

Parameter Inference Results

Analysis Europe 10c

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04 February, 2021

Deme configuration

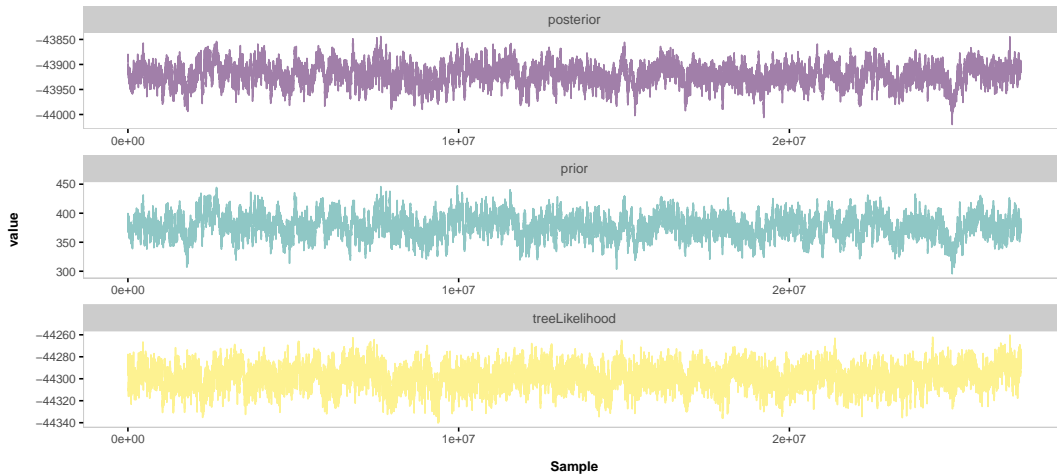
demeID	deme	division	country	region	exclude_country	exclude_division	min_date	max_date	prob
2	China		China	Asia			2019-12-24	2020-01-23	deaths
0	France		France	Europe			2020-01-23	2020-03-08	cases
1	Germany		Germany	Europe			2020-01-28	2020-03-08	cases
3	Italy		Italy	Europe			2020-01-29	2020-03-08	cases
4	OtherEuropean			Europe	France,Germany,Italy,Spain		2020-01-29	2020-03-08	cases_and_location
5	Spain		Spain	Europe			2020-02-24	2020-03-08	cases

Chains diagnostic

"chain"	"seed"	"burnin"	"length"	"min_ESS"	"included"
"europeC/chains/210129_europe10c.1"	"1"	10	1e+07	50	0
"europeC/chains/210129_europe10c.2"	"2"	10	1e+07	50	0
"europeC/chains/210129_europe10c.3"	"3"	10	1e+07	50	1
"europeC/chains/210129_europe10c.4"	"4"	10	1e+07	50	1
"europeC/chains/210129_europe10c.5"	"5"	10	1e+07	50	1

Convergence

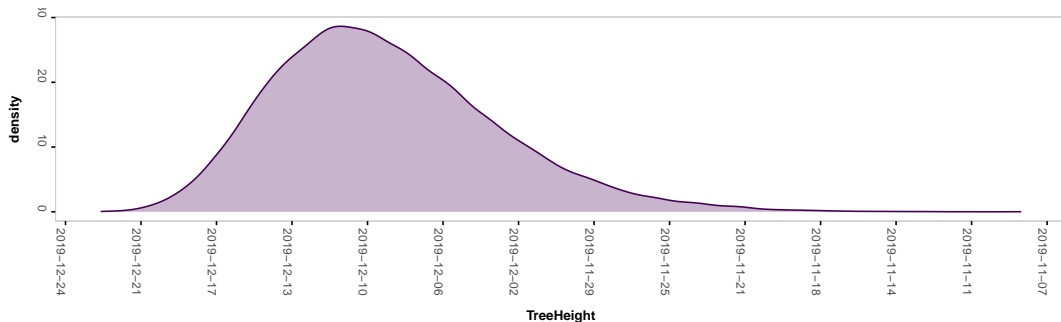
- **Mean ESS value:** 1188.0856972
- **Median ESS value:** 473.22445
- **Standard deviation ESS value:** 2709.642606



median 95%HPDlo 95%HPDupp ESS

TreeHeight

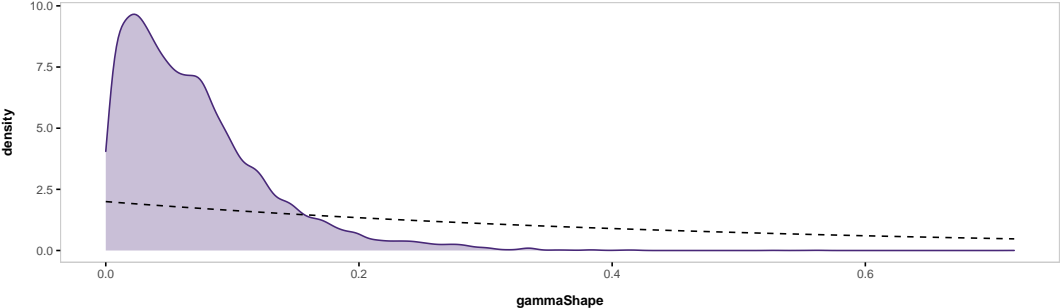
First sample date: 2019-12-23



median	95%HPDlo	95%HPDup	ESS
2019-12-09	2019-12-18	2019-11-28	2504.716

gammaShape

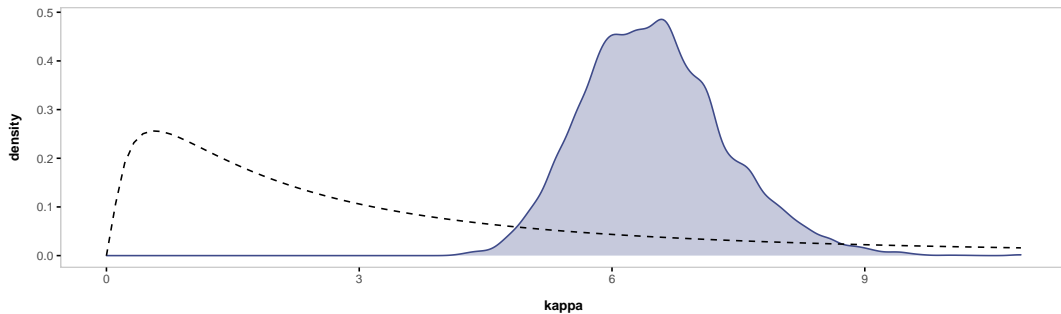
Prior: Exponential, 0.5



median	95%HPDlo	95%HPDup	ESS
0.057447	0.001004	0.180832	1211.995

kappa

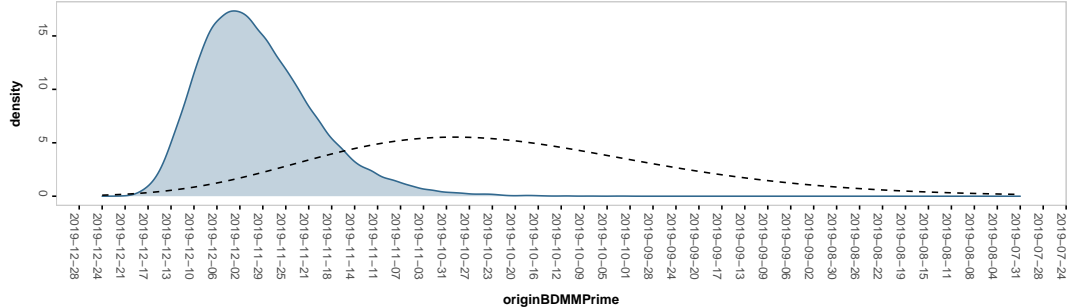
Prior: Lognormal, 1.0, 1.25



median	95%HPDlo	95%HPDup	ESS
6.449568	4.909735	8.178545	5019.293

originBDMMPPrime

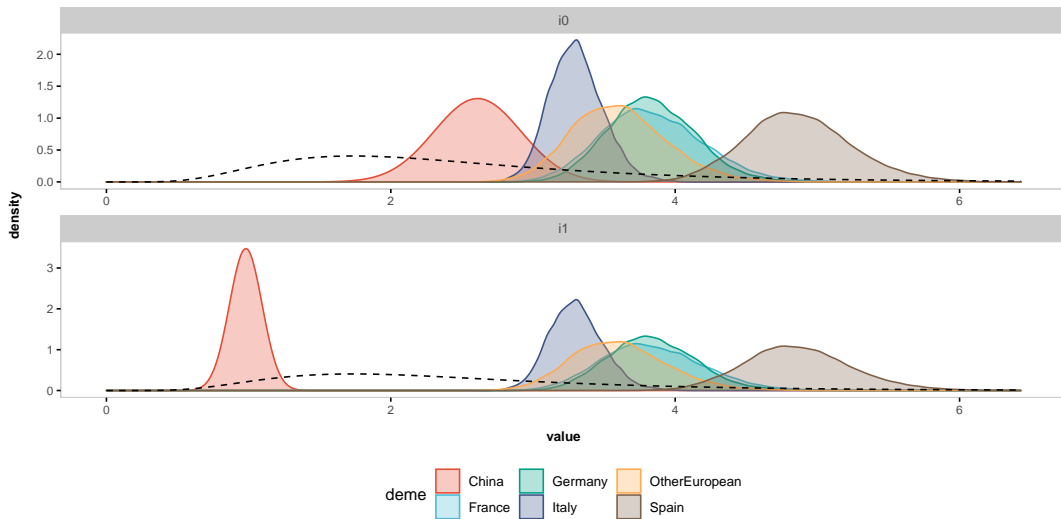
Prior: Lognormal, -1.0, 0.2



median	95%HPDlo	95%HPDUp	ESS
2019-12-01	2019-12-15	2019-11-11	7666.211

R0

Prior: Lognormal, 0.8, 0.5



item	mean	median	95%HPDlo	95%HPDup	ESS
R0SVi0_China	2.610000	2.610000	2.610000	2.610000	24303.00000
R0SVi0_France	3.836417	3.812801	3.150647	4.519441	578.58620
R0SVi0_Germany	3.841354	3.830085	3.264092	4.443296	343.99480
R0SVi0_Italy	3.304260	3.295929	2.941816	3.668546	329.53540
R0SVi0_OtherEuropean	3.603978	3.583957	2.970584	4.274784	522.09230
R0SVi0_Spain	4.857147	4.836633	4.117859	5.591438	141.35230
R0SVi1_China	0.980000	0.980000	0.980000	0.980000	6.14303
R0SVi1_France	3.836417	3.812801	3.150647	4.519441	578.58620
R0SVi1_Germany	3.841354	3.830085	3.264092	4.443296	343.99480
R0SVi1_Italy	3.304260	3.295929	2.941816	3.668546	329.53540
R0SVi1_OtherEuropean	3.603978	3.583957	2.970584	4.274784	522.09230
R0SVi1_Spain	4.857147	4.836633	4.117859	5.591438	141.35230

becomeUninfectiousRate

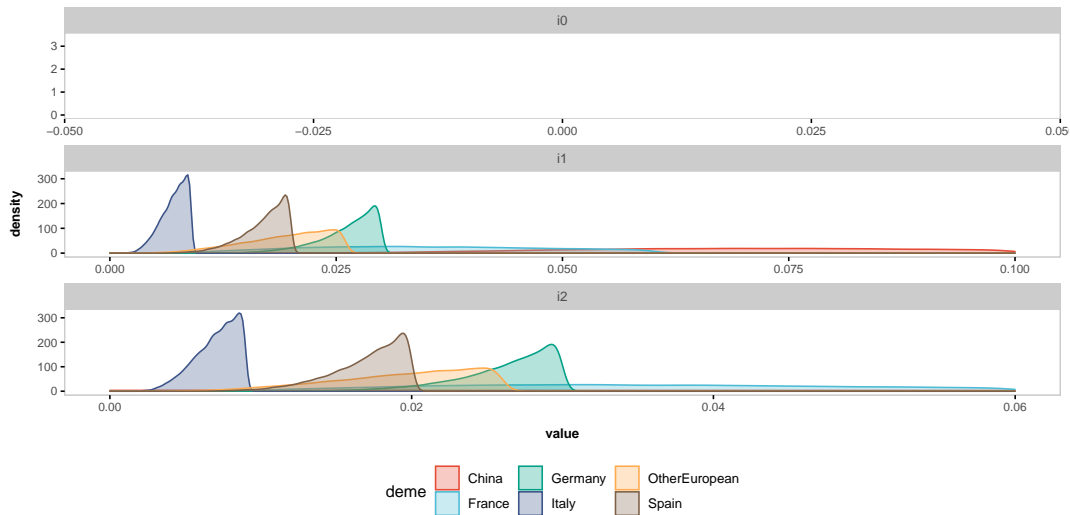
Fixed to 36.5 year^{-1} (time exponentially distributed mean 10 days)

samplingProportion

Prior:

input	deme	210129_europe10c
Lower		0.0
Upper	Hubei	
Upper	China	0.1
Upper	France	0.06
Upper	Germany	0.03
Upper	Italy	0.009
Upper	OtherEuropean	0.026
Upper	Spain	0.02

samplingProportion



samplingProportion

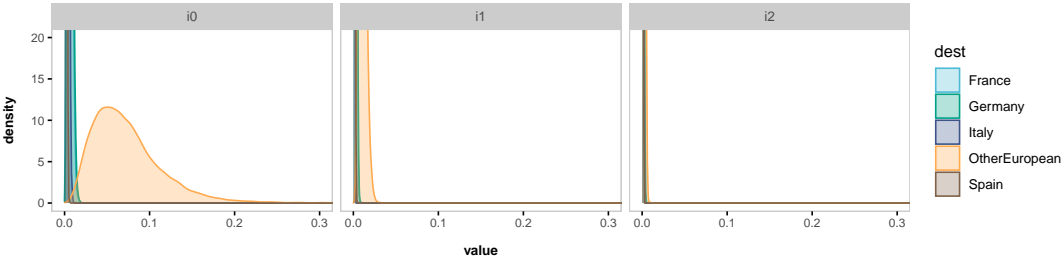
item	mean	median	95%HPDlo	95%HPDup	ESS
samplingProportionSVi0_China	0.000000	0.000000	0.000000	0.000000	
samplingProportionSVi0_France	0.000000	0.000000	0.000000	0.000000	
samplingProportionSVi0_Germany	0.000000	0.000000	0.000000	0.000000	
samplingProportionSVi0_Italy	0.000000	0.000000	0.000000	0.000000	
samplingProportionSVi0_OtherEuropean	0.000000	0.000000	0.000000	0.000000	
samplingProportionSVi0_Spain	0.000000	0.000000	0.000000	0.000000	
samplingProportionSVi1_China	0.069331	0.070372	0.038300	0.099963	490.2357
samplingProportionSVi1_France	0.034798	0.034044	0.014778	0.059887	516.1939
samplingProportionSVi1_Germany	0.026200	0.027056	0.019653	0.030000	5661.9390
samplingProportionSVi1_Italy	0.007069	0.007322	0.004382	0.009000	1137.7590
samplingProportionSVi1_OtherEuropean	0.019653	0.020458	0.010965	0.026000	801.1396
samplingProportionSVi1_Spain	0.017007	0.017608	0.012085	0.020000	5614.2890
samplingProportionSVi2_China	0.000000	0.000000	0.000000	0.000000	
samplingProportionSVi2_France	0.034798	0.034044	0.014778	0.059887	516.1939
samplingProportionSVi2_Germany	0.026200	0.027056	0.019653	0.030000	5661.9390
samplingProportionSVi2_Italy	0.007069	0.007322	0.004382	0.009000	1137.7590
samplingProportionSVi2_OtherEuropean	0.019653	0.020458	0.010965	0.026000	801.1396
samplingProportionSVi2_Spain	0.017007	0.017608	0.012085	0.020000	5614.2890

removalProb

Fixed to 1.

migrationRate China

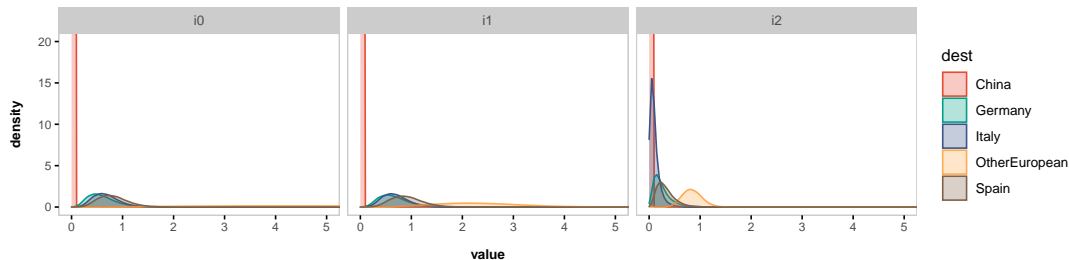
Prior: MigRateGLM, NA, NA, NA



item	mean	median	95%HPDlo	95%HPDUp	ESS
migrationRateSMi0_China_to_France	0.0054250	0.0051350	0.0017690	0.0097560	587.5836
migrationRateSMi0_China_to_Germany	0.0060630	0.0057620	0.0019260	0.0106280	561.6643
migrationRateSMi0_China_to_Italy	0.0025380	0.0023290	0.0005240	0.0049330	477.0681
migrationRateSMi0_China_to_OtherEuropean	0.0737620	0.0656790	0.0105920	0.1528730	570.3969
migrationRateSMi0_China_to_Spain	0.0008600	0.0007270	0.0000822	0.0019400	446.6912
migrationRateSMi1_China_to_France	0.0015730	0.0013990	0.0002340	0.0032670	456.8478
migrationRateSMi1_China_to_Germany	0.0014710	0.0012690	0.0001920	0.0032310	440.3114
migrationRateSMi1_China_to_Italy	0.0000064	0.0000005	0.0000000	0.0000263	987.9769
migrationRateSMi1_China_to_OtherEuropean	0.0102530	0.0097950	0.0036540	0.0175450	613.2167
migrationRateSMi1_China_to_Spain	0.0003540	0.0002570	0.0000100	0.0009660	442.8524
migrationRateSMi2_China_to_France	0.0004020	0.0002870	0.0000108	0.0011170	442.8646
migrationRateSMi2_China_to_Germany	0.0002480	0.0001470	0.0000030	0.0008100	467.3427
migrationRateSMi2_China_to_Italy	0.0000099	0.0000011	0.0000000	0.0000424	869.6003
migrationRateSMi2_China_to_OtherEuropean	0.0013610	0.0011530	0.0001410	0.0030590	436.3193
migrationRateSMi2_China_to_Spain	0.0000417	0.0000147	0.0000001	0.0001670	563.4616

migrationRate France

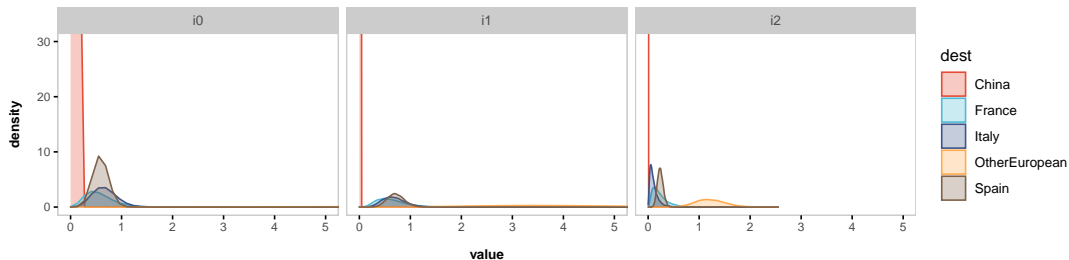
Prior: MigRateGLM, NA, NA, NA



item	mean	median	95%HPDlo	95%HPDup	ESS
migrationRateSMi0_France_to_China	0.005240	0.004950	0.0016060	0.009368	583.0093
migrationRateSMi0_France_to_Germany	0.603864	0.559467	0.1497070	1.173070	534.9483
migrationRateSMi0_France_to_Italy	0.678582	0.652066	0.2146530	1.158128	501.2540
migrationRateSMi0_France_to_OtherEuropean	5.669585	5.167773	0.9559620	11.459440	351.9160
migrationRateSMi0_France_to_Spain	0.817278	0.789423	0.2958030	1.382894	492.2498
migrationRateSMi1_France_to_China	0.001130	0.000965	0.0001200	0.002504	443.7273
migrationRateSMi1_France_to_Germany	0.666401	0.622166	0.1680040	1.256971	532.0712
migrationRateSMi1_France_to_Italy	0.690301	0.663707	0.2258370	1.177958	499.9135
migrationRateSMi1_France_to_OtherEuropean	2.327306	2.254410	0.8035690	3.978228	304.8775
migrationRateSMi1_France_to_Spain	0.914253	0.886001	0.3413360	1.504341	479.6183
migrationRateSMi2_France_to_China	0.000703	0.000560	0.0000428	0.001734	437.0243
migrationRateSMi2_France_to_Germany	0.250935	0.206701	0.0166880	0.595034	541.8024
migrationRateSMi2_France_to_Italy	0.103889	0.076659	0.0029940	0.283696	531.4332
migrationRateSMi2_France_to_OtherEuropean	0.843027	0.833587	0.4749920	1.214352	277.3696
migrationRateSMi2_France_to_Spain	0.325038	0.289185	0.0520490	0.676161	527.7730

migrationRate Germany

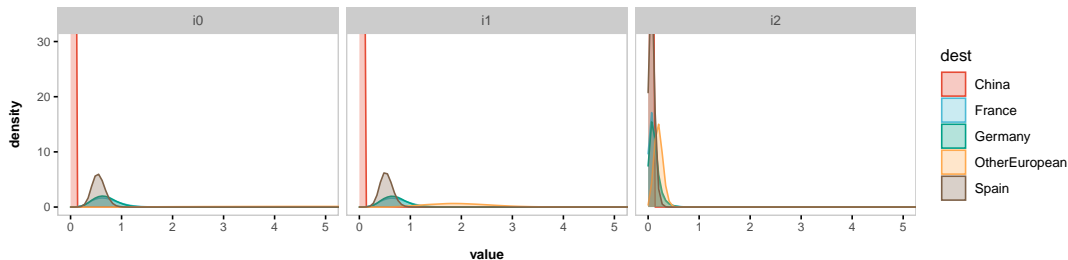
Prior: MigRateGLM, NA, NA, NA



item	mean	median	95%HPDlo	95%HPDUp	ESS
migrationRateSMi0_Germany_to_China	0.005972	0.005674	0.0018930	0.010486	559.5842
migrationRateSMi0_Germany_to_France	0.573807	0.528658	0.1314160	1.121642	536.0871
migrationRateSMi0_Germany_to_Italy	0.674006	0.655362	0.2642720	1.105205	474.4185
migrationRateSMi0_Germany_to_OtherEuropean	12.327930	10.878810	1.4593230	26.449040	357.0178
migrationRateSMi0_Germany_to_Spain	0.590501	0.584421	0.3491850	0.843430	280.2109
migrationRateSMi1_Germany_to_China	0.001550	0.001344	0.0001970	0.003353	441.7718
migrationRateSMi1_Germany_to_France	0.634383	0.590077	0.1642690	1.219962	533.6301
migrationRateSMi1_Germany_to_Italy	0.682037	0.663612	0.2711550	1.117857	473.0851
migrationRateSMi1_Germany_to_OtherEuropean	3.843413	3.692732	1.2515570	6.703620	301.2756
migrationRateSMi1_Germany_to_Spain	0.716872	0.710343	0.4080580	1.055808	277.9493
migrationRateSMi2_Germany_to_China	0.001026	0.000840	0.0000858	0.002437	434.7287
migrationRateSMi2_Germany_to_France	0.239105	0.195460	0.0103080	0.569172	542.1439
migrationRateSMi2_Germany_to_Italy	0.113300	0.089303	0.0054220	0.286394	516.9527
migrationRateSMi2_Germany_to_OtherEuropean	1.227795	1.211083	0.6740890	1.797788	289.1994
migrationRateSMi2_Germany_to_Spain	0.240805	0.238011	0.1361190	0.358788	394.4947

migrationRate Italy

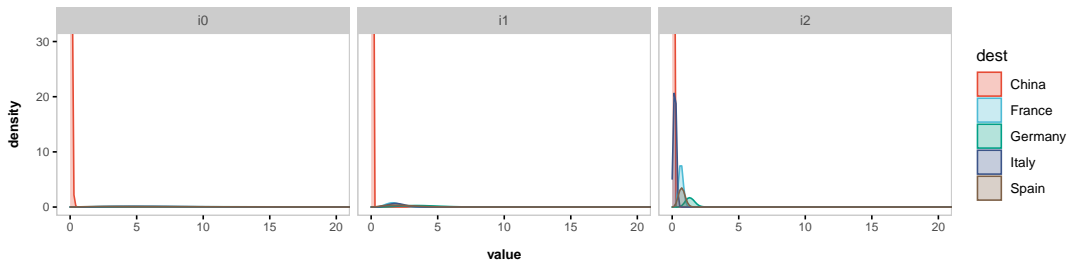
Prior: MigRateGLM, NA, NA, NA



item	mean	median	95%HPDlo	95%HPDup	ESS
migrationRateSMi0_Italy_to_China	0.0028900	0.0026740	0.000746	0.005597	488.6352
migrationRateSMi0_Italy_to_France	0.7002840	0.6737710	0.231863	1.192916	498.7484
migrationRateSMi0_Italy_to_Germany	0.6803640	0.6618700	0.270019	1.115496	473.3638
migrationRateSMi0_Italy_to_OtherEuropean	7.3186560	6.6174550	1.068286	15.003470	351.9152
migrationRateSMi0_Italy_to_Spain	0.5518860	0.5452400	0.318832	0.793387	340.8821
migrationRateSMi1_Italy_to_China	0.0000424	0.0000126	0.000000	0.000178	620.9839
migrationRateSMi1_Italy_to_France	0.7206050	0.6946700	0.256044	1.232342	496.3135
migrationRateSMi1_Italy_to_Germany	0.6945570	0.6765450	0.276710	1.131508	470.9829
migrationRateSMi1_Italy_to_OtherEuropean	1.9782410	1.9373400	0.809781	3.166709	288.0726
migrationRateSMi1_Italy_to_Spain	0.5326580	0.5260560	0.299495	0.761700	346.9630
migrationRateSMi2_Italy_to_China	0.0000454	0.0000140	0.000000	0.000188	613.1360
migrationRateSMi2_Italy_to_France	0.1113760	0.0834810	0.003018	0.298597	529.9274
migrationRateSMi2_Italy_to_Germany	0.1228540	0.0982190	0.006182	0.303827	515.8825
migrationRateSMi2_Italy_to_OtherEuropean	0.2079490	0.2009070	0.077281	0.350365	464.9232
migrationRateSMi2_Italy_to_Spain	0.0696150	0.0594070	0.007343	0.156343	476.9587

migrationRate Other European

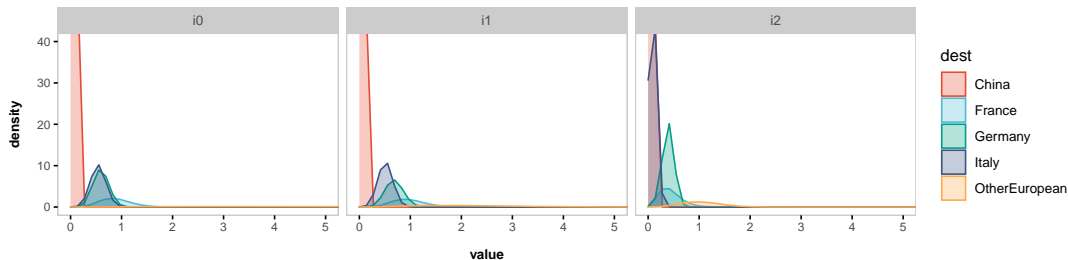
Prior: MigRateGLM, NA, NA, NA



item	mean	median	95%HPDlo	95%HPDUp	ESS
migrationRateSMi0_OtherEuropean_to_China	0.075655	0.067230	0.011543	0.158100	570.1739
migrationRateSMi0_OtherEuropean_to_France	5.665135	5.164143	0.955740	11.448620	351.8723
migrationRateSMi0_OtherEuropean_to_Germany	12.702050	11.179570	1.478684	27.438520	358.6327
migrationRateSMi0_OtherEuropean_to_Italy	7.380615	6.667810	1.072067	15.158030	352.3772
migrationRateSMi0_OtherEuropean_to_Spain	7.536254	6.095178	0.324779	18.571930	462.9961
migrationRateSMi1_OtherEuropean_to_China	0.010144	0.009692	0.003624	0.017374	612.3315
migrationRateSMi1_OtherEuropean_to_France	1.693736	1.659721	0.702316	2.716507	290.1558
migrationRateSMi1_OtherEuropean_to_Germany	3.860393	3.708711	1.293851	6.777801	301.4686
migrationRateSMi1_OtherEuropean_to_Italy	1.948131	1.908781	0.803792	3.110169	287.4609
migrationRateSMi1_OtherEuropean_to_Spain	2.345126	2.154938	0.407058	4.715937	387.3424
migrationRateSMi2_OtherEuropean_to_China	0.006220	0.005917	0.001993	0.010886	553.7394
migrationRateSMi2_OtherEuropean_to_France	0.661614	0.654093	0.397517	0.942125	290.5910
migrationRateSMi2_OtherEuropean_to_Germany	1.369194	1.349336	0.737190	2.023407	284.3019
migrationRateSMi2_OtherEuropean_to_Italy	0.203643	0.196495	0.074845	0.345064	465.8026
migrationRateSMi2_OtherEuropean_to_Spain	0.732693	0.720886	0.301735	1.174338	320.7084

migrationRate Spain

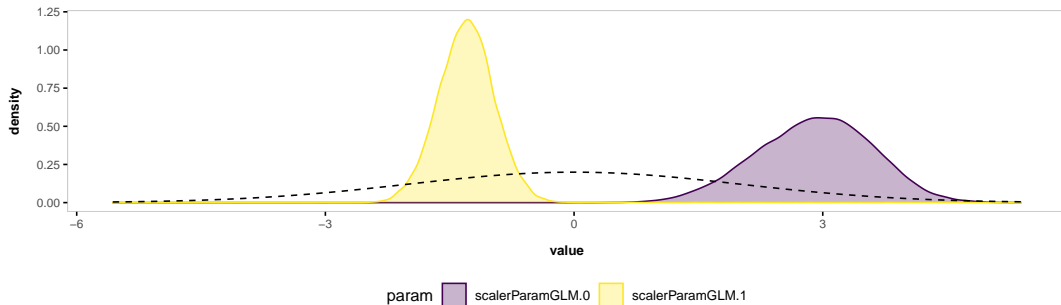
Prior: MigRateGLM, NA, NA, NA



item	mean	median	95%HPDlo	95%HPDup	ESS
migrationRateSMi0_Spain_to_China	0.000910	0.0007750	0.0000991	0.002037	448.4144
migrationRateSMi0_Spain_to_France	0.892917	0.8654630	0.3289880	1.475958	482.4807
migrationRateSMi0_Spain_to_Germany	0.598905	0.5928580	0.3439270	0.847659	279.8044
migrationRateSMi0_Spain_to_Italy	0.547054	0.5403240	0.3099240	0.781497	342.3755
migrationRateSMi0_Spain_to_OtherEuropean	7.442169	6.0298170	0.3320000	18.300690	462.0963
migrationRateSMi1_Spain_to_China	0.000374	0.0002750	0.0000111	0.001009	442.0130
migrationRateSMi1_Spain_to_France	0.971338	0.9436970	0.3779590	1.589498	471.7969
migrationRateSMi1_Spain_to_Germany	0.688865	0.6821450	0.3903340	1.002005	277.8496
migrationRateSMi1_Spain_to_Italy	0.515965	0.5092710	0.2950460	0.746443	352.5357
migrationRateSMi1_Spain_to_OtherEuropean	2.234145	2.0603360	0.3999690	4.445852	384.4877
migrationRateSMi2_Spain_to_China	0.000166	0.0000997	0.0000022	0.000536	465.6505
migrationRateSMi2_Spain_to_France	0.435891	0.4018200	0.0992560	0.845142	524.8451
migrationRateSMi2_Spain_to_Germany	0.394808	0.3900240	0.2422180	0.553541	313.5827
migrationRateSMi2_Spain_to_Italy	0.079337	0.0690700	0.0099200	0.171589	475.7130
migrationRateSMi2_Spain_to_OtherEuropean	1.044688	1.0136640	0.3408550	1.792076	339.5035

scalerParamGLM

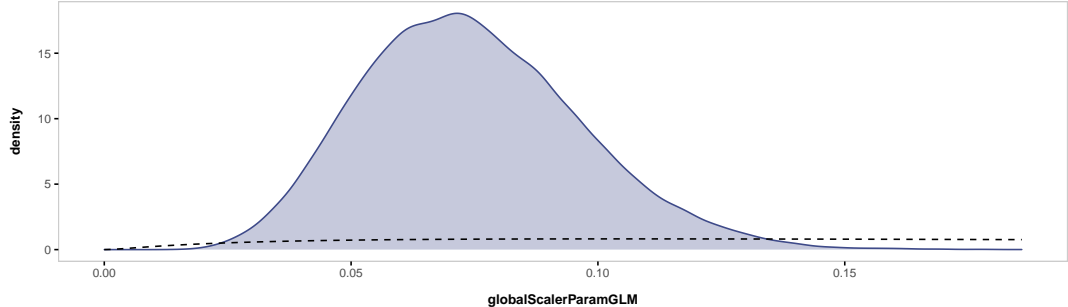
Prior: Normal, 0.0, 2.0



item	mean	median	95%HPDlo	95%HPDUp	ESS
scalerParamGLM.0	2.889105	2.913172	1.529506	4.212689	379.7221
scalerParamGLM.1	-1.301370	-1.301890	-1.968320	-0.651540	621.7058

globalScalerParamGLM

Prior: Lognormal, 0, 1.5



median	95%HPDlo	95%HPDup	ESS
0.073599	0.033683	0.117882	413.3083

indicatorParamGLM

- **Initial value:** 0 0
- **Inclusion probability:** 1, 0.99642