Additional Results

to

“Estimating the Armington Elasticity:

The Importance of Study Design and Publication Bias”*

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Abstract

This appendix provides robustness checks and diagnostics of the BMA exercise included in the main body of the paper.

*The paper, data, and code are available at `meta-analysis.cz/armington`.

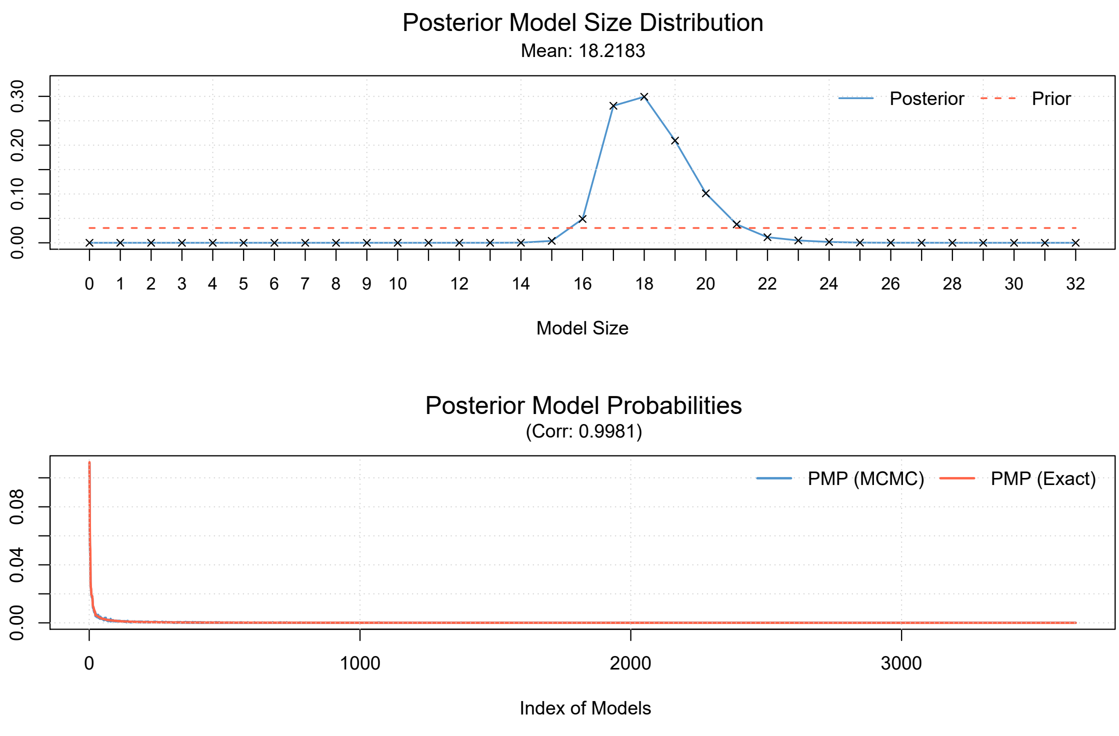
1 Diagnostics of BMA and Robustness Checks

Table B1: Diagnostics of the baseline BMA estimation

Mean no. regressors	*Draws*	*Burn-ins*	*Time*	*No. models visited*
18.2183	$3 \cdot 10^5$	$1 \cdot 10^5$	28.42869 secs	42,041
Modelspace	*Visited*	*Topmodels*	*Corr PMP*	*No. obs.*
$4.3 \cdot 10^9$	0.00098%	100%	0.9981	2,968
Model prior	*g-prior*	*Shrinkage-stats*		
Random / 16	UIP	Av = 0.9997		

Notes: We employ the g-prior suggested by Eicher *et al.* (2011) and model dilution prior suggested by George (2010). The results of this BMA exercise are reported in Table 3.

Figure B1: Model size and convergence of the baseline BMA estimation



Notes: The figure depicts the posterior model size distribution and the posterior model probabilities of the BMA exercise reported in Table 3.

Table B2: Why elasticities vary (alternative priors and weights)

Response variable:	Alternative BMA prior			Study-weighted BMA			Precision-weighted BMA		
Armington elasticity	Post. mean	Post. SD	PIP	Post. mean	Post. SD	PIP	Post. mean	Post. SD	PIP
Constant	-1.58	NA	1.00	0.00	NA	1.00	1.16	NA	1.00
Standard error	0.75	0.03	1.00	0.70	0.03	1.00	2.86	0.26	1.00
Data characteristics									
Data disaggregation	0.22	0.05	1.00	0.24	0.03	1.00	-0.29	0.04	1.00
Results disaggregation	-0.24	0.04	1.00	-0.25	0.04	1.00	0.14	0.04	1.00
Monthly data	-0.41	0.19	0.89	-0.30	0.16	0.87	-0.01	0.04	0.07
Annual data	-1.07	0.15	1.00	-0.69	0.09	1.00	0.00	0.02	0.04
Time series	0.59	0.14	1.00	0.02	0.07	0.14	0.04	0.11	0.20
Cross-section	1.99	0.24	1.00	1.51	0.14	1.00	0.00	0.03	0.04
Data period	0.03	0.01	1.00	0.02	0.00	1.00	0.00	0.00	0.40
Data size	0.33	0.02	1.00	0.44	0.02	1.00	0.10	0.01	1.00
Midyear	0.00	0.00	0.03	-0.04	0.01	1.00	0.00	0.00	0.08
Structural Variation									
Secondary sector	0.00	0.01	0.02	-0.24	0.08	0.98	0.25	0.03	1.00
Tertiary sector	-0.01	0.07	0.04	-0.91	0.20	1.00	0.35	0.04	1.00
Developed countries	0.00	0.02	0.03	-1.02	0.12	1.00	-1.05	0.14	1.00
Market size	-0.10	0.02	1.00	-0.14	0.02	1.00	-0.07	0.02	1.00
Tariffs	0.03	0.01	1.00	0.00	0.01	0.21	-0.04	0.00	1.00
Non-tariff barriers	0.09	0.16	0.30	0.60	0.11	1.00	0.03	0.07	0.26
FX volatility	0.32	0.08	1.00	0.00	0.01	0.05	0.02	0.05	0.13
National pride	0.00	0.03	0.02	0.00	0.05	0.06	0.00	0.03	0.04
Internet usage	0.00	0.01	0.10	0.01	0.02	0.37	0.00	0.00	0.19
Estimation technique									
Static model	-0.01	0.04	0.04	-0.32	0.07	1.00	-0.81	0.08	1.00
Distributed lag and trend model	-0.01	0.06	0.05	-0.41	0.09	1.00	-1.04	0.10	1.00
Partial adjustment model	-0.05	0.12	0.22	0.00	0.03	0.05	-0.26	0.07	0.99
Nonlinear model	-0.01	0.07	0.05	1.40	0.21	1.00	0.28	0.25	0.63
OLS	-0.05	0.12	0.21	0.01	0.06	0.09	0.04	0.07	0.27
CORC	-0.01	0.06	0.06	0.02	0.07	0.11	-0.10	0.13	0.43
TSLS	0.24	0.23	0.57	-0.70	0.16	0.99	0.01	0.06	0.04
GMM	-0.08	0.16	0.22	-1.48	0.16	1.00	0.39	0.08	1.00
Import constraint	0.52	0.19	0.95	0.77	0.11	1.00	-0.01	0.04	0.05
Seasonality	-0.64	0.12	1.00	0.00	0.03	0.06	1.17	0.14	1.00
Publication characteristics									
Impact factor	0.13	0.20	0.351	0.00	0.03	0.057	1.04	0.14	1.000
Citations	0.60	0.05	1.000	0.48	0.05	1.000	-0.29	0.03	1.000
Published	0.57	0.11	1.000	1.17	0.09	1.000	0.21	0.16	0.691
Studies	39			39			39		
Observations	2,968			2,968			2,968		

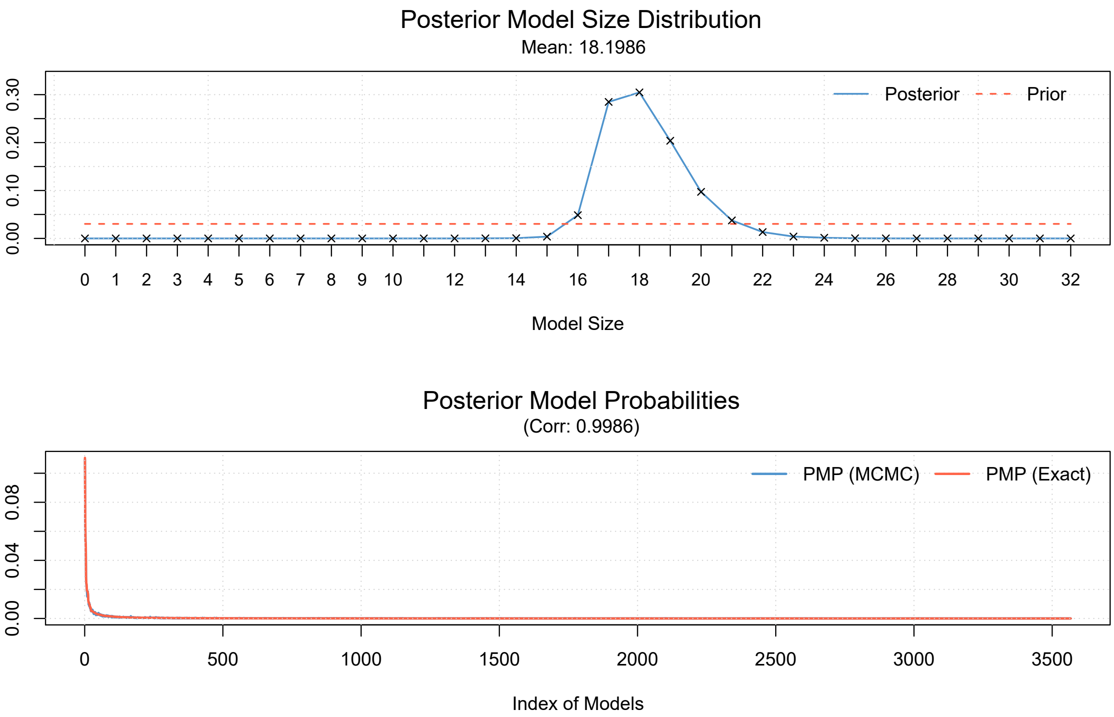
Notes: SD = standard deviation. PIP = posterior inclusion probability. All three panels represent results of Bayesian model averaging (BMA). The first panel employs an alternative model priors; Zellner's g prior is set according to Fernandez *et al.* (2001) and a dilution prior as suggested by George (2010). The two weighted specifications employ a uniform model prior suggested by Eicher *et al.* (2011) and a dilution prior suggested by George (2010). The study-weighted specification represents BMA applied to data weighted by the inverse of the number of observations reported per study, precision-weighted specification represents BMA applied to data weighted by the inverse of the standard error. All variables are described in Table A1 in the Appendix.

Table B3: Diagnostics of the alternative BMA prior

Mean no. regressors	*Draws*	*Burn-ins*	*Time*	*No. models visited*
18.1986	$3 \cdot 10^5$	$1 \cdot 10^5$	28.40841 secs	41,665
Modelspace	*Visited*	*Topmodels*	*Corr PMP*	*No. obs.*
$4.3 \cdot 10^9$	0.00097%	100%	0.9986	2,968
Model prior	*g-prior*	*Shrinkage-stats*		
Random / 16	BRIC	Av = 0.9997		

Notes: We employ the g-prior suggested by Fernandez *et al.* (2001) and model dilution prior suggested by George (2010). The results of this BMA exercise are reported in Table B2.

Figure B2: Model size and convergence of the alternative BMA prior



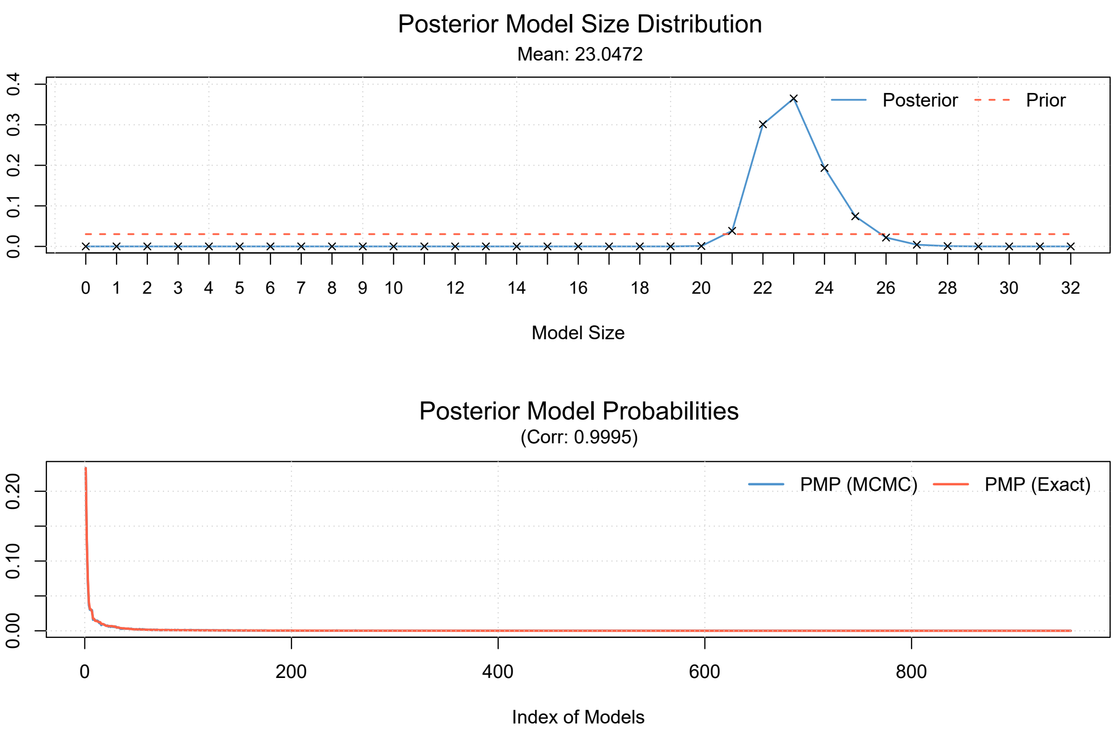
Notes: The figure depicts the posterior model size distribution and the posterior model probabilities of the BMA exercise with alternative g-prior according to Fernandez *et al.* (2001) reported in Table B2.

Table B4: Diagnostics of the study-weighted BMA estimation

Mean no. regressors	*Draws*	*Burn-ins*	*Time*	*No. models visited*
23.0472	$3 \cdot 10^5$	$1 \cdot 10^5$	23.9105 secs	33,872
Modelspace	*Visited*	*Topmodels*	*Corr PMP*	*No. obs.*
$4.3 \cdot 10^9$	0.00079%	100%	0.9995	2,968
Model prior	*g-prior*	*Shrinkage-stats*		
Random / 16	UIP	Av = 0.9997		

Notes: We employ the g-prior suggested by Eicher *et al.* (2011) and model dilution prior suggested by George (2010). The results of this BMA exercise are reported in Table B2.

Figure B3: Model size and convergence of the study-weighted BMA estimation



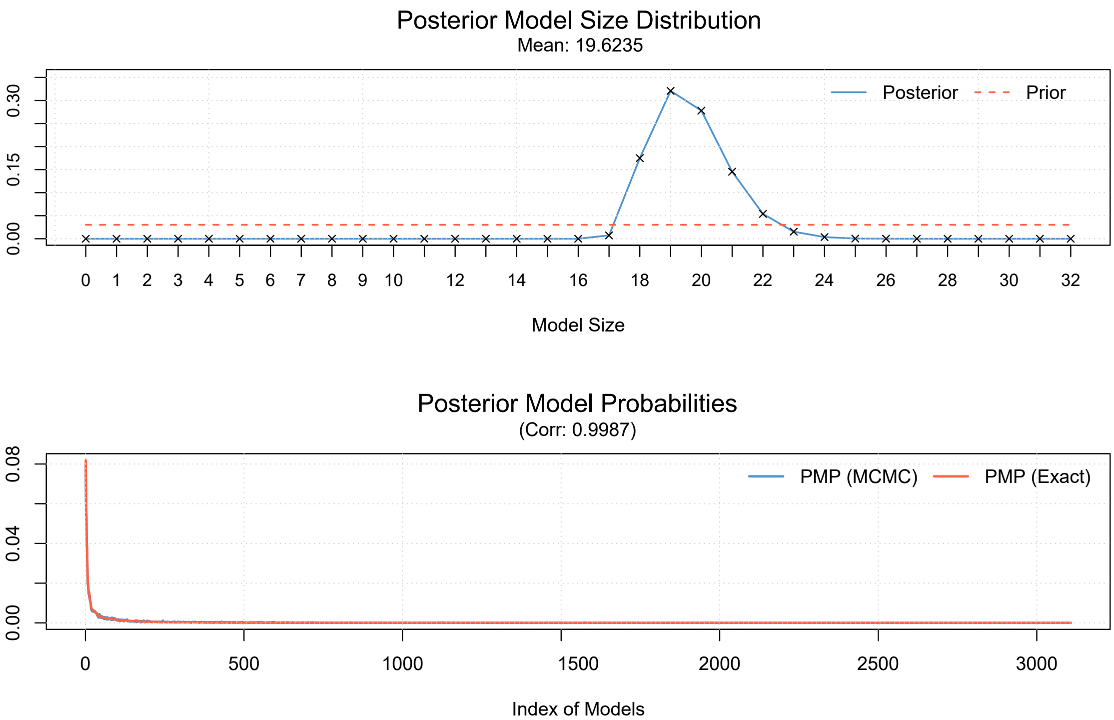
Notes: The figure depicts the posterior model size distribution and the posterior model probabilities of the study-weighted BMA exercise reported in Table B2.

Table B5: Diagnostics of the precision-weighted BMA estimation

Mean no. regressors	*Draws*	*Burn-ins*	*Time*	*No. models visited*
19.6235	$3 \cdot 10^5$	$1 \cdot 10^5$	29.30259 secs	44,536
Modelspace	*Visited*	*Topmodels*	*Corr PMP*	*No. obs.*
$4.3 \cdot 10^9$	0.001%	100%	0.9987	2,968
Model prior	*g-prior*	*Shrinkage-stats*		
Random / 16	UIP	Av = 0.9997		

Notes: We employ the g-prior suggested by Eicher *et al.* (2011) and model dilution prior suggested by George (2010). The results of this BMA exercise are reported in Table B2.

Figure B4: Model size and convergence of the precision-weighted BMA estimation



Notes: The figure depicts the posterior model size distribution and the posterior model probabilities of the precision-weighted BMA exercise reported in Table B2.

References

Eicher, T. S., C. Papageorgiou, & A. E. Raftery (2011): "Default priors and predictive performance in Bayesian model averaging, with application to growth determinants." *Journal of Applied Econometrics* **26(1)**: pp. 30–55.

Fernandez, C., E. Ley, & M. F. J. Steel (2001): "Benchmark priors for Bayesian Model Averaging." *Journal of Econometrics* **100(2)**: pp. 381–427.

George, E. I. (2010): "Dilution priors: Compensating for model space redundancy." In "IMS Collections Borrowing Strength: Theory Powering Applications – A Festschrift for Lawrence D. Brown," volume 6, p. 158–165. Institute of Mathematical Statistics.