## The MCMC Procedure

| | |
|---|---|
| Number of Observations Read | 414 |
| Number of Observations Used | 414 |

| Parameters | | | | |
|---|---|---|---|---|
| Block | Parameter | Sampling Method | Initial Value | Prior Distribution |
| 1 | betaint | N-Metropolis | 0 | normal(mean = 0, var = 100000) |
| 2 | betabase | N-Metropolis | 0 | normal(mean = 0, var = 100000) |
| 3 | betahash | N-Metropolis | 0 | normal(mean = 0, var = 100000) |
| 4 | betabmi | N-Metropolis | 0 | normal(mean = 0, var = 100000) |
| 5 | betasmoke | N-Metropolis | 0 | normal(mean = 0, var = 100000) |
| 6 | betadrink | N-Metropolis | 0 | normal(mean = 0, var = 100000) |
| 7 | betarace | N-Metropolis | 0 | normal(mean = 0, var = 100000) |
| 8 | betaeduc | N-Metropolis | 0 | normal(mean = 0, var = 100000) |
| 9 | betaage | N-Metropolis | 0 | normal(mean = 0, var = 100000) |
| 10 | betaadh | N-Metropolis | 0 | normal(mean = 0, var = 100000) |
| 11 | betaincomemid | N-Metropolis | 0 | normal(mean = 0, var = 100000) |
| | betaincomehigh | | 0 | normal(mean = 0, var = 100000) |
| 12 | sigma2 | Conjugate | 1.0000 | igamma(shape = 2.001, scale = 1.001) |

## The MCMC Procedure

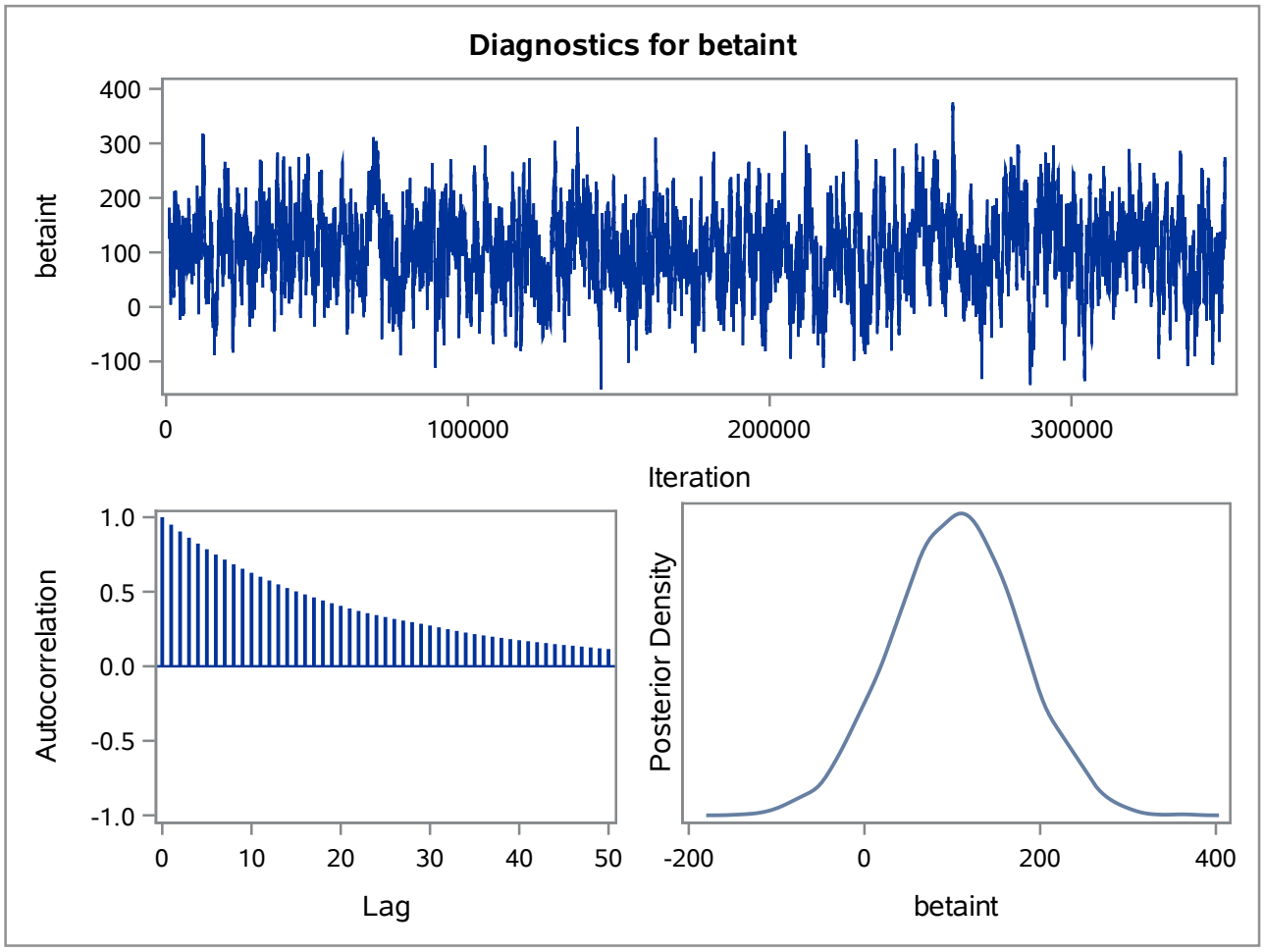
| Posterior Summaries and Intervals | | | | | |
|---|---|---|---|---|---|
| Parameter | N | Mean | Standard Deviation | 95% HPD Interval | |
| **betaint** | 17500 | 103.9 | 72.3722 | -35.9610 | 246.3 |
| **betabase** | 17500 | -0.0577 | 0.0433 | -0.1420 | 0.0279 |
| **betahash** | 17500 | 37.1478 | 17.1863 | 1.6525 | 68.9294 |
| **betabmi** | 17500 | 4.8076 | 2.0952 | 0.6652 | 8.8141 |
| **betasmoke** | 17500 | -17.7960 | 18.8417 | -53.5057 | 20.1261 |
| **betadrink** | 17500 | -1.1151 | 31.5812 | -63.3844 | 60.1253 |
| **betarace** | 17500 | -25.2036 | 20.3857 | -64.8505 | 15.1656 |
| **betaeduc** | 17500 | 30.5041 | 25.1862 | -18.6494 | 80.2096 |
| **betaage** | 17500 | -0.8691 | 0.9741 | -2.7926 | 0.9804 |
| **betaadh** | 17500 | -37.0926 | 27.7685 | -91.2956 | 17.2178 |
| **betaincomemid** | 17500 | 2.5950 | 25.3124 | -48.6946 | 50.9036 |
| **betaincomehigh** | 17500 | -50.7537 | 29.3162 | -107.5 | 7.2820 |
| **sigma2** | 17500 | 28915.8 | 2028.7 | 24861.1 | 32781.9 |

## The MCMC Procedure

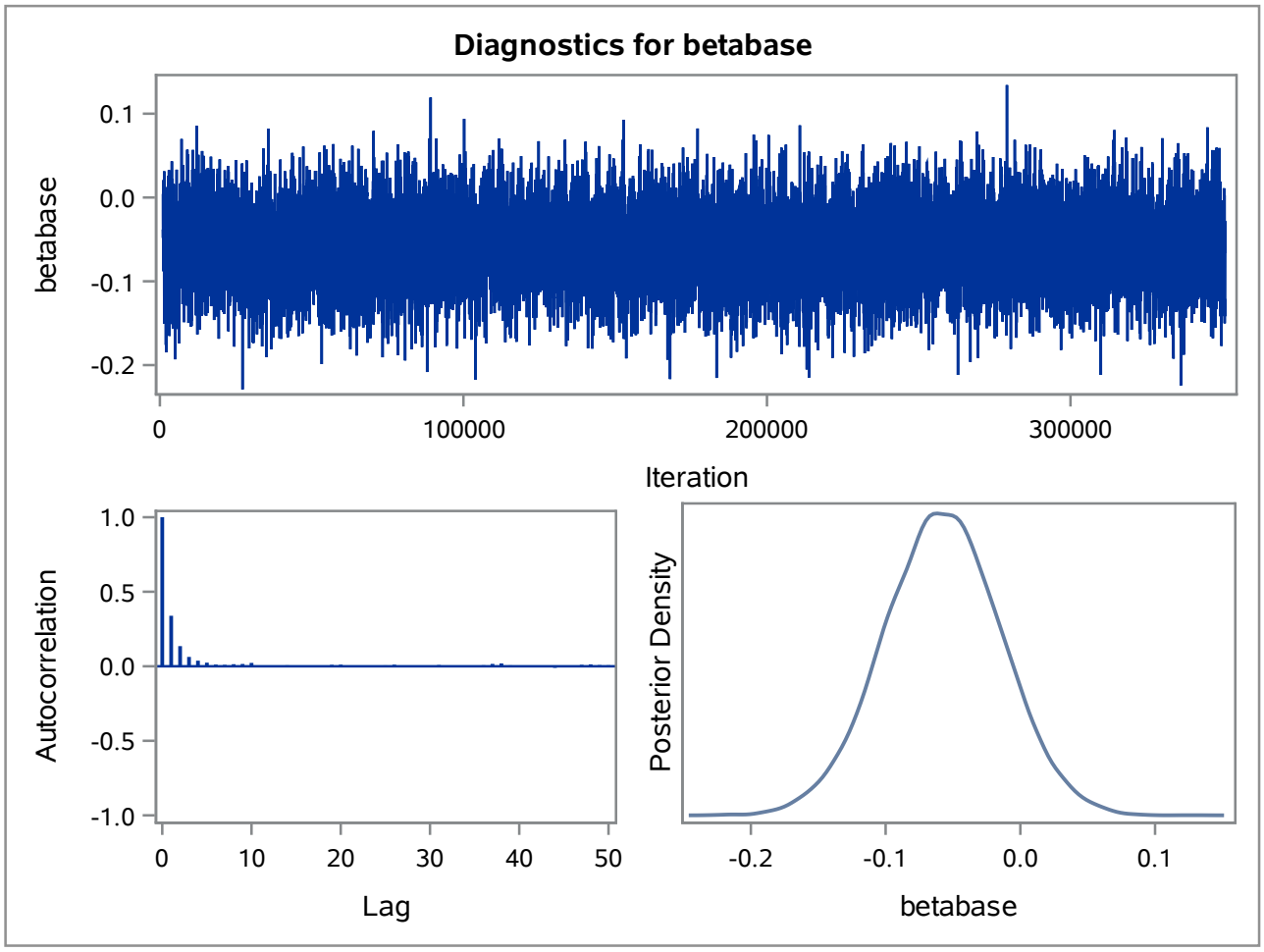
| Effective Sample Sizes | | | |
|---|---|---|---|
| Parameter | ESS | Autocorrelation Time | Efficiency |
| **betaint** | 391.5 | 44.6976 | 0.0224 |
| **betabase** | 7883.5 | 2.2198 | 0.4505 |
| **betahash** | 13343.7 | 1.3115 | 0.7625 |
| **betabmi** | 633.8 | 27.6099 | 0.0362 |
| **betasmoke** | 4585.2 | 3.8166 | 0.2620 |
| **betadrink** | 17047.7 | 1.0265 | 0.9742 |
| **betarace** | 6456.5 | 2.7104 | 0.3689 |
| **betaeduc** | 4937.2 | 3.5445 | 0.2821 |
| **betaage** | 890.8 | 19.6453 | 0.0509 |
| **betaadh** | 15635.0 | 1.1193 | 0.8934 |
| **betaincomemid** | 5349.2 | 3.2715 | 0.3057 |
| **betaincomehigh** | 5409.6 | 3.2350 | 0.3091 |
| **sigma2** | 17461.5 | 1.0022 | 0.9978 |

| Deviance Information Criterion | |
|---|---|
| Dbar (posterior mean of deviance) | 5430.650 |
| Dmean (deviance evaluated at posterior mean) | 5417.682 |
| pD (effective number of parameters) | 12.967 |
| DIC (smaller is better) | 5443.617 |

**The MCMC Procedure**



The MCMC Procedure



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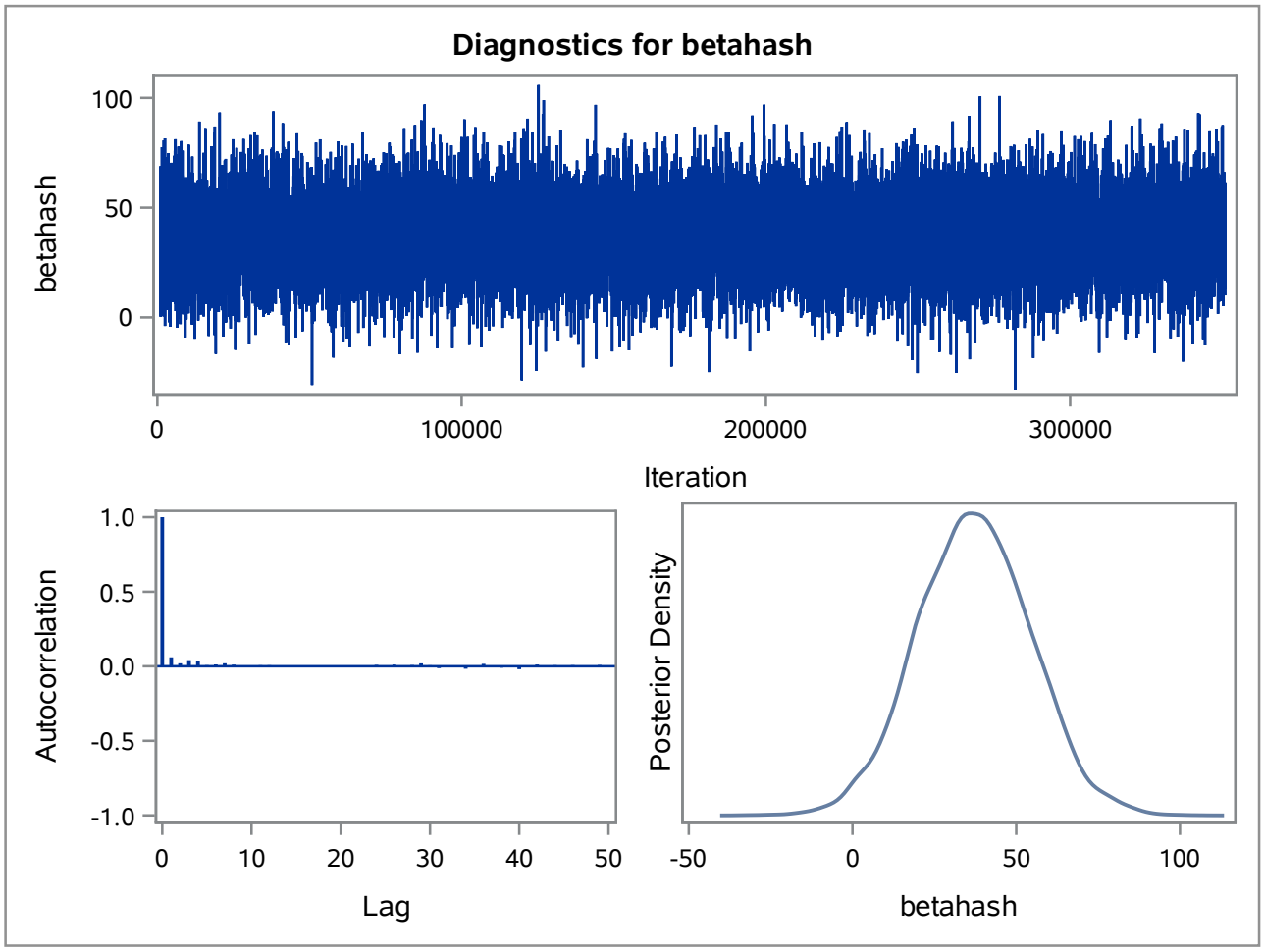

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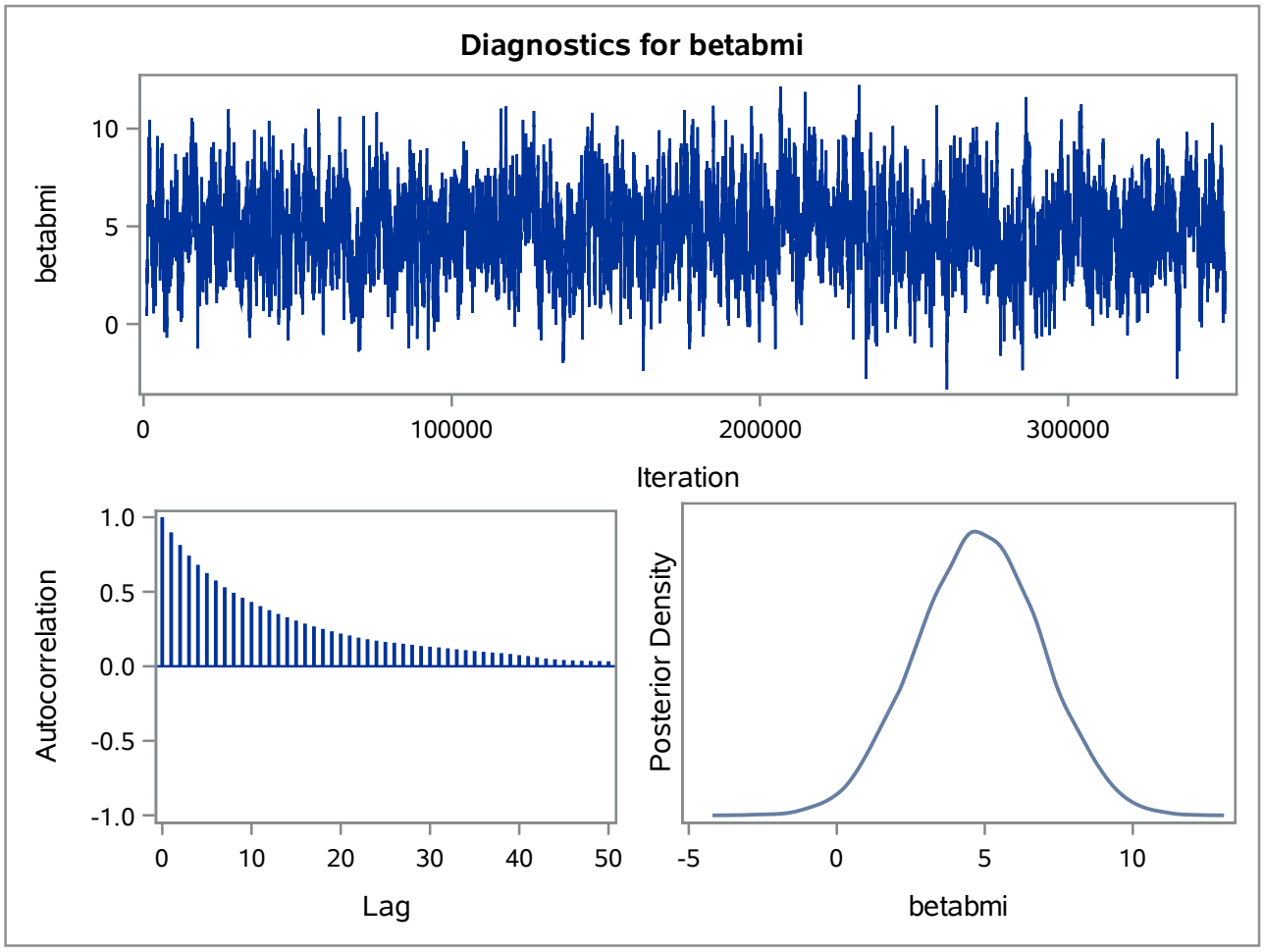

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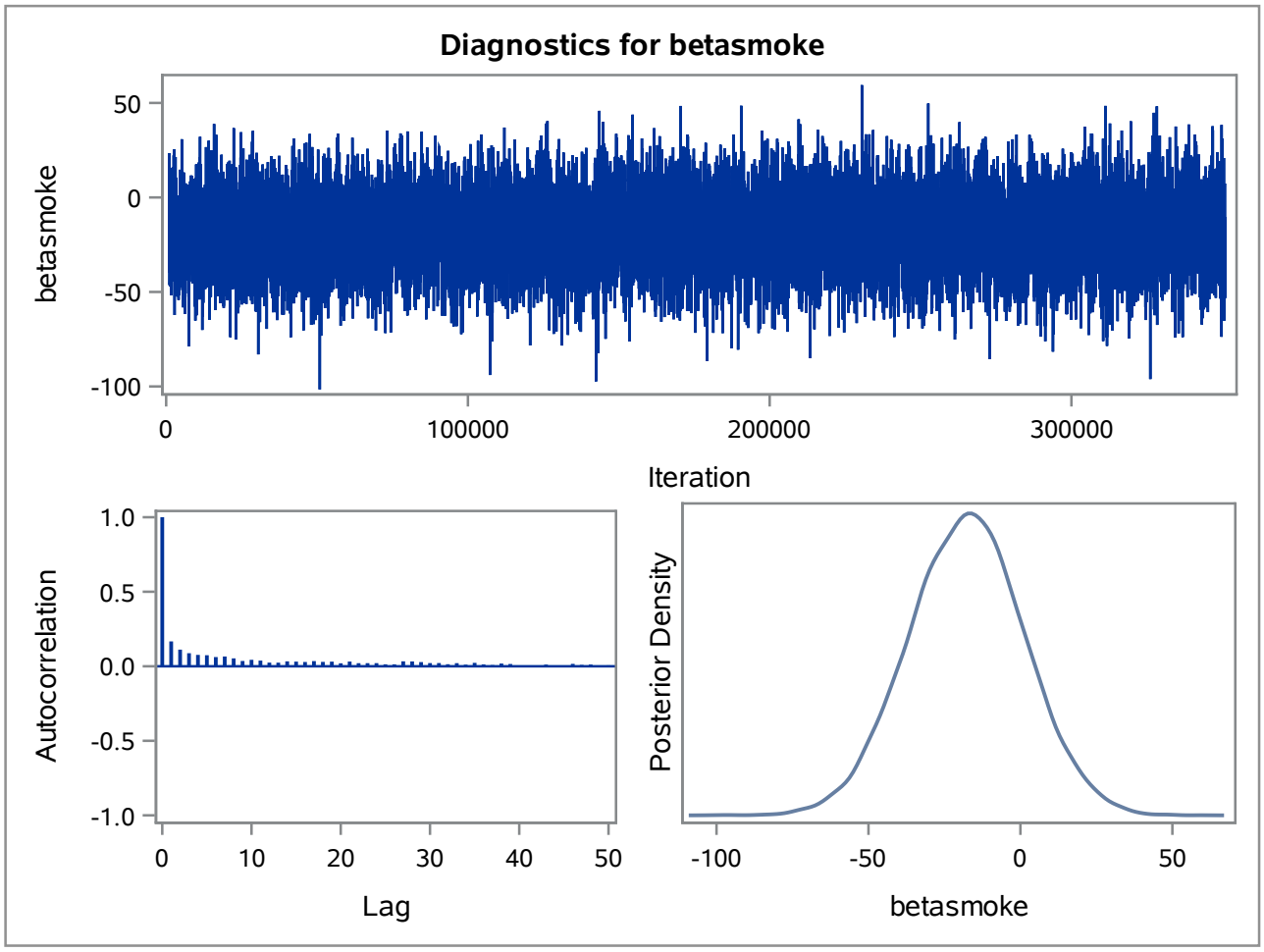

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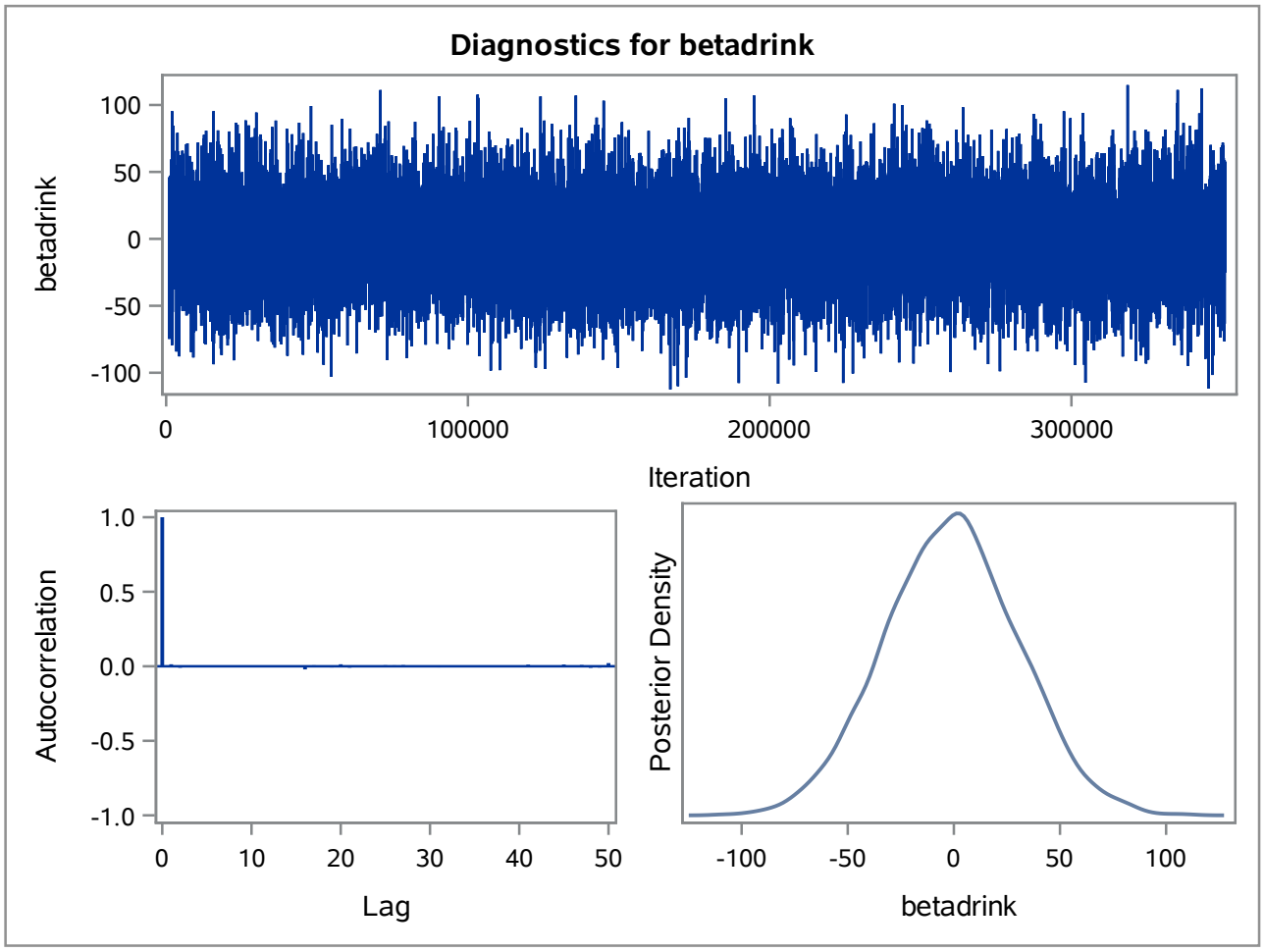

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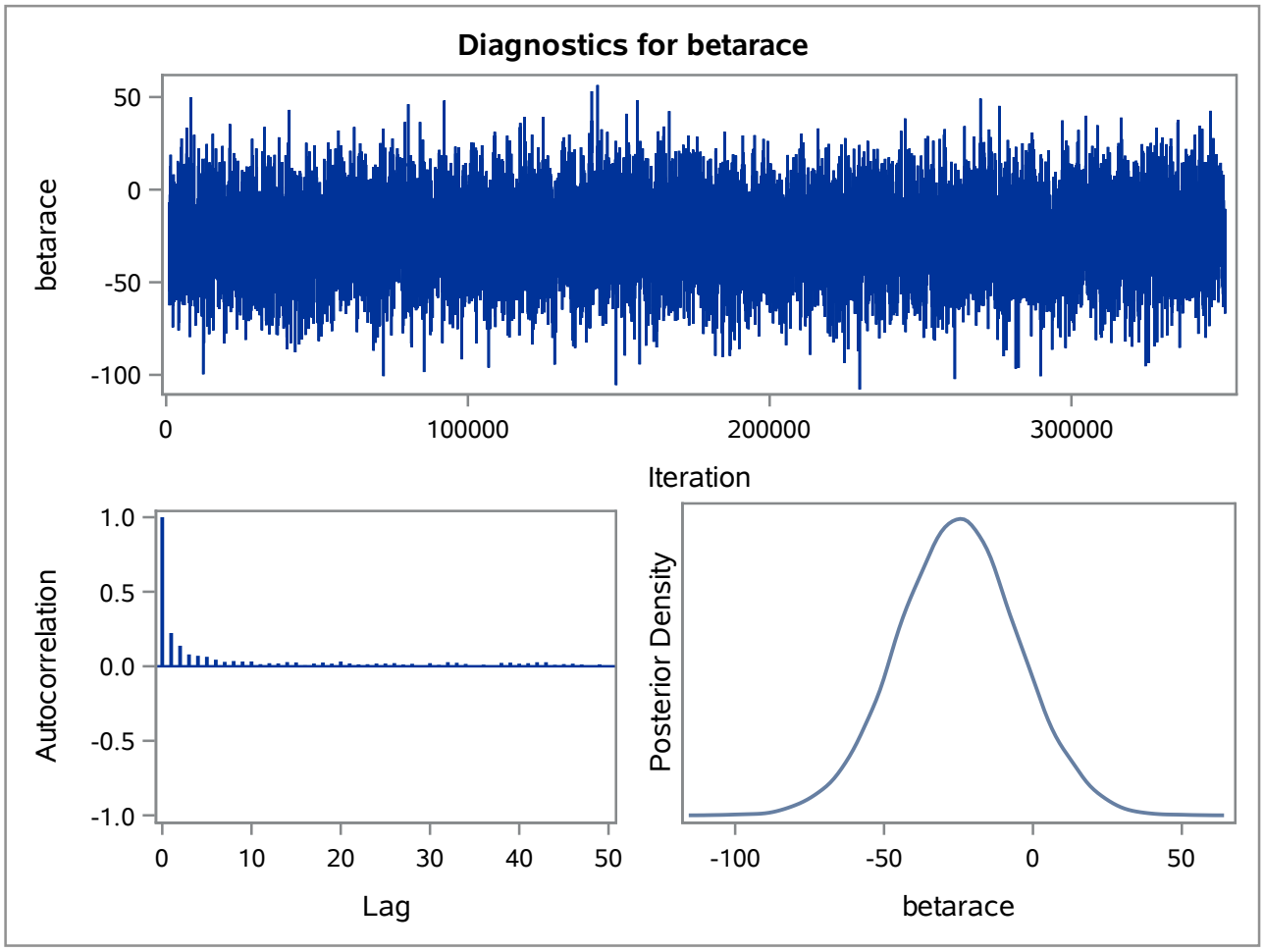

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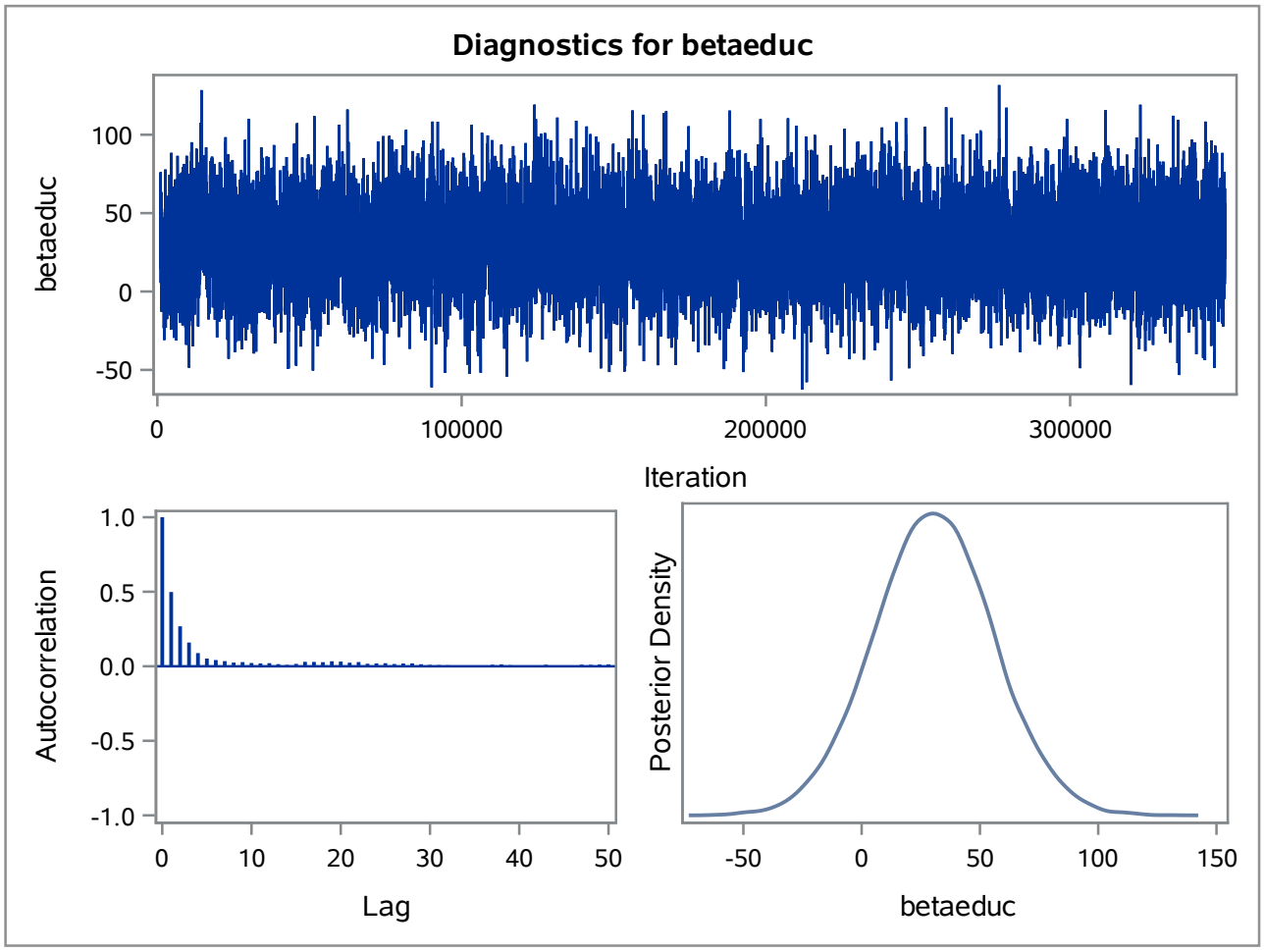

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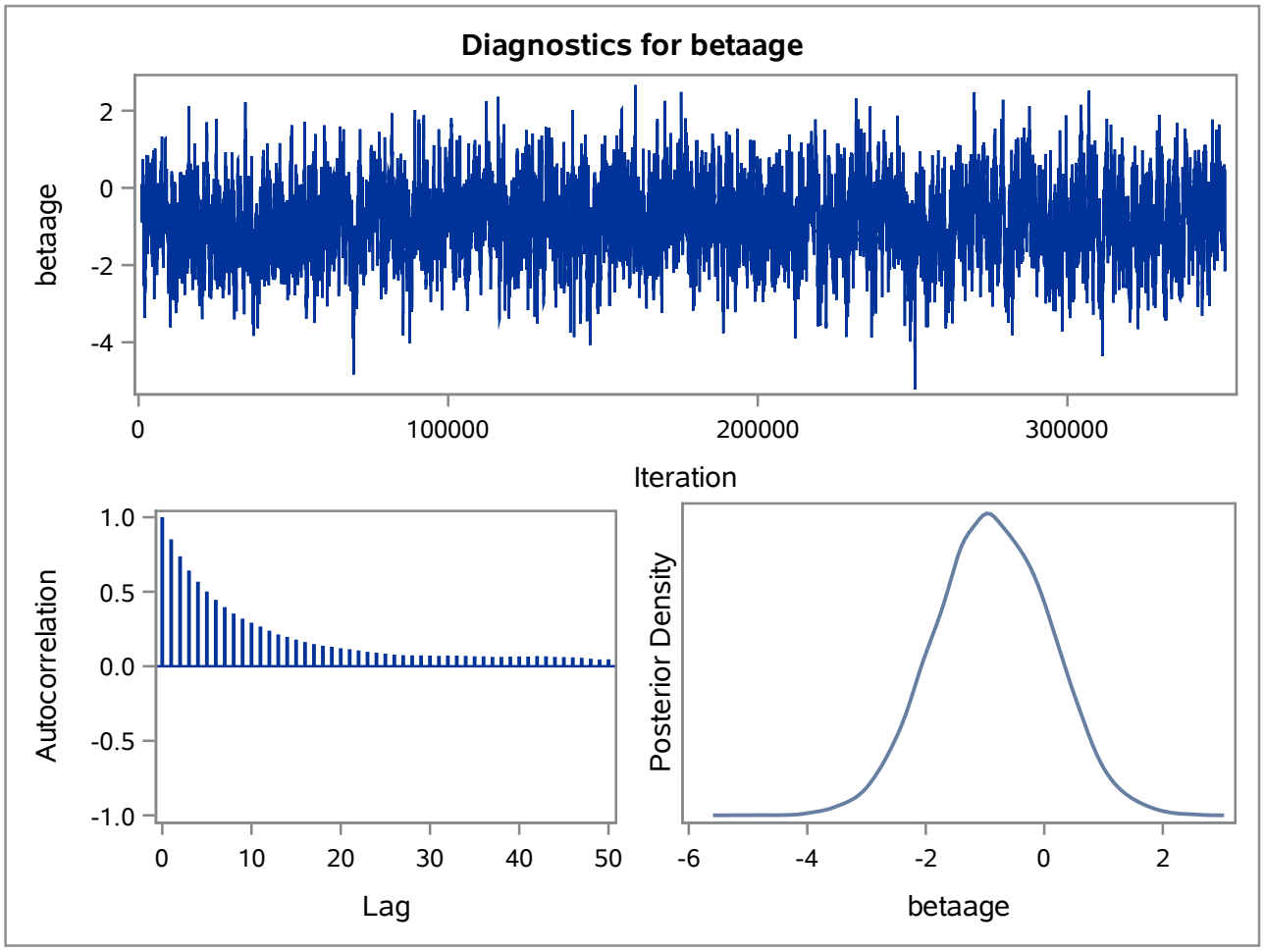

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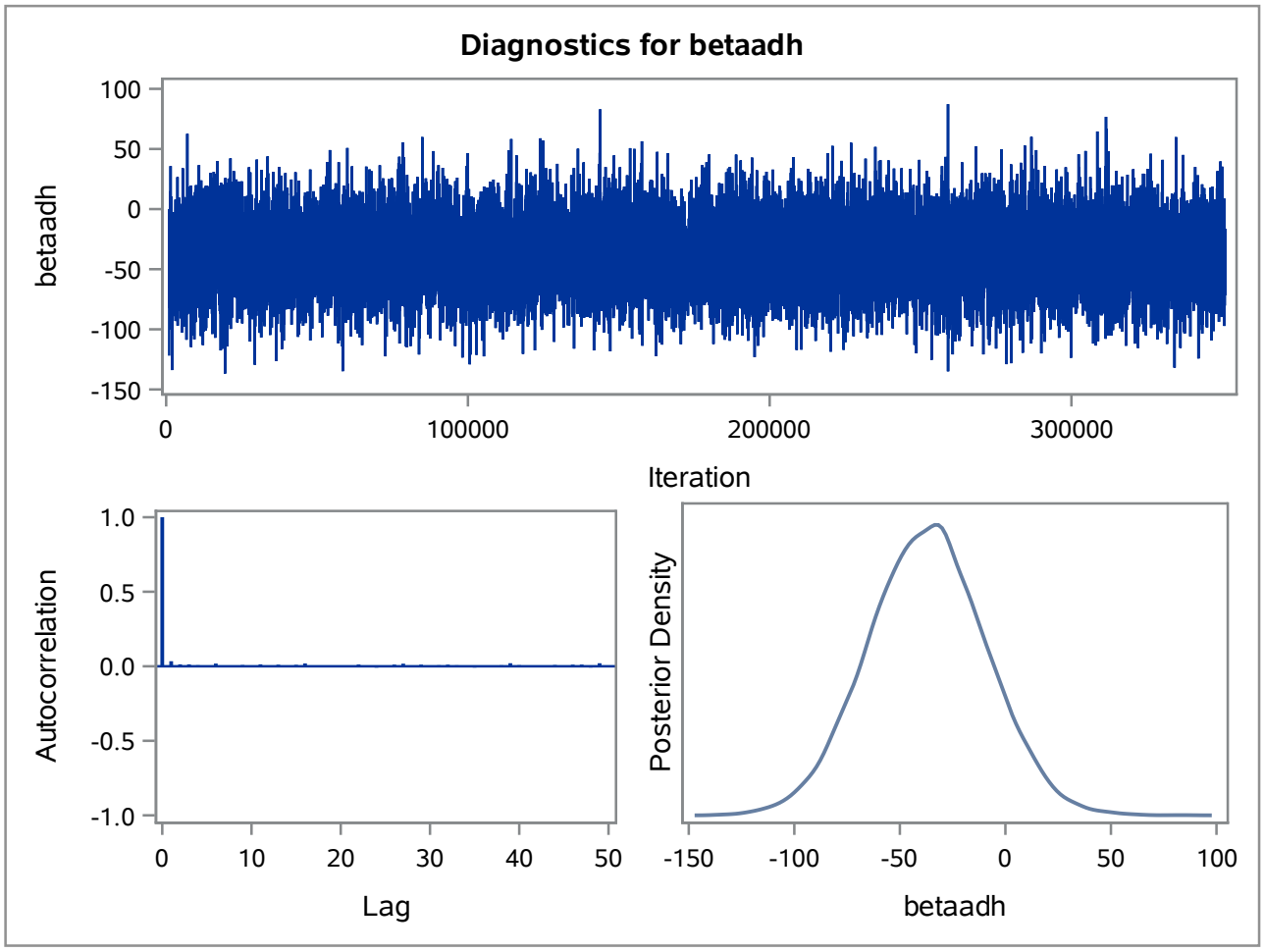

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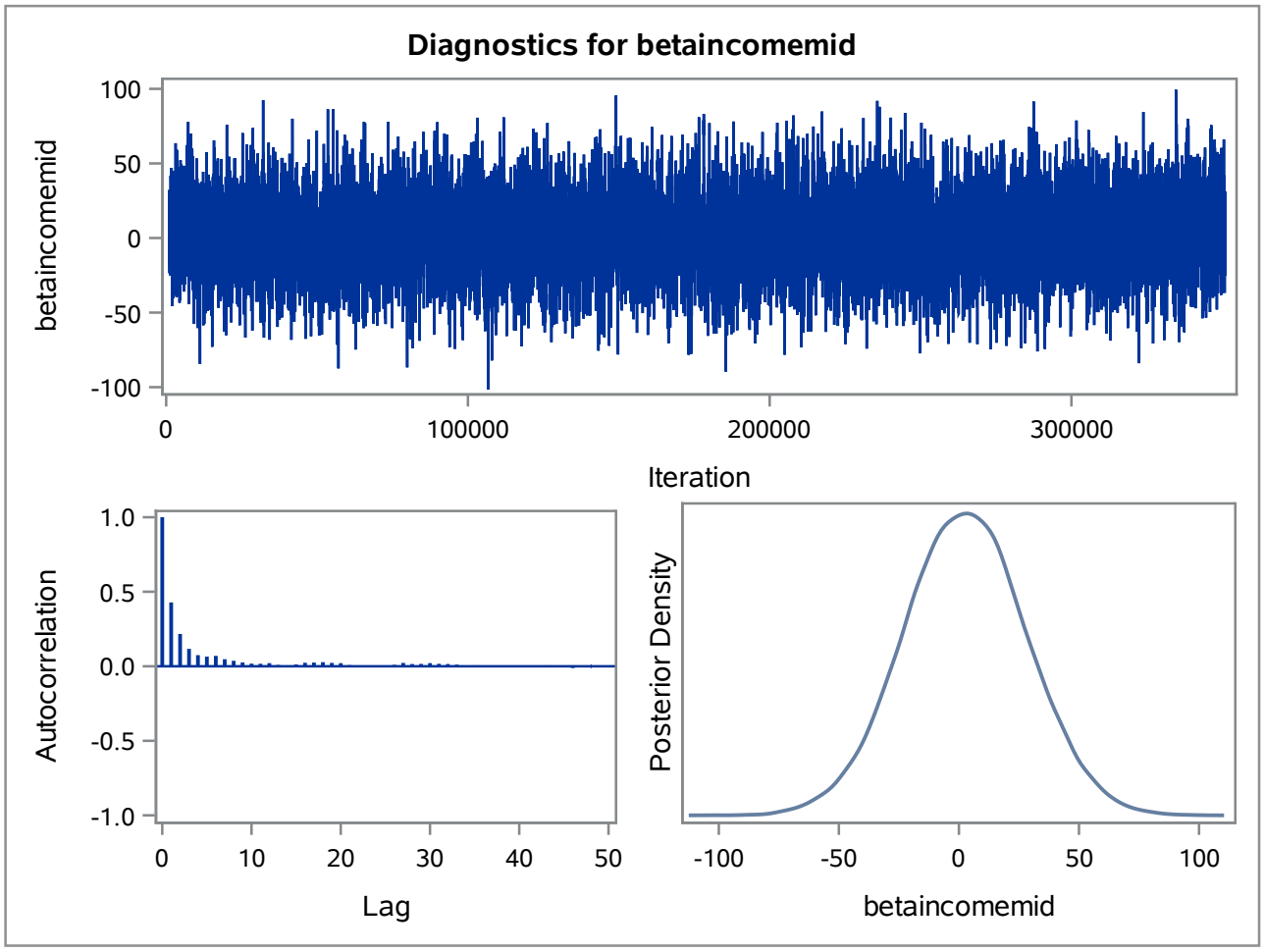

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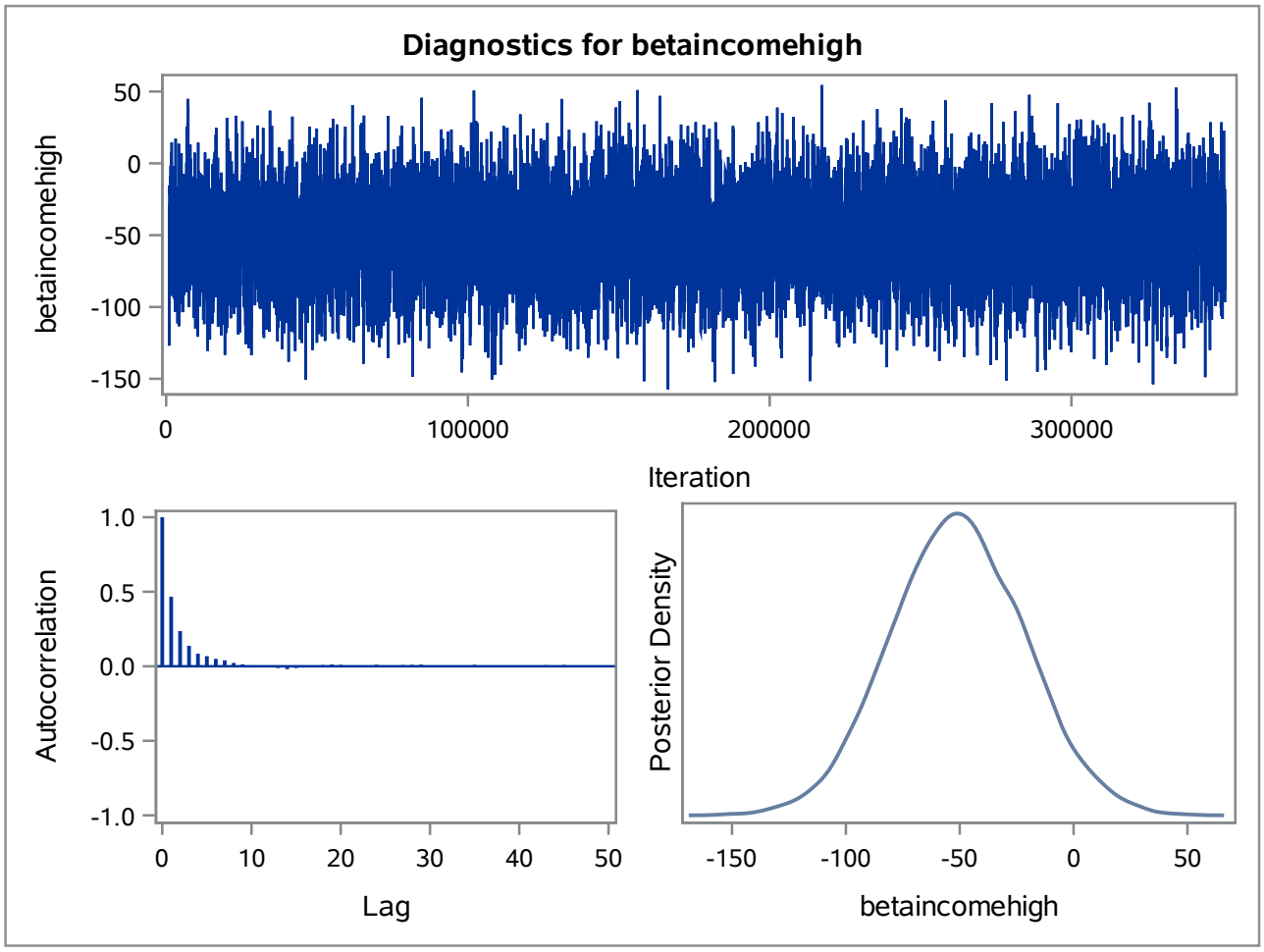
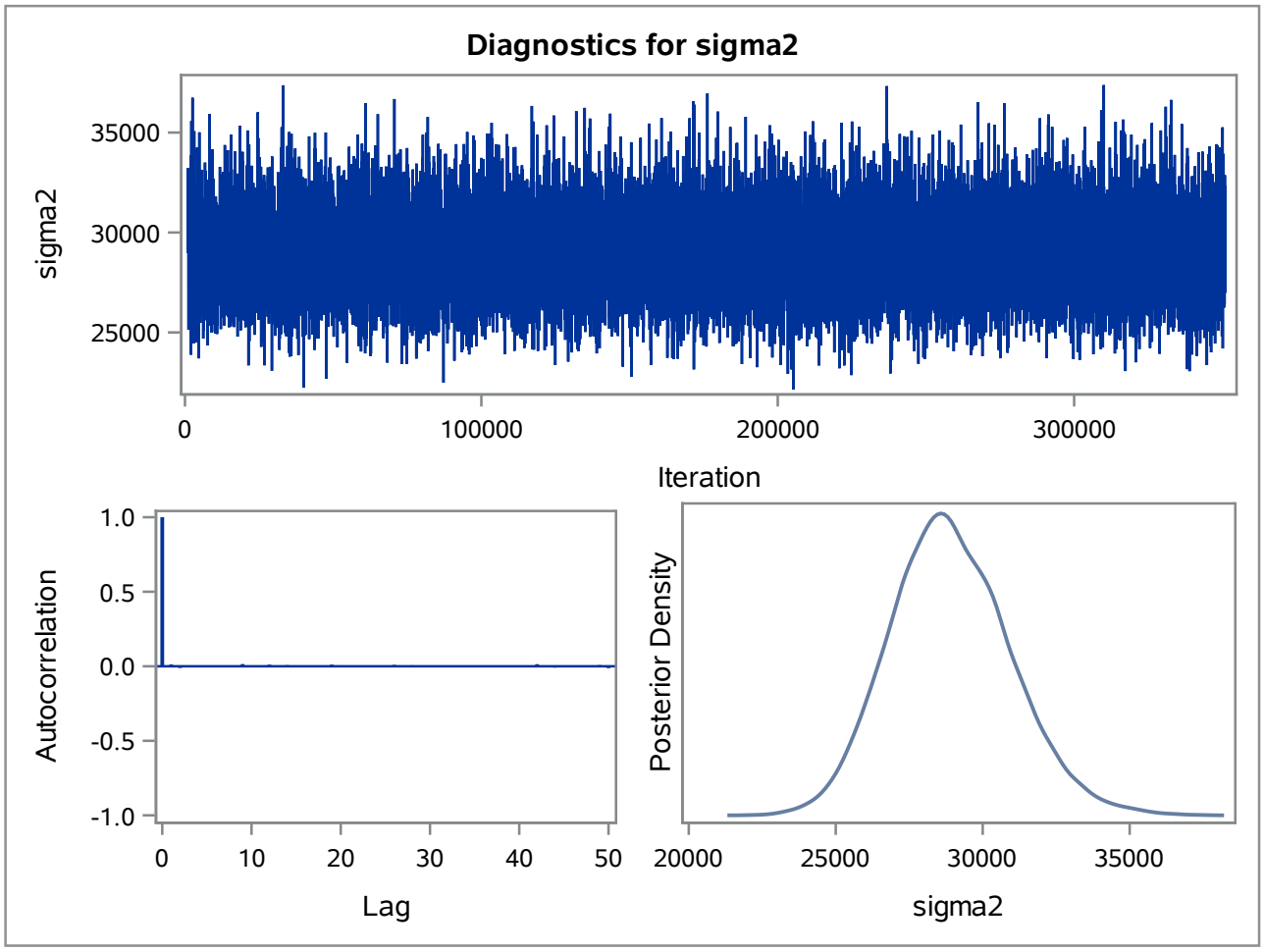
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