Part I

Appendices

A Technical Appendix

The following subsections contain the draws omitted from the main text and more details on the draw of the factors.

A.1 Generating $\boldsymbol{\sigma}^2|\boldsymbol{\Theta}_{-\boldsymbol{\sigma}^2}, \mathbf{F}, \mathbf{Y}$

Next, we draw σ_n^2 conditional on $\mathbf{Y}$, $\mathbf{F}$, and $\Theta_{-\sigma_n^2}$. Let $\overline{\mathbf{Y}}_n$ reflect the quasi-difference of the vector $\mathbf{Y}_n$ and $\overline{\mathbf{X}}_n$ reflect the quasi-difference of the vector $\mathbf{X}_n = [\mathbf{1}_T, \mathbf{f}_0, \widetilde{\mathbf{F}}\gamma_n]$, conditioned on the accepted value of γ_n. The innovation variance is a straightforward draw from an inverse gamma posterior

$$\sigma_n^{-2}|\mathbf{Y}, \mathbf{X}, \Theta_{-\sigma_n^2} \sim \boldsymbol{\Gamma}\left(\frac{\nu_0 + T}{2}, \frac{\Upsilon_0 + \left(\overline{\mathbf{Y}}_n - \overline{\mathbf{X}}_n\beta_n\right)'\left(\overline{\mathbf{Y}}_n - \overline{\mathbf{X}}_n\beta_n\right)}{2}\right).$$

A.2 Generating $\boldsymbol{\psi}|\boldsymbol{\Theta}_{-\boldsymbol{\psi}}, \mathbf{F}, \mathbf{Y}$

The set of serial correlation coefficients, $\boldsymbol{\psi}_n = \left[\boldsymbol{\psi}_{n1}, .., \boldsymbol{\psi}_{np_\varepsilon}\right]$, can be sampled, conditional on $\boldsymbol{\Theta}_{-\boldsymbol{\psi}}$, $\mathbf{F}$, and $\mathbf{Y}$, in a Metropolis-Hastings (MH) step [Chib (1993); Chib and Greenberg (1994)]. We draw a candidate $\boldsymbol{\psi}_n^*$ from the proposal density: $\boldsymbol{\psi}_n^* \sim N\left(\mathbf{w}_n, \mathbf{W}_n\right)$, where

$$\mathbf{W}_n = \mathbf{W}_0 + \sigma_n^{-2}\boldsymbol{\varepsilon}_n'\boldsymbol{\varepsilon}_n,$$

$$\mathbf{w}_n = \mathbf{W}_n\left(\mathbf{W}_0^{-1}\mathbf{w}_0 + \sigma_n^{-2}\boldsymbol{\varepsilon}_n'\widehat{\varepsilon}_{n0}\right),$$

$\boldsymbol{\varepsilon}_n = [\widehat{\varepsilon}_{n1}, ..., \widehat{\varepsilon}_{np_\varepsilon}]$, $\widehat{\varepsilon}_{nk} = [\varepsilon_{n,p_\varepsilon+1-k}, ..., \varepsilon_{n,T-k}]'$, and

$$\varepsilon_{nt} = y_{nt} - \beta_{n0} - \beta_{nG}f_t - \sum_i^M \gamma_{ni}\beta_{ni}F_{it}.$$

Once we have obtained a candidate, it is accepted with probability

$$A_{n,\psi} = \min\left\{\frac{\Psi\left(\boldsymbol{\psi}_n^*\right)}{\Psi\left(\boldsymbol{\psi}_n\right)}, 1\right\}, \tag{9}$$

where

$$\Psi\left(\boldsymbol{\psi}_n\right) = \left|\Sigma_n\right|^{-1/2} \exp\left[-\frac{1}{2\sigma_n^2}(\mathbf{Y}_n - \mathbf{X}_n\beta_n)'\Sigma_n^{-1}(\mathbf{Y}_n - \mathbf{X}_n\beta_n)\right],$$

the quantity Σ_n is the function defined above of either the candidate or last iteration value of $\boldsymbol{\psi}_n$, and the denominator in (9) is computed with the value from the previous iteration. Thus, the acceptance probability is the ratio of the pseudo-likelihoods for the candidate and the past accepted draw.

A.3 Generating $\boldsymbol{\phi}|\boldsymbol{\Theta}_{-\boldsymbol{\phi}}, \mathbf{F}, \mathbf{Y}$

The draw for $\boldsymbol{\phi}_i = \left[\boldsymbol{\phi}_{i0}, \boldsymbol{\phi}_{i1}, .., \boldsymbol{\phi}_{ip_F}\right]$ for $i = 1, ..., M$ is similar to the draw of $\boldsymbol{\psi}_n$ the prevous subsection. The candidate factor AR coefficients are drawn from the proposal: $\boldsymbol{\phi}_i^* \sim N\left(\mathbf{v}_i, \mathbf{V}_i\right)$, where

$$\mathbf{v}_i = \mathbf{V}_i\left(\mathbf{V}_0^{-1}\mathbf{v}_0 + \mathbf{e}_i'\widehat{e}_{i0}\right),$$

$$\mathbf{V}_i = \mathbf{V}_0 + \boldsymbol{\varepsilon}_i'\boldsymbol{\varepsilon}_i,$$

$\mathbf{e}_i = [\widehat{e}_{i1}, ..., \widehat{e}_{ip_F}]$, $\widehat{e}_{ik} = [e_{i,p_F+1-k}, ..., e_{i,T-k}]'$, and

$$e_{it} = F_{it} - \phi_i\left(L\right)F_{it-1}.$$

As before, the candidate is accepted with a probability

$$A_{n,\phi} = \min\left\{\frac{\Psi\left(\boldsymbol{\phi}_i^*\right)}{\Psi\left(\boldsymbol{\phi}_i^{[g-1]}\right)}, 1\right\},$$

where the pseudo-likelihood, $\Psi\left(\boldsymbol{\phi}_i\right)$, is

$$\Psi\left(\boldsymbol{\phi}_i\right) = \left|\Omega_i\right|^{-1/2} \exp\left[-\frac{1}{2}\widehat{e}_{i0}'\Omega_i^{-1}\widehat{e}_{i0}\right]$$

with Ω_i defined as above. The same algorithm is repeated to obtain the AR parameters for the global factor.

A.4 Generating $\mathbf{F}|\boldsymbol{\Theta}, \boldsymbol{\phi}, \mathbf{Y}$

The factors are generated recursively from posterior distributions obtained from the modified Kalman filter described in Kim and Nelson (1999). For notational simplicity, we describe the case in which the factors and observation errors have the same lag order, p. Let $\widetilde{y}_t = y_t - \beta_0$ represent the conditionally demeaned data and $\rho_t = [F_t', \varepsilon_t', ..., F_{t+1-p}', \varepsilon_{t+1-p}']'$ be the state vector. Define $\overline{N} = M + N + 1$. Then, the state-space representation is described by

$$\widetilde{y}_t = H\rho_t, \tag{10}$$

where

$$H = \begin{bmatrix} \boldsymbol{\beta}_G & \gamma\beta & \mathbf{1}_{N\times N} & \mathbf{0}_{N\times\overline{N}(p-1)} \end{bmatrix};$$

$$\rho_t = G\rho_{t-1} + \hat{u}_t; \tag{11}$$

$$G = \begin{bmatrix} G_1 & \cdots & G_p \\ \mathbf{1}_{\overline{N}(p-1)\times\overline{N}(p-1)} & & \mathbf{0}_{\overline{N}(p-1)\times\overline{N}} \end{bmatrix};$$

$G_i = diag\left[\phi_{G,i}, \phi_{1,i}, ..., \phi_{M,i}, \psi_{1,i}, ..., \psi_{N,i}\right]$; $\hat{u}_t = \left[e_t', \epsilon_t', \mathbf{0}_{\overline{N}\times(p-1)}'\right]'$; $E_t\left[\hat{u}_t\hat{u}_t'\right] = Q$; and

$$Q = \begin{bmatrix} diag\left[\omega_G^2, \omega_1^2, ..., \omega_M^2, \sigma_1^2, ..., \sigma_N^2\right] & \mathbf{0}_{\overline{N}\times\overline{N}(p-1)} \\ \mathbf{0}_{\overline{N}(p-1)\times\overline{N}} & \mathbf{0}_{\overline{N}(p-1)\times\overline{N}(p-1)} \end{bmatrix}.$$

The Kalman filter sequentially updates the linear projection for the system (10) and (11) above. Given an initialization for the state vector, $\rho_{0|0}$, and for the unconditional density of the state vector; $P_{0|0}$, the Kalman filter computes the prediction density by propagating the state vector through the transition equation, (11), to obtain an estimate of the state vector at period t conditional on

information available at time $t-1$:

$$\begin{aligned}\rho_{t|t-1} &= G\rho_{t-1|t-1}, \\ P_{t|t-1} &= GP_{t-1|t-1}G' + Q.\end{aligned}$$

The filter then updates this prediction given the new (observable) information realized at time t as:

$$\begin{aligned}\rho_{t|t} &= \rho_{t|t-1} + P_{t|t-1}H'(H'P_{t|t-1}H + R)^{-1}(\widetilde{y}_t - H\rho_{t|t-1}), \\ P_{t|t} &= P_{t|t-1} - P_{t|t-1}H'(H'P_{t|t-1}H + R)^{-1}HP_{t|t-1}.\end{aligned}$$

The factors are then sampled recursively from a Gaussian distribution with one additional step. Because Q is singular and we are interested only in drawing the factors, Kim and Nelson (1999) show that the dimensions of Q, G, and the state variable must be reduced. They define Q^* as the upper $(M+1)\times(M+1)$ submatrix of Q and

$$G^* = \begin{bmatrix} G_1 & \mathbf{0}_{(M+1\times N)} & G_2 & \mathbf{0}_{(M+1\times N)} & \cdots & G_p & \mathbf{0}_{(M+1\times N)} \end{bmatrix},$$

where G_i is defined above.

The last iteration of the Kalman filter yields $\rho_{T|T}$ and $P_{T|T}$ from which we can draw F_T. Then, we recursively draw F_{t-1} from $N\left(\rho_{t|t,\rho^*_{t+1}}, P_{t|t,\rho^*_{t+1}}\right)$, where

$$\begin{aligned}\rho_{t|t,\rho^*_{t+1}} &= \rho_{t|t} + P'_{t|t}G^{*\prime}(G^*P_{t|t}G^{*\prime} + Q^*)^{-1}(\rho^*_{t+1} - G^*\rho_{t|t}), \\ P_{t|t,\rho^*_{t+1}} &= P_{t|t} - P_{t|t}G^{*\prime}(G^*P_{t|t}G^{*\prime} + Q^*)^{-1}G^*P_{t|t}.\end{aligned}$$

A.5 Computing the Bayes Factors

Chib (1995) uses the basic marginal likelihood identity to approximate the marginal likelihood using the output from the Gibbs sampler:

$$\ln \widehat{m}(\mathbf{Y}) = \ln f(\mathbf{Y}|\mathbf{\Theta}^*) + \ln \pi(\mathbf{\Theta}^*) - \ln \widehat{\pi}(\mathbf{\Theta}^*|\mathbf{Y}), \tag{12}$$

where Θ is the vector of model parameters, $\ln \widehat{m}(\mathbf{Y})$ is the log marginal likelihood, $\ln f(\mathbf{Y}|\mathbf{\Theta}^*)$ is the log likelihood evaluated at a given $\mathbf{\Theta} = \mathbf{\Theta}^*$, $\ln \pi(\mathbf{\Theta}^*)$ is the log of the prior evaluated at $\mathbf{\Theta}^*$, $\ln \widehat{\pi}(\mathbf{\Theta}^*|\mathbf{Y})$ is the posterior ordinate, and $\mathbf{\Theta}^*$ is any high-density value of $\mathbf{\Theta}$ (e.g., a modal point).

The posterior ordinate $\ln \widehat{\pi}(\mathbf{\Theta}^*|\mathbf{Y})$ can be computed by expanding the expression $\widehat{\pi}(\mathbf{\Theta}^*|\mathbf{Y})$ as

$$\widehat{\pi}(\mathbf{\Theta}^*|\mathbf{Y}) = \pi(\Theta_1^*|\mathbf{Y}) \times \pi(\Theta_2^*|\mathbf{Y}, \Theta_1^*) \times ... \times \pi\left(\Theta_N^*|\mathbf{Y}, \Theta_1^*, ..., \Theta_{N-1}^*\right),$$

where here N represents the number of blocks in the sampler. The first term can be obtained from the initial run of the Gibbs sampler. A typical term for block n in the above representation is $\pi\left(\Theta_n^*|\mathbf{Y}, \Theta_1^*, ..., \Theta_{n-1}^*\right)$, which can be estimated by additional sampling of $\{\Theta_{n+1}..., \Theta_N, \mathbf{F}\}$ holding constant $\{\Theta_1^*, ..., \Theta_n^*\}$. In general, the estimate of the posterior ordinate, $\widehat{\pi}(\Theta_n^*|\mathbf{Y})$, is then

$$\widehat{\pi}(\Theta_n^*|\mathbf{Y}) = \frac{1}{G}\sum_{g=1}^{G} \pi\left(\Theta_n^*|\mathbf{Y}, \Theta_1^*, ..., \Theta_{n-1}^*, \Theta_{n+1}^{(g)}, ..., \Theta_N^{(g)}, F_0^{(g)}, F_1^{(g)}, ..., F_M^{(g)}, f_1^{(g)}, ..., f_N^{(g)}\right).$$

For the blocks requiring an MH step, we employ the method of Chib and Jeliazkov (2001), which computes the posterior ordinate as proportional to the sum of the candidates weighted by their appropriate acceptance probabilities.

B Data

Openness is measured in constant prices (percent in 2005 constant prices); exports + imports divided by real GDP per capita (RGDPL) and represents the total trade as a percentage of GDP. Investment share of RGDPL is defined in 2005 constant prices. Real GDP chain per equivalent adult (in 2005 constant prices) computes output with weights of 1.0 to all persons over age 15 and 0.5 for those younger than age 15. The dispersion indices used in the estimation are obtained from Baxter and Kouparitsas (2005).

Country Listing			
Latin America		**Europe**	
Costa Rica	Bolivia	France	Italy
Domincan Republic	Brazil	Austria	Luxembourg
El Salvador	Chile	Belgium	Netherlands
Guatemala	Columbia	Denmark	Norway
Honduras	Ecuador	Finland	Portugal
Jamaica	Paraguay	Germany	Spain
Panama	Peru	Greece	Sweden
Trinidad	Uruguay	Iceland	Switzerland
Argentina	Venezuela	Ireland	United Kingdom
Oceania	**Africa**	**Asia 1**	**Asia 2**
Australia	Cameroon	Bangladesh	Hong Kong
New Zealand	Ivory Coast	India	Japan
North America	Kenya	Indonesia	South Korea
Canada	Morocco	Pakistan	Malaysia
United States	Senegal	Philippines	Singapore
Mexico	South Africa	Sri Lanka	Thailand
	Zimbabwe		

Table 7: Countries. Regions in bold reflect the groupings imposed in Kose, Otrok, and Whiteman (2003).

C Full Posterior Distributions

Posterior Means, Medians, and Coincidence Intervals for Cluster Loadings												
	β_1				β_2				β_3			
	Mean	Median	16th-84th		Mean	Median	16th-84th		Mean	Median	16th-84th	
Argentina	-0.56	-.33	-0.89	-0.27	0.57	0.57	0.57	0.57	1.19	1.16	0.79	1.59
Australia	NA	NA	NA	NA	1.24	1.22	1	1.5	NA	NA	NA	NA
Austria	-1.06	-1.05	-1.25	-0.87	1.42	1.31	1.31	1.64	NA	NA	NA	NA
Bangladesh	0.14	0.16	-0.27	0.54	0.27	0.28	-0.18	0.68	-0.06	-0.07	-0.43	0.33
Belgium	-1.3	-1.29	-1.49	-1.13	1.18	1.19	0.69	1.65	0.93	0.88	0.64	1.31
Bolivia	-0.14	-0.16	-0.43	0.23	0.21	0.21	-0.18	0.59	0.74	0.76	0.36	1.09
Brazil	-1.23	-1.23	-1.63	-0.85	-0.06	-0.07	-0.57	0.47	1.23	1.26	0.82	1.63
Cameroon	-0.01	-0.02	-0.55	0.5	0.68	0.68	0.15	1.2	0.39	0.4	-0.14	0.89
Canada	-1.1	-1.13	-1.37	-0.74	1.69	1.68	1.46	1.93	0.99	0.92	0.83	1.27
Chile	-0.08	-0.16	-0.53	0.48	0.15	0.16	-0.46	0.75	0.88	0.88	0.44	1.34
Colombia	-0.34	-0.32	-0.57	-0.2	0.3	0.3	0.3	0.3	0.64	0.64	0.45	0.82
Costa Rica	-0.65	-0.69	-0.75	-0.52	0.98	0.94	0.61	1.22	0.93	0.93	0.66	1.19
Ivory Coast	-0.87	-0.9	-1.36	-0.35	0.54	0.55	0.01	1.08	-0.06	-0.04	-0.56	0.44
Denmark	-1.02	-0.99	-1.31	-0.73	1.15	1.16	0.87	1.43	NA	NA	NA	NA
Dom. Republic	-0.56	-0.57	-1.02	-0.14	0.93	0.89	0.47	1.39	0.85	0.85	0.44	1.26
Ecuador	-0.34	-0.31	-0.76	0.07	-0.31	-0.3	-0.6	0.05	1.01	1	0.63	1.38
El Salvador	-0.32	-0.36	-0.6	-0.03	0.78	0.77	0.4	1.2	0.74	0.74	0.4	1.1
Finland	-1.78	-1.76	-2.09	-1.47	NA	NA	NA	NA	NA	NA	NA	NA
France	-1.26	-1.26	-1.47	-1.06	1.33	1.44	0.68	1.94	0.77	0.73	0.05	1.49
Germany	-0.55	-0.54	-0.76	-0.33	0.36	0.36	0.15	0.59	0.2	0.21	-0.01	0.38
Greece	-1.03	-1.02	-1.47	-0.61	0.87	0.84	0.51	1.27	0.36	0.33	-0.03	0.74
Guatemala	-0.47	-0.48	-0.7	-0.17	0.1	0.08	-0.26	0.45	0.65	0.65	0.37	0.92
Honduras	0.28	0.27	-0.11	0.54	0.2	0.19	-0.27	0.69	0.88	0.88	0.57	1.19
Hong Kong	-0.65	-0.7	-1.15	-0.16	0.96	0.97	0.43	1.51	0.92	0.85	0.44	1.43
Iceland	-1.07	-1.08	-1.56	-0.58	1.25	1.27	0.74	1.76	1	0.99	0.53	1.49
India	-0.22	-0.22	-0.61	0.14	0.56	0.56	0.14	0.97	0.11	0.14	-0.29	0.49
Indonesia	0.03	0.02	-0.36	0.43	0.16	0.16	-0.33	0.64	0.14	0.14	-0.24	0.52
Ireland	-0.92	-0.92	-1.31	-0.52	0.8	0.81	0.37	1.23	0.3	0.28	-0.17	0.77
Italy	-1.34	-1.34	-1.56	-1.11	NA	NA	NA	NA	NA	NA	NA	NA
Jamaica	0.05	0.04	-0.39	0.49	-0.01	-0.01	-0.47	0.45	-0.19	-0.21	-0.64	0.28

Table 8: Posterior Means, Medians, 16th and 84th percentiles for the cluster loadings. Notees: 'NA' represents that the observation never chose that cluster and its corresponding loading was not sampled. The sample size of each parameter depends on the number of times an observation belongs to one cluster. For example; the mean value for the first cluster loading for Argentina is the sum of loadings for Argentina in that cluster divided by the number of times Argentina falls in cluster 1.

Posterior Means, Medians, and Coincidence Intervals for Cluster Loadings												
	β_1				β_2				β_1			
	Mean	Median	16th-84th		Mean	Median	16th-84th		Mean	Median	16th-84th	
Japan	-0.74	-0.74	-1.05	-0.42	0.03	0	-0.27	0.37	-0.04	-0.1	-0.48	0.45
Kenya	-0.34	-0.35	-0.7	0.04	0.54	0.55	0.15	0.94	0.34	0.33	0.03	0.68
Korea	-0.27	-0.26	-0.69	0.13	0.73	0.71	0.27	1.19	-0.51	-0.53	-0.87	-0.17
Luxembourg	-1.41	-1.42	-1.82	-1.02	0.94	0.92	0.55	1.43	0.11	0.12	-0.34	0.56
Malaysia	-0.12	-0.13	-0.5	0.27	0.24	0.22	-0.16	0.65	0.43	0.46	-0.04	0.91
Mexico	-0.53	-0.56	-0.93	-0.06	0.56	0.58	0.01	1.1	0.87	0.87	0.5	1.26
Morocco	-0.53	-0.53	-1.11	0.06	-0.4	-0.42	-0.92	0.13	-0.22	-0.23	-0.77	0.31
Netherlands	-0.95	-0.94	-1.17	-0.74	0.9	0.88	0.65	1.15	0.66	0.66	0.66	0.66
New Zealand	-0.42	-0.41	-0.9	-0.02	1.13	1.13	0.74	1.52	-0.16	-0.16	-0.16	-0.16
Norway	-0.65	-0.65	-0.87	-0.41	0.32	0.32	0.02	0.67	0.75	0.73	0.44	1.1
Pakistan	-0.51	-0.5	-0.77	-0.25	0.26	0.27	-0.05	0.56	0.33	0.35	0.03	0.62
Panama	-0.45	-0.36	-0.97	-0.07	-0.4	-0.4	-0.45	-0.35	0.7	0.69	0.32	1.06
Paraguay	-0.32	-0.27	-0.73	-0.01	-0.08	-0.05	-0.26	0.06	0.52	0.52	0.14	0.92
Peru	-0.74	-0.72	-1.22	-0.24	0.77	0.72	-0.09	1.56	1.1	1.11	0.65	1.55
Philippines	-0.4	-0.4	-0.77	0	0.15	0.18	-0.38	0.67	0.76	0.78	0.44	1.09
Portugal	-1.55	-1.54	-1.92	-1.19	NA	NA	NA	NA	-0.03	0.02	-0.27	0.15
Senegal	0.19	0.19	-0.14	0.54	-0.15	-0.14	-0.53	0.24	0.07	0.08	-0.21	0.34
Singapore	-0.19	-0.2	-0.67	0.3	0.2	0.2	-0.39	0.8	0.41	0.39	-0.11	0.89
South Africa	-0.16	-0.17	-0.5	0.16	0.05	0.04	-0.24	0.35	0.08	0.13	-0.37	0.43
Spain	-1.17	-1.17	-1.45	-0.9	NA	NA	NA	NA	-0.37	-0.23	-0.73	-0.09
Sri Lanka	-0.89	-0.89	-1.21	-0.57	0.14	0.14	-0.24	0.49	0.39	0.38	0.08	0.75
Sweden	-1.15	-1.14	-1.35	-0.95	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland	-1.17	-1.16	-1.37	-0.97	NA	NA	NA	NA	NA	NA	NA	NA
Thailand	0.46	0.48	0.09	0.82	-0.46	-0.46	-0.87	-0.05	-0.15	-0.12	-0.53	0.18
Trinidad & Tobago	-0.98	-0.97	-1.54	-0.46	-0.07	-0.07	-0.68	0.55	1.02	1.09	0.42	1.53
United Kingdom	NA	NA	NA	NA	1.19	1.18	0.96	1.43	NA	NA	NA	NA
United States	-1.4	-1.18	-1.99	-1.03	1.72	1.71	1.45	1.98	NA	NA	NA	NA
Uruguay	0.07	0.07	-0.32	0.48	0.17	0.28	-0.4	0.7	1.12	1.12	0.6	1.61
Venezuela	-0.25	0.04	-0.95	0.04	NA	NA	NA	NA	1.36	1.36	0.91	1.8
Zimbabwe	-0.58	-0.57	-1.26	0.1	-0.52	-0.53	-1.29	0.3	-0.2	-0.21	-0.97	0.65

Table 9: Posterior Means, Medians, 16th and 84th percentiles for the cluster loadings. Notes: 'NA' represents that the observation never chose that cluster and its corresponding loading was not sampled.

Posterior Means, Medians, and Coincidence Intervals for Parameters												
	β_0				β_G				σ^2			
	Mean	Median	16th-84th		Mean	Median	16th-84th		Mean	Median	16th-84th	
Argentina	0.05	0.05	-0.71	0.82	0.07	0.06	-0.4	0.54	13.13	12.79	10.17	16.07
Australia	0.6	0.62	0.04	1.15	-0.33	-0.35	-0.6	-0.06	2.79	2.71	2.17	3.4
Austria	0.05	0.06	-0.37	0.49	-0.62	-0.62	-0.85	-0.39	1.7	1.64	1.31	2.09
Bangladesh	0.78	0.81	0	1.54	0.14	0.14	-0.29	0.58	13.73	13.36	10.88	16.52
Belgium	-0.41	-0.41	-0.81	-0.02	-0.66	-0.66	-0.87	-0.45	0.79	0.66	0.49	0.91
Bolivia	-0.31	-0.32	-0.98	0.36	-0.27	-0.27	-0.63	0.08	6.13	5.94	4.79	7.47
Brazil	-0.02	-0.02	-0.83	0.8	-0.49	-0.49	-0.95	-0.02	9.82	9.54	7.69	11.92
Cameroon	0.43	0.44	-0.44	1.33	0.71	0.71	0.15	1.27	20.92	20.25	16.61	25.3
Canada	0.23	0.23	-0.34	0.81	-0.36	-0.37	-0.63	-0.09	0.72	0.64	0.38	0.97
Chile	0.04	0.04	-0.82	0.89	-1.07	-1.08	-1.56	-0.59	12.43	12.02	9.7	15.14
Colombia	0.38	0.38	-0.1	0.86	-0.53	-0.53	-0.75	-0.3	1.6	1.55	1.2	1.99
Costa Rica	0.72	0.72	0.11	1.34	-0.15	-0.15	-0.51	0.21	5.52	5.36	4.26	6.76
Ivory Coast	-0.25	-0.26	-1.1	0.59	-0.21	-0.21	-0.71	0.29	24.75	24.09	19.7	29.8
Denmark	0.37	0.4	-0.25	1	-0.46	-0.46	-0.78	-0.14	4.38	4.26	3.45	5.31
Dom. Republic	0.99	0.99	0.22	1.79	-0.53	-0.53	-1.02	-0.05	16.69	19.11	15.64	23.76
Ecuador	0.04	0.05	-0.74	0.8	-0.19	-0.20	-0.61	0.23	8.78	8.52	6.87	10.64
El Salvador	0.17	0.18	-0.48	0.81	-0.11	-0.11	-0.44	0.23	5.23	5.09	4.06	6.37
Finland	1.16	1.18	0.47	1.86	0.58	0.58	0.2	0.95	3.93	3.79	2.86	4.98
France	-0.25	-0.27	-0.68	0.17	-0.46	-0.46	-0.68	-0.24	0.94	0.88	0.66	1.16
Germany	-0.28	-0.28	-0.9	0.33	-0.67	-0.67	-0.89	-0.45	1.4	1.36	1.08	1.72
Greece	0.23	0.22	-0.59	1.08	-0.79	-0.79	-1.24	-0.35	9.42	9.13	7.45	11.4
Guatemala	-0.39	-0.41	-1.08	0.3	-0.78	-0.78	-1.06	-0.5	3.13	3.04	2.39	3.86
Honduras	-0.09	-0.09	-0.76	0.6	-0.12	-0.13	-0.51	0.27	10.27	9.96	8.01	12.52
Hong Kong	0.64	0.65	-0.21	1.51	-1.61	-1.62	-2.1	-1.12	11.66	11.28	9.13	14.21
Iceland	0.87	0.87	0.02	1.7	0	-0.02	-0.55	0.54	22.09	21.48	17.54	26.7
India	1.60	1.61	0.79	2.4	-0.19	-0.19	-0.6	0.21	8.56	8.31	6.79	10.28
Indonesia	0.23	0.25	-0.53	1	-1.71	-1.71	-2.1	-1.32	6.66	6.45	5.07	8.26
Ireland	0.50	0.52	-0.35	1.36	-0.99	-0.99	-1.41	-0.57	7.3	7.09	5.78	8.82
Italy	-0.60	-0.59	-1.1	-0.1	-0.77	-0.77	-1.04	-0.5	1.87	1.81	1.42	2.32
Jamaica	0.10	0.11	-0.73	0.94	-0.31	-0.32	-0.77	0.16	12.64	12.27	10.08	15.22

Table 10: Posterior Means, Medians, and Coincidence Intervals for Parameters. Notes: The columns show posterior means, medians, 16th and 84th percentiles for the parameters: intercept, global factor loading and the idiosyncratic variance.

Posterior Means, Medians, and Coincidence Intervals for Parameters												
	β_0				β_G				σ^2			
	Mean	Median	16th-84th		Mean	Median	16th-84th		Mean	Median	16th-84th	
Japan	0.22	0.23	-0.68	1.13	-1.03	-1.03	-1.4	-0.65	4.72	4.58	3.68	5.77
Kenya	-0.11	-0.1	-0.87	0.63	-0.01	-0.01	-0.38	0.36	12.87	12.49	10.22	15.49
Korea	1.43	1.44	0.56	2.28	-1.95	-1.96	-2.38	-1.52	8.9	8.59	6.73	11.06
Luxembourg	0.1	0.1	-0.74	0.91	-0.58	-0.58	-1.02	-0.14	7.63	7.41	6.03	9.21
Malaysia	0.73	0.74	-0.01	1.46	-1.81	-1.81	-2.19	-1.43	4.75	4.6	3.49	6.05
Mexico	0.24	0.26	-0.46	0.94	-0.49	-0.49	-0.91	-0.07	9.85	9.58	7.77	11.9
Morocco	0.21	0.22	-0.78	1.2	0	0	-0.59	0.6	23.83	23.16	19.09	28.6
Netherlands	0.03	0.04	-0.47	0.52	-0.44	-0.45	-0.7	-0.19	2.22	2.15	1.73	2.7
New Zealand	0.19	0.2	-0.56	0.93	-0.16	-0.16	-0.56	0.25	7.94	7.73	6.29	9.54
Norway	1.52	1.53	0.97	2.08	-0.24	-0.25	-0.51	0.02	2.93	2.85	2.3	3.55
Pakistan	1.56	1.62	0.85	2.29	-0.06	-0.07	-0.39	0.26	4.77	4.63	3.79	5.73
Panama	1.13	1.13	0.42	1.84	-0.41	-0.42	-0.84	0.01	15.03	14.6	11.89	18.15
Paraguay	0.34	0.34	-0.45	1.13	0.01	0.01	-0.44	0.47	9.83	9.57	7.82	11.79
Peru	0.49	0.48	-0.3	1.3	0.2	0.18	-0.32	0.71	13.54	13.17	10.5	16.62
Philippines	-0.02	-0.01	-0.73	0.7	-0.62	-0.60	-1.09	-0.15	8.99	8.7	7.09	10.88
Portugal	-0.64	-0.66	-1.4	0.11	-1.14	-1.15	-1.58	-0.69	6.84	6.63	5.29	8.35
Senegal	0.82	0.82	0.12	1.53	0.81	0.82	0.44	1.2	13.2	12.84	10.33	15.96
Singapore	0.60	0.61	-0.23	1.42	-2.17	-2.17	-2.7	-1.64	13.83	13.47	10.29	17.31
South Africa	0.85	0.9	0.1	1.6	-0.12	-0.12	-0.45	0.22	3.46	3.35	2.76	4.17
Spain	0.42	0.45	-0.54	1.37	-0.18	-0.18	-0.5	0.13	3.14	3.04	2.45	3.81
Sri Lanka	0.74	0.76	-0.05	1.53	-0.44	-0.43	-0.8	-0.07	6.4	6.23	5.06	7.77
Sweden	1.05	1.07	0.5	1.58	0.39	0.38	0.09	0.68	1.55	1.5	1.12	1.97
Switzerland	-0.52	-0.52	-0.99	-0.05	-0.27	-0.27	-0.51	-0.03	1.47	1.42	1.14	1.8
Thailand	1.70	1.75	0.93	2.49	-1.58	-1.6	-2.01	-1.16	6.28	6.08	4.59	7.94
Trinidad & Tobago	0.1	0.1	-0.84	1.03	-1.16	-1.16	-1.78	-0.53	28.9	27.91	22.77	35.02
United Kingdom	0.29	0.31	-0.25	0.84	-0.46	-0.47	-0.71	-0.22	1.71	1.66	1.32	2.1
United States	-0.66	-0.67	-1.25	-0.05	-0.8	-0.8	-1.07	-0.5	1.07	1.02	0.71	1.41
Uruguay	-0.13	-0.14	-0.92	0.68	-0.36	-0.37	-0.87	0.15	13.85	13.46	10.89	16.83
Venezuela	-0.79	-0.81	-1.6	0.03	-0.18	-0.19	-0.69	0.32	21.42	20.81	16.7	26.08
Zimbabwe	-0.12	-0.12	-1.05	0.81	0.05	0.05	-0.69	0.78	86.19	83.68	69.1	103.16

Table 11: Posterior Means, Medians, and Coincidence Intervals for Parameters. Notes: The columns show posterior means, medians, 16th and 84th percentiles for the parameters: intercept, global factor loading and the idiosyncratic variance.

Cluster Probabilities: Posterior Means							
	Cluster 1	Cluster 2	Cluster 3		Cluster 1	Cluster 2	Cluster 3
Argentina	0	0	1	Japan	0.95	0.04	0.01
Australia	0	1	0	Kenya	0.07	0.89	0.04
Austria	1	0	0	Korea	0.43	0.38	0.19
Bangladesh	0.27	0.25	0.48	Luxembourg	0.95	0.03	0.02
Belgium	0.98	0.02	0	Malaysia	0.09	0.9	0.01
Bolivia	0.01	0	0.99	Mexico	0.03	0	0.96
Brazil	0.69	0.02	0.28	Morocco	0.15	0.04	0.81
Cameroon	0.07	0.79	0.14	Netherlands	1	0	0
Canada	0.01	0.99	0	New Zealand	0.01	0.99	0
Chile	0.02	0	0.98	Norway	0.9	0.03	0.07
Colombia	0	0	1	Pakistan	0.52	0.35	0.13
Costa Rica	0	0	1	Panama	0.01	0	0.99
Ivory Coast	0.23	0.66	0.1	Paraguay	0.01	0	0.99
Denmark	0.2	0.8	0	Peru	0.03	0	0.97
Dom. Republic	0.07	0.02	0.91	Philippines	0.06	0.05	0.88
Ecuador	0.02	0	0.98	Portugal	1	0	0
El Salvador	0.03	0.03	0.94	Senegal	0.09	0.29	0.62
Finland	1	0	0	Singapore	0.45	0.42	0.13
France	0.99	0.01	0	South Africa	0.03	0.97	0
Germany	0.91	0.06	0.04	Spain	1	0	0
Greece	0.88	0.07	0.05	Sri Lanka	0.9	0.02	0.08
Guatemala	0.02	0	1	Sweden	1	0	0
Honduras	0	0	0	Switzerland	1	0	0
Hong Kong	0.05	0.95	0	Thailand	0.62	0.37	0.02
Iceland	0.59	0.1	0.31	Trinidad & Tobago	0.55	0.44	0.1
India	0.12	0.85	0.03	United Kingdom	0	1	0
Indonesia	0.21	0.62	0.17	United States	0	1	0
Ireland	0.63	0.35	0.01	Uruguay	0.02	0.01	0.97
Italy	1	0	0	Venezuela	0	0	1
Jamaica	0.47	0.48	0.04	Zimbabwe	0.19	0.77	0.04

Table 12: Cluster Probabilities. Notes: Each value represents the posterior means of the cluster membership indicator for each country.