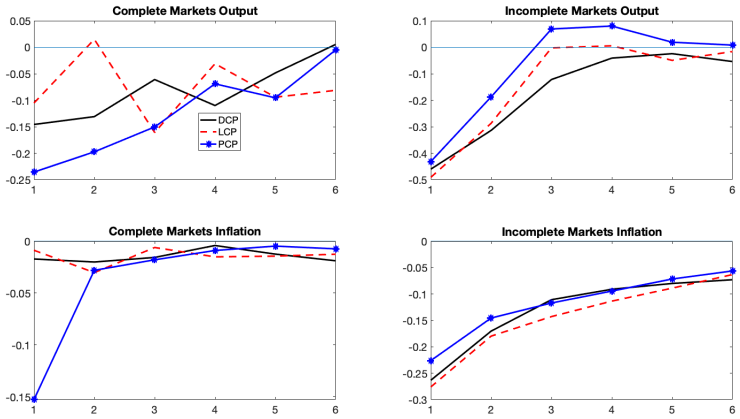
Appendix (not intended for publication)

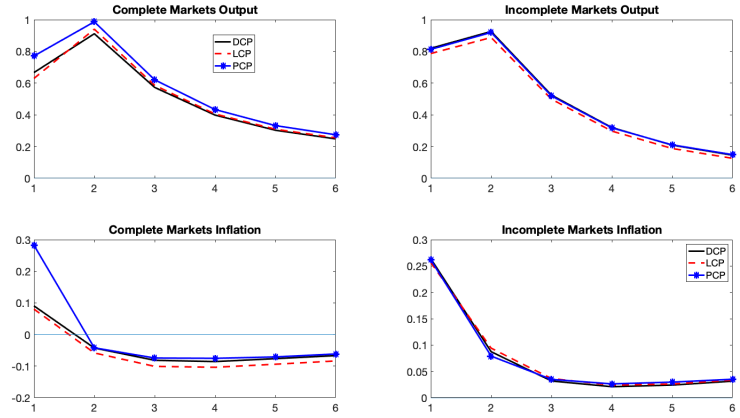
A Aggregate Demand or Aggregate Supply Shocks?

Figure A.1: Aggregate Demand or Aggregate Supply Shocks?

Volatility Shock

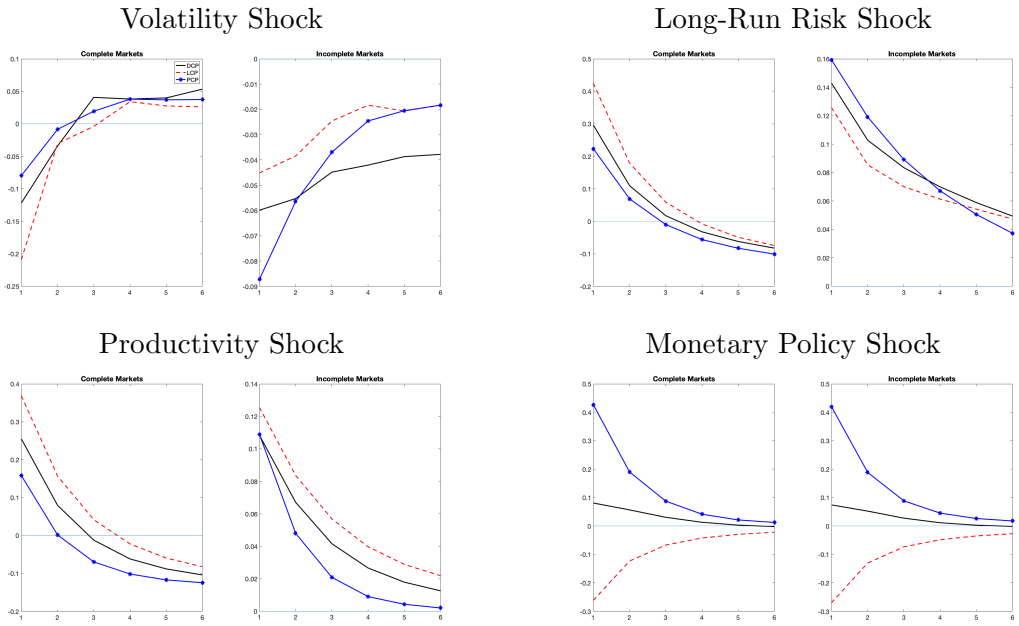


Long-Run Risk Shock



Notes: Country 1 output and inflation impulse responses to positive country 1 stochastic volatility and long-run risk shocks under DCP, LCP, and PCP. The impulse responses are reported in percent per annum. Parameterization follows from Section 4.

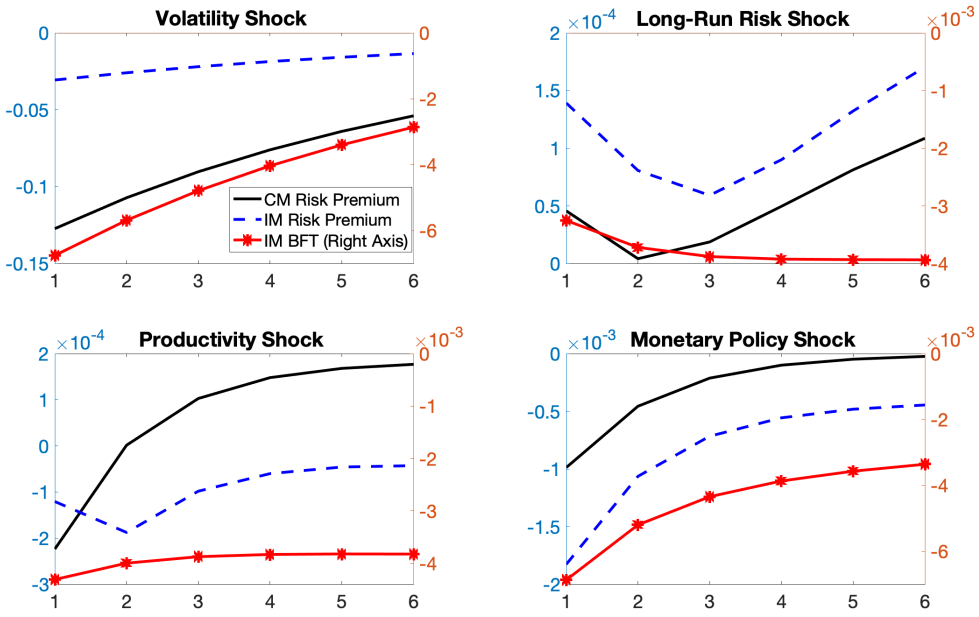
Figure A.2: Output Response of Country 2 to Country 1 Shocks under Alternative Export Pricing Conventions



Notes: Country 2 output impulse responses to positive country 1 shocks under DCP, LCP, and PCP. The impulse responses are reported in percent per annum. Parameterization follows from Section 4.

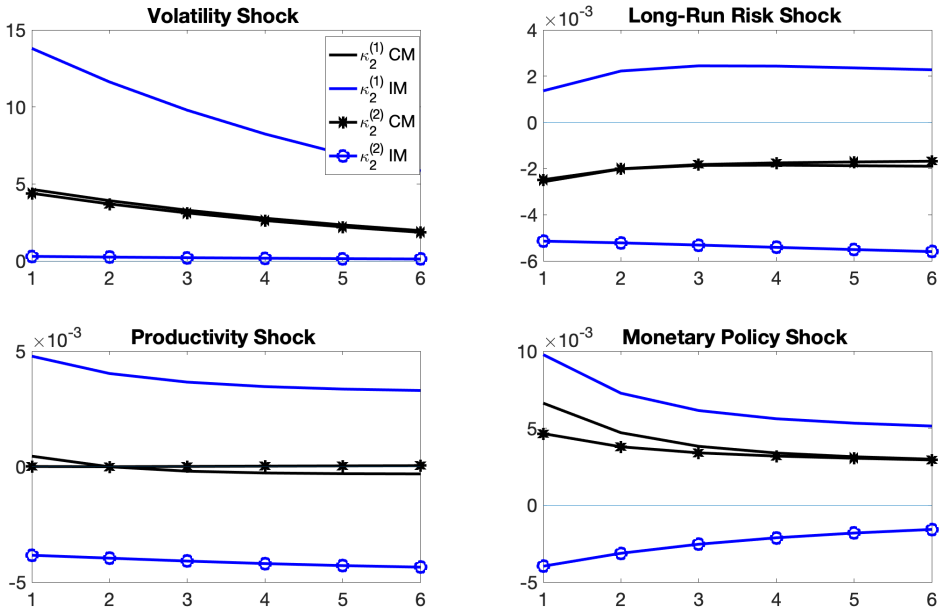
B Dominant Currency Pricing (DCP)

Figure B.1: BFT_t and Risk Premium (rp_t) Impulse Responses under DCP



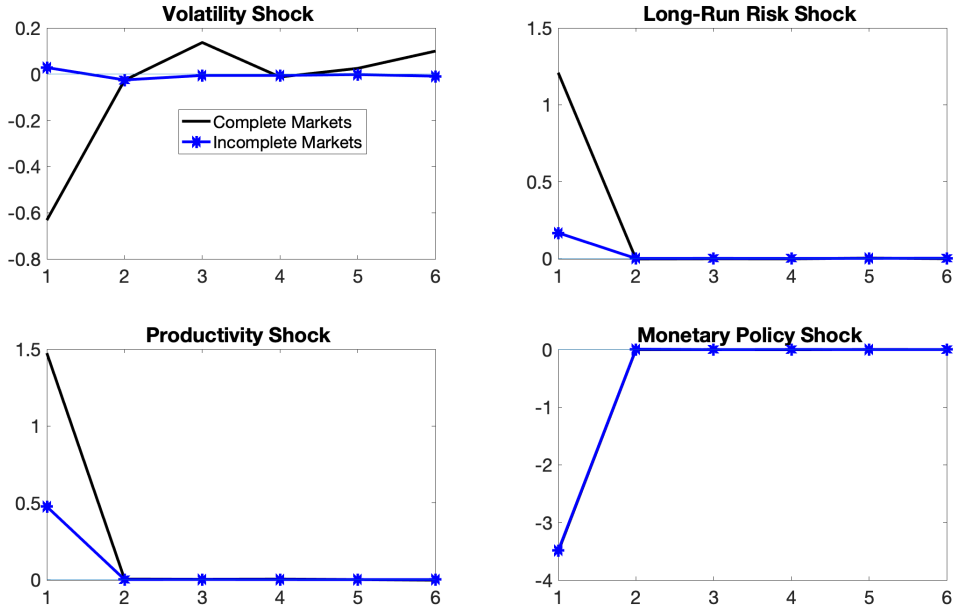
Notes: The impulse responses are to positive country 1 shocks under DCP and are reported in percent per annum. $rp_t = E_t\left(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1})\right)$ is the currency risk premium and $\text{BFT}_t = \frac{\kappa^*_{2t}}{2} + \frac{\kappa^*_{3t}}{6}$. CM represents complete markets and IM represents incomplete markets. Parameterization follows from Section 4.

Figure B.2: $\kappa_{2t}^{(1)}$ and $\kappa_{2t}^{(2)}$ Impulse Responses under DCP



Notes: The impulse responses are to positive country 1 shocks under DCP and are reported in percent per annum. $\kappa_{2t}^{(1)}$ is the second conditional cumulant of country 1's nominal SDF and $\kappa_{2t}^{(2)}$ is the second conditional cumulant of country 2's nominal SDF. CM represents complete markets and IM represents incomplete markets. Parameterization follows from Section 4.

Figure B.3: Exchange Rate Forecast Error Impulse Responses under DCP



Notes: The impulse responses are to positive country 1 shocks under DCP and are reported in percent per annum. The exchange rate forecast error is $\ln(S_{1,2,t}) - E_{t-1} ln(S_{1,2,t})$. Parameterization follows from Section 4.

Table B.1: Simulated Variance Decomposition under DCP

	Volatility		Long-Run Risk		Productivity		Monetary		
	$\nu_{1,t}$	$\nu_{2,t}$	$u_{1,t}$	$u_{2,t}$	$\epsilon_{1,t}$	$\epsilon_{2,t}$	$e_{1,t}$	$e_{2,t}$	Total
Complete Markets									
$\kappa_{2t}^{(1)}$	53.272	47.762	0.000	0.000	0.000	0.000	0.000	0.000	101.036
$\kappa_{2t}^{(2)}$	47.594	53.403	0.000	0.000	0.000	0.000	0.000	0.000	100.998
rp_t	49.627	49.052	0.216	0.067	0.129	0.125	0.000	0.000	99.216
$\Delta ln(S_{1,2,t})$	0.789	0.795	4.328	4.557	6.237	6.435	34.781	34.414	92.333
er_t	0.808	0.827	3.850	4.089	5.367	5.394	36.988	36.484	93.805
Incomplete Markets									
$\kappa_{2t}^{(1)}$	99.969	0.048	0.000	0.000	0.000	0.000	0.000	0.000	100.020
$\kappa_{2t}^{(2)}$	0.046	99.974	0.000	0.000	0.000	0.000	0.000	0.000	100.021
rp_t	40.862	41.646	2.894	4.125	2.750	3.739	0.184	0.262	96.462
BFT_t	49.850	50.563	0.000	0.000	0.000	0.000	0.000	0.000	100.419
$\Delta ln(S_{1,2,t})$	0.279	0.337	0.852	0.857	0.899	0.908	46.465	47.554	98.151
er_t	0.021	0.050	0.100	0.111	0.782	0.788	47.711	48.942	98.503

Notes: $\kappa_{2t}^{(1)}$ is the second conditional cumulant of country 1's nominal SDF, $\kappa_{2t}^{(2)}$ is the second conditional cumulant of country 2's nominal SDF, $rp_t = E_t\left(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1})\right)$ is the currency risk premium, $S_{1,2,t}$ is the nominal exchange rate, $er_t = i_{1,t-1} - i_{2,t-1} - \Delta ln(S_{1,2,t})$ is the ex post currency excess return, and $\text{BFT}_t = \frac{\kappa_{2t}^*}{2!} + \frac{\kappa_{3t}^*}{3!}$. Parameterization follows from Section 4. Averages over 10 replications of 5,000 periods. Numbers may not add up to 100 due to i) non-zero correlation of simulated shocks in small samples and ii) nonlinearity.

Table B.2: Unconditional Moments and Risk Aversion Coefficient under DCP

	Complete Markets			Incomplete Markets		
Risk Aversion Coefficient	4	40	60	4	40	60
$\sigma(\Delta \ln y_{1,t})$	3.263	3.258	3.240	3.287	3.289	3.360
$\sigma(\Delta \ln c_{1,t})$	2.932	2.995	3.016	3.229	3.272	3.386
$\sigma(i_{1,t})$	1.316	1.340	1.327	1.141	1.171	1.285
$\sigma(r_{1,t})$	1.399	1.410	1.401	1.386	1.379	1.393
$\sigma(\pi_{1,t})$	1.516	1.535	1.504	1.179	1.207	1.283
$\rho(\Delta \ln y_{1,t}, \Delta \ln y_{2,t})$	-0.007	0.057	0.076	0.005	0.014	0.027
$\rho(\Delta \ln c_{1,t}, \Delta \ln c_{2,t})$	0.260	0.226	0.199	0.042	0.025	0.010
$\rho(\ln N_{1,t}, \ln N_{2,t})$	0.889	0.998	0.999	0.240	0.271	0.244
$\rho(\Delta \ln Q_{1,2,t}, \Delta \ln S_{1,2,t})$	0.895	0.895	0.900	0.946	0.947	0.945
$\Delta \ln y_{1,t}$–AR(1)	-0.045	-0.029	-0.035	-0.069	-0.078	-0.073
$\Delta \ln c_{1,t}$–AR(1)	-0.122	-0.123	-0.131	-0.080	-0.090	-0.088
$\pi_{1,t}$–AR(1)	0.737	0.724	0.707	0.622	0.573	0.565
$\sigma(\Delta \ln S_{1,2,t})$	5.712	6.118	6.187	5.142	5.227	5.290
$\sigma(\Delta \ln Q_{1,2,t})$	4.367	4.844	4.904	3.624	3.646	3.691
$\mu(rp_t)$	0.008	0.001	-0.024	-0.005	0.004	0.016
$\mu(er_t)$	-0.001	0.019	0.008	-0.008	-0.005	-0.004
β_F	0.987	0.979	1.005	1.004	1.000	0.973

Notes: $\mu(\bullet)$ is the mean of the variable stated, $\sigma(\bullet)$ is the volatility or standard deviation of the variable stated, $\rho(\bullet)$ is the correlation of the variables stated, and AR(1) is the first-order autocorrelation coefficient of the variable stated. $y_{1,t}$ is output in country 1, $c_{1,t}$ is consumption in country 1, $i_{1,t}$ is the nominal interest rate in country 1, $r_{1,t}$ is the real interest rate in country 1, $\pi_{1,t}$ is inflation in country 1, $N_{1,t}$ and $N_{2,t}$ are the nominal SDFs in countries 1 and 2, $Q_{1,2,t}$ is the real exchange rate, $S_{1,2,t}$ is the nominal exchange rate, $rp_t = E_t(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1}))$ is the currency risk premium, $er_t = i_{1,t-1} - i_{2,t-1} - \Delta ln(S_{1,2,t})$ is the ex post currency excess return, and β_F is the Fama coefficient. Parameterization follows from Section 4 except for the risk aversion coefficient (ϕ). Averages over 10 replications of 5,000 periods.

Table B.3: Heterogeneous Monetary Policy under DCP

	Complete Markets				Incomplete Markets			
	Country 2				Country 2			
	Inflation Targeter	Procyclical Interest Rate	Undis-ciplined	Accommo-date Inflation	Inflation Targeter	Procyclical Interest Rate	Undis-ciplined	Accommo-date Inflation
ξ_1	1.5	1.5	1.5	2.5	1.5	1.5	1.5	2.5
ζ_1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
ξ_2	4.0	1.5	1.1	1.3	4.0	1.5	1.1	1.3
ζ_2	0.1	2.0	0.1	0.5	0.1	2.0	0.1	0.5
$\mu(rp_t)$	0.099	-0.213	0.269	0.060	0.139	-0.309	0.447	0.070
$\mu(er_t)$	0.087	-0.157	0.341	0.075	0.111	-0.281	0.442	0.105
β_F	0.970	1.050	0.961	1.014	0.982	0.993	0.889	0.973
$\mu(\kappa_{2t}^{(1)})$	19.188	19.184	18.873	19.296	30.459	29.444	29.625	29.159
$\mu(\kappa_{2t}^{(2)})$	19.387	18.756	19.410	19.417	29.482	29.677	30.985	29.697

Notes: $\mu(\bullet)$ is the mean of the variable stated. $rp_t = E_t\left(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1})\right)$ is the currency risk premium, $er_t = i_{1,t-1} - i_{2,t-1} - \Delta ln(S_{1,2,t})$ is the ex post currency excess return, β_F is the Fama coefficient, $\kappa_{2t}^{(1)}$ is the second conditional cumulant of country 1's nominal SDF, and $\kappa_{2t}^{(2)}$ is the second conditional cumulant of country 2's nominal SDF. Except for the monetary policy parameters, parameterization follows from Section 4. Averages over 10 replications of 5,000 periods.

Table B.4: Heterogeneous Productivity Growth under Incomplete Markets and DCP (Australia, Canada, United States, and Japan)

	United States (1)–Japan (2)			Australia (1)–Japan (2)			Canada (1)–Japan (2)		
	Data	Complete Markets	Incomplete Markets	Data	Complete Markets	Incomplete Markets	Data	Complete Markets	Incomplete Markets
$\mu(rp_t)$	–	0.642	1.092	–	0.457	0.764	–	0.629	1.070
$\mu(er_t)$	0.490	0.562	1.087	4.856	0.407	0.744	2.887	0.594	1.073
β_F	-2.820	1.014	0.991	-0.465	1.007	0.959	-2.863	1.001	0.954
$\mu(\kappa_{2t}^{(1)})$	–	40.785	30.790	–	46.935	49.479	–	42.572	35.173
$\mu(\kappa_{2t}^{(2)})$	–	42.070	96.083	–	47.849	95.754	–	43.831	95.571
$\sigma(\Delta \ln S_{1,2,t})$	20.99	9.121	5.434	24.825	8.731	5.493	23.525	8.900	5.431
$\sigma(\Delta \ln Q_{1,2,t})$	21.204	8.773	3.836	24.978	8.079	3.903	24.257	8.429	3.822
$\sigma(\Delta \ln y_{1,t})$	3.713	2.986	3.337	4.128	3.455	3.848	3.378	2.948	3.293
$\sigma(\Delta \ln y_{2,t})$	3.986	4.161	4.425	3.986	4.010	4.425	3.986	4.109	4.405
$\sigma(\Delta \ln c_{1,t})$	3.198	4.403	3.396	3.118	4.285	3.902	2.709	4.176	3.396
$\sigma(\Delta \ln c_{2,t})$	3.841	4.781	4.298	3.841	4.465	4.364	3.841	4.675	4.295
$\sigma(\pi_{1,t})$	2.623	2.852	1.285	4.322	2.247	1.287	3.609	2.826	1.361
$\sigma(\pi_{2,t})$	4.745	5.662	1.999	4.745	4.857	2.014	4.745	5.527	2.011
$\Delta \ln y_{1,t}$–AR(1)	0.362	-0.026	-0.073	-0.058	0.024	-0.016	0.386	-0.019	-0.076
$\Delta \ln y_{2,t}$–AR(1)	0.129	0.233	0.061	0.129	0.257	0.055	0.129	0.245	0.054
$\Delta \ln c_{1,t}$–AR(1)	0.083	-0.117	-0.077	0.145	-0.067	-0.031	0.078	-0.134	-0.087
$\Delta \ln c_{2,t}$–AR(1)	-0.163	-0.096	0.025	-0.163	-0.073	0.018	-0.163	-0.092	0.018
$\pi_{1,t}$–AR(1)	0.798	0.872	0.599	0.595	0.827	0.560	0.652	0.867	0.597
$\pi_{2,t}$–AR(1)	0.553	0.888	0.280	0.553	0.870	0.298	0.553	0.890	0.300

Notes: $\mu(\bullet)$ is the mean of the variable stated, $\sigma(\bullet)$ is the volatility or standard deviation of the variable stated, and AR(1) is the first-order autocorrelation coefficient of the variable stated. $rp_t = E_t\left(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1})\right)$ is the currency risk premium, $er_t = i_{1,t-1} - i_{2,t-1} - \Delta ln(S_{1,2,t})$ is the ex post currency excess return, β_F is the Fama coefficient, $\kappa_{2t}^{(1)}$ is the second conditional cumulant of country 1's nominal SDF, $\kappa_{2t}^{(2)}$ is the second conditional cumulant of country 2's nominal SDF, $S_{1,2,t}$ is the nominal exchange rate, $Q_{1,2,t}$ is the real exchange rate, $y_{1,t}$ is output in country 1, $y_{2,t}$ is output in country 2, $c_{1,t}$ is consumption in country 1, $c_{2,t}$ is consumption in country 2, $\pi_{1,t}$ is inflation in country 1, and $\pi_{2,t}$ is inflation in country 2. Country-specific productivity growth process parameters are employed. Except for the productivity growth process parameters, parameterization follows from Section 4. Averages over 10 replications of 5,000 periods.

Table B.5: Heterogeneous Monetary Policy and Productivity Growth under DCP (United States and Japan)

		Japan Inflation Targeter		Japan Undisciplined		Japan Undisciplined*	
	Data	Complete Markets	Incomplete Markets	Complete Markets	Incomplete Markets	Complete Markets	Incomplete Markets
ξ_2	–	4.0	4.0	1.1	1.1	1.1	1.1
ζ_2	–	0.1	0.1	0.1	0.1	0.1	0.1
$\mu(rp_t)$	–	1.023	1.534	1.329	2.346	1.791	2.583
$\mu(er_t)$	0.490	1.011	1.568	1.334	2.290	1.788	2.571
β_F	-2.820	0.992	0.948	0.926	0.873	0.846	0.841
$\mu(\kappa_{2t}^{(1)})$	–	40.960	31.357	40.255	31.391	74.337	45.932
$\mu(\kappa_{2t}^{(2)})$	–	43.008	94.725	42.913	96.548	77.919	113.130

Notes: $\mu(\bullet)$ is the mean of the variable stated. $rp_t = E_t\left(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1})\right)$ is the currency risk premium, $er_t = i_{1,t-1} - i_{2,t-1} - \Delta ln(S_{1,2,t})$ is the ex post currency excess return, β_F is the Fama coefficient, $\kappa_{2t}^{(1)}$ is the second conditional cumulant of country 1's nominal SDF, and $\kappa_{2t}^{(2)}$ is the second conditional cumulant of country 2's nominal SDF. Monetary policy parameters for the United States (country 1) are $\xi_1 = 1.5$ and $\zeta_1 = 0.5$. Country-specific productivity growth process parameters are employed. Except for the monetary policy and productivity growth process parameters, parameterization follows from Section 4. *: Cross-country correlations of exogenous shocks are set to 0.99 as in Backus et al. (2013). Averages over 10 replications of 5,000 periods.

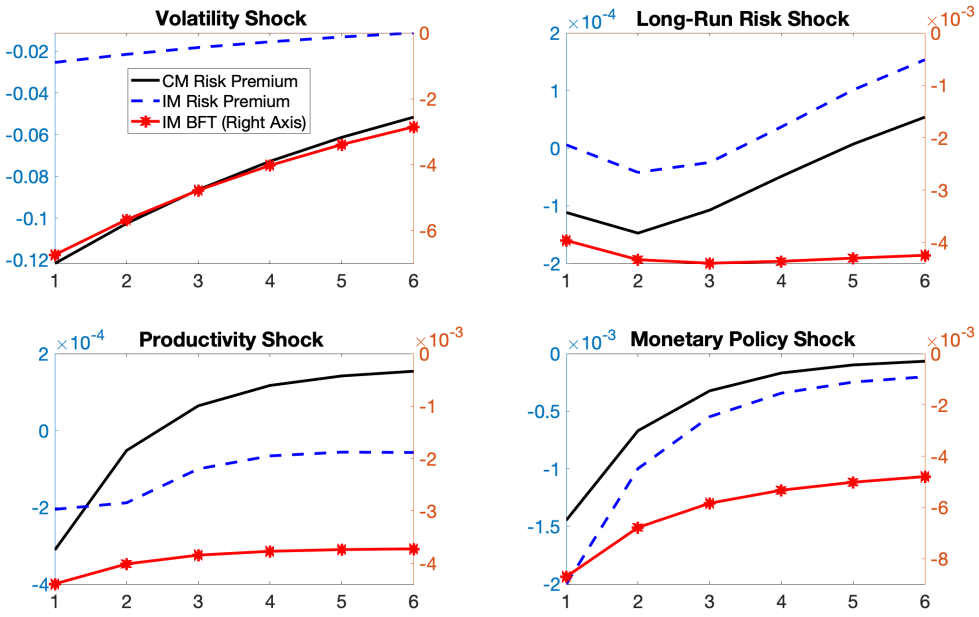
Table B.6: Heterogeneous Monetary Policy and Productivity Growth under DCP (Australia, Canada, and United States)

	United States (1)–Australia (2)				United States (1)–Canada (2)				Canada (1)–Australia (2)			
	Data	Bench-mark	United States Undis-ciplined	Australia Procyclical Interest Rate	Data	Bench-mark	United States Undis-ciplined	Canada Procyclical Interest Rate	Data	Bench-mark	Canada Undis-ciplined	Australia Procyclical Interest Rate
ξ_1	–	1.5	1.1	1.5	–	1.5	1.1	1.5	–	1.5	1.1	1.5
ζ_1	–	0.5	0.1	0.5	–	0.5	0.1	0.5	–	0.5	0.1	0.5
ξ_2	–	1.5	1.5	1.5	–	1.5	1.5	1.5	–	1.5	1.5	1.5
ζ_2	–	0.5	0.5	2.0	–	0.5	0.5	2.0	–	0.5	0.5	2.0
Complete Markets												
$\mu(rp_t)$	–	0.205	-0.107	-0.123	–	0.002	-0.282	-0.243	–	0.163	-0.224	-0.128
$\mu(er_t)$	-4.366	0.243	-0.158	-0.100	-2.398	0.019	-0.288	-0.274	-1.968	0.162	-0.120	-0.011
β_F	-0.553	0.988	0.986	1.023	-0.074	1.026	0.986	1.037	0.840	1.007	0.981	1.085
$\mu(\kappa_{2t}^{(1)})$	–	24.763	25.445	25.250	–	20.090	21.104	20.194	–	25.723	27.083	26.307
$\mu(\kappa_{2t}^{(2)})$	–	25.174	25.230	25.003	–	20.094	20.540	19.706	–	26.048	26.635	26.050
$\mu(\kappa_{1t}^{(1)})$	–	-14.507	-8.853	-14.870	–	-12.185	-7.214	-12.166	–	-14.955	-8.682	-15.338
$\mu(\kappa_{1t}^{(2)})$	–	-13.772	-14.040	-14.241	–	-12.118	-12.394	-12.519	–	-14.333	-14.716	-14.847
$\mu(\kappa_{1t}^{*}+\kappa_{2t}^{*}/2)$	–	0.964	-5.288	0.700	–	0.060	-5.463	-0.541	–	0.782	-6.251	0.388
$\rho(rp_t, bot_{1,t})$	–	-0.002	0.019	-0.053	–	0.075	0.019	0.093	–	0.045	-0.003	-0.048
Incomplete Markets												
$\mu(rp_t)$	–	0.369	-0.014	-0.106	–	0.019	-0.367	-0.380	–	0.345	-0.179	-0.136
$\mu(er_t)$	-4.366	0.337	-0.060	-0.076	-2.398	0.029	-0.421	-0.388	-1.968	0.335	-0.199	-0.162
β_F	-0.553	0.964	0.940	0.985	-0.074	1.003	0.955	0.987	0.840	0.993	0.944	0.979
$\mu(\kappa_{2t}^{(1)})$	–	30.750	30.275	29.626	–	29.686	30.758	30.024	–	34.350	35.079	33.980
$\mu(\kappa_{2t}^{(2)})$	–	48.034	47.015	46.578	–	33.205	33.534	32.966	–	47.931	47.702	46.937
$\mu(\kappa_{1t}^{(1)})$	–	-16.793	-8.788	-16.384	–	-16.343	-8.890	-16.469	–	-18.630	-9.395	-18.362
$\mu(\kappa_{1t}^{(2)})$	–	-24.391	-24.135	-25.187	–	-18.049	-18.273	-19.128	–	-24.387	-24.346	-25.301
$\mu(\kappa_{1t}^{*}+\kappa_{2t}^{*}/2)$	–	1.097	-6.898	-0.352	–	0.042	-7.990	-1.090	–	1.056	-8.667	-0.413
$\rho(rp_t, bot_{1,t})$	–	-0.289	-0.259	-0.267	–	-0.462	-0.202	-0.126	–	-0.355	-0.265	-0.262

Notes: $\mu(\bullet)$ is the mean of the variable stated and $\rho(\bullet)$ is the correlation of the variables stated. $rp_t = E_t\left(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1})\right)$ is the currency risk premium, $er_t = i_{1,t-1} - i_{2,t-1} - \Delta ln(S_{1,2,t})$ is the ex post currency excess return, β_F is the Fama coefficient, $\kappa_{2t}^{(1)}$ is the second conditional cumulant of country 1's nominal SDF, $\kappa_{2t}^{(2)}$ is the second conditional cumulant of country 2's nominal SDF, $\kappa_{1t}^{(1)}$ is the first conditional cumulant of country 1's nominal SDF, $\kappa_{1t}^{(2)}$ is the first conditional cumulant of country 2's nominal SDF, $\kappa_{1t}^{*} + \kappa_{2t}^{*}/2 = \left(\kappa_{1t}^{(2)} - \kappa_{1t}^{(1)}\right) + \frac{\kappa_{2t}^{(2)} - \kappa_{2t}^{(1)}}{2}$, and $bot_{1,t}$ is saving in country 1 ($\frac{y_{1,t} - c_{1,t}}{y_{1,t}}$). Country-specific productivity growth process parameters are employed. Except for the monetary policy and productivity growth process parameters, parameterization follows from Section 4. Averages over 10 replications of 5,000 periods.

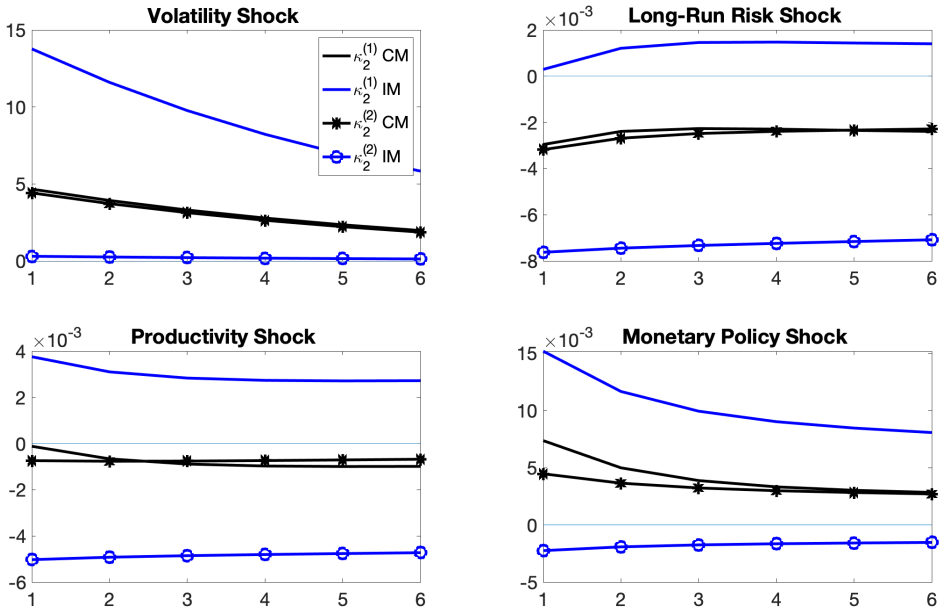
C Producer Currency Pricing (PCP)

Figure C.1: BFT_t and Risk Premium (rp_t) Impulse Responses under PCP



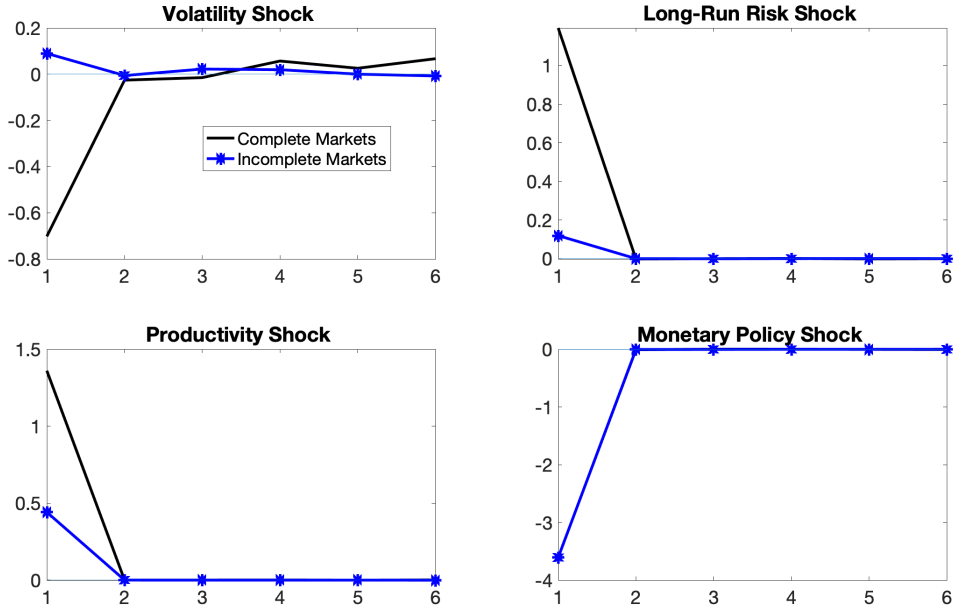
Notes: The impulse responses are to positive country 1 shocks under PCP and are reported in percent per annum. $rp_t = E_t\left(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1})\right)$ is the currency risk premium and $\text{BFT}_t = \frac{\kappa^*_{2t}}{2} + \frac{\kappa^*_{3t}}{6}$. CM represents complete markets and IM represents incomplete markets. Parameterization follows from Section 4.

Figure C.2: $\kappa_{2t}^{(1)}$ and $\kappa_{2t}^{(2)}$ Impulse Responses under PCP



Notes: The impulse responses are to positive country 1 shocks under PCP and are reported in percent per annum. $\kappa_{2t}^{(1)}$ is the second conditional cumulant of country 1's nominal SDF and $\kappa_{2t}^{(2)}$ is the second conditional cumulant of country 2's nominal SDF. CM represents complete markets and IM represents incomplete markets. Parameterization follows from Section 4.

Figure C.3: Exchange Rate Forecast Error Impulse Responses under PCP



Notes: The impulse responses are to positive country 1 shocks under PCP and are reported in percent per annum. The exchange rate forecast error is $\ln(S_{1,2,t}) - E_{t-1} ln(S_{1,2,t})$. Parameterization follows from Section 4.

Table C.1: Simulated Variance Decomposition under PCP

	Volatility		Long-Run Risk		Productivity		Monetary		
	$\nu_{1,t}$	$\nu_{2,t}$	$u_{1,t}$	$u_{2,t}$	$\epsilon_{1,t}$	$\epsilon_{2,t}$	$e_{1,t}$	$e_{2,t}$	Total
Complete Markets									
$\kappa_{2t}^{(1)}$	53.477	48.375	0.000	0.000	0.000	0.000	0.000	0.000	101.853
$\kappa_{2t}^{(2)}$	47.624	53.659	0.000	0.000	0.000	0.000	0.000	0.000	101.284
rp_t	48.473	48.850	0.098	0.191	0.129	0.069	0.000	0.000	97.814
$\Delta ln(S_{1,2,t})$	0.939	0.931	3.984	3.937	5.643	5.672	37.132	37.686	95.922
er_t	1.025	1.016	3.644	3.598	5.040	5.054	38.811	39.417	97.606
Incomplete Markets									
$\kappa_{2t}^{(1)}$	99.968	0.048	0.000	0.000	0.000	0.000	0.000	0.000	100.019
$\kappa_{2t}^{(2)}$	0.048	99.917	0.000	0.000	0.000	0.000	0.000	0.000	99.970
rp_t	42.464	41.245	5.780	4.415	2.565	4.032	0.124	0.123	100.750
BFT_t	50.826	50.464	0.001	0.000	0.000	0.000	0.000	0.000	101.296
$\Delta ln(S_{1,2,t})$	0.267	0.266	0.726	0.741	0.738	0.728	47.482	47.078	98.029
er_t	0.050	0.050	0.049	0.046	0.579	0.577	48.924	48.445	98.721

Notes: $\kappa_{2t}^{(1)}$ is the second conditional cumulant of country 1's nominal SDF, $\kappa_{2t}^{(2)}$ is the second conditional cumulant of country 2's nominal SDF, $rp_t = E_t\left(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1})\right)$ is the currency risk premium, $S_{1,2,t}$ is the nominal exchange rate, $er_t = i_{1,t-1} - i_{2,t-1} - \Delta ln(S_{1,2,t})$ is the ex post currency excess return, and $\text{BFT}_t = \frac{\kappa_{2t}^*}{2!} + \frac{\kappa_{3t}^*}{3!}$. Parameterization follows from Section 4. Averages over 10 replications of 5,000 periods. Numbers may not add up to 100 due to i) non-zero correlation of simulated shocks in small samples and ii) nonlinearity.

Table C.2: Unconditional Moments and Risk Aversion Coefficient under PCP

	Complete Markets			Incomplete Markets		
Risk Aversion Coefficient	4	40	60	4	40	60
$\sigma(\Delta \ln y_{1,t})$	3.664	3.671	3.663	3.647	3.658	3.722
$\sigma(\Delta \ln c_{1,t})$	2.769	2.824	2.836	3.020	3.096	3.215
$\sigma(i_{1,t})$	1.235	1.273	1.280	1.180	1.207	1.302
$\sigma(r_{1,t})$	1.316	1.309	1.302	1.292	1.283	1.298
$\sigma(\pi_{1,t})$	1.883	1.943	1.975	1.707	1.740	1.832
$\rho(\Delta \ln y_{1,t}, \Delta \ln y_{2,t})$	-0.186	-0.184	-0.177	-0.188	-0.168	-0.151
$\rho(\Delta \ln c_{1,t}, \Delta \ln c_{2,t})$	0.423	0.370	0.355	0.182	0.161	0.131
$\rho(\ln N_{1,t}, \ln N_{2,t})$	0.888	0.998	0.999	0.248	0.266	0.247
$\rho(\Delta \ln Q_{1,2,t}, \Delta \ln S_{1,2,t})$	0.864	0.865	0.865	0.916	0.917	0.913
$\Delta \ln y_{1,t}$–AR(1)	-0.087	-0.086	-0.085	-0.109	-0.108	-0.106
$\Delta \ln c_{1,t}$–AR(1)	-0.112	-0.114	-0.110	-0.064	-0.072	-0.072
$\pi_{1,t}$–AR(1)	0.401	0.398	0.364	0.325	0.302	0.311
$\sigma(\Delta \ln S_{1,2,t})$	5.760	6.048	6.125	5.275	5.325	5.403
$\sigma(\Delta \ln Q_{1,2,t})$	3.573	3.809	3.876	2.875	2.880	2.914
$\mu(rp_t)$	-0.001	-0.004	-0.028	0.003	0.002	0.011
$\mu(er_t)$	0.022	-0.006	-0.009	0.000	-0.006	0.003
β_F	1.004	1.026	0.982	1.013	0.995	0.987

Notes: $\mu(\bullet)$ is the mean of the variable stated, $\sigma(\bullet)$ is the volatility or standard deviation of the variable stated, $\rho(\bullet)$ is the correlation of the variables stated, and AR(1) is the first-order autocorrelation coefficient of the variable stated. $y_{1,t}$ is output in country 1, $c_{1,t}$ is consumption in country 1, $i_{1,t}$ is the nominal interest rate in country 1, $r_{1,t}$ is the real interest rate in country 1, $\pi_{1,t}$ is inflation in country 1, $N_{1,t}$ and $N_{2,t}$ are the nominal SDFs in countries 1 and 2, $Q_{1,2,t}$ is the real exchange rate, $S_{1,2,t}$ is the nominal exchange rate, $rp_t = E_t(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1}))$ is the currency risk premium, $er_t = i_{1,t-1} - i_{2,t-1} - \Delta ln(S_{1,2,t})$ is the ex post currency excess return, and β_F is the Fama coefficient. Parameterization follows from Section 4 except for the risk aversion coefficient (ϕ). Averages over 10 replications of 5,000 periods.

Table C.3: Heterogeneous Monetary Policy under PCP

	Complete Markets				Incomplete Markets			
	Country 2				Country 2			
	Inflation Targeter	Procyclical Interest Rate	Undis-ciplined	Accommo-date Inflation	Inflation Targeter	Procyclical Interest Rate	Undis-ciplined	Accommo-date Inflation
ξ_1	1.5	1.5	1.5	2.5	1.5	1.5	1.5	2.5
ζ_1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
ξ_2	4.0	1.5	1.1	1.3	4.0	1.5	1.1	1.3
ζ_2	0.1	2.0	0.1	0.5	0.1	2.0	0.1	0.5
$\mu(rp_t)$	0.101	-0.202	0.343	0.036	0.149	-0.323	0.460	0.061
$\mu(er_t)$	0.105	-0.180	0.316	0.058	0.200	-0.338	0.455	0.027
β_F	0.961	1.031	0.960	1.003	0.955	0.993	0.963	0.978
$\mu(\kappa_{2t}^{(1)})$	18.878	19.182	18.778	19.067	29.132	30.466	29.445	29.463
$\mu(\kappa_{2t}^{(2)})$	19.081	18.778	19.464	19.140	29.981	29.175	30.349	29.897

Notes: $\mu(\bullet)$ is the mean of the variable stated. $rp_t = E_t\left(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1})\right)$ is the currency risk premium, $er_t = i_{1,t-1} - i_{2,t-1} - \Delta ln(S_{1,2,t})$ is the ex post currency excess return, β_F is the Fama coefficient, $\kappa_{2t}^{(1)}$ is the second conditional cumulant of country 1's nominal SDF, and $\kappa_{2t}^{(2)}$ is the second conditional cumulant of country 2's nominal SDF. Except for the monetary policy parameters, parameterization follows from Section 4. Averages over 10 replications of 5,000 periods.

Table C.4: Heterogeneous Productivity Growth under Incomplete Markets and PCP (Australia, Canada, United States, and Japan)

	United States (1)–Japan (2)			Australia (1)–Japan (2)			Canada (1)–Japan (2)		
	Data	Complete Markets	Incomplete Markets	Data	Complete Markets	Incomplete Markets	Data	Complete Markets	Incomplete Markets
$\mu(rp_t)$	–	0.592	1.046	–	0.430	0.715	–	0.572	1.028
$\mu(er_t)$	0.490	0.610	1.039	4.856	0.455	0.706	2.887	0.562	1.046
β_F	-2.820	1.003	0.976	-0.465	1.008	0.957	-2.863	0.999	0.991
$\mu(\kappa_{2t}^{(1)})$	–	40.840	31.447	–	46.749	49.175	–	41.000	35.317
$\mu(\kappa_{2t}^{(2)})$	–	42.023	93.881	–	47.608	94.877	–	42.143	94.764
$\sigma(\Delta \ln S_{1,2,t})$	20.99	6.691	5.505	24.825	6.853	5.574	23.525	6.839	5.543
$\sigma(\Delta \ln Q_{1,2,t})$	21.204	4.439	3.085	24.978	4.603	3.141	24.257	4.596	3.102
$\sigma(\Delta \ln y_{1,t})$	3.713	3.724	3.680	4.128	4.113	4.129	3.378	3.622	3.632
$\sigma(\Delta \ln y_{2,t})$	3.986	4.762	4.644	3.986	4.740	4.682	3.986	4.766	4.670
$\sigma(\Delta \ln c_{1,t})$	3.198	3.718	3.282	3.118	3.692	3.741	2.709	3.595	3.271
$\sigma(\Delta \ln c_{2,t})$	3.841	4.630	4.134	3.841	4.301	4.222	3.841	4.648	4.157
$\sigma(\pi_{1,t})$	2.623	4.179	1.766	4.322	3.234	1.792	3.609	4.186	1.850
$\sigma(\pi_{2,t})$	4.745	5.073	1.993	4.745	4.089	2.020	4.745	5.063	2.022
$\Delta \ln y_{1,t}$–AR(1)	0.362	-0.100	-0.112	-0.058	-0.052	-0.040	0.386	-0.109	-0.116
$\Delta \ln y_{2,t}$–AR(1)	0.129	0.159	0.026	0.129	0.122	0.037	0.129	0.150	0.027
$\Delta \ln c_{1,t}$–AR(1)	0.083	-0.102	-0.071	0.145	-0.054	-0.010	0.078	-0.114	-0.079
$\Delta \ln c_{2,t}$–AR(1)	-0.163	-0.124	0.032	-0.163	-0.092	0.040	-0.163	-0.127	0.026
$\pi_{1,t}$–AR(1)	0.798	0.510	0.332	0.595	0.429	0.297	0.652	0.500	0.365
$\pi_{2,t}$–AR(1)	0.553	0.846	0.270	0.553	0.809	0.287	0.553	0.854	0.282

Notes: $\mu(\bullet)$ is the mean of the variable stated, $\sigma(\bullet)$ is the volatility or standard deviation of the variable stated, and AR(1) is the first-order autocorrelation coefficient of the variable stated. $rp_t = E_t\left(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1})\right)$ is the currency risk premium, $er_t = i_{1,t-1} - i_{2,t-1} - \Delta ln(S_{1,2,t})$ is the ex post currency excess return, β_F is the Fama coefficient, $\kappa_{2t}^{(1)}$ is the second conditional cumulant of country 1's nominal SDF, $\kappa_{2t}^{(2)}$ is the second conditional cumulant of country 2's nominal SDF, $S_{1,2,t}$ is the nominal exchange rate, $Q_{1,2,t}$ is the real exchange rate, $y_{1,t}$ is output in country 1, $y_{2,t}$ is output in country 2, $c_{1,t}$ is consumption in country 1, $c_{2,t}$ is consumption in country 2, $\pi_{1,t}$ is inflation in country 1, and $\pi_{2,t}$ is inflation in country 2. Country-specific productivity growth process parameters are employed. Except for the productivity growth process parameters, parameterization follows from Section 4. Averages over 10 replications of 5,000 periods.

Table C.5: Heterogeneous Monetary Policy and Productivity Growth under PCP (United States and Japan)

		Japan Inflation Targeter		Japan Undisciplined		Japan Undisciplined*	
	Data	Complete Markets	Incomplete Markets	Complete Markets	Incomplete Markets	Complete Markets	Incomplete Markets
ξ_2	–	4.0	4.0	1.1	1.1	1.1	1.1
ζ_2	–	0.1	0.1	0.1	0.1	0.1	0.1
$\mu(rp_t)$	–	0.971	1.473	1.370	2.372	1.992	2.694
$\mu(er_t)$	0.490	0.939	1.536	1.457	2.365	1.898	2.674
β_F	-2.820	0.955	0.927	0.864	0.928	0.844	0.872
$\mu(\kappa_{2t}^{(1)})$	–	38.905	30.662	38.104	30.936	75.885	46.857
$\mu(\kappa_{2t}^{(2)})$	–	40.848	96.382	40.845	96.589	79.868	114.100

Notes: $\mu(\bullet)$ is the mean of the variable stated. $rp_t = E_t\left(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1})\right)$ is the currency risk premium, $er_t = i_{1,t-1} - i_{2,t-1} - \Delta ln(S_{1,2,t})$ is the ex post currency excess return, β_F is the Fama coefficient, $\kappa_{2t}^{(1)}$ is the second conditional cumulant of country 1's nominal SDF, and $\kappa_{2t}^{(2)}$ is the second conditional cumulant of country 2's nominal SDF. Monetary policy parameters for the United States (country 1) are $\xi_1 = 1.5$ and $\zeta_1 = 0.5$. Country-specific productivity growth process parameters are employed. Except for the monetary policy and productivity growth process parameters, parameterization follows from Section 4. *: Cross-country correlations of exogenous shocks are set to 0.99 as in Backus et al. (2013). Averages over 10 replications of 5,000 periods.

Table C.6: Heterogeneous Monetary Policy and Productivity Growth under PCP (Australia, Canada, and United States)

	United States (1)–Australia (2)				United States (1)–Canada (2)				Canada (1)–Australia (2)			
	Data	Bench-mark	United States Undis-ciplined	Australia Procyclical Interest Rate	Data	Bench-mark	United States Undis-ciplined	Canada Procyclical Interest Rate	Data	Bench-mark	Canada Undis-ciplined	Australia Procyclical Interest Rate
ξ_1	–	1.5	1.1	1.5	–	1.5	1.1	1.5	–	1.5	1.1	1.5
ζ_1	–	0.5	0.1	0.5	–	0.5	0.1	0.5	–	0.5	0.1	0.5
ξ_2	–	1.5	1.5	1.5	–	1.5	1.5	1.5	–	1.5	1.5	1.5
ζ_2	–	0.5	0.5	2.0	–	0.5	0.5	2.0	–	0.5	0.5	2.0
Complete Markets												
$\mu(rp_t)$	–	0.212	-0.165	-0.146	–	-0.024	-0.346	-0.231	–	0.174	-0.254	-0.148
$\mu(er_t)$	-4.366	0.212	-0.213	-0.097	-2.398	-0.031	-0.377	-0.185	-1.968	0.176	-0.196	-0.110
β_F	-0.553	0.994	0.957	1.084	-0.074	1.016	0.984	1.053	0.840	1.014	0.951	1.082
$\mu(\kappa_{2t}^{(1)})$	–	25.341	25.406	24.838	–	19.862	21.114	20.233	–	25.692	27.060	26.265
$\mu(\kappa_{2t}^{(2)})$	–	25.765	25.075	24.544	–	19.813	20.421	19.769	–	26.039	26.552	25.969
$\mu(\kappa_{1t}^{(1)})$	–	-14.857	-8.420	-14.546	–	-12.089	-6.450	-12.134	–	-15.049	-8.127	-15.219
$\mu(\kappa_{1t}^{(2)})$	–	-14.193	-13.990	-13.944	–	-11.957	-12.266	-12.658	–	-14.511	-14.727	-14.688
$\mu(\kappa_{1t}^{*} + \kappa_{2t}^{*}/2)$	–	0.900	-5.727	0.536	–	0.107	-6.176	-0.679	–	0.722	-6.847	0.670
$\rho(rp_t, bot_{1,t})$	–	-0.006	0.007	-0.027	–	0.030	0.051	0.085	–	0.039	0.000	0.005
Incomplete Markets												
$\mu(rp_t)$	–	0.343	-0.125	-0.105	–	0.016	-0.449	-0.335	–	0.319	-0.318	-0.115
$\mu(er_t)$	-4.366	0.317	-0.132	-0.092	-2.398	0.002	-0.470	-0.327	-1.968	0.337	-0.312	-0.110
β_F	-0.553	0.981	0.948	0.985	-0.074	0.979	0.959	0.970	0.840	0.992	0.934	0.988
$\mu(\kappa_{2t}^{(1)})$	–	30.137	30.949	29.933	–	29.756	30.400	29.975	–	34.223	35.762	33.502
$\mu(\kappa_{2t}^{(2)})$	–	47.743	47.751	46.876	–	33.694	32.718	32.531	–	47.456	47.053	46.226
$\mu(\kappa_{1t}^{(1)})$	–	-16.621	-8.088	-16.463	–	-16.544	-7.878	-16.509	–	-18.458	-8.425	-18.124
$\mu(\kappa_{1t}^{(2)})$	–	-24.350	-24.337	-25.191	–	-18.376	-17.879	-18.736	–	-24.213	-24.152	-24.934
$\mu(\kappa_{1t}^{*} + \kappa_{2t}^{*}/2)$	–	1.066	-7.954	-0.328	–	0.060	-8.899	-1.004	–	0.915	-10.015	-0.358
$\rho(rp_t, bot_{1,t})$	–	-0.281	-0.171	-0.194	–	-0.452	-0.115	-0.087	–	-0.356	-0.168	-0.214

Notes: $\mu(\bullet)$ is the mean of the variable stated and $\rho(\bullet)$ is the correlation of the variables stated. $rp_t = E_t\left(i_{1,t} - i_{2,t} - \Delta ln(S_{1,2,t+1})\right)$ is the currency risk premium, $er_t = i_{1,t-1} - i_{2,t-1} - \Delta ln(S_{1,2,t})$ is the ex post currency excess return, β_F is the Fama coefficient, $\kappa_{2t}^{(1)}$ is the second conditional cumulant of country 1's nominal SDF, $\kappa_{2t}^{(2)}$ is the second conditional cumulant of country 2's nominal SDF, $\kappa_{1t}^{(1)}$ is the first conditional cumulant of country 1's nominal SDF, $\kappa_{1t}^{(2)}$ is the first conditional cumulant of country 2's nominal SDF, $\kappa_{1t}^{*} + \kappa_{2t}^{*}/2 = \left(\kappa_{1t}^{(2)} - \kappa_{1t}^{(1)}\right) + \frac{\kappa_{2t}^{(2)} - \kappa_{2t}^{(1)}}{2}$, and $bot_{1,t}$ is saving in country 1 ($\frac{y_{1,t} - c_{1,t}}{y_{1,t}}$). Country-specific productivity growth process parameters are employed. Except for the monetary policy and productivity growth process parameters, parameterization follows from Section 4. Averages over 10 replications of 5,000 periods.