

```
> gelman.diag(model,multivariate=FALSE)#FALSE
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Potential scale reduction factors:

	Point est.	Upper C.I.
varietyArielle:varietyArielle.env	1	1
varietyDenar:varietyArielle.env	1	1
varietyEverest:varietyArielle.env	1	1
varietyImpala:varietyArielle.env	1	1
varietyLord:varietyArielle.env	1	1
varietyMilek:varietyArielle.env	1	1
varietyRiviera:varietyArielle.env	1	1
varietyViviana:varietyArielle.env	1	1
varietyArielle:varietyDenar.env	1	1
varietyDenar:varietyDenar.env	1	1
varietyEverest:varietyDenar.env	1	1
varietyImpala:varietyDenar.env	1	1
varietyLord:varietyDenar.env	1	1
varietyMilek:varietyDenar.env	1	1
varietyRiviera:varietyDenar.env	1	1
varietyViviana:varietyDenar.env	1	1
varietyArielle:varietyEverest.env	1	1
varietyDenar:varietyEverest.env	1	1
varietyEverest:varietyEverest.env	1	1
varietyImpala:varietyEverest.env	1	1
varietyLord:varietyEverest.env	1	1
varietyMilek:varietyEverest.env	1	1
varietyRiviera:varietyEverest.env	1	1
varietyViviana:varietyEverest.env	1	1
varietyArielle:varietyImpala.env	1	1
varietyDenar:varietyImpala.env	1	1
varietyEverest:varietyImpala.env	1	1
varietyImpala:varietyImpala.env	1	1
varietyLord:varietyImpala.env	1	1
varietyMilek:varietyImpala.env	1	1
varietyRiviera:varietyImpala.env	1	1
varietyViviana:varietyImpala.env	1	1
varietyArielle:varietyLord.env	1	1
varietyDenar:varietyLord.env	1	1
varietyEverest:varietyLord.env	1	1
varietyImpala:varietyLord.env	1	1
varietyLord:varietyLord.env	1	1
varietyMilek:varietyLord.env	1	1
varietyRiviera:varietyLord.env	1	1
varietyViviana:varietyLord.env	1	1
varietyArielle:varietyMilek.env	1	1
varietyDenar:varietyMilek.env	1	1
varietyEverest:varietyMilek.env	1	1
varietyImpala:varietyMilek.env	1	1
varietyLord:varietyMilek.env	1	1
varietyMilek:varietyMilek.env	1	1
varietyRiviera:varietyMilek.env	1	1
varietyViviana:varietyMilek.env	1	1
varietyArielle:varietyRiviera.env	1	1
varietyDenar:varietyRiviera.env	1	1
varietyEverest:varietyRiviera.env	1	1
varietyImpala:varietyRiviera.env	1	1
varietyLord:varietyRiviera.env	1	1

varietyMilek:varietyRiviera.env	1	1
varietyRiviera:varietyRiviera.env	1	1
varietyViviana:varietyRiviera.env	1	1
varietyArielle:varietyViviana.env	1	1
varietyDenar:varietyViviana.env	1	1
varietyEverest:varietyViviana.env	1	1
varietyImpala:varietyViviana.env	1	1
varietyLord:varietyViviana.env	1	1
varietyMilek:varietyViviana.env	1	1
varietyRiviera:varietyViviana.env	1	1
varietyViviana:varietyViviana.env	1	1
env:rep	1	1
env20161.units	1	1
env20163.units	1	1
env20164.units	1	1
env20165.units	1	1
env20168.units	1	1
env20171.units	1	1
env20173.units	1	1
env20174.units	1	1
env20175.units	1	1
env20178.units	1	1
env20181.units	1	1
env20183.units	1	1
env20185.units	1	1
env20188.units	1	1
env201610.units	1	1
env201611.units	1	1
env201614.units	1	1
env201618.units	1	1
env201619.units	1	1
env201621.units	1	1
env201623.units	1	1
env201625.units	1	1
env201626.units	1	1
env201628.units	1	1
env201629.units	1	1
env201636.units	1	1
env201639.units	1	1
env201641.units	1	1
env201643.units	1	1
env201645.units	1	1
env201648.units	1	1
env201649.units	1	1
env201710.units	1	1
env201711.units	1	1
env201715.units	1	1
env201718.units	1	1
env201719.units	1	1
env201721.units	1	1
env201723.units	1	1
env201725.units	1	1
env201726.units	1	1
env201728.units	1	1
env201729.units	1	1
env201736.units	1	1
env201739.units	1	1

env201741.units	1	1
env201743.units	1	1
env201745.units	1	1
env201748.units	1	1
env201749.units	1	1
env201810.units	1	1
env201811.units	1	1
env201815.units	1	1
env201818.units	1	1
env201821.units	1	1
env201823.units	1	1
env201825.units	1	1
env201826.units	1	1
env201828.units	1	1
env201829.units	1	1
env201836.units	1	1
env201839.units	1	1
env201841.units	1	1
env201843.units	1	1
env201845.units	1	1
env201848.units	1	1
env201849.units	1	1

```
> gelman.plot(model,autoburnin=TRUE, auto.layout = TRUE,ask=TRUE)
```

Oczekiwanie na potwierdzenie zmiany strony...

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Oczekiwanie na potwierdzenie zmiany strony...

>

```
> summary(model)
```

Iterations = 1000001:1999951

Thinning interval = 50

Number of chains = 5

Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

	Mean	SD	Naive SE	Time-series SE	
varietyArielle:varietyArielle.env	142.1076	25.55967	8.083e-02	8.083e-02	
varietyDenar:varietyArielle.env	142.6117	27.15053	8.586e-02	8.608e-02	
varietyEverest:varietyArielle.env	145.7392	28.72366	9.083e-02	9.083e-02	
varietyImpala:varietyArielle.env	136.9248	26.24184	8.298e-02	8.278e-02	
varietyLord:varietyArielle.env	144.2558	28.99197	9.168e-02	9.168e-02	
varietyMilek:varietyArielle.env	104.5330	20.71447	6.550e-02	6.530e-02	
varietyRiviera:varietyArielle.env	111.9717	21.42383	6.775e-02	6.737e-02	

varietyViviana:varietyArielle.env	129.4378	25.42004	8.039e-02	8.051e-02
varietyArielle:varietyDenar.env	142.6117	27.15053	8.586e-02	8.608e-02
varietyDenar:varietyDenar.env	181.9399	32.51894	1.028e-01	1.028e-01
varietyEverest:varietyDenar.env	172.4325	33.09763	1.047e-01	1.047e-01
varietyImpala:varietyDenar.env	160.3633	30.08740	9.514e-02	9.495e-02
varietyLord:varietyDenar.env	186.3802	34.59696	1.094e-01	1.097e-01
varietyMilek:varietyDenar.env	125.4127	23.95115	7.574e-02	7.595e-02
varietyRiviera:varietyDenar.env	129.7294	24.42964	7.725e-02	7.776e-02
varietyViviana:varietyDenar.env	153.8737	29.30180	9.266e-02	9.235e-02
varietyArielle:varietyEverest.env	145.7392	28.72366	9.083e-02	9.083e-02
varietyDenar:varietyEverest.env	172.4325	33.09763	1.047e-01	1.047e-01
varietyEverest:varietyEverest.env	196.7588	38.50782	1.218e-01	1.221e-01
varietyImpala:varietyEverest.env	162.8133	32.01621	1.012e-01	1.016e-01
varietyLord:varietyEverest.env	180.6794	35.93795	1.136e-01	1.136e-01
varietyMilek:varietyEverest.env	121.3676	24.87115	7.865e-02	7.865e-02
varietyRiviera:varietyEverest.env	126.2383	25.17703	7.962e-02	7.981e-02
varietyViviana:varietyEverest.env	151.3088	30.60866	9.679e-02	9.679e-02
varietyArielle:varietyImpala.env	136.9248	26.24184	8.298e-02	8.278e-02
varietyDenar:varietyImpala.env	160.3633	30.08740	9.514e-02	9.495e-02
varietyEverest:varietyImpala.env	162.8133	32.01621	1.012e-01	1.016e-01
varietyImpala:varietyImpala.env	171.6490	30.74061	9.721e-02	9.721e-02
varietyLord:varietyImpala.env	171.8930	32.89495	1.040e-01	1.040e-01
varietyMilek:varietyImpala.env	115.7501	22.78112	7.204e-02	7.200e-02
varietyRiviera:varietyImpala.env	121.6073	23.37165	7.391e-02	7.372e-02
varietyViviana:varietyImpala.env	148.9037	28.42444	8.989e-02	8.965e-02
varietyArielle:varietyLord.env	144.2558	28.99197	9.168e-02	9.168e-02
varietyDenar:varietyLord.env	186.3802	34.59696	1.094e-01	1.097e-01
varietyEverest:varietyLord.env	180.6794	35.93795	1.136e-01	1.136e-01
varietyImpala:varietyLord.env	171.8930	32.89495	1.040e-01	1.040e-01
varietyLord:varietyLord.env	224.7932	40.07954	1.267e-01	1.267e-01
varietyMilek:varietyLord.env	135.5001	26.28782	8.313e-02	8.310e-02
varietyRiviera:varietyLord.env	136.9416	26.53101	8.390e-02	8.412e-02
varietyViviana:varietyLord.env	161.6829	31.79308	1.005e-01	1.005e-01
varietyArielle:varietyMilek.env	104.5330	20.71447	6.550e-02	6.530e-02
varietyDenar:varietyMilek.env	125.4127	23.95115	7.574e-02	7.595e-02
varietyEverest:varietyMilek.env	121.3676	24.87115	7.865e-02	7.865e-02
varietyImpala:varietyMilek.env	115.7501	22.78112	7.204e-02	7.200e-02
varietyLord:varietyMilek.env	135.5001	26.28782	8.313e-02	8.310e-02
varietyMilek:varietyMilek.env	110.7520	19.99520	6.323e-02	6.322e-02
varietyRiviera:varietyMilek.env	101.0075	19.11666	6.045e-02	6.045e-02
varietyViviana:varietyMilek.env	121.8416	23.11230	7.309e-02	7.292e-02
varietyArielle:varietyRiviera.env	111.9717	21.42383	6.775e-02	6.737e-02
varietyDenar:varietyRiviera.env	129.7294	24.42964	7.725e-02	7.776e-02
varietyEverest:varietyRiviera.env	126.2383	25.17703	7.962e-02	7.981e-02
varietyImpala:varietyRiviera.env	121.6073	23.37165	7.391e-02	7.372e-02
varietyLord:varietyRiviera.env	136.9416	26.53101	8.390e-02	8.412e-02
varietyMilek:varietyRiviera.env	101.0075	19.11666	6.045e-02	6.045e-02
varietyRiviera:varietyRiviera.env	112.7802	20.33915	6.432e-02	6.435e-02
varietyViviana:varietyRiviera.env	125.8588	23.56775	7.453e-02	7.399e-02
varietyArielle:varietyViviana.env	129.4378	25.42004	8.039e-02	8.051e-02
varietyDenar:varietyViviana.env	153.8737	29.30180	9.266e-02	9.235e-02
varietyEverest:varietyViviana.env	151.3088	30.60866	9.679e-02	9.679e-02
varietyImpala:varietyViviana.env	148.9037	28.42444	8.989e-02	8.965e-02
varietyLord:varietyViviana.env	161.6829	31.79308	1.005e-01	1.005e-01
varietyMilek:varietyViviana.env	121.8416	23.11230	7.309e-02	7.292e-02
varietyRiviera:varietyViviana.env	125.8588	23.56775	7.453e-02	7.399e-02
varietyViviana:varietyViviana.env	166.1438	29.83636	9.435e-02	9.411e-02

env:rep	2.7283	0.44944	1.421e-03	1.433e-03
env20161.units	10.9528	4.11775	1.302e-02	1.297e-02
env20163.units	2.3976	1.03299	3.267e-03	3.256e-03
env20164.units	3.3656	1.43722	4.545e-03	4.553e-03
env20165.units	10.5756	4.99794	1.580e-02	1.586e-02
env20168.units	2.1713	1.02304	3.235e-03	3.235e-03
env20171.units	17.8093	8.92395	2.822e-02	2.828e-02
env20173.units	2.8137	1.20719	3.817e-03	3.805e-03
env20174.units	0.1568	0.07018	2.219e-04	2.228e-04
env20175.units	3.4977	1.50365	4.755e-03	4.742e-03
env20178.units	1.4782	0.67529	2.135e-03	2.130e-03
env20181.units	0.6807	0.27420	8.671e-04	8.741e-04
env20183.units	0.3517	0.14320	4.529e-04	4.529e-04
env20185.units	1.6729	0.66028	2.088e-03	2.078e-03
env20188.units	0.6349	0.26217	8.290e-04	8.334e-04
env201610.units	19.0665	8.40990	2.659e-02	2.690e-02
env201611.units	28.1254	9.95857	3.149e-02	3.153e-02
env201614.units	1.0828	0.48825	1.544e-03	1.537e-03
env201618.units	0.7939	0.35087	1.110e-03	1.097e-03
env201619.units	3.2356	1.44544	4.571e-03	4.543e-03
env201621.units	15.5787	6.59697	2.086e-02	2.086e-02
env201623.units	30.6277	11.16062	3.529e-02	3.529e-02
env201625.units	1.5447	0.67277	2.127e-03	2.127e-03
env201626.units	5.8536	2.36004	7.463e-03	7.463e-03
env201628.units	0.4745	0.21153	6.689e-04	6.645e-04
env201629.units	27.0690	13.46549	4.258e-02	4.272e-02
env201636.units	13.3193	5.16767	1.634e-02	1.633e-02
env201639.units	2.5679	1.18170	3.737e-03	3.756e-03
env201641.units	4.8770	1.87291	5.923e-03	5.936e-03
env201643.units	1.2727	0.55343	1.750e-03	1.754e-03
env201645.units	1.2367	0.55745	1.763e-03	1.767e-03
env201648.units	8.8881	3.87515	1.225e-02	1.225e-02
env201649.units	7.8546	4.60411	1.456e-02	1.459e-02
env201710.units	23.4035	9.49318	3.002e-02	2.998e-02
env201711.units	6.5917	2.46859	7.806e-03	7.788e-03
env201715.units	5.6234	2.38215	7.533e-03	7.550e-03
env201718.units	1.5237	0.66900	2.116e-03	2.125e-03
env201719.units	2.3307	1.03352	3.268e-03	3.247e-03
env201721.units	6.7773	3.01196	9.525e-03	9.731e-03
env201723.units	5.0947	2.12460	6.719e-03	6.678e-03
env201725.units	1.5191	0.65289	2.065e-03	2.060e-03
env201726.units	1.7801	0.71559	2.263e-03	2.260e-03
env201728.units	4.0017	1.83569	5.805e-03	5.795e-03
env201729.units	2.6905	1.17140	3.704e-03	3.706e-03
env201736.units	12.8451	5.10501	1.614e-02	1.616e-02
env201739.units	2.2362	1.09058	3.449e-03	3.442e-03
env201741.units	0.9227	0.37283	1.179e-03	1.179e-03
env201743.units	1.4430	0.63982	2.023e-03	2.028e-03
env201745.units	1.0739	0.48026	1.519e-03	1.537e-03
env201748.units	1.1774	0.51799	1.638e-03	1.649e-03
env201749.units	0.5642	0.24952	7.891e-04	7.891e-04
env201810.units	1.9352	0.90044	2.847e-03	2.827e-03
env201811.units	10.8878	4.61923	1.461e-02	1.461e-02
env201815.units	5.1549	2.18841	6.920e-03	6.882e-03
env201818.units	1.8760	0.76124	2.407e-03	2.394e-03
env201821.units	6.1399	2.40755	7.613e-03	7.568e-03
env201823.units	1.2010	0.48496	1.534e-03	1.539e-03

env201825.units	2.5293	1.04814	3.315e-03	3.315e-03
env201826.units	4.9510	1.99097	6.296e-03	6.296e-03
env201828.units	0.0604	0.02451	7.751e-05	7.823e-05
env201829.units	0.4377	0.17794	5.627e-04	5.734e-04
env201836.units	9.1087	3.47516	1.099e-02	1.091e-02
env201839.units	14.4095	5.72928	1.812e-02	1.812e-02
env201841.units	0.4813	0.19304	6.104e-04	6.104e-04
env201843.units	9.2942	3.54536	1.121e-02	1.109e-02
env201845.units	4.7845	1.95400	6.179e-03	6.168e-03
env201848.units	0.9787	0.39499	1.249e-03	1.252e-03
env201849.units	1.0298	0.42115	1.332e-03	1.338e-03

2. Quantiles for each variable:

	2.5%	25%	50%	75%
varietyArielle:varietyArielle.env	100.61970	123.97283	139.15959	157.08810
varietyDenar:varietyArielle.env	98.45989	123.32020	139.60867	158.52729
varietyEverest:varietyArielle.env	98.85829	125.39189	142.58499	162.62691
varietyImpala:varietyArielle.env	94.15448	118.24343	133.94091	152.40463
varietyLord:varietyArielle.env	96.72835	123.69839	141.09808	161.39093
varietyMilek:varietyArielle.env	70.68219	89.87831	102.18584	116.68447
varietyRiviera:varietyArielle.env	77.08397	96.74388	109.59692	124.64322
varietyViviana:varietyArielle.env	87.83771	111.42500	126.64360	144.45098
varietyArielle:varietyDenar.env	98.45989	123.32020	139.60867	158.52729
varietyDenar:varietyDenar.env	128.99815	158.87085	178.35560	201.07364
varietyEverest:varietyDenar.env	118.52034	148.95786	168.75191	191.87078
varietyImpala:varietyDenar.env	111.25469	138.90815	157.10304	177.98902
varietyLord:varietyDenar.env	129.88507	161.84042	182.58791	206.73158
varietyMilek:varietyDenar.env	86.20163	108.41588	122.75611	139.48021
varietyRiviera:varietyDenar.env	89.79285	112.32529	127.02655	144.08953
varietyViviana:varietyDenar.env	106.02246	133.06440	150.64835	171.02100
varietyArielle:varietyEverest.env	98.85829	125.39189	142.58499	162.62691
varietyDenar:varietyEverest.env	118.52034	148.95786	168.75191	191.87078
varietyEverest:varietyEverest.env	134.39446	169.37901	192.38927	219.27538
varietyImpala:varietyEverest.env	110.48537	140.13379	159.27363	181.77538
varietyLord:varietyEverest.env	121.91087	155.23026	176.65169	201.93466
varietyMilek:varietyEverest.env	80.65149	103.73199	118.55290	136.18088
varietyRiviera:varietyEverest.env	85.24879	108.37534	123.41621	141.04866
varietyViviana:varietyEverest.env	101.30694	129.61922	147.85053	169.38019
varietyArielle:varietyImpala.env	94.15448	118.24343	133.94091	152.40463
varietyDenar:varietyImpala.env	111.25469	138.90815	157.10304	177.98902
varietyEverest:varietyImpala.env	110.48537	140.13379	159.27363	181.77538
varietyImpala:varietyImpala.env	121.44832	149.69865	168.27782	189.72076
varietyLord:varietyImpala.env	118.03845	148.52445	168.28189	191.27221
varietyMilek:varietyImpala.env	78.52660	99.55487	113.25031	129.21388
varietyRiviera:varietyImpala.env	83.36707	104.92505	119.06545	135.37500
varietyViviana:varietyImpala.env	102.47303	128.69138	145.77264	165.67134
varietyArielle:varietyLord.env	96.72835	123.69839	141.09808	161.39093
varietyDenar:varietyLord.env	129.88507	161.84042	182.58791	206.73158
varietyEverest:varietyLord.env	121.91087	155.23026	176.65169	201.93466
varietyImpala:varietyLord.env	118.03845	148.52445	168.28189	191.27221
varietyLord:varietyLord.env	159.33981	196.28422	220.35352	248.35999
varietyMilek:varietyLord.env	92.39070	116.81609	132.64941	151.01580
varietyRiviera:varietyLord.env	93.45966	118.07890	134.04811	152.51635
varietyViviana:varietyLord.env	109.54292	139.16914	158.21609	180.49248
varietyArielle:varietyMilek.env	70.68219	89.87831	102.18584	116.68447
varietyDenar:varietyMilek.env	86.20163	108.41588	122.75611	139.48021

varietyEverest:varietyMilek.env	80.65149	103.73199	118.55290	136.18088
varietyImpala:varietyMilek.env	78.52660	99.55487	113.25031	129.21388
varietyLord:varietyMilek.env	92.39070	116.81609	132.64941	151.01580
varietyMilek:varietyMilek.env	78.04851	96.57347	108.55156	122.45829
varietyRiviera:varietyMilek.env	69.75836	87.45371	98.87272	112.30968
varietyViviana:varietyMilek.env	83.93414	105.46478	119.36625	135.44081
varietyArielle:varietyRiviera.env	77.08397	96.74388	109.59692	124.64322
varietyDenar:varietyRiviera.env	89.79285	112.32529	127.02655	144.08953
varietyEverest:varietyRiviera.env	85.24879	108.37534	123.41621	141.04866
varietyImpala:varietyRiviera.env	83.36707	104.92505	119.06545	135.37500
varietyLord:varietyRiviera.env	93.45966	118.07890	134.04811	152.51635
varietyMilek:varietyRiviera.env	69.75836	87.45371	98.87272	112.30968
varietyRiviera:varietyRiviera.env	79.72395	98.35951	110.48995	124.75237
varietyViviana:varietyRiviera.env	87.33441	109.07511	123.24299	139.77068
varietyArielle:varietyViviana.env	87.83771	111.42500	126.64360	144.45098
varietyDenar:varietyViviana.env	106.02246	133.06440	150.64835	171.02100
varietyEverest:varietyViviana.env	101.30694	129.61922	147.85053	169.38019
varietyImpala:varietyViviana.env	102.47303	128.69138	145.77264	165.67134
varietyLord:varietyViviana.env	109.54292	139.16914	158.21609	180.49248
varietyMilek:varietyViviana.env	83.93414	105.46478	119.36625	135.44081
varietyRiviera:varietyViviana.env	87.33441	109.07511	123.24299	139.77068
varietyViviana:varietyViviana.env	117.25824	144.96582	162.93296	183.73078
env:rep	1.95173	2.41153	2.69283	3.00497
env20161.units	5.51569	8.10321	10.11308	12.86440
env20163.units	1.12195	1.70194	2.17230	2.82797
env20164.units	1.58428	2.39020	3.04279	3.97278
env20165.units	4.67031	7.22852	9.40539	12.55366
env20168.units	0.96904	1.49927	1.93555	2.56510
env20171.units	7.35817	11.82769	15.66844	21.31283
env20173.units	1.31955	1.99562	2.54808	3.31852
env20174.units	0.07198	0.10986	0.14095	0.18522
env20175.units	1.63218	2.47676	3.17069	4.13985
env20178.units	0.67070	1.02797	1.32358	1.74705
env20181.units	0.33112	0.49329	0.62282	0.80079
env20183.units	0.17113	0.25494	0.32171	0.41294
env20185.units	0.82023	1.21926	1.53371	1.96752
env20188.units	0.30746	0.45822	0.57784	0.74469
env201610.units	8.49296	13.26979	17.23086	22.73814
env201611.units	14.54224	21.18105	26.22349	32.91789
env201614.units	0.49393	0.75705	0.97324	1.27937
env201618.units	0.36439	0.55832	0.71619	0.93681
env201619.units	1.49313	2.27126	2.91526	3.81305
env201621.units	7.27522	11.06375	14.15511	18.42296
env201623.units	15.68951	22.89927	28.43092	35.82672
env201625.units	0.71542	1.09206	1.39601	1.82136
env201626.units	2.83891	4.24271	5.35098	6.88708
env201628.units	0.21804	0.33372	0.42810	0.56004
env201629.units	10.60460	17.81937	24.02873	32.70370
env201636.units	6.56439	9.74492	12.25254	15.67765
env201639.units	1.15832	1.77601	2.29622	3.04095
env201641.units	2.43009	3.58243	4.49179	5.73624
env201643.units	0.59142	0.90001	1.14846	1.50280
env201645.units	0.56455	0.86481	1.11024	1.45916
env201648.units	4.09600	6.25033	8.02524	10.53012
env201649.units	2.90622	4.85605	6.64719	9.42908
env201710.units	11.12605	16.85821	21.45322	27.65088
env201711.units	3.34118	4.88598	6.09448	7.71914

env201715.units	2.62430	3.99975	5.11084	6.65635
env201718.units	0.70166	1.07340	1.37503	1.79622
env201719.units	1.07109	1.63655	2.10311	2.75360
env201721.units	3.09154	4.75032	6.10427	8.01455
env201723.units	2.43579	3.65229	4.64086	6.00388
env201725.units	0.71107	1.07975	1.37575	1.79402
env201726.units	0.86645	1.29389	1.63017	2.09113
env201728.units	1.79454	2.76809	3.57530	4.75098
env201729.units	1.24941	1.89724	2.43387	3.17801
env201736.units	6.25735	9.33578	11.75941	15.11588
env201739.units	0.98362	1.52307	1.97889	2.64290
env201741.units	0.44904	0.66874	0.84331	1.08389
env201743.units	0.66598	1.01486	1.29922	1.70251
env201745.units	0.49326	0.75161	0.96477	1.26826
env201748.units	0.54559	0.82981	1.06080	1.39166
env201749.units	0.26073	0.39683	0.50875	0.66640
env201810.units	0.88576	1.34919	1.73012	2.27477
env201811.units	5.14258	7.75682	9.88045	12.83241
env201815.units	2.44107	3.67305	4.68002	6.06845
env201818.units	0.91519	1.35722	1.71424	2.20512
env201821.units	3.02889	4.48918	5.64842	7.21566
env201823.units	0.58665	0.87038	1.09719	1.41429
env201825.units	1.21770	1.82153	2.30522	2.97508
env201826.units	2.41529	3.59117	4.53794	5.82144
env201828.units	0.02924	0.04364	0.05519	0.07113
env201829.units	0.21193	0.31699	0.39941	0.51479
env201836.units	4.55209	6.70688	8.39595	10.68003
env201839.units	6.95270	10.45211	13.21684	17.01485
env201841.units	0.23491	0.34887	0.44049	0.56638
env201843.units	4.63929	6.83779	8.56542	10.94064
env201845.units	2.31839	3.45012	4.36524	5.63256
env201848.units	0.47621	0.70955	0.89629	1.14912
env201849.units	0.50137	0.74411	0.93986	1.21173

97.5%

varietyArielle:varietyArielle.env 200.0941
varietyDenar:varietyArielle.env 204.1346
varietyEverest:varietyArielle.env 210.8012
varietyImpala:varietyArielle.env 196.5870
varietyLord:varietyArielle.env 209.8191
varietyMilek:varietyArielle.env 151.3315
varietyRiviera:varietyArielle.env 160.8553
varietyViviana:varietyArielle.env 187.1889
varietyArielle:varietyDenar.env 204.1346
varietyDenar:varietyDenar.env 255.6874
varietyEverest:varietyDenar.env 247.5094
varietyImpala:varietyDenar.env 228.2893
varietyLord:varietyDenar.env 264.9064
varietyMilek:varietyDenar.env 179.4354
varietyRiviera:varietyDenar.env 185.2247
varietyViviana:varietyDenar.env 220.4679
varietyArielle:varietyEverest.env 210.8012
varietyDenar:varietyEverest.env 247.5094
varietyEverest:varietyEverest.env 284.5110
varietyImpala:varietyEverest.env 235.1353
varietyLord:varietyEverest.env 262.2190
varietyMilek:varietyEverest.env 177.5415
varietyRiviera:varietyEverest.env 183.3133

varietyViviana:varietyEverest.env	220.8450
varietyArielle:varietyImpala.env	196.5870
varietyDenar:varietyImpala.env	228.2893
varietyEverest:varietyImpala.env	235.1353
varietyImpala:varietyImpala.env	241.6619
varietyLord:varietyImpala.env	246.3722
varietyMilek:varietyImpala.env	167.1654
varietyRiviera:varietyImpala.env	174.3805
varietyViviana:varietyImpala.env	213.5244
varietyArielle:varietyLord.env	209.8191
varietyDenar:varietyLord.env	264.9064
varietyEverest:varietyLord.env	262.2190
varietyImpala:varietyLord.env	246.3722
varietyLord:varietyLord.env	316.2864
varietyMilek:varietyLord.env	194.9772
varietyRiviera:varietyLord.env	196.8979
varietyViviana:varietyLord.env	233.7587
varietyArielle:varietyMilek.env	151.3315
varietyDenar:varietyMilek.env	179.4354
varietyEverest:varietyMilek.env	177.5415
varietyImpala:varietyMilek.env	167.1654
varietyLord:varietyMilek.env	194.9772
varietyMilek:varietyMilek.env	155.9287
varietyRiviera:varietyMilek.env	144.2697
varietyViviana:varietyMilek.env	174.3418
varietyArielle:varietyRiviera.env	160.8553
varietyDenar:varietyRiviera.env	185.2247
varietyEverest:varietyRiviera.env	183.3133
varietyImpala:varietyRiviera.env	174.3805
varietyLord:varietyRiviera.env	196.8979
varietyMilek:varietyRiviera.env	144.2697
varietyRiviera:varietyRiviera.env	158.7302
varietyViviana:varietyRiviera.env	179.1658
varietyArielle:varietyViviana.env	187.1889
varietyDenar:varietyViviana.env	220.4679
varietyEverest:varietyViviana.env	220.8450
varietyImpala:varietyViviana.env	213.5244
varietyLord:varietyViviana.env	233.7587
varietyMilek:varietyViviana.env	174.3418
varietyRiviera:varietyViviana.env	179.1658
varietyViviana:varietyViviana.env	233.7510
env:rep	3.7113
env20161.units	21.2593
env20163.units	5.0130
env20164.units	7.0213
env20165.units	23.3417
env20168.units	4.7616
env20171.units	40.6811
env20173.units	5.8610
env20174.units	0.3342
env20175.units	7.3209
env20178.units	3.1924
env20181.units	1.3723
env20183.units	0.7096
env20185.units	3.3510
env20188.units	1.3000
env201610.units	40.1583

env201611.units	52.6571
env201614.units	2.3305
env201618.units	1.6881
env201619.units	6.8507
env201621.units	32.2424
env201623.units	58.4356
env201625.units	3.2509
env201626.units	11.7637
env201628.units	1.0068
env201629.units	61.5477
env201636.units	26.3804
env201639.units	5.5493
env201641.units	9.5737
env201643.units	2.6799
env201645.units	2.6573
env201648.units	18.6935
env201649.units	19.9712
env201710.units	47.0983
env201711.units	12.7454
env201715.units	11.6758
env201718.units	3.2358
env201719.units	4.9523
env201721.units	14.4315
env201723.units	10.4412
env201725.units	3.1706
env201726.units	3.5563
env201728.units	8.6792
env201729.units	5.6759
env201736.units	25.6750
env201739.units	5.0241
env201741.units	1.8646
env201743.units	3.0598
env201745.units	2.2981
env201748.units	2.4994
env201749.units	1.1980
env201810.units	4.1899
env201811.units	22.4984
env201815.units	10.6437
env201818.units	3.7981
env201821.units	12.1756
env201823.units	2.4233
env201825.units	5.1600
env201826.units	9.9604
env201828.units	0.1217
env201829.units	0.8894
env201836.units	17.8624
env201839.units	28.7298
env201841.units	0.9689
env201843.units	18.1389
env201845.units	9.6933
env201848.units	1.9735
env201849.units	2.0782

> autocorr.diag(model)

	varietyArielle:varietyArielle.env	varietyDenar:varietyArielle.env
Lag 0	1.0000000000	1.0000000000
Lag 50	0.0007338893	0.003270092

Lag 250	0.0046479715	0.003027464
Lag 500	0.0015470093	0.002696945
Lag 2500	-0.0022538796	-0.002287235
varietyEverest:varietyArielle.env varietyImpala:varietyArielle.env		
Lag 0	1.000000000	1.000000000
Lag 50	0.002642442	0.001539406
Lag 250	0.003372374	0.002558781
Lag 500	0.001024852	0.001673295
Lag 2500	-0.002421689	-0.002288785
varietyLord:varietyArielle.env varietyMilek:varietyArielle.env		
Lag 0	1.000000000	1.000000000
Lag 50	0.002926337	-0.0008604109
Lag 250	0.004503624	0.0050169274
Lag 500	0.001808342	0.0019821437
Lag 2500	-0.001700819	0.0002861298
varietyRiviera:varietyArielle.env varietyViviana:varietyArielle.env		
Lag 0	1.000000000	1.000000000
Lag 50	0.0007215741	0.0001046242
Lag 250	0.0036010037	0.0037573898
Lag 500	0.0011845020	0.0006351123
Lag 2500	-0.0032189863	-0.0014374355
varietyArielle:varietyDenar.env varietyDenar:varietyDenar.env		
Lag 0	1.000000000	1.000000000
Lag 50	0.003270092	0.0025096763
Lag 250	0.003027464	-0.0009279763
Lag 500	0.002696945	0.0029736562
Lag 2500	-0.002287235	-0.0011947370
varietyEverest:varietyDenar.env varietyImpala:varietyDenar.env		
Lag 0	1.000000000	1.000000000
Lag 50	0.004459788	0.0032984923
Lag 250	0.001430312	-0.0003308644
Lag 500	0.002709197	0.0013548107
Lag 2500	-0.002379810	-0.0029517937
varietyLord:varietyDenar.env varietyMilek:varietyDenar.env		
Lag 0	1.000000000	1.000000000
Lag 50	0.0027437523	0.0003169422
Lag 250	0.0004665632	0.0013834146
Lag 500	0.0029628584	0.0033691367
Lag 2500	-0.0013814991	-0.0008181824
varietyRiviera:varietyDenar.env varietyViviana:varietyDenar.env		
Lag 0	1.000000000	1.000000000
Lag 50	0.0028437443	0.0008222263
Lag 250	0.0008012542	0.0001378539
Lag 500	0.0012877912	0.0006514958
Lag 2500	-0.0042866917	-0.0024842721
varietyArielle:varietyEverest.env varietyDenar:varietyEverest.env		
Lag 0	1.000000000	1.000000000
Lag 50	0.002642442	0.004459788
Lag 250	0.003372374	0.001430312
Lag 500	0.001024852	0.002709197
Lag 2500	-0.002421689	-0.002379810
varietyEverest:varietyEverest.env varietyImpala:varietyEverest.env		
Lag 0	1.000000000	1.000000e+00
Lag 50	0.0038781910	4.826235e-03
Lag 250	0.0027768200	1.083165e-05
Lag 500	0.0010059258	1.589045e-03
Lag 2500	-0.0002626725	-9.318286e-04

varietyLord:varietyEverest.env varietyMilek:varietyEverest.env		
Lag 0	1.000000e+00	1.000000000
Lag 50	5.579249e-03	0.001432830
Lag 250	1.961920e-03	0.003635385
Lag 500	2.702742e-03	0.003114809
Lag 2500	-7.019839e-05	-0.001602579
varietyRiviera:varietyEverest.env varietyViviana:varietyEverest.env		
Lag 0	1.0000000000	1.0000000000
Lag 50	0.0037496675	0.0030936530
Lag 250	0.0022051528	0.0023545203
Lag 500	0.0006383775	-0.0006028936
Lag 2500	-0.0034953481	-0.0017161536
varietyArielle:varietyImpala.env varietyDenar:varietyImpala.env		
Lag 0	1.0000000000	1.0000000000
Lag 50	0.001539406	0.0032984923
Lag 250	0.002558781	-0.0003308644
Lag 500	0.001673295	0.0013548107
Lag 2500	-0.002288785	-0.0029517937
varietyEverest:varietyImpala.env varietyImpala:varietyImpala.env		
Lag 0	1.000000e+00	1.0000000000
Lag 50	4.826235e-03	0.0021820135
Lag 250	1.083165e-05	-0.0000815490
Lag 500	1.589045e-03	-0.0006033266
Lag 2500	-9.318286e-04	-0.0020609484
varietyLord:varietyImpala.env varietyMilek:varietyImpala.env		
Lag 0	1.000000e+00	1.0000000000
Lag 50	3.652273e-03	0.0003576780
Lag 250	9.249543e-04	0.0019842373
Lag 500	7.814589e-05	0.0008990956
Lag 2500	-1.853685e-03	-0.0013796295
varietyRiviera:varietyImpala.env varietyViviana:varietyImpala.env		
Lag 0	1.0000000000	1.0000000000
Lag 50	0.0017650942	0.0012339562
Lag 250	0.0007029175	0.0009251644
Lag 500	0.0002446286	-0.0013540050
Lag 2500	-0.0050783297	-0.0040884849
varietyArielle:varietyLord.env varietyDenar:varietyLord.env		
Lag 0	1.0000000000	1.0000000000
Lag 50	0.002926337	0.0027437523
Lag 250	0.004503624	0.0004665632
Lag 500	0.001808342	0.0029628584
Lag 2500	-0.001700819	-0.0013814991
varietyEverest:varietyLord.env varietyImpala:varietyLord.env		
Lag 0	1.000000e+00	1.000000e+00
Lag 50	5.579249e-03	3.652273e-03
Lag 250	1.961920e-03	9.249543e-04
Lag 500	2.702742e-03	7.814589e-05
Lag 2500	-7.019839e-05	-1.853685e-03
varietyLord:varietyLord.env varietyMilek:varietyLord.env		
Lag 0	1.0000000000	1.000000e+00
Lag 50	0.0031205455	5.579489e-05
Lag 250	0.0011996646	1.956129e-03
Lag 500	0.0019888683	3.259345e-03
Lag 2500	0.0002914854	-6.132550e-04
varietyRiviera:varietyLord.env varietyViviana:varietyLord.env		
Lag 0	1.0000000000	1.0000000000
Lag 50	0.003503579	0.0016912722

Lag 250	0.001219693	0.0011470187
Lag 500	0.001199948	0.0001535968
Lag 2500	-0.004184349	-0.0024813853
varietyArielle:varietyMilek.env varietyDenar:varietyMilek.env		
Lag 0	1.0000000000	1.0000000000
Lag 50	-0.0008604109	0.0003169422
Lag 250	0.0050169274	0.0013834146
Lag 500	0.0019821437	0.0033691367
Lag 2500	0.0002861298	-0.0008181824
varietyEverest:varietyMilek.env varietyImpala:varietyMilek.env		
Lag 0	1.0000000000	1.0000000000
Lag 50	0.001432830	0.0003576780
Lag 250	0.003635385	0.0019842373
Lag 500	0.003114809	0.0008990956
Lag 2500	-0.001602579	-0.0013796295
varietyLord:varietyMilek.env varietyMilek:varietyMilek.env		
Lag 0	1.000000e+00	1.0000000000
Lag 50	5.579489e-05	-0.0005803028
Lag 250	1.956129e-03	0.0026055370
Lag 500	3.259345e-03	0.0026180749
Lag 2500	-6.132550e-04	0.0004495403
varietyRiviera:varietyMilek.env varietyViviana:varietyMilek.env		
Lag 0	1.0000000000	1.000000e+00
Lag 50	0.0004273770	-4.982495e-04
Lag 250	0.0022507997	2.162144e-03
Lag 500	0.0009468094	-7.620697e-05
Lag 2500	-0.0034382546	-1.822312e-03
varietyArielle:varietyRiviera.env varietyDenar:varietyRiviera.env		
Lag 0	1.0000000000	1.0000000000
Lag 50	0.0007215741	0.0028437443
Lag 250	0.0036010037	0.0008012542
Lag 500	0.0011845020	0.0012877912
Lag 2500	-0.0032189863	-0.0042866917
varietyEverest:varietyRiviera.env varietyImpala:varietyRiviera.env		
Lag 0	1.0000000000	1.0000000000
Lag 50	0.0037496675	0.0017650942
Lag 250	0.0022051528	0.0007029175
Lag 500	0.0006383775	0.0002446286
Lag 2500	-0.0034953481	-0.0050783297
varietyLord:varietyRiviera.env varietyMilek:varietyRiviera.env		
Lag 0	1.0000000000	1.0000000000
Lag 50	0.003503579	0.0004273770
Lag 250	0.001219693	0.0022507997
Lag 500	0.001199948	0.0009468094
Lag 2500	-0.004184349	-0.0034382546
varietyRiviera:varietyRiviera.env varietyViviana:varietyRiviera.env		
Lag 0	1.0000000000	1.0000000000
Lag 50	0.001918828	0.000827989
Lag 250	0.001021790	0.001792749
Lag 500	-0.001676558	-0.001323949
Lag 2500	-0.006363367	-0.005722552
varietyArielle:varietyViviana.env varietyDenar:varietyViviana.env		
Lag 0	1.0000000000	1.0000000000
Lag 50	0.0001046242	0.0008222263
Lag 250	0.0037573898	0.0001378539
Lag 500	0.0006351123	0.0006514958
Lag 2500	-0.0014374355	-0.0024842721

varietyEverest:varietyViviana.env varietyImpala:varietyViviana.env				
Lag 0	1.0000000000	1.0000000000		
Lag 50	0.0030936530	0.0012339562		
Lag 250	0.0023545203	0.0009251644		
Lag 500	-0.0006028936	-0.0013540050		
Lag 2500	-0.0017161536	-0.0040884849		
varietyLord:varietyViviana.env varietyMilek:varietyViviana.env				
Lag 0	1.0000000000	1.000000e+00		
Lag 50	0.0016912722	-4.982495e-04		
Lag 250	0.0011470187	2.162144e-03		
Lag 500	0.0001535968	-7.620697e-05		
Lag 2500	-0.0024813853	-1.822312e-03		
varietyRiviera:varietyViviana.env varietyViviana:varietyViviana.env				
Lag 0	1.0000000000	1.0000000000		
Lag 50	0.000827989	-0.0003704562		
Lag 250	0.001792749	0.0013612552		
Lag 500	-0.001323949	-0.0019652568		
Lag 2500	-0.005722552	-0.0036053817		
env:rep env20161.units env20163.units env20164.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.000000e+00
Lag 50	0.003533347	-0.0028879879	-0.0014423536	2.751163e-03
Lag 250	0.001724807	0.0001678541	-0.0009930923	7.545105e-04
Lag 500	-0.003177033	-0.0014278347	0.0021338391	-1.179008e-03
Lag 2500	-0.001727511	-0.0016183327	0.0050422953	7.126315e-05
env20165.units env20168.units env20171.units env20173.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.0000000000
Lag 50	0.0021003478	0.002628182	0.0018370858	-0.002943442
Lag 250	-0.0036493392	-0.001821336	0.0039608185	0.001807315
Lag 500	-0.0008883778	0.001962778	-0.0002542492	-0.005769373
Lag 2500	-0.0015155246	-0.006843612	-0.0006623385	0.003089460
env20174.units env20175.units env20178.units env20181.units				
Lag 0	1.000000e+00	1.0000000000	1.0000000000	1.0000000000
Lag 50	-1.014081e-05	0.0002343725	-0.001962424	0.0032918796
Lag 250	2.206002e-03	-0.0015296536	0.003946978	-0.0015976472
Lag 500	-3.454700e-03	-0.0018232569	0.004040966	0.0027588159
Lag 2500	2.103205e-03	0.0010317931	-0.002018280	-0.0003242014
env20183.units env20185.units env20188.units env201610.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.0000000000
Lag 50	-0.001088568	-0.0055768689	0.003499045	0.0049085215
Lag 250	-0.006325100	0.0007289963	0.002605853	-0.0007161105
Lag 500	0.001192337	0.0057281744	0.003417192	0.0017065232
Lag 2500	-0.001005764	0.0037564545	0.006473257	-0.0007264319
env201611.units env201614.units env201618.units env201619.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.0000000000
Lag 50	0.001279893	-0.005492978	-0.005699791	-0.0003981910
Lag 250	-0.002247083	-0.003741047	-0.003249215	0.0017548098
Lag 500	-0.004315813	-0.004797856	0.002158258	-0.0001723542
Lag 2500	-0.001883139	0.001861954	-0.008219285	-0.0050117500
env201621.units env201623.units env201625.units env201626.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.0000000000
Lag 50	-0.0002223667	-0.0016651755	-0.001708964	-0.0006957614
Lag 250	-0.0015584592	0.0008028507	0.004684029	0.0035730930
Lag 500	-0.0018851539	-0.0053250069	0.004937819	-0.0002644067
Lag 2500	-0.0013526148	-0.0029939061	0.001325672	0.0018973545
env201628.units env201629.units env201636.units env201639.units				
Lag 0	1.000000e+00	1.0000000000	1.0000000000	1.0000000000
Lag 50	1.241086e-03	0.0044158748	0.0017117125	0.0002297378

Lag 250	1.208919e-04	0.0004306204	0.0022219065	-0.0015637004
Lag 500	1.194967e-03	0.0070567839	0.0016923094	0.0060927703
Lag 2500	-4.626571e-05	-0.0019443864	-0.0004424156	-0.0002030479
env201641.units env201643.units env201645.units env201648.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.0000000000
Lag 50	0.0048143477	0.004698202	0.0009990936	0.0026733744
Lag 250	0.0008933159	0.005189019	-0.0046510247	0.0010772129
Lag 500	0.0042761165	-0.004787905	-0.0041868539	0.0001257495
Lag 2500	-0.0034704482	-0.003774827	0.0027449121	-0.0095459226
env201649.units env201710.units env201711.units env201715.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.0000000000
Lag 50	-0.0003981703	0.001446614	-0.0016973299	0.0017065273
Lag 250	-0.0021665292	0.005495830	0.0004084129	-0.0024489437
Lag 500	-0.0035031223	-0.001787246	-0.0004982797	0.0009281218
Lag 2500	0.0075085472	-0.002434734	0.0020750099	-0.0034801846
env201718.units env201719.units env201721.units env201723.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.000000e+00
Lag 50	0.002534769	-0.0044631960	0.0001761554	-1.962290e-03
Lag 250	-0.008094887	-0.0004554780	0.0082979034	-1.488702e-03
Lag 500	-0.005727198	-0.0008662926	-0.0047618087	-5.650032e-05
Lag 2500	0.001261020	0.0004435615	0.0041331432	-1.099567e-03
env201725.units env201726.units env201728.units env201729.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.0000000000
Lag 50	-0.0048831255	-0.006353498	-0.0022083235	0.0019303325
Lag 250	-0.0002785442	0.001443781	0.0013255416	0.0009590688
Lag 500	-0.0005564319	-0.001937321	0.0006112667	0.0012387249
Lag 2500	0.0031364062	0.005875034	0.0001324234	0.0005851578
env201736.units env201739.units env201741.units env201743.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.0000000000
Lag 50	0.003293623	0.0008651345	0.0024123110	0.001849308
Lag 250	-0.001360215	0.0020750562	-0.0004963346	0.011366705
Lag 500	0.006439067	0.0003803472	0.0010306419	0.003355112
Lag 2500	-0.000803462	-0.0028050175	0.0060808505	-0.000672582
env201745.units env201748.units env201749.units env201810.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.0000000000
Lag 50	0.0003603341	0.0000183168	-0.0003230776	-0.003629084
Lag 250	-0.0058533943	0.0034885169	-0.0040173025	0.002346836
Lag 500	-0.0008086210	-0.0062996324	-0.0064165796	0.001012505
Lag 2500	-0.0027553837	-0.0034575542	0.0012782363	-0.000155716
env201811.units env201815.units env201818.units env201821.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.0000000000
Lag 50	-0.002186547	0.0036632237	0.0022102465	0.0001022025
Lag 250	-0.004485244	-0.0009191353	0.0042080892	0.0041034453
Lag 500	-0.005090565	0.0011900971	-0.0007386434	-0.0012294931
Lag 2500	-0.002069298	-0.0031484974	0.0011771662	0.0057993811
env201823.units env201825.units env201826.units env201828.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.0000000000
Lag 50	-0.0010664091	0.0008727489	0.0029720073	0.0015887619
Lag 250	-0.0041083521	-0.0021104571	-0.0018519265	-0.0005566931
Lag 500	0.0009331976	-0.0049452009	-0.0019615590	0.0005362062
Lag 2500	0.0019746490	-0.0059470118	-0.0002835116	0.0026195144
env201829.units env201836.units env201839.units env201841.units				
Lag 0	1.0000000000	1.0000000000	1.0000000000	1.0000000000
Lag 50	0.001895355	-0.0006398234	-0.0009035620	0.0024132920
Lag 250	0.001961874	-0.0019986411	0.0002226405	0.0001768761
Lag 500	0.001452604	-0.0018824629	-0.0021159383	0.0026700987
Lag 2500	-0.001968233	0.0001206233	-0.0001659378	0.0012646585

```

env201843.units env201845.units env201848.units env201849.units
Lag 0    1.0000000000  1.0000000000  1.0000000000  1.0000000000
Lag 50   -0.0019841997 -0.0010355553  0.001260803  0.0041590459
Lag 250  -0.0049412222 -0.003502466  0.001274485  0.0050469390
Lag 500  -0.0002129442  0.005233232  -0.002886312  -0.0006788671
Lag 2500  0.0027042821  0.001061988  0.005210259  -0.0036866929

```

```
> plot(model,ask=TRUE)
```

```
> gelman.diag(model2)
```

Potential scale reduction factors:

	Point est.	Upper C.I.
varietyArielle	1	1
varietyDenar	1	1
varietyEverest	1	1
varietyImpala	1	1
varietyLord	1	1
varietyMilek	1	1
varietyRiviera	1	1
varietyViviana	1	1

Multivariate psrf

1

```
> gelman.plot(model2,autoburnin=TRUE, auto.layout = TRUE,ask=TRUE)
```

```
> summary(model2)
```

Iterations = 1000001:1999951

Thinning interval = 50

Number of chains = 5

Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

	Mean	SD	Naive SE	Time-series SE
varietyArielle	52.99	1.470	0.004648	0.004648
varietyDenar	51.50	1.660	0.005251	0.005251
varietyEverest	52.26	1.939	0.006131	0.006131
varietyImpala	51.39	1.611	0.005095	0.005122
varietyLord	48.65	1.844	0.005832	0.005832
varietyMilek	41.83	1.302	0.004117	0.004117
varietyRiviera	43.35	1.313	0.004152	0.004152
varietyViviana	43.80	1.587	0.005020	0.005020

2. Quantiles for each variable:

	2.5%	25%	50%	75%	97.5%
varietyArielle	50.10	52.00	52.98	53.97	55.87
varietyDenar	48.25	50.39	51.49	52.61	54.76
varietyEverest	48.48	50.95	52.25	53.55	56.08
varietyImpala	48.23	50.30	51.39	52.47	54.55
varietyLord	45.03	47.42	48.66	49.88	52.27
varietyMilek	39.29	40.96	41.83	42.71	44.38
varietyRiviera	40.77	42.47	43.34	44.23	45.93
varietyViviana	40.70	42.74	43.80	44.87	46.91


```

> plot(model2,ask=TRUE)
Oczekiwanie na potwierdzenie zmiany strony...
>
>
> data.frame(model=c("modenv","modenv2","modenv3","modenv4","modenv5"),
+ DIC=c(modenv$DIC,modenv2$DIC,modenv3$DIC,modenv4$DIC,modenv5$DIC))
  model  DIC
1 modenv 6422.215
2 modenv2 6422.239
3 modenv3 6422.419
4 modenv4 6422.094
5 modenv5 6422.354
>
>
> ##### Calculation of posterior coefficient of variation
>
> cv11<-100*sqrt(modenv$VCV[, "varietyArielle:varietyArielle.env"])/modenv$Sol[, "varietyArielle"]
> cv12<-100*sqrt(modenv2$VCV[, "varietyArielle:varietyArielle.env"])/modenv2$Sol[, "varietyArielle"]
> cv13<-100*sqrt(modenv3$VCV[, "varietyArielle:varietyArielle.env"])/modenv3$Sol[, "varietyArielle"]
> cv14<-100*sqrt(modenv4$VCV[, "varietyArielle:varietyArielle.env"])/modenv4$Sol[, "varietyArielle"]
> cv15<-100*sqrt(modenv5$VCV[, "varietyArielle:varietyArielle.env"])/modenv5$Sol[, "varietyArielle"]
>
> cv21<-100*sqrt(modenv$VCV[, "varietyDenar:varietyDenar.env"])/modenv$Sol[, "varietyDenar"]
> cv22<-100*sqrt(modenv2$VCV[, "varietyDenar:varietyDenar.env"])/modenv2$Sol[, "varietyDenar"]
> cv23<-100*sqrt(modenv3$VCV[, "varietyDenar:varietyDenar.env"])/modenv3$Sol[, "varietyDenar"]
> cv24<-100*sqrt(modenv4$VCV[, "varietyDenar:varietyDenar.env"])/modenv4$Sol[, "varietyDenar"]
> cv25<-100*sqrt(modenv5$VCV[, "varietyDenar:varietyDenar.env"])/modenv5$Sol[, "varietyDenar"]
>
> cv31<-100*sqrt(modenv$VCV[, "varietyEverest:varietyEverest.env"])/modenv$Sol[, "varietyEverest"]
> cv32<-100*sqrt(modenv2$VCV[, "varietyEverest:varietyEverest.env"])/modenv2$Sol[, "varietyEverest"]
> cv33<-100*sqrt(modenv3$VCV[, "varietyEverest:varietyEverest.env"])/modenv3$Sol[, "varietyEverest"]
> cv34<-100*sqrt(modenv4$VCV[, "varietyEverest:varietyEverest.env"])/modenv4$Sol[, "varietyEverest"]
> cv35<-100*sqrt(modenv5$VCV[, "varietyEverest:varietyEverest.env"])/modenv5$Sol[, "varietyEverest"]
>
> cv41<-100*sqrt(modenv$VCV[, "varietyImpala:varietyImpala.env"])/modenv$Sol[, "varietyImpala"]
> cv42<-100*sqrt(modenv2$VCV[, "varietyImpala:varietyImpala.env"])/modenv2$Sol[, "varietyImpala"]
> cv43<-100*sqrt(modenv3$VCV[, "varietyImpala:varietyImpala.env"])/modenv3$Sol[, "varietyImpala"]
> cv44<-100*sqrt(modenv4$VCV[, "varietyImpala:varietyImpala.env"])/modenv4$Sol[, "varietyImpala"]
> cv45<-100*sqrt(modenv5$VCV[, "varietyImpala:varietyImpala.env"])/modenv5$Sol[, "varietyImpala"]
>
> cv51<-100*sqrt(modenv$VCV[, "varietyLord:varietyLord.env"])/modenv$Sol[, "varietyLord"]
> cv52<-100*sqrt(modenv2$VCV[, "varietyLord:varietyLord.env"])/modenv2$Sol[, "varietyLord"]
> cv53<-100*sqrt(modenv3$VCV[, "varietyLord:varietyLord.env"])/modenv3$Sol[, "varietyLord"]
> cv54<-100*sqrt(modenv4$VCV[, "varietyLord:varietyLord.env"])/modenv4$Sol[, "varietyLord"]
> cv55<-100*sqrt(modenv5$VCV[, "varietyLord:varietyLord.env"])/modenv5$Sol[, "varietyLord"]
>
> cv61<-100*sqrt(modenv$VCV[, "varietyMilek:varietyMilek.env"])/modenv$Sol[, "varietyMilek"]
> cv62<-100*sqrt(modenv2$VCV[, "varietyMilek:varietyMilek.env"])/modenv2$Sol[, "varietyMilek"]
> cv63<-100*sqrt(modenv3$VCV[, "varietyMilek:varietyMilek.env"])/modenv3$Sol[, "varietyMilek"]
> cv64<-100*sqrt(modenv4$VCV[, "varietyMilek:varietyMilek.env"])/modenv4$Sol[, "varietyMilek"]
> cv65<-100*sqrt(modenv5$VCV[, "varietyMilek:varietyMilek.env"])/modenv5$Sol[, "varietyMilek"]
>
> cv71<-100*sqrt(modenv$VCV[, "varietyRiviera:varietyRiviera.env"])/modenv$Sol[, "varietyRiviera"]
> cv72<-100*sqrt(modenv2$VCV[, "varietyRiviera:varietyRiviera.env"])/modenv2$Sol[, "varietyRiviera"]
> cv73<-100*sqrt(modenv3$VCV[, "varietyRiviera:varietyRiviera.env"])/modenv3$Sol[, "varietyRiviera"]
> cv74<-100*sqrt(modenv4$VCV[, "varietyRiviera:varietyRiviera.env"])/modenv4$Sol[, "varietyRiviera"]

```

```
> cv75<-100*sqrt(modenv5$VCV[, "varietyRiviera:varietyRiviera.env"])/modenv5$Sol[, "varietyRiviera"]
```

```
> cv81<-100*sqrt(modenv$VCV[, "varietyViviana:varietyViviana.env"])/modenv$Sol[, "varietyViviana"]
> cv82<-100*sqrt(modenv2$VCV[, "varietyViviana:varietyViviana.env"])/modenv2$Sol[, "varietyViviana"]
> cv83<-100*sqrt(modenv3$VCV[, "varietyViviana:varietyViviana.env"])/modenv3$Sol[, "varietyViviana"]
> cv84<-100*sqrt(modenv4$VCV[, "varietyViviana:varietyViviana.env"])/modenv4$Sol[, "varietyViviana"]
> cv85<-100*sqrt(modenv5$VCV[, "varietyViviana:varietyViviana.env"])/modenv5$Sol[, "varietyViviana"]
```

```
> cv1<-mcmc.list(cv11,cv12,cv13,cv14,cv15)
> cv2<-mcmc.list(cv21,cv22,cv23,cv24,cv25)
> cv3<-mcmc.list(cv31,cv32,cv33,cv34,cv35)
> cv4<-mcmc.list(cv41,cv42,cv43,cv44,cv45)
> cv5<-mcmc.list(cv51,cv52,cv53,cv54,cv55)
> cv6<-mcmc.list(cv61,cv62,cv63,cv64,cv65)
> cv7<-mcmc.list(cv71,cv72,cv73,cv74,cv75)
> cv8<-mcmc.list(cv81,cv82,cv83,cv84,cv85)
```

```
> summary(cv1)#Arielle
```

Iterations = 1000001:1999951
Thinning interval = 50
Number of chains = 5
Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
22.427128	2.083560	0.006589	0.006589

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
18.81	20.96	22.26	23.72	26.96

```
> summary(cv2)#Denar
```

Iterations = 1000001:1999951
Thinning interval = 50
Number of chains = 5
Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
26.117191	2.457841	0.007772	0.007864

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
21.88	24.38	25.93	27.65	31.46

```
> summary(cv3)#Everest
```

Iterations = 1000001:1999951
Thinning interval = 50

Number of chains = 5
Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
26.749584	2.708039	0.008564	0.008579

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
22.08	24.84	26.53	28.43	32.65

> summary(cv4)#Impala

Iterations = 1000001:1999951
Thinning interval = 50
Number of chains = 5
Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
25.420859	2.388747	0.007554	0.007554

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
21.26	23.74	25.24	26.90	30.61

> summary(cv5)#Lord

Iterations = 1000001:1999951
Thinning interval = 50
Number of chains = 5
Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
30.743177	2.958977	0.009357	0.009357

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
25.64	28.66	30.51	32.57	37.20

> summary(cv6)#Milek

Iterations = 1000001:1999951
Thinning interval = 50
Number of chains = 5
Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
25.082748	2.371887	0.007501	0.007488

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
20.96	23.41	24.90	26.56	30.20

```
> summary(cv7)#Riviera
```

```
Iterations = 1000001:1999951
Thinning interval = 50
Number of chains = 5
Sample size per chain = 20000
```

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
24.423185	2.300094	0.007274	0.007271

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
20.43	22.81	24.25	25.84	29.43

```
> summary(cv8)#Viviana
```

```
Iterations = 1000001:1999951
Thinning interval = 50
Number of chains = 5
Sample size per chain = 20000
```

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
29.350128	2.821647	0.008923	0.008866

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
24.46	27.36	29.13	31.10	35.49

```
>
>
> ##### Posterior density functions for coefficient of variation
>
> par(mfrow=c(4,2))#,ask=TRUE
> densplot(cv1,main="variety Arielle")
> densplot(cv2,main="variety Denar")
> densplot(cv3,main="variety Everest")
> densplot(cv4,main="variety Impala")
> densplot(cv5,main="variety Lord")
```

```

> densplot(cv6,main="variety Milek")
> densplot(cv7,main="variety Riviera")
> densplot(cv8,main="variety Viviana")
>
>
>
> ##### Posterior expected utility
> delta<-42
> c<-0.8
>
> postexputil2<-function(mu,sig2,delta,c){
+ postexputil2<-c*(mu+sqrt(sig2)*dnorm((delta-mu)/sqrt(sig2),0,1))
+ }
>
>
> post11<-postexputil2(modenv$Sol["varietyArielle"],modenv$VCV["varietyArielle:varietyArielle.env"],delta,c)
> post12<-
postexputil2(modenv2$Sol["varietyArielle"],modenv2$VCV["varietyArielle:varietyArielle.env"],delta,c)
> post13<-
postexputil2(modenv3$Sol["varietyArielle"],modenv3$VCV["varietyArielle:varietyArielle.env"],delta,c)
> post14<-
postexputil2(modenv4$Sol["varietyArielle"],modenv4$VCV["varietyArielle:varietyArielle.env"],delta,c)
> post15<-
postexputil2(modenv5$Sol["varietyArielle"],modenv5$VCV["varietyArielle:varietyArielle.env"],delta,c)
>
> post21<-postexputil2(modenv$Sol["varietyDenar"],modenv$VCV["varietyDenar:varietyDenar.env"],delta,c)
> post22<-
postexputil2(modenv2$Sol["varietyDenar"],modenv2$VCV["varietyDenar:varietyDenar.env"],delta,c)
> post23<-
postexputil2(modenv3$Sol["varietyDenar"],modenv3$VCV["varietyDenar:varietyDenar.env"],delta,c)
> post24<-
postexputil2(modenv4$Sol["varietyDenar"],modenv4$VCV["varietyDenar:varietyDenar.env"],delta,c)
> post25<-
postexputil2(modenv5$Sol["varietyDenar"],modenv5$VCV["varietyDenar:varietyDenar.env"],delta,c)
>
> post31<-
postexputil2(modenv$Sol["varietyEverest"],modenv$VCV["varietyEverest:varietyEverest.env"],delta,c)
> post32<-
postexputil2(modenv2$Sol["varietyEverest"],modenv2$VCV["varietyEverest:varietyEverest.env"],delta,c)
> post33<-
postexputil2(modenv3$Sol["varietyEverest"],modenv3$VCV["varietyEverest:varietyEverest.env"],delta,c)
> post34<-
postexputil2(modenv4$Sol["varietyEverest"],modenv4$VCV["varietyEverest:varietyEverest.env"],delta,c)
> post35<-
postexputil2(modenv5$Sol["varietyEverest"],modenv5$VCV["varietyEverest:varietyEverest.env"],delta,c)
>
> post41<-
postexputil2(modenv$Sol["varietyImpala"],modenv$VCV["varietyImpala:varietyImpala.env"],delta,c)
> post42<-
postexputil2(modenv2$Sol["varietyImpala"],modenv2$VCV["varietyImpala:varietyImpala.env"],delta,c)
> post43<-
postexputil2(modenv3$Sol["varietyImpala"],modenv3$VCV["varietyImpala:varietyImpala.env"],delta,c)
> post44<-
postexputil2(modenv4$Sol["varietyImpala"],modenv4$VCV["varietyImpala:varietyImpala.env"],delta,c)
> post45<-
postexputil2(modenv5$Sol["varietyImpala"],modenv5$VCV["varietyImpala:varietyImpala.env"],delta,c)
>

```

```

> post51<-postexputil2(modenv$Sol[, "varietyLord"],modenv$VCV[, "varietyLord:varietyLord.env"],delta,c)
> post52<-postexputil2(modenv2$Sol[, "varietyLord"],modenv2$VCV[, "varietyLord:varietyLord.env"],delta,c)
> post53<-postexputil2(modenv3$Sol[, "varietyLord"],modenv3$VCV[, "varietyLord:varietyLord.env"],delta,c)
> post54<-postexputil2(modenv4$Sol[, "varietyLord"],modenv4$VCV[, "varietyLord:varietyLord.env"],delta,c)
> post55<-postexputil2(modenv5$Sol[, "varietyLord"],modenv5$VCV[, "varietyLord:varietyLord.env"],delta,c)
>
> post61<-postexputil2(modenv$Sol[, "varietyMilek"],modenv$VCV[, "varietyMilek:varietyMilek.env"],delta,c)
> post62<-postexputil2(modenv2$Sol[, "varietyMilek"],modenv2$VCV[, "varietyMilek:varietyMilek.env"],delta,c)
> post63<-postexputil2(modenv3$Sol[, "varietyMilek"],modenv3$VCV[, "varietyMilek:varietyMilek.env"],delta,c)
> post64<-postexputil2(modenv4$Sol[, "varietyMilek"],modenv4$VCV[, "varietyMilek:varietyMilek.env"],delta,c)
> post65<-postexputil2(modenv5$Sol[, "varietyMilek"],modenv5$VCV[, "varietyMilek:varietyMilek.env"],delta,c)
>
> post71<-
postexputil2(modenv$Sol[, "varietyRiviera"],modenv$VCV[, "varietyRiviera:varietyRiviera.env"],delta,c)
> post72<-
postexputil2(modenv2$Sol[, "varietyRiviera"],modenv2$VCV[, "varietyRiviera:varietyRiviera.env"],delta,c)
> post73<-
postexputil2(modenv3$Sol[, "varietyRiviera"],modenv3$VCV[, "varietyRiviera:varietyRiviera.env"],delta,c)
> post74<-
postexputil2(modenv4$Sol[, "varietyRiviera"],modenv4$VCV[, "varietyRiviera:varietyRiviera.env"],delta,c)
> post75<-
postexputil2(modenv5$Sol[, "varietyRiviera"],modenv5$VCV[, "varietyRiviera:varietyRiviera.env"],delta,c)
>
> post81<-
postexputil2(modenv$Sol[, "varietyViviana"],modenv$VCV[, "varietyViviana:varietyViviana.env"],delta,c)
> post82<-
postexputil2(modenv2$Sol[, "varietyViviana"],modenv2$VCV[, "varietyViviana:varietyViviana.env"],delta,c)
> post83<-
postexputil2(modenv3$Sol[, "varietyViviana"],modenv3$VCV[, "varietyViviana:varietyViviana.env"],delta,c)
> post84<-
postexputil2(modenv4$Sol[, "varietyViviana"],modenv4$VCV[, "varietyViviana:varietyViviana.env"],delta,c)
> post85<-
postexputil2(modenv5$Sol[, "varietyViviana"],modenv5$VCV[, "varietyViviana:varietyViviana.env"],delta,c)
>
> postArielle<-mcmc.list(post11,post12,post13,post14,post15)
> postDenar<-mcmc.list(post21,post22,post23,post24,post25)
> postEverest<-mcmc.list(post31,post32,post33,post34,post35)
> postImpala<-mcmc.list(post41,post42,post43,post44,post45)
> postLord<-mcmc.list(post51,post52,post53,post54,post75)
> postMilek<-mcmc.list(post61,post62,post63,post64,post65)
> postRiviera<-mcmc.list(post71,post72,post73,post74,post75)
> postViviana<-mcmc.list(post81,post82,post83,post84,post85)
>
>
> summary(postArielle)

```

Iterations = 1000001:1999951

Thinning interval = 50

Number of chains = 5

Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
44.854740	0.990654	0.003133	0.003133

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
43.02	44.17	44.82	45.50	46.90

```
> summary(postDenar)
```

Iterations = 1000001:1999951
Thinning interval = 50
Number of chains = 5
Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
44.52400	1.13521	0.00359	0.00359

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
42.38	43.75	44.50	45.26	46.84

```
> summary(postEverest)
```

Iterations = 1000001:1999951
Thinning interval = 50
Number of chains = 5
Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
45.188975	1.347733	0.004262	0.004262

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
42.64	44.27	45.15	46.06	47.94

```
> summary(postImpala)
```

Iterations = 1000001:1999951
Thinning interval = 50
Number of chains = 5
Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
44.311784	1.099959	0.003478	0.003486

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
------	-----	-----	-----	-------

42.24 43.56 44.29 45.03 46.56

> summary(postLord)

Iterations = 1000001:1999951

Thinning interval = 50

Number of chains = 5

Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
42.169344	2.444575	0.007730	0.004032

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
36.79	41.21	42.78	43.83	45.74

> summary(postMilek)

Iterations = 1000001:1999951

Thinning interval = 50

Number of chains = 5

Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
36.784653	1.091886	0.003453	0.003469

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
34.65	36.05	36.78	37.52	38.93

> summary(postRiviera)

Iterations = 1000001:1999951

Thinning interval = 50

Number of chains = 5

Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
38.004239	1.045451	0.003306	0.003313

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
35.97	37.30	38.00	38.70	40.07

> summary(postViviana)

Iterations = 1000001:1999951

Thinning interval = 50

Number of chains = 5

Sample size per chain = 20000

1. Empirical mean and standard deviation for each variable,
plus standard error of the mean:

Mean	SD	Naive SE	Time-series SE
39.069760	1.258168	0.003979	0.003979

2. Quantiles for each variable:

2.5%	25%	50%	75%	97.5%
36.62	38.22	39.07	39.91	41.55