A regional trend towards a basket peg system

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Abstract: Exchange rate volatility can be detrimental to growth and stability. For East Asian countries, a common basket system can be a way to reduce such volatility. By evaluating the weights of the dollar, the yen, and the euro in individual country's exchange rate, the paper shows that post-crisis fluctuations of regional currencies are no longer determined by the US dollar alone. Should the region decide to adopt a common basket, therefore, it is consistent with such a trend. The regional exchange rates also have not uniformly functioned as a stabiliser, suggesting there is a room for a basket peg system.

Keywords: exchange rate volatility; macroeconomic stability; basket peg system; symmetric shock.

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"*… even small exchange rate misalignments can disturb trade and investment flows and create trade friction among the region's economies*." Haruhiko Kuroda, President of the Asian Development Bank, October 2005.

1 Introduction

Since the work of Mundell (1961) and McKinnon (1963), an extensive literature has been written about the benefit of a common currency in ensuring stability of intra-regional exchange rates while allowing some flexibility against the fluctuations of some major

currencies. In the case of East Asian countries, the relevant common currency would be based on a basket consisting of the US dollar, the yen, and the euro (Bayoumi and Mauro, 1999; Kawai and Akiyama, 2000).[1] Pegging to the US dollar alone makes the regional currencies prone to a dollar shock that could destabilise the region's effective exchange rate, lowering growth, and endangering macroeconomic stability. As argued in Branson and Healy (2005), through a common currency basket and cooperative and coordinated stabilisation the targeting convenience from potential speculative pressure can be removed.[2]

This paper argues that the idea of East Asian countries adopting a basket peg system is worth to consider. More specifically, it is shown that during the period after the Asian Financial Crisis (AFC) the movements of the region's exchange rates have already been influenced not only by the variability of the US dollar alone but also by the rise and fall of other major currencies, i.e., the yen and the euro. This implies that should the region decide to officially adopt a basket system in the future, it would be consistent with the post-AFC trend of the region's exchange rates movement. Whether the basket system is consistent with a monetary or currency union, it would depend on the extent to which the nominal exchange rates perform as a stabiliser – or a shock absorber – when there is a symmetric shock to the economy.

The organisation of the paper is as follows. The next section analyses the effect of exchange rate volatility on regional growth and macroeconomic stability. The subsequent section discusses the link between fluctuations of the US dollar, the yen, and the euro, and the rise and fall of regional currencies. It is shown that the post-crisis trend is not inconsistent with a common basket system. The theoretical support for adopting the latter, however, rests upon the role of regional exchange rates in absorbing the effects of a symmetric shock. This is analysed in the last section before conclusions.

2 Exchange rate volatility, growth, and macroeconomic instability

Volatility of exchange rate could be detrimental to growth and macroeconomic stability. A sharp fluctuation would not be compatible with sustainable competitiveness and resource allocation. It would also create uncertainty that could unfavourably affect business plan and investment. Thus, under certain circumstances a fully flexible exchange rate may not be the most preferred system (Asian Development Bank-Institute, 2003; Kawai and Takagi, 2000).

Economists have long recognised the impossibility of simultaneously pursuing a fixed exchange rate regime, independent monetary policy, and open capital accounts. Prior to the regional crisis in 1997, emerging market economies in Asia more or less pegged their currencies to the US dollar, pursued independent monetary policies, and rapidly liberalised their capital accounts. When the crisis struck, many of these countries scrambled to drop one of the three objectives. Most of them opted for a freely floating exchange rate. Only Malaysia chose to impose capital controls and to fix the exchange rate with the US dollar, albeit temporarily. While Singapore and Taipei-China maintained their managed float exchange rate systems, Hong Kong–China kept its currency board regime. As a result, a diverse set of exchange rate regimes now exists in East Asia.

To what extent the effect of volatility of the regional exchange rates has been detrimental to growth and macroeconomic stability? In order to analyse this issue, a Vector Autoregression (VAR) technique along with impulse response functions are employed. VAR basically quantifies the reaction of every single variable in the model (i.e., GDP growth, inflation) on an exogenous shock (i.e., exchange rate fluctuation). The imposed shock mirrors the residual covariance structure of the model, and the idea is how to investigate the orthogonalised impulse responses. The reaction is measured for every variable in a certain time period (i.e., a number of quarters) after shocking the system.

Using data for 1993 : Q1 to 2007 : Q1 with 4-quarter lag:[3]

$$\Delta \ln Y_t = c_1 + \sum_{j=1}^{4} \beta_1 \Delta \ln Y_{t-j} + \sum_{j=1}^{4} \beta_2 \Delta \ln E_{t-j} + \sum_{j=1}^{4} \beta_3 \Delta \ln P_{t-j} + e_{1t}$$

$$\Delta \ln E_t = c_2 + \sum_{j=1}^{4} \theta_1 \Delta \ln Y_{t-j} + \sum_{j=1}^{4} \theta_2 \Delta \ln E_{t-j} + \sum_{j=1}^{4} \theta_3 \Delta \ln P_{t-j} + e_{2t}$$

$$\Delta \ln P_t = c_3 + \sum_{j=1}^{4} \phi_1 \Delta \ln Y_{t-j} + \sum_{j=1}^{4} \phi_2 \Delta \ln E_{t-j} + \sum_{j=1}^{4} \phi_3 \Delta \ln P_{t-j} + e_{3t},$$

where $\Delta \ln Y_t$ is the GDP real growth rate; $\Delta \ln E_t$ is the difference of log exchange rate of local currency against the US Dollar, and $\Delta \ln P_t$ is the log difference in Consumer Price Index (CPI) – i.e., inflation; e_{1t}, e_{2t} and e_{3t} are, respectively, the shocks to GDP growth rate, exchange rate, and inflation rate.[4]

The following set of impulse response functions are obtained from using Cholesky orthogonalisation (see Figure 1). With the exception of Taipei-China, Singapore, the Philippines, and Hong Kong-China (the results are insignificant), fluctuations of the regional exchange rates have produced a fairly strong inflationary effect to the regional economy. In the case of Indonesia, the inflationary pressure has been the largest and longest-lasting. The time required for the pressure to subside varies, ranging from 3 quarters (Korea) to 6 quarters (Indonesia). A sharp fluctuation (depreciation) of exchange rates has thus been detrimental to the region's macroeconomic stability (Clarida and Gali, 1994).[5]

The second set of impulse response functions shows the reaction of GDP growth to one standard deviation of exchange rate. Most cases suggest that GDP growth has been adversely affected by the depreciation (only the VAR results for Taipei-China and Hong Kong-China are insignificant). Thus, exchange rate depreciation has not only created an inflationary pressure but also lowered economic growth. The latter reflects the working of a balance-sheet effect, i.e., the larger the depreciation, the greater the damage on the balance-sheets of the region's corporate and banking sector. Under such circumstances, no business expansion and credit allocation could be expected. This caused investment and GDP to fall. Indeed, many studies confirmed that such a phenomenon characterised a number of Asian countries during the AFC. Many firms and banks were highly leveraged; most debt were foreign currency-denominated, short-term, and un-hedged.

Figure 1 Impulse responses to 1 SD exchange rate shock (see online version for colours)

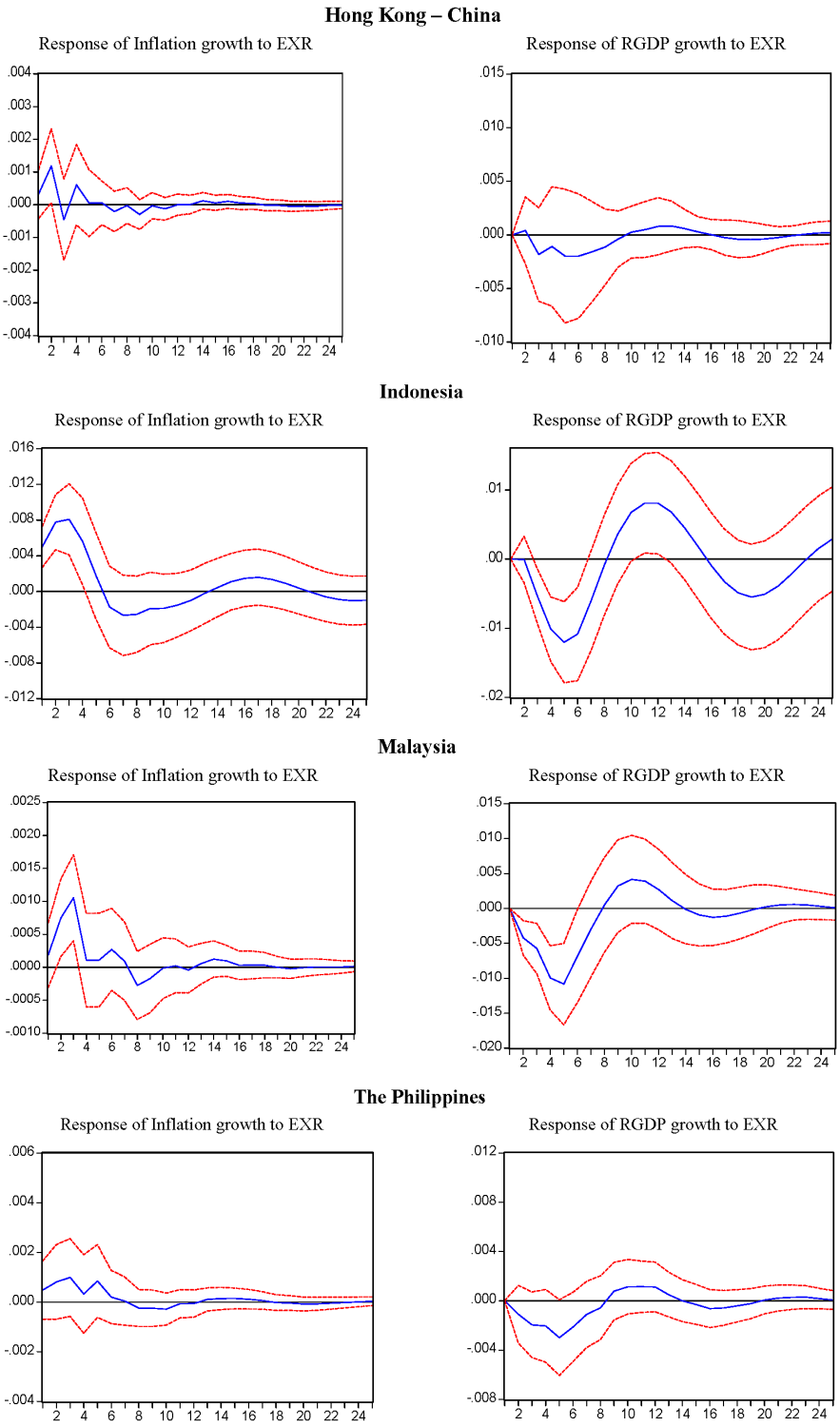
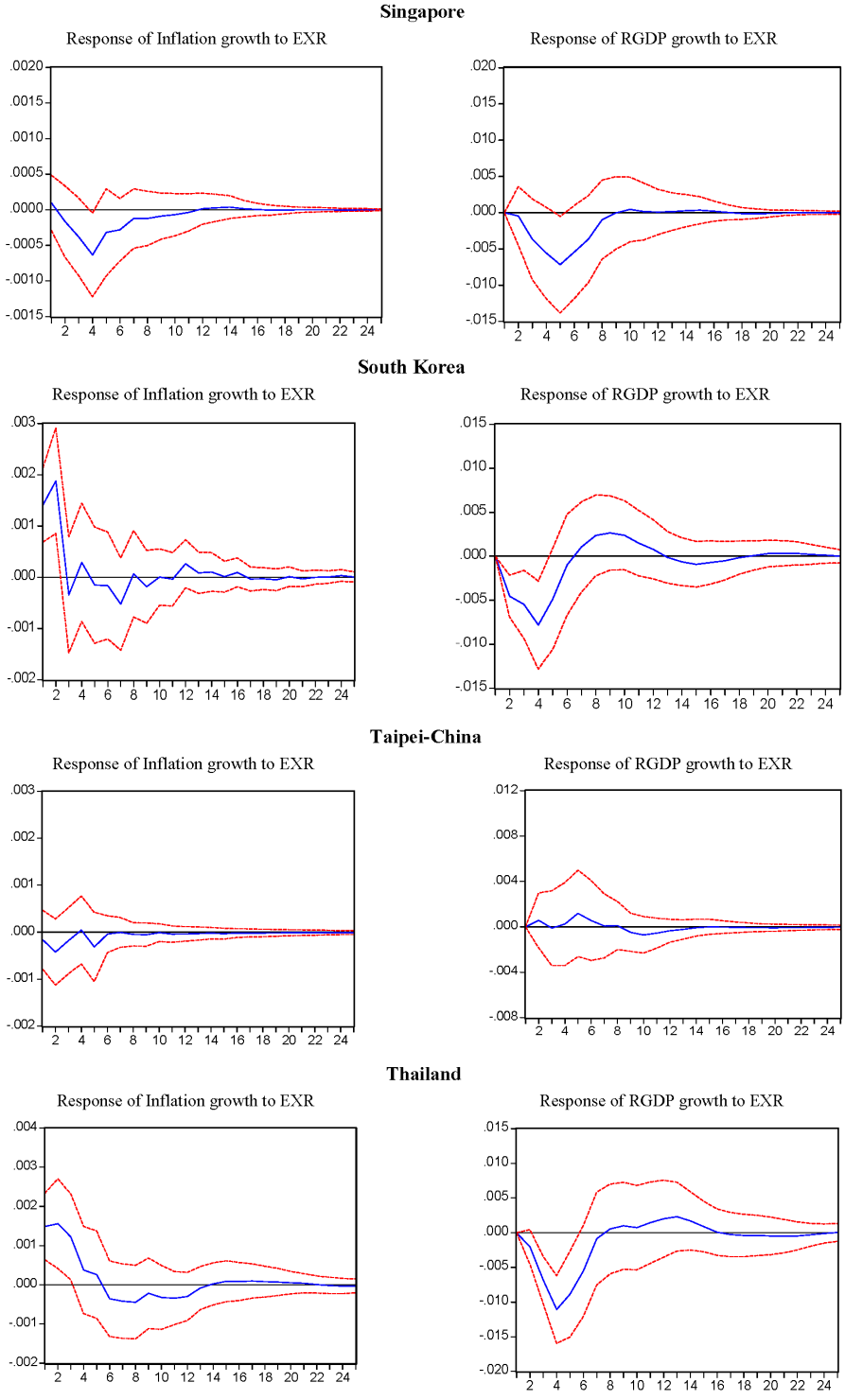


Figure 1 Impulse responses to 1 SD exchange rate shock (see online version for colours) (continued)



3 Influence of US dollar, yen, and euro on regional currencies' fluctuations

The following model is used to test the role of major currencies in influencing the fluctuation of regional currencies:

$$\Delta e_t^j = \alpha + \beta_1 \Delta e_t^{\text{USD}} + \beta_2 \Delta e_t^{\text{Yen}} + \beta_3 \Delta e_t^{\text{Euro}} + u_t,$$

where Δe_t^j is the daily change in the log exchange rate of currency j on date t; and u_t is the disturbances. All exchange rates are measured against the neutral currency (Swiss Franc is used in the current study).[6]

Applying the above model to daily exchange rates data during January 1994 – September 2007, it is found that the sum of the statistically significant coefficients is very close to unity (due to data constraint the starting date for Indonesia and the Philippines is January 1996).[7] As expected, for currencies with a fixed system, i.e., the Malaysian ringgit (during 1998–2005) and the HK dollar, the regression coefficients of the US dollar are close to unity. Note that the regression fit during the crisis is generally lower than that during the non-crisis period (regression for the Indonesian rupiah during the second half of 1998 is the only one that produces insignificant coefficients; the complete results are available upon request).

Normalising the statistically significant coefficients from the above regressions, Tables 1–8 is obtained (excluding the fixers).

Table 1 Hong Kong–China dollar

Period	*US dollar* (%)	*Euro* (%)	*Yen* (%)
1994/01–1994/06	100.00		
1994/07–1994/12	100.00		
1995/01–1995/06	100.00		
1995/07–1995/12	100.00		
1996/01–1996/06	98.02	1.98	
1996/07–1996/12	100.00		
1997/01–1997/06	100.00		
1997/07–1997/12	100.00		
1998/01–1998/06	100.00		
1998/07–1998/12	96.55	3.45	
1999/01–1999/06	100.00		
1999/07–1999/12	96.79	3.21	
2000/01–2000/06	100.00		
2000/07–2000/12	100.00		
2001/01–2001/06	100.00		
2001/07–2001/12	100.00		
2002/01–2002/06	100.00		

Table 1 Hong Kong–China dollar (continued)

Period	*US dollar* (%)	*Euro* (%)	*Yen* (%)
2002/07–2002/12	100.00		
2003/01–2003/06	100.00		
2003/07–2003/12	96.16		3.84
2004/01–2004/06	95.88	3.36	0.76
2004/07–2004/12	98.15		1.85
2005/01–2005/06	96.29	2.34	1.37
2005/07–2005/12	98.57		1.43
2006/01–2006/06	99.08		0.92
2006/07–2006/12	97.62		2.38
2007/01–2007/09	100.00		

Table 2 Indonesian rupiah

Period	*US dollar* (%)	*Euro* (%)	*Yen* (%)
1996/01–1996/06	100.00		
1996/07–1996/12	100.00		
1997/01–1997/06	100.00		
1997/07–1997/12	100.00		
1998/01–1998/06			100.00
1998/07–1998/12			
1999/01–1999/06	100.00		
1999/07–1999/12	100.00		
2000/01–2000/06	100.00		
2000/07–2000/12	100.00		
2001/01–2001/06	100.00		
2001/07–2001/12	100.00		
2002/01–2002/06	100.00		
2002/07–2002/12	100.00		
2003/01–2003/06	100.00		
2003/07–2003/12	84.50		15.50
2004/01–2004/06	77.20		22.80
2004/07–2004/12	59.63		40.37
2005/01–2005/06	100.00		
2005/07–2005/12	100.00		
2006/01–2006/06	69.13		30.87
2006/07–2006/12	48.40	51.60	
2007/01–2007/09	40.31	59.69	

Table 3 Malaysian ringgit

Period	*US dollar* (%)	*Euro* (%)	*Yen* (%)
1994/01–1994/06	100.00		
1994/07–1994/12	89.38		10.62
1995/01–1995/06	69.56	30.44	
1995/07–1995/12	87.55		12.45
1996/01–1996/06	100.00		0.00
1996/07–1996/12	95.23		4.77
1997/01–1997/06	100.00		
1997/07–1997/12	100.00		
1998/01–1998/06			100.00
1998/07–1998/12	72.33		27.67
1999/01–1999/06	100.00		
1999/07–1999/12	100.00		
2000/01–2000/06	100.00		
2000/07–2000/12	100.00		
2001/01–2001/06	100.00		
2001/07–2001/12	100.00		
2002/01–2002/06	100.00		
2002/07–2002/12	100.00		
2003/01–2003/06	100.00		
2003/07–2003/12	100.00		
2004/01–2004/06	100.00		
2004/07–2004/12	100.00		
2005/01–2005/06	100.00		
2005/07–2005/12	100.00		
2006/01–2006/06	90.58		9.42
2006/07–2006/12	80.94		19.06
2007/01–2007/09	65.97	34.03	

Table 4 Philippines peso

Period	*US dollar* (%)	*Euro* (%)	*Yen* (%)
1996/01–1996/06	100.00		
1996/07–1996/12	100.00		
1997/01–1997/06	100.00		
1997/07–1997/12	100.00		
1998/01–1998/06			100.00
1998/07–1998/12	80.60		19.40
1999/01–1999/06	78.48		21.52
1999/07–1999/12	100.00		

Table 4 Philippines peso (continued)

Period	*US dollar* (%)	*Euro* (%)	*Yen* (%)
2000/01–2000/06	100.00		
2000/07–2000/12	100.00		
2001/01–2001/06	100.00		
2001/07–2001/12	100.00		
2002/01–2002/06	100.00		
2002/07–2002/12	100.00		
2003/01–2003/06	84.60		15.40
2003/07–2003/12	100.00		
2004/01–2004/06	93.53		6.47
2004/07–2004/12	100.00		
2005/01–2005/06	100.00		
2005/07–2005/12	77.95	22.05	
2006/01–2006/06	100.00		
2006/07–2006/12	84.08		15.92
2007/01–2007/09	56.11	42.89	

Table 5 Singapore dollar

Period	*US dollar* (%)	*Euro* (%)	*Yen* (%)
1994/01–1994/06	57.98	32.47	9.55
1994/07–1994/12	100.00		
1995/01–1995/06	100.00		
1995/07–1995/12	78.09		21.91
1996/01–1996/06	84.24		15.76
1996/07–1996/12	91.18		8.78
1997/01–1997/06	85.76		14.24
1997/07–1997/12	85.31		14.69
1998/01–1998/06	18.14	35.80	46.16
1998/07–1998/12	67.66		32.34
1999/01–1999/06	61.55	26.72	11.73
1999/07–1999/12	100.00		
2000/01–2000/06	86.70		13.30
2000/07–2000/12	87.80		12.20
2001/01–2001/06	81.67		18.34
2001/07–2001/12	73.56		26.44
2002/01–2002/06	77.63		22.37
2002/07–2002/12	65.30		34.70
2003/01–2003/06	69.25		30.75
2003/07–2003/12	77.95		22.05

Table 5 Singapore dollar (continued)

Period	*US dollar* (%)	*Euro* (%)	*Yen* (%)
2004/01–2004/06	47.13	26.79	26.09
2004/07–2004/12	73.09		26.91
2005/01–2005/06	63.91		36.09
2005/07–2005/12	66.39		33.61
2006/01–2006/06	68.56		31.44
2006/07–2006/12	50.61	31.31	18.08
2007/01–2007/09	57.35	42.65	

Table 6 South Korea won

Period	*US dollar* (%)	*Euro* (%)	*Yen* (%)
1994/01–1994/06	88.41	11.60	
1994/07–1994/12	100.00		
1995/01–1995/06	100.00		
1995/07–1995/12	100.00		
1996/01–1996/06	100.00		
1996/07–1996/12	100.00		
1997/01–1997/06	100.00		
1997/07–1997/12	100.00		
1998/01–1998/06	100.00		
1998/07–1998/12	88.50		11.50
1999/01–1999/06	87.48		12.52
1999/07–1999/12	100.00		
2000/01–2000/06	100.00		
2000/07–2000/12	100.00		
2001/01–2001/06	60.57		39.43
2001/07–2001/12	79.87		20.13
2002/01–2002/06	77.79		22.21
2002/07–2002/12	60.38		39.62
2003/01–2003/06	66.00		34.00
2003/07–2003/12	72.18		27.82
2004/01–2004/06	78.15		21.85
2004/07–2004/12	75.88		24.12
2005/01–2005/06	68.66		31.34
2005/07–2005/12	51.04	34.95	14.01
2006/01–2006/06	73.86		26.14
2006/07–2006/12	71.62		28.38
2007/01–2007/09	71.58	28.42	

Table 7 Taipei–China dollar

Period	*US dollar* (%)	*Euro* (%)	*Yen* (%)
1994/01–1994/06	100.00		
1994/07–1994/12	100.00		
1995/01–1995/06	67.75	14.30	17.95
1995/07–1995/12	100.00		
1996/01–1996/06	100.00		
1996/07–1996/12	100.00		
1997/01–1997/06	100.00		
1997/07–1997/12	75.60	24.40	
1998/01–1998/06	77.68		22.32
1998/07–1998/12	73.98	17.84	8.18
1999/01–1999/06	100.00		
1999/07–1999/12	100.00		
2000/01–2000/06	100.00		
2000/07–2000/12	100.00		
2001/01–2001/06	100.00		
2001/07–2001/12	100.00		
2002/01–2002/06	91.04		8.96
2002/07–2002/12	100.00		
2003/01–2003/06	100.00		
2003/07–2003/12	90.83		9.17
2004/01–2004/06	89.25		10.75
2004/07–2004/12	88.16		11.84
2005/01–2005/06	67.17		32.83
2005/07–2005/12	100.00		
2006/01–2006/06	83.42		16.58
2006/07–2006/12	84.07		15.93

Table 8 Thai baht

Period	*US dollar*	*Euro*	*Yen*
1994/01–1994/06	100.00		
1994/07–1994/12	100.00		
1995/01–1995/06	100.00		
1995/07–1995/12	86.02	5.60	8.38
1996/01–1996/06	100.00		
1996/07–1996/12	100.00		
1997/01–1997/06	73.91		26.09
1997/07–1997/12	100.00		
1998/01–1998/06			100.00

Table 8 Thai baht (continued)

Period	*US dollar*	*Euro*	*Yen*
1998/07–1998/12	40.76	41.38	17.84
1999/01–1999/06	59.85	24.20	15.95
1999/07–1999/12	100.00		
2000/01–2000/06	90.41		9.59
2000/07–2000/12	71.78		28.22
2001/01–2001/06	76.00		24.00
2001/07–2001/12	86.63		13.27
2002/01–2002/06	79.82		20.18
2002/07–2002/12	64.69		35.31
2003/01–2003/06	76.81		23.19
2003/07–2003/12	80.36		19.64
2004/01–2004/06	61.71	19.46	18.83
2004/07–2004/12	65.94		34.06
2005/01–2005/06	64.83		35.17
2005/07–2005/12	66.93		33.07
2006/01–2006/06	66.79		33.21
2006/07–2006/12	77.30		22.70
2007/01–2007/09	100.00		

It is clear that the weights of the US dollar, the yen, and the euro have been changing over the observation period. In most cases, the post AFC has reduced the weight of the US dollar. During the first half of 1998, currency fluctuations in Indonesia, Thailand and the Philippines were exclusively influenced by the yen movement. Since then, the weights fluctuated. Movements of the Korean won shortly after the country fell into a crisis have been also influenced by the yen fluctuation. Since early 2001, the role of the yen generally increased, and during the second half of 2005 all three major currencies influenced the won movement.

In general, the role of the yen has increased during the post-crisis period, and in some periods euro's role has also emerged prominently. In Singapore, the Philippines, and Indonesia the weight of the euro reached higher than 40% by 2007. The influence of the euro in the Indonesian rupiah movement was even larger than that of the US dollar in that year.

After being jointly influenced by the US dollar and the yen, in 2007 the movement of the Thai baht was determined entirely by the US dollar movement, a pattern similar to that during the pre-crisis period. The latter case may reaffirm the claim made by those (e.g., McKinnon, 2000; Ogawa, 2001) who predict that the region's currencies will return to a dollar-standard. We argue that such a claim is premature, relying only on the short-term trend after the crisis. As shown in the above tables, the post-crisis role of the euro and especially the yen has generally been prominent in influencing the movements of currencies in the region.

The sharp fluctuations of regional exchange rates, especially during the AFC, however, may distort the results. Thus, a series of rolling regressions are conducted

by dividing the whole sample into several small sub-samples with equal numbers of observation. The daily exchange rate data from 4 January, 1994 to 5 September, 2007 is divided into sub-samples, each having 90 observations. For example, the first sub-sample (daily exchange rates from 4 January, 1994 to 12 May, 1994) is followed by the next sub-sample through shifting the 90-day window by one day (from 5 January, 1994 to 13 May, 1994). In this way, the points from the series at each iteration can be added, and the parametric variability can be accommodated. The results of the rolling regressions are displayed in Figures 2–9.[8]

Figure 2 Hong Kong–China dolla (see online version for colours)

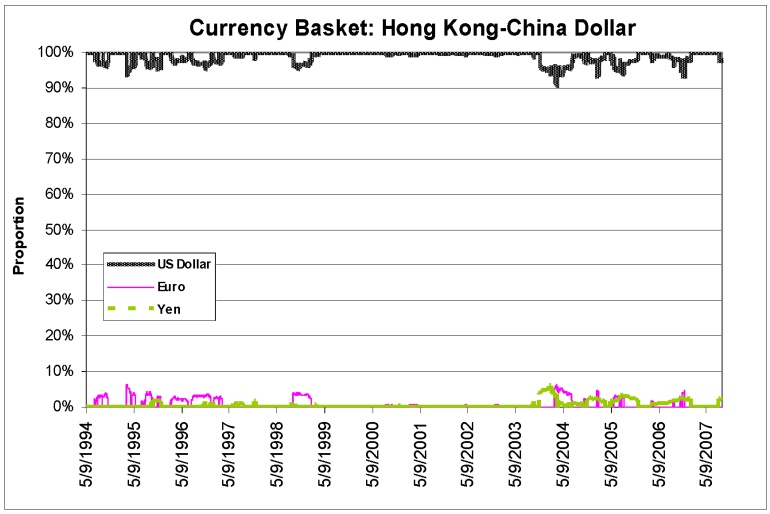


Figure 3 Indonesian rupiah (see online version for colours)

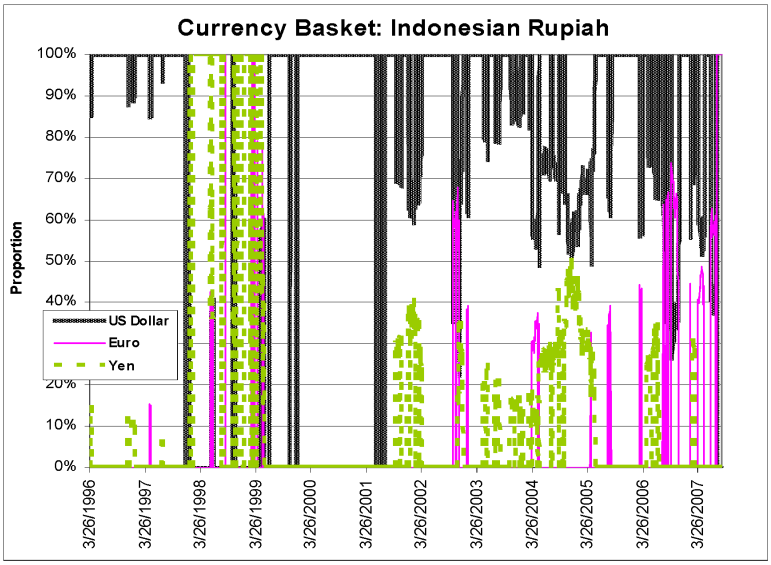


Figure 4 Malaysian ringgit (see online version for colours)

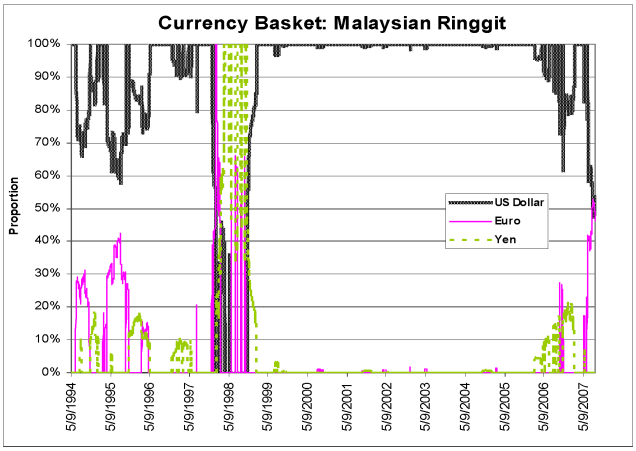


Figure 5 Philippines peso (see online version for colours)

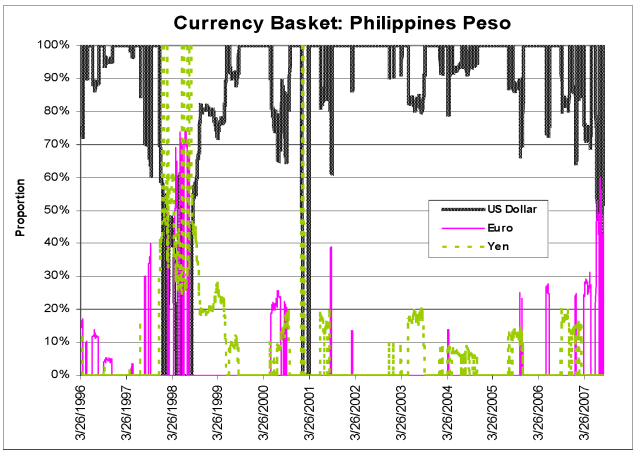


Figure 6 Singapore dollar (see online version for colours)

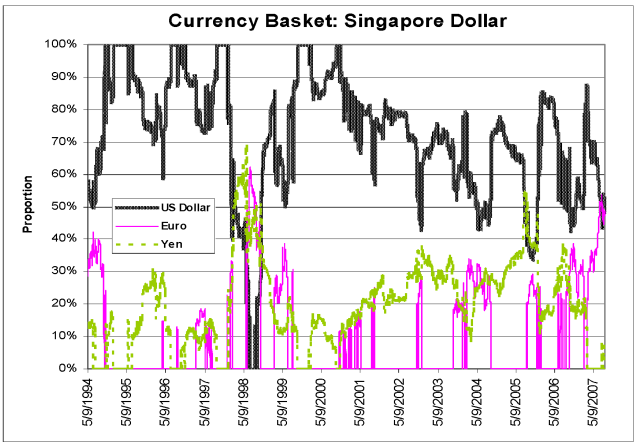


Figure 7 South Korea won (see online version for colours)

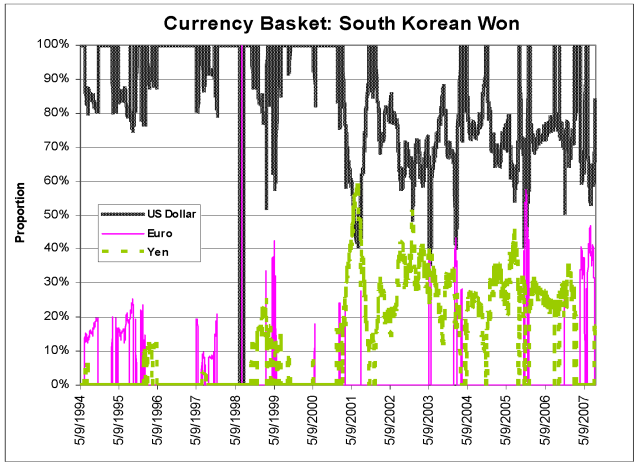


Figure 8 Taipei-China dollar (see online version for colours)

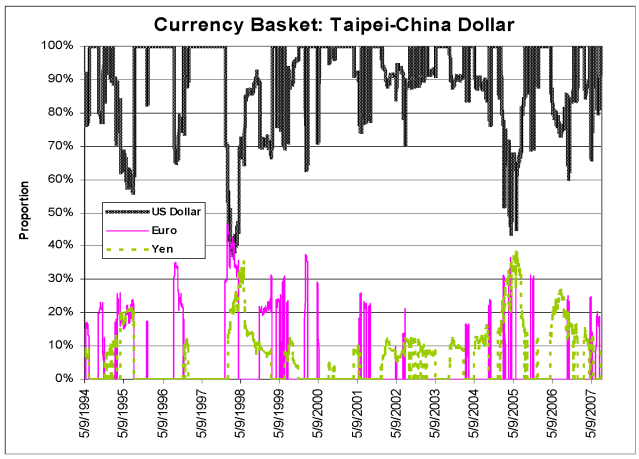
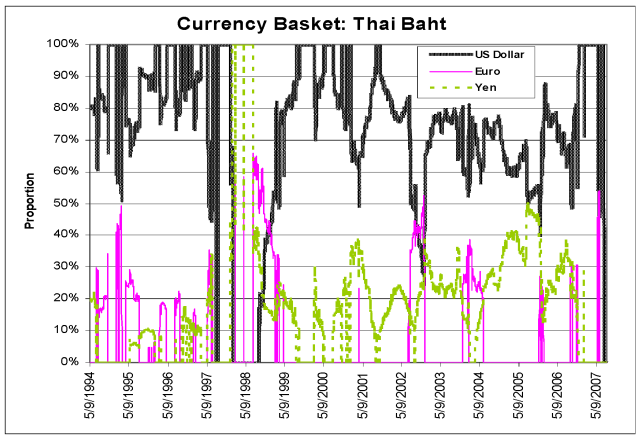


Figure 9 Thai bath (see online version for colours)



Take the Indonesian case (Figure 3). It is clearly shown that the basket composition has changed considerably from a US dollar-dominated to a combined currency-influenced system. It should be noted, however, that the results of the rupiah rolling regressions for some periods are insignificant. Fore example, no co-movements of the rupiah and other major currencies are detected during 16 January, 1998–11 February, 1998, 11 September, 1998–20 October, 1998 and 17 December, 1998–12 January, 1999.

The trend in other countries also points to a changing weight, i.e., the role of the yen and the euro have increased, particularly during and after the crisis. During April 1994 – May 1998, the Singaporean dollar was mainly based on the US dollar (contributes around 65–100% of the currency basket), but the pattern changed during May 1998–May 1999; the role of the yen and the euro increased considerably during this period. Although from June 1999 the US dollar re-dominated the influence, its weight to the basket decreased as the weights of the yen and the euro increased (Figure 6).

Thus, the role of the US dollar in the movements of regional currencies (except the fixers) has changed considerably during and after the crisis. In most cases the role of the US dollar declined. Although in a few cases the sign of a return to a dollar standard emerged, it is too premature to conclude that such a pattern will persist in the future.

4 Optimal currency area for East Asia?

Conceptually, East Asian countries with open capital accounts can adopt a managed float exchange rate policy that would be consistent with sustainable international competitiveness (Azis and Woo, 2002). It would allow sufficient exchange rate flexibility but avoid a serious exchange rate misalignment caused by persistent capital movements. The exchange rate compatible with competitiveness can be based on an appropriately trade-weighted currency basket – such as the one described earlier – rather than on a single currency. Such an exchange rate regime would be consistent with the efforts to facilitate trade, FDI and economic growth, and to accommodate pressures from abrupt and large swings in capital flows.

There are at least three advantages of a basket system (see the Asian Development Bank-Institute, 2003). First, an appropriately trade-weighted basket can avoid wide fluctuations in international competitiveness caused by a single currency-dominated basket. Second, sufficient flexibility can accommodate moderate swings in capital flows without undermining monetary policy autonomy, and smoothing operations can be used to limit excessive short-run exchange rate volatility. Third, serious misalignment of exchange rates in the medium term can be avoided. Thus, a basket system is consistent with Asian economies' move toward greater financial integration and the promotion of real economic growth, while also allowing for reasonable monetary policy autonomy.[9]

Against this backdrop, one wonders whether a basket system could be further advanced towards a common currency a-la EMU. This is not an easy question to answer. In theory, a monetary and/or financial shock such as the one in 1997 lends a support to a fixed system including a common basket system. Adopting a flexible exchange rate system in such a situation could lead to macroeconomic instability.[10] But that is only a part of the equation. Even if the shock is monetary and/or financial in nature, one still needs to examine whether or not in practice the exchange rate acts as a stabiliser or a shock absorber. If it does, a more flexible system is preferable, implying that a common basket system is not the way to go for East Asia.

From the VAR analysis, it is revealed that the response of regional exchange rates to a symmetric shock is mostly insignificant, i.e., slower output growth did not significantly result in exchange rate depreciation. The only exceptions are Korea and Thailand, albeit for a short interval. In the Indonesian case, the exchange rate moved to the opposite direction (the complete results are available upon request). Thus, in general regional exchange rates do not really perform as an important shock absorber to a symmetric shock. However, while this suggests that there is a room for the region to adopt a basket peg system, in Korea and Thailand alternative instruments and mechanisms may need to be explored to allow some counter-cyclical forces.

5 Conclusions

Compared to that during the pre-crisis period, the exchange rate volatility in East Asia after the AFC has slightly declined but remains high. It is shown in the paper that a sharp volatility (depreciation) of regional exchange rates has been detrimental to growth and macroeconomic stability. Inflationary pressures are up, economic growth is down. The transmission mechanisms of the latter work through a balance-sheet effect, which is unique to an open economy characterised by a large size of debt denominated in foreign currency, majority of which is short-term and un-hedged.

Against such a backdrop, attempts are needed to reduce the volatility of exchange rates. In the context of Regional Financial Arrangement (RFA), a common basket system consisting of the US dollar, the yen, and the euro could be considered. The system allows some flexibility against three major currencies such that it is compatible with the region's sustainable competitiveness and resource allocation. This will enable the region to accommodate moderate swings in capital flows without undermining monetary policy autonomy. Pegging to the US dollar alone makes the regional currencies prone to a dollar shock that could destabilise the region's effective exchange rate, lowering growth and endangering macroeconomic stability. These losses can be interpreted as the potential gains from an effective arrangement for exchange rate stabilisation (Branson and Healy, 2005).

The post-crisis trend appears consistent with the idea of a basket peg system. The role of the US dollar in regional currencies' movements (with the exception of the fixers) has changed considerably during and after the crisis. In most cases the role of the US dollar has declined, while that of the yen and the euro has increased. Although some analysts have predicted that the regional currencies will return to a dollar standard, and the trend in some cases shows the dollar has re-captured its dominance (e.g., the Thai baht during the first three quarters of 2007), it is much too premature to conclude that the reversal will persist in the future.

The theoretical support for a currency union a-la EMU, however, depends on the extent to which the regional exchange rates will play a major role in stabilising the economy when there is a symmetric shock. Our analysis reveals that the regional rates have not uniformly acted as a stabiliser to such a shock, implying that the costs of adopting a common basket currency system in the region are relatively small.

In practice, however, to agree on altering one's exchange rate regime let alone adopting a basket system and a common currency would require considerations that go beyond economics. When these are taken into account, the timing factor becomes critical. This may explain why the process to officially adopt a basket system in East Asia has taken a longer time frame.

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Notes

[1]East Asia consists of China, Hong Kong-China, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taipei-China, and Thailand.

[2]Ogawa and Shimizu (2006) went even further by proposing a way to create an Asian Monetary Unit (AMU) as a weighted average of the 13 East Asian currencies (ASEAN + China, Japan, and Korea).

[3]The optimal lag length was selected by using Akaike Information Criterion (AIC). To ensure the robustness of lag length selection, we compared the impulse responses obtained from using a lag length of 3–7 quarters, and found that they are very similar in both response-to-shock patterns and levels of significance.

[4]Macro data are obtained from the International Financial Statistics (IFS) and CEIC database. All log-difference time series pass the unit-root test except that of Hong Kong–China's CPI. Thus, we use the second log-difference for Hong Kong–China's CPI.

[5]While the source of exchange rate fluctuation is often explained through demand shocks, an in-depth analysis on this issue using the case of East Asia needs to be done. Studies that confirm the importance of demand shocks in explaining exchange rate fluctuations, and that supply shocks explain very little, are largely based on the case of industrial countries (see for example Clarida and Gali, 1994).

[6]Daily exchange rate data are from Pacific Exchange Service, University of British Columbia (http://fx.sauder.ubc.ca/data.html).

[7]Data on the Indonesian rupiah and the Philippines peso are from 2 January, 1996 to September 2007, while those on other currencies cover the period of 3 January, 1994–5 September, 2007 (the last period is 2 January, 2007–5 September, 2007).

[8]As each new observation is acquired, another observation may be removed so that at any instant the estimator comprises only n points. Such an estimator is the result of rolling regression.

[9]There are several disadvantages to using such a managed float. First, an exchange rate regime compatible with international competitiveness requires appropriate trade-weights and adjustments for international inflation differentials, involving difficult calculations and careful evaluation. Second, it is not easy to judge when a currency is seriously misaligned and such judgment can differ from economy to economy. Third, the degree of flexibility should be increased in order to accommodate extraordinarily large shocks, such as massive, persistent capital inflows, international price shocks (e.g., oil price shocks), and relative productivity advances related to technological innovation.

[10]On the other hand, if the shock is of the aggregate-supply or aggregate-demand type, a flexible rate is preferable since it could stabilise the instability caused by the shock.