

IMPLICATIONS OF A CHANGING ENVIRONMENT FOR MONETARY POLICY IN EAST ASIA

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This paper presents a simple model to analyze the implications of monetary and exchange rate policy spillovers between a large and a small country in an integrated region. We use a Swann diagram to discuss the balance that monetary authorities need to maintain between domestic monetary conditions and the foreign currency market. We find that the small country is required to adjust its policy as its internal equilibrium is affected by decisions taken by the large country. However, the large country needs also to take into consideration the reverse spillover effect of its monetary policy on its own economy especially if the integrated region includes several small countries and the degree of economic interdependence is high. This simple model is useful in the analysis of the implication of the global economic crisis of 2008/09 for contemporary East Asia.

1. Introduction

As East Asian countries recover from the global economic and financial crisis, their monetary and exchange rate authorities are faced with huge challenges. The analysis developed in this paper suggests that the incentives for policy dialogue and regional coordination increase together with enhanced regional economic interdependence. This is true not only for the smaller regional economies, which are naturally affected by policy spillovers from the larger ones, but for the large countries as well, as they see the merit to maintain good economic conditions in the smaller countries, with their performance becoming increasingly important to ensure regional growth.

Section 2 of the paper reviews the recent trend of economic interdependence in East Asia, which provides a clear rationale for closer regional monetary and exchange rate policy coordination. In sections 3, 4 and 5 we introduce a simple two-country model to analyze the implications of monetary and exchange rate policy decisions by a large and a small country with a high degree of economic interdependence. In particular, we discuss the effect of policy spillovers from the large to the small country. Section 6 of the paper discusses the merits of closer monetary and exchange rate policy coordination, while section 7 offers some conclusions.

2. Increasing Economic Interdependence in East Asia

Economic interdependence in East Asia has rapidly increased during the last few decades especially through the creation of industrial clusters in the electronics and automotive sectors

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that led to the progressive formation of “Factory Asia.”¹⁾

One of the main reasons behind such a trend lies in East Asian countries following the so-called “flying-geese pattern” of industrial development, a market-led industrial relocation process from more to less advanced countries.²⁾ Parts and components needed for assembly production are imported from regional neighbors following their comparative advantages. In the presence of low trade barriers, economic interdependence is therefore the outcome of creating regional production networks in industries where final goods are assembled in and exported from countries with abundance of low-cost labor, while intermediate goods are imported from countries with sophisticated technologies and human capital. This production-based economic interdependence explains the rapid increase in intraregional and intra-industry trade experienced in East Asia in the last quarter century.

The region’s financial markets, however, followed a different path for integration. With banking sectors typically linked to industrial conglomerates and playing a major role in overall financial intermediation, Asia’s capital markets have remained relatively underdeveloped and inefficient. As foreign banks’ operations in most East Asian economies were limited by strict domestic regulations, and national authorities in several countries maintained closed capital controls, financial interdependence has lagged behind. Hence, while East Asian bond and equity markets are highly integrated with more efficient markets in the United States (US), European Union (EU), and other developed economies, intra-Asian financial integration remains quite low.

Table 1 shows East Asia’s holdings of total international portfolio assets and liabilities in 2001 and 2007. These data, which are computed from the Coordinated Portfolio Investment Survey that the International Monetary Fund (IMF) has recently started to publish, provide a quantity indicator of regional financial interdependence. As Japan’s share of total East Asian financial flows is very high (approximately 70 percent of total assets invested in East Asia and 50 percent of total liabilities received from East Asia in 2007) and as Japanese financial flows remain biased towards non-Asian economies, the table shows the trend of East Asian economies with the inclusion as well as with the exclusion of Japan.

In general, the data suggest that the extent of intraregional financial integration among East Asian economies is quite low. In 2007, in fact, the share of financial assets (liabilities) held intraregionally by East Asian economies was in fact a mere 12 percent (15 percent) of the total. The largest shares of portfolio transactions occurred with the EU and the US: their combined share reached approximately 58 percent (72 percent) of the total. Once Japan is excluded, however, the intraregional share of assets (liabilities) increases to 28 percent (21.5 percent) in the same year, while the combined share held by the EU and the US lowers to 36 percent (64 percent).

Although these figures reflect the much larger extent of global compared to regional financial integration among East Asian economies, overtime intraregional financial integration tends

1) See Baldwin (2006). Other main references related to the creation of Asia’s regional production networks and product fragmentation are Urata (2001), Ando and Kimura (2005), Athukorala (2005), Petri (2006), and ADB (2008).

2) See Yamazawa (1990).

TABLE 1. Intra-regional portfolio investment

Reporting region/ country	Assets invested in					Total Assets	Liabilities received from					Total Liabilities
	East Asia 15 (no Japan)	Japan	East Asia 16	EU15	US		East Asia 15 (no Japan)	Japan	East Asia 16	EU15	US	
East Asia 15 (no Japan)	48.60	20.00	68.60	87.42	63.60	324.80	48.60	21.80	70.40	115.90	132.20	354.00
Japan	21.70		21.70	497.78	490.20	1,289.80	20.00		20.00	201.01	197.90	542.30
East Asia 16	69.60	20.00	89.60	585.20	553.80	1,614.60	68.60	21.80	90.40	316.91	330.10	896.30
East Asia 15 (no Japan)	15.00	6.20	21.10	26.92	19.60	100.00	13.70	6.10	19.90	35.68	37.40	100.00
Japan	1.70		1.70	38.59	38.00	100.00	3.70		3.70	15.58	36.50	100.00
East Asia 16	4.40	1.20	5.60	36.24	34.30	100.00	7.70	2.40	10.10	19.63	36.80	100.00
East Asia 15 (no Japan)	362.80	34.91	397.71	295.31	168.89	1,303.31	362.61	62.29	424.90	538.41	579.08	1,683.51
Japan	70.80		70.80	915.21	813.31	2,523.57	34.91		34.91	538.02	582.34	1,422.48
East Asia 16	433.60	34.91	468.51	1,210.52	982.21	3,826.88	397.52	62.29	459.81	1,076.43	1,161.42	3,105.99
East Asia 15 (no Japan)	27.84	2.68	30.52	22.66	12.96	100.00	21.54	3.70	25.24	31.98	34.40	100.00
Japan	2.81		2.81	36.27	32.23	100.00	2.45		2.45	37.82	40.94	100.00
East Asia 16	11.33	0.91	12.24	31.63	25.67	100.00	12.80	2.01	14.80	34.66	37.39	100.00

East Asia 16 includes Brunei Darussalam; Cambodia; People's Republic of China; Hong Kong, China; India; Indonesia; Japan; Republic of Korea; Lao People's Democratic Republic; Malaysia; Myanmar; Philippines; Singapore; Taipei, China; Thailand; and Viet Nam.
 Author's computations based on IMF 2008. Coordinated Portfolio Investment Survey.
 Source: Consolidated Portfolio Investment Survey, International Monetary Fund (2001 and 2008). Available: www.imf.org/external/np/cta/pi/cpis/html

to rise. The share of intraregional assets (liabilities) held within East Asia in 2001 was almost half the 2007 values, or only 6 percent of East Asian countries' international assets portfolio (10 percent for liabilities), or 15 percent (14 percent) when Japan is excluded.

A clearer picture of such growing East Asian financial integration can be grasped from price indicators such as the trend of cross-market differentials in financial instruments yields or the co-movements of stock market values. The trend of cross-market yield spreads — calculated as basis points of average standard deviation — of 10-year government bonds and 3-month treasury bills from 1999 to 2009 is shown in Figure 1. The decline from 5-6 to 2-3 basis points of average standard deviation for both 10-year government bonds and 3-month treasury bills over the decade shows that the yield spreads across the region will tend to reduce as financial markets become more integrated. Recent correlation analyses of stock market values show a similar trend of low, but rapidly increasing financial integration among East Asian economies.³⁾

Several cooperation initiatives introduced by finance ministries and central banks after the financial crisis of 1997/98 have pushed for closer East Asian financial integration and strengthening of the region's financial markets. The primary objective of such initiatives — including the Asian Bond Markets Initiative (ABMI) and the Asian Bond Fund (ABF) initiative — was to facilitate the recycling of regional savings into regional investment without passing through financial intermediation by non-Asian financial centers.⁴⁾

East Asia's macroeconomic interdependence has also increased in the last decade. Several studies have shown how business cycles of East Asian economies have become more closely synchronized with each other, especially since the Asian financial crisis of 1997/98. Greater macroeconomic interdependence is shown in the trend of gross domestic product (GDP) of individual East Asian economies, which depends more than in the past on the GDP trends of other region's members.⁵⁾

Increased regional economic interdependence raises the likelihood of spillover effects of monetary and exchange rate policies spillovers. In particular, the monetary policy stance of large countries such as the People's Republic of China (PRC) or Japan may have a significant impact on the monetary conditions of smaller economies in the region. Moreover, as economic and financial integration strengthens at a global level, the likelihood, frequency, and magnitude of common shocks such as a financial crisis elsewhere in the world or a persistent depreciation of the US dollar vis-à-vis regional currencies may well increase.

3) See ADB (2008), Capannelli, Lee, and Petri (2009).

4) Of particular importance is the Chiang Mai Initiative (CMI), launched in 2000 to assist countries with short-term liquidity needs by creating a network of foreign reserves bilateral swap arrangements between the central banks of the "plus three" countries (the People's Republic of China, Japan, and the Republic of Korea) and those of the five largest ASEAN economies (Indonesia, Malaysia, Philippines, Singapore, and Thailand). In early May 2009, the ASEAN+3 Finance Ministers have decided several implementation mechanisms to multilateralize the CMI by collectively managing the single pool of reserves and establishing an independent agency for regional surveillance.

5) See Kawai (2005), IMF (2007), and Rana (2007).

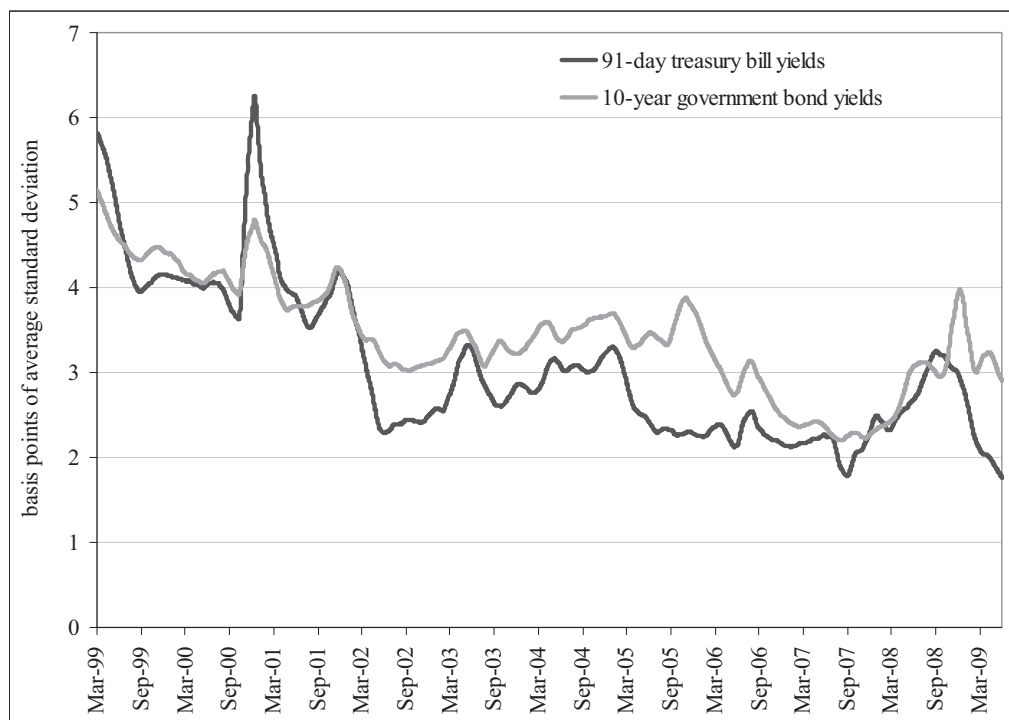


FIGURE 1: Trend of cross-market differentials in East Asia (1999-2009)

Author's calculations.

Note: The figure shows the average standard deviation (61-day) of 91-day treasury bill yield spreads and 10-year government bond yield spreads. Treasury bill yields are available for the following 7 countries: People's Republic of China; Hong Kong, China; India; Japan; Korea; Philippines; and Singapore. Government bond yields are available for the following 14 countries: Australia; People's Republic of China; Hong Kong, China; India; Indonesia; Japan; Korea; Malaysia; New Zealand; Philippines; Singapore, Taipei, China, Thailand and Vietnam.

Source: Bloomberg, available: www.bloomberg.com/

The global economic and financial crisis is a clear example of the amplified effect of economic shocks in the presence of a high degree of financial integration. The set of economic policies that individual countries decide to introduce in response to crises, ranging from monetary and fiscal policies to structural reforms, have large potential spillovers on regional neighbours which increase with the extent of regional interdependence. The significance of these shocks and the scope for spillovers from monetary and exchange rate policies turns crucially on (i) the relative size of the regional economies, and (ii) their degree of economic and financial openness.

The situation at the end of 2009 is illustrative. In response to the global economic and financial crisis East Asian countries have aggressively introduced expansionary monetary and fiscal policies to reverse the economic slowdown. While the PRC and several other countries in the region have started massive fiscal stimulus packages, as growth slowed down and with

falling inflation East Asia's authorities continued to ease their monetary policies by drastically reducing policy rates. They have also introduced several other measures to increase liquidity in the banking system and to expand bank lending. While this has generally been the case, policy responses vary from country to country. Due to the increased regional economic interdependence, small countries, however, are substantially dependent on the policy response introduced in large countries and have only limited degrees of freedom in following an independent path.

The exchange rate regimes adopted by different East Asian countries are also increasing tensions among regional currencies as the yuan has de-facto remained stable vis-à-vis the US dollar, while the yen and other East Asian currencies have moved considerably during the last 12 months and are now rapidly appreciating against the dollar. Exchange rate stability among regional members is becoming more and more important as economic interdependence increases and several calls have been raised from different quarters to introduce a regional mechanism for coordination of monetary and exchange rate policies in East Asia.

These current economic conditions provide a strong motivation for this paper to illustrate the regional implications of individual countries' monetary and exchange rate policies with a simple framework that builds on Adams (2006) and Rajan (2006). Such a framework is particularly useful to show how adjustments in interest rates and exchange rates become crucial in maintaining: (i) a given degree of monetary conditions in the domestic economy, and (ii) a desired balance in the market for foreign exchange.

3. The Framework

In the literature on the monetary condition index (MCI) and the financial condition index (FCI), a reduced form of the open economy aggregate demand equation can be used to derive an expression that relates the monetary stance, or actual monetary conditions, to a weighted average of the following variables: (i) short-term interest rate (R), (ii) effective exchange rate (E), and possibly (iii) additional variables such as long-term interest rates, risk premiums, and various other asset price indicators. For this illustrative exercise, we focus on the analysis of R and E , without formally considering the influence of other financial assets, or the possibility of lagged impacts of the variables on monetary conditions.

Following Rajan (2006), we postulate that domestic monetary conditions summarized in the MCI curve, can be written as:

$$MCI_t = a(R_t - R_0) + b(E_t - E_0), \quad (1)$$

in which R_t is the short-term interest rate and E_t is the effective exchange rate (with an increase indicating appreciation) at time t , the subscript $_0$ reflects a base year, and $a+b=1$. For the purposes of this paper, we consider R and E as nominal interest and exchange rates and hence, take the inflation rates as given at the beginning of the period. The smaller and more open the economy, the higher is b , as it represents the effect (or pass-through) of an exchange rate fluctuation on domestic inflation.

In Figure 2a, for a given monetary stance, the MCI is drawn in R, E space as a negatively sloped curve. Since an increase (decrease) in either R or E tightens (loosens) monetary conditions, the same monetary stance can only be maintained if an appreciation (depreciation) of the exchange rate is accompanied by a lower (higher) interest rate. Any point above and to the right of the MCI_t^a curve represents tighter or less accommodative monetary conditions. Similarly, any point below and to the left of the MCI_t^a curve represents an expansionary or less restrictive monetary policy. The more sensitive the economy is to exchange rate movements relative to interest rate movements, the steeper will be the MCI curve. Other things equal, this suggests that a small and open economy will have a steeper MCI curve than a large and relatively closed economy.

Given the above definitions and assuming that monetary authorities target inflation, in the case of inflationary pressures, monetary authorities will tighten monetary conditions and the MCI_t^a curve will shift to the right.⁶⁾ Similarly, to counter deflationary factors authorities will loosen monetary conditions, hence inducing a shift of the MCI_t^a curve to the left.

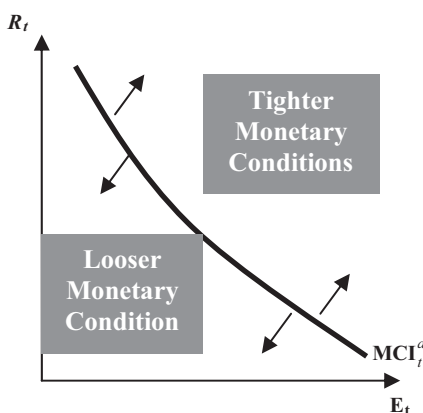


FIGURE 2a

The second key equation of the model is that defining the conditions in the foreign exchange market. Again following Rajan (2006), we assume the balance of payments (BOP) conditions can be written as follows:

$$RA_t = CA_t + KA_t \tag{2}$$

6) Even in a formal inflation targeting setting, the reaction function of the monetary authority may include other factors besides the inflation or output gap. In the context of emerging East Asia, there are a variety of monetary policy frameworks and different transmission mechanisms. However, for the most part, authorities will respond to inflationary pressures and most use interest rates as policy instruments. The degree of exchange rate management also varies across the region. As a study included in the December 2007 ADB *Asia Economic Monitor* shows, increased flexibility in exchange rates since the 1997/98 Asian Financial crisis enhanced monetary policy independence in several regional economies. In some cases, for a given desired interest rate setting, sterilized intervention in the exchange market has been used in an attempt to manage exchange rate movements.

where RA_t is foreign exchange reserve accumulation, CA_t is the current account balance, and KA_t is the capital account balance. The current and capital account balances are given as:

$$CA_t = f(E_t, Y_t, Y_t^*) \quad (3)$$

$$KA_t = f(R_t - R_t^*, -A_t). \quad (4)$$

Here, CA_t is described as a negative function of both the exchange rate and the national income (Y_t) and as a positive function of foreign income (Y_t^*); while KA_t is specified as a positive function of the difference between the domestic and foreign interest rates ($R_t - R_t^*$). The term A_t in (4) captures risk premiums and expected exchange rate movements.

In Figure 2b, for a given rate of reserve accumulation, the foreign currency market (FCM) curve is drawn in R, E space as a positively sloped curve, where income, risk premiums, expectations, and other foreign variables are held constant. Given these assumptions, an increase in the interest rate will induce capital inflows and cause a BOP surplus. Such a surplus can be offset by a currency appreciation, which reduces the current account. Any point above and to the left of the FCM curve represents either higher accumulation of reserves or appreciation pressures on the local currency. Similarly, any point below and to the right of the FCM curve represents either lower accumulation of reserves or pressures on the local currency to depreciate. The less sensitive capital flows are to interest rate differentials, the steeper the FCM curve.

To close the model, we need to make assumptions about the way monetary and exchange rate policies are set. We assume that the domestic monetary authority sets a desired level of monetary conditions (e.g., to meet a certain inflationary target) and then uses the short-term interest rate to adjust domestic conditions, for a given exchange rate — or alternatively taking account of how the exchange rate will respond to changes in the domestic policy rate. For simplicity, we also assume that reserve accumulation is zero (or, alternatively, the model could allow for a positive but constant amount) and the exchange rate adjusts to clear the foreign currency market.

The model can now be used to assess the impacts of and movements of the MCI (changes in monetary conditions) and FCM curves (changes in the foreign currency market), where only a unique combination of the interest and exchange rates will be consistent with both the desired level of monetary conditions and the external balance, as in Figure 2c.

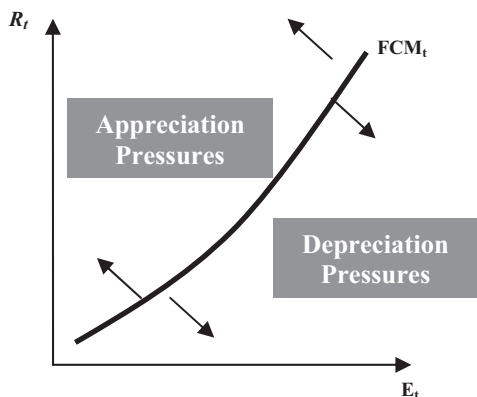


FIGURE 2b

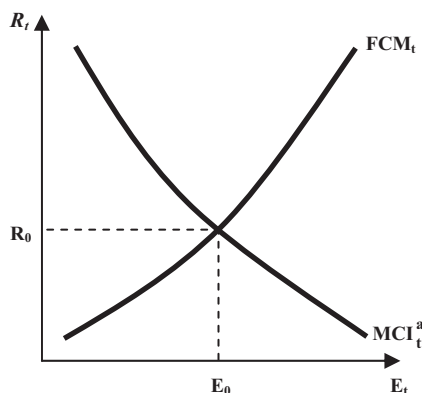


FIGURE 2c

As pointed out by both Adams (2006) and Rajan (2006), one relevant implication of this model is that assuming the monetary authority intends to maintain at the same time the internal and external balances through an appropriate combination of interest rates and exchange rates, the actual policy combination required to respond to various shocks that affect the economy will depend on (i) the type of shocks, (ii) the extent of exchange rate pass-through, (iii) the structure of the balance of payments, (iv) the existing stock of international reserves, as well as (v) the size of the economy and (vi) its degree of openness.

For instance, inflationary pressures would require some monetary tightening (shifting the MCI curve to the right) through both a higher interest rate and an appreciated exchange rate. However, if the authorities decide to maintain a fixed exchange rate, the interest rate would have to be adjusted by more to achieve the desired level of monetary conditions. Moreover, reserve accumulation would need to rise to clear the foreign currency market and this would require effective sterilization.

4. A Two-country Case with Spillovers

To analyse the conduct of monetary and exchange rate policy in an economically integrated regional context, we imagine the presence of a large and a small economy, linked through the balance of payments. We assume that the large economy is a large export market for the small economy and the recipient of a large portion of total capital flows to the region. The framework for monetary and exchange rate policy decisions used above would apply for the large country, with foreign income and interest rates reflecting conditions external to the region. However, the large country's income and interest rate levels also influence the foreign currency market in the small country. We also assume for simplicity that both the large and small economies that form the region have monetary and exchange rate policy frameworks such as the one outlined above and are subject to extra-regional shocks.

Consider an initial situation such as depicted in Figure 3. We assume that in the large economy the sensitivity of both (i) the domestic economy to exchange rate movements and

(ii) the capital account to interest rate differentials is relatively low. Under such conditions, the large economy has relatively flat MCI and steep FCM curves, as depicted in the left panel of Figure 3.

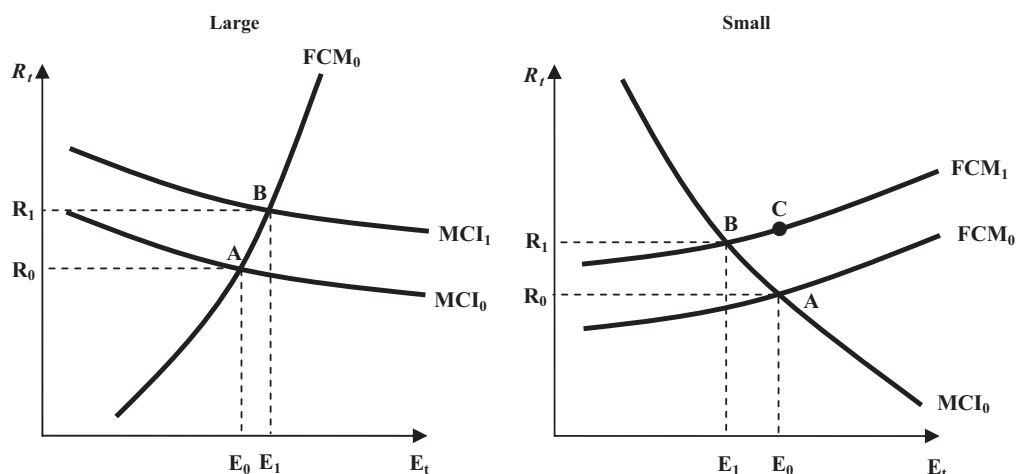


FIGURE 3

At the same time, we assume that the small economy has relatively steep MCI and flat FCM curves, as shown in the right panel of the Figure. In other words, the slope of these curves reflects a situation in the small economy where: (a) the economy is highly sensitive to exchange rate movements and (b) the capital account is highly reactive to interest rate differentials.

We also assume that, initially, the two economies (large and small) are in equilibrium at their respective point A (in both panels), where monetary conditions are at the desired level and the exchange market is stable.

Let's now suppose that the large economy experiences an increase in inflationary pressures that causes a correspondent tightening of desired monetary conditions. This shifts the MCI curve up from MCI_0 to MCI_1 , as the monetary authority raises interest rates from R_0 to R_1 . Such an increase triggers a capital inflow from the rest of the world and a corresponding appreciation of the exchange rate from E_0 to E_1 . The large economy reaches therefore a new equilibrium at point B. Given the assumed slope of the curves, the exchange rate adjustment is relatively small ($E_1 - E_0$) compared to the increase in the interest rate ($R_1 - R_0$).

The possible impact of the adjustment on the small economy of the change in monetary conditions in the large country has two possible channels. First, the increased interest rate in the large economy would tend to reduce capital inflows to the small economy, reducing demand for its currency. Second, the appreciation of the large country's exchange rate would tend to raise imports, including from the small country, increasing therefore the demand for the small country's currency. These effects work in opposite directions and the net impact on the small economy will depend on the relative strength of the two effects. Suppose, for example that the first effect dominates, which causes the FMC curve in the small economy to shift up

from FCM_0 to FCM_1 in the right panel of Figure 3 and the exchange rate to depreciate from E_0 to E_1 . In this case, the policy solution offered to the small economy's monetary authority to mitigate the inflationary impact of the depreciation is to raise interest rates (from R_0 to R_1). Assuming that the exchange rate in the small economy remains flexible, the new equilibrium maintaining the same domestic monetary conditions is reached at point B in the right panel.

Thus, within an economically integrated region, in a case like this, when the effect of reducing capital flows to the small economy dominates over the increase in exports to the large economy, the ultimate effect of an inflationary shock in the large economy that causes monetary authorities to tighten monetary conditions spills over to the small economy in the form of a higher interest rate and a depreciated exchange rate. This new situation, however, does not necessarily alter monetary conditions in the small economy, as long as it maintains a flexible exchange rate. In the case of a fixed exchange rate regime for the smaller economy, the impact of the change in capital flows induced by the large economy's increased interest rate would need to be met by a shift to tighter monetary conditions (to the right of the MCI_0 curve in the right panel, and a larger interest rate change to reach a point higher than R_1), such as, for instance, the level required to reach point C in the right panel of Figure 3.

5. Policy Responses to External Shocks

Let's consider again a situation in which both the large and the small economy are initially in equilibrium at point A, respectively in the left and right panels of Figure 4. We now assume the occurrence of a positive global financial shock that increases capital flows to the region. This will shift the FCM_0 curve out to FCM_1 for both economies. At the given policy rate, the exchange rate will appreciate, tightening monetary conditions (and shift demand from local to foreign goods). Assuming that monetary authorities in both economies prefer to not alter their internal monetary stance, they would offset this effect by lowering interest rates. The new equilibrium is reached at point B for both economies.

For the large economy, where the economy is more sensitive to interest rates than exchange rates, the adjustment occurs primarily in the exchange rate. However, the small economy will be required to undertake a more significant interest rate adjustment to offset the impact of exchange rate appreciation. In this case, let's assume that for the small economy the impact on capital flows of the relatively small interest rate adjustment in the large economy is dominated by the impact of the relatively larger exchange rate appreciation in the large economy on improving the trade balance. Thus, the net effect on the small economy is to shift the FCM curve further out, leading to a larger interest rate cut and further exchange rate appreciation, leaving the economy at a point such as C in the right panel of Figure 4.

In this case, because of the policy spillover effects from the large economy, the small economy ends up with a larger exchange rate adjustment and a larger decrease in the interest rate than otherwise. It is important to note that, although different combinations of interest rate and exchange rate settings can achieve the same level of monetary conditions, they are not necessarily equivalent in the resulting mix of sources of aggregate demand. In the small country, in fact, the greater extent of necessary policy adjustment implies a greater extent

of shifting between domestic and foreign sources of demand. This adjustment, in turn, will increase regional economic interdependence.

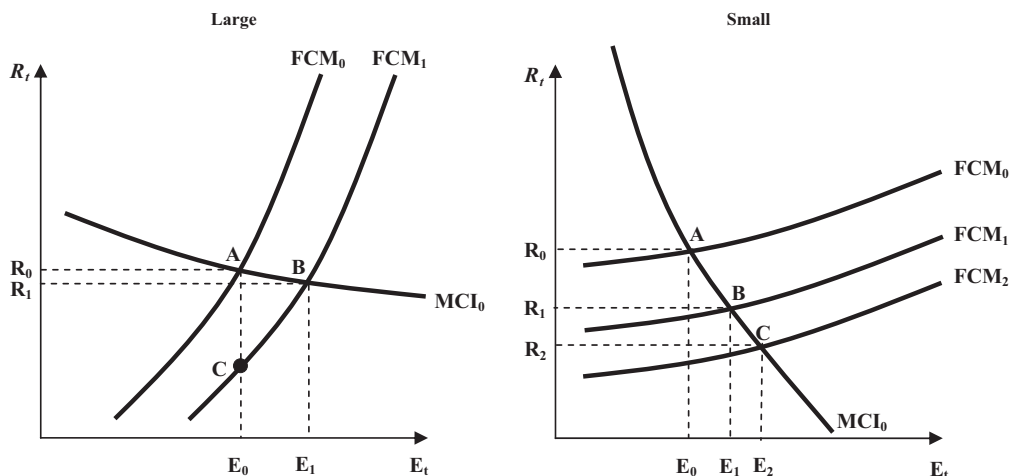


FIGURE 4

We can also analyse the case in which the large economy does not allow the exchange rate adjustment, maintaining a fixed exchange rate regime. If this were to be accomplished through looser monetary policy, by shifting the economy to point C in the left part of the panel of Figure 3, the substantially larger interest rate cut would accentuate the required shift in the FCM curve for the small economy, again moving the equilibrium to a point such as C in the right panel, where both the interest rate cut and exchange rate appreciation were larger because of the impact of the large country's decision to maintain a fixed exchange rate. But, by undertaking a sterilized intervention, the large economy could *perhaps* partially offset the impact of the higher capital inflows and move to a point between A and C, in the left panel. This would imply a less significant impact on the small economy, which would result in equilibrium between B and C in the right panel of Figure 4.

6. Implications for Monetary and Exchange Rate Policy Coordination in East Asia

The analysis above suggests that in a situation with a high degree of interdependence between regional economies, the monetary authority in the small country would benefit from a greater understanding of the monetary policy rules of the larger country and the likely impact of those policies on its own economy, which can be achieved by enhancing monetary and exchange rate policy dialogue across the region. The small country's task will be made more difficult in the absence of regional policy dialogue and if the large country lacks clear policy rules and clear transmission mechanisms. As the large country's policy decisions have huge implications for the small economy's adjustment process, the small country needs to enhance its understanding of the large country's conditions and decision-making mechanisms in order to predict the

impact on its own economy and introduce proper corrective measures. While an enhanced regional policy dialogue is required at least to exchange information and to consult regional neighbors on the impact of the adjustment process conducted within each economy, the small country will have an obvious incentive to engage in some form of policy coordination, as economic interdependence increases.

For the large economy, however, the incentives for engaging in a regional dialogue or policy coordination are less evident and may often arise from non-market considerations. Issues related to political and security conditions may well induce the large country to start different forms of regional policy dialogue with possible ramifications to economic policy decisions. However, as regional economic interdependence increases the incentives for economic policy dialogue and coordination tend to increase also for the large country. This is particularly true when the region is formed by several small economies, as their collective actions could have an impact on the large regional economy.

Asia is a vast and quite heterogeneous region including many countries with different political regimes and economic systems. Market forces have worked as a catalyst for economic integration across several countries in the region. Although the model presented in the above sections included for simplicity only one large and one small economy, in practice East Asia comprises at least three large countries (PRC, India, Japan) and several smaller ones. An extension of the model to include two large and two small countries, each of them with different MCI and FCM curves and different reaction functions would provide more insights for understanding the actual complexity of monetary and exchange rate policy making in the region. In general terms, the outcome of such an exercise would be to illustrate how important regional policy dialogue and coordination becomes not only for the smaller countries, but for the larger ones as well, especially if the smaller countries are able to act collectively in their policy responses.

In other words, with advanced regional economic interdependence, the economic authorities in the large countries cannot act in isolation but need to consider the policy implications also for the rest of the region: they must take responsible policy decision knowing their implications on other regional neighbors, including similarly large economies and smaller ones as well. In the absence of regional dialogue and policy coordination tensions may easily emerge and it becomes difficult to internalize the positive spillovers originating from regional interdependence. In some cases, a lack of regional dialogue and policy coordination may contribute to instability and the disruption of market relations. The creation of regional production networks and increasing intraregional trade flows of parts and components link East Asia's markets tightly, demanding for exchange rate stability among regional currencies. In other words, cross-country production fragmentation creates an incentive for large countries to coordinate economic policy decisions with smaller countries in the region.

7. Conclusions

What form should regional dialogue and policy coordination among East Asian economies take? What are the prospects for introducing a common basket peg of East Asian currencies?

Should East Asian authorities coordinate their exchange rate policy and start a regional exchange rate mechanism? Can East Asia be considered an optimum currency area and create a common regional currency like Europe did with the euro? Several proposals have been put on the table.⁷⁾ Although a discussion of alternative solutions goes beyond the scope of this paper, the model presented above offers an insight on the importance to strengthen regional dialogue and coordinate monetary and exchange rate policies among East Asian economies.

The various groupings and initiatives were created after the Asian financial crisis of 1997/98 by regional finance ministries and central banks — that were briefly reviewed above — offer of concrete venues for policy coordination, although regional authorities have refrained from introducing monetary and exchange rate issues in their agenda so far. But the recent decision of ASEAN+3 countries to multilateralize the Chiang-Mai initiative and to set up a regional surveillance agency among ASEAN+3 countries, together with the perceived urgency to limit the huge fluctuations occurred among East Asia's currencies during the last twelve months, suggest that the time may have come to assist to the possible start of some new form of coordination among East Asia's monetary authorities. In particular they may now consider the merits to allow more exchange rate flexibility vis-à-vis non-regional currencies so as to mitigate the impact of external financial shocks on the region, while maintaining relative intra-regional currency stability to minimize trade disruptions arising from external financial shocks. With the ongoing recovery from the global economic and financial crisis imposing to rebalance the sources of Asian economic growth from export to internal demand, the likelihood of experiencing such new developments increases as regional authorities realize that discussion of common economic challenges not only increases mutual understanding of external shocks but also allows for the sharing of experience on structural frameworks for demand management.

While initial conditions and the policy transmission mechanisms vary from case to case, the model discussed above turns useful to highlight the fact that as regional integration among East Asian economies intensifies so does the scope for enhancing intraregional monetary and exchange rate policy coordination. As shown by our simple model, the incentives for policy coordination are higher for the smaller economies because they are affected by policy spillovers from the larger ones. Countries such as Malaysia, Thailand, or Vietnam would need to closely monitor shocks that may hit China or Japan as their economies are closely interlinked and the emergence of policy spillovers will limit their degrees of freedom in determining their stance on monetary and exchange rate conditions. At the same time, however, there is also a rationale for large countries to increase regional policy coordination with the smaller ones.

7) See, among others, Frankel and Wei (1994); Williamson (1999); De Brower (2002); Kawai (2002, 2005, and 2006); Mundell (2002); Ogawa and Ito (2002); Rajan (2002); Kuroda and Kawai (2004); Choy and Yoon (2005); Eichengreen (2005); Cowen et. al (2006).

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