Toward a Regional Exchange Rate Regime in East Asia

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Abstract

Deepening market-driven economic integration in East Asia makes intraregional exchange rate stability across the region increasingly desirable and necessary. This paper suggests that East Asia's emerging economies begin with a currency basket system based on the G3 (US, Euro area and Japanese) or G3-plus (including emerging East Asian) currencies as a monetary policy anchor. This arrangement will enable all East Asian currencies to collectively appreciate vis-à-vis the US dollar, while maintaining intraregional rate stability, in the event of continuous surges of capital inflows to East Asia or a rapid unwinding of global payments imbalances. Such a system would contribute as an initial step to an East Asian monetary zone. After sufficient convergence and with stronger political commitment, East Asia may agree on more rigid intraregional exchange rate stabilization schemes through, for example, an Asian Snake or an Asian Exchange Rate Mechanism.

Keywords: Exchange rate arrangement in East Asia, yen and yuan, new Bretton Woods system, G-3 or G3-plus currency basket regime, Asian currency unit (ACU)

JEL Classifications: F32, F33, F42

1. INTRODUCTION: KEY ISSUES

In recent years East Asia has seen rapid advances in market-driven economic integration through cross-border trade, investment and finance. Following the Asian newly industrialized economies (NIEs) and middle-income Association of Southeast Asian Nations (ASEAN) members,[1] the People's Republic of China (PRC) is the most recent participant in this integration process as a result of further opening of its economy to international trade in goods and services and inward foreign direct investment (FDI). Growing economic integration has strengthened macroeconomic linkages across those East Asian economies that have also opened financial markets and liberalized capital accounts.

The high and rising degree of economic interdependence in East Asia suggests that it is increasingly important for the region's economies to achieve intraregional exchange rate stability. In reality, however, the region remains characterized by diverse, uncoordinated exchange rate arrangements. Japan and the PRC, the two dominant countries in East Asia, respectively adopt an exchange rate regime akin to a pure float and a tightly managed US dollar-based regime. Most other economies—except for the small open economies of Hong Kong, China and Brunei Darussalam—adopt intermediate regimes such as managed floating with the US dollar as the most important anchor currency. As it is becoming difficult to maintain intraregional rate stability through the traditional policy of dollar pegs, a regional framework for exchange rate regime coordination needs to be developed in East Asia. This is particularly the case given the possible unwinding of global payments imbalances and/or sudden surges of massive capital inflows to the region.

In this context, East Asia faces three major policy challenges in identifying practical modalities for exchange rate coordination. First, to achieve intraregional exchange rate stability, there must be some convergence of exchange rate regimes in East Asia; the most realistic option is the adoption of similar managed floating regimes—rather than a pure float or a rigid peg to an external currency. This requires the PRC to exit from the current *de facto* US dollar-based regime and adopt a more flexible regime. Second, given the limited degree of the Japanese yen's internationalization and the lack of the Chinese yuan's full convertibility, East Asia needs to secure a credible regional monetary anchor through a combination of some form of national inflation targeting and a currency basket system. An important challenge here is to find a suitable currency basket. Third, if the creation of an East Asian monetary zone—and possibly a regional single currency in the distant future—is feasible, the region needs to articulate the roadmap, or the required steps, toward closer monetary and exchange rate policy coordination.

The rest of this paper is organized as follows. Section 2 reviews how rapidly and deeply regional economic integration has been proceeding in East Asia in trade, FDI and macroeconomic activity. Section 3 summarizes the evolution of exchange rate arrangements in East Asia particularly in the post-currency crisis period. Section 4 explores the implications of a possible unwinding of global payments imbalances and surges in capital inflows for the region's exchange rate arrangements, focusing on the PRC's dollar-based regime. Section 5 examines the challenges for monetary and exchange rate policy coordination and suggests gradual policy steps to foster such coordination. Section 6 provides concluding remarks and policy implications.

[1] The Asian NIEs include Hong Kong, China; Korea; Singapore; and Taipei,China. The Association of Southeast Asian Nations (ASEAN) includes Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam. The addition in ASEAN+3 is for the PRC, Japan, and Korea.

2. DEEPENING ECONOMIC INTEGRATION IN EAST ASIA

Economic interdependence in East Asia has been deepening through the market-driven forces of cross-border trade, FDI, and finance. Trade in goods and services and FDI activities have expanded rapidly over the past twenty years thanks to global (WTO), trans-Pacific (APEC), and unilateral trade liberalization processes. International portfolio investments and banking flows, together with cross-border financial services activities, have also grown in many economies due to financial market deregulation and opening, and capital account liberalization. The removal of various types of cross-border barriers and the geographical proximity of East Asian economies have created natural economic linkages among them. In a sense, regional economic integration has been a natural outcome of economic globalization.

FDI and trade integration. The main driver behind economic integration through trade and FDI is the intraregional business activity of multinational corporations—initially those from Japan, Europe, and the United States, followed by those from emerging East Asia. Firms from the NIEs and advanced ASEAN countries (like Malaysia and Thailand) have also been providing FDI to other ASEAN members (including Cambodia, Lao PDR, and Viet Nam) and the PRC, thereby contributing to the formation of a web of regional supply chains increasingly centered on the PRC (for details see Kawai, 2005). The PRC is building a complementary relationship within East Asia by participating in the region's production network, while at the same time it is competing against many other emerging East Asian economies in global markets. This situation implies that exchange rate movements between the yuan and other East Asian currencies have become increasingly relevant from trade and FDI perspectives.

For East Asia as a whole, the share of intraregional trade in its total trade has expanded from 37% in 1985 to 52% in 1995, and to 55% in 2005 (Kawai, 2007). This increase is due to increased integration as well as much faster economic growth of East Asia than of other regions, raising the weight of its trade in global trade. The share of 55% is higher than the 45% figure for the North American Free Trade Area (NAFTA) and modestly lower than the 60% figure for the first 15 European Union (EU-15) member countries. The intensity of regional trade in East Asia is also comparable to that in the EU-15 and the NAFTA countries. While the development of regional production networks and supply chains has been premised on the existence of American and European markets for finished products, its relative dependence on these outside markets has been declining and is expected to further decline as demand for final products within East Asia continues to grow.

Financial integration. Financial markets are also integrating in East Asia as a result of the deregulation of domestic financial systems, opening of financial services, and relaxation of capital and exchange controls. Foreign operations by commercial banks from developed countries and portfolio investment by developed-market investors have significantly strengthened linkages among the region's financial markets. Relative to trade and FDI integration, however, financial integration has been less pronounced. Table 1 indicates that cross-border portfolio investment flows—particularly equity investment flows—have been expanding among the East Asian economies, but the share of intraregional portfolio investment flows in East Asia is still low (a mere 6% in 2004) compared with those of EU-15 (64%) and NAFTA (15%). An important reason for the limited degree of financial integration is that, apart from Japan; Hong Kong, China; and Singapore, many economies in East Asia still impose significant capital and exchange restrictions and other cross-border barriers, which impede free flows of financial capital within the region. In particular, the PRC and low-income ASEAN countries apply heavy controls and regulations.

Table 1. Cross-border Portfolio Investment Flows, 2002 and 2004

(a) 2002 Cross-border Portfolio Flows (Billion US dollars; Percentage of total)

	Investment to:									
Investment From:	NAFTA		EU-15		East Asia		Rest of the World		World Total	
Total Portfolio Investment										
NAFTA	424	(17.1)	1,190	(47.9)	320	(12.9)	549	(22.1)	2,483	(100.0)
EU-15	1,379	(19.7)	4,375	(62.5)	267	(3.8)	983	(14.0)	7,003	(100.0)
East Asia	601	(33.8)	654	(36.8)	81	(4.6)	442	(24.9)	1,778	(100.0)
Rest of the World	1,322	(46.1)	1,047	(36.5)	126	(4.4)	374	(13.0)	2,868	(100.0)
World Total	3,725	(26.4)	7,265	(51.4)	794	(5.6)	2,348	(16.6)	14,132	(100.0)
Long-Term Debt Securities Investment										
NAFTA	174	(23.7)	327	(44.5)	58	(7.9)	175	(23.9)	734	(100.0)
EU-15	679	(16.2)	2,825	(67.4)	82	(2.0)	606	(14.5)	4,193	(100.0)
East Asia	454	(34.2)	518	(39.0)	38	(2.9)	316	(23.8)	1,326	(100.0)
Rest of the World	873	(49.0)	642	(36.1)	54	(3.0)	211	(11.9)	1,781	(100.0)
World Total	2,180	(27.1)	4,313	(53.7)	233	(2.9)	1,309	(16.3)	8,034	(100.0)
Equity Securities Investment										
NAFTA	228	(14.4)	738	(46.5)	260	(16.4)	360	(22.7)	1,588	(100.0)
EU-15	541	(23.3)	1,292	(55.6)	183	(7.9)	306	(13.2)	2,322	(100.0)
East Asia	125	(36.3)	96	(28.0)	34	(9.8)	89	(25.9)	343	(100.0)
Rest of the World	152	(26.7)	258	(45.3)	31	(5.4)	129	(22.5)	570	(100.0)
World Total	1,047	(21.7)	2,384	(49.4)	508	(10.5)	883	(18.3)	4,823	(100.0)

(b) 2004 Cross-border Portfolio Flows (Billion US dollars; Percentage of total)

	Investment to:									
Investment From:	NAFTA		EU-15		East Asia		Rest of the World		World Total	
Total Portfolio Investment										
NAFTA	624	(15.0)	1,866	(45.0)	588	(14.2)	1,070	(25.8)	4,149	(100.0)
EU-15	2,117	(17.6)	7,709	(64.1)	578	(4.8)	1,622	(13.5)	12,026	(100.0)
East Asia	849	(32.3)	944	(35.9)	149	(5.7)	688	(26.2)	2,630	(100.0)
Rest of the World	1,877	(42.2)	1,733	(39.0)	182	(4.1)	650	(14.6)	4,443	(100.0)
World Total	5,468	(23.5)	12,252	(52.7)	1,497	(6.4)	4,031	(17.3)	23,247	(100.0)
Long-Term Debt Securities Investment										
NAFTA	218	(21.0)	438	(42.2)	62	(6.0)	319	(30.8)	1,037	(100.0)
EU-15	1,035	(14.8)	4,789	(68.4)	132	(1.9)	1,050	(15.0)	7,007	(100.0)
East Asia	615	(32.8)	718	(38.3)	49	(2.6)	492	(26.2)	1,875	(100.0)
Rest of the World	1,297	(46.9)	1,036	(37.5)	64	(2.3)	368	(13.3)	2,765	(100.0)
World Total	3,165	(25.0)	6,981	(55.0)	308	(2.4)	2,229	(17.6)	12,683	(100.0)
Equity Securities Investment										
NAFTA	389	(13.5)	1,253	(43.5)	523	(18.1)	718	(24.9)	2,882	(100.0)
EU-15	914	(21.6)	2,348	(55.5)	402	(9.5)	569	(13.4)	4,233	(100.0)
East Asia	212	(33.5)	179	(28.2)	78	(12.3)	164	(25.9)	632	(100.0)
Rest of the World	237	(24.5)	415	(42.9)	48	(5.0)	267	(27.6)	967	(100.0)
World Total	1,752	(20.1)	4,194	(48.1)	1,051	(12.1)	1,718	(19.7)	8,715	(100.0)

Note: NAFTA = North American Free Trade Area; EU-15 = European Union 15 countries;
East Asia = Japan; Korea; PRC; Hong Kong, China; Singapore; Indonesia; Malaysia; Philippines; Thailand; and
Source: International Monetary Fund, *Coordinated Portfolio Investment Survey*, December 2002, 2004.

Macroeconomic interdependence. An important consequence of these growing real and financial—albeit limited—linkages is the heightened macroeconomic interdependence and business cycle co-movements within East Asia. Rana (2006) provides rolling 10-year correlations of GDP growth for individual countries with ASEAN+3 (excluding the respective reference country) growth as a whole. These correlations, reported for 1989-2003 (end-dated), have been uniformly higher from 1998 on than before, although their levels for the PRC tend to

be lower than those of most other ASEAN+3 countries. By contrast, the growth-rate correlations between the United States and Europe (represented by Germany, France, and Italy) and ASEAN+3 have been progressively lower, becoming negative in the moving correlations ending 1998 to 2003 (see also Kawai and Motonishi, 2005).

3. EXCHANGE RATE ARRANGEMENTS IN EAST ASIA

Exchange rate arrangements in East Asia have evolved considerably since the Asian financial crisis of 1997–98. In the economies of this region, exchange rate behavior may often resemble a managed float or even a *de facto* peg despite the declared regime being one of currency flexibility. McKinnon (2005) goes so far as to claim that "fear of floating" (see Calvo and Reinhart, 2002) caused the crisis-affected economies of East Asia to revert to their pre-crisis dollar peg regimes once the crisis had passed.

As done in Kawai (2002), we examine the changing roles of the G3 currencies—the US dollar, the yen, and the euro (and its predecessor, the ECU)—as anchors for exchange rate stabilization. We report Frankel-Wei (1994) regressions of daily movements of individual East Asian exchange rates, expressed against the Swiss franc, on movements of the G3 currencies, using a single specification and a uniform set of periods for 12 emerging economy currencies. Unless affected by specification or omitted-variable problems, the estimated coefficients may be interpreted as the weights on the corresponding G3 currencies in exchange rate baskets, and the estimated standard error of the residual (Std-res in Table 2) as a measure of exchange rate volatility.

Shifting exchange rate arrangements. The regression results for the log first-difference in local currency exchange rates are summarized in Table 2, where the entire daily sample is divided into a series of 18-month sub-periods. In the pre-crisis period (January 1990–June 1997), the estimated coefficients on the US dollar were largely statistically significant and close to unity, the adjusted R^2 was close to 1 and the estimated Std-res was small for all economies. These results support the proposition that emerging East Asian economies operated *de jure* or *de facto* dollar pegs prior to the crisis, while the yen had positive (though small) weights in Singapore and, for certain sub-periods, in Thailand, Malaysia and the Republic of Korea (hereafter referred to as Korea).

In the crisis period (July 1997–December 1998), the regressions for many East Asian currencies show noticeable declines in US dollar weights and noticeable rises in exchange rate volatility (measured by the adjusted R^2's and Std-res). The decline in US dollar weights was most pronounced in Indonesia, Thailand, and Malaysia, and the rise in exchange rate volatility was pronounced in Indonesia, Korea, Thailand, Malaysia, and Philippines. Even economies not directly affected by the crisis, like Singapore and Taipei,China, saw declines in their US dollar weights and rises in exchange rate volatility. In the case of Singapore, the central rate was adjusted several times in order to weather the crisis. The importance of the yen in the currency baskets of several economies rose during the crisis, while the euro's importance did not. As far as regression results for spot exchange rates are concerned, Hong Kong, China and the PRC were immune to the regional currency crisis.

The post-crisis period (January 1999–April 2006) exhibits greater diversity in exchange rate baskets. While Malaysia returned to its pre-crisis US dollar peg in September 1998 (and maintained it until July 2005), other crisis-affected economies moved toward greater exchange rate flexibility. Economies under a stable dollar peg throughout most of the period, such as the

PRC and Hong Kong, China continue to display dollar coefficients close to unity and adjusted R^2's close to one. The PRC and Malaysia officially abandoned their pegs in July 2005 and began to allow gradual currency appreciation. The administrative revaluation of the yuan against the US dollar on 21 July implied a revaluation of over 2% also against the Swiss franc on that day and induced an appreciation of the yen against US dollar and Swiss franc that was about 70% as large as that of the yuan. The results in Table 2 suggest some regime change: the US dollar coefficient for the yuan was statistically significantly below unity, and the yen coefficient was significantly positive for the sub-period January 2005–April 2006. But if the 21 July 2005 observation is excluded, the estimated coefficients are 1.000 for the US dollar (statistically significant) and 0.003 for the yen (statistically insignificant). Allowing for a break in the trend rate of appreciation from the period before, to after, July 21, 2005 by means of a dummy variable that would allow adjustment of the intercept for the onset of the gradual appreciation trend did not materially affect the result.

Table 2. Regression Results for Logarithmic Exchange Rate Changes, Selected East Asian Currencies Before, During, and After the 1997-98 Crisis

(a) Hong Kong Dollar

Period	USD		JPY		EURO		R2-adj	D.W.	Std-res	No. Obs.
1990/01-1991/06	0.992	**	-0.001		0.006		0.9973	1.570	0.00042	390
1991/07-1992/12	0.997	**	-0.010		0.009		0.9957	2.581	0.00059	394
1993/01-1994/06	0.992	**	0.001		0.009	*	0.9974	2.178	0.00036	390
1994/07-1995/12	0.997	**	0.000		0.003		0.9994	1.986	0.00021	391
1996/01-1997/06	0.998	**	0.009	**	-0.008		0.9977	2.588	0.00028	391
1997/07-1998/12	1.001	**	0.007	*	0.001		0.9937	2.770	0.00053	393
1999/01-2000/06	0.999	**	0.001		0.003		0.9998	2.321	0.00011	391
2000/07-2001/12	0.999	**	0.000		0.002		0.9999	2.159	0.00008	391
2002/01-2003/06	1.000	**	0.000		0.001		0.9996	2.248	0.00013	390
2003/07-2004/12	0.982	**	0.021	**	0.001		0.9948	2.057	0.00055	394
2005/01-2006/04	0.992	**	0.028	**	-0.054	**	0.9899	2.835	0.00061	343

(b) Korean Won

Period	USD		JPY		EURO		R2-adj	D.W.	Std-res	No. Obs.
1990/01-1991/06	1.007	**	-0.014		-0.018		0.9338	1.985	0.00214	390
1991/07-1992/12	1.029	**	-0.015		-0.019		0.8102	2.003	0.00445	394
1993/01-1994/06	1.012	**	-0.020	*	0.002		0.9718	2.256	0.00121	390
1994/07-1995/12	0.981	**	0.080	**	-0.041		0.9327	2.013	0.00221	391
1996/01-1997/06	0.956	**	0.065	**	0.025		0.8584	1.804	0.00238	391
1997/07-1998/12	1.152	**	0.044		0.092		0.0912	1.608	0.02430	393
1999/01-2000/06	0.944	**	0.065	*	0.148		0.7472	1.692	0.00400	391
2000/07-2001/12	0.820	**	0.304	**	0.026		0.6639	2.527	0.00557	391
2002/01-2003/06	0.760	**	0.286	**	-0.100		0.4867	2.549	0.00586	390
2003/07-2004/12	0.806	**	0.224	**	0.060		0.7788	2.293	0.00397	394
2005/01-2006/04	0.661	**	0.267	**	0.000		0.5815	2.316	0.00412	343

Note: (constant not shown)

Table 2. Regression Results for Logarithmic Exchange Rate Changes, Selected East Asian Currencies Before, During, and After the 1997-98 Crisis

(c) Singapore Dollar

Period	USD		JPY		EURO		R2-adj	D.W.	Std-res	No. Obs.
1990/01-1991/06	0.740	**	0.084	**	0.179	**	0.8746	2.563	0.00274	390
1991/07-1992/12	0.749	**	0.126	**	0.107	**	0.9268	2.504	0.00221	394
1993/01-1994/06	0.811	**	0.080	**	0.063	*	0.887	2.475	0.00225	390
1994/07-1995/12	0.787	**	0.164	**	-0.009		0.9177	2.263	0.00210	391
1996/01-1997/06	0.790	**	0.113	**	0.104	**	0.9285	2.229	0.00147	391
1997/07-1998/12	0.648	**	0.353	**	0.036		0.4293	2.200	0.00722	393
1999/01-2000/06	0.819	**	0.124	**	0.158	*	0.8399	2.108	0.00280	391
2000/07-2001/12	0.777	**	0.198	**	0.048		0.8987	1.902	0.00229	391
2002/01-2003/06	0.673	**	0.299	**	0.039		0.8683	2.316	0.00208	390
2003/07-2004/12	0.640	**	0.245	**	0.189	**	0.9175	2.298	0.00195	394
2005/01-2006/04	0.593	**	0.308	**	0.106		0.8666	2.197	0.00185	343

(d) New Taiwan Dollar

Period	USD		JPY		EURO		R2-adj	D.W.	Std-res	No. Obs.
1990/01-1991/06	0.885	**	-0.003		0.147		0.4516	2.869	0.00857	390
1991/07-1992/12	0.986	**	0.033		-0.066		0.6340	2.897	0.00681	394
1993/01-1994/06	0.988	**	0.059		0.028		0.6662	2.877	0.00520	390
1994/07-1995/12	0.950	**	0.065	**	0.026		0.8957	2.020	0.00281	391
1996/01-1997/06	0.925	**	0.018		0.041		0.9385	2.310	0.00143	391
1997/07-1998/12	0.877	**	0.090	**	0.051		0.6122	1.420	0.00495	393
1999/01-2000/06	0.960	**	-0.001		0.062		0.6971	2.769	0.00431	391
2000/07-2001/12	0.982	**	-0.015		0.063		0.8222	2.093	0.00323	391
2002/01-2003/06	0.898	**	0.066	**	-0.026		0.9195	1.896	0.00174	390
2003/07-2004/12	0.902	**	0.103	**	0.023		0.8959	2.374	0.00254	394
2005/01-2006/04	0.803	**	0.152	**	-0.012		0.7603	2.149	0.00298	343

(e) Indonesian Rupiah

Period	USD		JPY		EURO		R2-adj	D.W.	Std-res	No. Obs.
1990/01-1991/06	0.956	**	0.030		0.041		0.9098	2.073	0.00255	390
1991/07-1992/12	1.002	**	-0.005		0.000		0.9901	2.290	0.00091	394
1993/01-1994/06	0.997	**	0.010		-0.007		0.9740	2.044	0.00116	390
1994/07-1995/12	0.992	**	-0.015		0.015		0.9709	1.998	0.00144	391
1996/01-1997/06	1.010	**	0.001		0.000		0.9370	2.164	0.00153	391
1997/07-1998/12	0.495		0.684	*	-0.122		0.0144	1.960	0.05316	393
1999/01-2000/06	0.858	**	0.258	*	0.126		0.1810	1.794	0.01591	391
2000/07-2001/12	1.119	**	0.022		0.198		0.2950	1.911	0.01261	391
2002/01-2003/06	0.864	**	0.091		0.002		0.4525	2.065	0.00630	390
2003/07-2004/12	0.817	**	0.197	**	0.039		0.6940	2.069	0.00488	394
2005/01-2006/04	0.715	**	0.144		0.154		0.3341	2.169	0.00685	343

Note: (constant not shown)

Table 2. Regression Results for Logarithmic Exchange Rate Changes, Selected East Asian Currencies Before, During, and After the 1997-98 Crisis

(f) Malaysian Ringgit

Period	USD		JPY		EURO		R2-adj	D.W.	Std-res	No. Obs.
1990/01-1991/06	0.908	**	0.050	**	0.067	**	0.9524	2.518	0.00177	390
1991/07-1992/12	0.889	**	0.037		0.051	**	0.9442	2.168	0.00205	394
1993/01-1994/06	0.896	**	0.023		0.038		0.8284	1.501	0.00300	390
1994/07-1995/12	0.865	**	0.083	**	0.017		0.9487	1.946	0.00175	391
1996/01-1997/06	0.907	**	0.044	**	0.045		0.9222	1.959	0.00162	391
1997/07-1998/12	0.779	**	0.364	**	0.021		0.1693	1.878	0.01539	393
1999/01-2000/06	1.004	**	-0.003		0.011		0.9985	2.993	0.00027	391
2000/07-2001/12	1.001	**	0.000		-0.001		0.9997	2.727	0.00012	391
2002/01-2003/06	1.001	**	0.000		-0.004		0.9989	2.974	0.00021	390
2003/07-2004/12	1.002	**	-0.003		-0.004		0.9986	2.992	0.00029	394
2005/01-2006/04	0.972	**	0.037		0.059		0.8479	3.043	0.00255	343

(g) Philippine Peso

Period	USD		JPY		EURO		R2-adj	D.W.	Std-res	No. Obs.
1990/01-1991/06	1.029	**	0.038		0.006		0.6885	2.013	0.00576	390
1991/07-1992/12	1.050	**	-0.107		0.097		0.6705	1.994	0.00645	394
1993/01-1994/06	0.995	**	-0.009		-0.067		0.6163	2.017	0.00537	390
1994/07-1995/12	0.980	**	0.060		-0.048		0.7797	2.222	0.00431	391
1996/01-1997/06	1.005	**	-0.005		-0.004		0.9936	2.201	0.00047	391
1997/07-1998/12	0.879	**	0.288	**	-0.015		0.1889	1.717	0.01442	393
1999/01-2000/06	0.919	**	0.085	**	0.118		0.7429	1.957	0.00400	391
2000/07-2001/12	0.955	**	0.026		0.035		0.3858	2.208	0.00876	391
2002/01-2003/06	0.867	**	0.086	*	0.088		0.6984	2.529	0.00383	390
2003/07-2004/12	0.923	**	0.049		0.002		0.8594	2.621	0.00295	394
2005/01-2006/04	0.865	**	0.089	*	-0.046		0.7937	2.264	0.00278	343

(h) Thai Baht

Period	USD		JPY		EURO		R2-adj	D.W.	Std-res	No. Obs.
1990/01-1991/06	0.955	**	0.031	*	0.034	*	0.9545	2.073	0.00176	390
1991/07-1992/12	0.960	**	0.020		0.032	**	0.9779	2.015	0.00134	394
1993/01-1994/06	0.967	**	0.012		0.015		0.9779	2.048	0.00105	390
1994/07-1995/12	0.875	**	0.069	**	0.052	**	0.9883	2.399	0.00084	391
1996/01-1997/06	0.832	**	0.178	**	0.137		0.4736	1.979	0.00618	391
1997/07-1998/12	0.608	**	0.312	**	0.100		0.1003	1.877	0.01722	393
1999/01-2000/06	0.824	**	0.123	**	0.166		0.5949	2.253	0.00532	391
2000/07-2001/12	0.823	**	0.201	**	0.058		0.7622	2.118	0.00400	391
2002/01-2003/06	0.752	**	0.207	**	-0.014		0.6579	2.600	0.00392	390
2003/07-2004/12	0.780	**	0.219	**	0.035		0.8978	2.116	0.00243	394
2005/01-2006/04	0.691	**	0.296	**	0.112		0.7781	1.944	0.00280	343

Note: (constant not shown)

Table 2. Regression Results for Logarithmic Exchange Rate Changes, Selected East Asian Currencies Before, During, and After the 1997-98 Crisis

(i) Chinese Yuan

Period	USD		JPY		EURO		R2-adj	D.W.	Std-res	No. Obs.
1990/01-1991/06	1.023	**	-0.036		0.011		0.7144	2.007	0.00517	390
1991/07-1992/12	1.045	**	-0.040		-0.062	*	0.8902	2.034	0.00319	394
1993/01-1994/06	0.967	**	0.083		0.057		0.1157	2.007	0.01993	390
1994/07-1995/12	1.030	**	-0.002		-0.030	**	0.9829	2.082	0.00112	391
1996/01-1997/06	1.019	**	-0.010		-0.013		0.9337	2.833	0.00157	391
1997/07-1998/12	0.996	**	0.002		-0.003		0.9917	2.478	0.00060	393
1999/01-2000/06	1.004	**	0.001		-0.015		0.9943	2.992	0.00052	391
2000/07-2001/12	1.000	**	-0.001		0.000		0.9999	1.988	0.00005	391
2002/01-2003/06	1.010	**	-0.002		-0.016		0.9870	2.921	0.00073	390
2003/07-2004/12	1.006	**	-0.008		0.008		0.9756	2.841	0.00121	394
2005/01-2006/04	0.963	**	0.078	**	0.000		0.9655	2.045	0.00114	343

(j) Cambodia Riel

Period	USD		JPY		EURO		R2-adj	D.W.	Std-res	No. Obs.
1990/01-1991/06	0.517		-0.399		-0.151		-0.0028	2.011	0.04578	390
1991/07-1992/12	0.223		0.436		0.019		0.0055	2.042	0.04296	394
1993/01-1994/06	0.253		0.281		0.269		0.0090	2.023	0.03384	390
1994/07-1995/12	0.881	**	0.139		-0.292		0.0971	2.034	0.01922	391
1996/01-1997/06	0.954	**	-0.152		-0.041		0.1120	2.088	0.01390	391
1997/07-1998/12	1.359	**	0.145		-0.784	**	0.1345	2.300	0.01935	393
1999/01-2000/06	-3.145		-2.784		11.471		-0.0011	1.989	0.51854	391
2000/07-2001/12	0.811	**	0.020		0.314	**	0.6028	2.574	0.00496	391
2002/01-2003/06	0.794	**	0.024		0.013		0.7120	2.852	0.00325	390
2003/07-2004/12	0.773	**	0.019		0.351	**	0.6574	2.471	0.00467	394
2005/01-2006/04	0.860	**	0.080		0.073		0.5267	2.271	0.00519	343

(k) Lao Kip

Period	USD		JPY		EURO		R2-adj	D.W.	Std-res	No. Obs.
1990/01-1991/06	0.401	**	0.132		0.059		0.0860	2.156	0.01328	390
1991/07-1992/12	0.217	*	0.175		0.222	**	0.1302	2.150	0.00982	394
1993/01-1994/06	0.427	**	0.010		-0.017		0.1092	2.106	0.00837	390
1994/07-1995/12	0.786	**	0.118		-0.165		0.1757	2.068	0.01313	391
1996/01-1997/06	0.697	**	-0.023		0.116		0.4025	2.101	0.00537	391
1997/07-1998/12	0.779	*	-0.223		-0.170		0.0125	2.154	0.03219	393
1999/01-2000/06	-4.850		-4.077		15.924		-0.0003	1.989	0.72591	391
2000/07-2001/12	0.775	**	-0.009		0.063		0.4815	2.327	0.00569	391
2002/01-2003/06	0.794	**	0.023		0.013		0.7716	2.852	0.00325	390
2003/07-2004/12	0.759	**	0.012		0.332	**	0.7016	2.582	0.00411	394
2005/01-2006/04	0.508	**	0.015		-0.236		0.0314	2.013	0.01669	343

Note: (constant not shown)

Table 2. Regression Results for Logarithmic Exchange Rate Changes, Selected East Asian Currencies Before, During, and After the 1997-98 Crisis

(I) Vietnam Dong

Period	USD		JPY		EURO		R2-adj	D.W.	Std-res	No. Obs.
1990/01-1991/06	0.528	**	-0.072		-0.131		0.0530	2.226	0.01400	390
1991/07-1992/12	0.433	**	0.121		-0.057		0.0613	2.101	0.01671	394
1993/01-1994/06	0.418	**	-0.022		0.041		0.0907	2.026	0.00923	390
1994/07-1995/12	0.767	**	0.039		-0.207	**	0.4244	2.187	0.00649	391
1996/01-1997/06	0.676	**	-0.003		0.145		0.3902	2.287	0.00555	391
1997/07-1998/12	1.076	**	0.081	*	-0.387	**	0.4563	2.598	0.00698	393
1999/01-2000/06	0.913	**	0.006		0.039		0.7773	2.903	0.00334	391
2000/07-2001/12	0.859	**	-0.032		0.207	**	0.7331	2.822	0.00366	391
2002/01-2003/06	0.799	**	0.024		0.012		0.7272	2.856	0.00315	390
2003/07-2004/12	0.767	**	0.055		0.263	**	0.7884	2.733	0.00336	394
2005/01-2006/04	0.860	**	0.030		0.187	*	0.7929	2.907	0.00278	343

Note: Asterisks indicate that the estimated coefficients are statistically significant at the 1% (**) or 5% (*) level. (constant not shown)

The appearance of the yen and euro rates having statistically significant effects on the HK dollar rate, as reported on the last line of Table 2 for Hong Kong, China, is also tenuous. Replacing the euro with the yuan for this period in the regression (not reported here) exhibited, quite plausibly, that there was a stronger co-movement of the HK dollar with the yuan than with the yen during the January 2005-April 2006 period, with the yen coefficient falling to 0.009 and the yuan coefficient 4 times greater at 0.039. The appreciable correlation (0.54) between the yen and the yuan and the high correlation (0.98) between the yuan and the US dollar muddy the resolution of which currency other than the US dollar might have influenced the HK dollar most.[2]

Indonesia is at the other extreme. Despite relatively large and statistically significant coefficients on the US dollar, the measured exchange rate volatility is substantially higher than in the pre-crisis period or in other economies. Evidently, the country has maintained an exchange rate regime close to a free float, despite frequent currency market interventions by Bank Indonesia to smooth the rupiah-dollar rate. Essentially, Indonesia has not been able to restore exchange rate stability against the dollar because of its difficult economic and social conditions.

In between these two groups lie economies that exhibit large US dollar coefficients, but ones that are smaller in size (Singapore, Korea, and Thailand) or that are associated with higher exchange rate volatility (Korea, Singapore, Thailand, and Philippines) than those of economies on *de jure* or *de facto* US dollar-based regimes. For these economies, the estimated weights on the dollar tend to be lower than in the pre-crisis period and the coefficient on the yen tends to be higher. Thus it is hard to argue that these countries have reverted to pre-crisis dollar-based exchange rate stabilization policies. But it is equally hard to argue that they have shifted to free floats. A notable observation is that Korea and Thailand—and, to some extent, Taipei,China—

[2] The author is thankful to George von Furstenberg who has made these observations in his own computations.

appear to have shifted to a *de facto* managed float, with reference to a currency basket with a smaller US dollar weight (around 0.6–0.7) and a larger yen weight (around 0.2–0.3) than in the pre-crisis period. These *de facto* baskets appear to be similar to that of Singapore, which has officially and operationally, maintained a managed float with a currency basket system.

Flexible yen vs. US dollar-based yuan. Among East Asian currencies, the yen has been the only currency that is virtually on a pure float. Although the Bank of Japan intervened periodically, and sometimes quite heavily, in the past, it has not done so since mid-March 2004. At the other end of the spectrum, Hong Kong, China and Brunei Darussalam use currency board systems, with their currencies institutionally pegged to the US and Singapore dollars, respectively. Other economies have intermediate arrangements, ranging from a managed float with relatively large exchange rate fluctuations (Cambodia, Indonesia, and Lao PDR) to a managed float with smaller rate fluctuations (Korea; Philippines; Singapore; Taipei,China; Thailand; and Viet Nam). As mentioned earlier, the PRC and Malaysia exited from a dollar-peg regime, and Malaysia has begun to allow greater flexibility since early 2006. Singapore maintains a formal currency basket arrangement, while Korea, Thailand, and, to some extent, Taipei,China are shifting to *de facto* currency basket systems. The thesis of a "revived dollar standard" (McKinnon, 2005) or a "new Bretton Woods system" (Dooley, Folkerts-Landau, and Garber, 2005) is too strong to characterize the entire East Asia region though it may not be entirely inappropriate to describe the PRC's dollar-based regime.

There are several reasons why a number of economies have moved away from dollar-based regimes. Emerging East Asian economies have found it increasingly inappropriate to use the US dollar as their sole anchor currency. With the high volatility of yen-dollar and euro-dollar exchange rates and given their diverse economic relationships globally—through trade, FDI, and other forms of capital flows—the benefits of using the US dollar as sole anchor have become limited. For much of emerging East Asia, the US is no longer the most dominant economic partner due to the traditional trade and FDI partnership with Japan and the European Union as well as the rising importance with other emerging economies in the region. These diverse economic linkages explain why a move away from dollar-based arrangements, and toward currency basket systems, has been more appropriate for ensuring greater exchange rate stability on an effective basis.[3]

Nonetheless, many emerging East Asian economies still seem to prefer some exchange rate stability—rather than complete flexibility—vis-à-vis the US dollar. This preference toward stability vis-à-vis the dollar (or the "fear of floating") may be driven, at least partly, by a desire to maintain relative international price competitiveness against regional competitors, such as the PRC. For most, critical bilateral exchange rates are those affecting trade with important partners (the US and Japan) as well as trade relative to key competitors (such as the PRC). Given the relative stability of the yuan to the US dollar, many East Asian economies would resist any rapid appreciation of their currencies against the dollar. Hence, greater yuan rate flexibility would not only entice other currencies to follow suit, but would contribute to the reduction of US dollar dominance within the region.

[3] East Asian currencies that were *de facto* tied to the US dollar became effectively overvalued in the pre-crisis period—i.e., from mid-1995—due to both higher domestic inflation than in the US and the dollar's appreciation against major industrialized currencies, particularly the yen and the deutschemark. With this US dollar appreciation, emerging East Asia saw its international price competitiveness deteriorate due to the *de facto* US dollar peg. Thus, economic activity began to slow. These were, at least, contributing factors to the Asian currency crisis.

4. IMPLICATIONS OF GLOBAL PAYMENTS IMBALANCES AND CAPITAL INFLOW SURGES

Global payments imbalances. Persistent global payments imbalances have raised concerns among policymakers, international financial institutions and academics as to the future course of the US dollar and the global economy.[4] The US has experienced rapidly rising current account deficits, while the East Asian economies—the PRC, Japan, and others in the region—and oil exporting countries have run large current account surpluses. International financial institutions regularly report such developments and comment on the sustainability of the implied gross and net flows of capital, macroeconomic policies, and exchange rate levels.

At the end of 2006, the PRC; Japan; Taipei,China; Korea; Singapore; and Hong Kong, China together held over half of the $5 trillion total of official foreign exchange reserves. East Asia has accumulated these sizable reserves because its current account surpluses have not been fully offset by net capital outflows; some countries like the PRC have even experienced large net private capital inflows, further contributing to reserve accumulation.[5] Between 2000 and 2006, East Asian central banks added an average $300 billion of foreign exchange reserves annually, of which an average $200 billion was estimated to be in US dollars (assuming that 2/3 of reserves were held in dollars), thereby financing close to 40% of the average $570 billion US current account deficit during the period.

The international consensus is that these payments imbalances are not sustainable, at least in the long run, and if left unaddressed, their continuation could result in an abrupt and disorderly adjustment of the US dollar. Any such development would clearly require that some or all East Asian currencies not only join, but even lead, the appreciation against the dollar as exchange rate changes could facilitate global adjustment in conjunction with other needed policy steps. However, as long as the PRC is willing to maintain its dollar-based regime, other economies have little incentive to allow rapid appreciation of their currencies vis-à-vis the dollar. But, over time, the PRC will find fewer incentives to maintain the current exchange rate regime. The PRC has clearly accumulated more foreign exchange reserves than are required to meet prudential requirements for liquidity and protection against volatile capital flows. Continuing reserve accumulation far in excess of these needs carries increasing domestic costs and risks.

First, under a tightly managed exchange rate regime and with growing foreign exchange reserves, the PRC has been sterilizing the impacts of intervention and has limited the expansion of central bank base money and commercial bank credits. In reality, however, reserve increases have been only partially sterilized, indicating that they have been translated into increasing base money and broad money supply. This can fuel over-investment, economic overheating, asset price bubbles, and a resumption of domestic inflation. As the banking sector primarily finances investment, rapid loan expansions can create future risks in the quality of bank balance sheets. Essentially, the authority cannot effectively tighten monetary conditions to reign in credit growth as long as the yuan is *de facto* stabilized against the US dollar. A high domestic interest rate under tightly managed exchange rates would encourage inflows of hot money through various channels—by bypassing capital and exchange controls—thereby frustrating monetary tightening. Second, the central bank potentially incurs large quasi-fiscal costs through continuous reserve accumulation. Currently, it appears that the People's Bank of China (PBC) does not incur income losses as the yields on US dollar reserves are higher than the domestic funding costs.

[4] See for example Obstfeld and Rogoff (2005), Blanchard, Giavazzi and Sa (2005), and Rajan (2006).

[5] Accumulation of foreign exchange reserves is an indication of currency undervaluation because without market intervention, the currency would tend to appreciate under a more flexible exchange rate regime.

But as the PBC tightens the monetary conditions and raises interest rates, income losses can emerge. Furthermore, PBC balance sheets are increasingly exposed to large capital losses due to US dollar depreciation.[6]

To summarize, the PRC will find it increasingly costly to maintain the current *de facto* US dollar-based regime and will eventually allow greater flexibility and appreciation of the yuan because of the need to better manage its domestic macroeconomic and financial conditions—i.e., to reduce overheating pressures and avoid a build-up of financial vulnerabilities—and to limit the quasi-fiscal cost of holding large amounts of official reserves. The central bank would have every incentive to raise monetary policy effectiveness by intervening much less in the currency market and allowing greater exchange rate flexibility.

Collective exchange rate adjustment in East Asia. In the absence of globally concerted efforts to resolve global payments imbalances, the risk will mount of an abrupt and sharp adjustment of the US dollar, forcing major floating currencies to undergo sharp appreciations vis-à-vis the dollar. If this happens, many East Asian authorities—even those with currency flexibility—may tend to resist market forces in order to maintain international price competitiveness against their regional neighbors, particularly the PRC should the yuan continue to be pegged to the US dollar.

In the event of significant, region-wide upward pressure on currencies vis-à-vis the US dollar, East Asian economies should adjust exchange rates collectively. Collective currency appreciation would spread the adjustment cost across East Asia, thus minimizing and balancing costs from the perspective of individual economies. Simple calculation would indicate that a 20% collective appreciation of East Asian currencies vis-à-vis the US dollar implies only a 9% effective (or trade-weighted) appreciation against trading partners—given the intra-regional trade share being 55%—even if all other non-East Asian currencies remain stable vis-à-vis the dollar. However, to the extent that other currencies also appreciate vis-à-vis the dollar, the degree of effective appreciation of the East Asian currencies would be more limited; for example, if other currencies appreciate vis-à-vis the dollar by 10% and 20%, then the East Asian currencies appreciate only 7% and 4%, respectively, on an effective basis—on the assumption that East Asia's trade share with the US is 20%. Even with a 30% collective appreciation vis-à-vis the dollar, the East Asian currencies do not appreciate much on an effective basis.

Joint currency appreciation requires a mechanism to ensure intraregional exchange rate stability. For this to happen, the existing policy dialogue processes among the region's finance ministers (such as ASEAN+3) and central bank governors (such as EMEAP) can play a critical role. However, it is important to point out that, although exchange rate adjustment is necessary and desirable, rate flexibility is no panacea for resolving payments imbalances. Japan has allowed

[6] Assuming that roughly 2/3 of official reserves are in US dollars, the PRC holds roughly $700 billion in dollar assets (about one-third the PRC's GDP) and $300 billion in euros and other currencies. A 20% depreciation in the US dollar against the yuan would generate capital losses of $140 billion, roughly 7% of GDP. However, these accounting losses on the PBC's balance-sheet must be kept in economic perspectives. If the US dollar price of traded goods is to rise (by 20% or its fraction) on account of the dollar depreciation (by 20%) against the yuan and this inflation is translated into higher nominal short-term interest rates on liquid dollar instruments—in which the bulk of the PRC's official reserves are invested—so that the US short-term real interest rates go up or are at least kept unchanged, the PRC or any other country holding liquid dollar claims would not incur losses of real purchasing power over traded goods. This partly explains why Germany and Japan did not appear to have suffered grievous losses on their US-dollar reserve holdings—except in the late 1960s and 1970s—despite continuous trend appreciations of the deutschemark and the yen against the US dollar.

freely flexible exchange rates since mid-March 2004, following a period of heavy market interventions. In the post-intervention period, the yen has been weak despite large current account surpluses, mainly because of the zero- or low- interest rate policy and active yen-carry trades.[7] Even yen appreciation may not significantly reduce Japan's current account surplus, which is the outcome of savings and investment behavior. But at least exchange rate flexibility prevents reserve accumulation, ensures monetary policy independence and sets the ground for facilitating a possible payments correction.

In addition to the possibility of disorderly unwinding of global payments imbalances, East Asia also faces the challenge of surges in short-term capital inflows. With the abundance of global liquidity, international investors have been channeling liquidity to East Asia thereby putting upward pressure on the values of many regional currencies. Allowing currency appreciation is advisable in the presence of domestic inflationary pressure and incipient asset price bubbles but it can damage international price competitiveness. One of the most reasonable policy options is to allow collective appreciation, which does not differentially affect individual countries' price competitiveness. Such a development could pre-figure the beginning of more formal monetary and exchange rate policy coordination within the region.

5. PROSPECTS OF REGIONAL EXCHANGE RATE POLICY COORDINATION

So far we have argued that there is a strong case for a collective appreciation of East Asian currencies vis-à-vis the US dollar. The next issue is how a mechanism can be introduced to achieve such coordination in the region. There are at least two ways to do this. One is for each economy to stabilize its currency to a common key currency or a common basket of key (and other) currencies. The other way is for these economies to jointly create a regional, cooperative system similar to the Snake or Exchange Rate Mechanism (ERM) in Europe. Given that economic (particularly structural) convergence among the East Asian economies is not sufficiently advanced—and that political relationships are not sufficiently mature to support the creation of a tightly coordinated regional system— the first option appears more realistic. Only with sufficient economic convergence—and with strong political consensus—East Asia may move to the stage of joint exchange rate stabilization.

Currency basket system. Given East Asia's diverse economic relationship with the major countries and areas in the world, the traditional practice of choosing the US dollar as the region's sole monetary anchor is no longer the best policy. An obvious alternative is to choose the yen and/or the yuan as a monetary anchor, given the size and importance of Japan and the PRC in East Asia. However, the yen's power waned in the 1990s due to Japan's lost decade following the bursting of asset price bubbles, though it still has potential to play a critical role. The yuan's international role will rise over time, but decades will have to pass before it becomes fully convertible and can assume an international currency status equivalent to that of the US dollar, the euro, or the yen. Some East Asian economies—particularly those with strong trade ties with the PRC—may consider pegging their currencies to the yuan as desirable from trade perspectives, but many other economies with increasingly open capital accounts will have little

[7] The Bank of Japan (BOJ) abandoned its "quantitative easing policy" in March 2006 and started to reduce commercial banks' current account reserves at the BOJ while keeping the short-term interest rate virtually at zero. The BOJ then raised its interest rate to 0.25% in July 2006 and to 0.5% in February 2007. Once Japan fully overcomes price deflation and the BOJ normalizes its monetary policy, the yen is expected to start appreciating with an unchanged US monetary policy. This could encourage the unwinding of yen-carry trade positions, thereby further accelerating the pace of yen appreciation.

incentive to do so because of the limited usefulness of the yuan for international settlement, clearance, financing and liquidity holding. Other East Asian economies, however robust their monetary policies, are too small for their currencies to take on a meaningful international role. This clearly makes it desirable—even necessary—to introduce a mechanism for intraregional exchange rate stability based on a currency basket, as no single currency is capable of playing a monetary anchor role at least in the near future.

Three options can be considered for the region's currency basket: (i) a G3 currency basket comprising the US dollar, the euro, and the yen; (ii) a G3-plus currency basket comprising the US dollar, the euro, the yen, and emerging East Asian currencies; and (iii) an Asian Currency Unit (ACU)—an appropriately weighted basket of East Asian currencies including the yen, yuan, won, baht, ringgit, etc. The first two options would not require a substantial degree of policy coordination because they rely on external nominal anchors. But the third option requires a high degree of monetary policy coordination, as a regional nominal anchor would have to be jointly established—and neither Japan nor the PRC is likely to play the sole leadership role at least for now. The first option is the simplest, and the third option the most complex. One of the advantages of the second option is that it will be easier to move to the third option at a later stage by reducing weights on the dollar and the euro to zero.

So long as Japan continues to maintain its current free float, it would make sense for other economies in East Asia, including the PRC, to adopt a G3 basket system (the first option). By so doing, they could enjoy more stable effective exchange rates, with less susceptibility to dollar-yen and dollar-euro fluctuations than a standard US dollar-based system. Korea and Thailand, in recent years and without any formal commitment, appear to have already adopted a regime resembling a G3 basket system. Singapore has already been managing its exchange rate in a manner of a G3-plus basket system (the second option) as its basket apparently includes the US dollar, the euro, the yen and other major and regional currencies. In July 2005, the PRC and Malaysia also started to move in this direction.

By agreeing on the adoption of a G3 or G3-plus currency basket, East Asian economies will have in place a mechanism through which collective exchange rate adjustment can be engineered. First, this system is particularly suited to the PRC as adopting a freely flexible exchange rate regime is ill-advised unless the country is confident of the depth, functioning and maturity of its money markets and the health of its banking sector, and is ready for advanced liberalization of capital accounts. Until then a G3 or G3 basket system would serve the PRC best in striking the difficult balance between maintaining a certain degree of exchange rate stability while allowing sufficient exchange rate flexibility against the US dollar—particularly given the backdrop of US current account deficits and the PRC's rising surpluses and official reserves. Second, this system can protect East Asia as a whole against the possibility of a sharp fall in the value of the US dollar in the face of mounting global payments imbalances and/or surging capital inflows.

Steps toward East Asian monetary integration. The measures offered here are intended to provide East Asia with a buffer against sharp depreciation of the US dollar and become a stepping stone toward more formal exchange rate policy coordination and the creation of a monetary zone in East Asia. Such a zone may be characterized by exchange rates that are relatively stable regionally while exhibiting greater flexibility against the US dollar. Following the European example, the transition to an integrated monetary zone could be navigated in several steps, starting from informal to formal policy coordination, and then to tighter policy coordination. East Asian economies are already in the early stage of loose, informal policy coordination, which could be further strengthened. They then could introduce formal policy coordination by

adopting a G3-plus currency basket system, and move to more rigid policy coordination for intraregional exchange rate stabilization.

The first step is the introduction of informal policies that attempt to stabilize exchange rates against a basket of G3 or G3-plus currencies rather than against the US dollar alone. This can be done by those economies under US dollar-pegs to reduce dollar weights in their exchange rate management and by all emerging East Asian economies to adopt managed floating targeted at a G3 or G3-plus currency basket. The currency weights in the basket could vary across countries, at least initially; they could depend on the relative importance of the G3 or G3-plus countries as trading partners and FDI sources, and on the attractiveness of holding the component currencies as official reserves. How strictly countries stabilize currencies to this basket should depend in each case on country conditions and preferences. National monetary authorities can maintain most of their independent policy-making by combining an appropriately defined inflation targeting policy and basket-based managed floating. At the same time, an ACU index can be introduced as a useful tool in measuring the degree of joint movements of East Asian currencies and the degree of divergence of each currency movement from the regional average set by ACU.[8] Once the PRC moves to a more flexible exchange rate regime, ACU index movements and divergences of component currency movements can provide more meaningful information.

This informal currencycoordination should be complemented by stronger institutional arrangements for financial cooperation. This includes an enhanced version of the regional reserve pooling arrangement (the Chiang Mai Initiative, or CMI), the regional economic surveillance process (Economic Review and Policy Dialogue, or ERPD), and the initiatives for Asian bond market development (the Asian Bond Markets Initiative, or ABMI; and the Asian Bond Fund, or ABF), under the aegis of ASEAN+3 finance ministers or Executive Meeting of East Asia-Pacific Central Banks (EMEAP) governors.[9] The CMI can be strengthened through enlarging currency swap size, multilateralizing swap arrangements, and further loosening its linkage with International Monetary Fund (IMF) programs. Some progress has already been made in this direction. The ERPD surveillance process can be strengthened to address earlier concerns that a liquidity fund that lent too generously with too little conditionality might create a moral hazard for governments on the receiving end—as well as for international investors having stakes in the countries in question. It should focus more intensively on exchange rate issues by using an ACU index and divergence indicators. Asian bond market initiatives can be strengthened to help channel East Asia's massive savings for the region's productive investment through better market infrastructure and institutional cooperation.

The second step is the joint adoption of a formal policy of stabilizing exchange rates against a common basket of G3-plus currencies (i.e., the US dollar, the euro, and the ACU) to ensure relative stability of their effective exchange rates and, hence, intraregional exchange rates. The basket stabilization policy will have to be clearly defined with transparent rules on exchange rate parity against the common G3-plus basket, a relatively wide exchange rate band (like ±10%) around parity, and adjustment of both the parity and the band (along the line of Williamson 2005). The authorities would allow greater exchange rate flexibility vis-à-vis the US dollar while

[8] The ACU could also be developed for invoicing trade-related transactions and serving as a denomination for local-currency bond issues.

[9] EMEAP membership includes Australia, the PRC, Indonesia, Japan, Korea, Malaysia, New Zealand, Philippines, Singapore, and Thailand. See Kawai (2007) for a review of recent financial cooperation initiatives in East Asia. Eichengreen (2006) recommends the "parallel currency approach" with regard to ACU while Europe instead adopted the official ECU and ERM.

enjoying a lesser degree of national monetary policy independence. The ACU index should continue to serve as an important indicator in measuring joint movements and divergences of East Asian currencies.

Supporting institutional arrangements should be much more developed than in the first step. The reserve pooling arrangement (CMI) will have been fully multilateralized; a joint ERPD by finance ministers and central bank governors will have been introduced; an independent secretariat will have been created to support CMI and ERPD; and various regional entities will have been established to support the development of local-currency bond markets, including credit guarantees and enhancements, and regional settlements and clearance.

The third step is the launch of more systematic intraregional exchange rate policy coordination. As East Asia becomes more integrated, achieves further economic convergence, and hence is better positioned to commit to more rigid policy coordination, a multi-country framework for intraregional exchange rate stabilization can be developed. A reasonable option is the introduction of an Asian Snake or ERM. All currencies are allowed to become freely flexible vis-à-vis external currencies, such as the US dollar and the euro, but maintain intraregional stability. Intraregional rate stability may be achieved through joint stabilization of individual currencies to the ACU. The mechanism should include well-defined monetary policy and intervention rules so as to provide a credible monetary anchor within East Asia as well as a fully elaborated short-term liquidity support arrangement, which is large and speedy enough for frequent interventions in the region's currency markets.[10] Fiscal policy rules may also be designed to lend credibility to the exchange rate stabilization scheme.

A practical approach is to take a multi-track, multi-speed approach, whereby economies ready for deeper policy coordination begin the process while others prepare to join later. A group of economies that are sufficiently integrated—Japan and Korea; or the PRC and Hong Kong, China; or Singapore, Malaysia, and Brunei Darussalam—and with sufficient political commitment, may wish at this stage to initiate subregional currency stabilization schemes. Each group would intensify monetary and exchange rate policy coordination while allowing the possibility for others to join them subsequently. Over time these groups may start negotiations to integrate into a larger monetary zone.

6. CONCLUDING REMARKS

In East Asia, market-driven economic integration is likely to continue, paving the way toward the emergence of an autonomous economic area comparable in many respects to the EU. If such an area evolves into a regional monetary zone, the formation of a global, tri-polar currency system based on the US dollar, the euro, and a collection of Asian currencies is a plausible future scenario. We have tried to tackle several questions: whether the possible unwinding of global payments imbalances and/or the surge of massive capital inflows to the region may accelerate this trend; whether the People's Republic of China's (PRC) exchange rate regime reform is beneficial to the PRC itself and East Asia as a whole; under whose monetary policy anchor—Japan, the PRC, or a collection of East Asian economies—a regional monetary zone

[10] Under the ERM of the European Monetary System, the deutschemark emerged as a *de facto* anchor currency despite the system having been designed as a symmetric exchange rate stabilization scheme. In Asia, it is entirely possible for the yen, the yuan or another currency to play such an asymmetric, monetary-anchor role, but the choice will be left to the natural evolution of non-inflationary policymaking and credibility of the region's central banks.

may take shape; and how East Asian economies can move toward closer exchange rate policy coordination.

The answers are far from clear. The initial impetus toward regional exchange rate coordination may well be provided by significant upward pressure on East Asian currencies, including the yuan, vis-à-vis the US dollar, prompted by a rapid unwinding of trans-Pacific payments imbalances or massive inflows of capital to East Asia. As East Asia could be most severely affected by an abrupt and sudden collapse of the US dollar, they have every incentive to collectively prepare for such an event. If they must accept currency appreciation, it is desirable to do so collectively while maintaining intraregional exchange rate stability, so that adjustment costs can be spread among them. For such a coordinated process to begin, the PRC needs to increase its exchange rate flexibility and accept the market-driven appreciation of its currency, thereby ending its *de facto* US dollar-based stabilization policy. Hence the issues of (i) managing market-driven appreciation of the yuan vis-à-vis the US dollar, and (ii) stabilizing the exchange rates throughout East Asia, need to be addressed separately.

Regarding the first issue, we have argued that it is in the PRC's best interest to reform its exchange rate regime by allowing greater yuan flexibility vis-à-vis the US dollar and significantly slowing the volume and pace of reserve accumulation, given the potentially grave monetary and financial consequences for the domestic economy. The PRC clearly needs to acquire the ability to set independent monetary policy in order to prudently manage domestic macroeconomic and financial conditions. The country has already made an initial move in this direction by allowing gradual yuan appreciation vis-à-vis the dollar. Building on this policy move, the PRC needs to further increase yuan rate flexibility so that all emerging economies in East Asia will be able to join the move toward collective exchange rate management against the dollar. Such a joint response has potential to lead to the formation of an East Asian monetary zone, exhibiting exchange rate flexibility against the dollar and exchange rate stability against regional currencies—in a way that supports the region's close economic linkages, shaped over the last several decades.

With regard to the second issue, given that no single currency is appropriate as a monetary policy anchor for East Asia, a pragmatic first step toward exchange rate coordination is the shift to managed floating that relies on a G3 or G3-plus currency basket, complemented by enhanced institutional arrangements—such as a multilateralized reserve pooling arrangement and an effective regional surveillance process. The second step is the adoption of a formal, common G3-plus currency basket system, with transparent rules of parity, band, and interventions. After having secured a substantial degree of economic and structural convergence and strong political commitment, the region can then move toward tighter policy coordination for intraregional exchange rate stability. At this stage, participating economies may consider adopting a multi-country policy framework, like the European Snake or Exchange Rate Mechanism, possibly based on currency stabilization to the ACU, accompanied by well-defined monetary policy and intervention rules and a very short-term liquidity support arrangement. But this is only a future possibility that would require a substantial degree of broad-based political consensus and support.

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