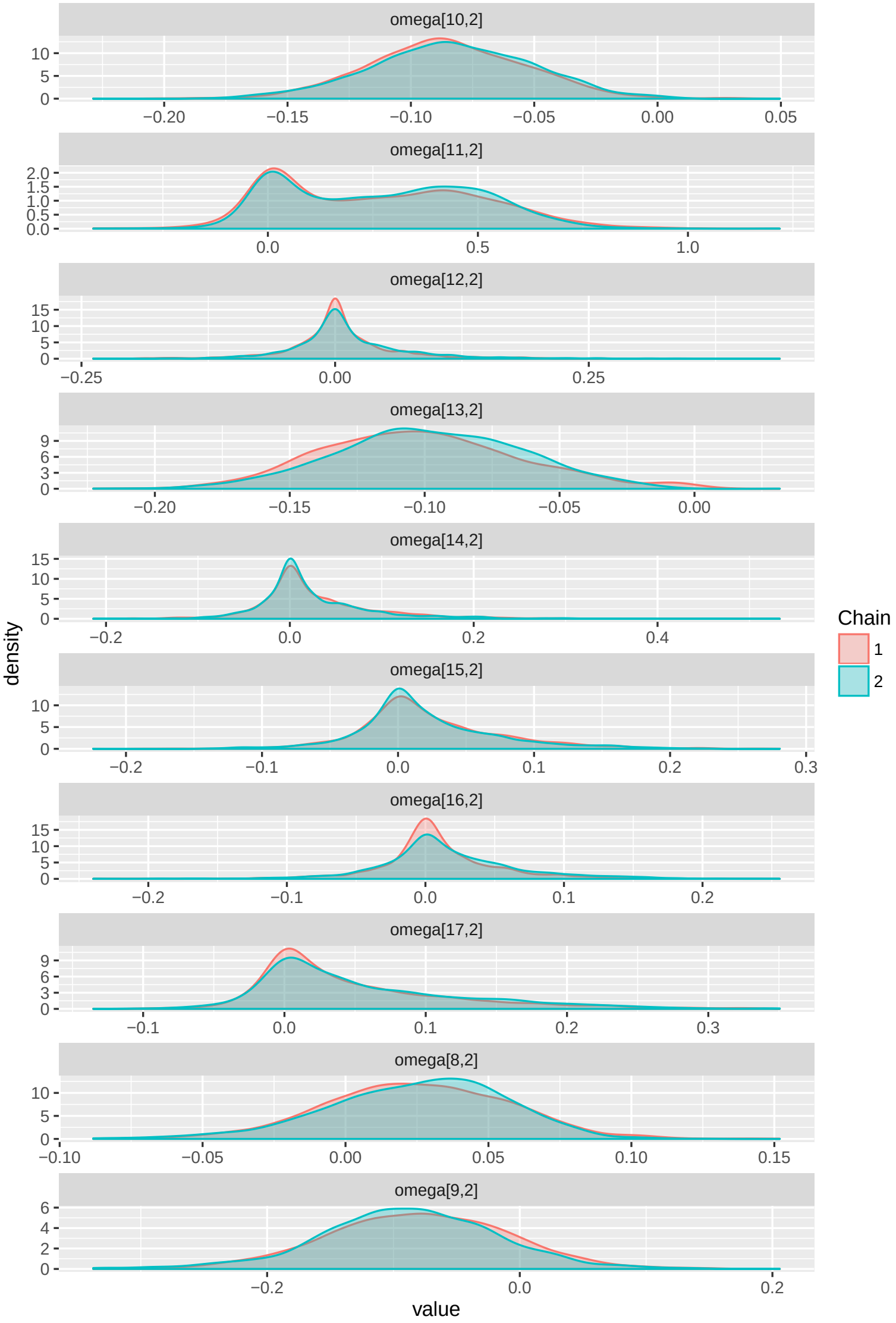

theta[20,3]
theta[21,3]
theta[22,3]
theta[23,3]
theta[24,3]
theta[25,3]
theta[26,3]
theta[27,3]
theta[28,3]
theta[29,3]
count
value

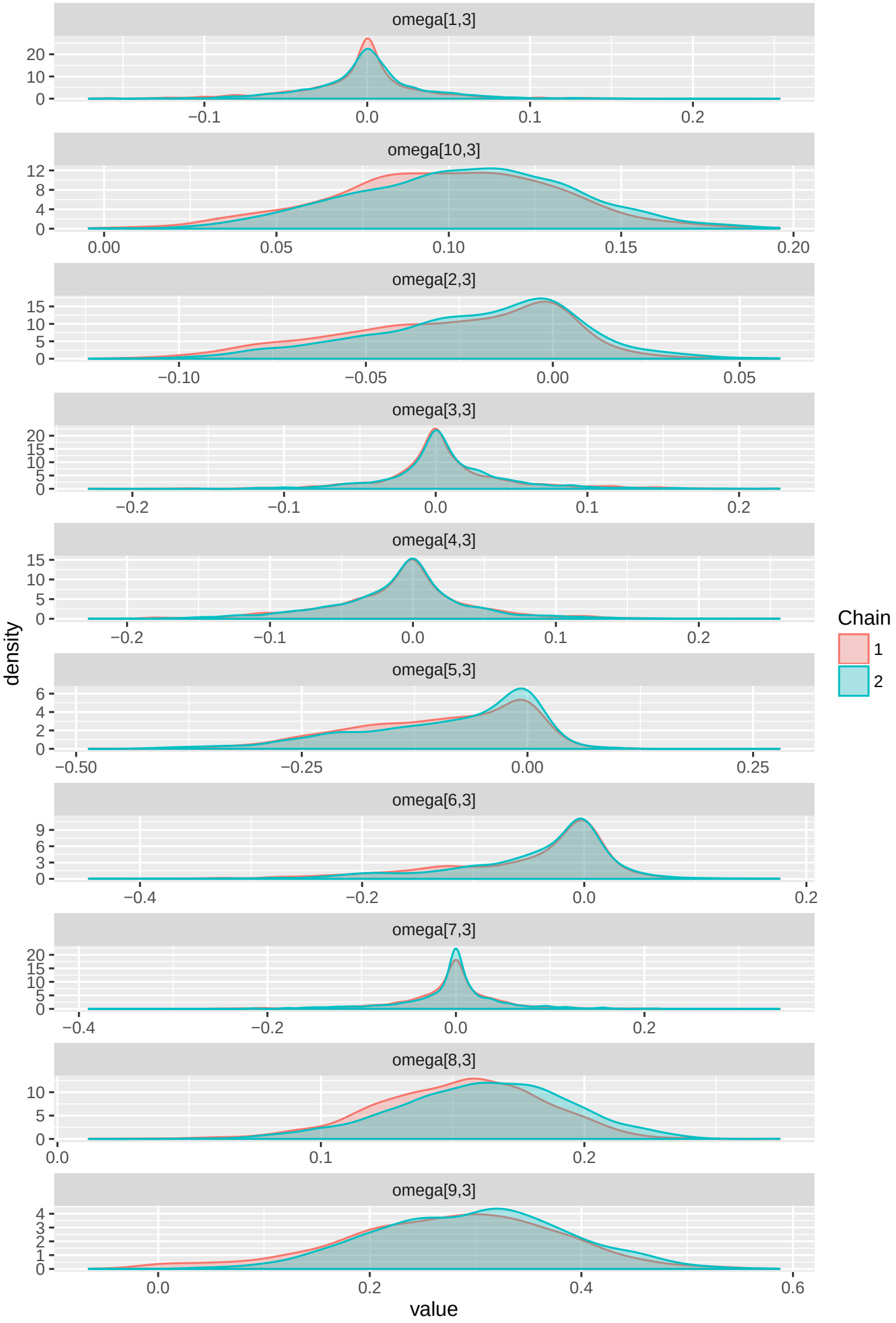

theta[30,3]
theta[31,3]
theta[32,3]
theta[33,3]
theta[34,3]
theta[35,3]
theta[36,3]
theta[37,3]
count
value

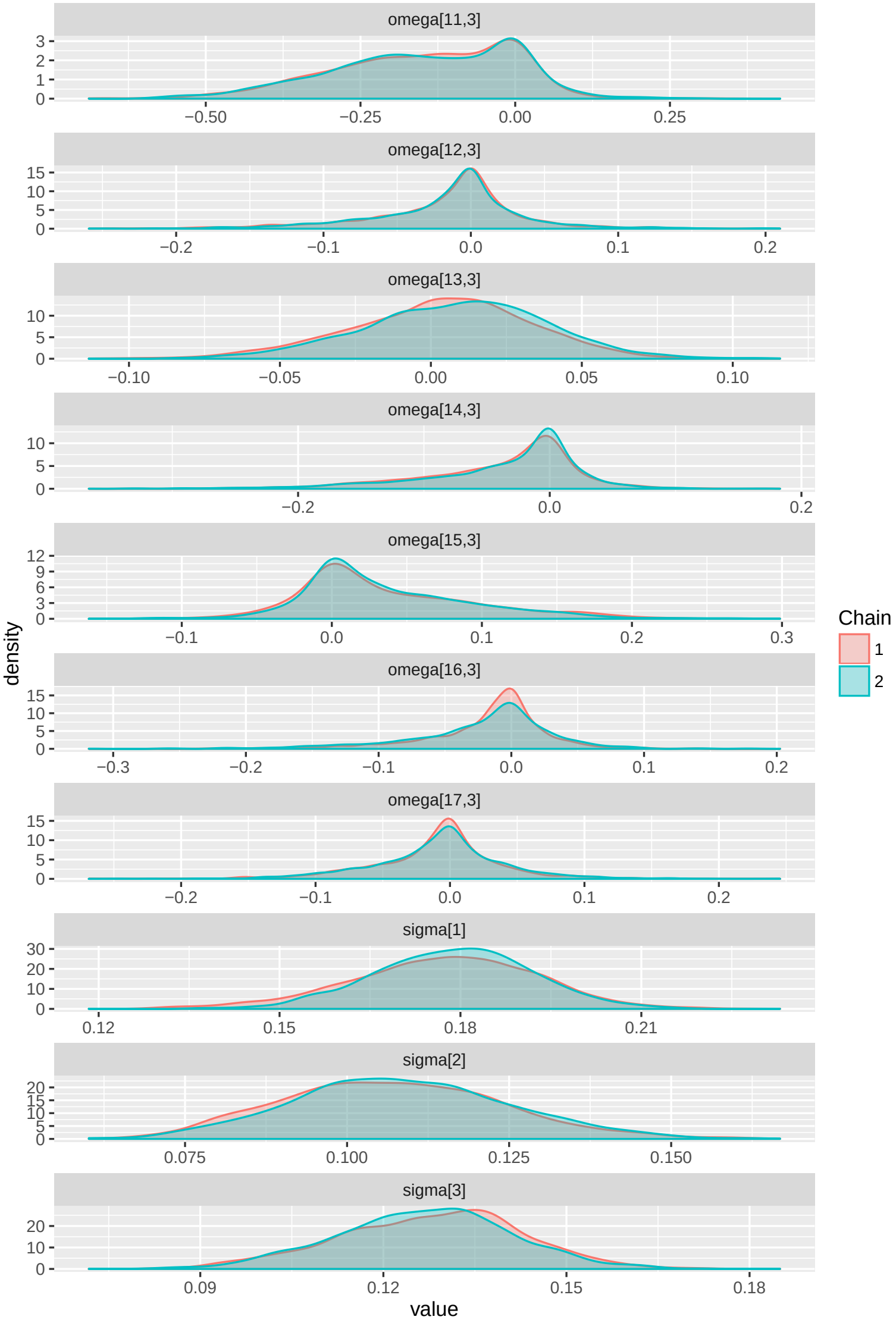

lambda[1]
lambda[2]
lambda[3]
nu[1]
nu[2]
nu[3]
omega[1,1]
omega[2,1]
omega[3,1]
omega[4,1]
density
value
Chain
1
2

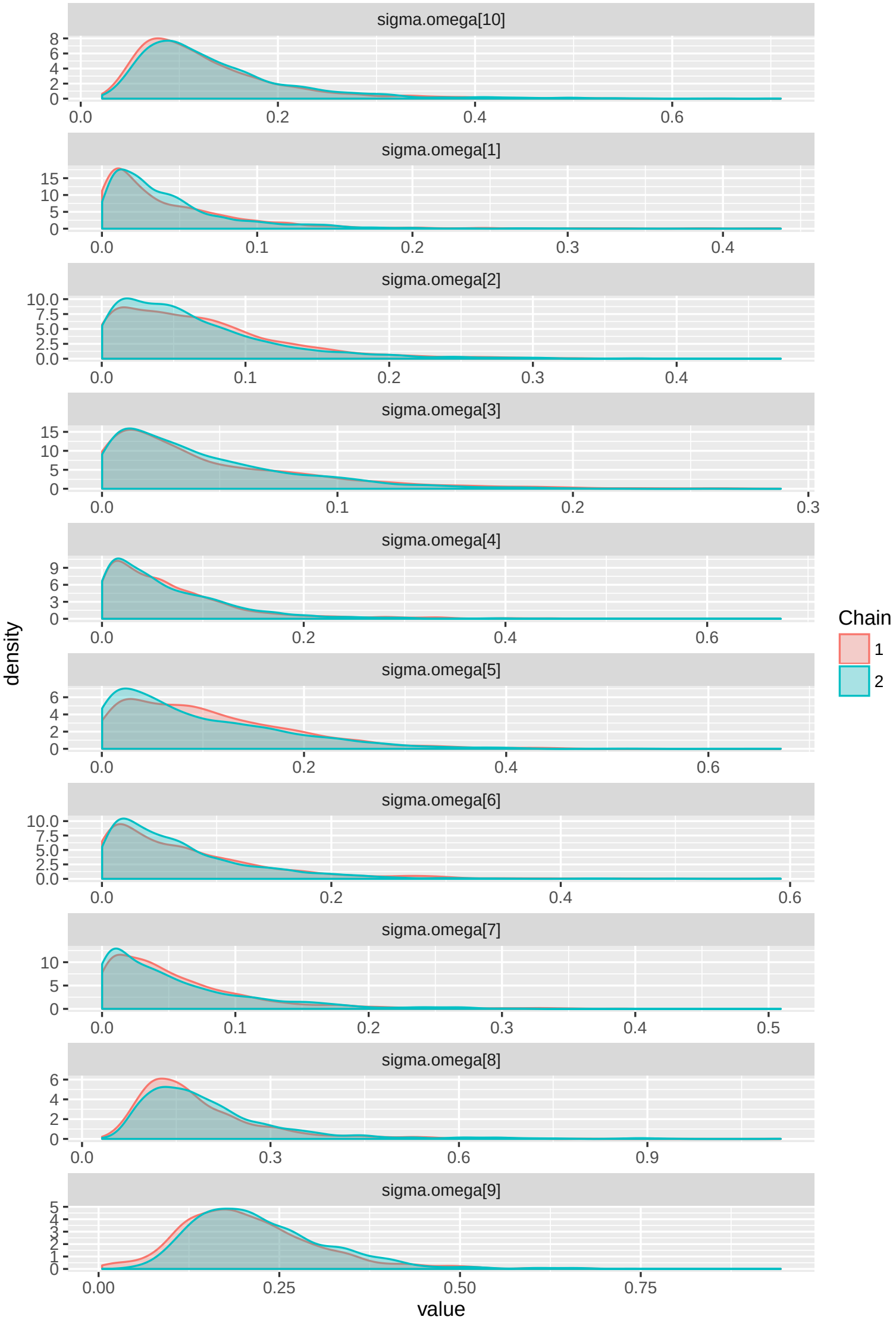

omega[10,1]
omega[11,1]
omega[12,1]
omega[13,1]
omega[14,1]
omega[5,1]
omega[6,1]
omega[7,1]
omega[8,1]
omega[9,1]
density
value
Chain
1
2

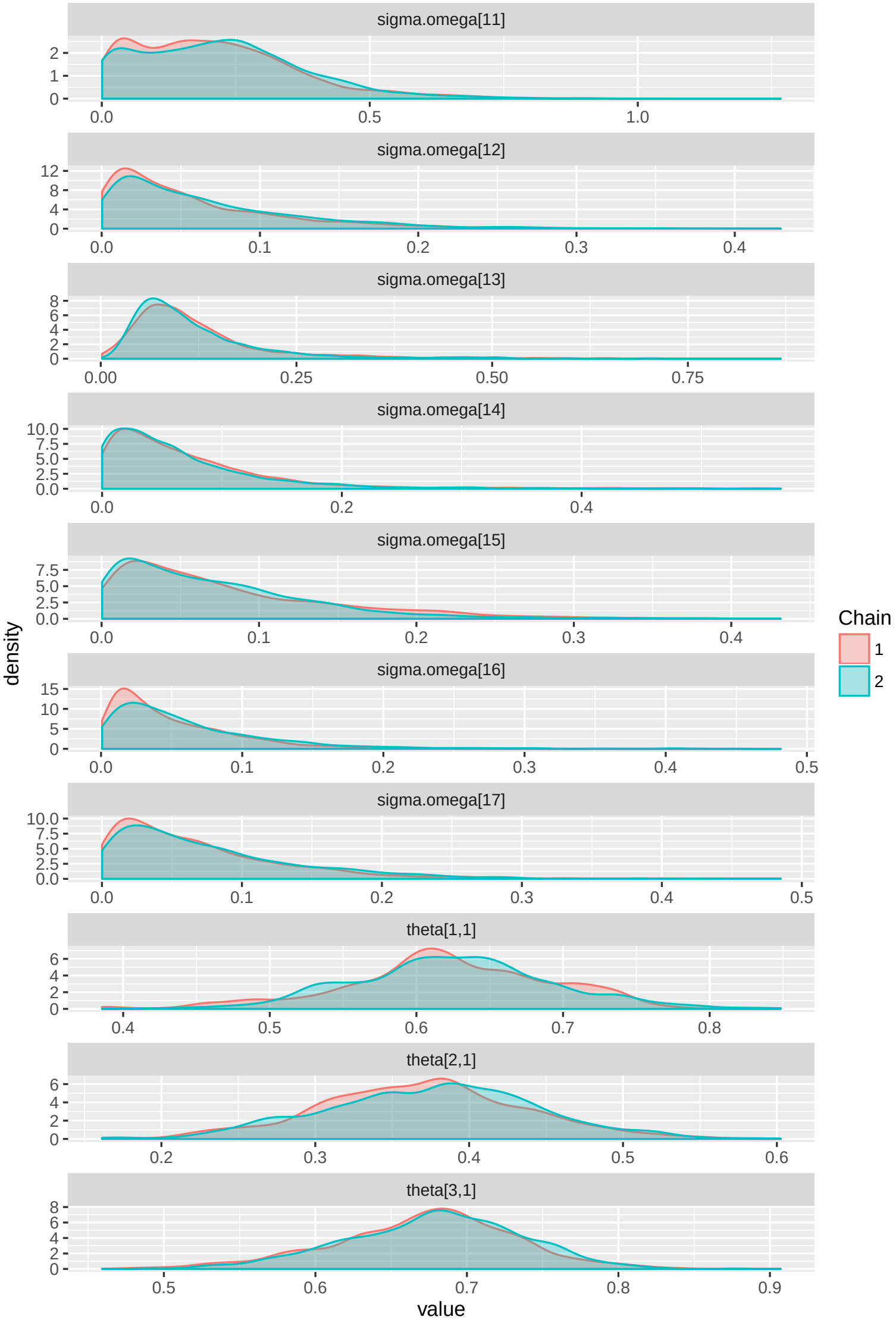

omega[1,2]
omega[15,1]
omega[16,1]
omega[17,1]
omega[2,2]
omega[3,2]
omega[4,2]
omega[5,2]
omega[6,2]
omega[7,2]
density
value
Chain
1
2

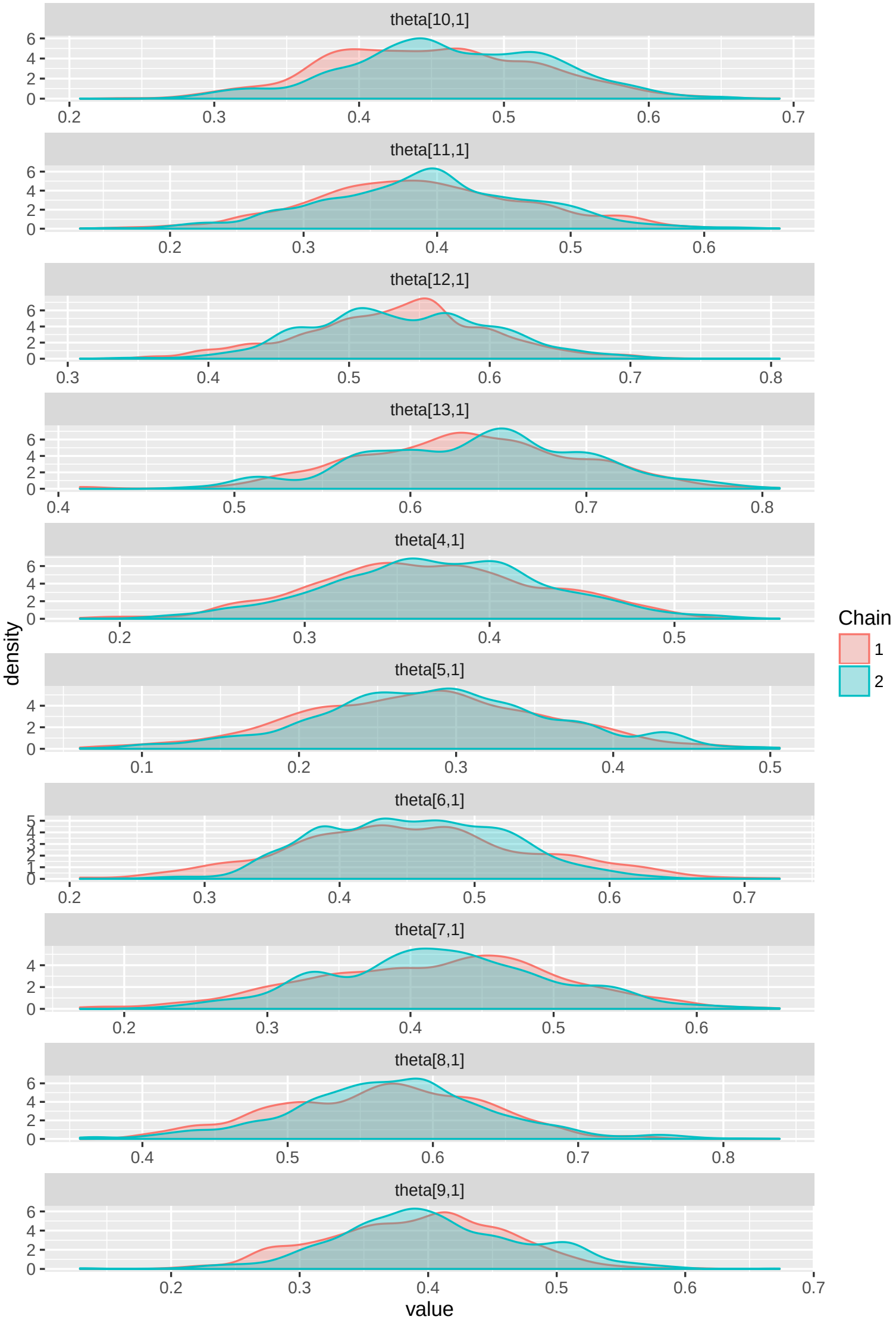

omega[10,2]
omega[11,2]
omega[12,2]
omega[13,2]
omega[14,2]
omega[15,2]
omega[16,2]
omega[17,2]
omega[8,2]
omega[9,2]
density
value
Chain
1
2

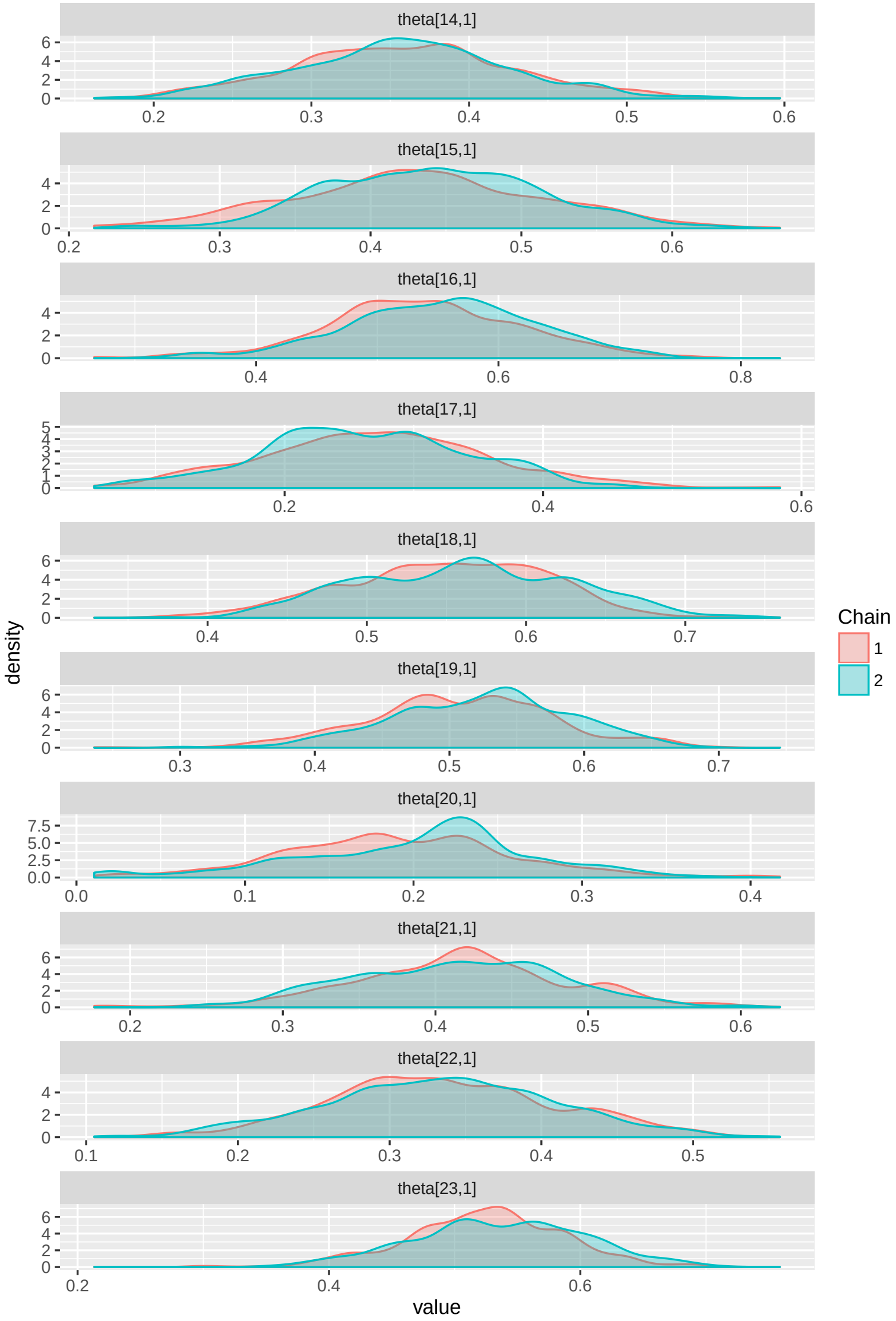

omega[1,3]
omega[10,3]
omega[2,3]
omega[3,3]
omega[4,3]
omega[5,3]
omega[6,3]
omega[7,3]
omega[8,3]
omega[9,3]
density
value
Chain
1
2

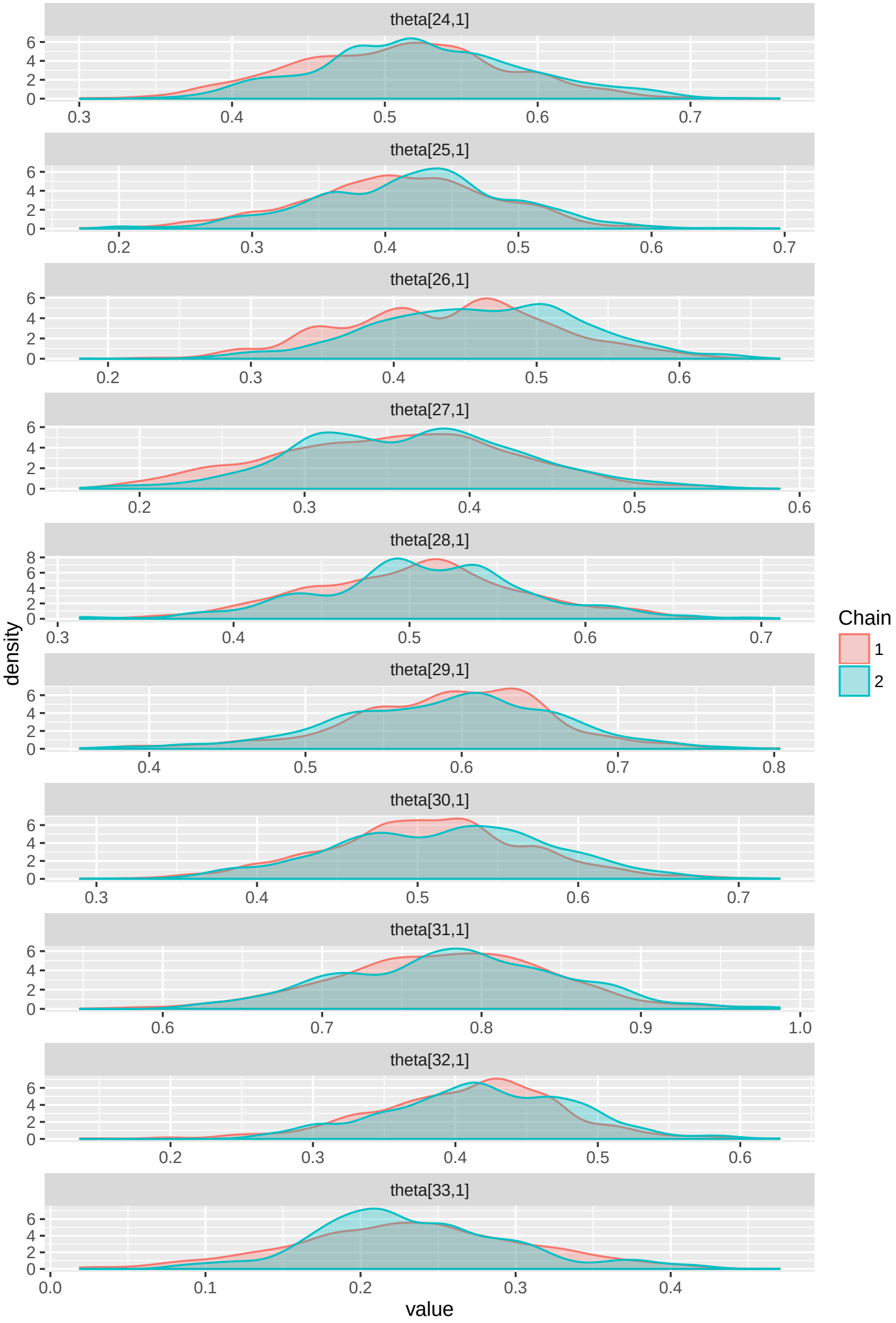

omega[11,3]
omega[12,3]
omega[13,3]
omega[14,3]
omega[15,3]
omega[16,3]
omega[17,3]
sigma[1]
sigma[2]
sigma[3]
density
value
Chain
1
2


sigma.omega[10]
sigma.omega[1]
sigma.omega[2]
sigma.omega[3]
sigma.omega[4]
sigma.omega[5]
sigma.omega[6]
sigma.omega[7]
sigma.omega[8]
sigma.omega[9]
density
value
Chain
1
2


sigma.omega[11]
sigma.omega[12]
sigma.omega[13]
sigma.omega[14]
sigma.omega[15]
sigma.omega[16]
sigma.omega[17]
theta[1,1]
theta[2,1]
theta[3,1]
density
value
Chain
1
2


theta[10,1]
theta[11,1]
theta[12,1]
theta[13,1]
theta[4,1]
theta[5,1]
theta[6,1]
theta[7,1]
theta[8,1]
theta[9,1]
density
value
Chain
1
2


theta[14,1]
theta[15,1]
theta[16,1]
theta[17,1]
theta[18,1]
theta[19,1]
theta[20,1]
theta[21,1]
theta[22,1]
theta[23,1]
density
value
Chain
1
2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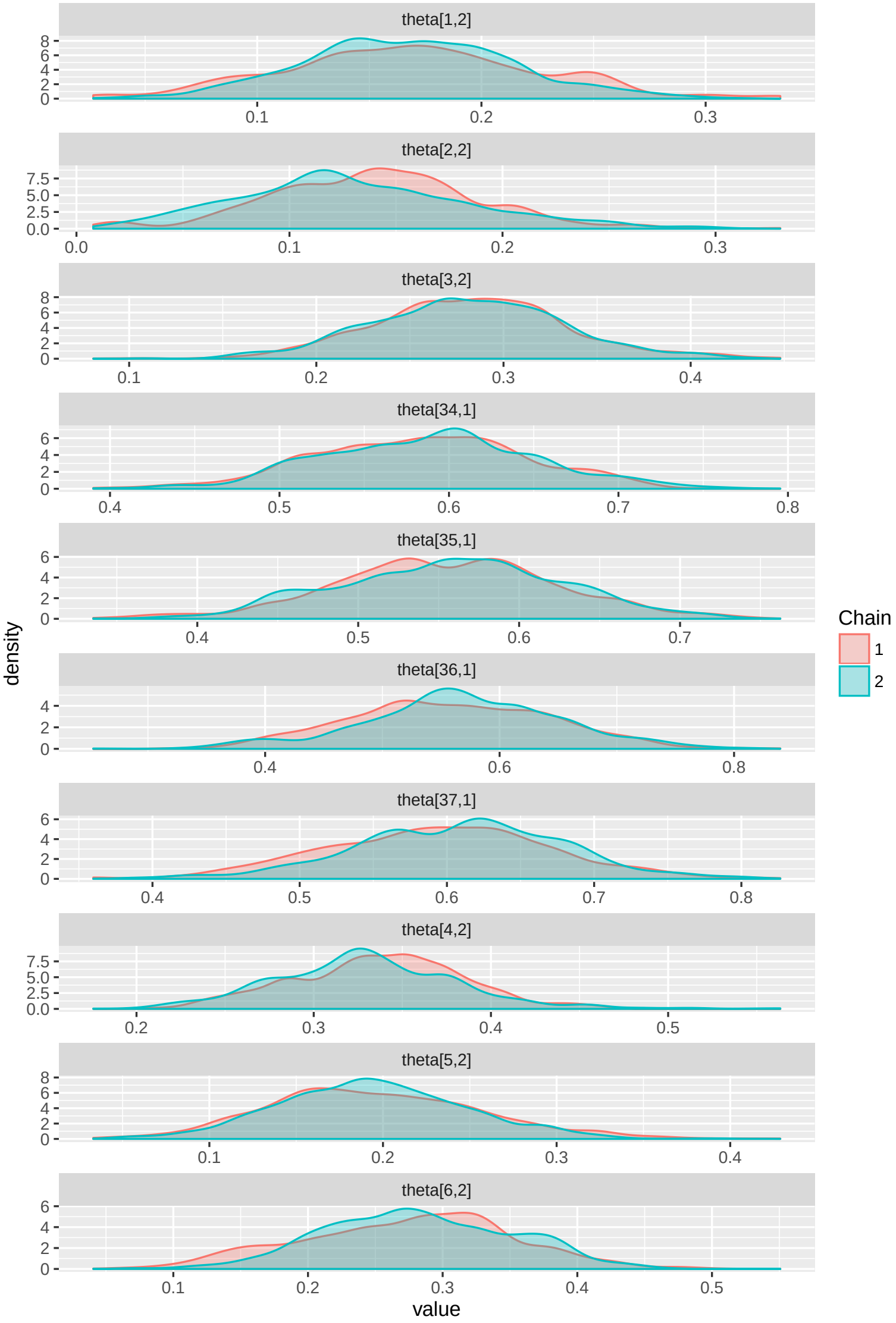
theta[27,1]
theta[28,1]
theta[29,1]
theta[30,1]
theta[31,1]
theta[32,1]
theta[33,1]
density
value
Chain
1
2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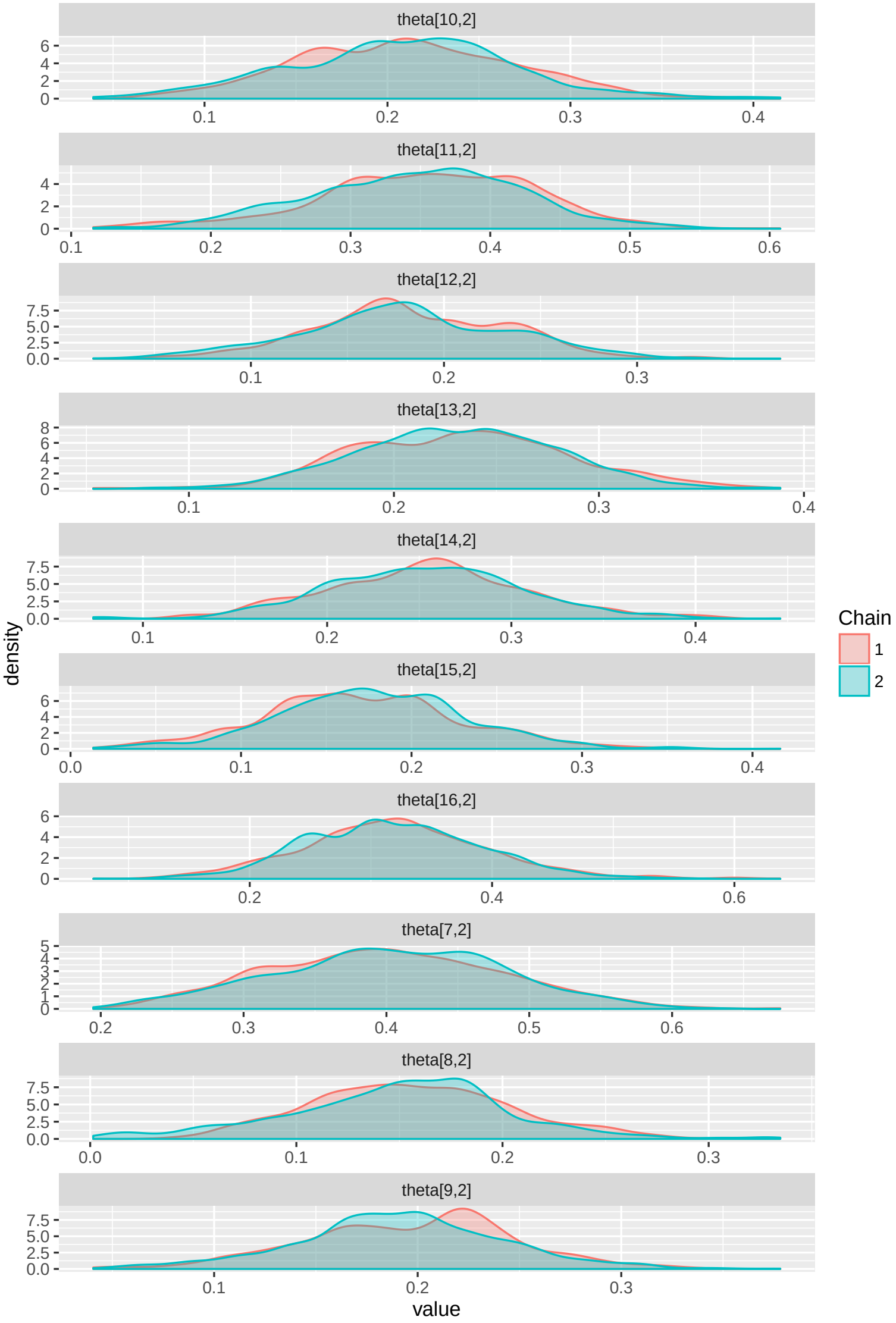
theta[2,2]
theta[3,2]
theta[34,1]
theta[35,1]
theta[36,1]
theta[37,1]
theta[4,2]
theta[5,2]
theta[6,2]
density
value
Chain
1
2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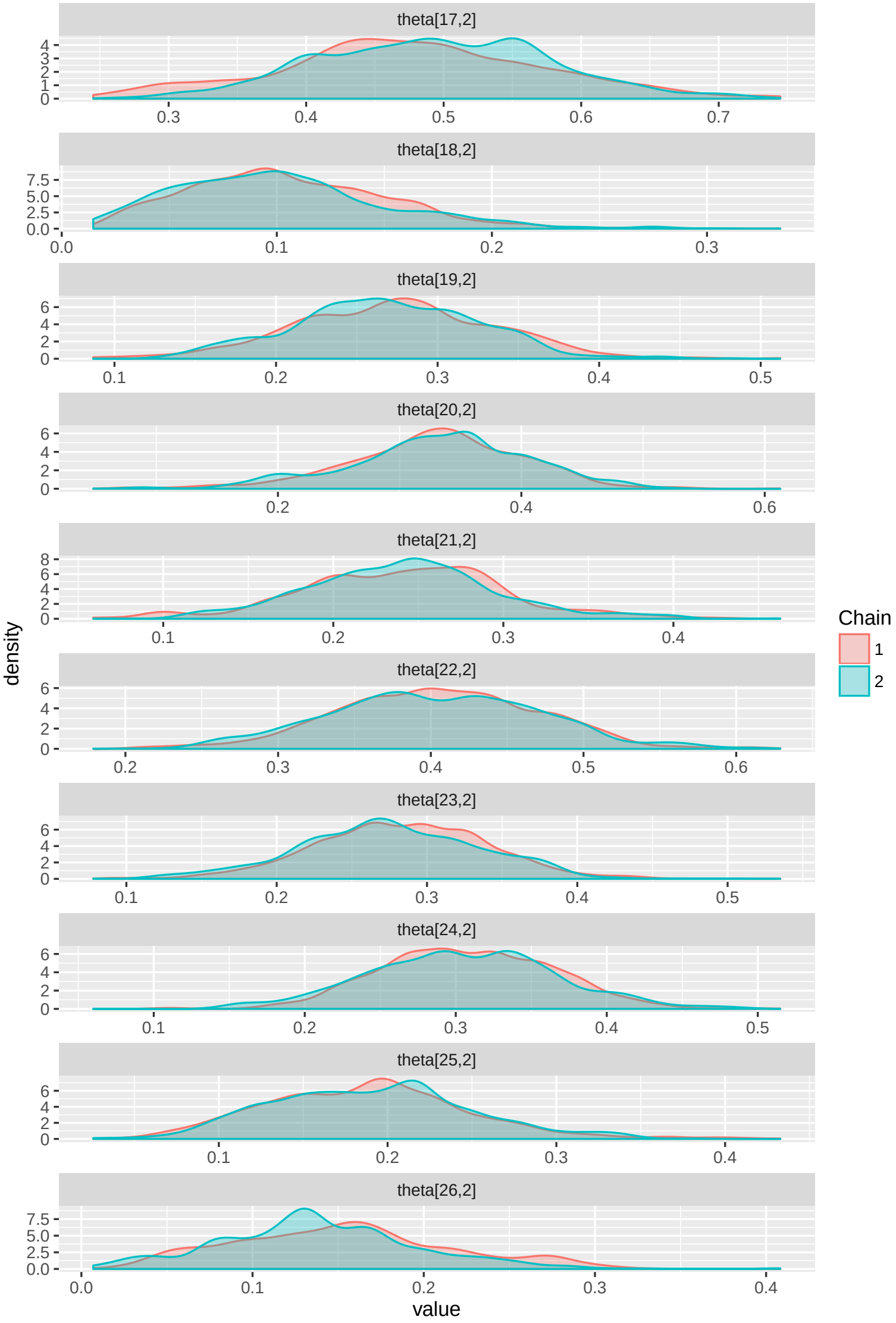
theta[12,2]
theta[13,2]
theta[14,2]
theta[15,2]
theta[16,2]
theta[7,2]
theta[8,2]
theta[9,2]
density
value
Chain
1
2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theta[18,2]
theta[19,2]
theta[20,2]
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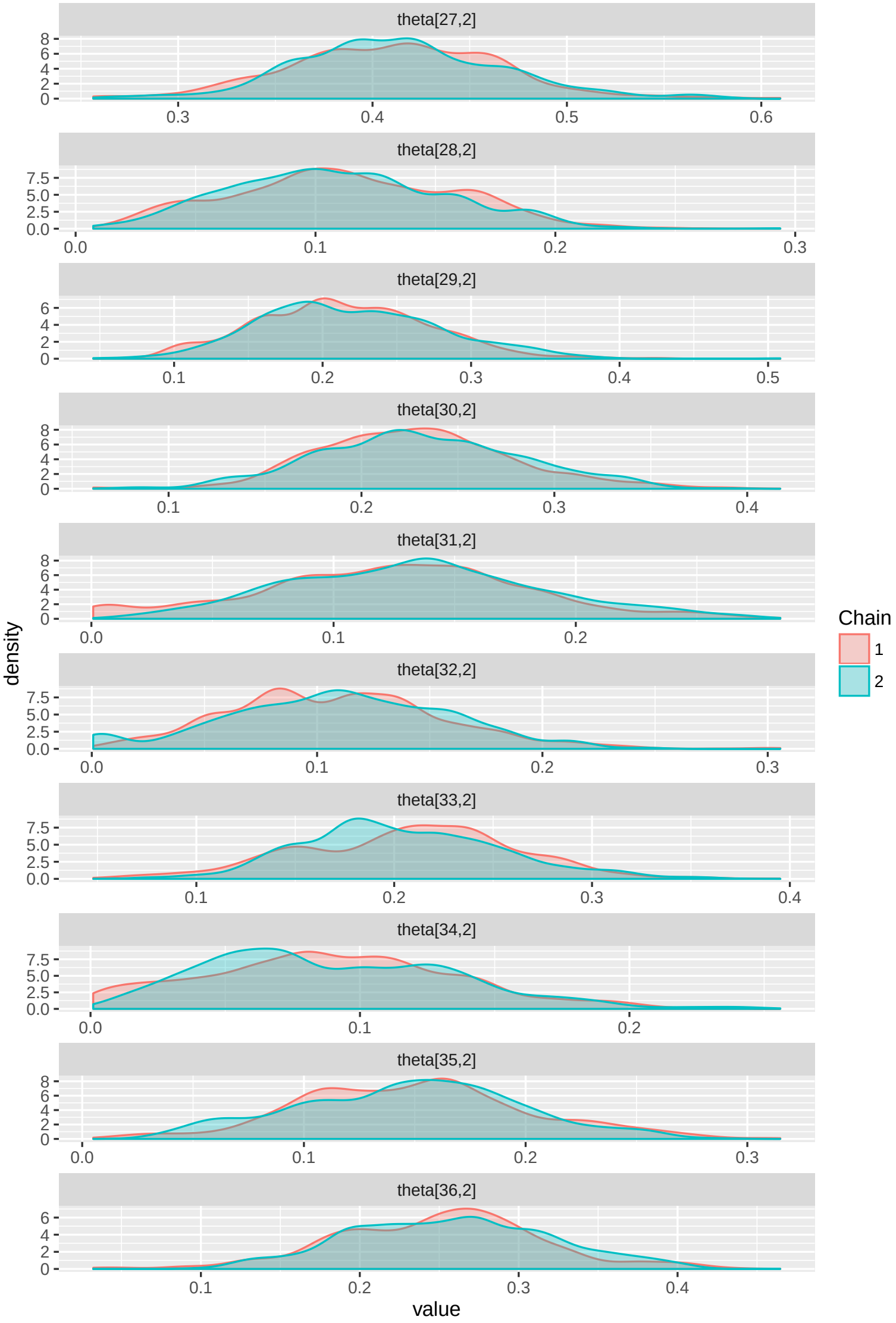
theta[22,2]
theta[23,2]
theta[24,2]
theta[25,2]
theta[26,2]
density
value
Chain
1
2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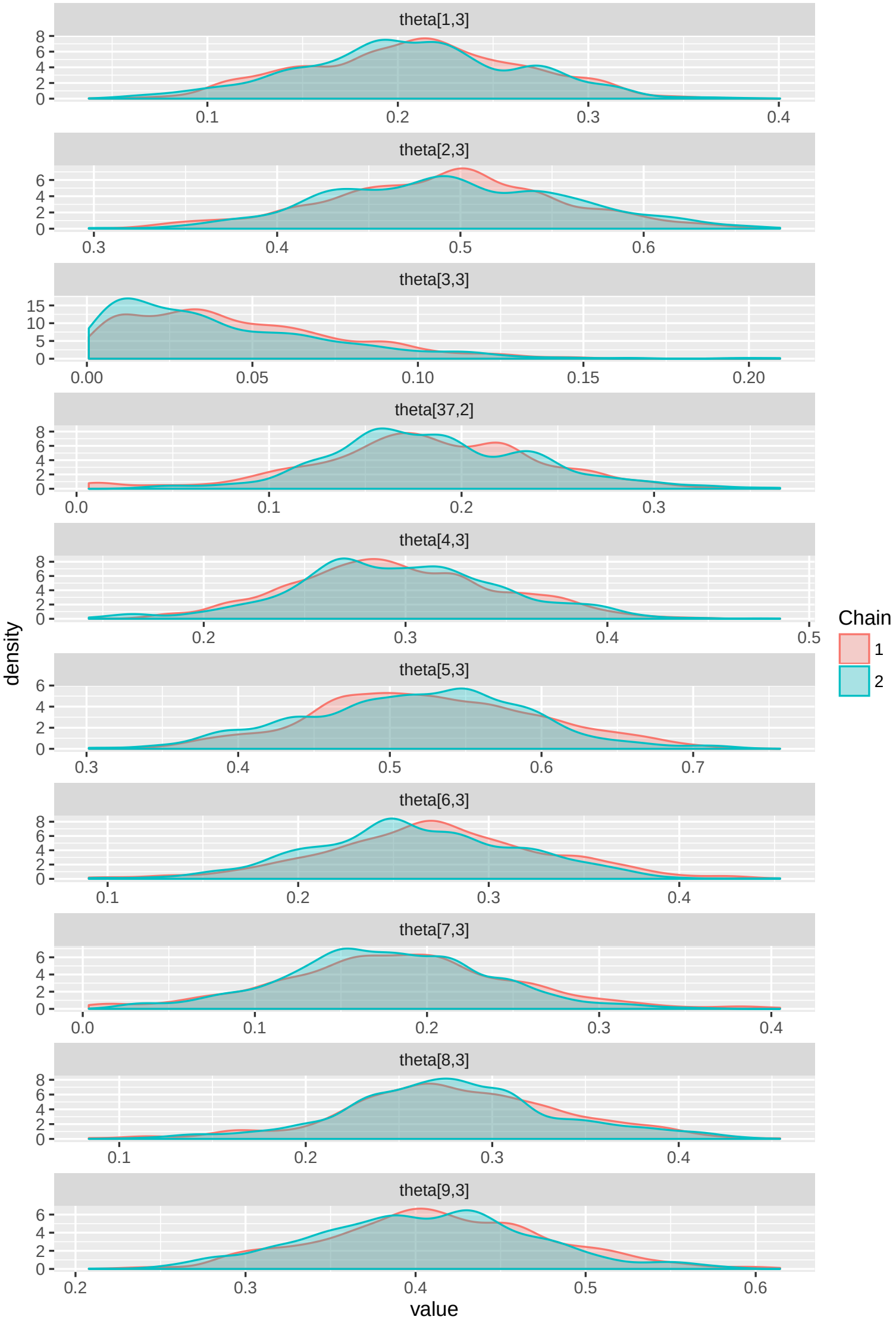
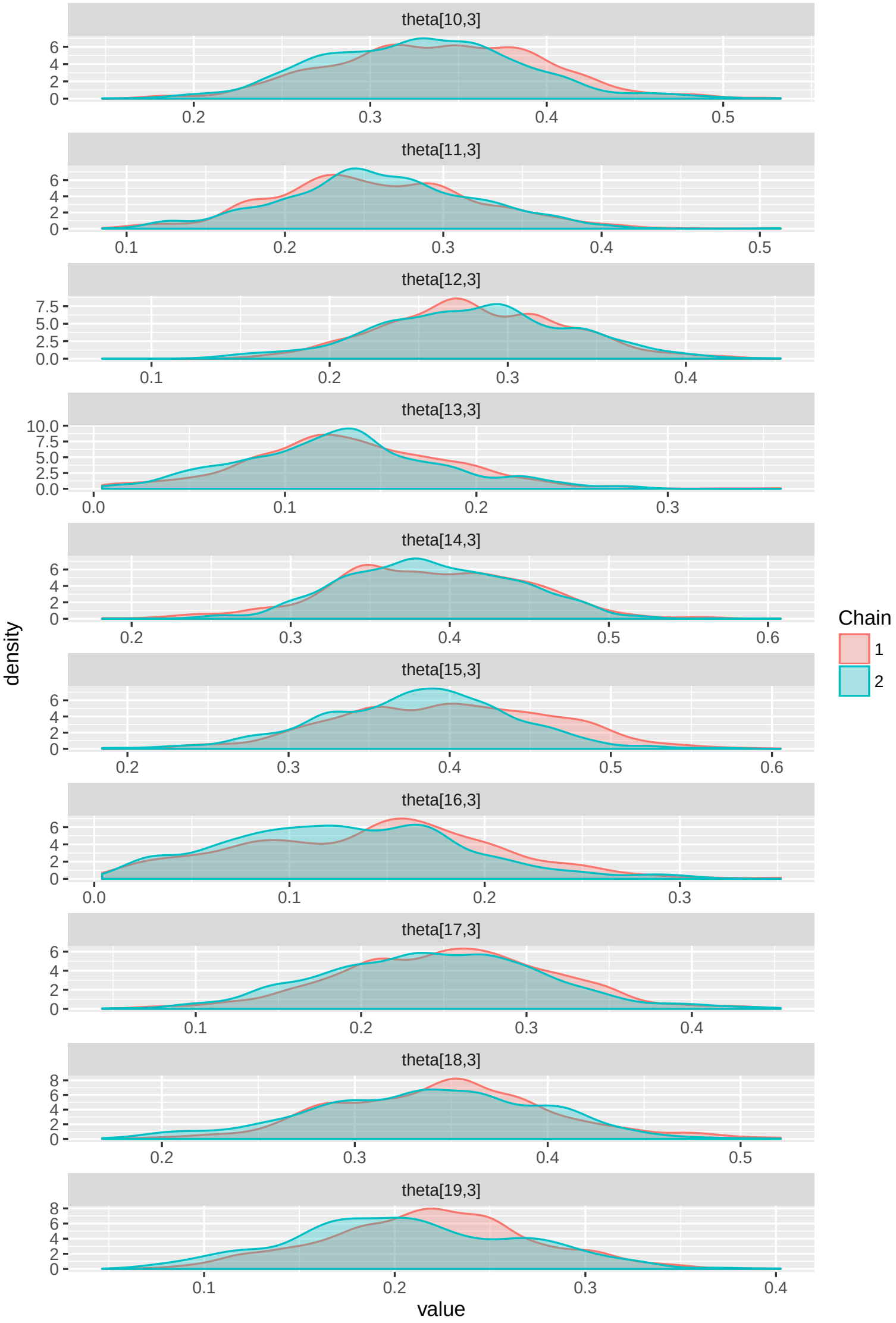
theta[28,2]
theta[29,2]
theta[30,2]
theta[31,2]
theta[32,2]
theta[33,2]
theta[34,2]
theta[35,2]
theta[36,2]
density
value
Chain
1
2


theta[1,3]
theta[2,3]
theta[3,3]
theta[37,2]
theta[4,3]
theta[5,3]
theta[6,3]
theta[7,3]
theta[8,3]
theta[9,3]
density
value
Chain
1
2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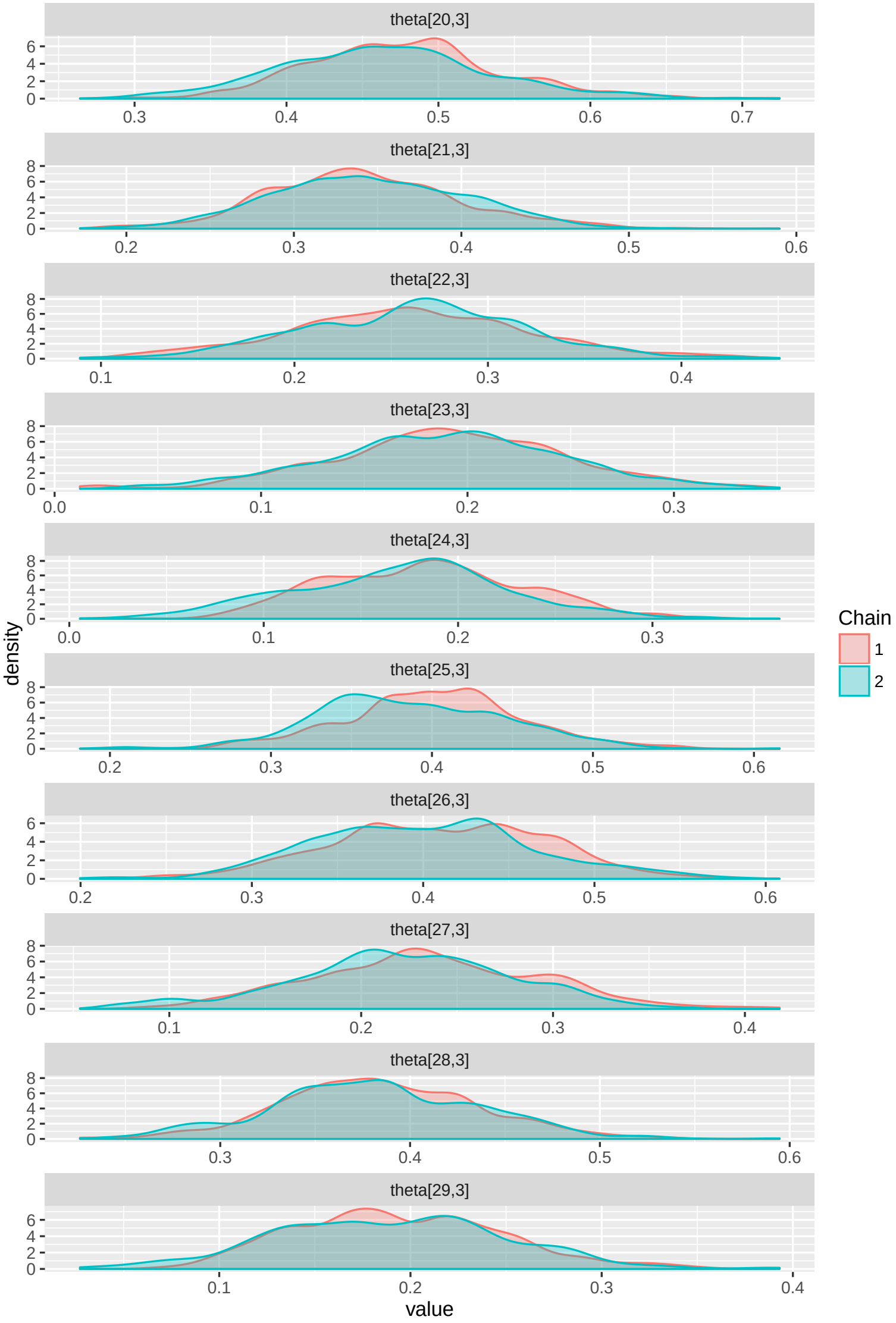
theta[12,3]
theta[13,3]
theta[14,3]
theta[15,3]
theta[16,3]
theta[17,3]
theta[18,3]
theta[19,3]
density
value
Chain
1
2


theta[20,3]
theta[21,3]
theta[22,3]
theta[23,3]
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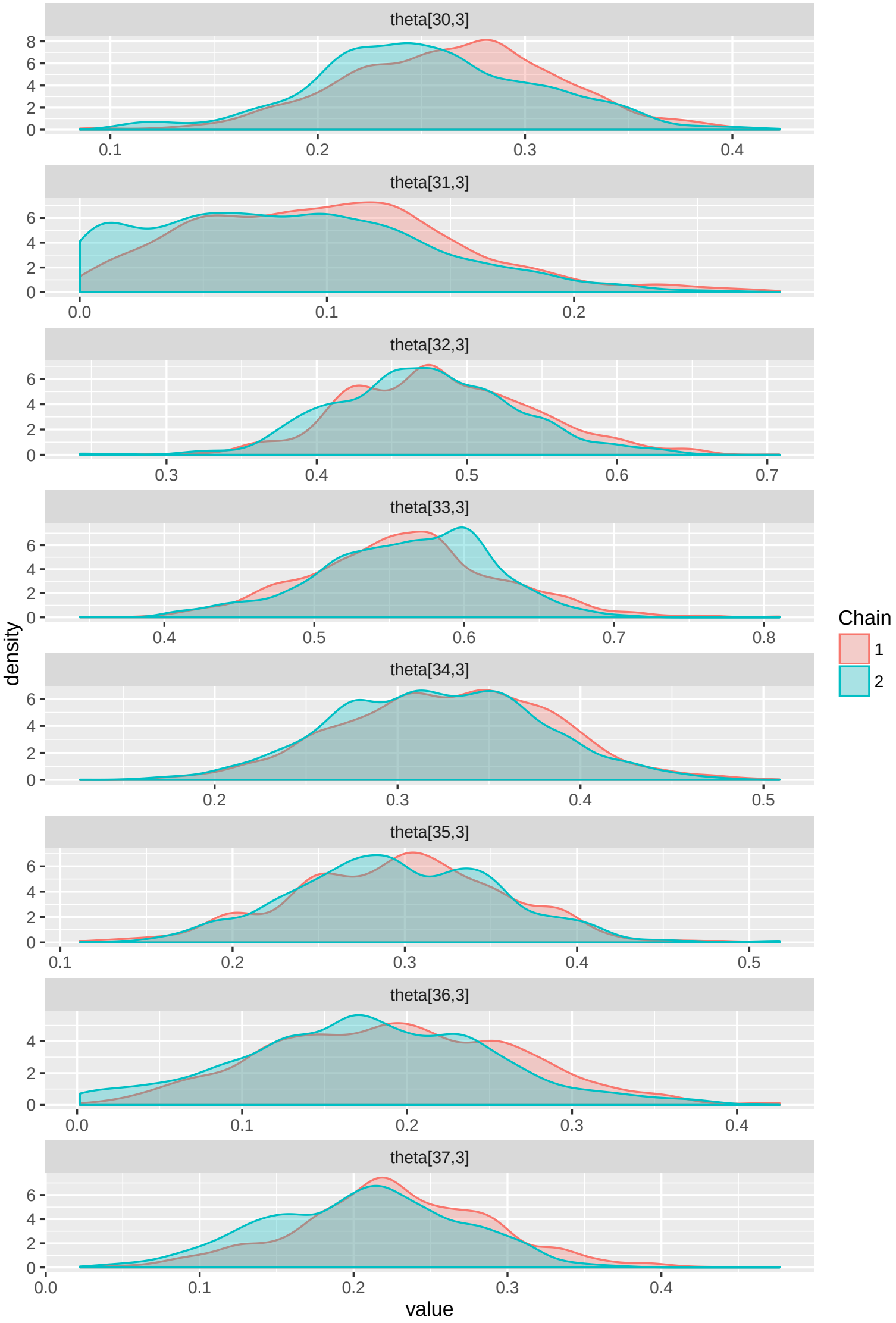
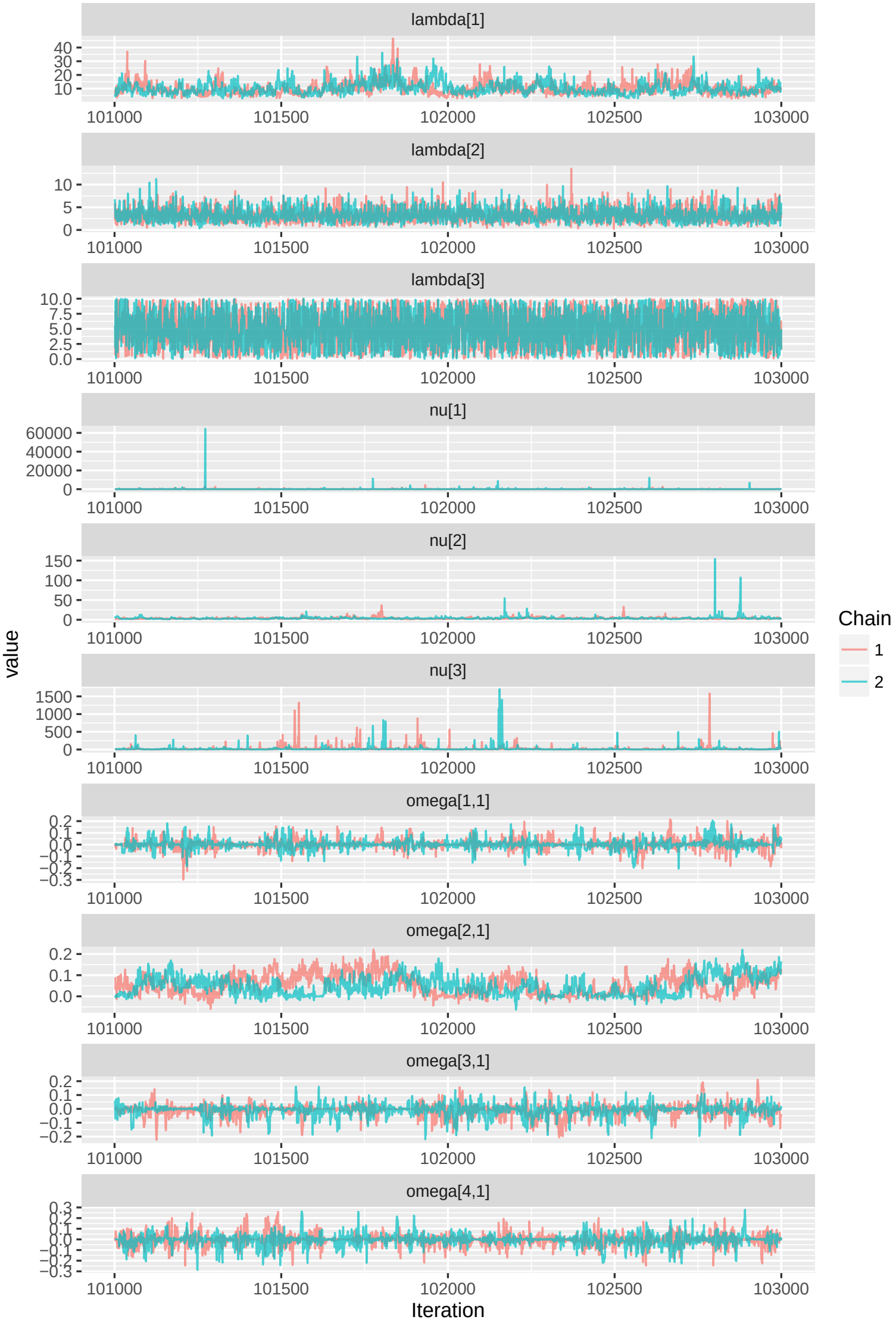
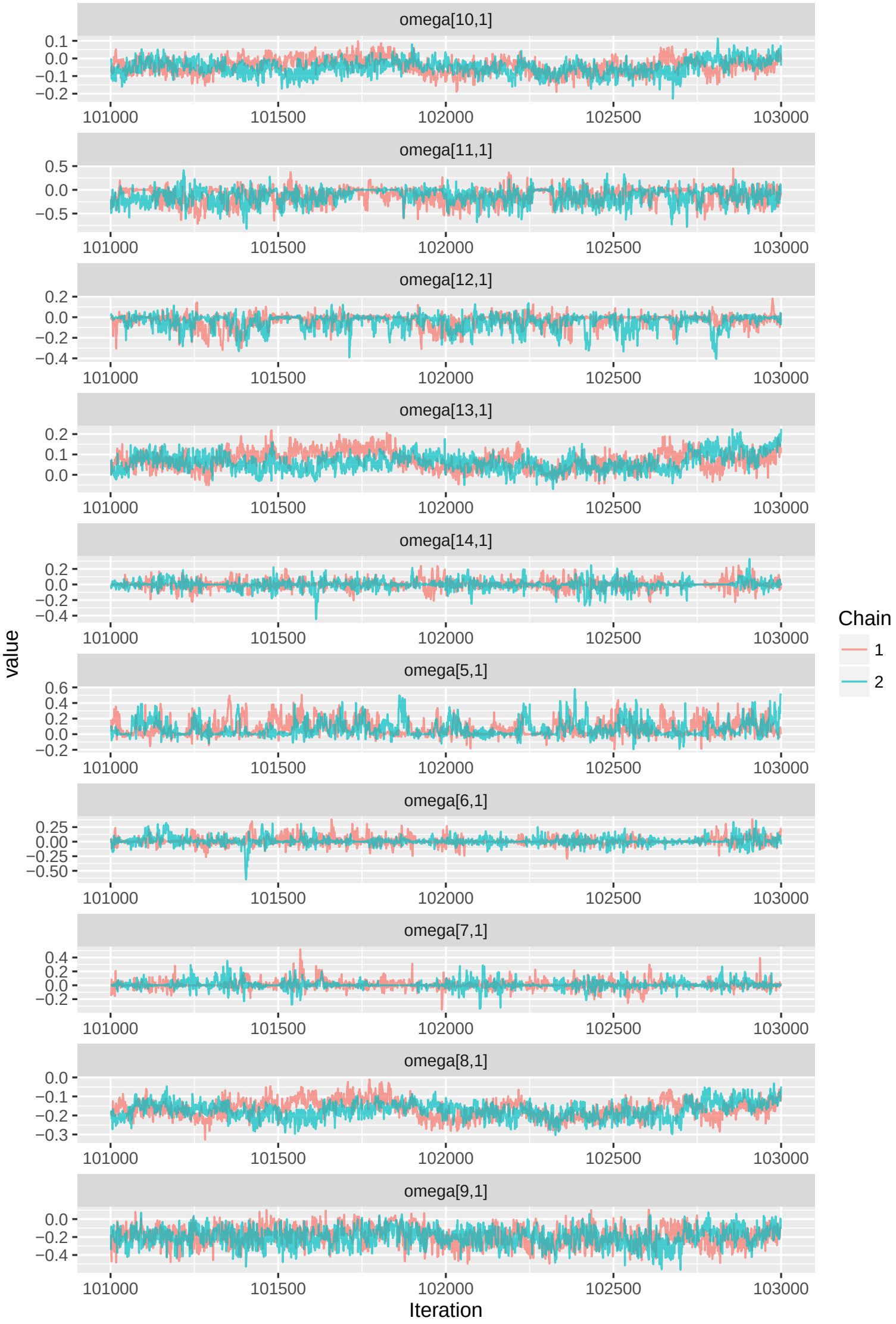
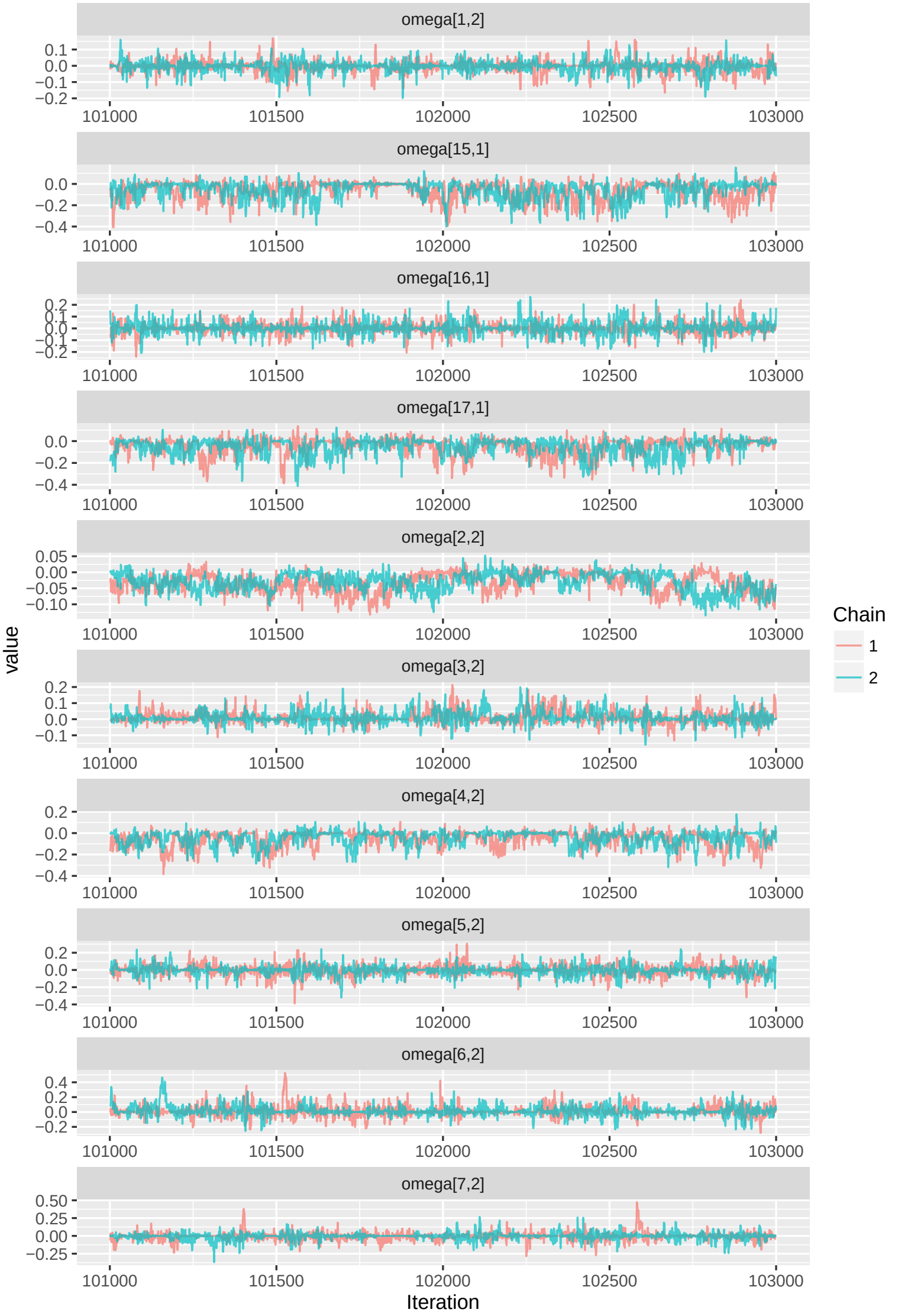
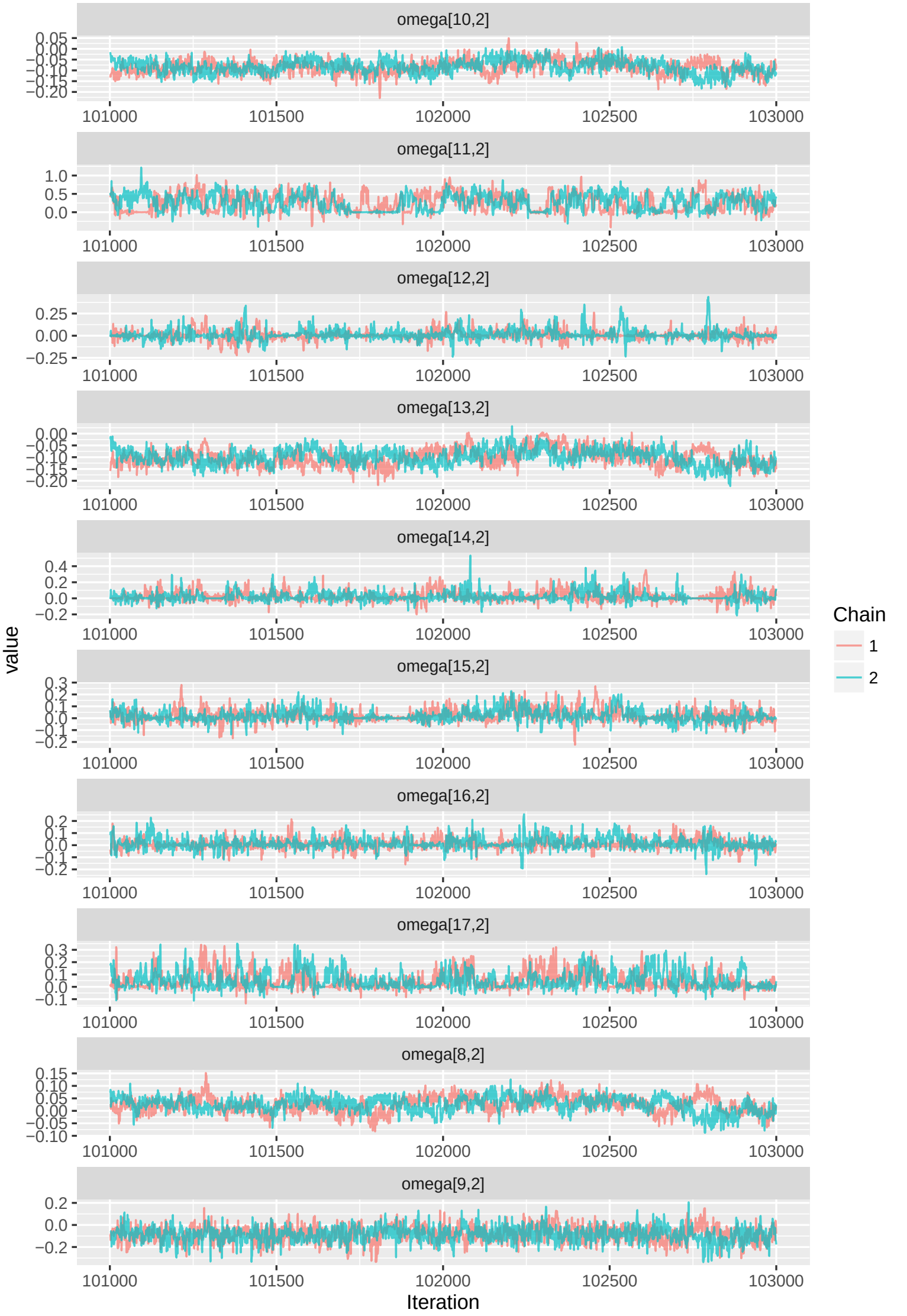
theta[25,3]
theta[26,3]
theta[27,3]
theta[28,3]
theta[29,3]
density
value
Chain
1
2

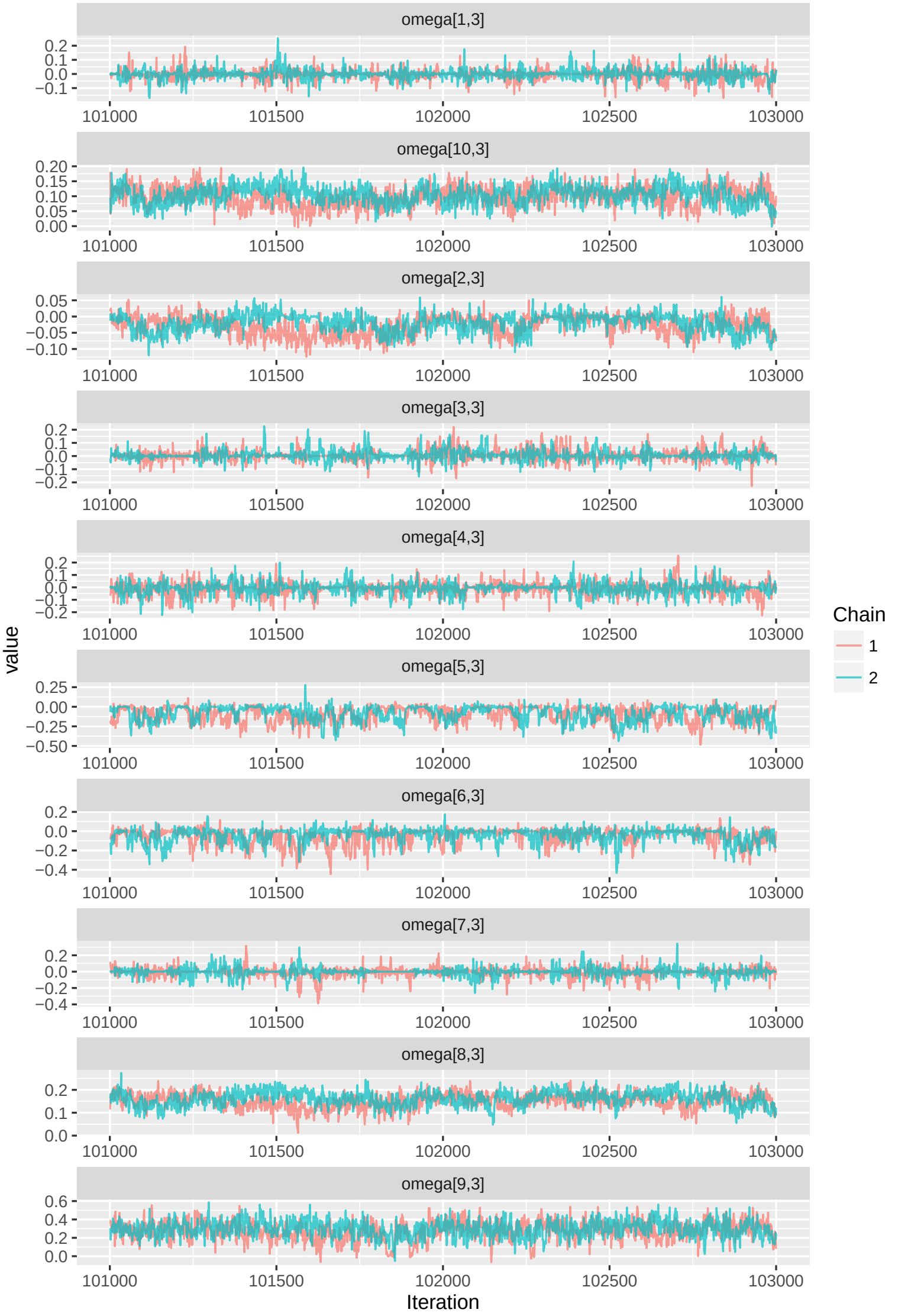

theta[30,3]
theta[31,3]
theta[32,3]
theta[33,3]
theta[34,3]
theta[35,3]
theta[36,3]
theta[37,3]
density
value
Chain
1
2

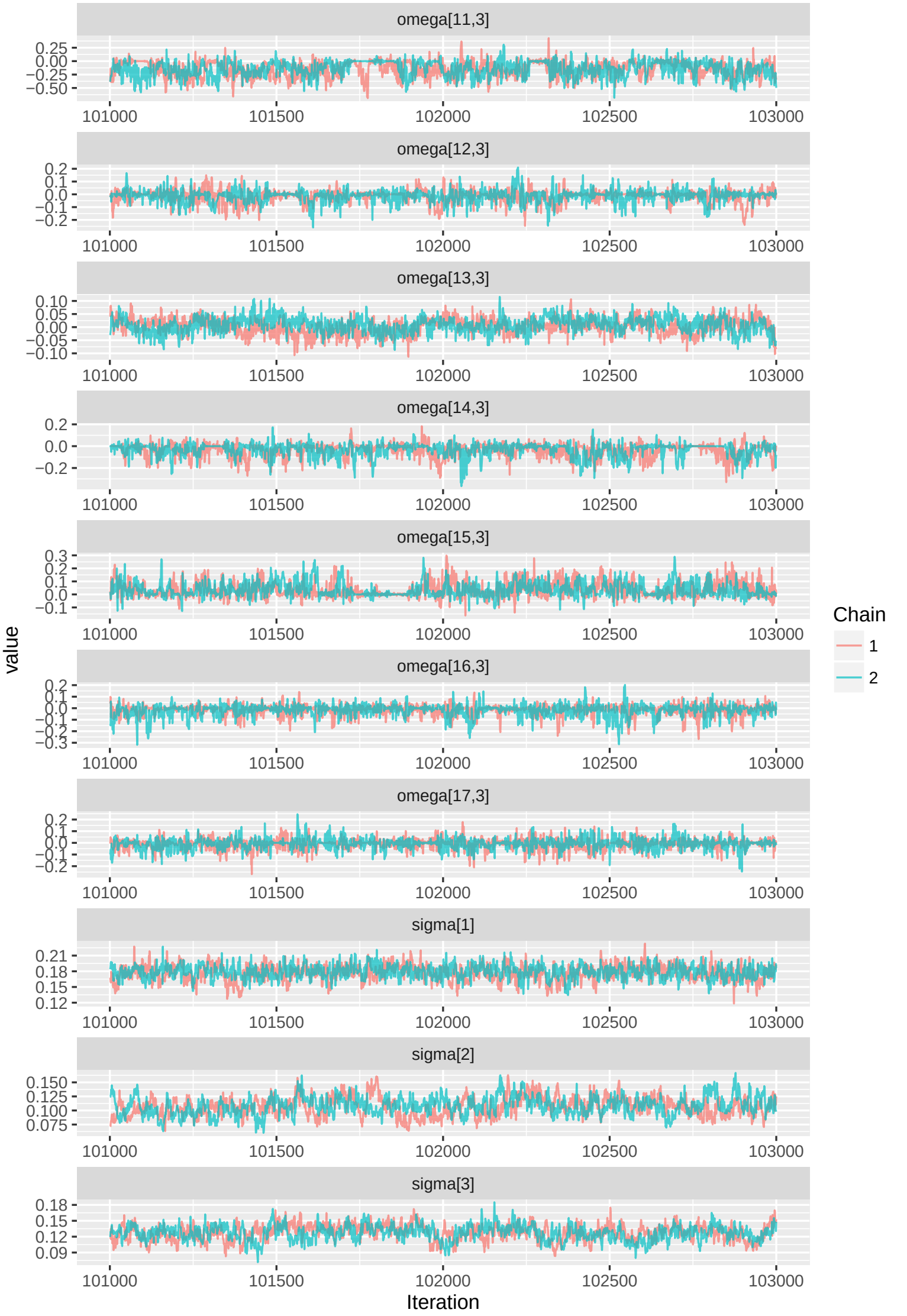

lambda[1]
lambda[2]
lambda[3]
nu[1]
nu[2]
nu[3]
omega[1,1]
omega[2,1]
omega[3,1]
omega[4,1]
value
Iteration
Chain
1
2


omega[10,1]
omega[11,1]
omega[12,1]
omega[13,1]
omega[14,1]
omega[5,1]
omega[6,1]
omega[7,1]
omega[8,1]
omega[9,1]
value
Iteration
Chain
1
2
101000
101500
102000
102500
103000

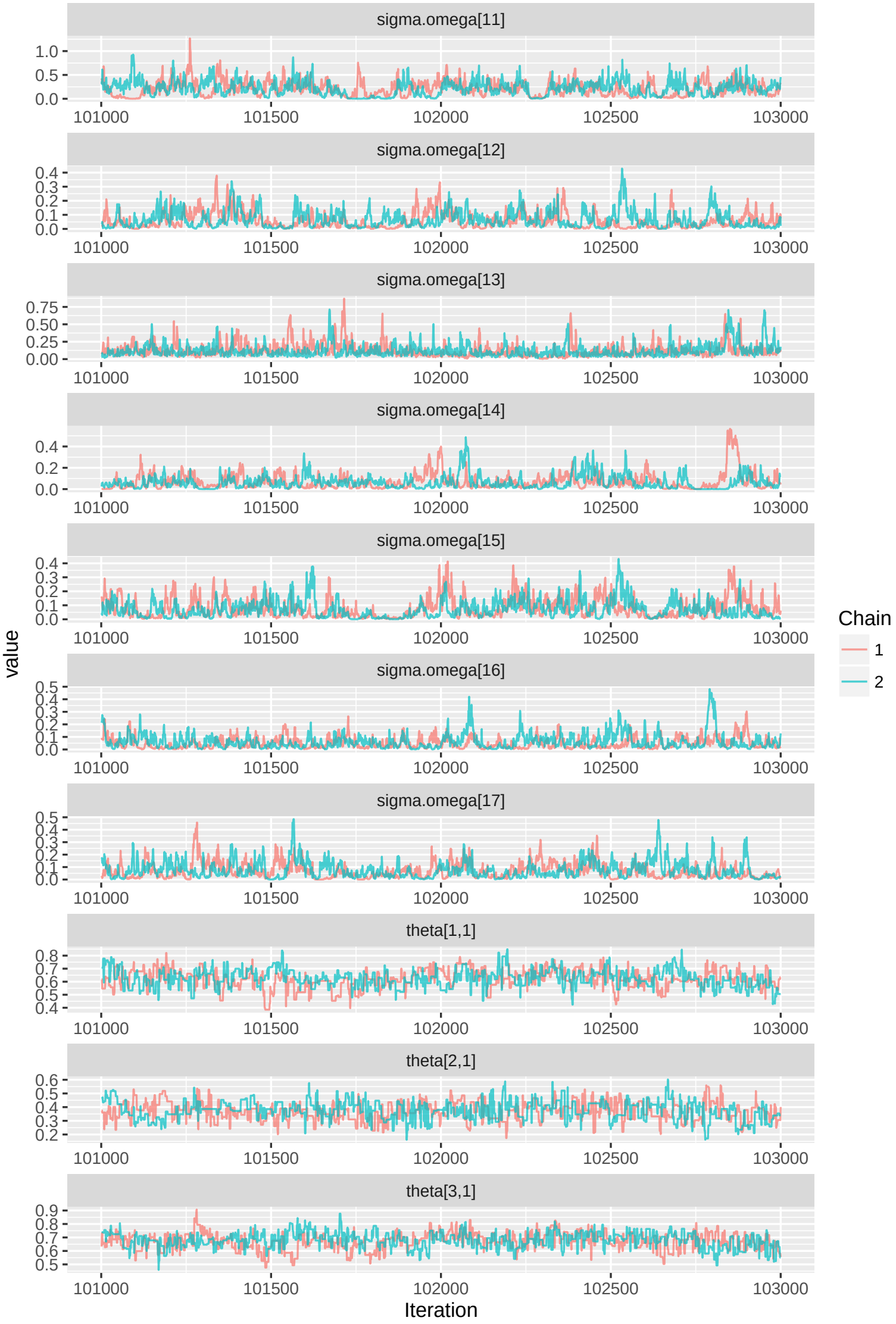

omega[1,2]
omega[15,1]
omega[16,1]
omega[17,1]
omega[2,2]
omega[3,2]
omega[4,2]
omega[5,2]
omega[6,2]
omega[7,2]
value
Iteration
Chain
1
2
101000
101500
102000
102500
103000

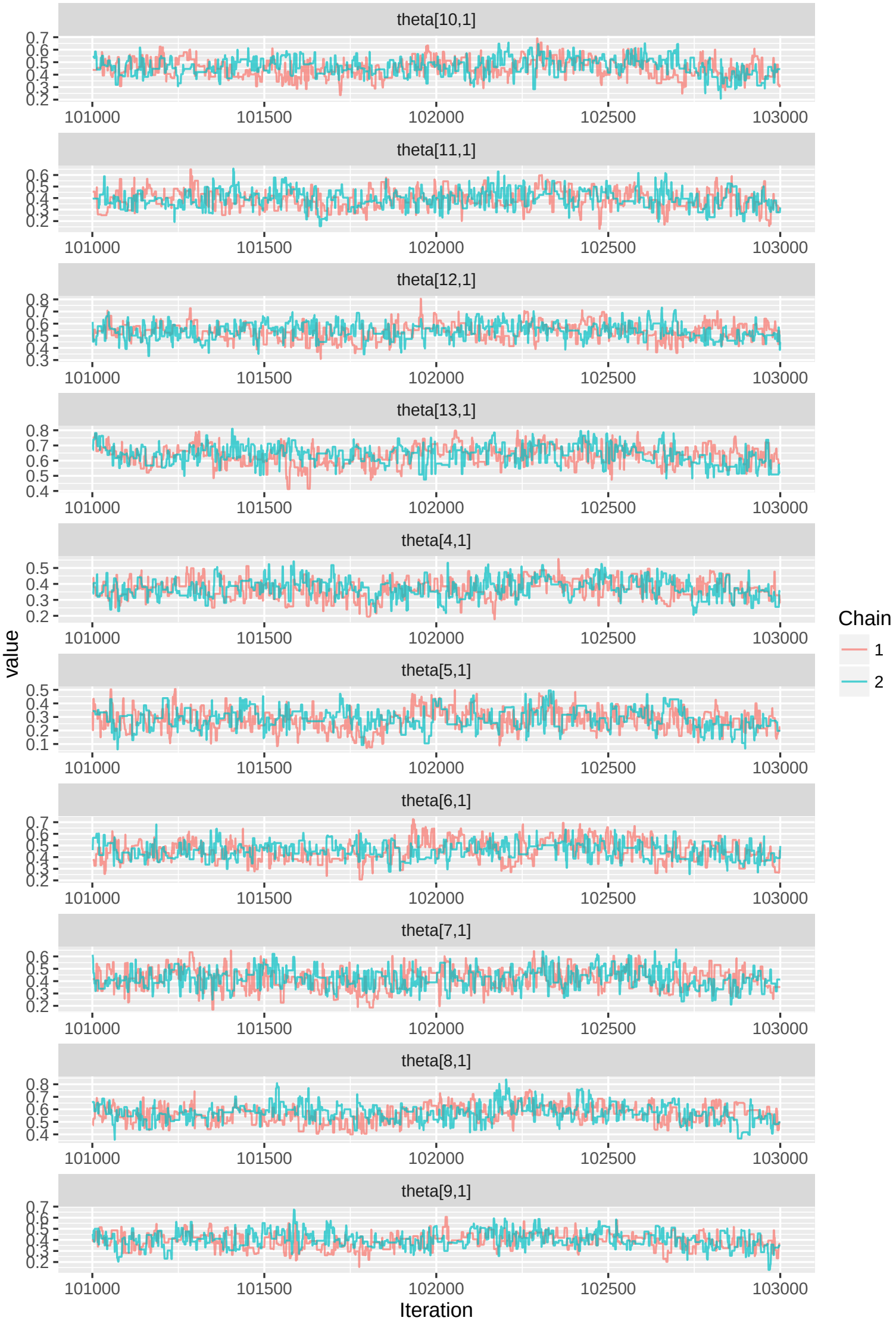

omega[10,2]
omega[11,2]
omega[12,2]
omega[13,2]
omega[14,2]
omega[15,2]
omega[16,2]
omega[17,2]
omega[8,2]
omega[9,2]
101000
101500
102000
102500
103000
value
Iteration
Chain
1
2


omega[1,3]
omega[10,3]
omega[2,3]
omega[3,3]
omega[4,3]
omega[5,3]
omega[6,3]
omega[7,3]
omega[8,3]
omega[9,3]
value
Iteration
Chain
1
2
101000
101500
102000
102500
103000

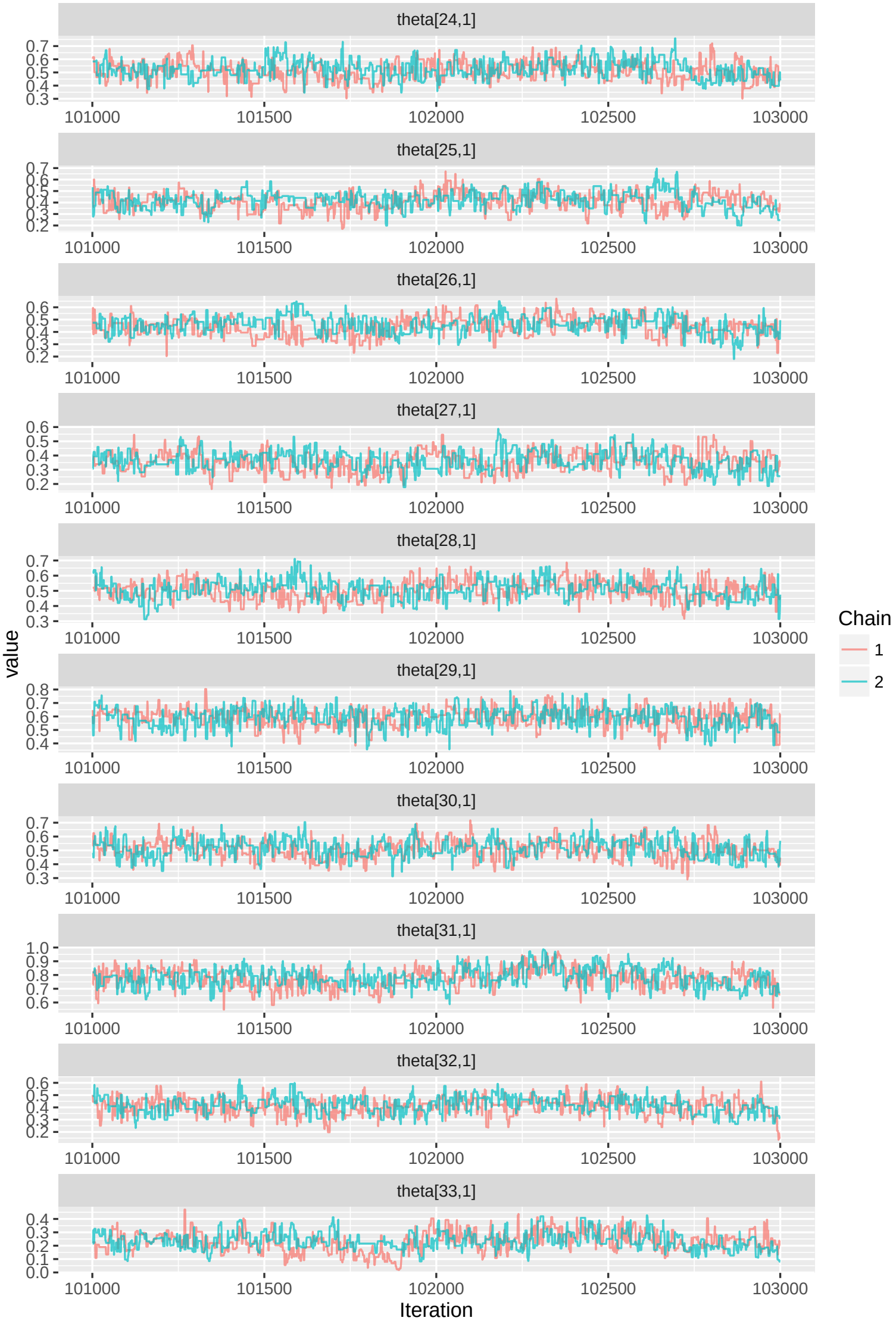

omega[11,3]
omega[12,3]
omega[13,3]
omega[14,3]
omega[15,3]
omega[16,3]
omega[17,3]
sigma[1]
sigma[2]
sigma[3]
value
Iteration
Chain
1
2
101000
101500
102000
102500
103000

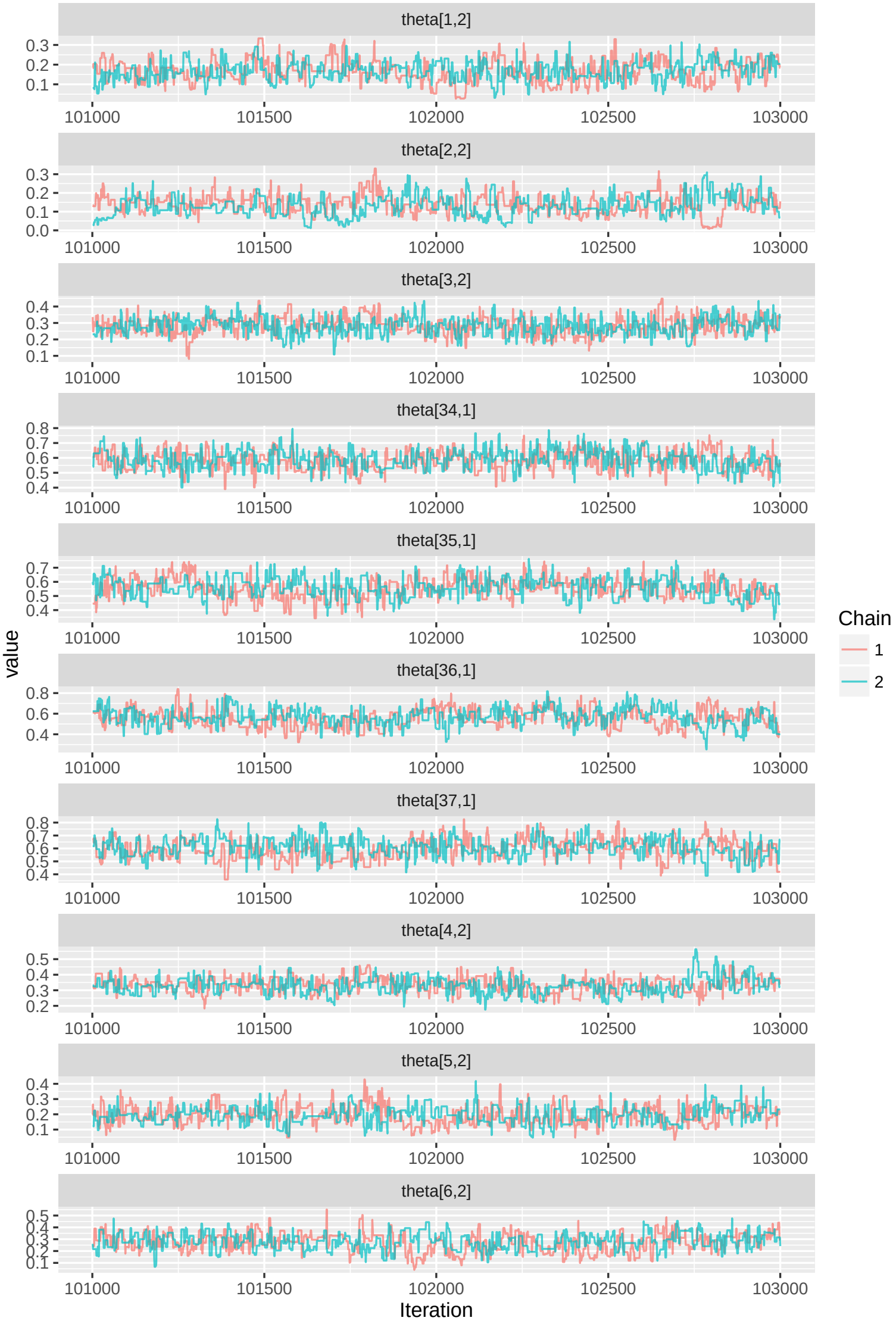
sigma.omega[10]
sigma.omega[1]
sigma.omega[2]
sigma.omega[3]
sigma.omega[4]
sigma.omega[5]
sigma.omega[6]
sigma.omega[7]
sigma.omega[8]
sigma.omega[9]
value
Iteration
Chain
1
2
101000
101500
102000
102500
103000

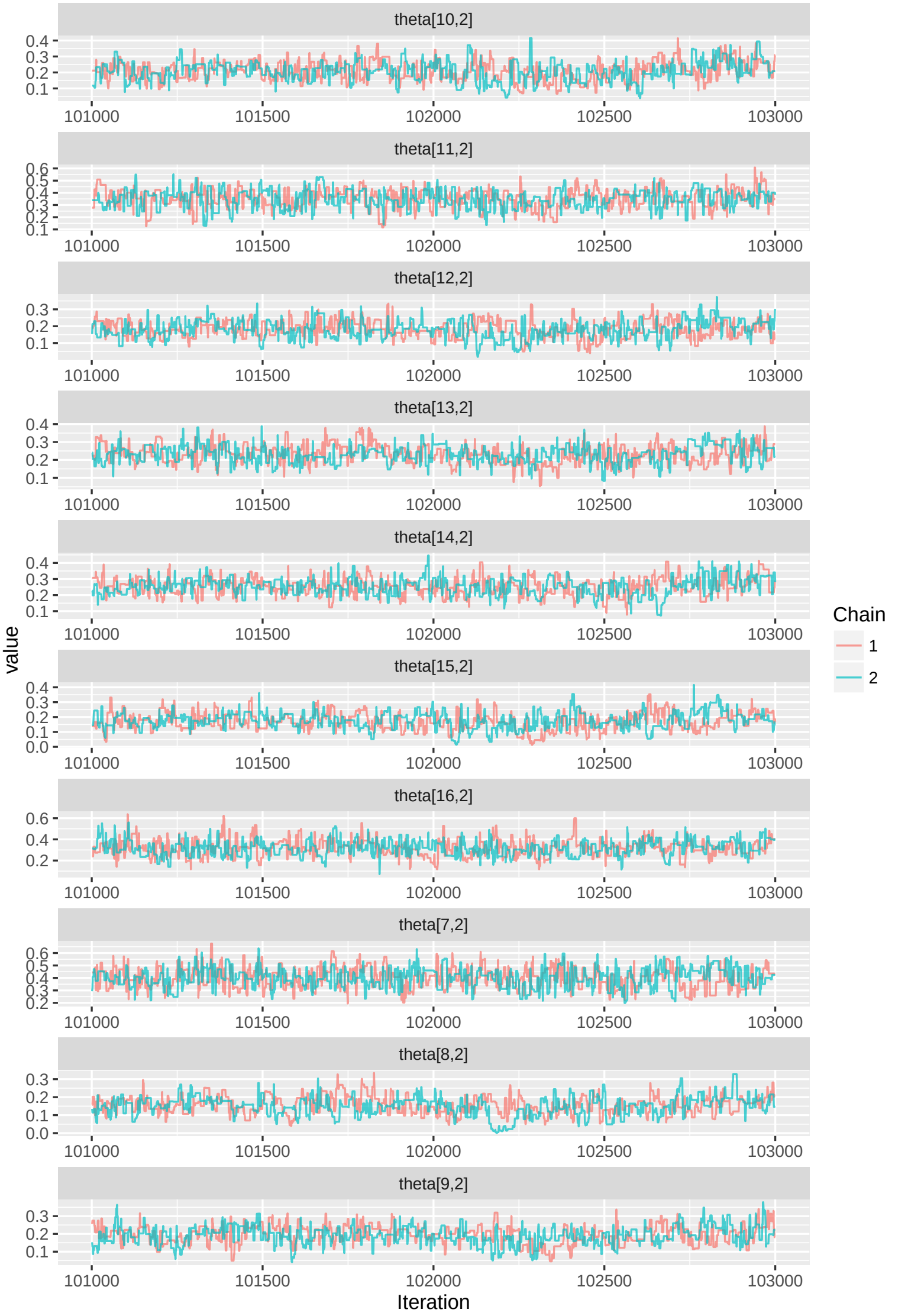

sigma.omega[11]
sigma.omega[12]
sigma.omega[13]
sigma.omega[14]
sigma.omega[15]
sigma.omega[16]
sigma.omega[17]
theta[1,1]
theta[2,1]
theta[3,1]
value
Iteration
Chain
1
2
101000
101500
102000
102500
103000

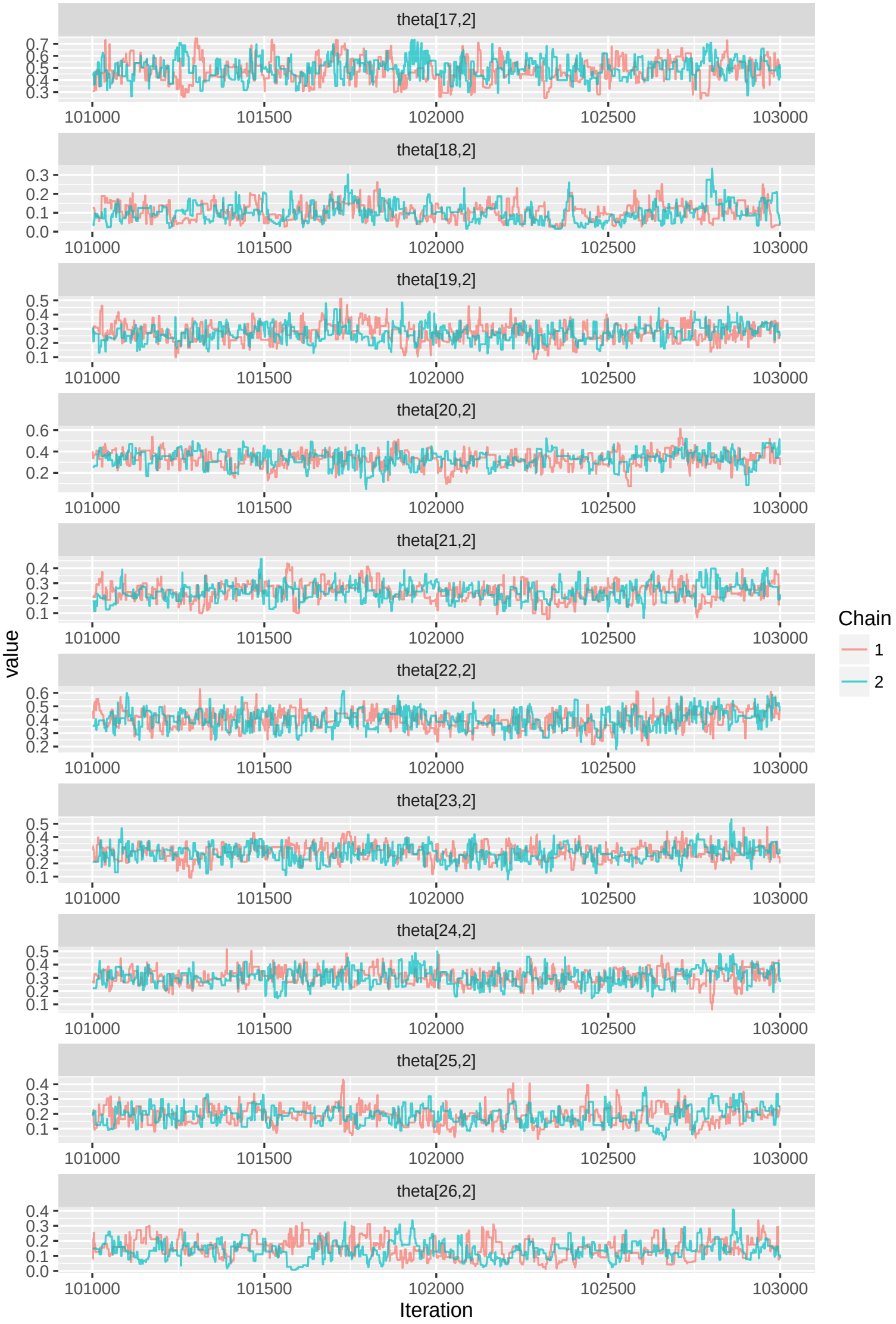

theta[10,1]
theta[11,1]
theta[12,1]
theta[13,1]
theta[4,1]
theta[5,1]
theta[6,1]
theta[7,1]
theta[8,1]
theta[9,1]
101000
101500
102000
102500
103000
value
Iteration
Chain
1
2

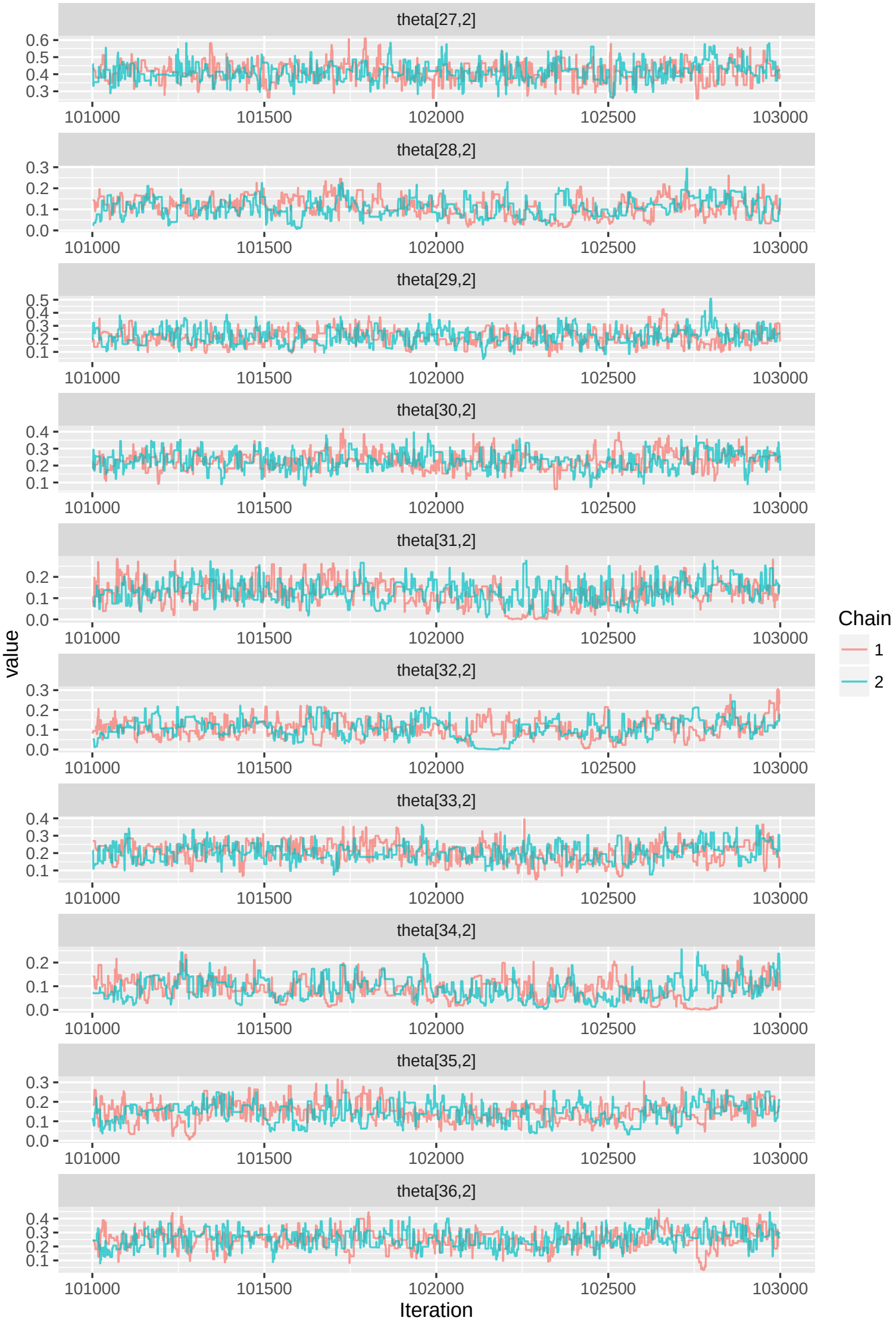
theta[14,1]
theta[15,1]
theta[16,1]
theta[17,1]
theta[18,1]
theta[19,1]
theta[20,1]
theta[21,1]
theta[22,1]
theta[23,1]
value
Iteration
Chain
1
2
101000
101500
102000
102500
103000

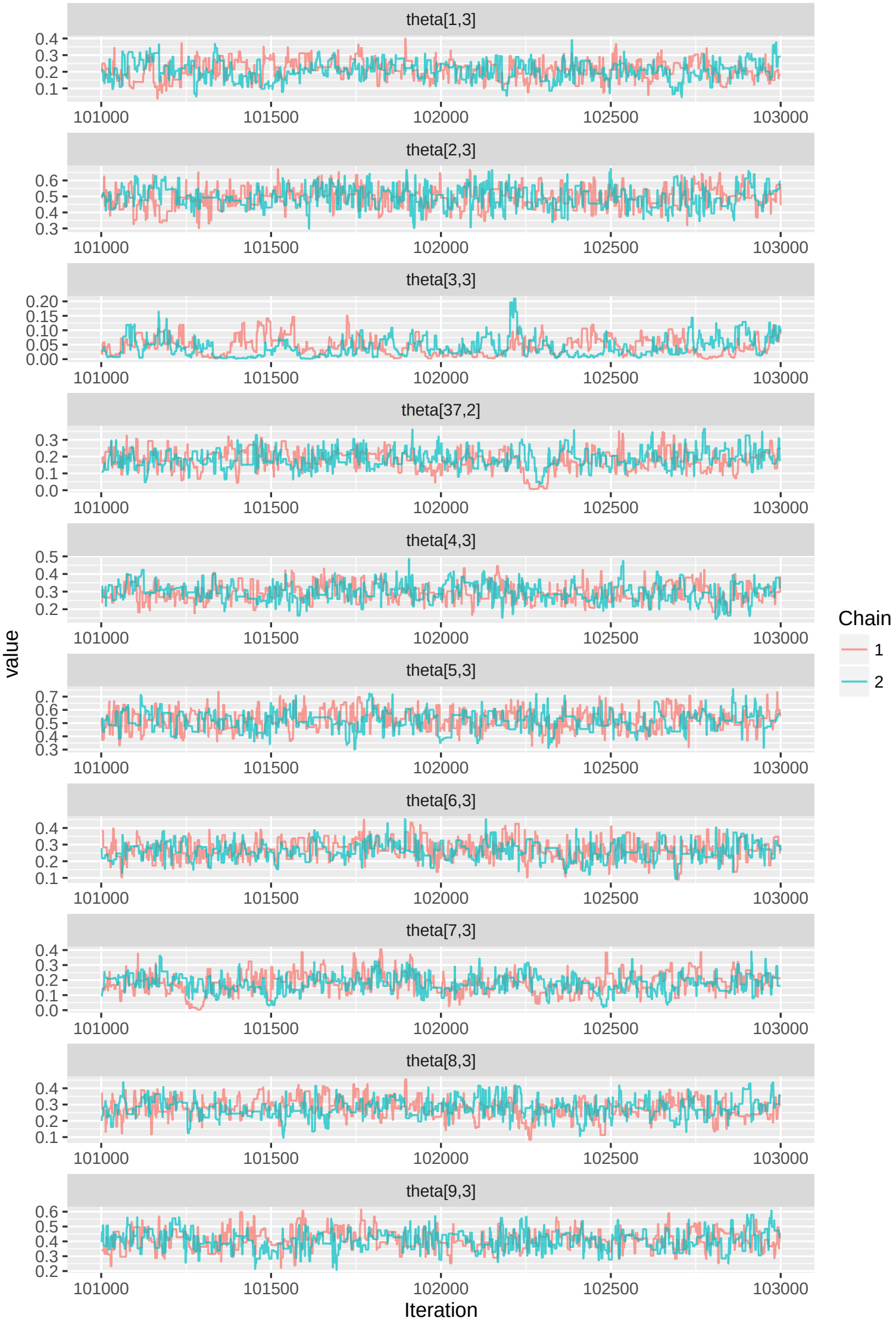

theta[24,1]
theta[25,1]
theta[26,1]
theta[27,1]
theta[28,1]
theta[29,1]
theta[30,1]
theta[31,1]
theta[32,1]
theta[33,1]
value
Iteration
Chain
1
2
101000
101500
102000
102500
103000

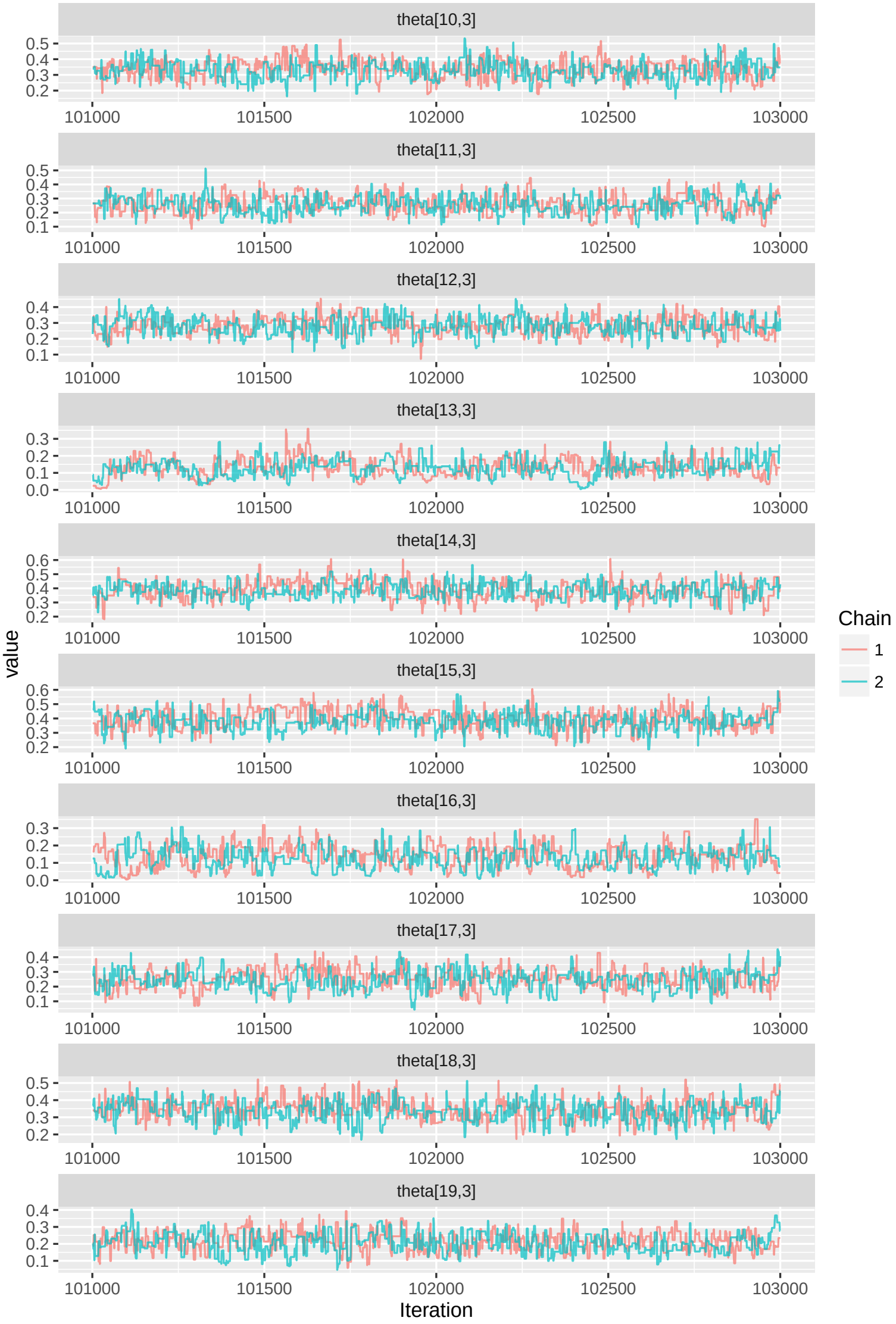

theta[1,2]
theta[2,2]
theta[3,2]
theta[34,1]
theta[35,1]
theta[36,1]
theta[37,1]
theta[4,2]
theta[5,2]
theta[6,2]
101000
101500
102000
102500
103000
value
Iteration
Chain
1
2

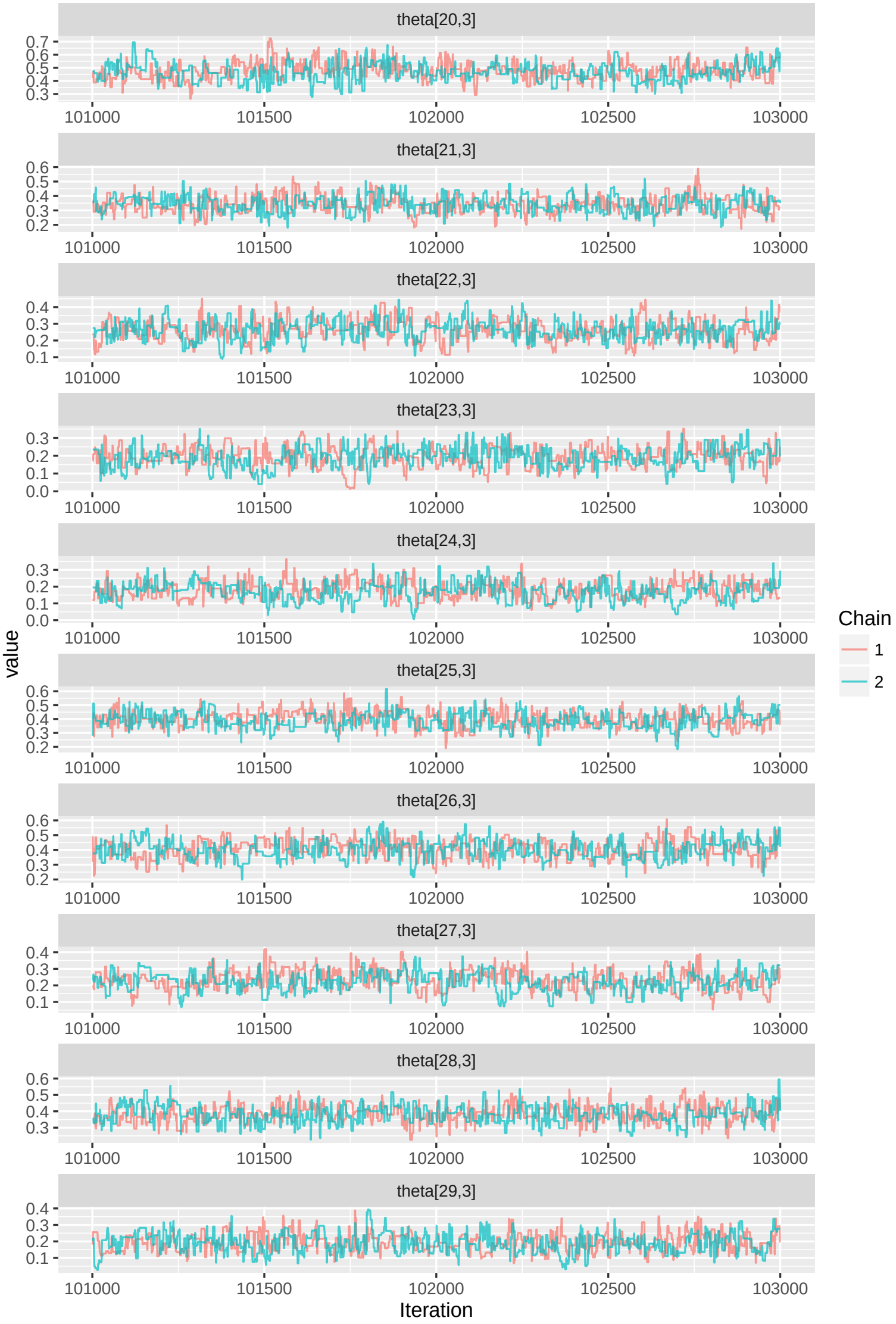

theta[10,2]
theta[11,2]
theta[12,2]
theta[13,2]
theta[14,2]
theta[15,2]
theta[16,2]
theta[7,2]
theta[8,2]
theta[9,2]
101000
101500
102000
102500
103000
value
Iteration
Chain
1
2

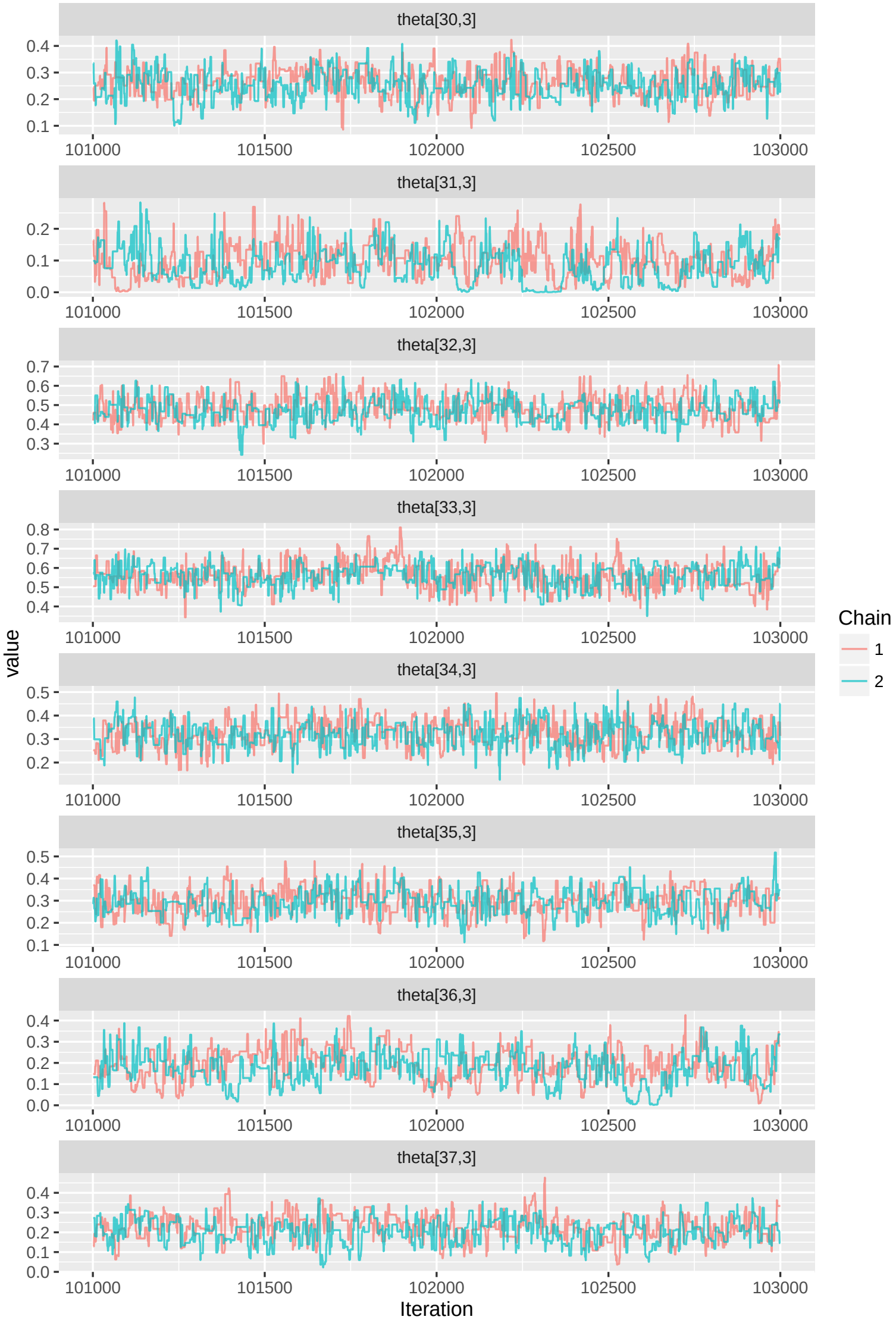

theta[17,2]
theta[18,2]
theta[19,2]
theta[20,2]
theta[21,2]
theta[22,2]
theta[23,2]
theta[24,2]
theta[25,2]
theta[26,2]
value
Iteration
Chain
1
2
101000
101500
102000
102500
103000

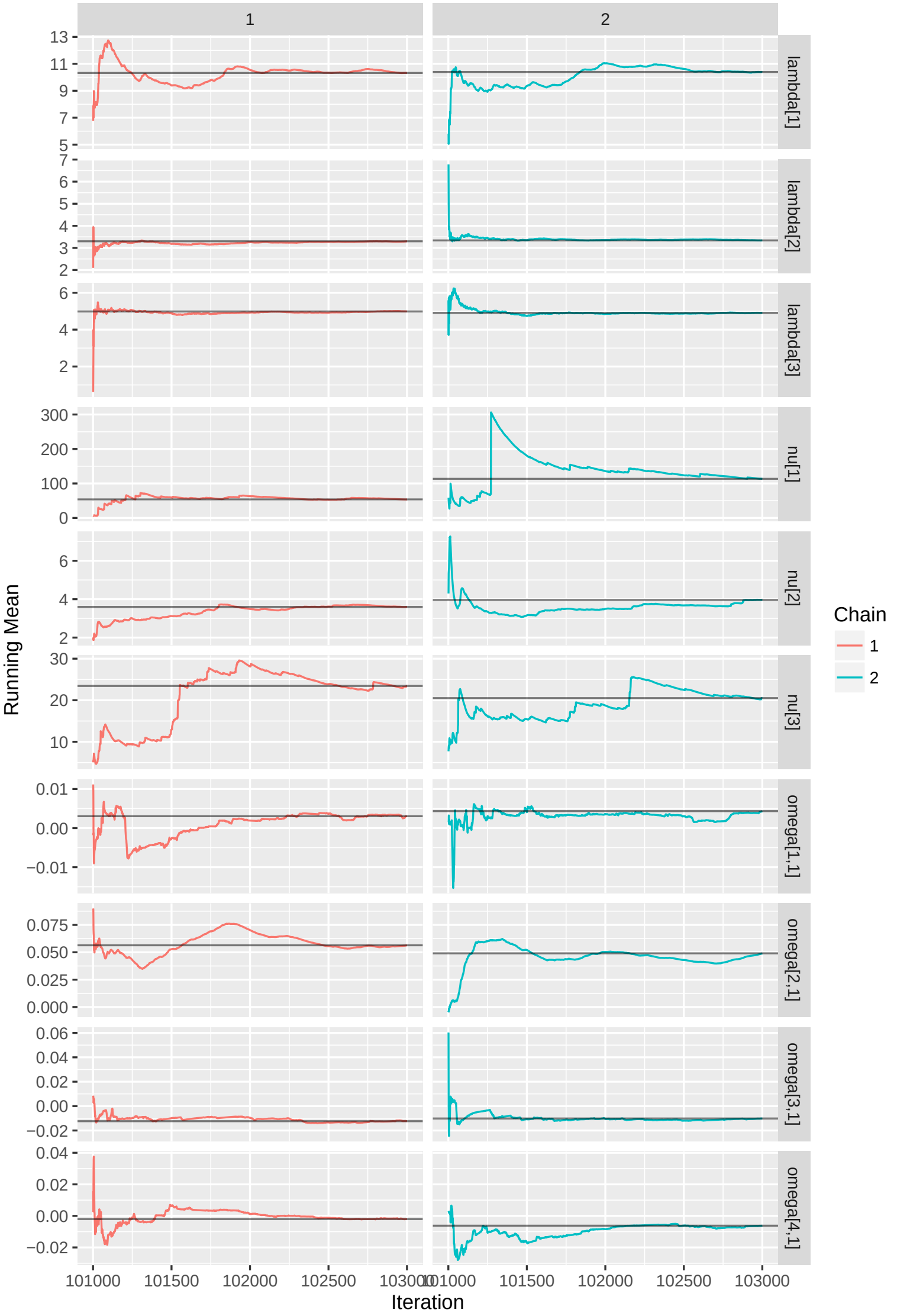

theta[27,2]
theta[28,2]
theta[29,2]
theta[30,2]
theta[31,2]
theta[32,2]
theta[33,2]
theta[34,2]
theta[35,2]
theta[36,2]
value
Iteration
Chain
1
2
101000
101500
102000
102500
103000

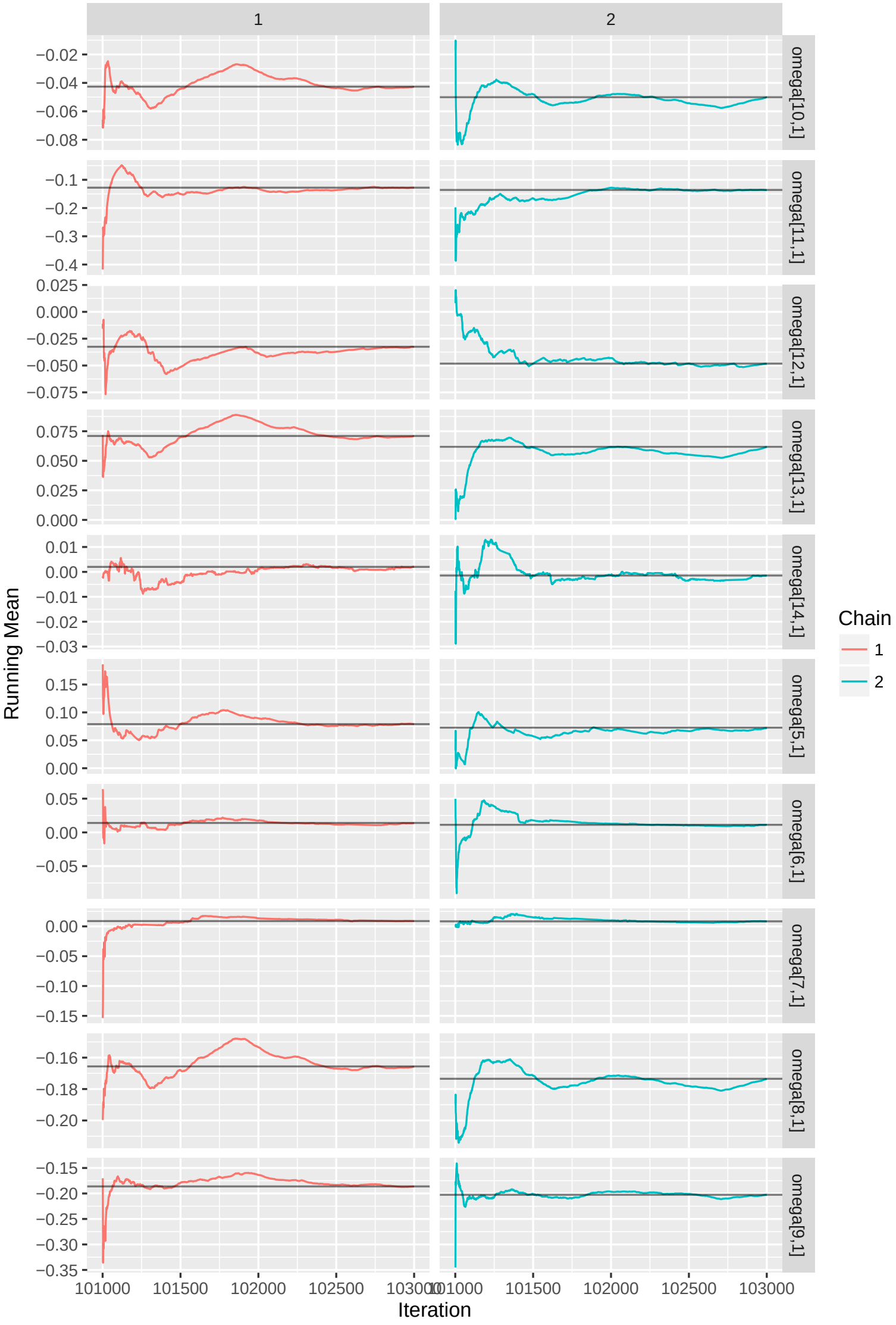

theta[1,3]
theta[2,3]
theta[3,3]
theta[37,2]
theta[4,3]
theta[5,3]
theta[6,3]
theta[7,3]
theta[8,3]
theta[9,3]
value
Iteration
Chain
1
2
101000
101500
102000
102500
103000

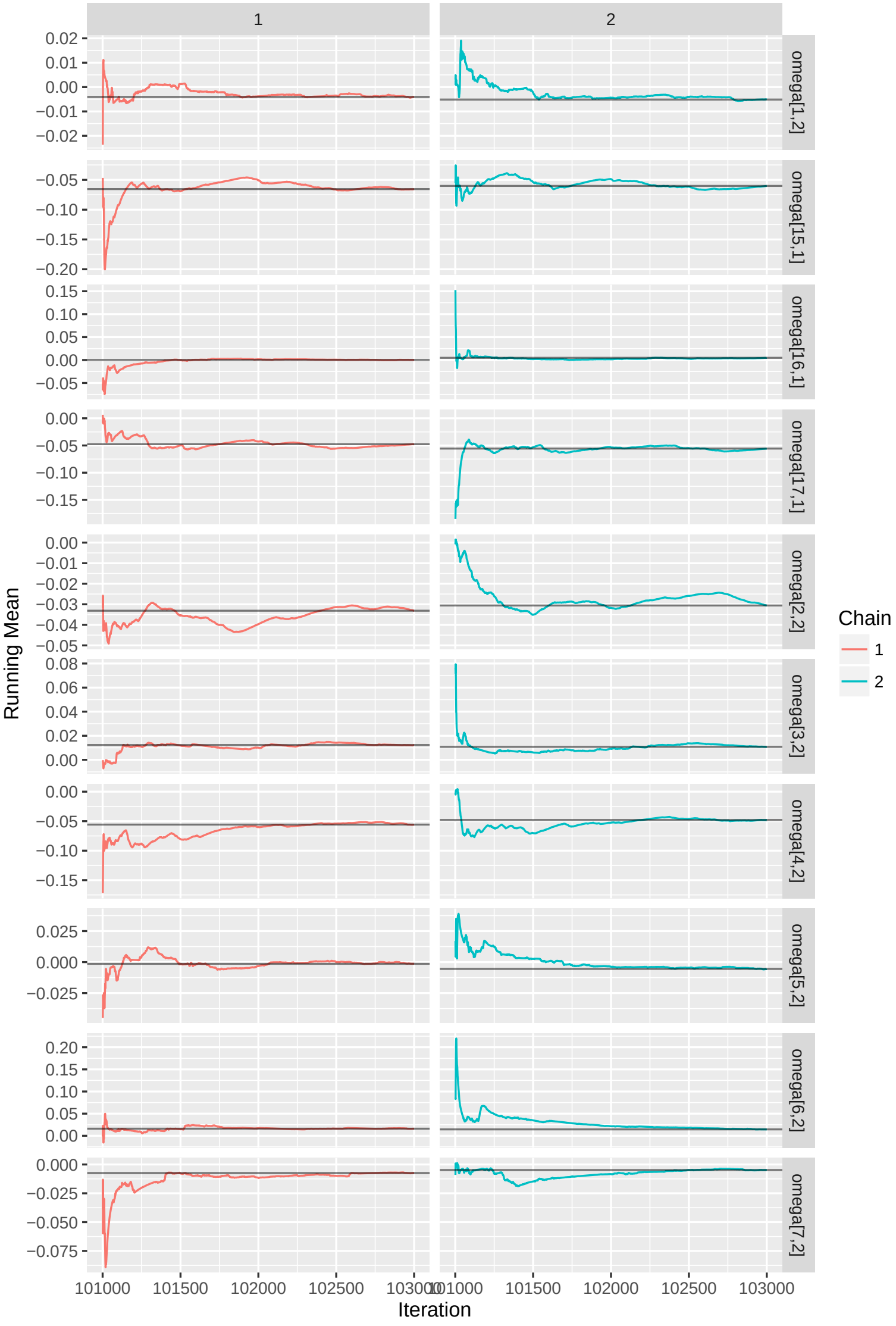

theta[10,3]
theta[11,3]
theta[12,3]
theta[13,3]
theta[14,3]
theta[15,3]
theta[16,3]
theta[17,3]
theta[18,3]
theta[19,3]
value
Iteration
Chain
1
2
101000
101500
102000
102500
103000

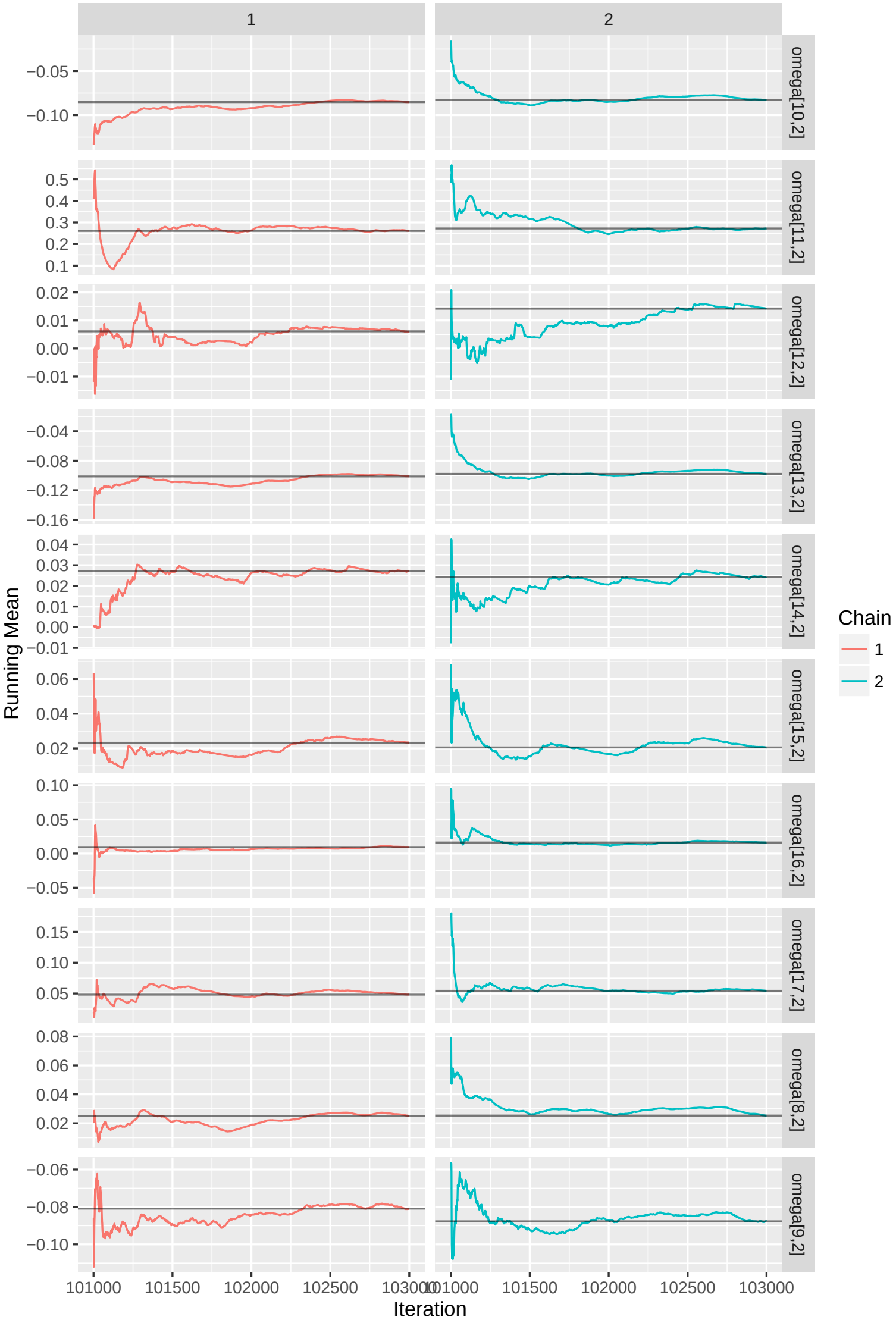

theta[20,3]
theta[21,3]
theta[22,3]
theta[23,3]
theta[24,3]
theta[25,3]
theta[26,3]
theta[27,3]
theta[28,3]
theta[29,3]
101000
101500
102000
102500
103000
value
Iteration
Chain
1
2

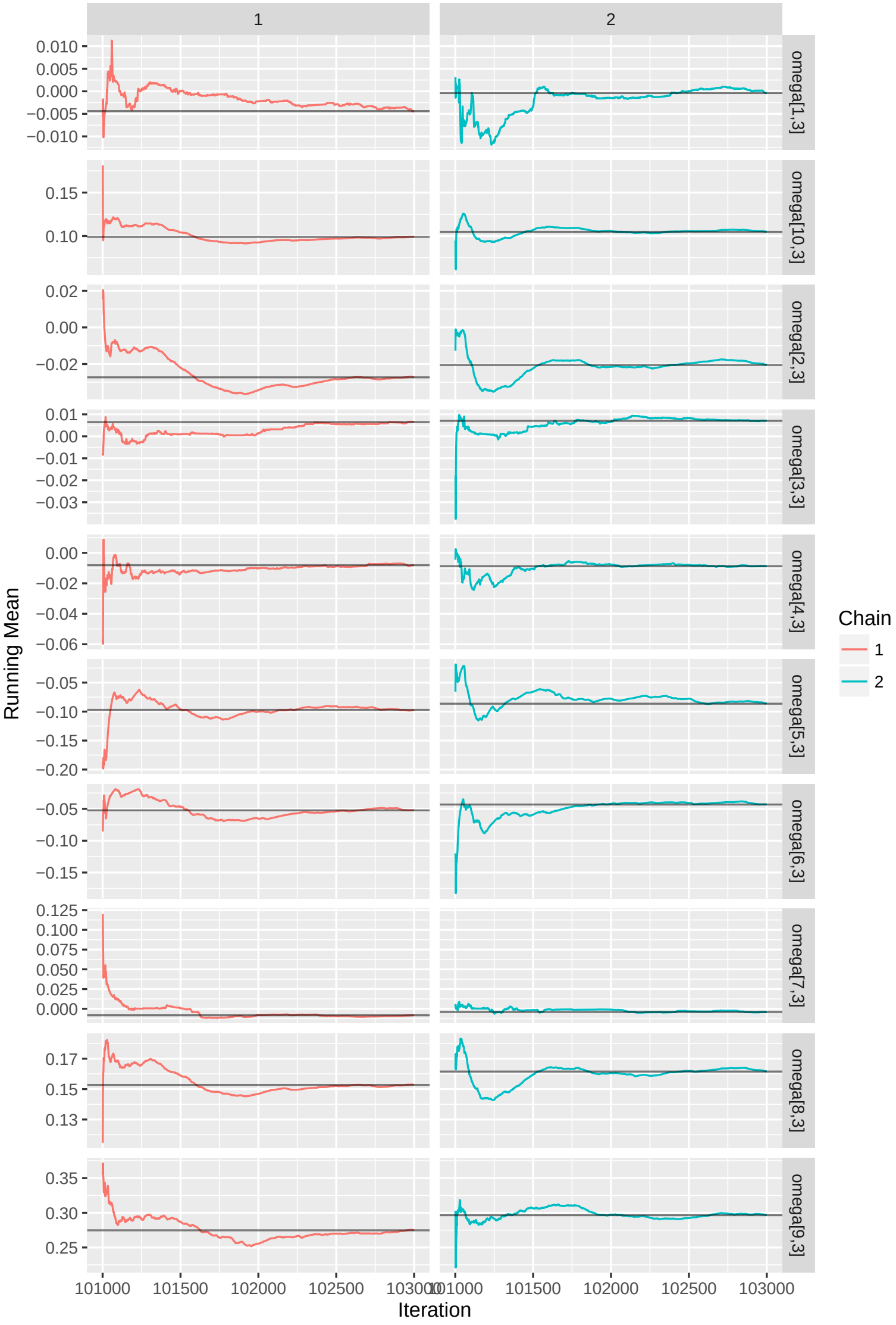

theta[30,3]
theta[31,3]
theta[32,3]
theta[33,3]
theta[34,3]
theta[35,3]
theta[36,3]
theta[37,3]
value
Iteration
101000
101500
102000
102500
103000
Chain
1
2

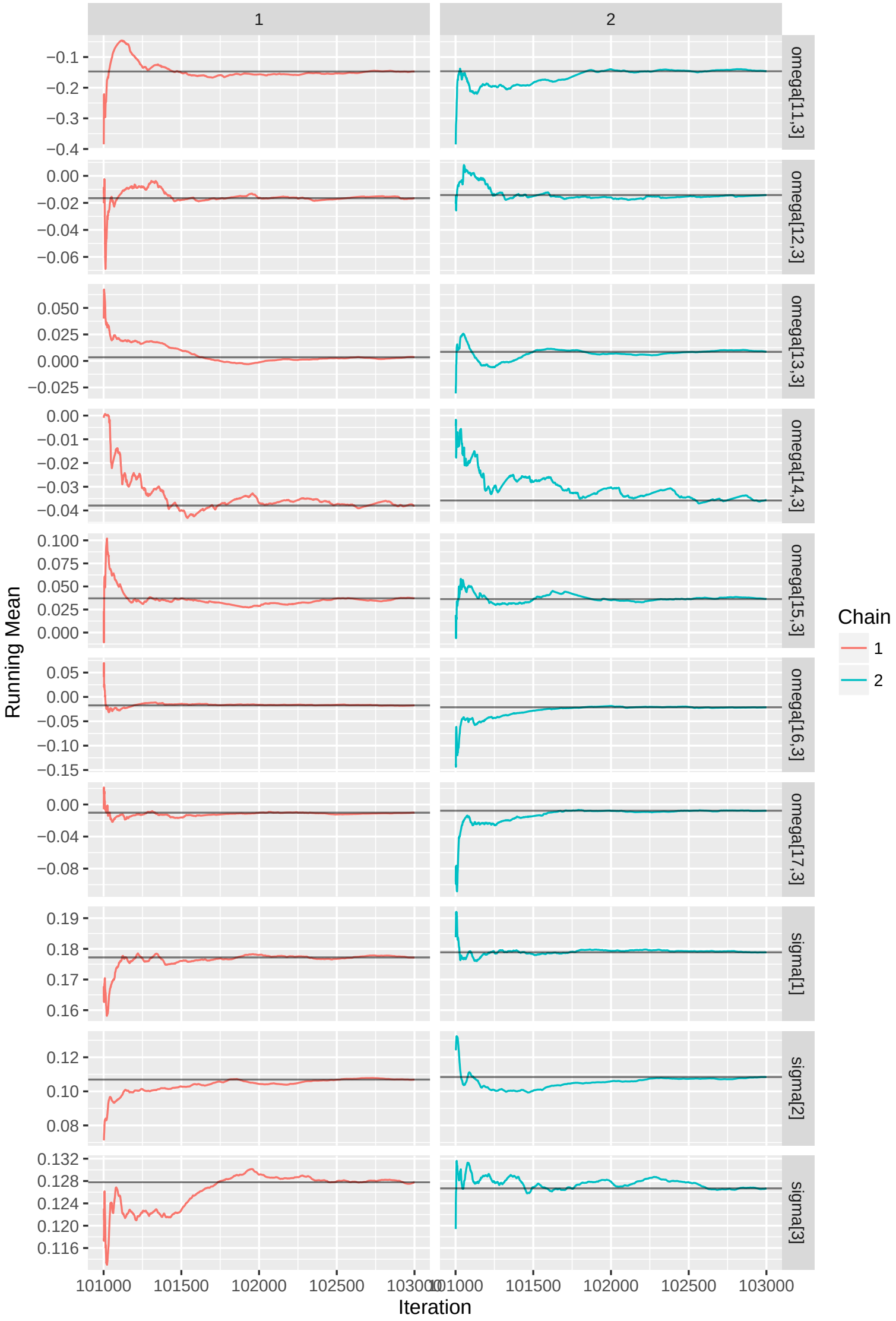

1
2
lambda[1]
lambda[2]
lambda[3]
nu[1]
nu[2]
nu[3]
omega[1,1]
omega[2,1]
omega[3,1]
omega[4,1]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

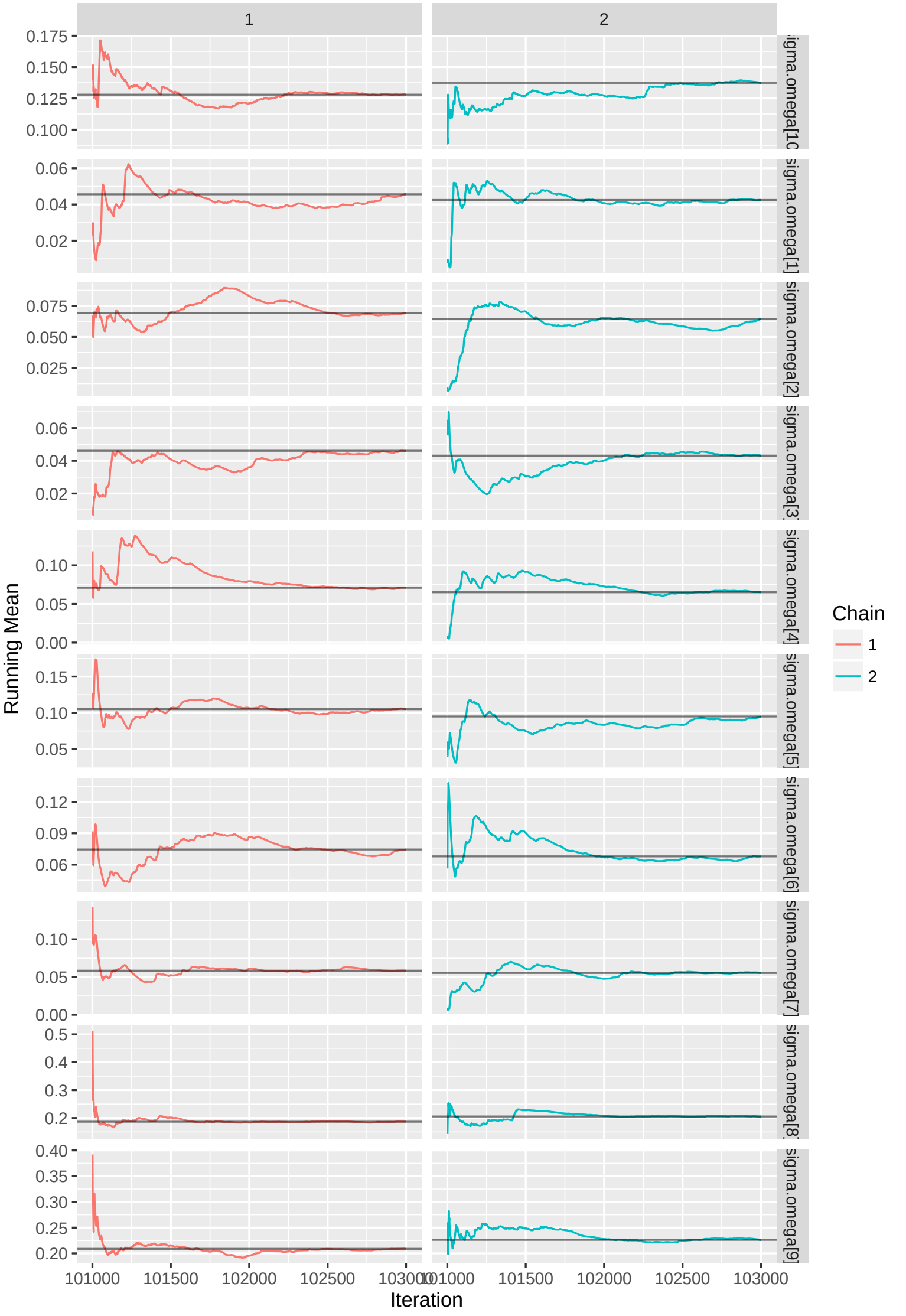

1
2
omega[10,1]
omega[11,1]
omega[12,1]
omega[13,1]
omega[14,1]
omega[5,1]
omega[6,1]
omega[7,1]
omega[8,1]
omega[9,1]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

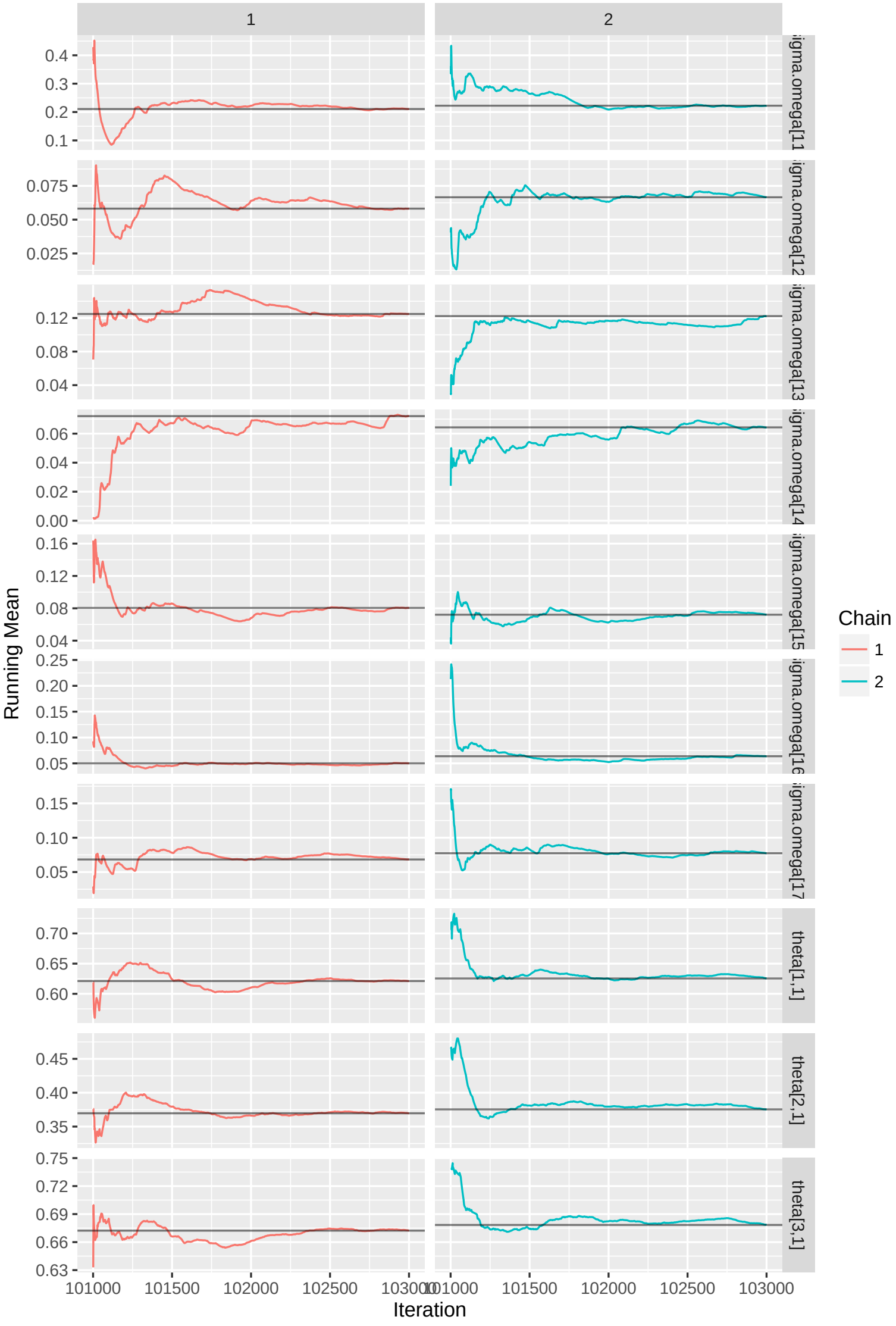

1
2
omega[1,2]
omega[15,1]
omega[16,1]
omega[17,1]
omega[2,2]
omega[3,2]
omega[4,2]
omega[5,2]
omega[6,2]
omega[7,2]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

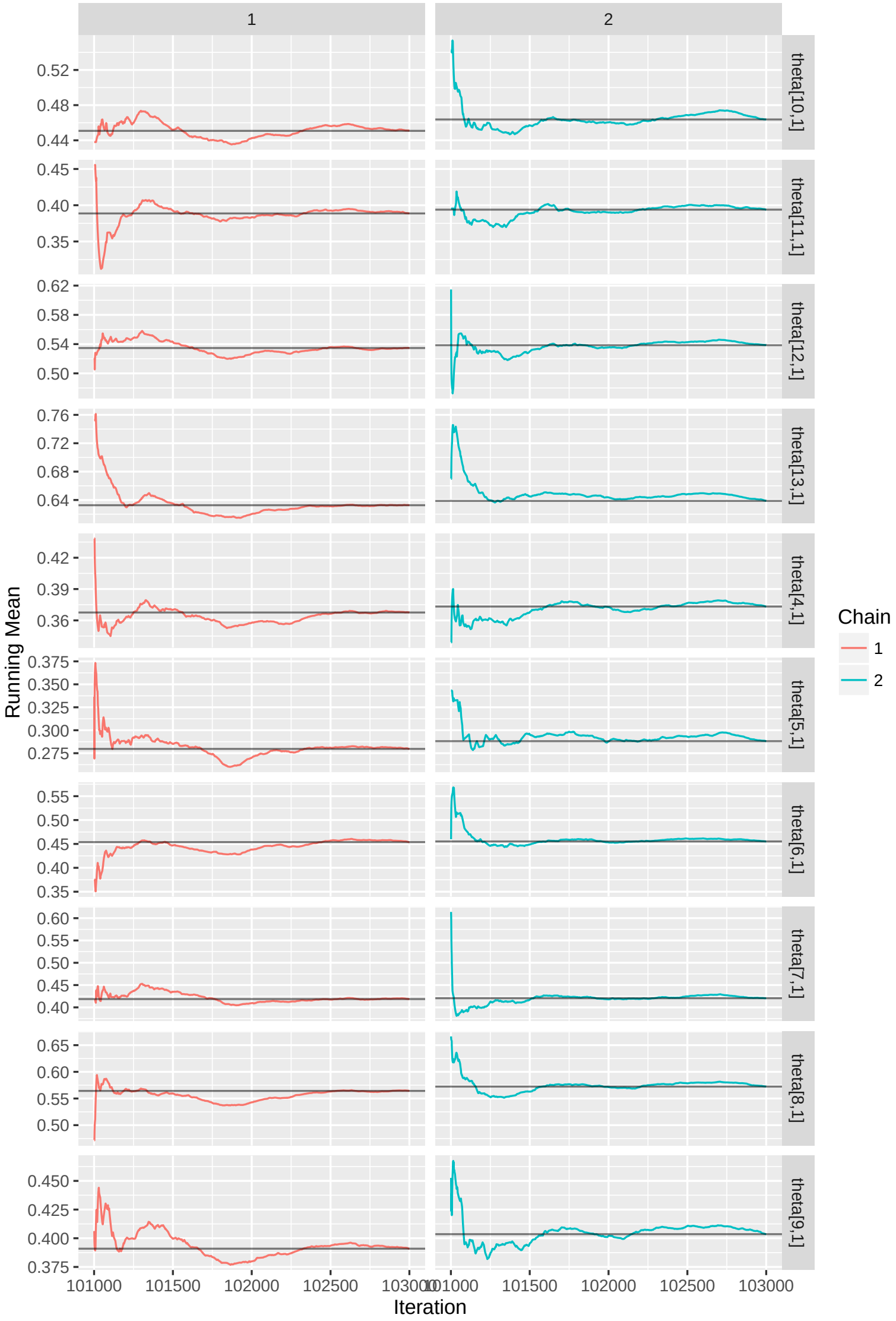

1
2
omega[10,2]
omega[11,2]
omega[12,2]
omega[13,2]
omega[14,2]
omega[15,2]
omega[16,2]
omega[17,2]
omega[8,2]
omega[9,2]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

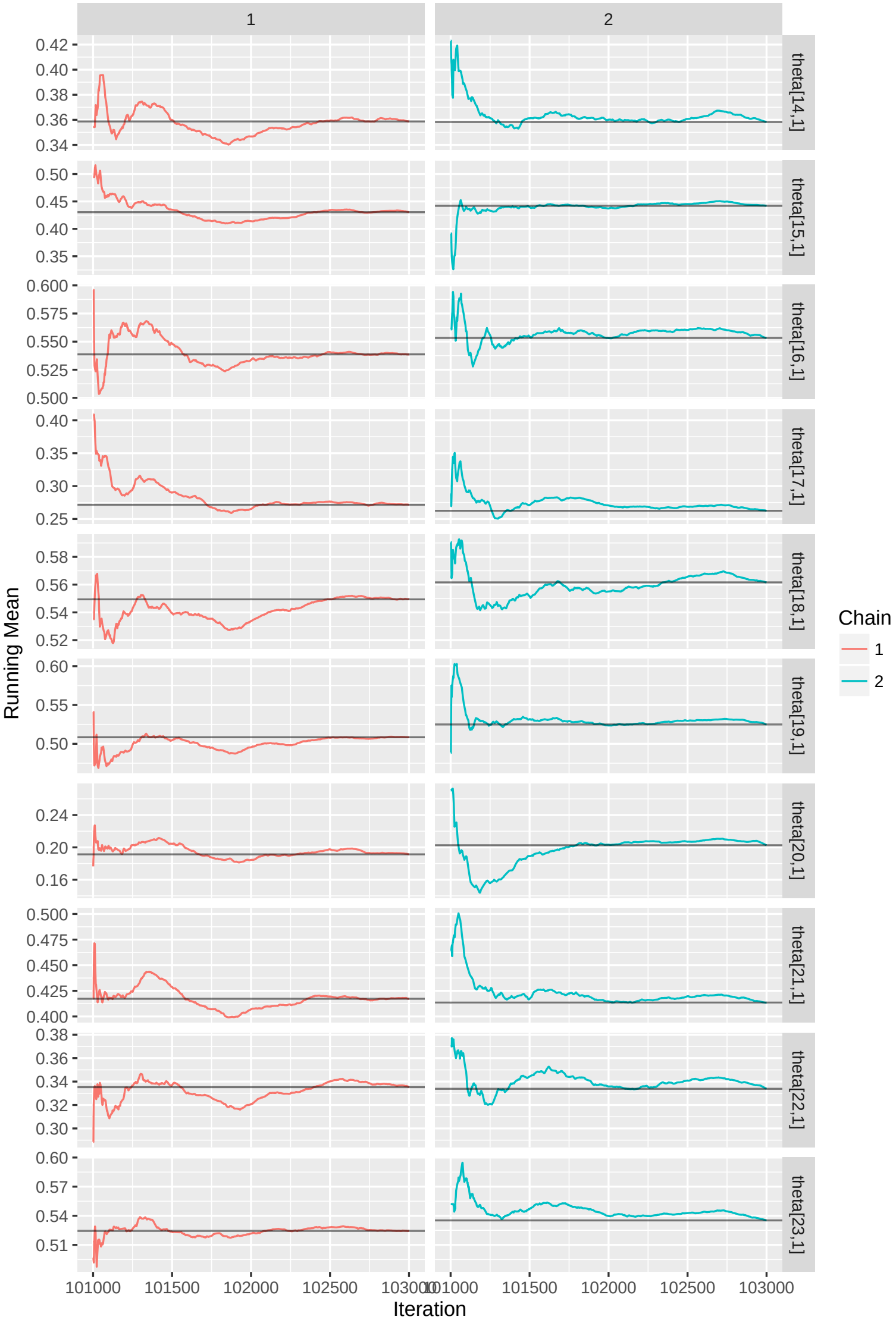

1
2
omega[1,3]
omega[10,3]
omega[2,3]
omega[3,3]
omega[4,3]
omega[5,3]
omega[6,3]
omega[7,3]
omega[8,3]
omega[9,3]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

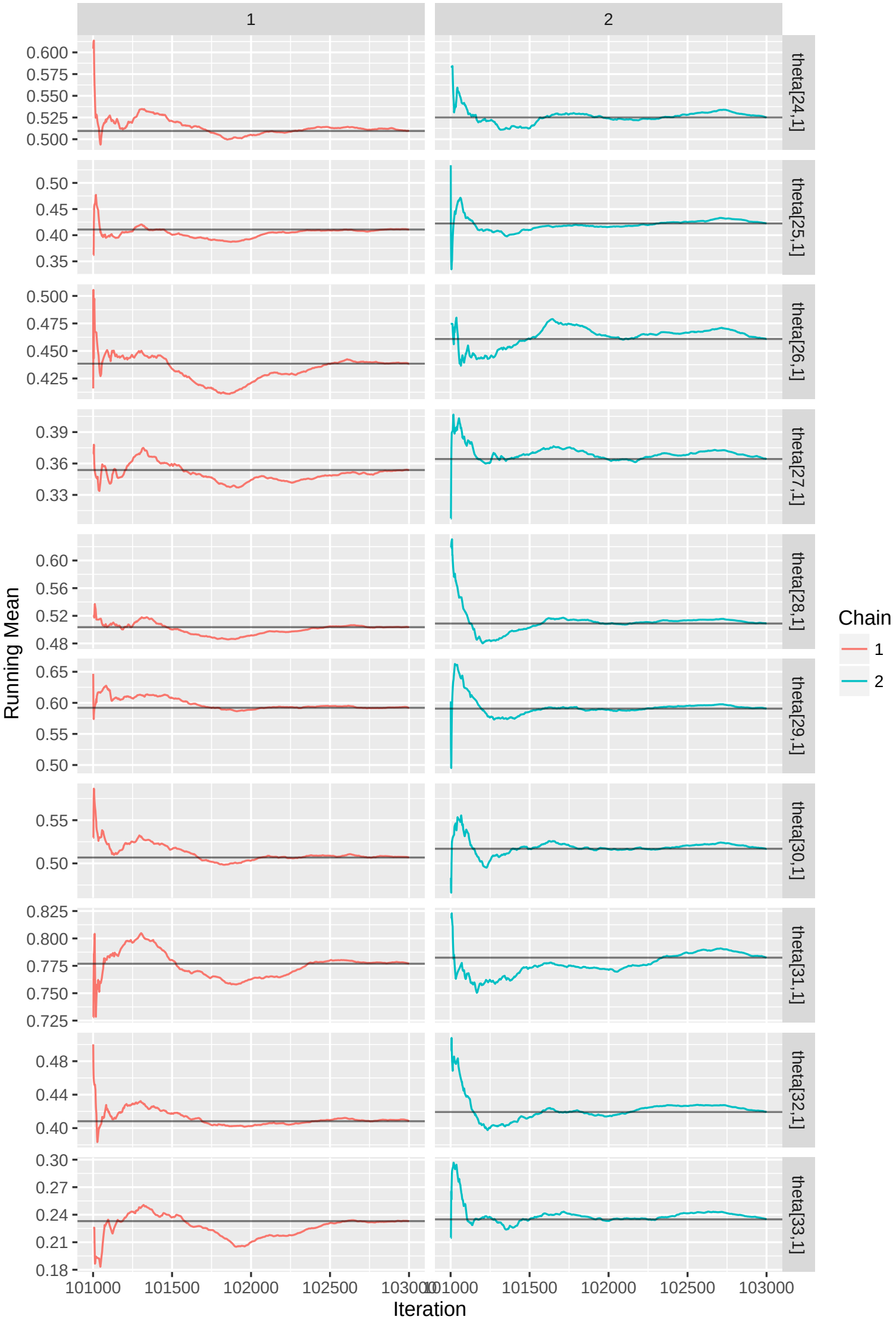

1
2
omega[11,3]
omega[12,3]
omega[13,3]
omega[14,3]
omega[15,3]
omega[16,3]
omega[17,3]
sigma[1]
sigma[2]
sigma[3]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

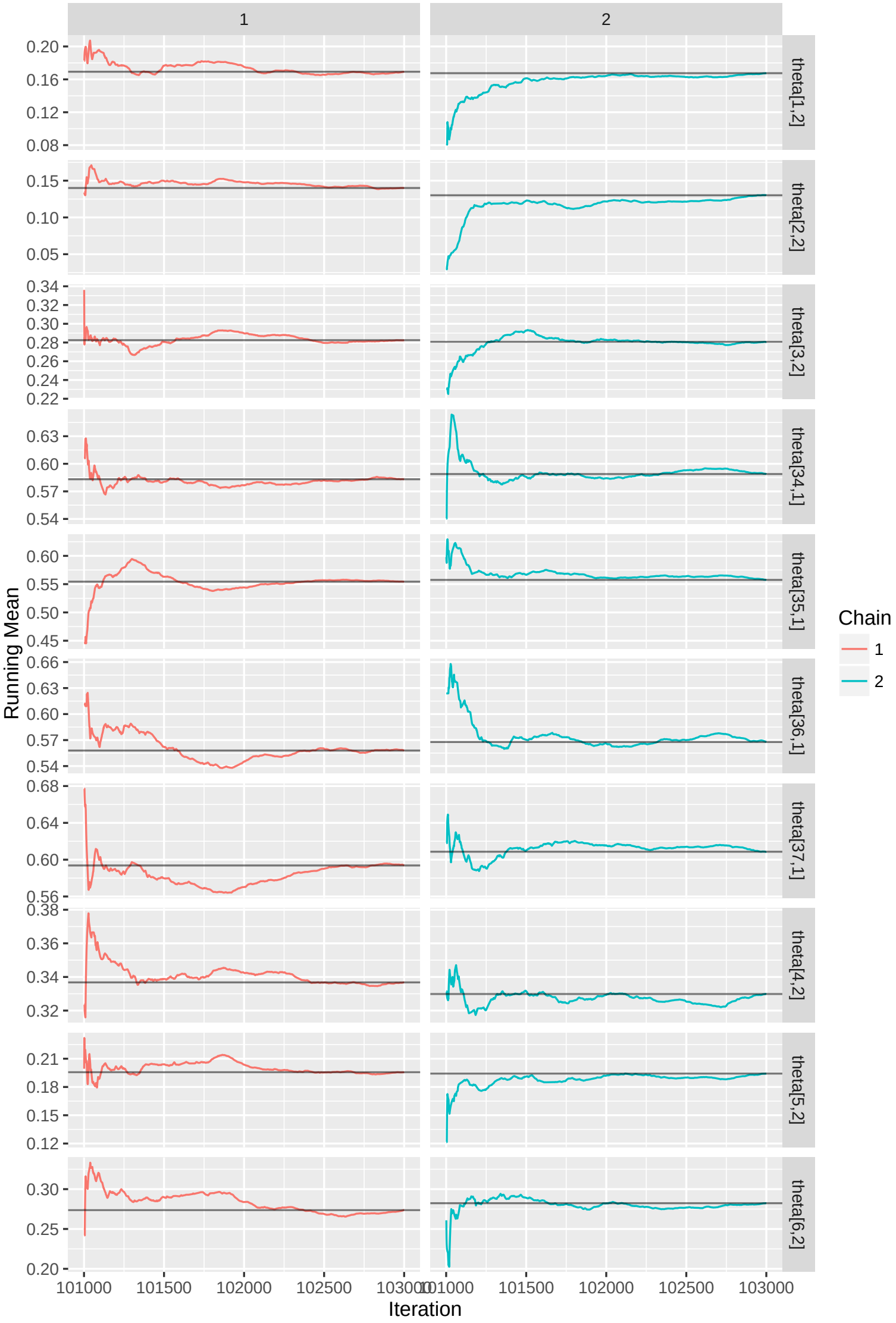

1
2
sigma.omega[10]
sigma.omega[1]
sigma.omega[2]
sigma.omega[3]
sigma.omega[4]
sigma.omega[5]
sigma.omega[6]
sigma.omega[7]
sigma.omega[8]
sigma.omega[9]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

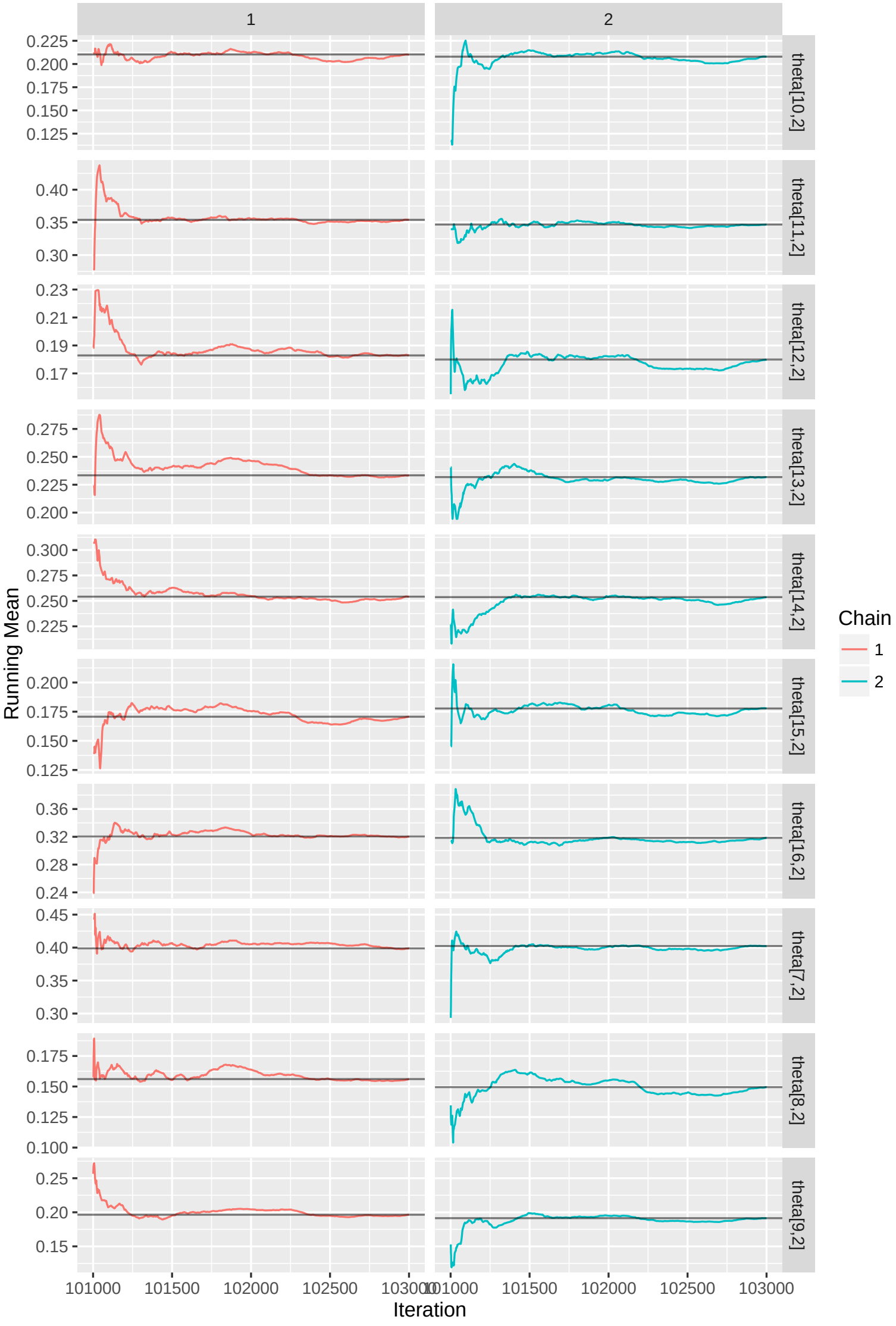

1
2
sigma.omega[11
sigma.omega[12
sigma.omega[13
sigma.omega[14
sigma.omega[15
sigma.omega[16
sigma.omega[17
theta[1,1]
theta[2,1]
theta[3,1]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

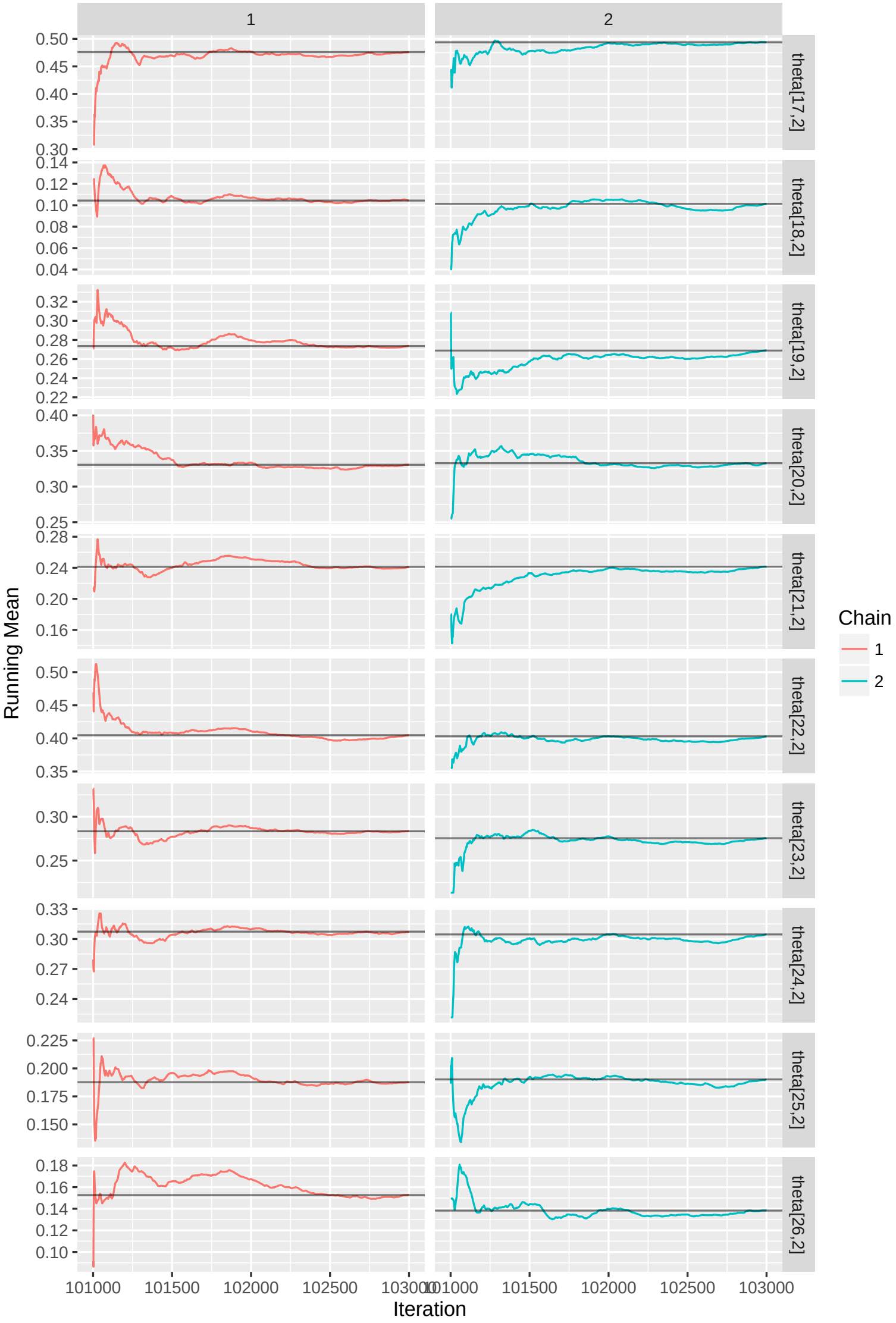

1
2
theta[10,1]
theta[11,1]
theta[12,1]
theta[13,1]
theta[4,1]
theta[5,1]
theta[6,1]
theta[7,1]
theta[8,1]
theta[9,1]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

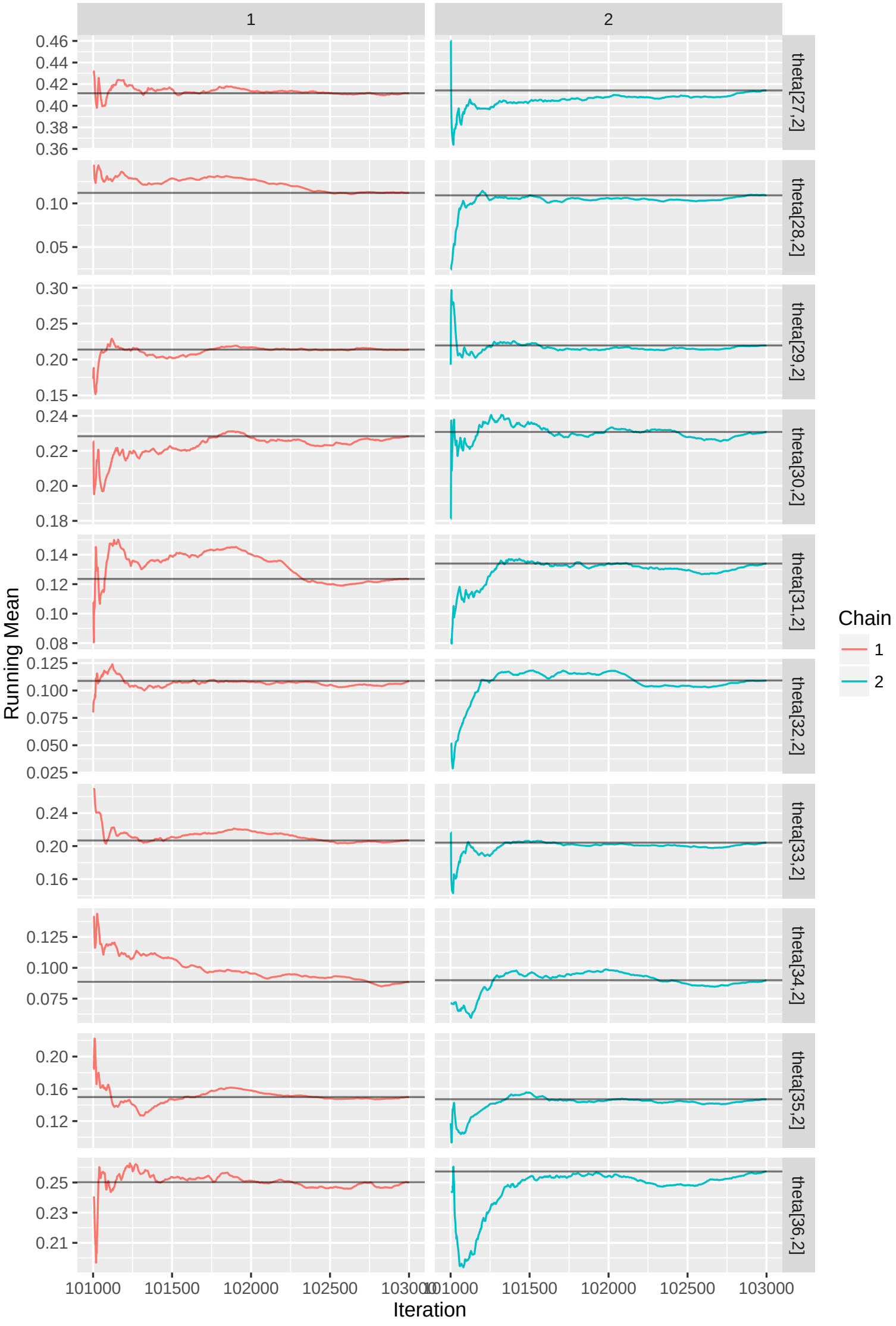

1
2
theta[14,1]
theta[15,1]
theta[16,1]
theta[17,1]
theta[18,1]
theta[19,1]
theta[20,1]
theta[21,1]
theta[22,1]
theta[23,1]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

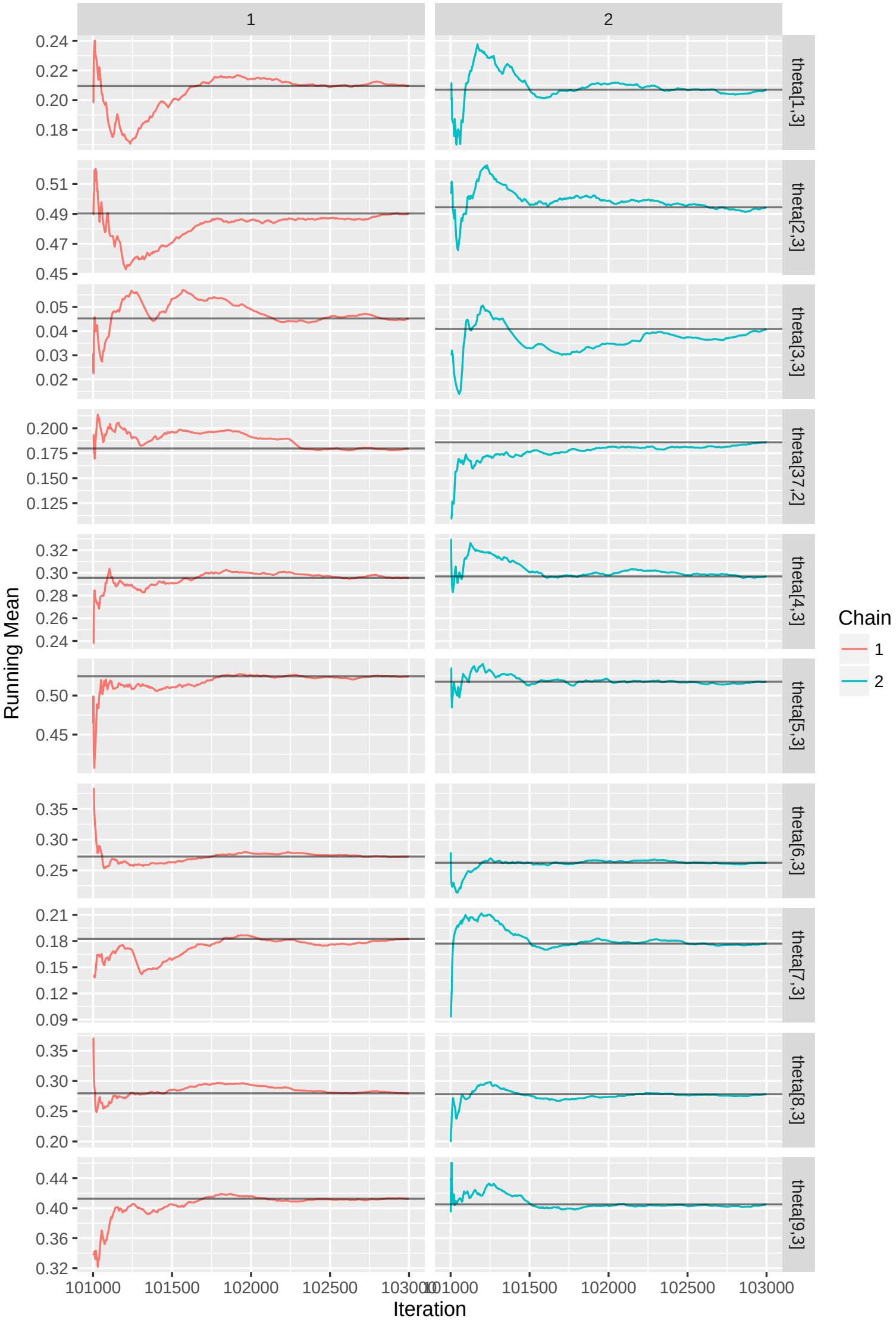

1
2
theta[24,1]
theta[25,1]
theta[26,1]
theta[27,1]
theta[28,1]
theta[29,1]
theta[30,1]
theta[31,1]
theta[32,1]
theta[33,1]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

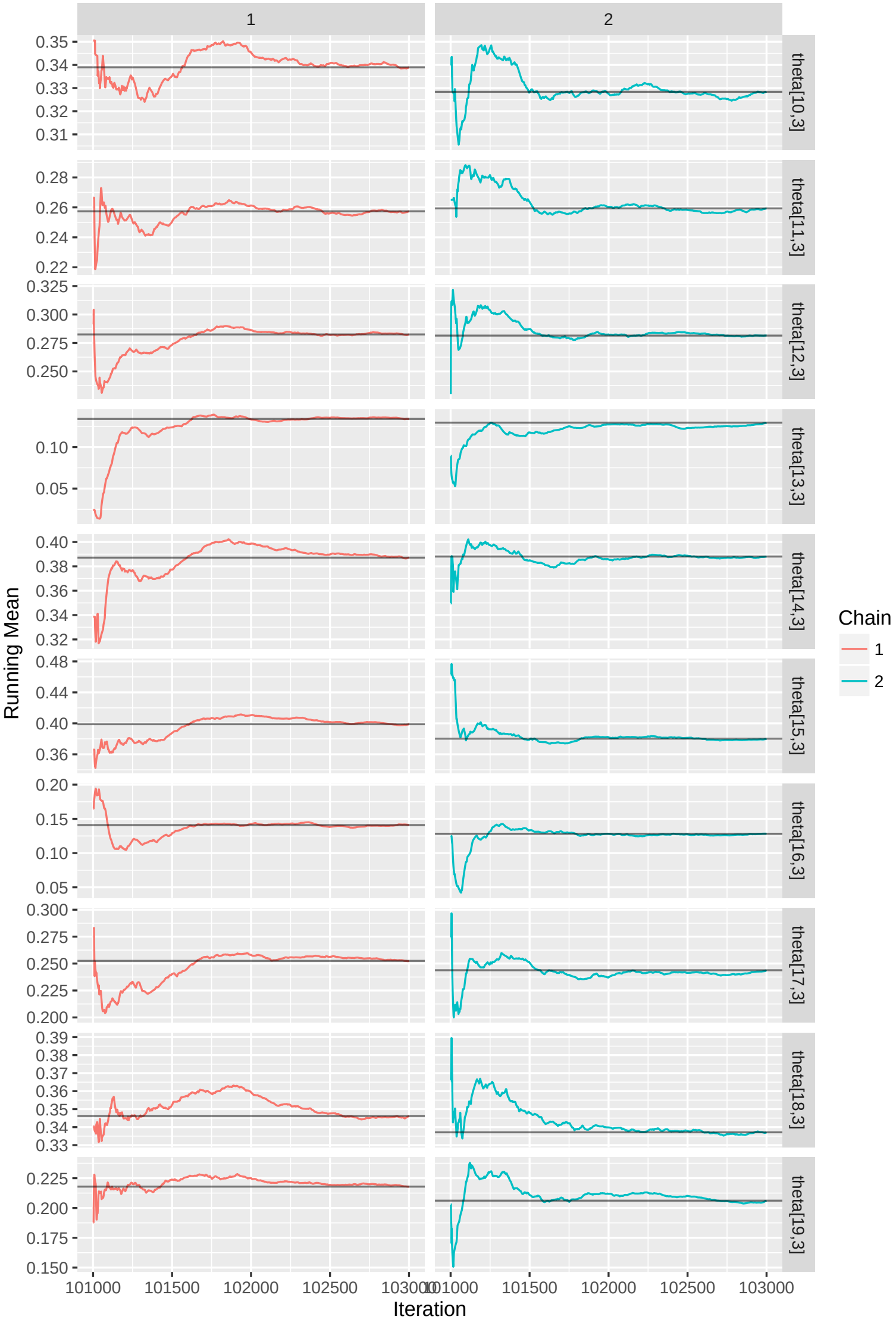

1
2
theta[1,2]
theta[2,2]
theta[3,2]
theta[34,1]
theta[35,1]
theta[36,1]
theta[37,1]
theta[4,2]
theta[5,2]
theta[6,2]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

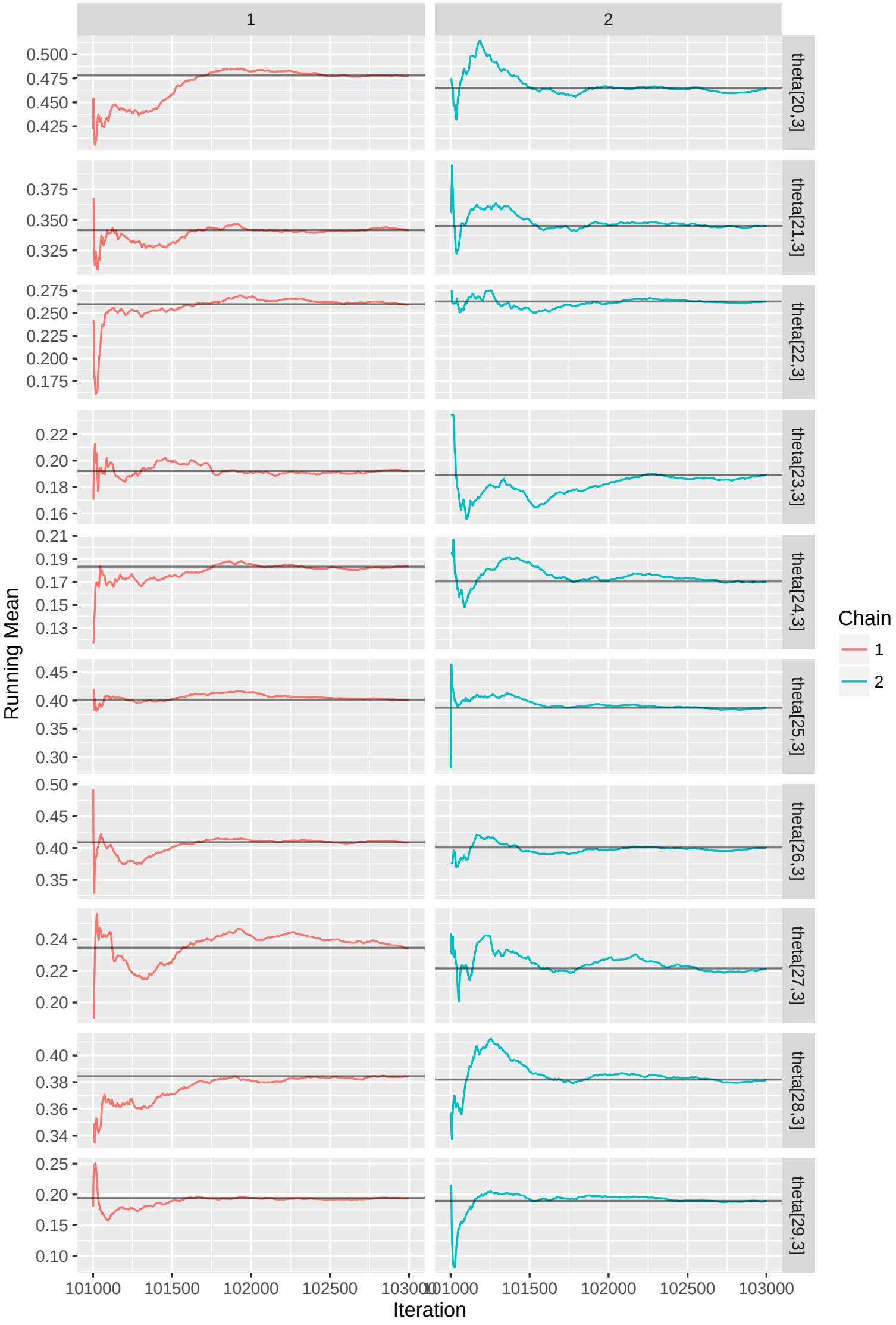

1
2
theta[10,2]
theta[11,2]
theta[12,2]
theta[13,2]
theta[14,2]
theta[15,2]
theta[16,2]
theta[7,2]
theta[8,2]
theta[9,2]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

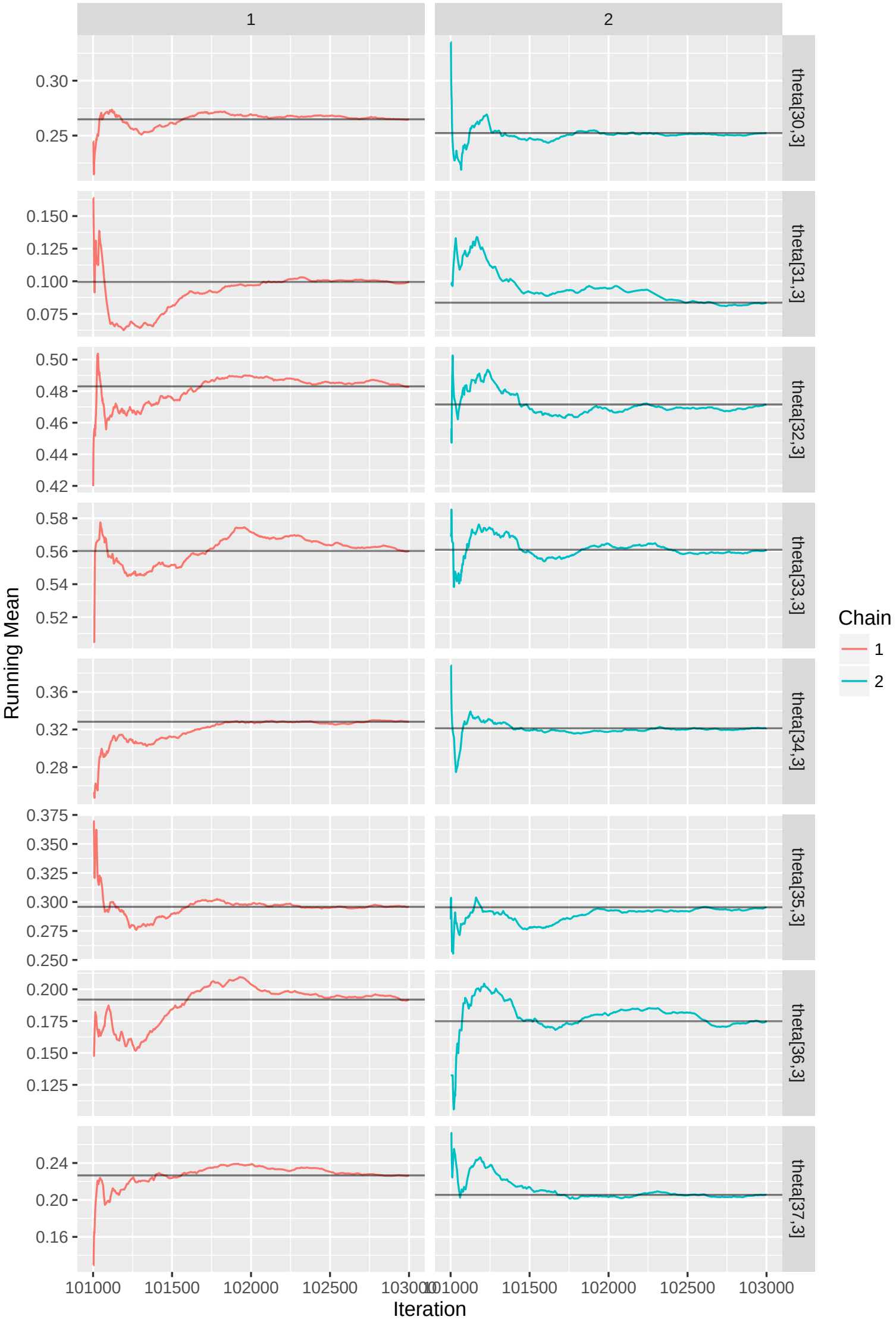

1
2
theta[17,2]
theta[18,2]
theta[19,2]
theta[20,2]
theta[21,2]
theta[22,2]
theta[23,2]
theta[24,2]
theta[25,2]
theta[26,2]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

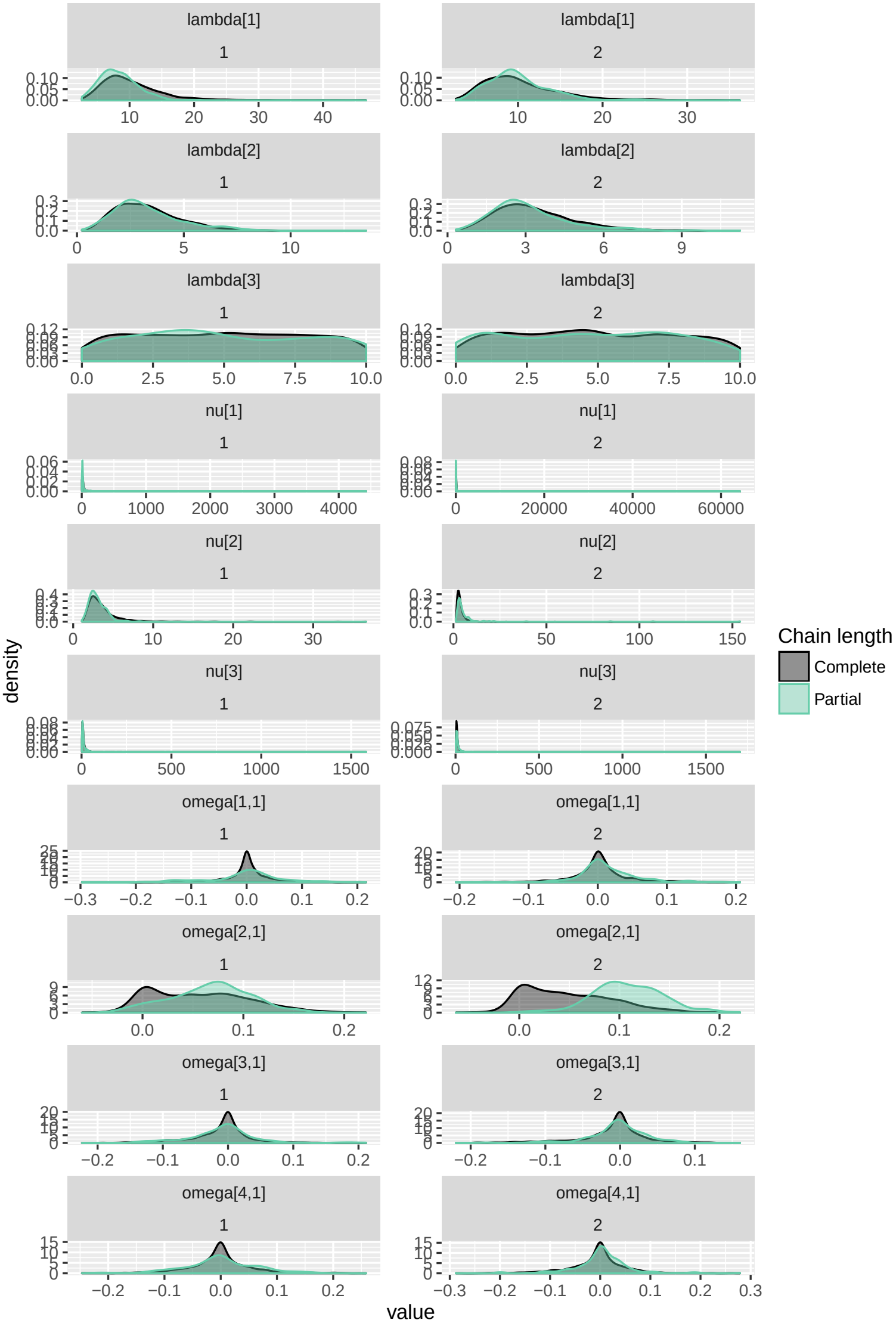

1
2
theta[27,2]
theta[28,2]
theta[29,2]
theta[30,2]
theta[31,2]
theta[32,2]
theta[33,2]
theta[34,2]
theta[35,2]
theta[36,2]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

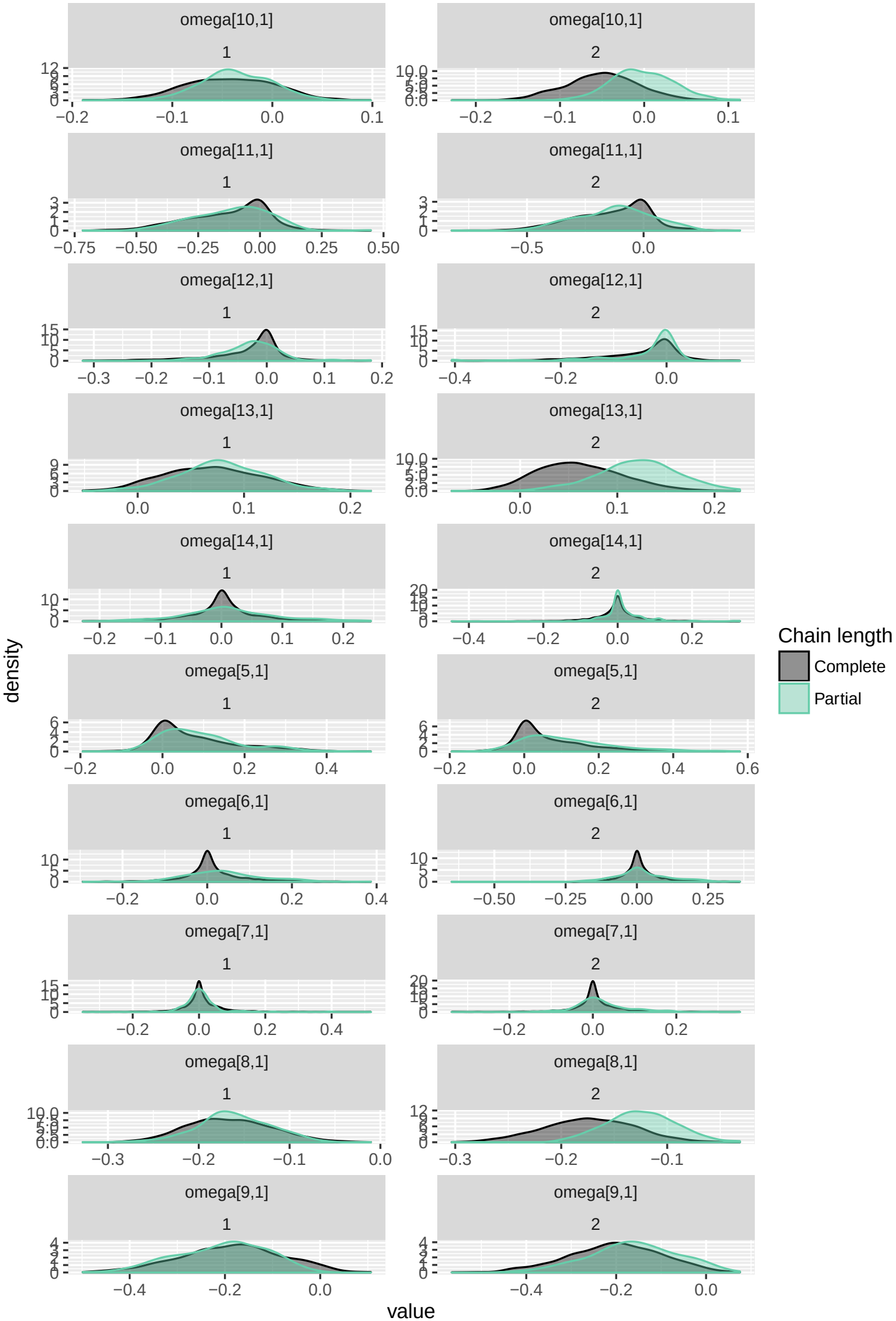

1
2
theta[1,3]
theta[2,3]
theta[3,3]
theta[37,2]
theta[4,3]
theta[5,3]
theta[6,3]
theta[7,3]
theta[8,3]
theta[9,3]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

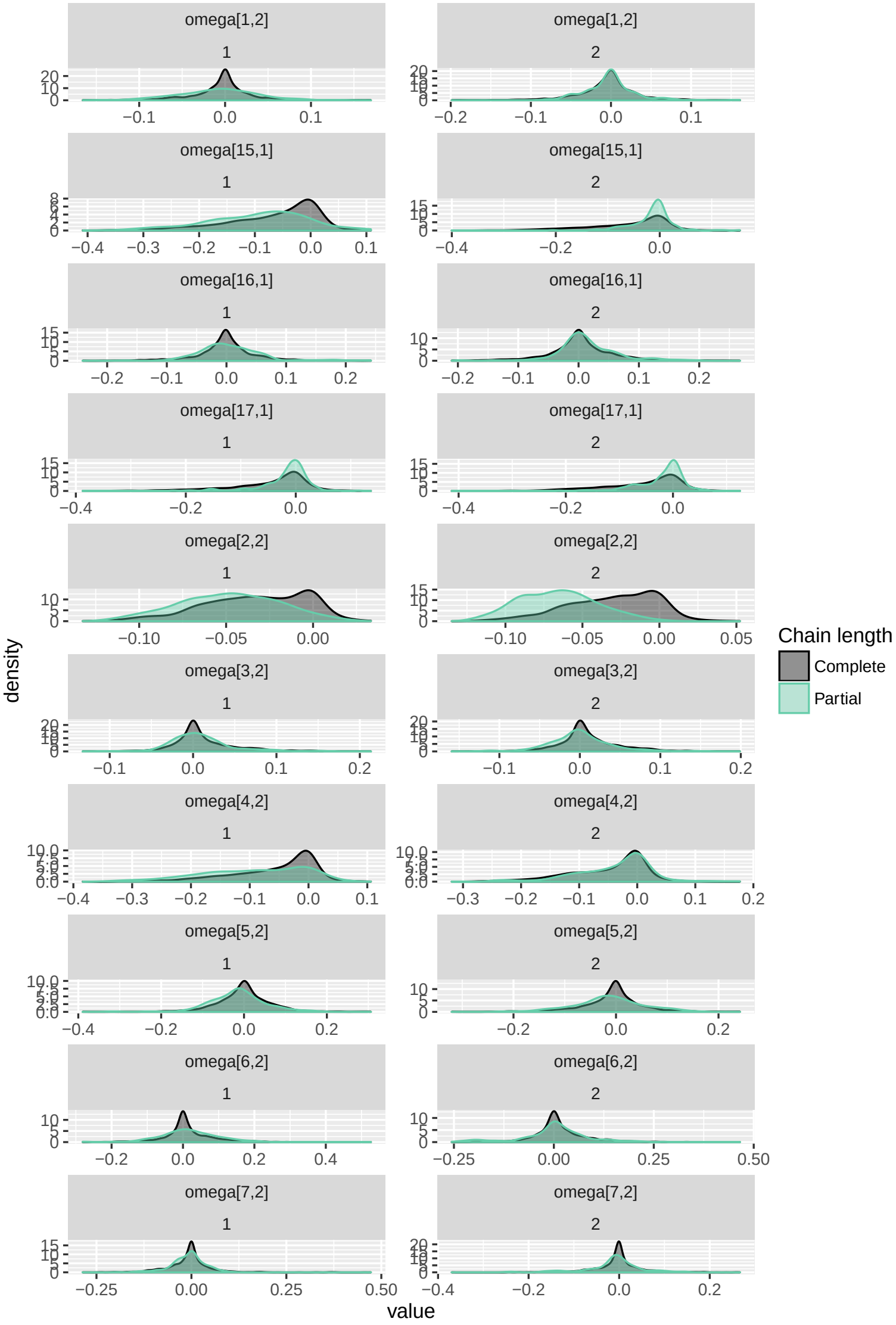

1
2
theta[10,3]
theta[11,3]
theta[12,3]
theta[13,3]
theta[14,3]
theta[15,3]
theta[16,3]
theta[17,3]
theta[18,3]
theta[19,3]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

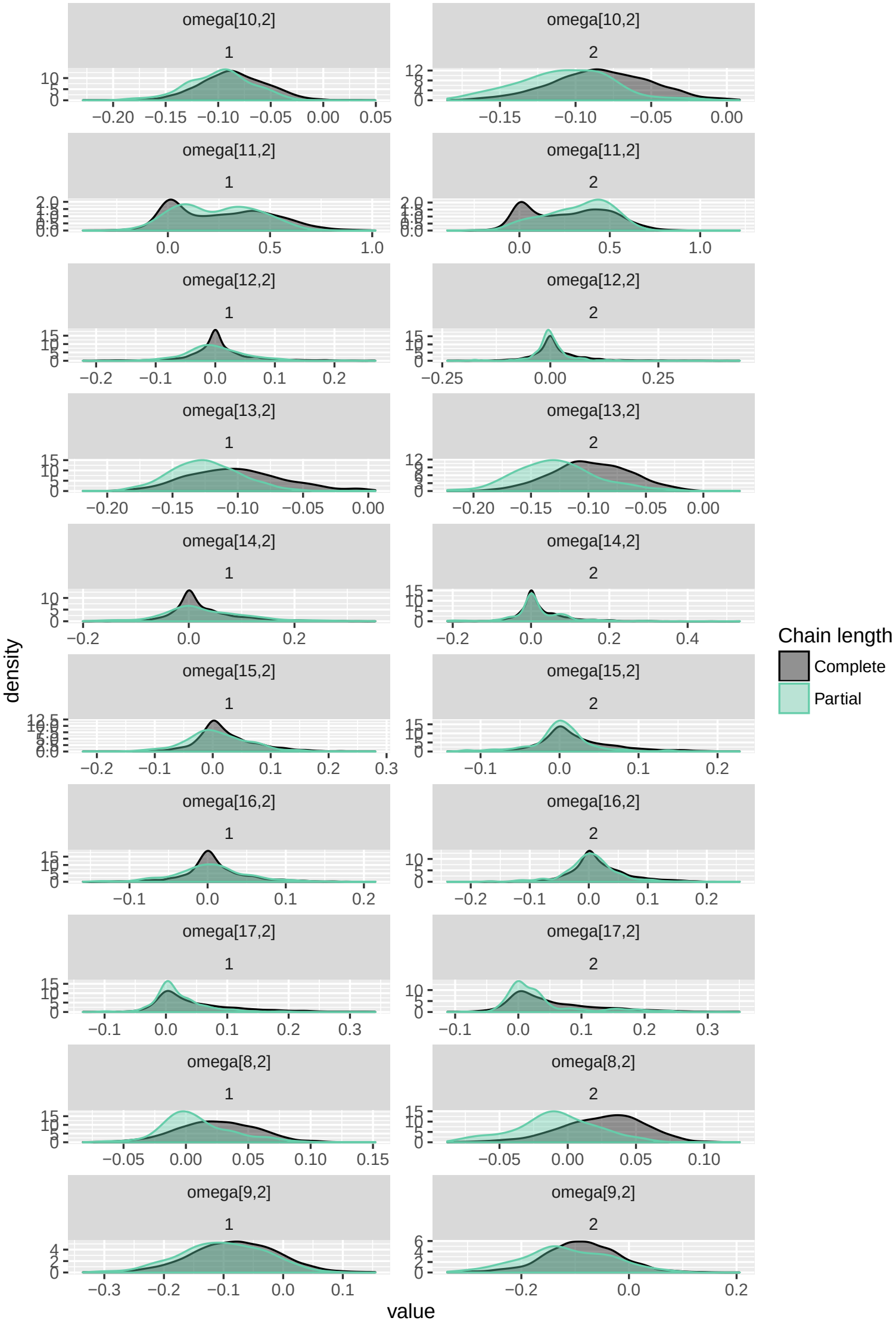

1
2
theta[20,3]
theta[21,3]
theta[22,3]
theta[23,3]
theta[24,3]
theta[25,3]
theta[26,3]
theta[27,3]
theta[28,3]
theta[29,3]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

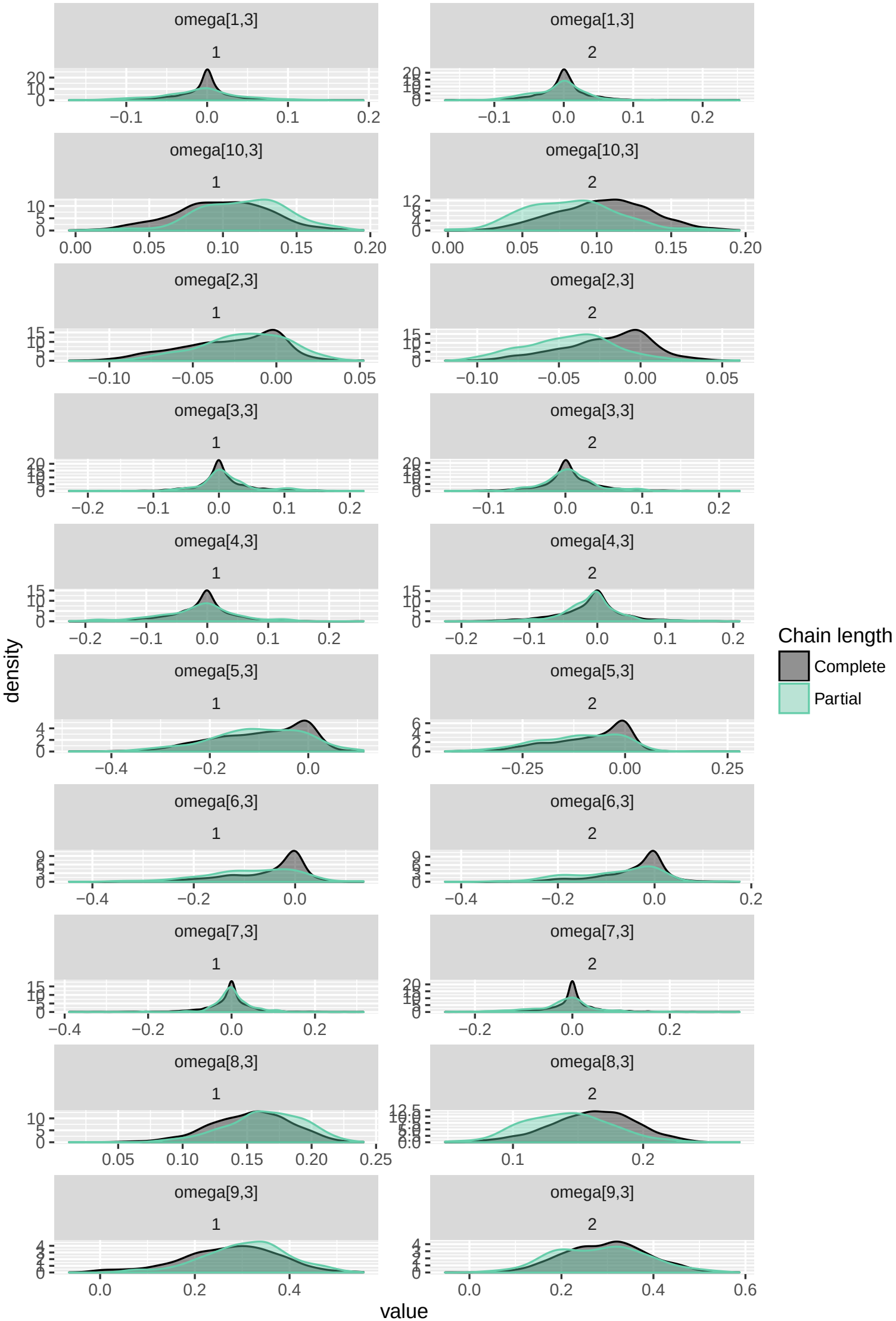

1
2
theta[30,3]
theta[31,3]
theta[32,3]
theta[33,3]
theta[34,3]
theta[35,3]
theta[36,3]
theta[37,3]
Running Mean
Iteration
101000
101500
102000
102500
103000
Chain
1
2

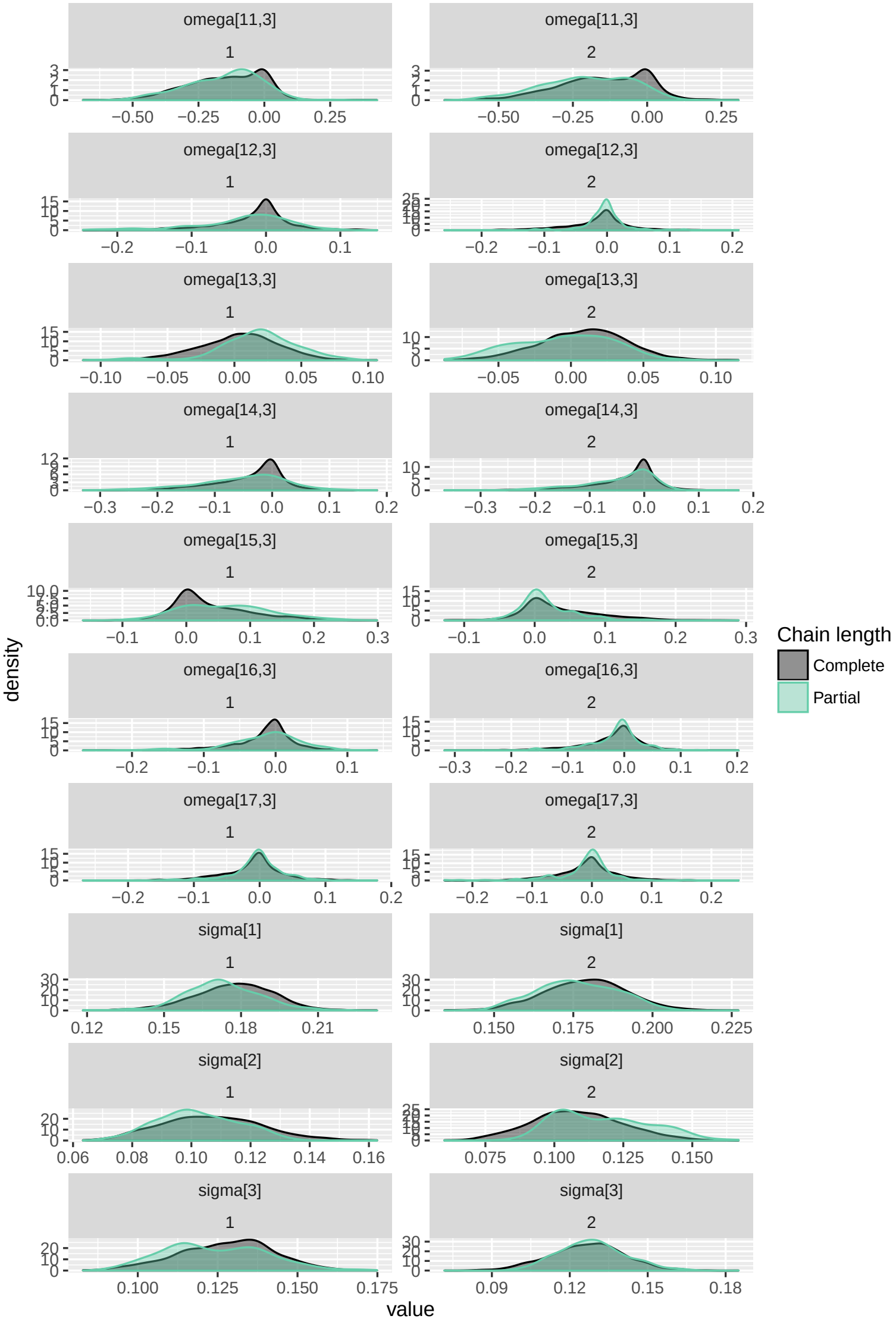

lambda[1]
1
lambda[1]
2
lambda[2]
1
lambda[2]
2
lambda[3]
1
lambda[3]
2
nu[1]
1
nu[1]
2
nu[2]
1
nu[2]
2
nu[3]
1
nu[3]
2
omega[1,1]
1
omega[1,1]
2
omega[2,1]
1
omega[2,1]
2
omega[3,1]
1
omega[3,1]
2
omega[4,1]
1
omega[4,1]
2
density
value
Chain length
Complete
Partial

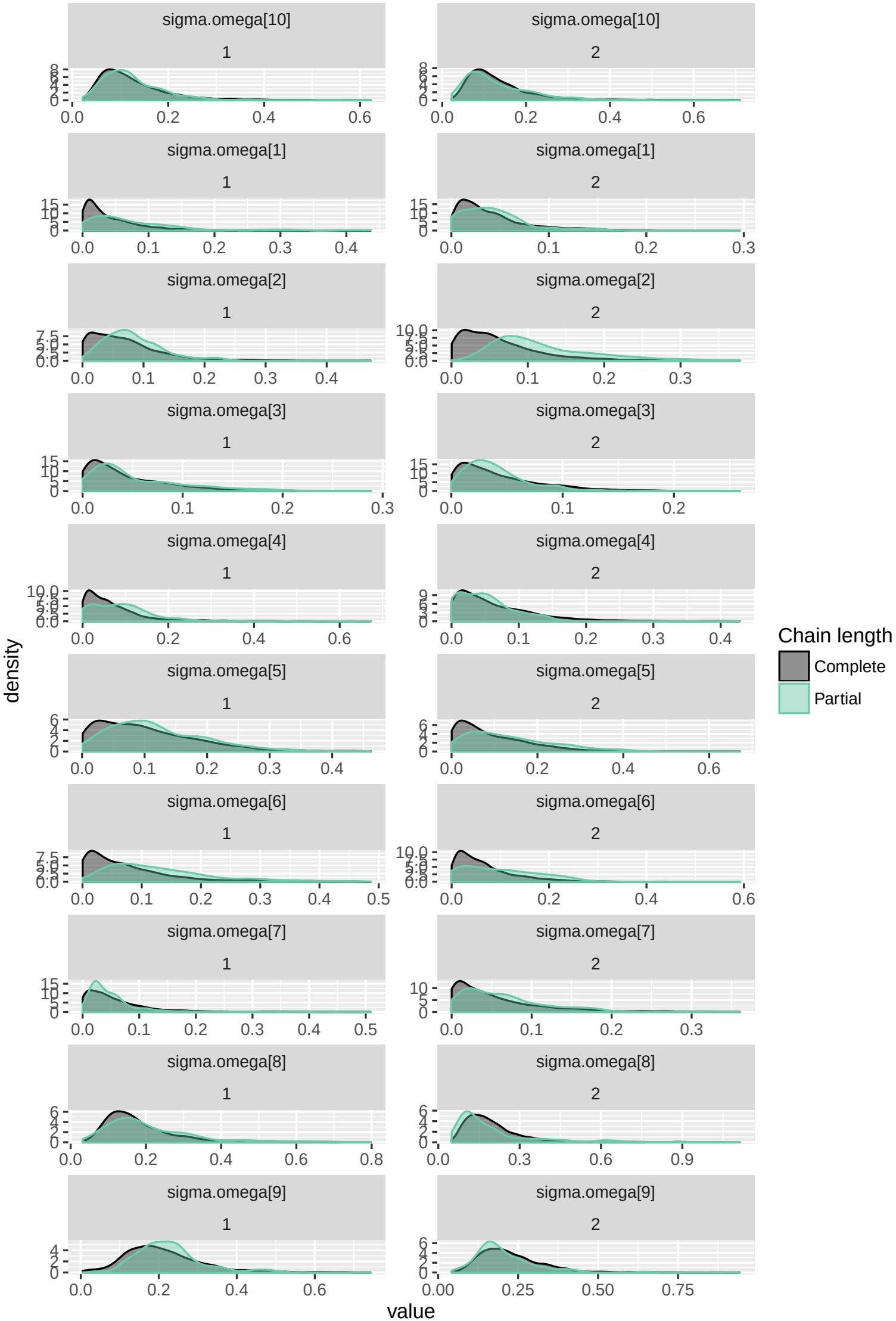

omega[10,1]
1
omega[10,1]
2
omega[11,1]
1
omega[11,1]
2
omega[12,1]
1
omega[12,1]
2
omega[13,1]
1
omega[13,1]
2
omega[14,1]
1
omega[14,1]
2
omega[5,1]
1
omega[5,1]
2
omega[6,1]
1
omega[6,1]
2
omega[7,1]
1
omega[7,1]
2
omega[8,1]
1
omega[8,1]
2
omega[9,1]
1
omega[9,1]
2
density
value
Chain length
Complete
Partial

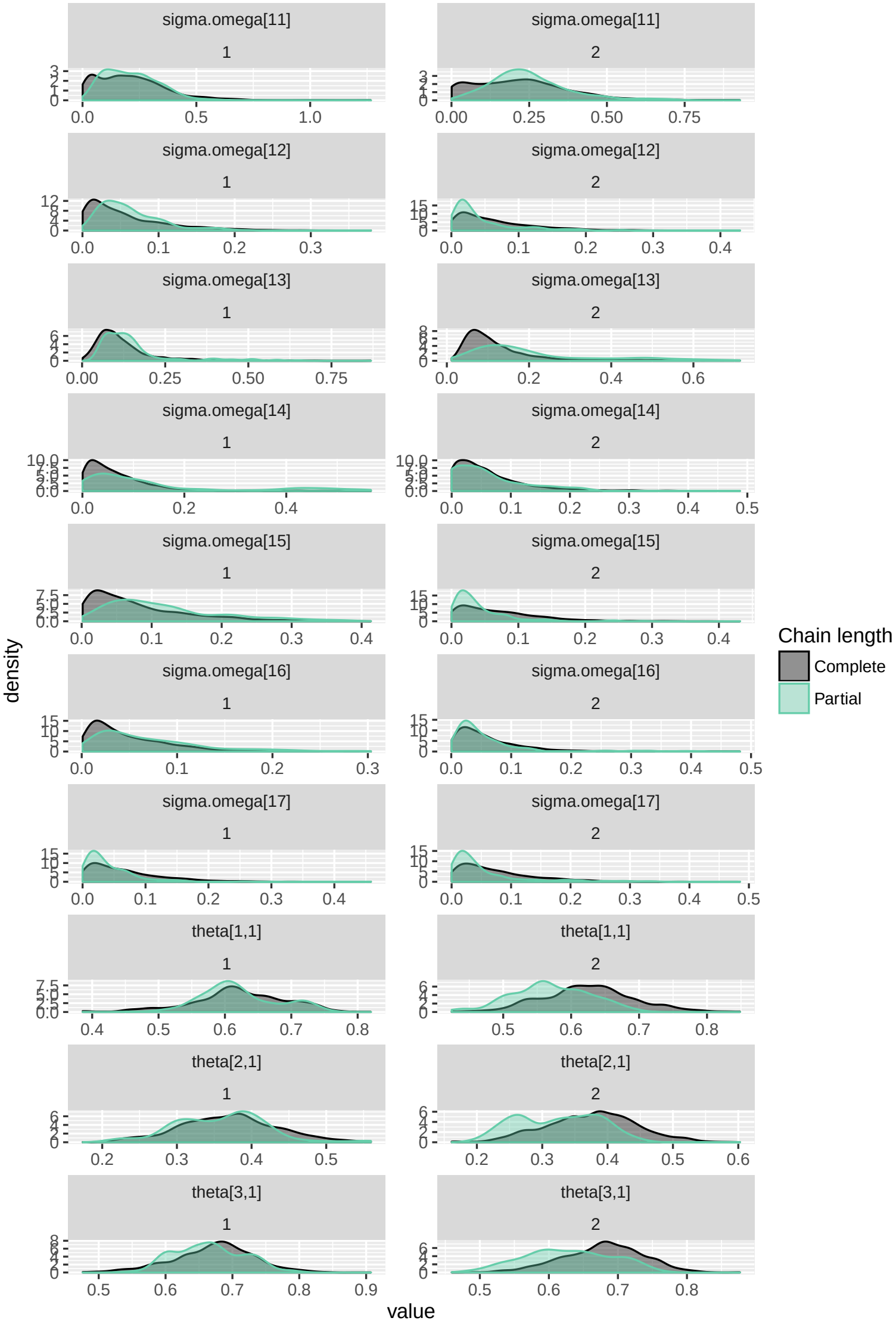

omega[1,2]
1
omega[1,2]
2
omega[15,1]
1
omega[15,1]
2
omega[16,1]
1
omega[16,1]
2
omega[17,1]
1
omega[17,1]
2
omega[2,2]
1
omega[2,2]
2
omega[3,2]
1
omega[3,2]
2
omega[4,2]
1
omega[4,2]
2
omega[5,2]
1
omega[5,2]
2
omega[6,2]
1
omega[6,2]
2
omega[7,2]
1
omega[7,2]
2
density
value
Chain length
Complete
Partial

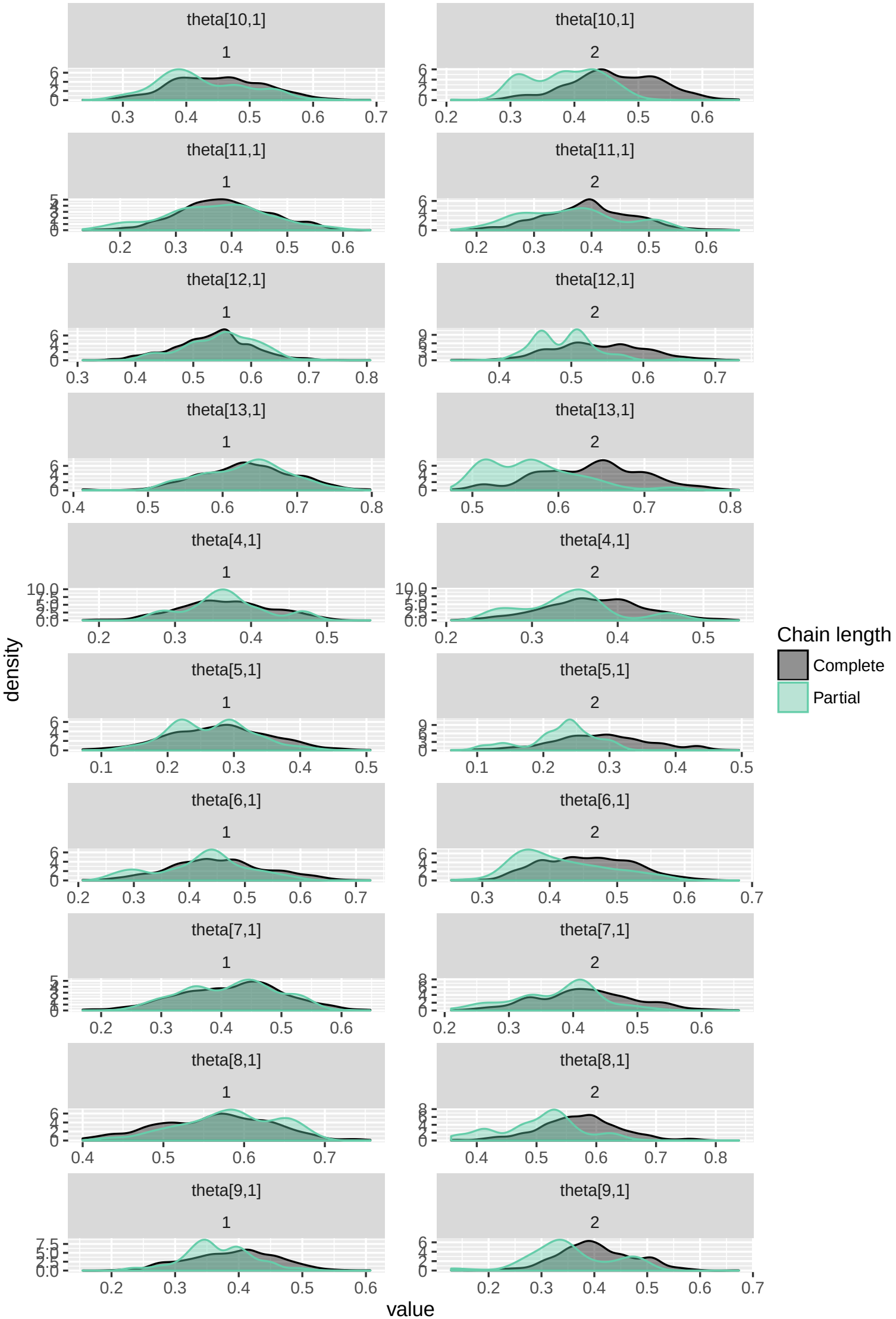

omega[10,2]
1
omega[10,2]
2
omega[11,2]
1
omega[11,2]
2
omega[12,2]
1
omega[12,2]
2
omega[13,2]
1
omega[13,2]
2
omega[14,2]
1
omega[14,2]
2
omega[15,2]
1
omega[15,2]
2
omega[16,2]
1
omega[16,2]
2
omega[17,2]
1
omega[17,2]
2
omega[8,2]
1
omega[8,2]
2
omega[9,2]
1
omega[9,2]
2
density
value
Chain length
Complete
Partial

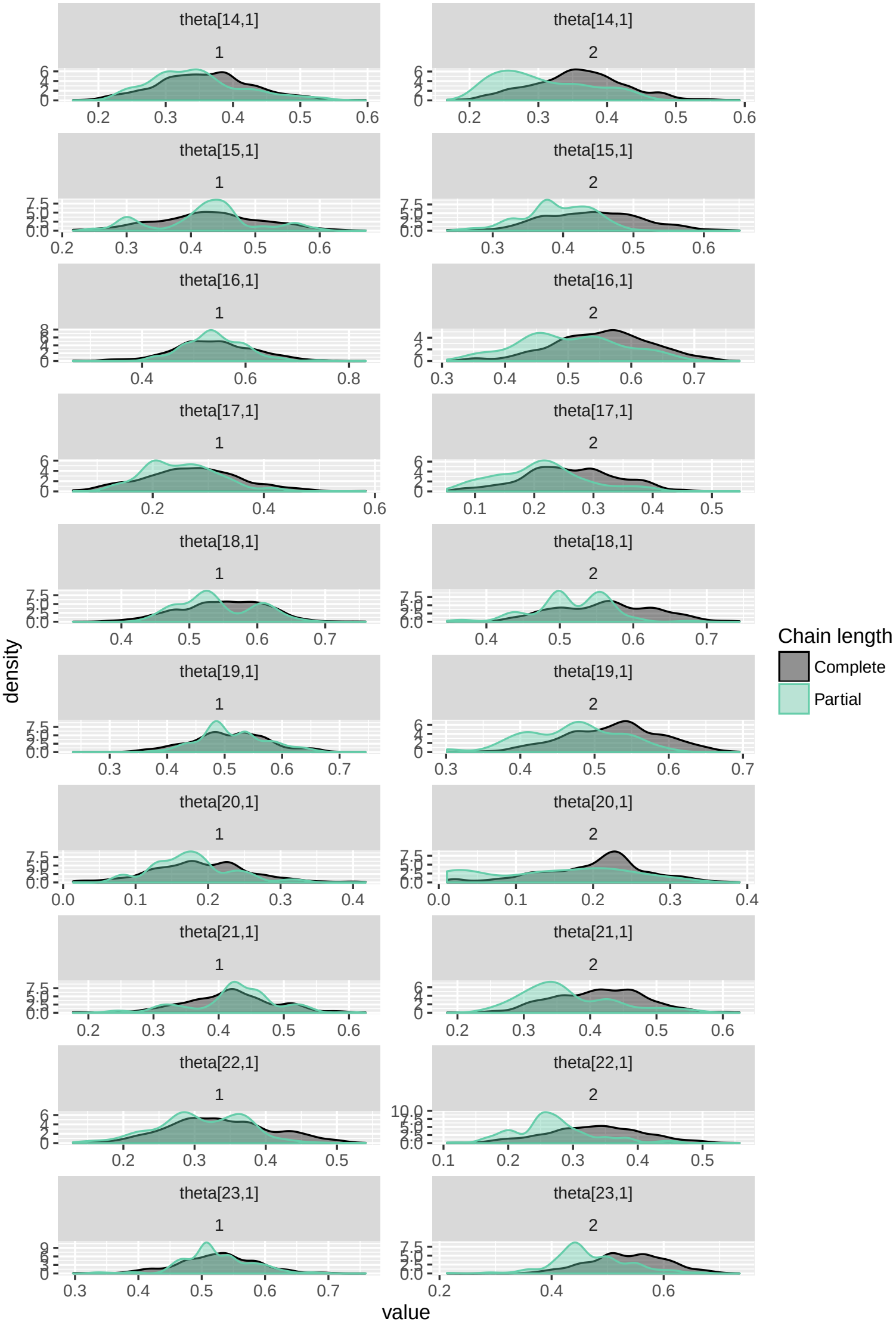

omega[1,3]
1
omega[1,3]
2
omega[10,3]
1
omega[10,3]
2
omega[2,3]
1
omega[2,3]
2
omega[3,3]
1
omega[3,3]
2
omega[4,3]
1
omega[4,3]
2
omega[5,3]
1
omega[5,3]
2
omega[6,3]
1
omega[6,3]
2
omega[7,3]
1
omega[7,3]
2
omega[8,3]
1
omega[8,3]
2
omega[9,3]
1
omega[9,3]
2
density
value
Chain length
Complete
Partial

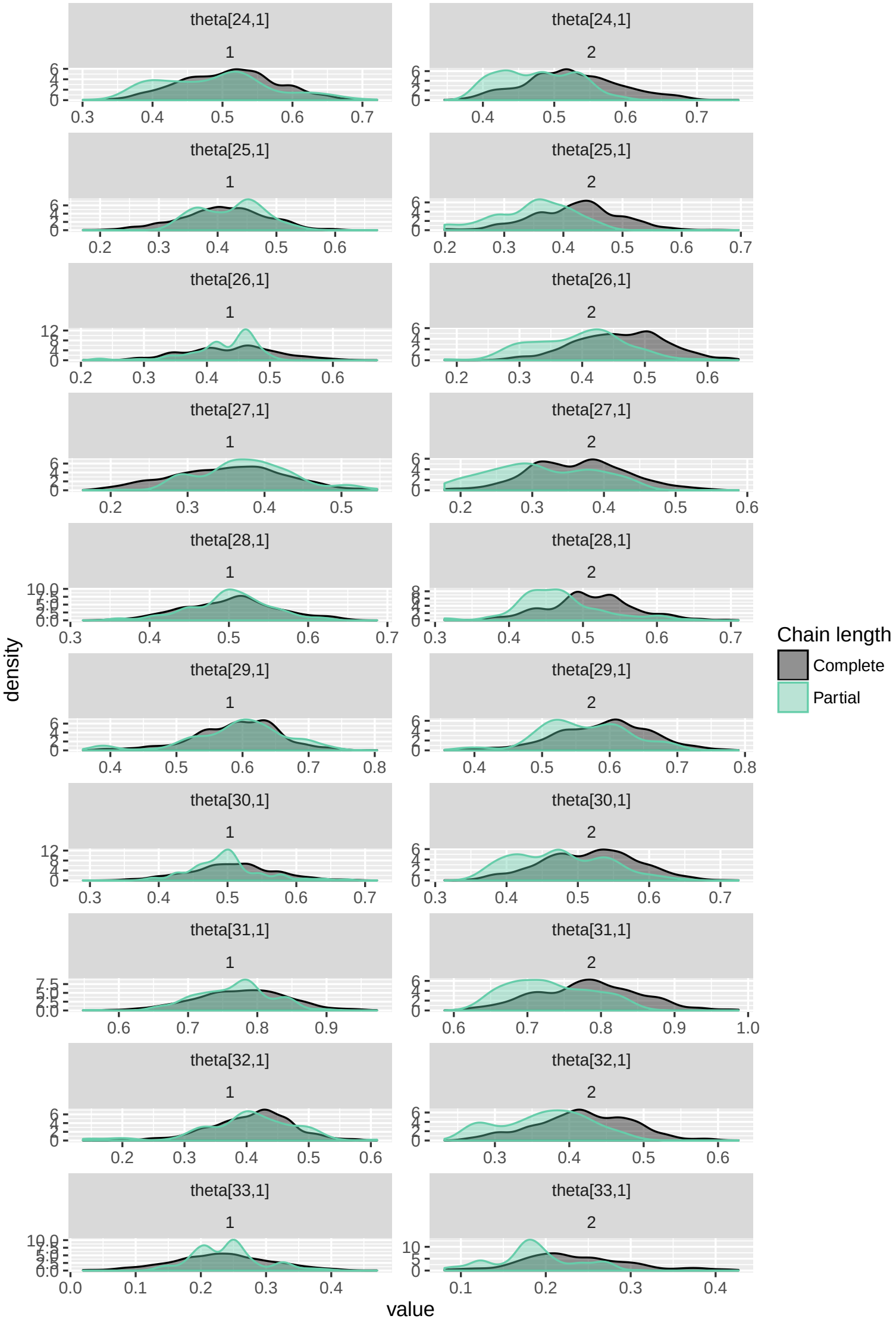

omega[11,3]
1
omega[11,3]
2
omega[12,3]
1
omega[12,3]
2
omega[13,3]
1
omega[13,3]
2
omega[14,3]
1
omega[14,3]
2
omega[15,3]
1
omega[15,3]
2
omega[16,3]
1
omega[16,3]
2
omega[17,3]
1
omega[17,3]
2
sigma[1]
1
sigma[1]
2
sigma[2]
1
sigma[2]
2
sigma[3]
1
sigma[3]
2
density
value
Chain length
Complete
Partial

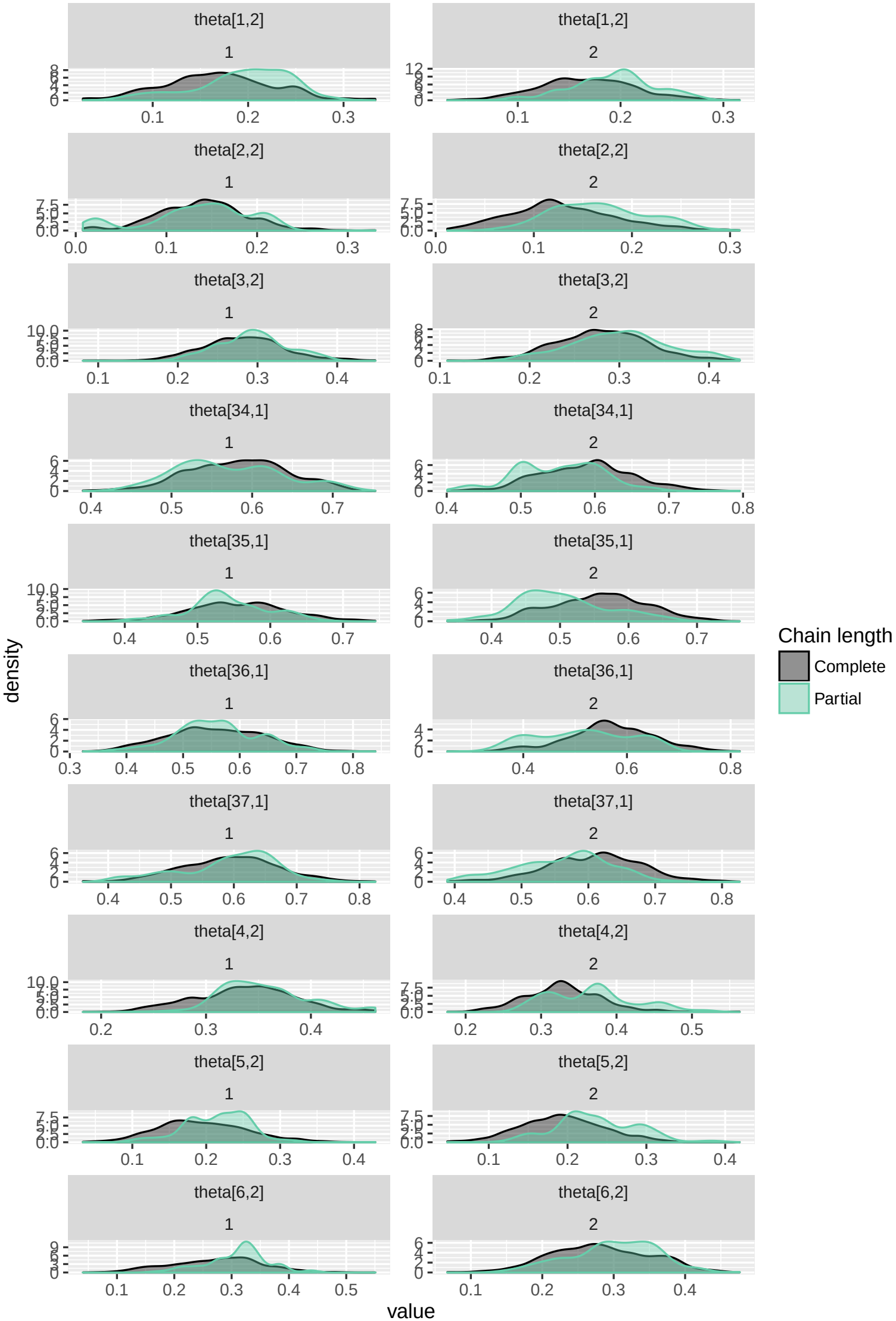

sigma.omega[10]
1
sigma.omega[10]
2
sigma.omega[1]
1
sigma.omega[1]
2
sigma.omega[2]
1
sigma.omega[2]
2
sigma.omega[3]
1
sigma.omega[3]
2
sigma.omega[4]
1
sigma.omega[4]
2
sigma.omega[5]
1
sigma.omega[5]
2
sigma.omega[6]
1
sigma.omega[6]
2
sigma.omega[7]
1
sigma.omega[7]
2
sigma.omega[8]
1
sigma.omega[8]
2
sigma.omega[9]
1
sigma.omega[9]
2
density
value
Chain length
Complete
Partial

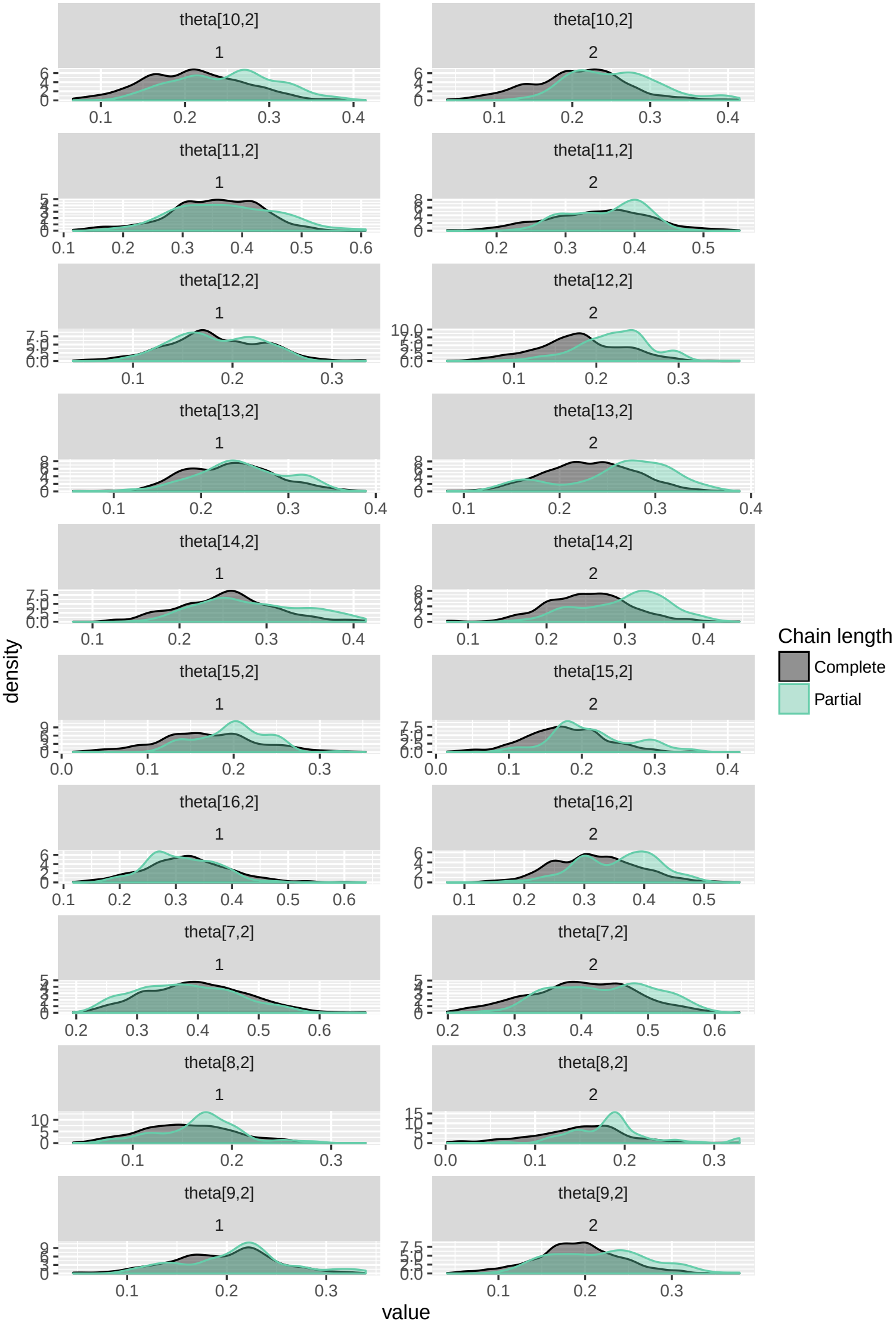

sigma.omega[11]
1
sigma.omega[11]
2
sigma.omega[12]
1
sigma.omega[12]
2
sigma.omega[13]
1
sigma.omega[13]
2
sigma.omega[14]
1
sigma.omega[14]
2
sigma.omega[15]
1
sigma.omega[15]
2
sigma.omega[16]
1
sigma.omega[16]
2
sigma.omega[17]
1
sigma.omega[17]
2
theta[1,1]
1
theta[1,1]
2
theta[2,1]
1
theta[2,1]
2
theta[3,1]
1
theta[3,1]
2
density
value
Chain length
Complete
Partial

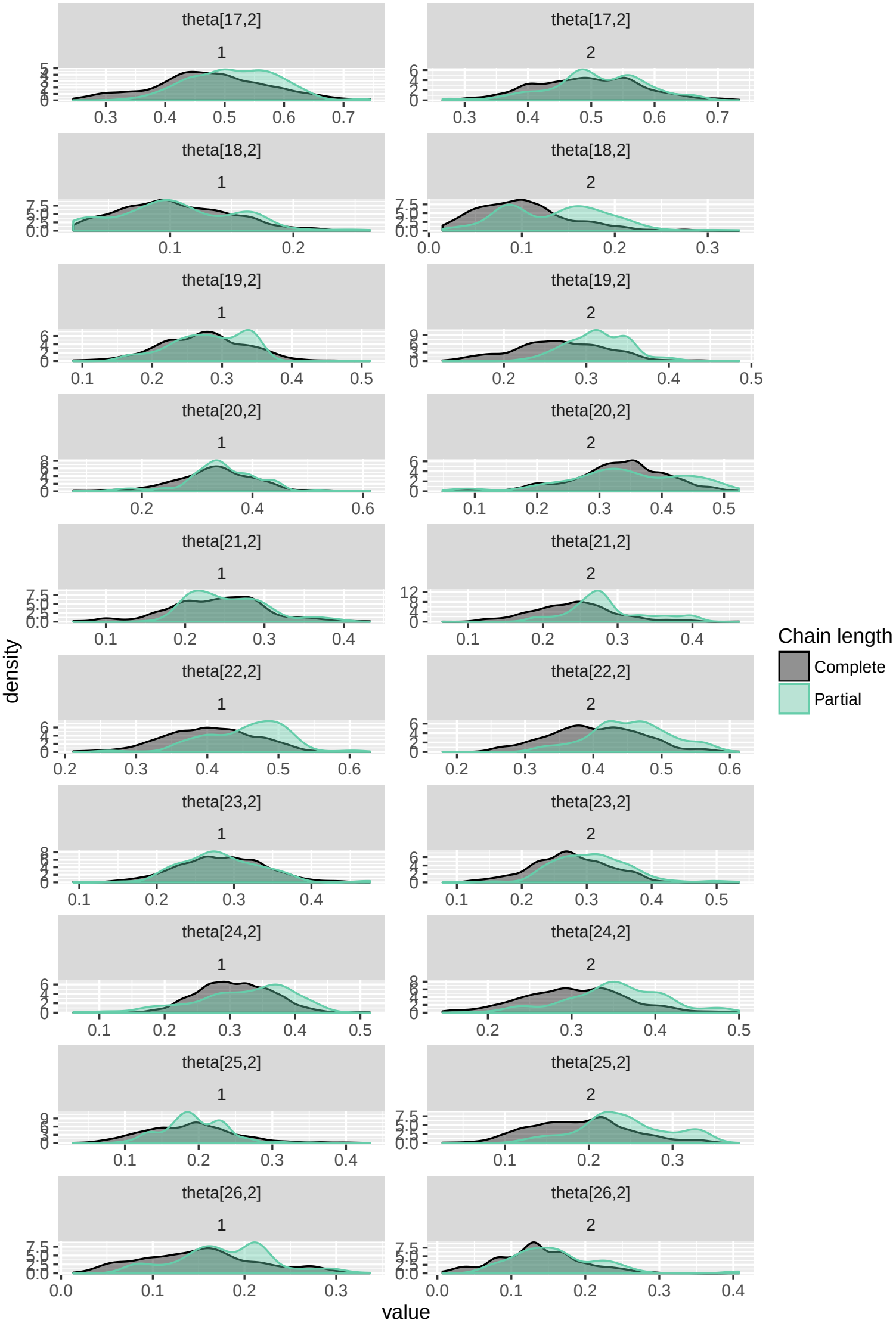

theta[10,1]
1
theta[10,1]
2
theta[11,1]
1
theta[11,1]
2
theta[12,1]
1
theta[12,1]
2
theta[13,1]
1
theta[13,1]
2
theta[4,1]
1
theta[4,1]
2
theta[5,1]
1
theta[5,1]
2
theta[6,1]
1
theta[6,1]
2
theta[7,1]
1
theta[7,1]
2
theta[8,1]
1
theta[8,1]
2
theta[9,1]
1
theta[9,1]
2
density
value
Chain length
Complete
Partial

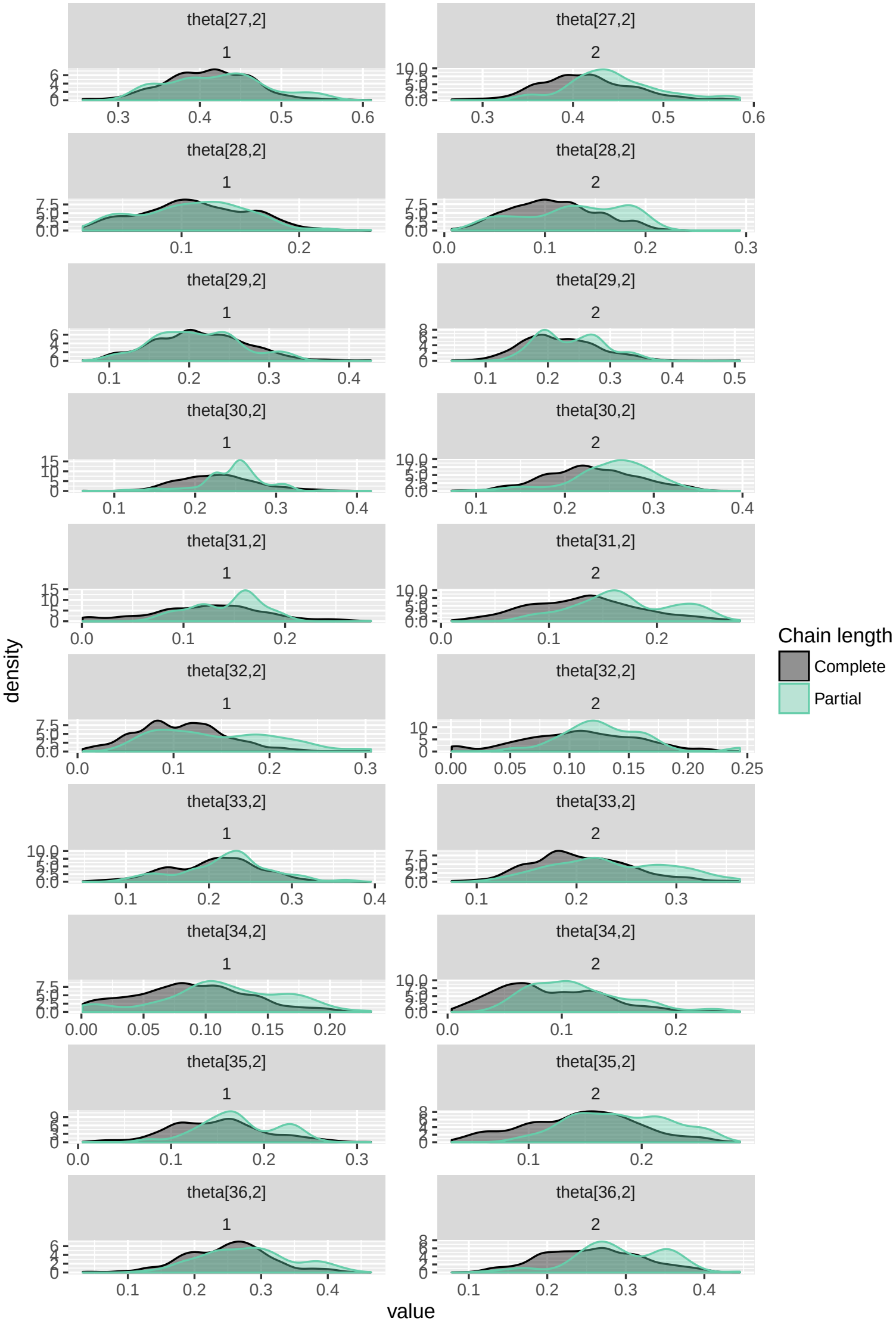

theta[14,1]
1
theta[14,1]
2
theta[15,1]
1
theta[15,1]
2
theta[16,1]
1
theta[16,1]
2
theta[17,1]
1
theta[17,1]
2
theta[18,1]
1
theta[18,1]
2
theta[19,1]
1
theta[19,1]
2
theta[20,1]
1
theta[20,1]
2
theta[21,1]
1
theta[21,1]
2
theta[22,1]
1
theta[22,1]
2
theta[23,1]
1
theta[23,1]
2
density
value
Chain length
Complete
Partial

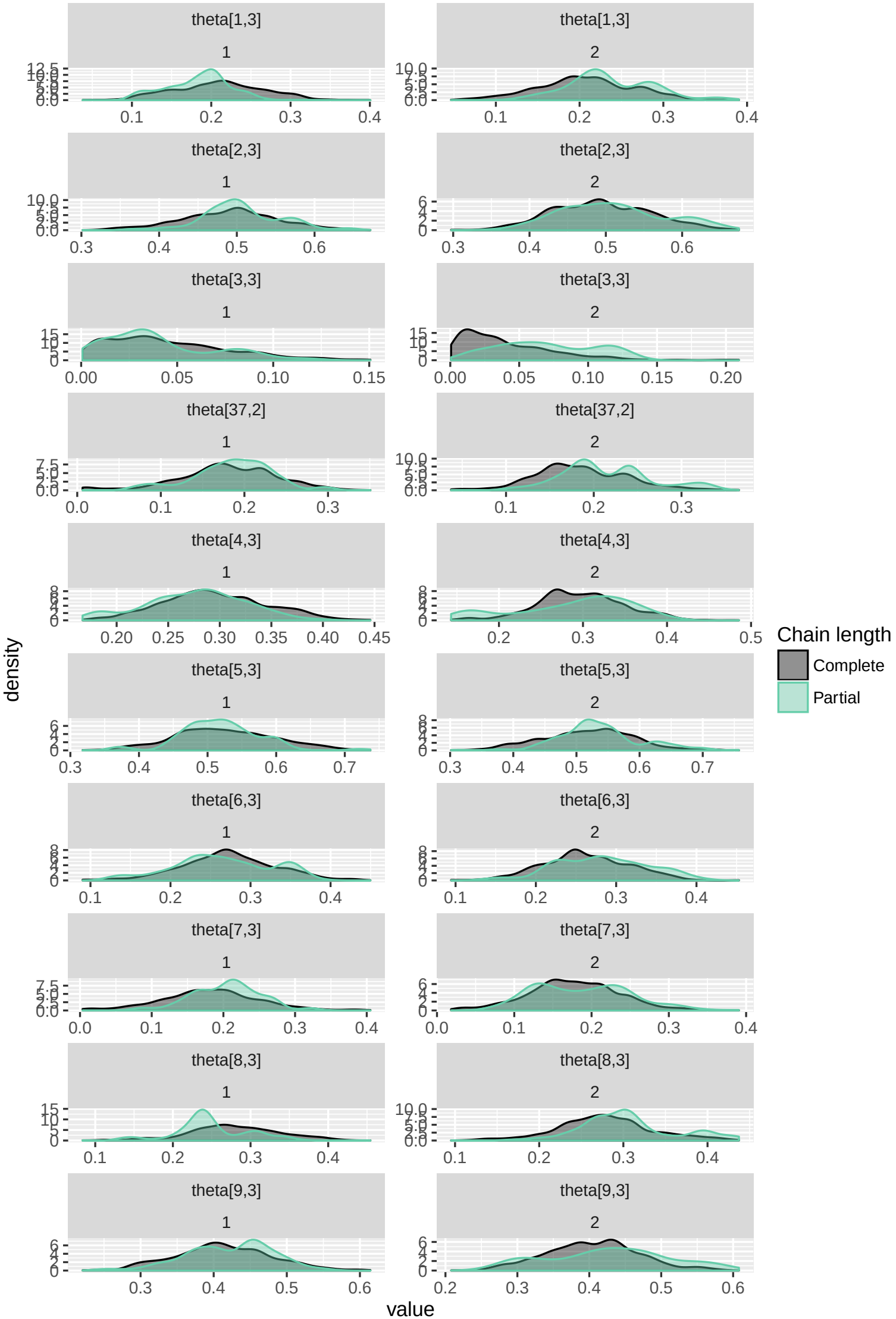

theta[24,1]
1
theta[24,1]
2
theta[25,1]
1
theta[25,1]
2
theta[26,1]
1
theta[26,1]
2
theta[27,1]
1
theta[27,1]
2
theta[28,1]
1
theta[28,1]
2
theta[29,1]
1
theta[29,1]
2
theta[30,1]
1
theta[30,1]
2
theta[31,1]
1
theta[31,1]
2
theta[32,1]
1
theta[32,1]
2
theta[33,1]
1
theta[33,1]
2
density
value
Chain length
Complete
Partial

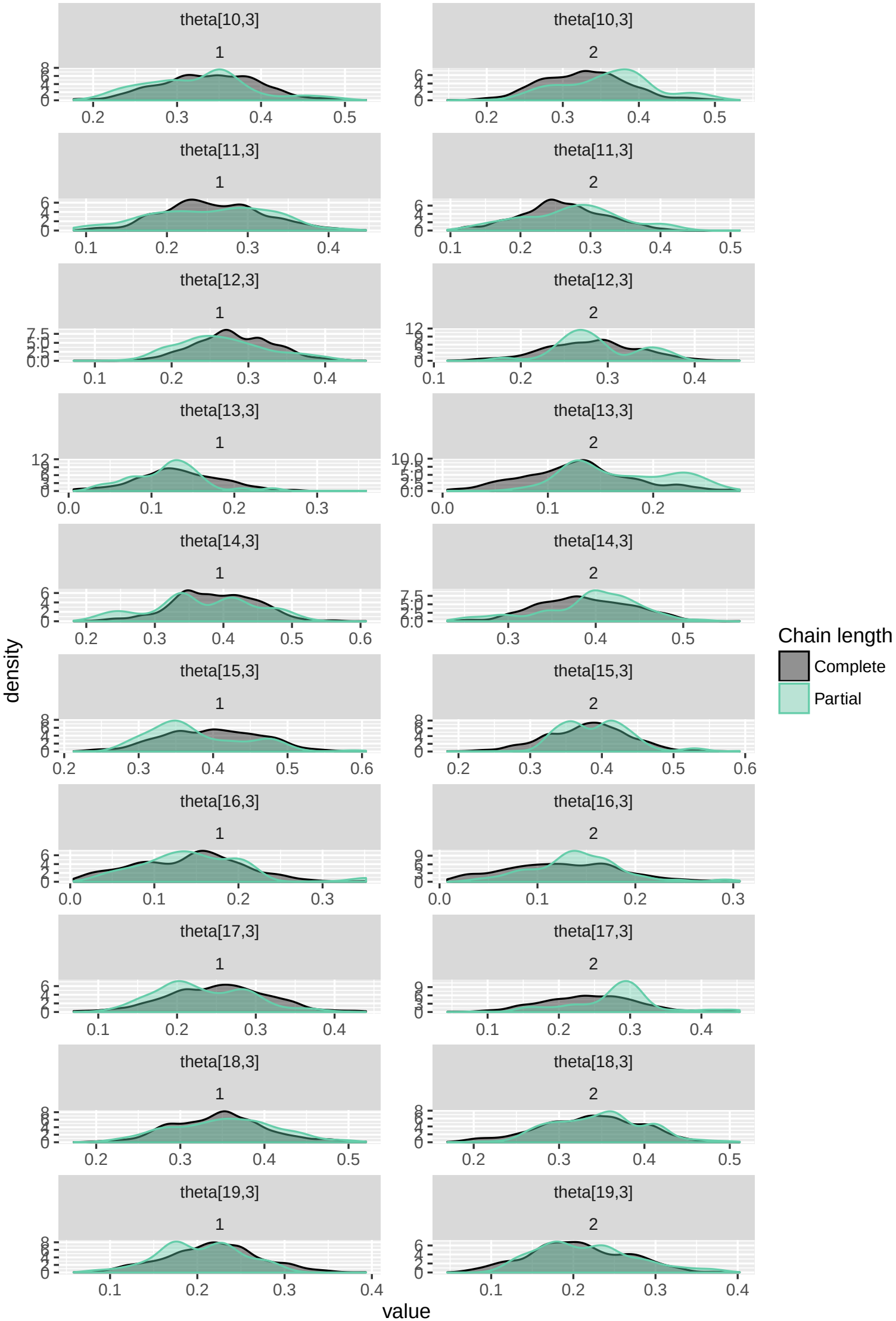

theta[1,2]
1
theta[1,2]
2
theta[2,2]
1
theta[2,2]
2
theta[3,2]
1
theta[3,2]
2
theta[34,1]
1
theta[34,1]
2
theta[35,1]
1
theta[35,1]
2
theta[36,1]
1
theta[36,1]
2
theta[37,1]
1
theta[37,1]
2
theta[4,2]
1
theta[4,2]
2
theta[5,2]
1
theta[5,2]
2
theta[6,2]
1
theta[6,2]
2
density
value
Chain length
Complete
Partial

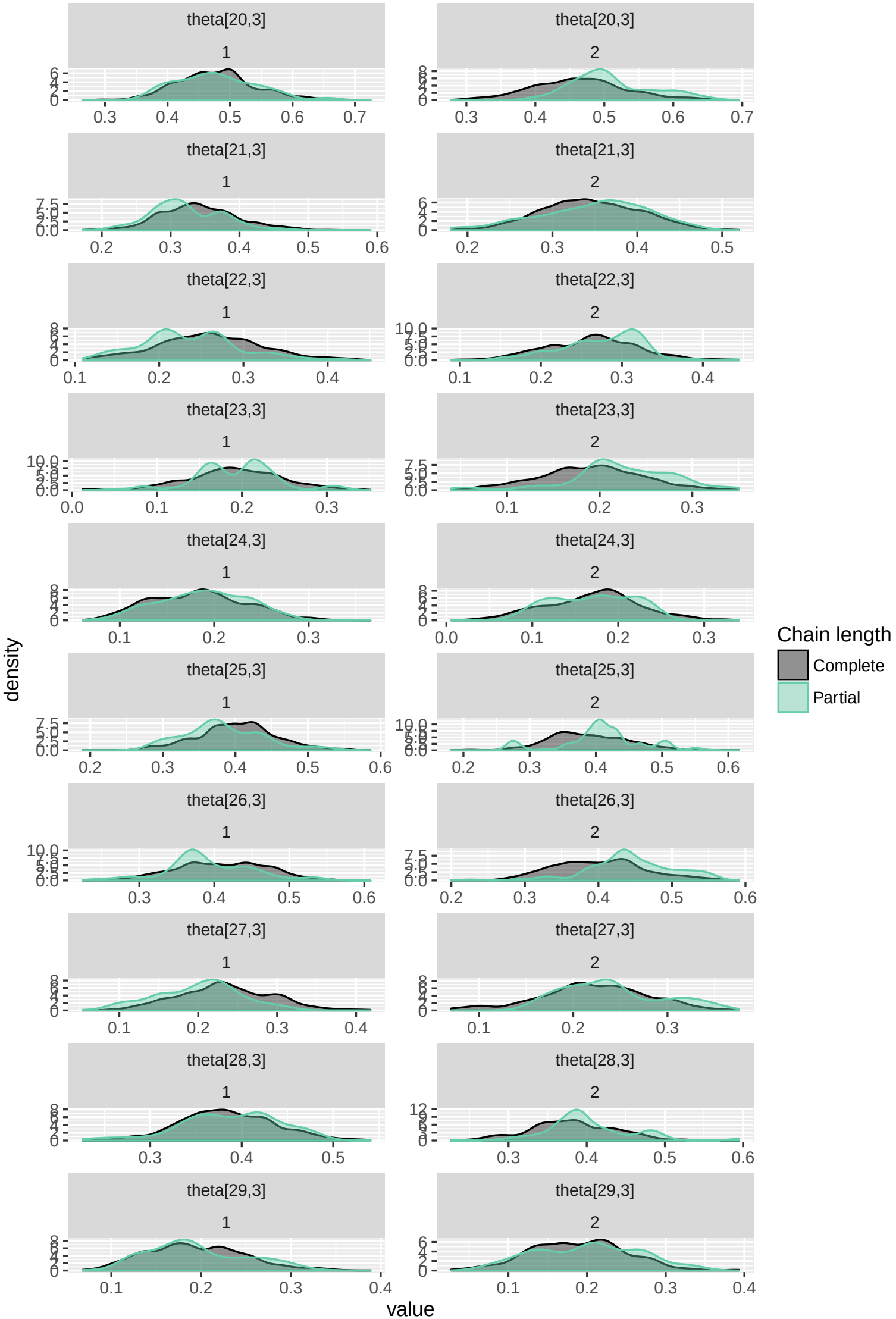

theta[10,2]
1
theta[10,2]
2
theta[11,2]
1
theta[11,2]
2
theta[12,2]
1
theta[12,2]
2
theta[13,2]
1
theta[13,2]
2
theta[14,2]
1
theta[14,2]
2
theta[15,2]
1
theta[15,2]
2
theta[16,2]
1
theta[16,2]
2
theta[7,2]
1
theta[7,2]
2
theta[8,2]
1
theta[8,2]
2
theta[9,2]
1
theta[9,2]
2
density
value
Chain length
Complete
Partial

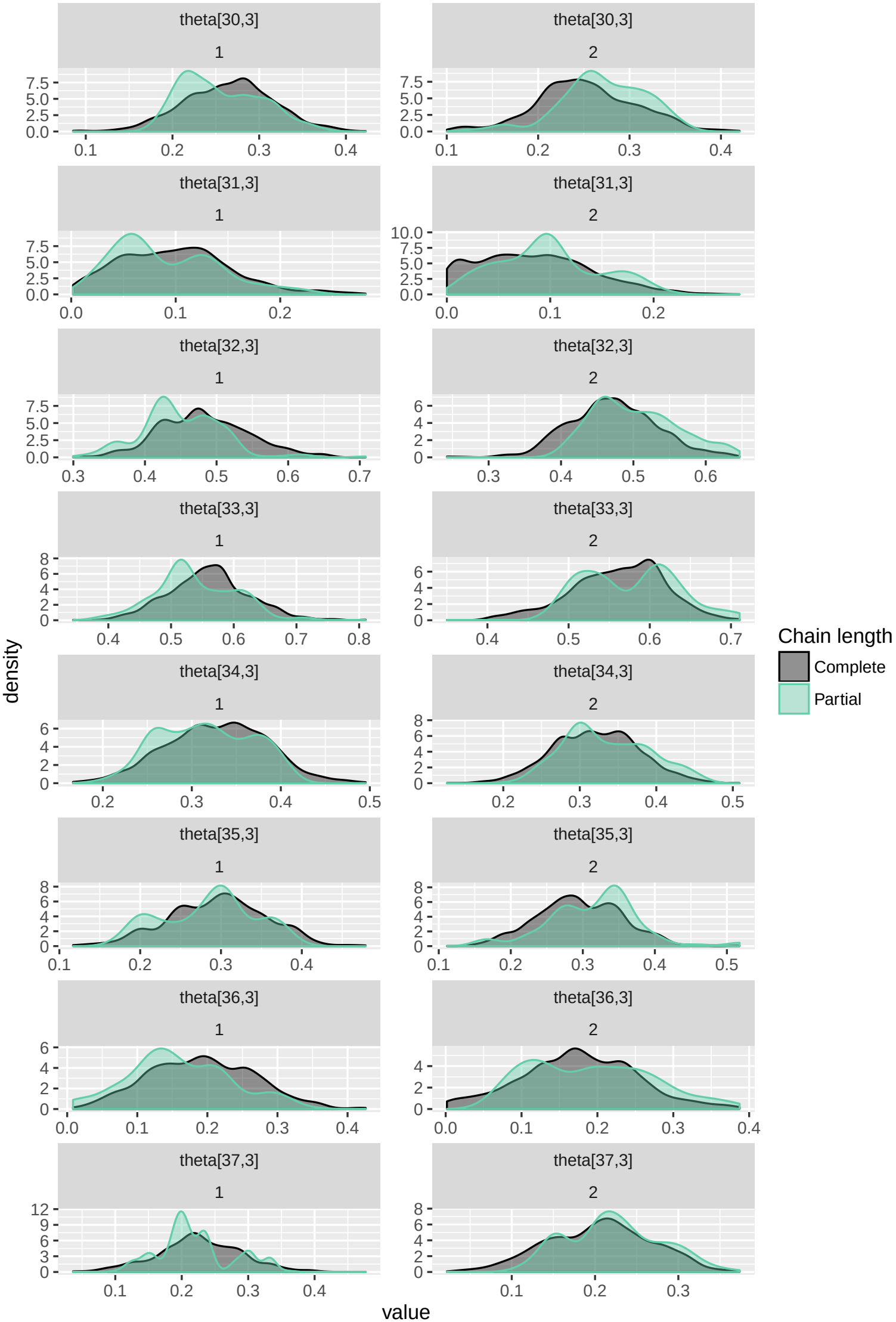

theta[17,2]
1
theta[17,2]
2
theta[18,2]
1
theta[18,2]
2
theta[19,2]
1
theta[19,2]
2
theta[20,2]
1
theta[20,2]
2
theta[21,2]
1
theta[21,2]
2
theta[22,2]
1
theta[22,2]
2
theta[23,2]
1
theta[23,2]
2
theta[24,2]
1
theta[24,2]
2
theta[25,2]
1
theta[25,2]
2
theta[26,2]
1
theta[26,2]
2
density
value
Chain length
Complete
Partial


theta[27,2]
1
theta[27,2]
2
theta[28,2]
1
theta[28,2]
2
theta[29,2]
1
theta[29,2]
2
theta[30,2]
1
theta[30,2]
2
theta[31,2]
1
theta[31,2]
2
theta[32,2]
1
theta[32,2]
2
theta[33,2]
1
theta[33,2]
2
theta[34,2]
1
theta[34,2]
2
theta[35,2]
1
theta[35,2]
2
theta[36,2]
1
theta[36,2]
2
density
value
Chain length
Complete
Partial


theta[1,3]
1
theta[1,3]
2
theta[2,3]
1
theta[2,3]
2
theta[3,3]
1
theta[3,3]
2
theta[37,2]
1
theta[37,2]
2
theta[4,3]
1
theta[4,3]
2
theta[5,3]
1
theta[5,3]
2
theta[6,3]
1
theta[6,3]
2
theta[7,3]
1
theta[7,3]
2
theta[8,3]
1
theta[8,3]
2
theta[9,3]
1
theta[9,3]
2
density
value
Chain length
Complete
Partial

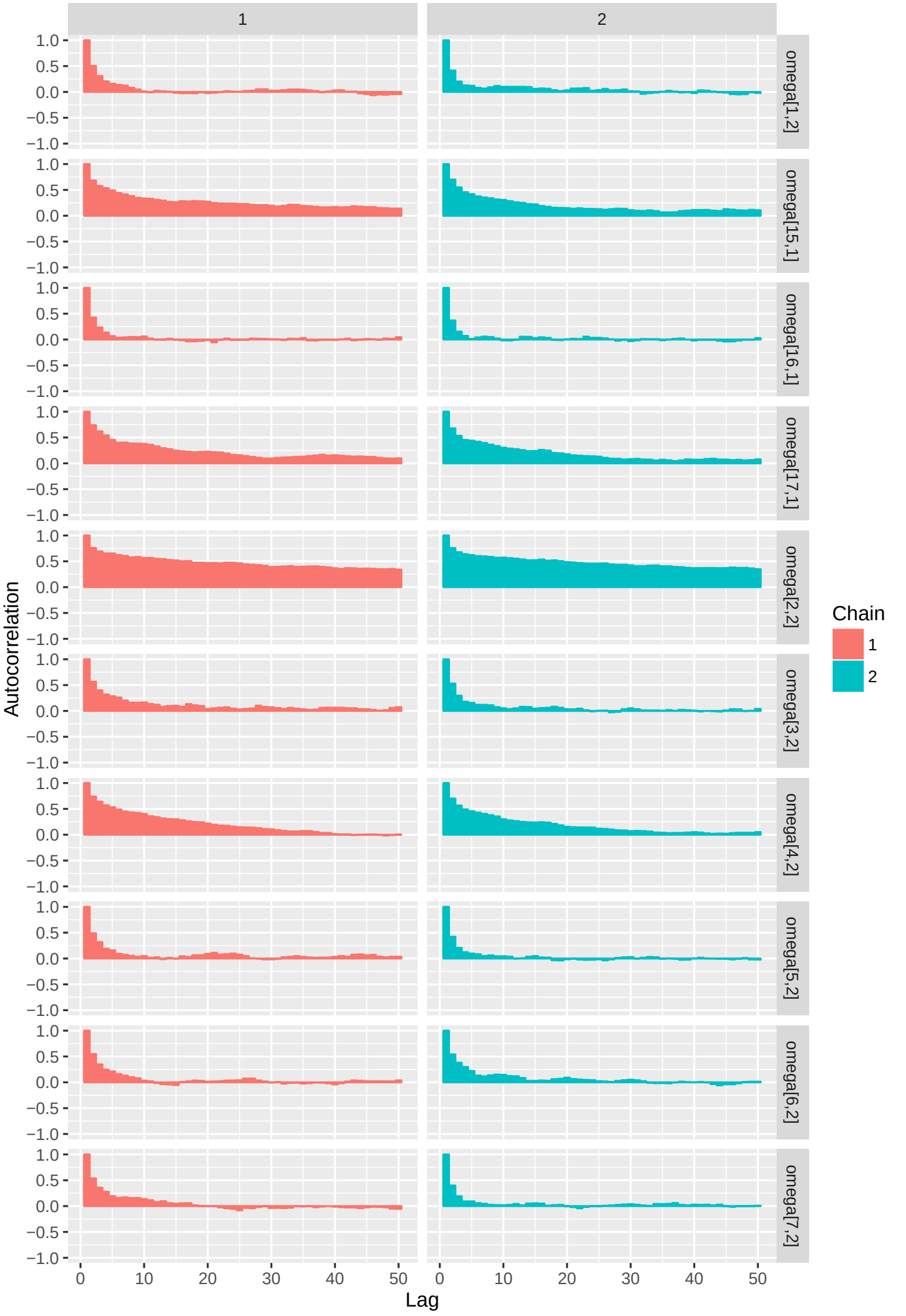

theta[10,3]
1
theta[10,3]
2
theta[11,3]
1
theta[11,3]
2
theta[12,3]
1
theta[12,3]
2
theta[13,3]
1
theta[13,3]
2
theta[14,3]
1
theta[14,3]
2
theta[15,3]
1
theta[15,3]
2
theta[16,3]
1
theta[16,3]
2
theta[17,3]
1
theta[17,3]
2
theta[18,3]
1
theta[18,3]
2
theta[19,3]
1
theta[19,3]
2
density
value
Chain length
Complete
Partial


theta[20,3]
1
theta[20,3]
2
theta[21,3]
1
theta[21,3]
2
theta[22,3]
1
theta[22,3]
2
theta[23,3]
1
theta[23,3]
2
theta[24,3]
1
theta[24,3]
2
theta[25,3]
1
theta[25,3]
2
theta[26,3]
1
theta[26,3]
2
theta[27,3]
1
theta[27,3]
2
theta[28,3]
1
theta[28,3]
2
theta[29,3]
1
theta[29,3]
2
density
value
Chain length
Complete
Partial

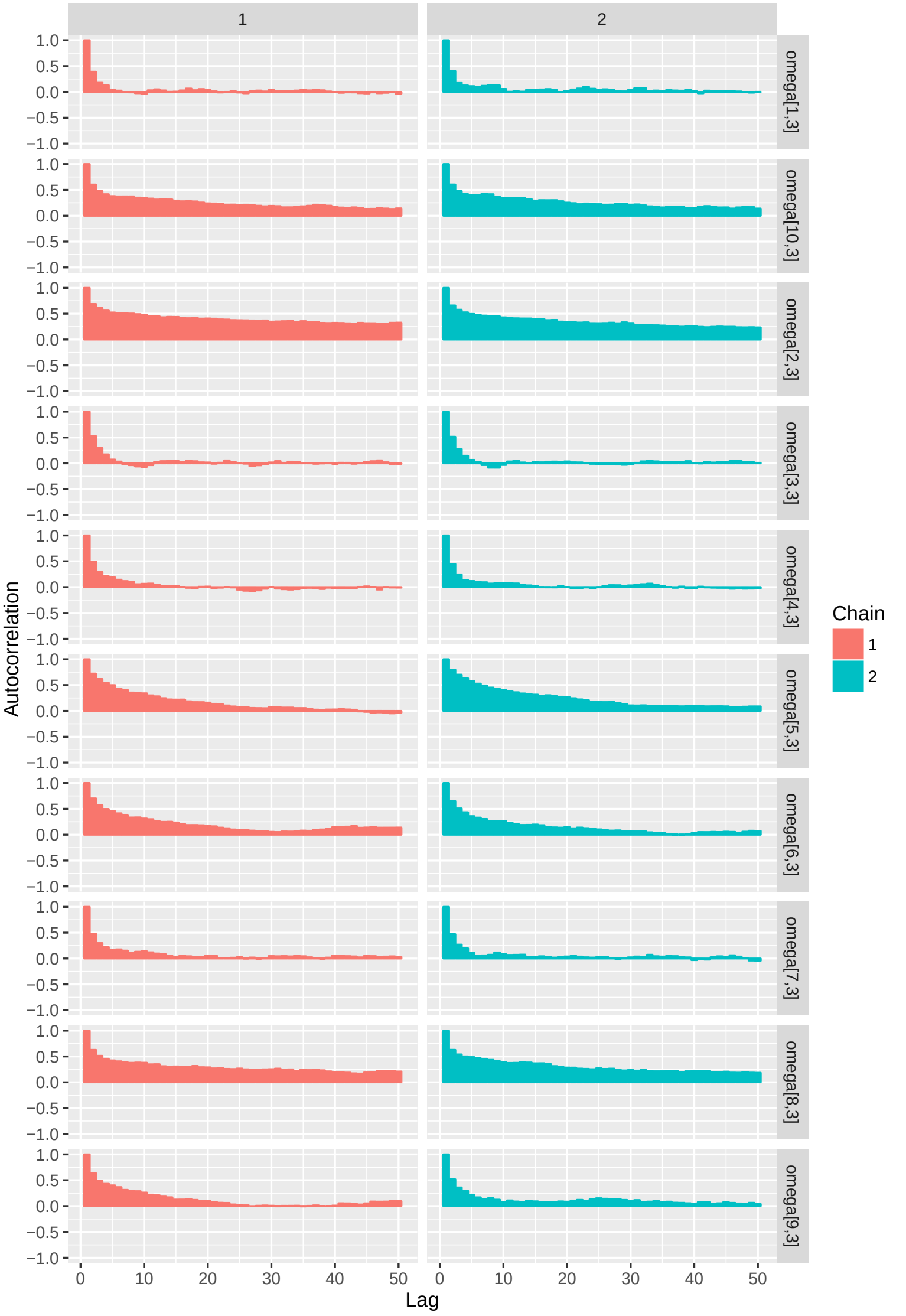

theta[30,3]
1
theta[30,3]
2
theta[31,3]
1
theta[31,3]
2
theta[32,3]
1
theta[32,3]
2
theta[33,3]
1
theta[33,3]
2
theta[34,3]
1
theta[34,3]
2
theta[35,3]
1
theta[35,3]
2
theta[36,3]
1
theta[36,3]
2
theta[37,3]
1
theta[37,3]
2
density
value
Chain length
Complete
Partial

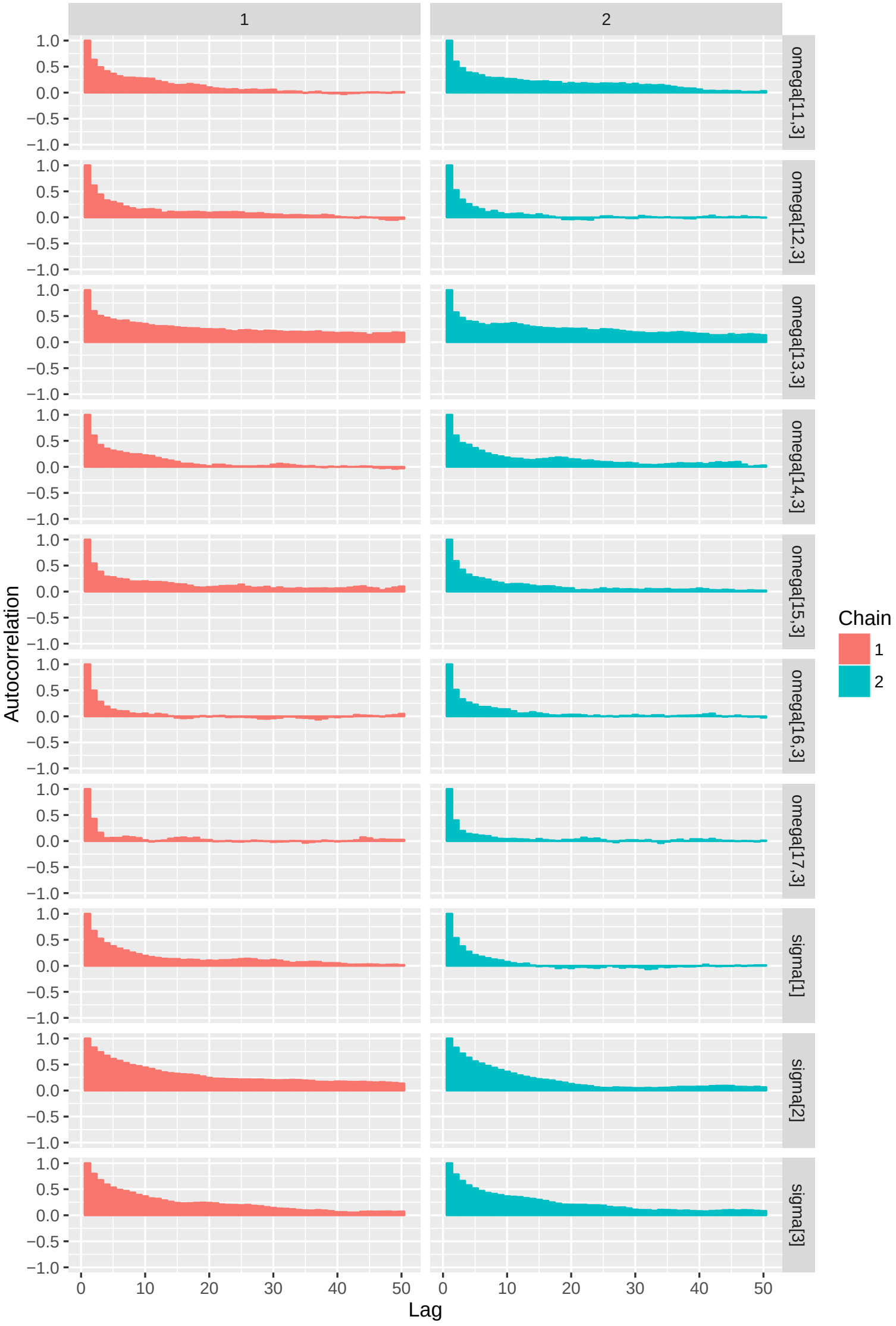
1
2
lambda[1]
lambda[2]
lambda[3]
nu[1]
nu[2]
nu[3]
omega[1,1]
omega[2,1]
omega[3,1]
omega[4,1]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

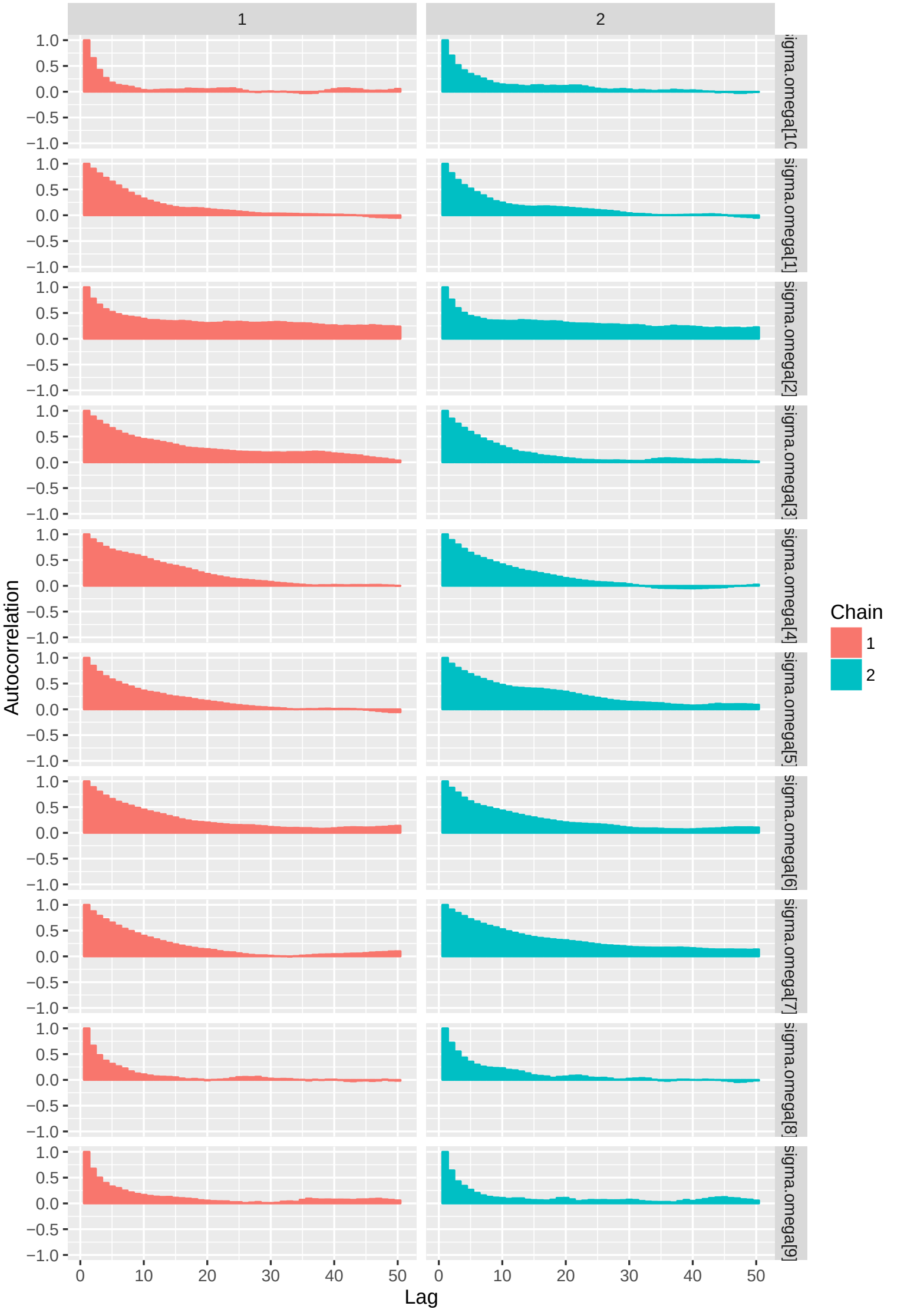
1
2
omega[10,1]
omega[11,1]
omega[12,1]
omega[13,1]
omega[14,1]
omega[5,1]
omega[6,1]
omega[7,1]
omega[8,1]
omega[9,1]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

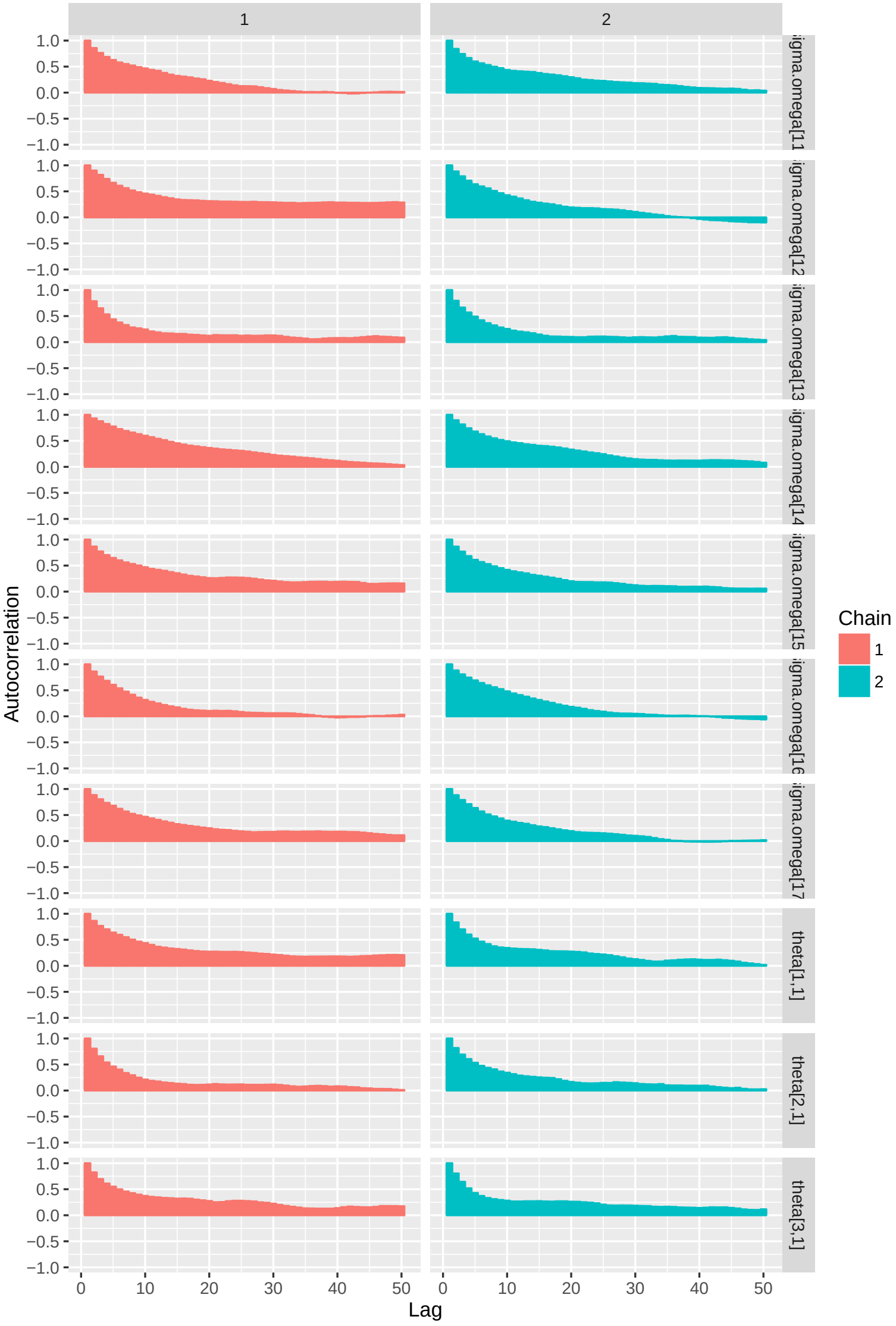

1
2
omega[1,2]
omega[15,1]
omega[16,1]
omega[17,1]
omega[2,2]
omega[3,2]
omega[4,2]
omega[5,2]
omega[6,2]
omega[7,2]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

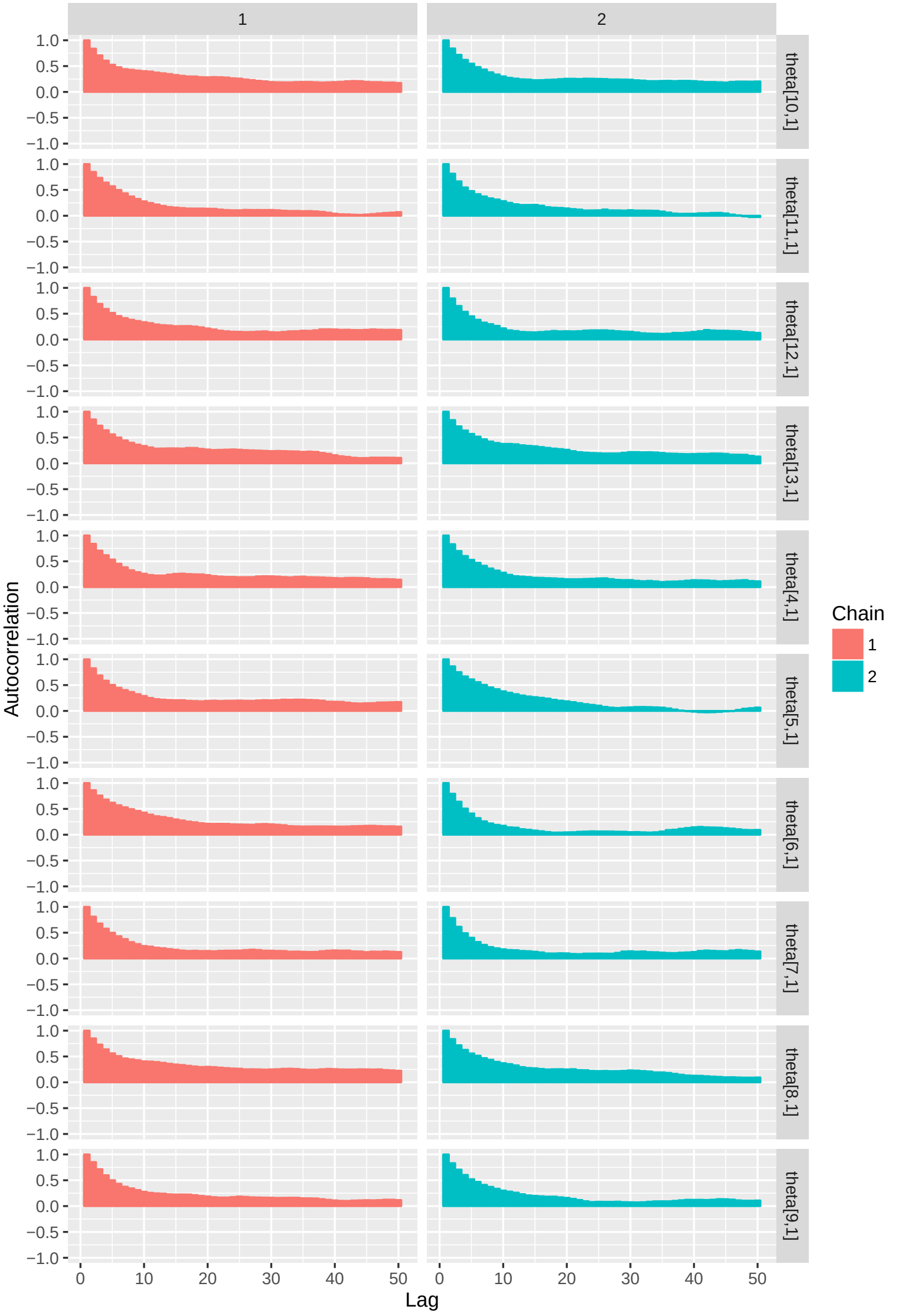
1
2
omega[10,2]
omega[11,2]
omega[12,2]
omega[13,2]
omega[14,2]
omega[15,2]
omega[16,2]
omega[17,2]
omega[8,2]
omega[9,2]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

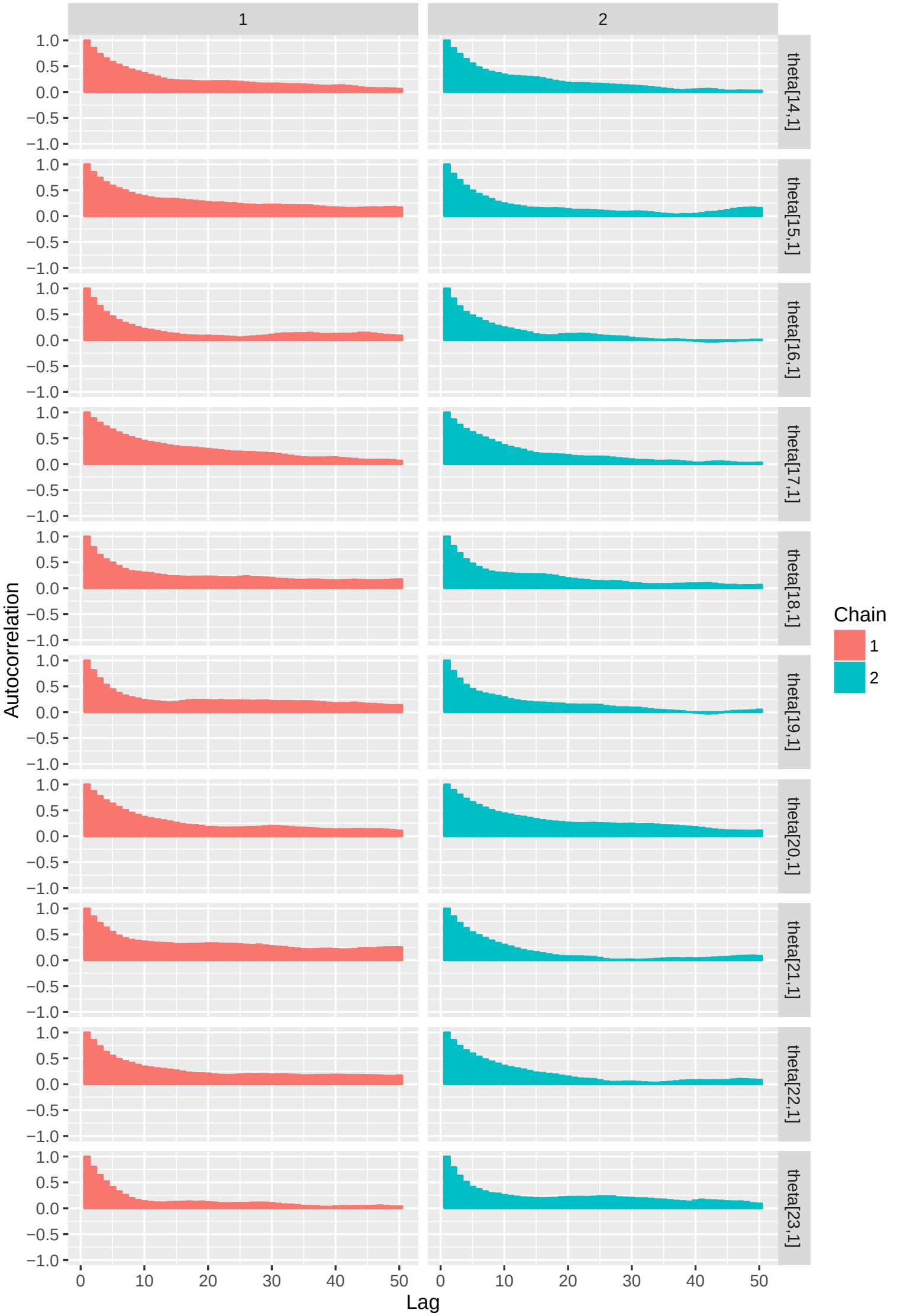

1
2
omega[1,3]
omega[10,3]
omega[2,3]
omega[3,3]
omega[4,3]
omega[5,3]
omega[6,3]
omega[7,3]
omega[8,3]
omega[9,3]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

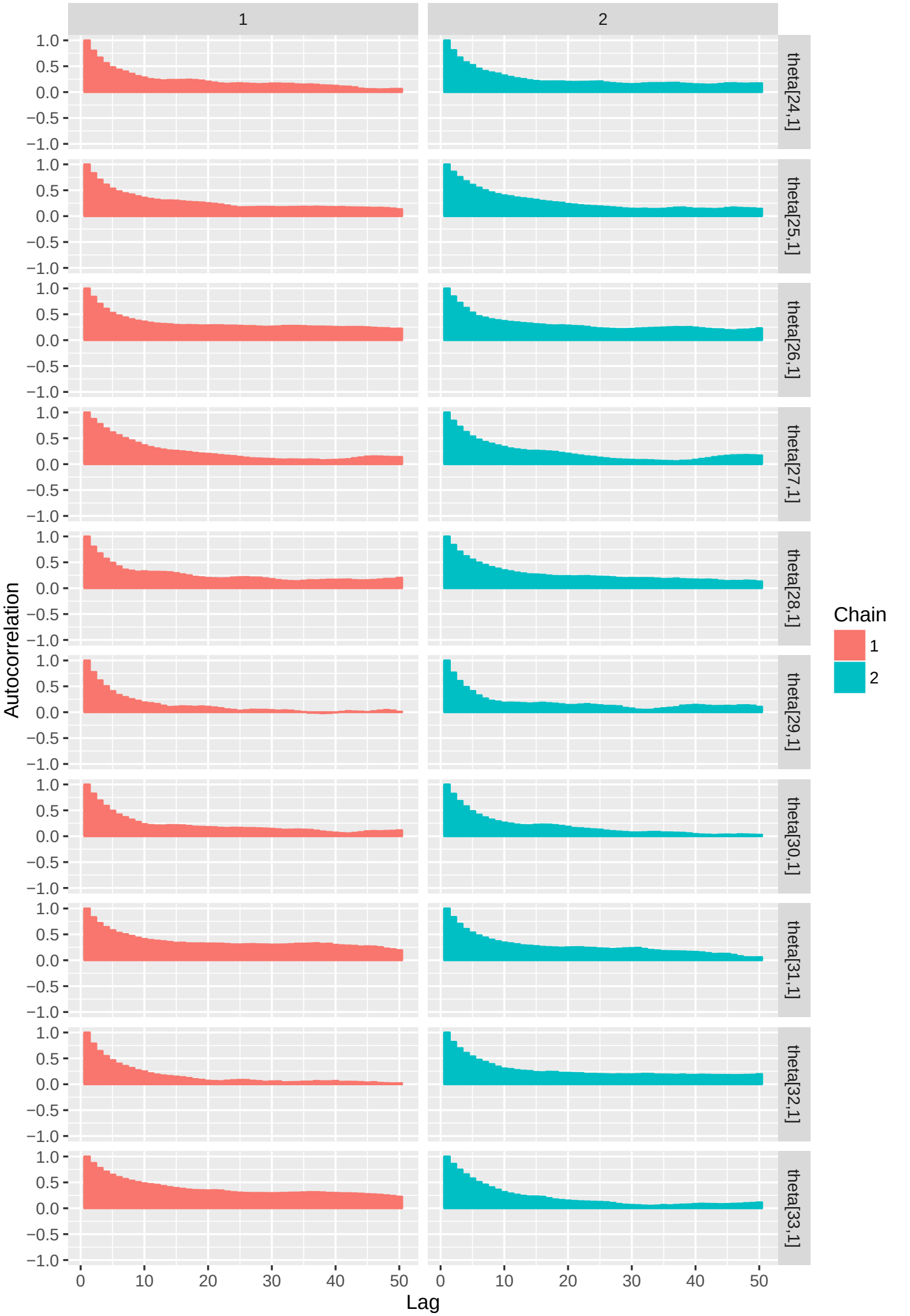

1
2
omega[11,3]
omega[12,3]
omega[13,3]
omega[14,3]
omega[15,3]
omega[16,3]
omega[17,3]
sigma[1]
sigma[2]
sigma[3]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

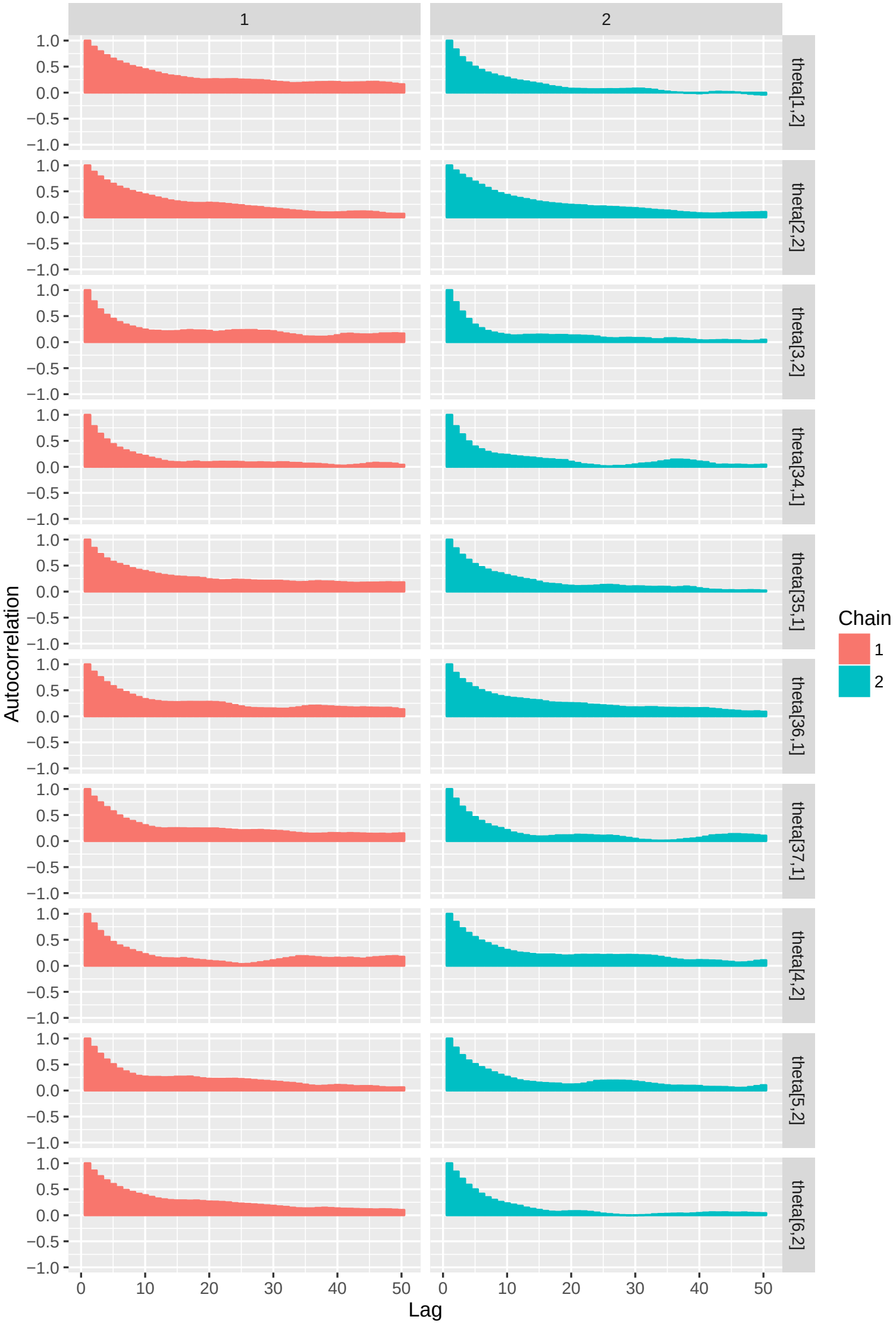

1
2
sigma.omega[10]
sigma.omega[1]
sigma.omega[2]
sigma.omega[3]
sigma.omega[4]
sigma.omega[5]
sigma.omega[6]
sigma.omega[7]
sigma.omega[8]
sigma.omega[9]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

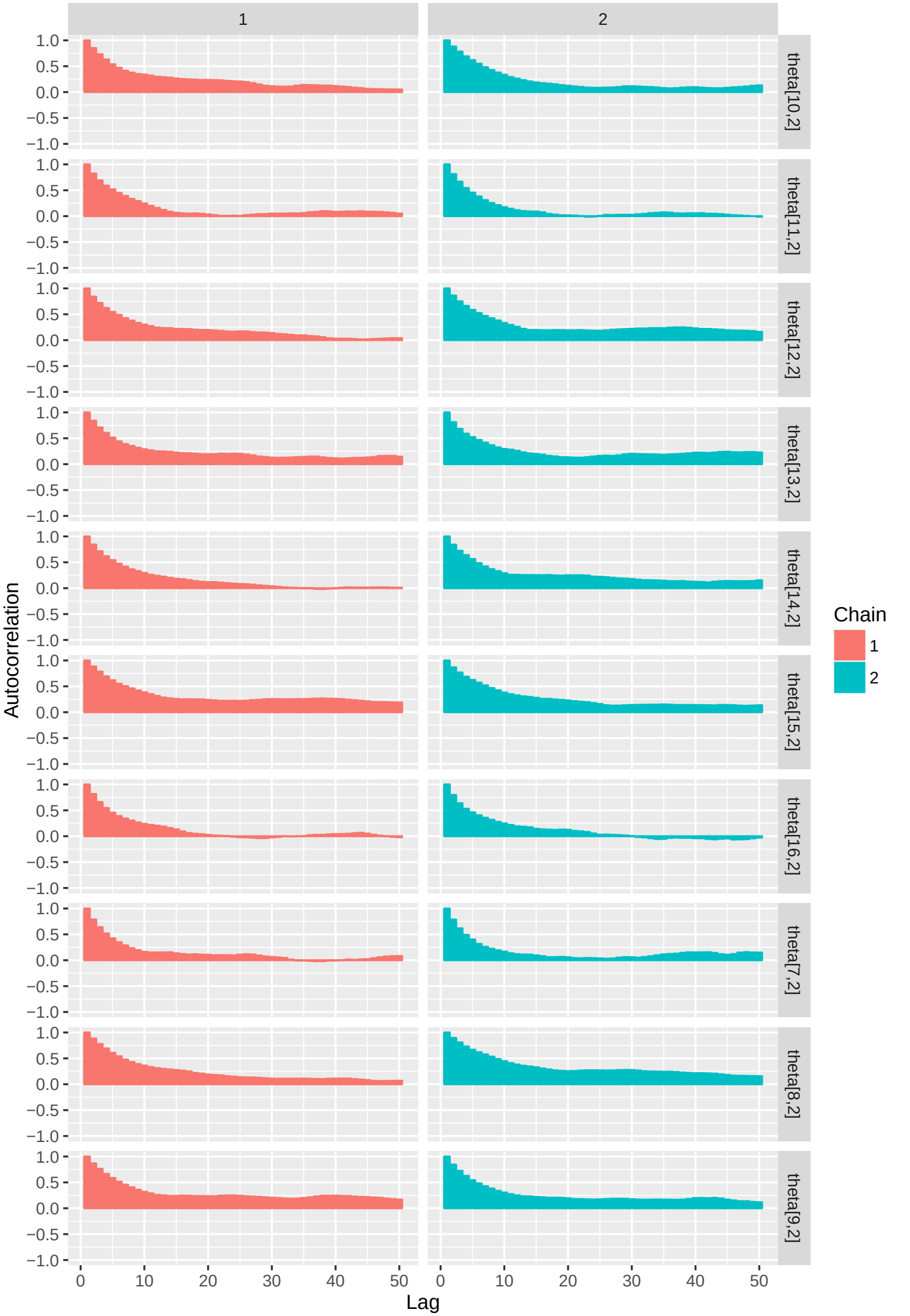

1
2
sigma.omega[11
sigma.omega[12
sigma.omega[13
sigma.omega[14
sigma.omega[15
sigma.omega[16
sigma.omega[17
theta[1,1]
theta[2,1]
theta[3,1]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

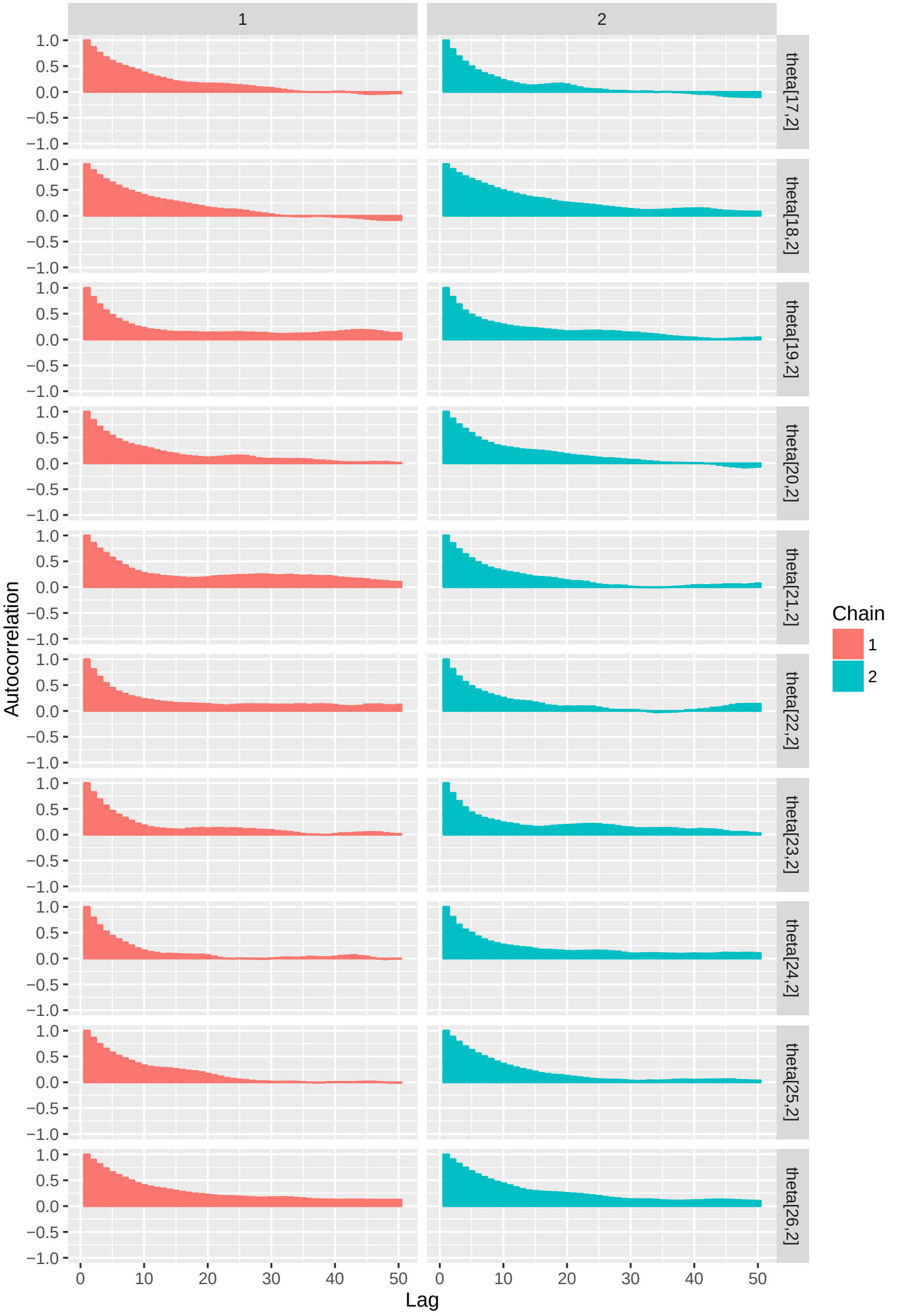

1
2
theta[10,1]
theta[11,1]
theta[12,1]
theta[13,1]
theta[4,1]
theta[5,1]
theta[6,1]
theta[7,1]
theta[8,1]
theta[9,1]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

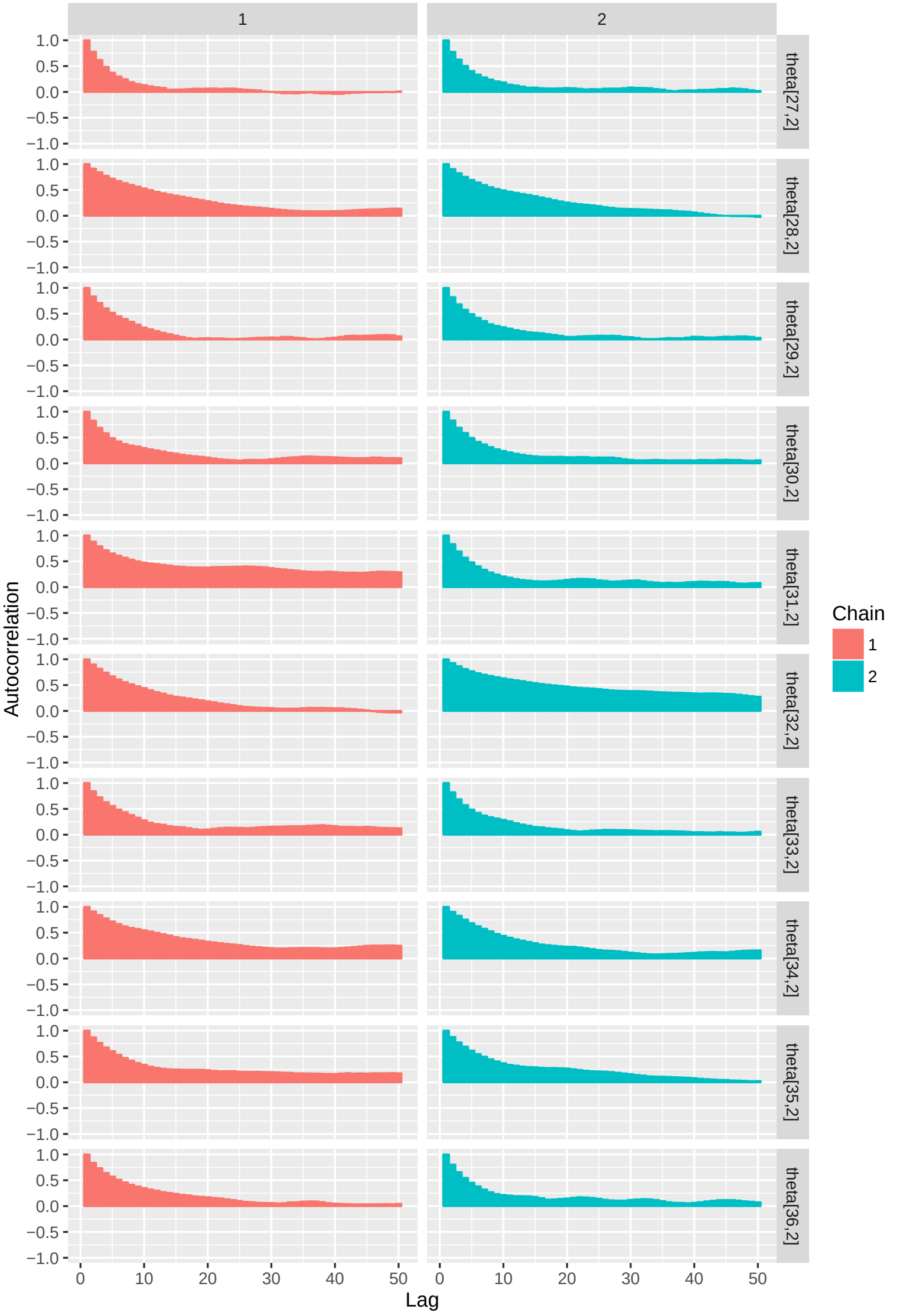

1
2
theta[14,1]
theta[15,1]
theta[16,1]
theta[17,1]
theta[18,1]
theta[19,1]
theta[20,1]
theta[21,1]
theta[22,1]
theta[23,1]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

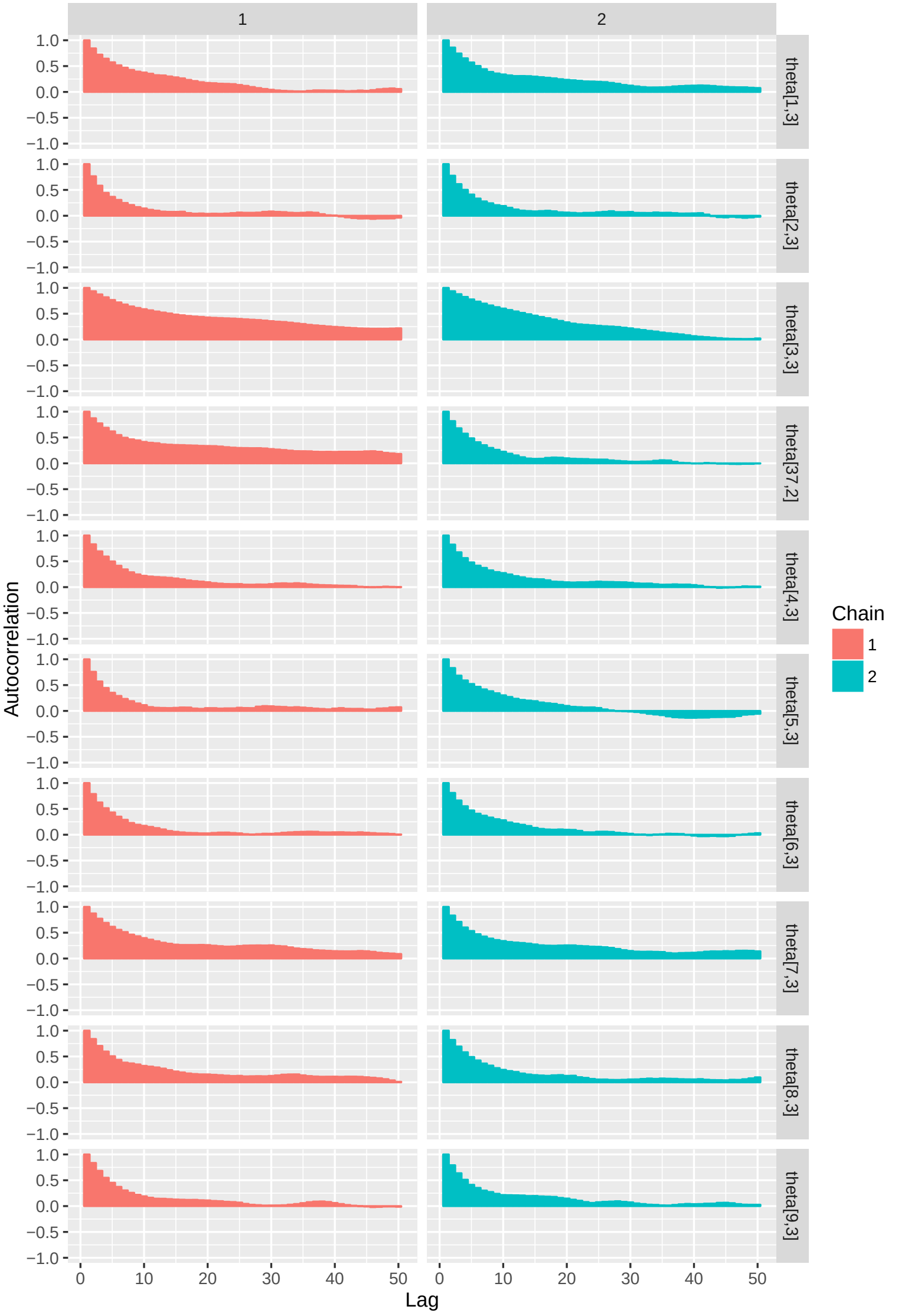

1
2
theta[24,1]
theta[25,1]
theta[26,1]
theta[27,1]
theta[28,1]
theta[29,1]
theta[30,1]
theta[31,1]
theta[32,1]
theta[33,1]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

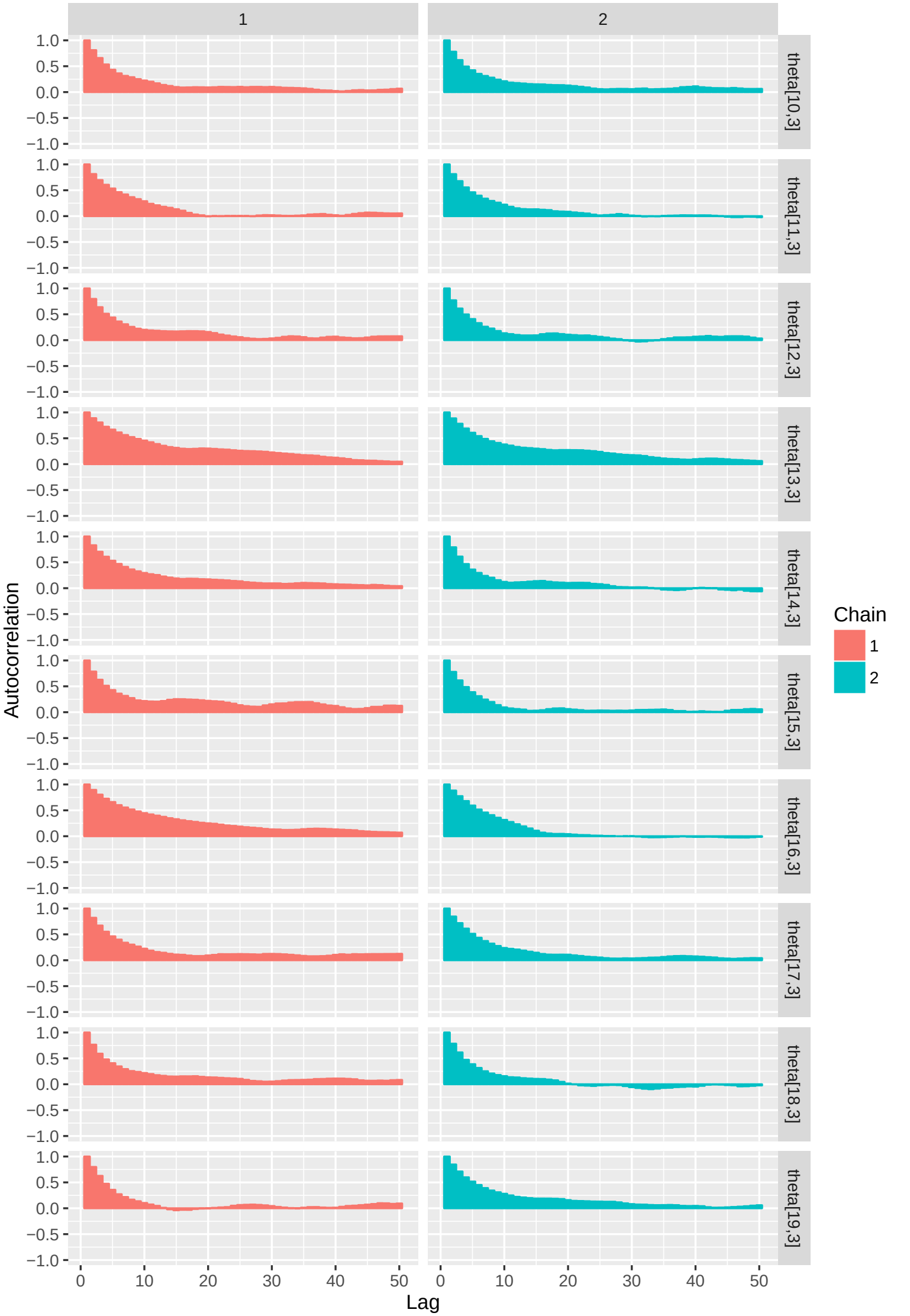

1
2
theta[1,2]
theta[2,2]
theta[3,2]
theta[34,1]
theta[35,1]
theta[36,1]
theta[37,1]
theta[4,2]
theta[5,2]
theta[6,2]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

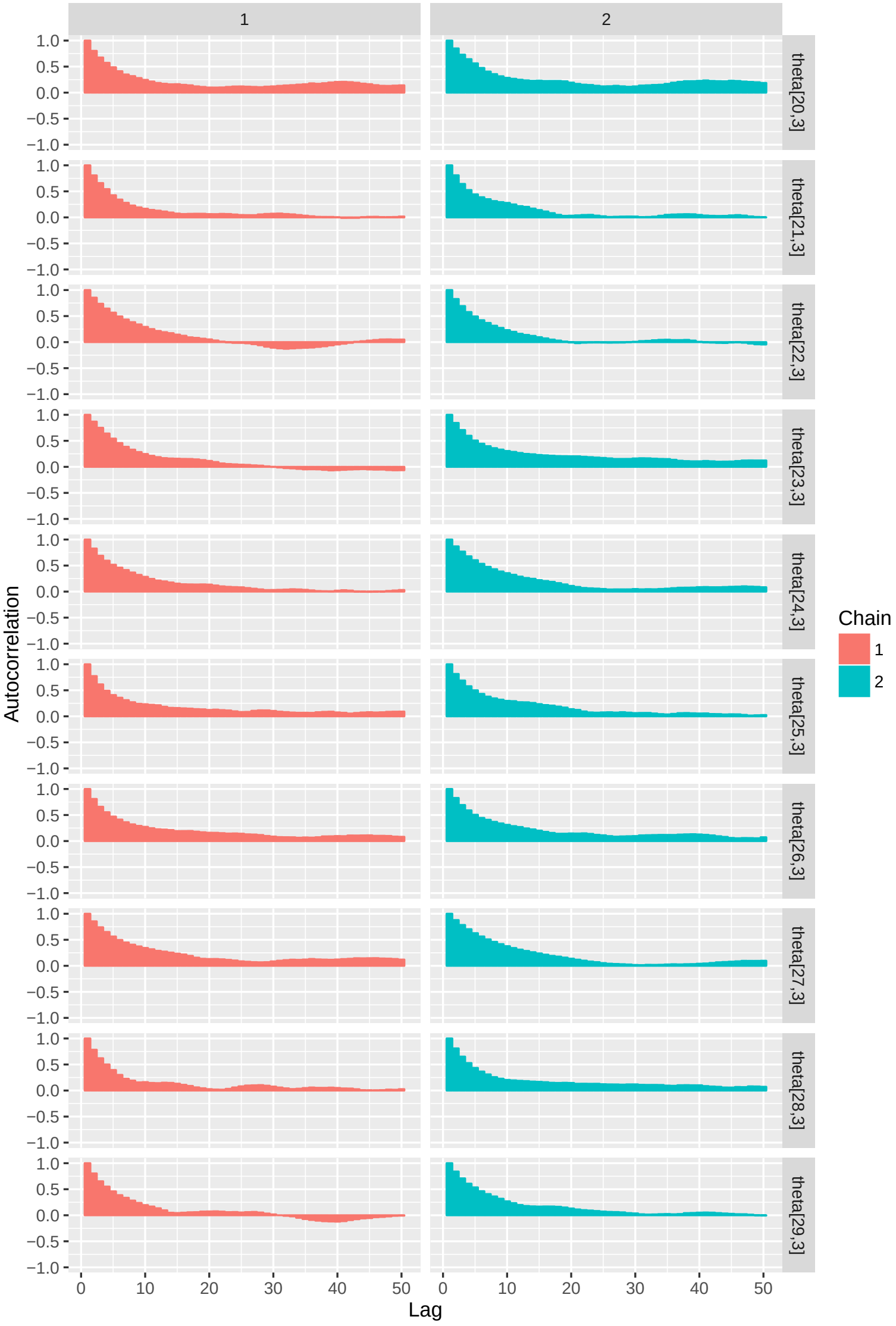

1
2
theta[10,2]
theta[11,2]
theta[12,2]
theta[13,2]
theta[14,2]
theta[15,2]
theta[16,2]
theta[7,2]
theta[8,2]
theta[9,2]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

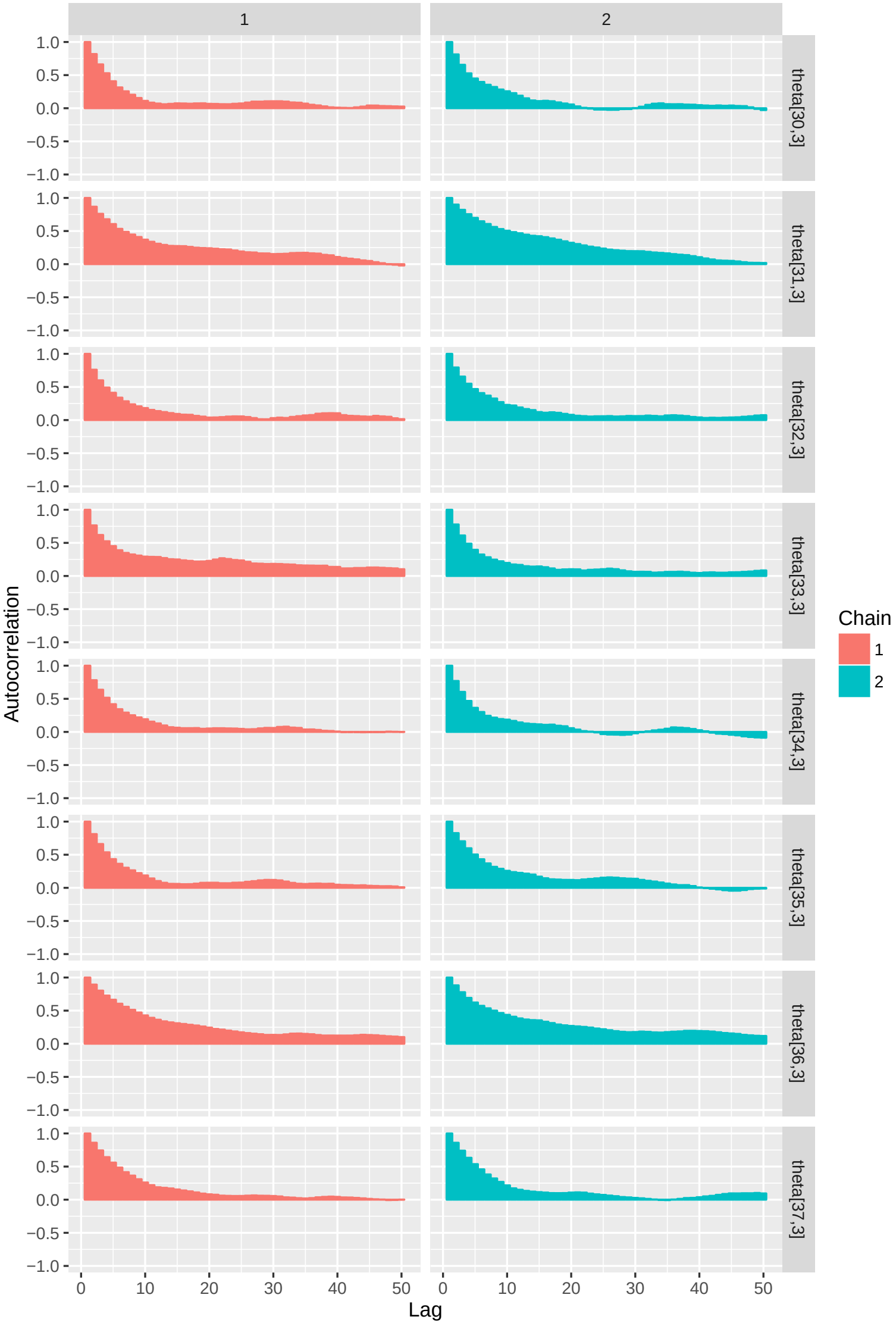

1
2
theta[17,2]
theta[18,2]
theta[19,2]
theta[20,2]
theta[21,2]
theta[22,2]
theta[23,2]
theta[24,2]
theta[25,2]
theta[26,2]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

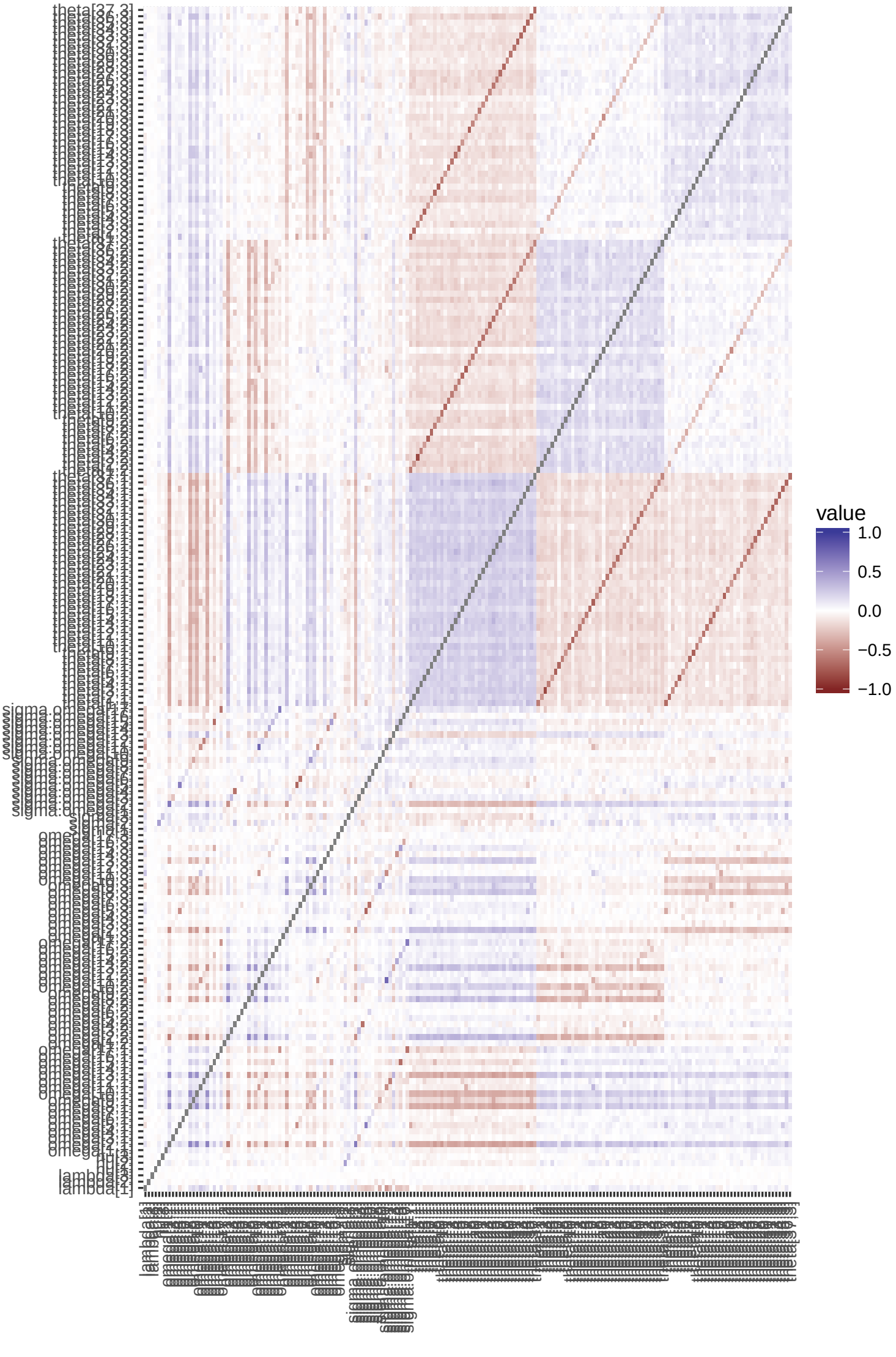

1
2
theta[27,2]
theta[28,2]
theta[29,2]
theta[30,2]
theta[31,2]
theta[32,2]
theta[33,2]
theta[34,2]
theta[35,2]
theta[36,2]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

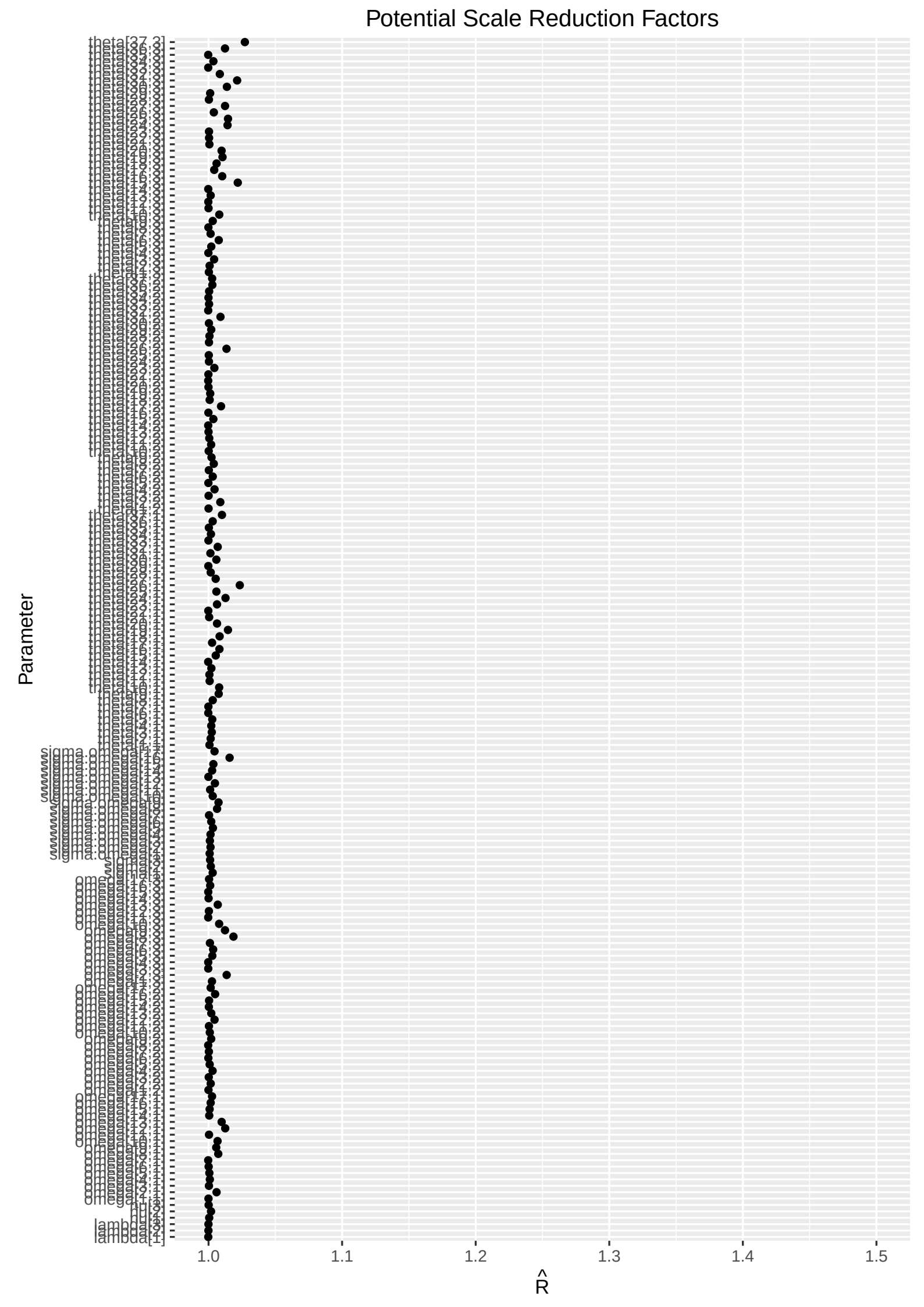

1
2
theta[1,3]
theta[2,3]
theta[3,3]
theta[37,2]
theta[4,3]
theta[5,3]
theta[6,3]
theta[7,3]
theta[8,3]
theta[9,3]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

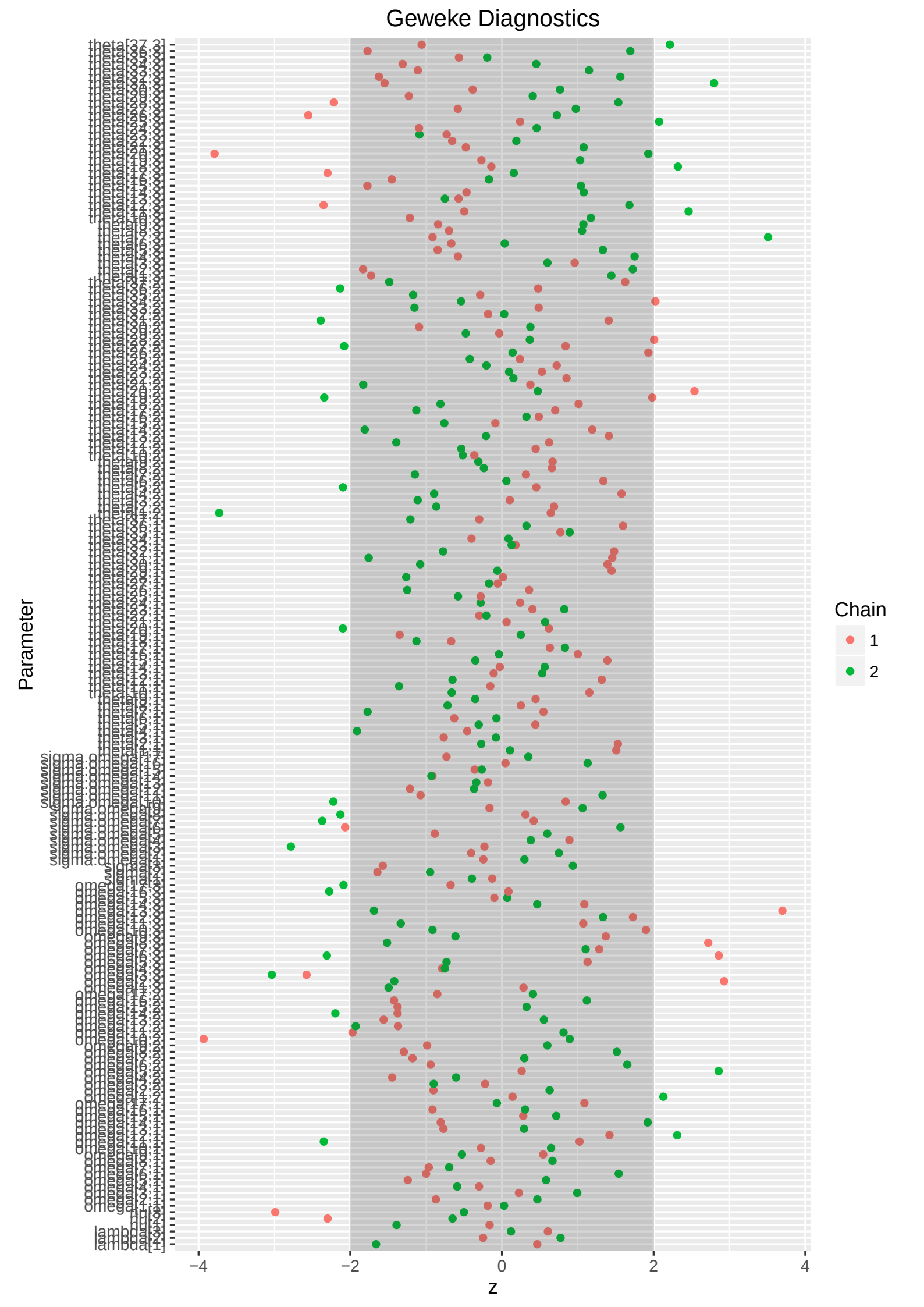

1
2
theta[10,3]
theta[11,3]
theta[12,3]
theta[13,3]
theta[14,3]
theta[15,3]
theta[16,3]
theta[17,3]
theta[18,3]
theta[19,3]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

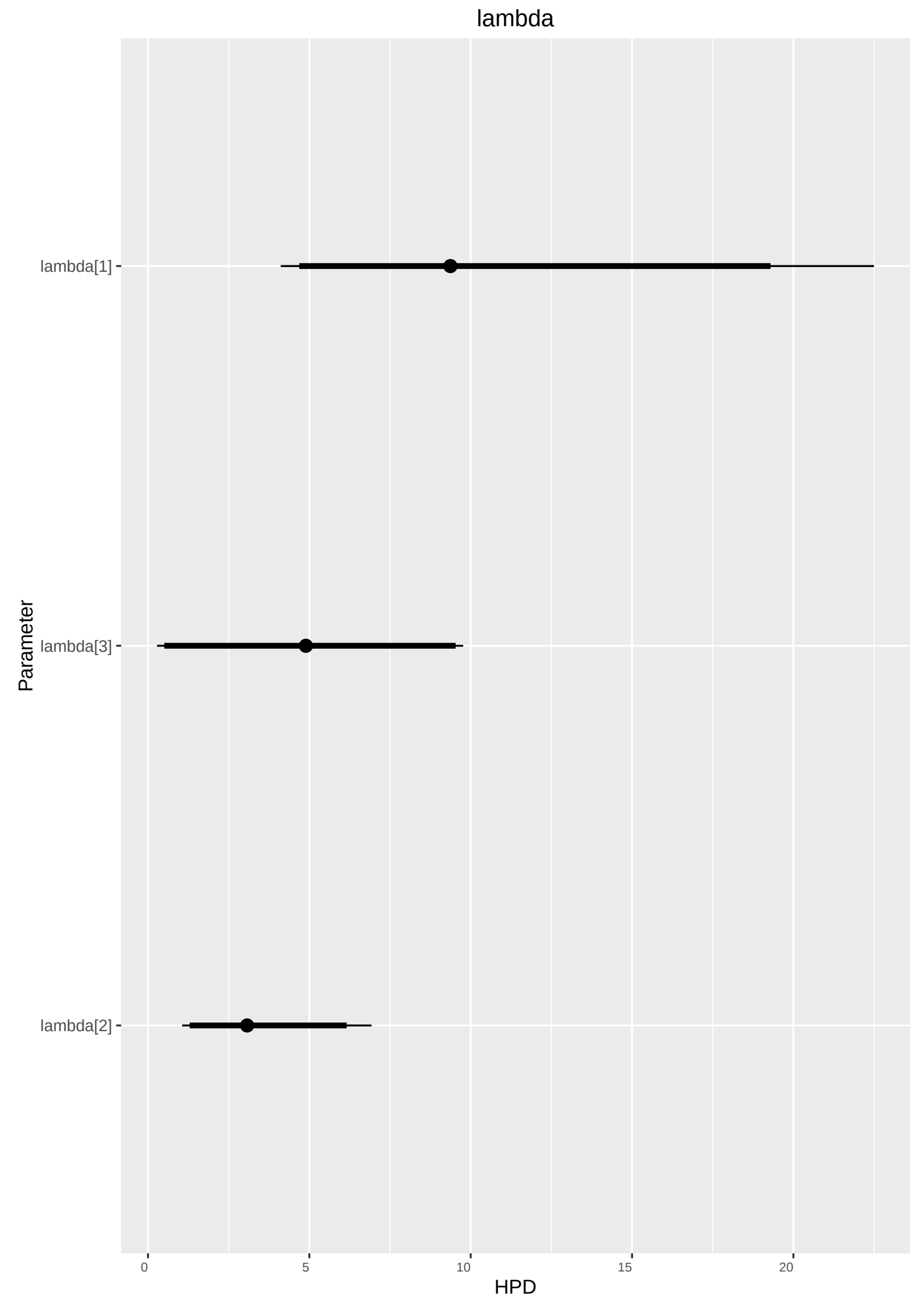

1
2
theta[20,3]
theta[21,3]
theta[22,3]
theta[23,3]
theta[24,3]
theta[25,3]
theta[26,3]
theta[27,3]
theta[28,3]
theta[29,3]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

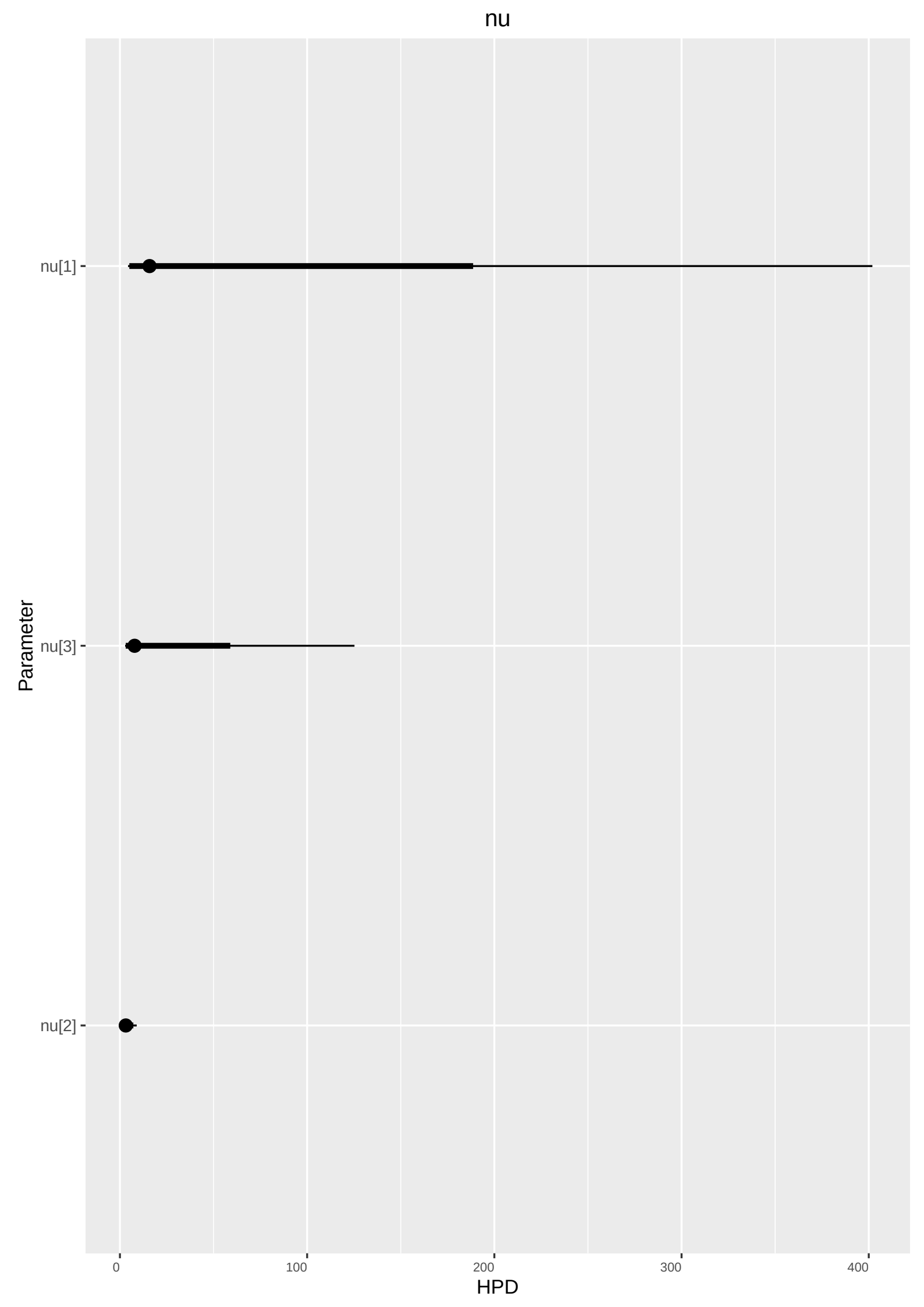

1
2
theta[30,3]
theta[31,3]
theta[32,3]
theta[33,3]
theta[34,3]
theta[35,3]
theta[36,3]
theta[37,3]
Autocorrelation
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50
Lag
Chain
1
2

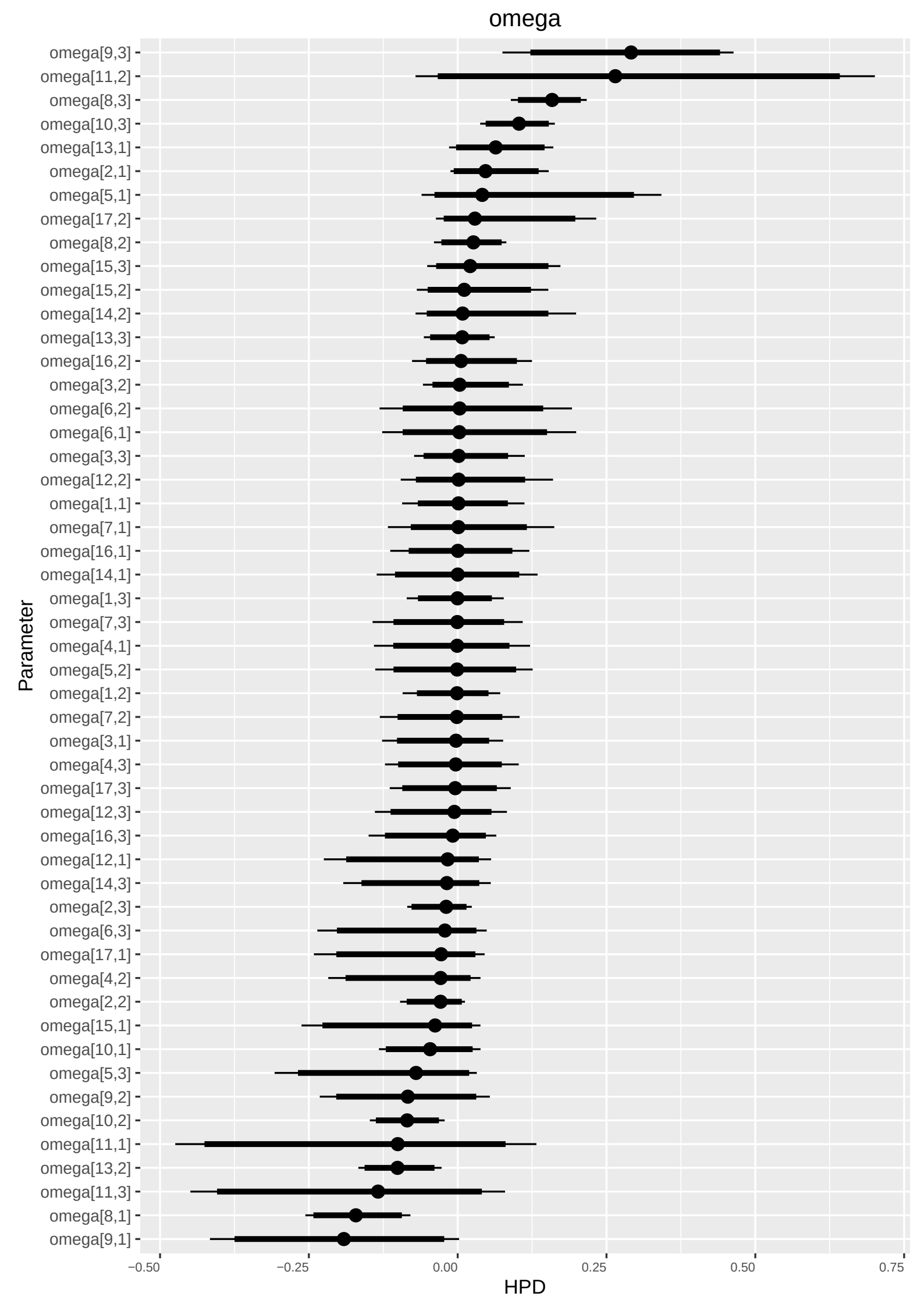

value
1.0
0.5
0.0
−0.5
−1.0

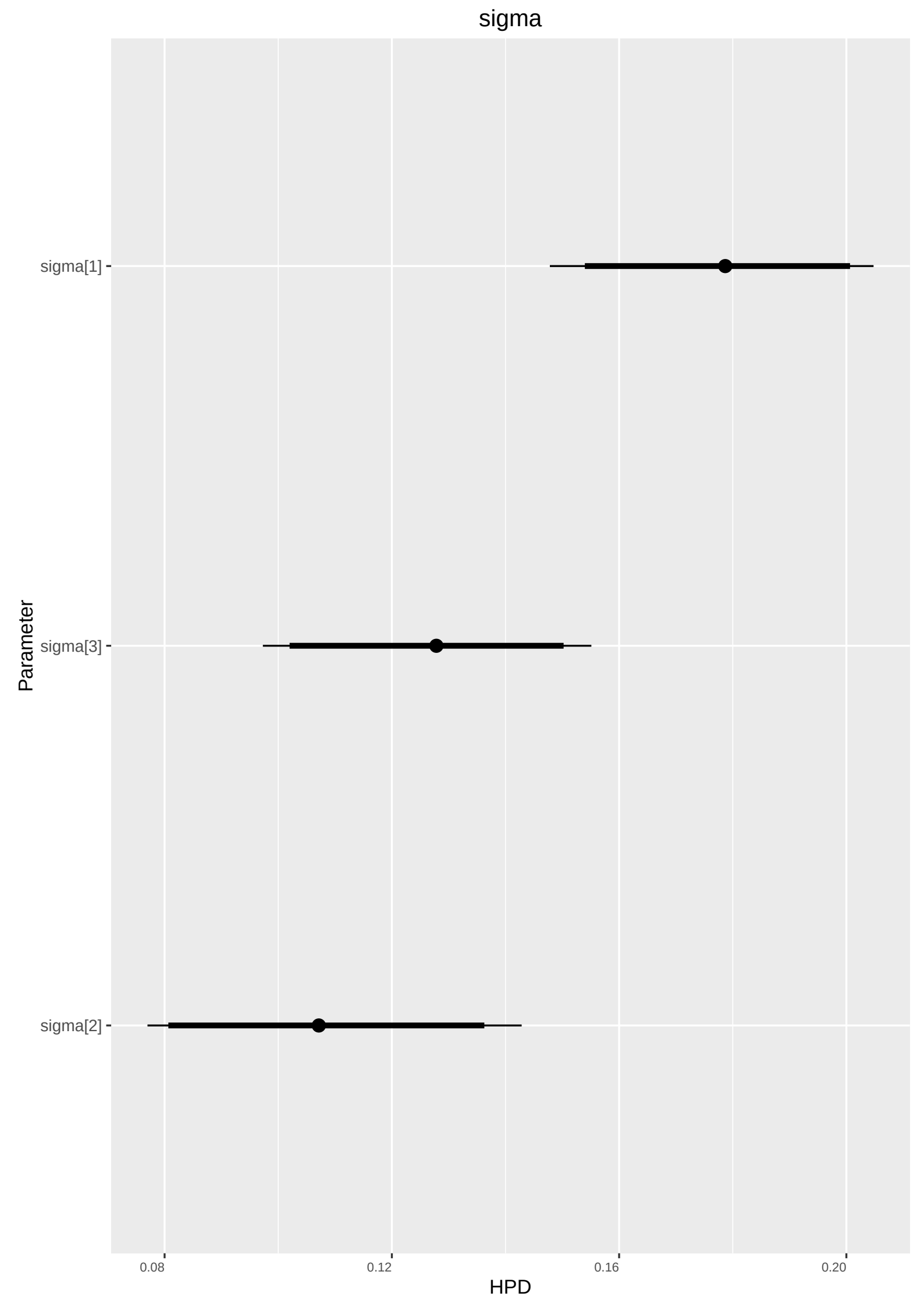

Potential Scale Reduction Factors
Parameter
1.0
1.1
1.2
1.3
1.4
1.5
R̂

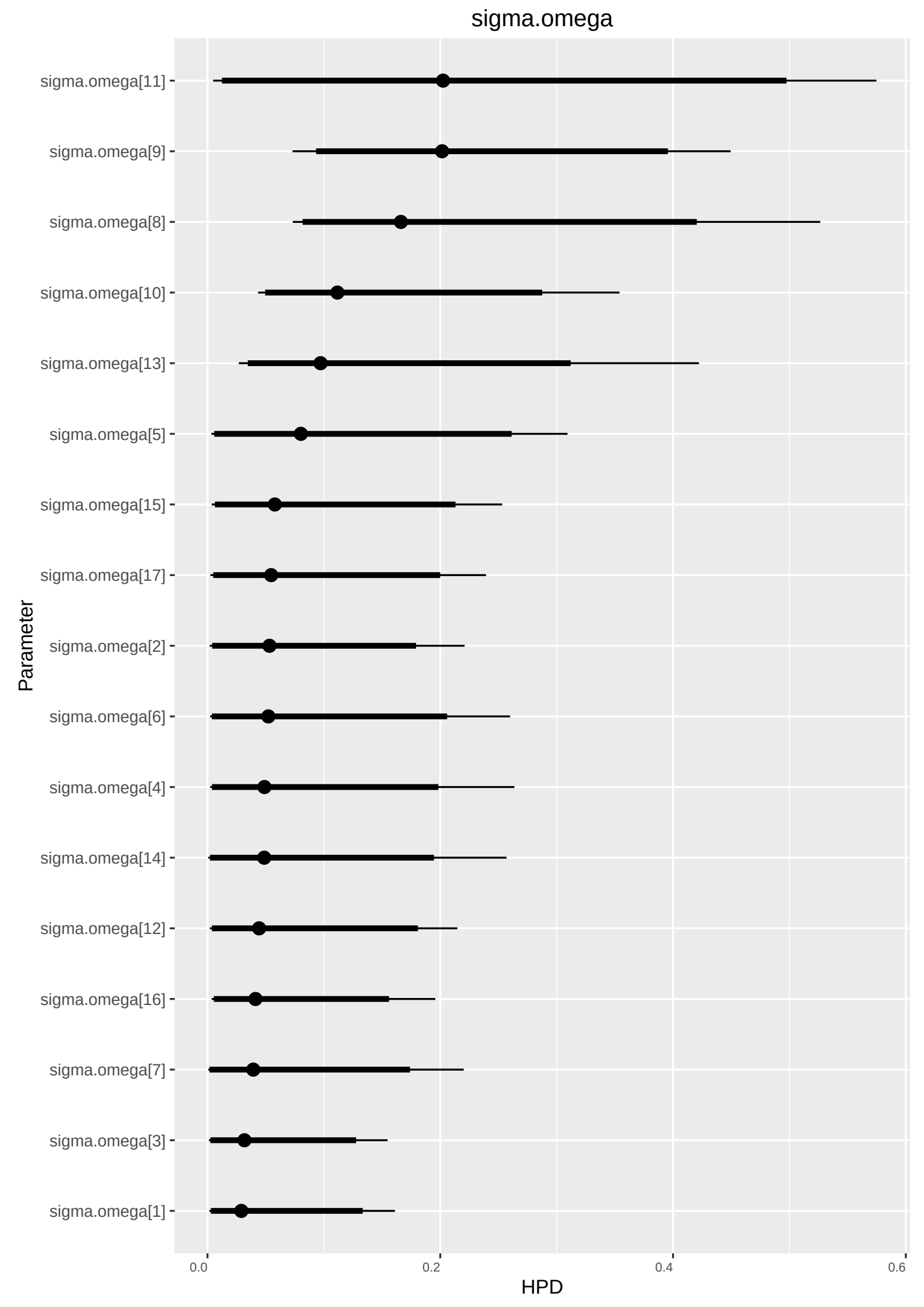

Geweke Diagnostics
Parameter
z
−4
−2
0
2
4
Chain
1
2

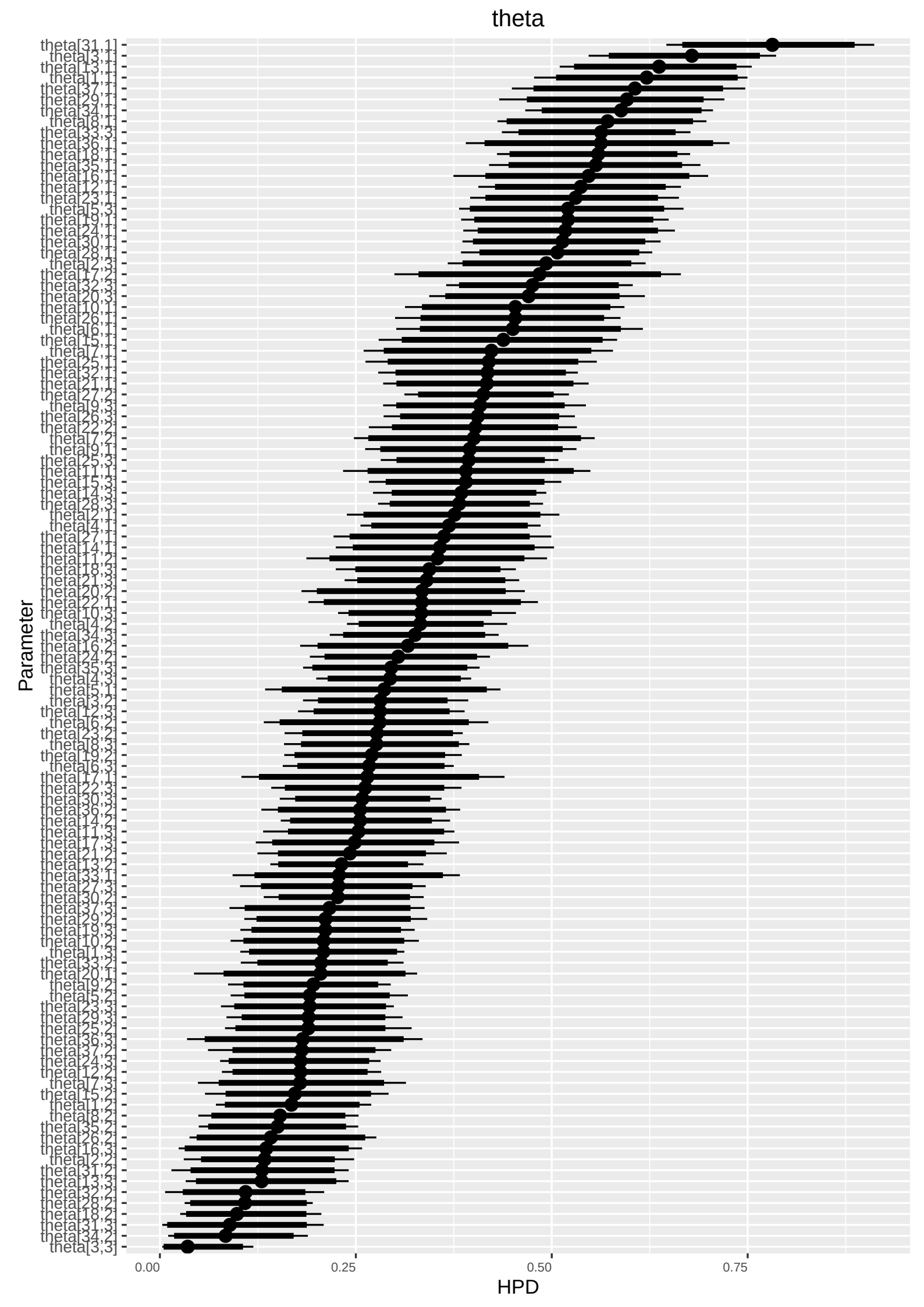

lambda
lambda[1]
lambda[3]
lambda[2]
Parameter
0
5
10
15
20
HPD


nu
Parameter
nu[1]
nu[3]
nu[2]
0
100
200
300
400
HPD


omega
omega[9,3]
omega[11,2]
omega[8,3]
omega[10,3]
omega[13,1]
omega[2,1]
omega[5,1]
omega[17,2]
omega[8,2]
omega[15,3]
omega[15,2]
omega[14,2]
omega[13,3]
omega[16,2]
omega[3,2]
omega[6,2]
omega[6,1]
omega[3,3]
omega[12,2]
omega[1,1]
omega[7,1]
omega[16,1]
omega[14,1]
omega[1,3]
omega[7,3]
omega[4,1]
omega[5,2]
omega[1,2]
omega[7,2]
omega[3,1]
omega[4,3]
omega[17,3]
omega[12,3]
omega[16,3]
omega[12,1]
omega[14,3]
omega[2,3]
omega[6,3]
omega[17,1]
omega[4,2]
omega[2,2]
omega[15,1]
omega[10,1]
omega[5,3]
omega[9,2]
omega[10,2]
omega[11,1]
omega[13,2]
omega[11,3]
omega[8,1]
omega[9,1]
Parameter
−0.50
−0.25
0.00
0.25
0.50
0.75
HPD


sigma
sigma[1]
sigma[3]
sigma[2]
Parameter
0.08
0.12
0.16
0.20
HPD


sigma.omega
sigma.omega[11]
sigma.omega[9]
sigma.omega[8]
sigma.omega[10]
sigma.omega[13]
sigma.omega[5]
sigma.omega[15]
sigma.omega[17]
sigma.omega[2]
sigma.omega[6]
sigma.omega[4]
sigma.omega[14]
sigma.omega[12]
sigma.omega[16]
sigma.omega[7]
sigma.omega[3]
sigma.omega[1]
Parameter
0.0
0.2
0.4
0.6
HPD


theta
Parameter
HPD
0.00
0.25
0.50
0.75