Online Appendix for: Macroprudential Policy Leakages in Open Economies: A Multiperipheral Approach

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1 Solution of the Model

Original System:

$$Q_1 = 1 + \frac{\zeta}{2}\left(\frac{I_1}{\bar{I}} - 1\right)^2 + \zeta\left(\frac{I_1}{\bar{I}} - 1\right)\frac{I_1}{\bar{I}} \tag{1)-(3}$$

$$Q_2 = 1 + \frac{\zeta}{2} \tag{4)-(6}$$

$$K_1 = I_1 + (1-\delta)\xi_1 K_0 \tag{7)-(9}$$

$$Y_1 = A_1(\xi_1 K_0)^\alpha \tag{10)-(12}$$

$$Y_2 = A_2(\xi_2 K_1)^\alpha \tag{13)-(15}$$

$$r_t = \alpha A_t \xi_t^\alpha K_{t-1}^{\alpha-1}, \quad t = \{1,2\} \tag{16)-(21}$$

$$R_{k,2} = \frac{r_2 + (1-\delta)\xi_2 Q_2}{Q_1} \tag{22)-(24}$$

$$Q_1 K_1 = F_1 + \delta_b Q_1 K_0 \tag{25)-(26}$$

$$\pi_{b,2} \geq k R_{k,2} Q_1 K_1 \tag{27)-(28}$$

$$(R_{k,2} - R_{b,1}) = \mu\left(\kappa R_{k,2} - (R_{k,2} - R_{b,1})\right) \tag{29)-(30}$$

$$F_1^a + F_1^b + Q_1^c K_1^c = D_1 + \delta_b Q_1^c K_0^c \tag{31}$$

$$R_{b,1}^a - R_{D,1} = 0 \tag{32}$$

$$R_{b,1}^b - R_{D,1} = 0 \tag{33}$$

$$R_{k,2}^c - R_{D,1} = 0 \tag{34}$$

$$C_1^s + \frac{B_1^s}{R_1^s} = r_1^s K_0^s + \pi_{f,1}^s + \pi_{inv,1}^s - \delta_b Q_1^s K_0^s \tag{35)-(36}$$

$$C_2^s = \pi_{f,2}^s + \pi_{b,2}^s + B_1^s - T^s, \quad for\ s = \{a,b\} \tag{37)-(38}$$

$$C_1^c + \frac{B_1^c}{R_1^c} + D_1 = r_1^c K_0^c + \pi_{f,1}^c + \pi_{inv,1}^c - \delta_b Q_1^c K_0^c \tag{39}$$

$$C_2^c = \pi_{f,2}^c + \pi_{b,2}^c + B_1^c + R_{D,1} D_1 - T^c \tag{40}$$

$$u'(C_1) = \beta R_1 u'(C_2) \tag{41)-(43}$$

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$$u'(C_1^c) = \beta R_{D,1} u'(C_2^c) \tag{44}$$

$$n_a B_1^a + n_b B_1^b + n_c B_1^c = 0 \tag{45}$$

$$R_1^a = R_1^b \tag{46}$$

$$R_1^c = R_1^b = R_1 \tag{47}$$

We replace the following profits:

$$\pi_{f,t} = A_t(\xi_t K_{t-1})^\alpha - r_t K_{t-1}, \quad for\ t = \{1, 2\}$$

$$\pi_{inv,1} = Q_1 I_1 - I_1 \left(1 + \frac{\zeta}{2}\left(\frac{I_1}{\bar{I}} - 1\right)^2\right)$$

$$\pi_{b,2}^s = R_{k,2}^s Q_1^s K_1^s - R_{b,1}^s F_1^s, \quad for\ s = \{i, e\}$$

$$\pi_{b,2}^c = R_{b,1}^a F_1^a + R_{b,1}^b F_1^b + R_{k,2}^c Q_1^c K_1^c - R_{D,1} D_1$$

Simplifications (reduction of number of equations) are applied in the following order:

- *S1:* Replace all related interest rates (we can drop $R_{b,1}^a, R_{b,1}^b, R^i, R^e, R^c$)

- *S2:* Remove already solved equations (function of parameters or pre-defined variables, hence we drop $Q2, Y_1$). Replace $Y_2,\ r_1,\ r_2$, $F_1^s = Q_1^s K_1^s - \delta_b Q_1^s K_0^s$. From (41) and (42) obtain $R_1 = R_{D,1}$ and replace.

- *S3:* Substitute $R_{k,2}^c = R_1$, $-T = \tau r_2 K_1$

Then, the final system of equations used for solving the model is:

$$Q_1^a = 1 + \frac{\zeta}{2}\left(\frac{I_1^a}{\bar{I}^a} - 1\right)^2 + \zeta\left(\frac{I_1^a}{\bar{I}^a} - 1\right)\frac{I_1^a}{\bar{I}^a} \tag{1}$$

$$Q_1^b = 1 + \frac{\zeta}{2}\left(\frac{I_1^b}{\bar{I}^b} - 1\right)^2 + \zeta\left(\frac{I_1^b}{\bar{I}^b} - 1\right)\frac{I_1^b}{\bar{I}^b} \tag{2}$$

$$Q_1^c = 1 + \frac{\zeta}{2}\left(\frac{I_1^c}{\bar{I}^c} - 1\right)^2 + \zeta\left(\frac{I_1^c}{\bar{I}^c} - 1\right)\frac{I_1^c}{\bar{I}^c} \tag{3}$$

$$K_1^a = I_1^a + (1-\delta)\xi_1^a K_0^a \tag{4}$$

$$K_1^b = I_1^b + (1-\delta)\xi_1^b K_0^b \tag{5}$$

$$K_1^c = I_1^c + (1-\delta)\xi_1^c K_0^c \tag{6}$$

$$R_{k,2}^a = \frac{(1-\tau^a)\alpha A_2^a \xi_2^{a\ \alpha} K_1^{a\ \alpha-1} + (1-\delta)\xi_2^a Q_2}{Q_1^a} \tag{7}$$

$$R_{k,2}^b = \frac{(1-\tau^b)\alpha A_2^b \xi_2^{b\ \alpha} K_1^{b\ \alpha-1} + (1-\delta)\xi_2^b Q_2}{Q_1^b} \tag{8}$$

$$R_1 = \frac{(1-\tau^c)\alpha A_2^c \xi_2^{c\ \alpha} K_1^{c\ \alpha-1} + (1-\delta)\xi_2^c Q_2}{Q_1^c} \tag{9}$$

$$R_{k,2}^a Q_1^a K_1^a - R_1 Q_1^a K_1^a + R_1 \delta_B Q_1^a K_0^a = \kappa^a R_{k,2}^a Q_1^a K_1^a \tag{10}$$

$$R_{k,2}^b Q_1^b K_1^b - R_1 Q_1^b K_1^b + R_1 \delta_B Q_1^b K_0^b = \kappa^b R_{k,2}^b Q_1^b K_1^b \tag{11}$$

$$R_{k,2}^a - R_1 = \mu^a \left(\kappa^a R_{k,2}^a - (R_{k,2}^a - R_1)\right) \tag{12}$$

$$R_{k,2}^b - R_1 = \mu^b \left(\kappa^b R_{k,2}^b - (R_{k,2}^b - R_1)\right) \tag{13}$$

$$Q_1^a K_1^a - \delta_B Q_1^a K_0^a + Q_1^b K_1^b - \delta_B Q_1^b K_0^b + Q_1^c K_1^c = D_1 + \delta_B Q_1^c K_0^c \tag{14}$$

$$C_1^a + \frac{B_1^a}{R_1} = A_1^a(\xi_1^a K_0^a)^\alpha + Q_1^a I_1^a - I_1^a \left(1 + \frac{\zeta}{2}\left(\frac{I_1^a}{\bar{I}^a} - 1\right)^2\right) - \delta_B Q_1^a K_0^a \tag{15}$$

$$C_1^b + \frac{B_1^b}{R_1} = A_1^b(\xi_1^b K_0^b)^\alpha + Q_1^b I_1^b - I_1^b \left(1 + \frac{\zeta}{2}\left(\frac{I_1^b}{\bar{I}^b} - 1\right)^2\right) - \delta_B Q_1^b K_0^b \tag{16}$$

$$C_2^a = (1-\alpha) A_2^a(\xi_2^a K_1^a)^\alpha + R_{k,2}^a Q_1^a K_1^a - R_1 Q_1^a K_1^a + R_1 \delta_B Q_1^a K_0^a + B_1^a + \tau^a r_2^a K_1^a \tag{17}$$

$$C_2^b = (1-\alpha) A_2^b(\xi_2^b K_1^b)^\alpha + R_{k,2}^b Q_1^b K_1^b - R_1 Q_1^b K_1^b + R_1 \delta_B Q_1^b K_0^b + B_1^b + \tau^b r_2^b K_1^b \tag{18}$$

$$C_1^c + \frac{B_1^c}{R_1} + D_1 = A_1^c(\xi_1^c K_0^c)^\alpha + Q_1^c I_1^c - I_1^c \left(1 + \frac{\zeta}{2}\left(\frac{I_1^c}{\bar{I}^c} - 1\right)^2\right) - \delta_b Q_1^c K_0^c \tag{19}$$

$$\begin{aligned} C_2^c = (1-\alpha) A_2^c(\xi_2^c K_1^c)^\alpha + R_1 Q_1^a K_1^a - R_1 \delta_B Q_1^a K_0^a + \\ + R_1 Q_1^b K_1^b - R_1 \delta_B Q_1^b K_0^b + R_1 Q_1^c K_1^c + B_1^c + \tau^c r_2^c K_1^c \end{aligned} \tag{20}$$

$$C_1^{a\ -\sigma} = \beta R_1 C_2^{a\ -\sigma} \tag{21}$$

$$C_1^{b\ -\sigma} = \beta R_1 C_2^{b\ -\sigma} \tag{22}$$

$$C_1^{c\ -\sigma} = \beta R_1 C_2^{c\ -\sigma} \tag{23}$$

$$n_a B_1^a + n_b B_1^b + n_c B_1^c = 0 \tag{24}$$

Variables: $Q_1^a, Q_1^b, Q_1^c, I_1^a, I_1^b, I_1^c, K_1^a, K_1^b, K_1^c, D_1, R_{k,2}^a, R_{k,2}^b, C_1^a, C_1^b, C_1^c, C_2^a, C_2^b, C_2^c, B_1^a, B_1^b, B_1^c, R_1, \mu^a, \mu^b$

This final system of 24 equations corresponds to the system in table A1 in the manuscript, which in addition also has three equations for the price of investment in $t = 2$ (that is constant since there is no investment in the terminal period), and two equations for the interbank lending to emerging economies F_1^e with $e = \{a, b\}$.[1]

[1] For the final period, we observe that there are no investment activities ($I_2 = 0$ or capital accumulation). Consequently, we assume that the pricing of capital follows the same condition determined by the optimality in previous periods. With no investment, this results in a price of $Q_2 = 1 + \zeta/2$. Alternatively, we could assume that investment returns to its steady state, or consider a different cost function where adjustment costs are based not on the distance between the investment level and its steady state, but relative to its previous value (another plausible option as documented by **?**), in that case, the relative price of capital would be $Q_2 = 1$, as in standard models without adjustment costs. Both functional approaches were tested, and the results remained similar. Finally, it should be noted that undepreciated capital does not remain unused in the final period, even if it is no longer used in production. These resources are also valued in terms of the final good and thus are returned as profits to households for consumption in the final period, either by the final goods firm, or the capital producer, regardless of whether one sold the undepreciated stock to another. Lastly, imposing $I_2 = 0$ for the final period is not only the natural choice, since investments flows' decisions determine the capital shock and not the other way around, but also because assuming zero capital for production beyond the terminal period would mistakenly lead to negative investment for the final period, as it would require "decumulating" or destroying the undepreciated capital after the final production cycle.

2 Steady State of the Baseline Model

In this section, we show deterministic steady-state equations and the solution of the model.

We depart from the system of equations in table A1 in the manuscript. Some variables are pinned down directly from a static version of the equations:

$$
\begin{aligned}
Q^i &= 1 \\
I^i &= \delta K^j \\
B^i &= 0 \\
R &= \frac{1}{\beta} \\
K^c &= \left(\frac{R-(1-\delta)}{\alpha(1-\tau^c)}\right)^{\frac{1}{\alpha-1}}
\end{aligned}
$$

The rest of the system, expressed in static terms leads to the following system of equations:

$$
\begin{aligned}
R_k^a &= (1-\tau^a)\alpha K^{a\ \alpha-1} + 1 - \delta \\
R_k^b &= (1-\tau^b)\alpha K^{b\ \alpha-1} + 1 - \delta \\
\beta(R_k^a - (1-\delta_b)R) &= \kappa^a \\
\beta(R_k^b - (1-\delta_b)R) &= \kappa^b \\
\beta(R_k^a - R) &= \mu^a(\kappa^a - \beta(R_k^a - R)) \\
\beta(R_k^b - R) &= \mu^b(\kappa^b - \beta(R_k^b - R)) \\
(1-\delta_b)K^a + (1-\delta_b)K^b + (1-\delta_b)K^c &= D \\
C^a\left(1+\frac{1}{R}\right) &= \left(1+\frac{1-\alpha}{R}\right)K^{a\ \alpha} + \frac{R_k^a - R}{R}K^{a\ \alpha} + \frac{\tau^a\alpha}{R}K^{a\ \alpha} \\
C^b\left(1+\frac{1}{R}\right) &= \left(1+\frac{1-\alpha}{R}\right)K^{b\ \alpha} + \frac{R_k^b - R}{R}K^{b\ \alpha} + \frac{\tau^b\alpha}{R}K^{b\ \alpha} \\
C^c\left(1+\frac{1}{R}\right) + D &= \left(1+\frac{1-\alpha}{R}\right)K^{c\ \alpha} + (1-\delta_b)K^a + (1-\delta_b)K^b + (1-\delta_b)K^c + \frac{\tau^c\alpha}{R}K^{c\ \alpha},
\end{aligned}
$$

where the last three equations are obtained from the life-time budget constraint of each representative household.

We solve this system of equations for: $C^a,\ C^b,\ C^c,\ K^a,\ K^b,\ D,\ R_k^a,\ R_k^b,\ \mu^a,\ \mu^b$.

2.1 Additional Ramsey Policy Equilibria results

In this section we report the simulation results for alternative versions of the baseline model.

2.1.1 Financial Frictions in the Center

This version of the model includes a financial friction in the center banking sector. In that case, the center bank solves:

$$\max_{F_1, L_1, D_1} J_1 = \mathbb{E}_1 \Lambda_{1,2} \pi^c_{b,2} = \mathbb{E}_1 \left[\Lambda_{1,2} (R^a_{b,1} F^a_1 + R^b_{b,1} F^b_1 + R^c_{k,2} L^c_1 - R_{D,1} D_1) \right],$$
$$s.t. \quad F^a_1 + F^b_1 + L^c_1 = D_1 + \delta_b Q^c_1 K^c_0,$$
$$J_1 \geq k^c \mathbb{E}_1 \Lambda^c_{1,2} \left[R^a_{a,1} F^a_1 + R^b_{b,1} F^b_1 + R^c_{k,2} L^c_1 \right],$$

with associated F.O.C. analogous to the emerging banks' problem but yielding expressions for positive credit spreads between the center's revenue rates ($R^a_{b,1}, R^b_{b,1}, R^c_{k2}$) and the deposit rates.

As a result, we no longer have that most interest rates in the model are equalized to R_1 (the world interest rate of bonds), but that intermediation rates of the center ($R^c_{k,2},\ R^a_{b,1},\ R^b_{b,1}$) will also be subject to a premium. In this version of the model we still obtain no gains from coordination. However, now we get lower gains with respect to the no policy case and the peripheries will apply more subsidization.

The intuition for this new finding is that the friction in the center works in the opposite direction on the emerging credit spreads. That is, a premium in the center lending rates will decrease the credit spreads in the EMEs. We could say that the frictions between lenders and borrowers are partially offsetting each other, the aggregate effects of the distortions are weaker and the peripheries would now opt for subsidizing the intermediation rather than undoing the friction.

Table 1: Welfare comparison for the model with frictions in every economy ($\kappa^a = \kappa^b = 0.399$ and $\kappa^c = 0.1$)

	Bechmark: Nash			Bechmark: First Best			
Country	Cooperation (All)	Cooperation (EMEs)	Cooperation (Center and EME-A)	Nash	Cooperation (All)	Cooperation (EMEs)	Cooperation (Center and EME-A)
C (Center)	1.00	1.00	1.00	1.03	1.04	1.03	1.03
A	1.00	1.00	1.00	0.97	0.98	0.98	0.97
B	1.00	1.00	1.00	0.97	0.98	0.98	0.98
World	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EME Block	1.00	1.00	1.00	0.97	0.98	0.98	0.98

Units: Proportional steady state consumption increase in the benchmark model

Table 2: Ramsey-Optimal taxes for the model with frictions in every economy ($\kappa^a = \kappa^b = 0.399$ and $\kappa^c = 0.1$)

	Policy Scheme			
Country	Nash	Cooperation (All)	Cooperation (EMEs)	Cooperation (Center and EME-A)
τ^a	-0.11	-0.68	-0.19	-0.47
τ^b	-0.11	-0.68	-0.19	-0.22
τ^c	0.68	0.34	0.65	0.55

Units: proportional tax on banking rate of return

2.2 Other alternative exercises results

Table 3: Welfare comparison for the model with higher financial friction in both emerging economies ($\kappa^a = \kappa^b = \frac{1}{2}$)

	Bechmark: Nash			Bechmark: First Best			
Country	Cooperation (All)	Cooperation (EMEs)	Cooperation (Center and EME-A)	Nash	Cooperation (All)	Cooperation (EMEs)	Cooperation (Center and EME-A)
C (Center)	1.00	1.00	1.00	1.01	1.01	1.01	1.01
A	1.00	1.00	1.00	0.99	0.99	0.99	0.99
B	1.00	1.00	1.00	0.99	0.99	0.99	0.99
World	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EME Block	1.00	1.00	1.00	0.99	0.99	0.99	0.99

Units: Proportional steady state consumption increase in the benchmark model

Table 4: Ramsey-Optimal taxes for the model with higher financial friction in both emerging economies ($\kappa^a = \kappa^b = \frac{1}{2}$)

	Policy Scheme			
Country	Nash	Cooperation (All)	Cooperation (EMEs)	Cooperation (Center and EME-A)
τ^a	0.20	-0.30	-0.04	0.15
τ^b	0.20	-0.30	-0.04	0.16
τ^c	1.29	1.09	1.23	1.25

Units: proportional tax on banking rate of return

Table 5: Welfare comparison for the model with higher financial friction in one emerging economy ($\kappa^a = \frac{1}{2}$, $\kappa^b = 0.399$)

	Bechmark: Nash				Bechmark: First Best				
Country	Coop. (All)	Coop. (EMEs)	Coop. (C + EME-A)	Coop. (C + EME-B)	Nash	Coop. (All)	Coop. (EMEs)	Coop. (C + EME-A)	Coop. (C + EME-B)
C (Center)	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01
A	1.01	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99
B	1.01	1.01	1.01	1.01	0.98	0.99	0.99	0.99	0.99
World	1.01	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00
EME Block	1.01	1.01	1.01	1.01	0.98	0.99	0.99	0.99	0.99

Units: Proportional steady state consumption increase in the benchmark model

Table 6: Ramsey-Optimal taxes for the model with higher financial friction in one emerging economy ($\kappa^a = \frac{1}{2}$, $\kappa^b = 0.399$)

	Policy Scheme				
Country	Nash	Cooperation (All)	Cooperation (EMEs)	Cooperation (Center and EME-A)	Cooperation (Center and EME-B)
τ^a	-0.05	-0.28	-0.08	0.08	0.11
τ^b	0.09	-0.12	0.18	0.40	0.37
τ^c	1.19	1.03	1.17	1.20	1.20

Units: proportional tax on banking rate of return

Table 7: Welfare comparison for the model with larger financial center. Population sizes: $(n_a, n_b, n_c) = (\frac{1}{6}, \frac{1}{6}, \frac{2}{3})$.

	Bechmark: Nash			Bechmark: First Best			
Country	Cooperation (All)	Cooperation (EMEs)	Cooperation (Center and EME-A)	Nash	Cooperation (All)	Cooperation (EMEs)	Cooperation (Center and EME-A)
C (Center)	1.00	1.00	1.00	0.98	0.98	0.98	0.98
A	1.00	0.99	1.00	0.99	1.00	0.99	1.00
B	1.00	0.99	1.01	0.99	1.00	0.99	1.00
World	1.00	1.00	1.00	0.98	0.99	0.98	0.99
EME Block	1.00	0.99	1.01	0.99	1.00	0.99	1.00

Units: Proportional steady state consumption increase in the benchmark model

Table 8: Ramsey-Optimal taxes for the model larger financial center. Population sizes: $(n_a, n_b, n_c) = (\frac{1}{6}, \frac{1}{6}, \frac{2}{3})$.

	Policy Scheme			
Country	Nash	Cooperation (All)	Cooperation (EMEs)	Cooperation (Center and EME-A)
τ^a	-0.71	-0.90	-0.44	-1.14
τ^b	-0.71	-0.91	-0.44	-0.92
τ^c	0.09	-0.05	0.30	-0.11

Units: proportional tax on banking rate of return

Table 9: Welfare comparison for the model with a smaller periphery. Population sizes: $(n_a, n_b, n_c) = (\frac{1}{3}, \frac{1}{6}, \frac{1}{2})$.

	Bechmark: Nash				Bechmark: First Best				
Country	Coop. (All)	Coop. (EMEs)	Coop. (C + EME-A)	Coop. (C + EME-B)	Nash	Coop. (All)	Coop. (EMEs)	Coop. (C + EME-A)	Coop. (C + EME-B)
C (Center)	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.01
A	1.00	1.01	1.00	1.00	0.99	0.99	1.00	0.99	0.99
B	1.01	1.01	1.01	1.01	0.97	0.99	0.99	0.99	0.99
World	1.00	1.01	1.00	1.00	0.99	1.00	1.00	1.00	1.00
EME Block	1.01	1.01	1.00	1.00	0.98	0.99	0.99	0.99	0.99

Units: Proportional steady state consumption increase in the benchmark model

Table 10: Ramsey-Optimal taxes for the model with a smaller periphery. $(n_a, n_b, n_c) = (\frac{1}{3}, \frac{1}{6}, \frac{1}{2})$.

	Policy Scheme				
Country	Nash	Cooperation (All)	Cooperation (EMEs)	Cooperation (Center and EME-A)	Cooperation (Center and EME-B)
τ^a	0.30	0.25	0.13	0.32	0.35
τ^b	-0.16	0.11	-0.67	0.33	0.27
τ^c	1.12	1.06	0.97	1.14	1.15

Units: proportional tax on banking rate of return

Table 11: Welfare comparison for model with unfeasibly aggressive subsidization

Country	Bechmark: Nash		Bechmark: First Best	
	Cooperation (EMEs)	Cooperation (Center and EME-A)	Cooperation (EMEs)	Cooperation (Center and EME-A)
C (Center)	1.03	1.04	1.03	1.05
A	1.00	1.10	0.99	1.08
B	1.00	0.99	0.99	0.98
World	1.01	1.04	1.01	1.04
EME Block	1.00	1.04	0.99	1.03

Units: Proportional steady state consumption increase in the benchmark model

Table 12: Ramsey-Optimal taxes for the model with unfeasibly aggressive subsidization

Country	Policy Scheme	
	Cooperation (EMEs)	Cooperation (Center and EME-A)
τ^a	-0.75	-1.66
τ^b	-8.21	-2.37
τ^c	-8.21	-15.09

Units: proportional tax on banking rate of return

3 On Achieving Gains from Coordination

To understand potential welfare equivalence between regimes with different instrument combinations (that internalize international spillovers) we can can refer to **?**, who develops a first welfare theorem for open economies. In a nutshell, the premise from which a call for policy coordination departs is that the de-centralized equilibrium is inefficient and could be subject to Pareto improvements if coordinated. However, there are a number of sufficient conditions that allow the non-cooperative outcome to become efficient:

1. *Competition:* The policy makers act as price takers by not exerting market power over international asset prices.
2. *Sufficient Instruments:* The policy is flexible and effective enough to achieve the targeted level in the international variables of interest.
3. *Frictionless International Markets:* The international market for assets is free of imperfections or frictions that would impair risk sharing.

Notice that no other conditions are necessary, that is, there can be other domestic frictions in place and the non-cooperative outcome will still be efficient and coordination would be redundant. The lesson from this theorem is that, as long as the flow of resources in the international markets is efficient and we have a flexible and effective toolkit to set allocations at desired levels, any policy can achieve the first best and the international externalities represent only efficient spillovers.

On the other hand, the policy spillovers may not be strong enough in our simplistic setup to deliver important welfare differences between regimes. For example, and to elaborate on this point, the policies in our setup have short-lived effects as the banks intermediate only once. The alternative exercises relative to the baseline (costly policies, dynamic policymaking, altered frictions) that we carry out are motivated by this theorem result and go precisely in the direction of departing from international spillovers efficiency conditions.