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Enhancing the Chiang Mai Initiative (CMI) to Address the Medium-Tem Needs and Vulnerabilities of the Region:

(A Possible Capital Market Solution to the Problem of Risk)

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ACRONYMS USED

ADB	Asian Development Bank
ASA	ASEAN Swap Agreement
ASEAN	Association of Southeast Asian Nations
ASEAN+3	ASEAN plus People's Republic of China, Japan and Korea
BIS	Bank of International Settlements
BSA	Bilateral Swap Agreement
CMI	Chiang Mai Initiative
CNY	Chinese Yuan
EWS	Early Warning System
GFSR	Global Financial Stability Report
IFS	International Financial Statistics
IIF	Institute for International Finance
IMF	International Monetary Fund
IMPST	Indonesia, Malaysia, the Philippines, Singapore and Thailand
INR	Indonesian Rupiah
JPY	Japanese Yen
KRW	Korean Won
LIBOR	London Interbank Offer Rate
PHP	Philippine Peso
SGD	Singapore Dollar
THB	Thai Baht
USD	United States Dollar
WB	World Bank

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EXECUTIVE SUMMARY

The 1997 Asian financial crisis is now understood to have emanated from the capital account of the Balance of Payment. Almost USD96 billion in portfolio inflows went into Thailand, the Philippines, Indonesia and Korea between 1993 and 1996 which is an eight-fold increase from the portfolio inflows from 1990 to 1992. At the level of each economy, the inflows actually increased 5x for Korea, 19x for Thailand, 41x for the Philippines and 76x for Indonesia over the two comparative periods.

It is well known by now that the traditional interest rate cure exacerbated the problem. But the more interesting point is that portfolio investments did not reverse immediately as the crisis unfolded. In fact, any reversal was with a lag and generally in token amounts when compared to subsequent inflows. Clearly, something continues to attract these flows despite the perceived volatility of the region.

This brings to the fore the new role of the foreign exchange market. Foreign exchange is no longer just a price that is driven and determined by external trade. Instead, it is now a commodity by itself that is governed by its own pricing framework. According to the Bank of International Settlements (BIS), the 2004 cross-border position of reporting banks stood at USD9,209.1 billion (Q1) with international debt securities at USD12,332 billion (Q2). This is separate from the USD197,167 billion in notional amounts outstanding for over-the-counter (OTC) derivatives as of end 2003.

Capital flows are however considered unstable funding sources. Yet, there is also a recognition that foreign saving can augment the scarce capital resources in most of East Asia. In general, the core issue is not whether external resources can augment domestic saving but rather in deciding how to manage the mix. Indeed, foreign saving as an incremental resource could generate additional growth which in turn attracts more foreign investments. Yet at the back of this virtuous spiral is the basic point that capital flows are driven by their own objectives which can at times be inconsistent with the needs of the recipient country.

For the Chiang Mai Initiative (CMI) then, the underlying concern is how to maximize the upside potential of capital flows while managing the downside risk of herd-like reversals. The CMI has traditionally approached this issue as a liquidity concern, creating various means through which requesting economies could avail of any excess liquidity from the lending economies. Without much surprise, prior research have commented that the liquidity is small relative to available reserves, that a quicker disbursement of funds would be useful and that the “opt-out” clause weakens the collective resolve to address the periodic difficulties.

This paper considers the liquidity aspect in its two components. First while it is true that Japan, China, Hong Kong and Singapore had international reserves in excess of the billions that flowed out in the early months of the crisis, it is not clear *ipso facto* how much of these reserves were openly available beyond the risk to their own economies. Since USD32.5 billion or 27% of the USD117.9 billion in official assistance provided to Thailand, Indonesia and South Korea were actually funded by ASEAN+3 the

issue then goes beyond a simple “access” problem.

Second, the BIS reports that the *average daily* turnover in the foreign exchange market is USD2,408 Billion based on survey data from participating central banks. Of this amount, USD133 Billion comes from the 5 original ASEAN economies and another USD322 Billion is accounted for by the “Plus 3" economies. The sheer size of this *daily turnover* is staggering but what complicates the situation is *concentration risk*. Since China, Japan and Korea — who are the providers of swap funds under the BSAs — must also contend with perturbations in their own markets (USD220 Billion daily), it is no longer obvious to what extent the “Plus 3" economies have “excess” reserves.

ASEAN then faces an allocation problem at two levels: (1) a pure liquidity problem in the context of its own daily market turnover and (2) what can be provided by the “Plus 3" economies given the latter’s high-volume-high-turnover requirements in their own economies. The solution to either allocation problem is not at all obvious. In our view, what it provides is strong evidence that ASEAN is not likely to have enough public resources to fully offset the volatilities generated in the foreign exchange market.

We then ask what we believe to be the more fundamental question: What is driving these flows?

In answer to this question, this study has found support in the result of other studies to show that financial prices do drive these flows. Whether we label it as either “returns” or “diversification”, the fact still remains that there is a structure of incentives embedded in these financial prices which savers, investors and speculators alike respond to. Contagion just compounds the situation because of the heightened correlation within ASEAN even for investment positions that are inherently disjoined. We also showed some empirical validation that within ASEAN some of these prices remain misaligned, leaving the region exposed to the risks of further volatilities, despite the fact that the general consensus is for “low vulnerability” due to increased international reserve holdings, improved bank balance sheets and a better handling of the external debt situation.

Given these, our recommendation for enhancing the CMI is premised on the view that the core issue is the management of risks. In particular, we recommend a 3-stage initiative.

First, as a matter of practical consideration, the most immediate action that ASEAN can take is to *develop the active and transparent use of forward prices*. This is because these prices provide the information that would initiate investment flows that would enforce *ex-post facto* parity conditions. This parity in prices is not an automatic outcome of market activity as this study has identified cases of systematic deviations from parity conditions. However, the task is not to rigidly set the “correct” price levels but rather to be transparent about any misalignment in prices. This serves as the first step so that market signals can be acted upon as part of the necessary process of correcting misalignments.

We should point out though that we are not suggesting that forward markets currently do not exist. Instead the recommendation is to actively intervene in the

forward markets rather than in the spot market. Whether these interventions are via non-deliverable forwards at one extreme end to a developed derivatives market at the other end is a decision that will be made by each economy. This decision however does not change the basic intent of using forward prices to force consistency in spot prices. It is for this reason that this 1st stage is a task of managing signals.

Second, with prices generally aligned, diversifiable risk will have to be the next concern. In this context, pre-emptive diagnostics & surveillance such as Early Warning Systems (EWS) play a key role.

Although recent tests show disappointing results for out-of-sample forecasts, an EWS provides value by being descriptive (i.e., what is causing what) and prescriptive (i.e., what then can be done). At the next level though, an effective EWS must be a forecasting model in order for it to provide pre-emptive signals. Here its value is not to explain crisis triggers but precisely to limit the fallout from any potential shocks by allowing policymakers the leeway to make *ex ante* corrective action.

One approach that ASEAN+3 may wish to explore at this time is to focus on a *surveillance system that uses high-frequency data, specifically financial prices*. This addresses (1) the mismatch in the periodicity of the flows (daily) and most economic variables (monthly and quarterly) as well as (2) any comparability issue of economic variables across economies. To complement the use of high-frequency data, any initiative to pursue the *endogenous detection of crises within econometric models* is likely to reap substantial rewards. This should complete the surveillance system as a signaling tool because it becomes preventive rather than reactive.

The 3rd leg of the strategy is to *develop a cross-border capital market*. This is the ultimate structural solution that will allow saving to be retained within the region instead of flowing into the US market. By minimizing the need to convert out of local currencies into USD, it also mitigates the exchange rate adjustment which is itself feeding the volatilities faced by the CMI.

This 3-prong strategy recommended by this study is a fairly straightforward view of an admittedly complex situation. Its one clear advantage, we believe, is its simplicity. We offer what is essentially a market solution to the current market phenomenon of capital flows which this study has identified as the key issue underlying the long term viability of the Chiang Mai Initiative. Our recommendation also respects the fact that private funds reflect the vagaries of private interests which public policy may find difficult to contain across unimpeded markets. Undoubtedly, the essence of the proposal is our contention that it is better to contain the factors that cause the capital to flow in the first place rather than to remedy the affect-attack effects.

1. Introduction: Putting the Issues in Perspective

It is highly unlikely that the 1997 Asian Financial Crisis will ever be relegated into a mere footnote in economic literature. Not only did it introduce "contagion" as the terminology in vogue, the paradigm shift from a region that was supposed to have gone through a 25-year miracle to one in severe crisis within seven years of that miracle is a contrast in economic advocacy that is just too sharp to overlook.[1]

Beyond the labels, however, the 1997 crisis is particularly prominent because the source of the crisis did not come from the traditional weakness of a current account imbalance. In fact, a simple review of the trade figures for the affected economies of Thailand, the Philippines, Indonesia and South Korea would indeed show deficits in the goods balance (see table 1) but not in magnitudes that would have indicated the coming of a regional crisis or the extent of its severe ramifications. By far, it was only the Philippines which was apparently in systemic danger with a persistent goods-balance deficit of over 50% of its goods exports and yet many would concede that the extent of the crisis in the Philippines was the least among the main affected economies. In contrast, Indonesia was one of the hardest hit by the financial crisis despite maintaining a surplus in the goods balance for the four years heading into 1997.

Table 1
Exports and Imports of Goods
(In Million US Dollars)

		1993	1994	1995	1996
Thailand					
	Exports	36397.6	44477.8	55446.6	54408.4
	Imports	40694.4	48204.1	63414.9	63896.6
	Balance	-4296.82	-3726.26	-7968.27	-9488.16
Philippines					
	Exports	11375	13483	17447	20543
	Imports	17597	21333	26391	31885
	Balance	-6222	-7850	-8944	-11342

Source of data: International Financial Statistics, IMF

[1]The World Bank dates the East Asian miracle from 1965 to 1990.

Table 1 (continued)
Exports and Imports of Goods
(In Million US Dollars)

		1993	1994	1995	1996
Indonesia					
	Exports	36,607.00	40,223.00	47,454.00	50,188.00
	Imports	28,376.00	32,322.00	40,921.00	44,240.00
	Balance	8,231.00	7,901.00	6,533.00	5,948.00
Korea					
	Exports	82,089.40	94,964.30	124,632.00	129,968.00
	Imports	79,770.90	97,824.20	129,076.00	144,933.00
	Balance	2,318.50	-2,859.90	-4,444.20	-14,964.70

Source of data: International Financial Statistics, IMF

The consensus view of course is that the crisis emanated from the financial account of the Balance of Payments. This is easily borne by the data below (table 2) where roughly USD95,874 million poured into these four economies from 1993 to 1996. When compared to the trade data, this figure may look surprisingly small. It bears mentioning however that unlike trade in goods which can be physically accounted for, financial flows are notoriously difficult to monitor. Since funds are "fungible" by definition, these resources can be quite easily "recycled" within a given period in a manner that the data does not capture well.[2] For these reasons, the likelihood of under-reporting must be seen as a distinct possibility.

The one point where the portfolio investment inflow data is unequivocally significant is the tremendous increase during the 1993-1996 period compared with the 1990-1992 years. In the aggregate, the almost USD96 billion in portfolio inflows for these four economies represents an eight-fold increase from the USD10,284 million in total portfolio investment inflows from 1990 to 1992. Even this is an understatement

[2]As an analogy, consider bank deposit data. Since we know the beginning and ending balance, we normally attribute the difference as a net flow. However, this makes no inference of how much funds were actually transacted and how often were the deposits & withdrawals.

Table 2
Portfolio Investment Into the Reporting Economies
(In Million US Dollars)

	Thailand	Philippines	Indonesia	Korea
1990	-38.09	-50.00	-93.00	661.50
1991	-81.06	125.00	-12.00	2,905.80
1992	924.36	155.00	-88.00	5,874.50
1993	5,455.34	897.00	1,805.00	11,087.80
1994	2,486.23	901.00	3,877.00	8,713.10
1995	4,082.93	2,619.00	4,100.00	14,619.30
1996	3,585.10	5,126.00	5,005.00	21,514.40
1990 - 1992	805.21	230.00	-193.00	9,441.80
1993 - 1996	15,609.60	9,543.00	14,787.00	55,934.60

Source of data: International Financial Statistics, IMF

when one considers that the increase is 19-fold for Thailand, 41-fold for the Philippines and 76-fold for Indonesia that also includes a change from an outflow into an inflow.

Analytically, all of these have a bearing on two related points. ***First***, the traditional interest rate cure in all likelihood exacerbated the problem. Since a key attraction of the region was its higher financial returns (table 3), raising interest rates would have provided a windfall to those holding floating rate instruments. In the meantime, the volatility that was driving the depreciation of the local currency would have also aided those who had precisely taken a "short position" on the local currency.[3]

Understandably, the spike in interest rates was meant to cause a contraction in domestic demand through a reduction in imports and thus create a current account surplus. Unfortunately, in hindsight this proved to be a misread of the source of the problem and instead the rising interest rates may have provided improved returns on floating rate instruments. Indeed, it remains an interesting point to note that when one

[3]The idea is to incur a liability in the currency expected to weaken and simultaneously invest in the other currency. A depreciation creates a windfall since the maturing asset can be converted at a level more than the stated obligation which was at the old exchange rate.

accounts for the portfolio inflows on a quarterly basis for Thailand, Indonesia and Korea, one finds (table 4):

a) portfolio inflows in Thailand actually did not reverse until Q2 of 1998 (and only in token amounts) despite the early and pronounced attacks on the Baht as early as late April-early May 1997;
b) portfolio inflows in general did not reverse until Q4 of 1997;
c) cumulative inflows in 1997 where 3 times more than outflows in that year;
d) total portfolio outflows from 97:Q4 to 98:Q4 amounting to USD7,390 million is dwarfed by the USD21,898 million of inflows for the first 3 quarters of 1997 alone.[4]

In effect, what the data suggests is that the portfolio investments have remained on a net basis despite the immediate shock of the 1997 financial crisis.[5]

Table 3
Government Bond Yields on Different Currencies
(In Percent Per Annum)

	USD	Euro Area	JPY	THB	PHP	KRW
1990	8.25	n.a.	7.36	10.60	n.a.	15.03
1991	6.81	n.a.	6.53	10.75	n.a.	16.46
1992	5.31	n.a.	4.94	10.75	n.a.	15.08
1993	4.44	n.a.	3.69	10.75	n.a.	12.08
1994	6.26	8.18	3.71	10.75	13.25	12.30
1995	6.26	8.73	2.53	10.75	14.25	12.40
1996	5.99	7.23	2.23	10.75	13.99	10.90

Source of data: International Financial Statistics, IMF

[4]The second quarter of 1998 actually had an inflow of USD3,815 million. Netting out the contra effect of this inflow to the outflow data, the comparison is still roughly 2:1 in favor of inflows for the period in question.

[5]We note that the case of the Philippines was different. Portfolio inflows for the first half of 1997 amounted to USD1,719 million while outflows occurred from 97:Q3 to 98:Q3 totally USD1,641 million, leaving a marginal net inflow of only USD78 million.

Table 4
Portfolio Investment Inflows and Outflows
(In Million US Dollars)

	Thailand	Indonesia	Korea	Cumulative
97:Q1	187.42	1,009.00	3,051.40	4,247.82
Q2	1,573.56	1,103.00	6,305.60	8,982.16
Q3	2,413.85	646.00	5,608.50	8,668.35
Q4	422.78	-5,390.00	-1,657.40	-6,624.62
98:Q1	345.57	-3,548.00	2,987.90	-2,145.30
Q2	-52.44	1,840.00	2,027.90	3,815.46
Q3	-271.03	107.00	-3,595.70	-3,759.73
Q4	315.47	-277.00	-645.30	-606.83

Source of data: International Financial Statistics, IMF

Second, it does bring to the fore the new role of the foreign exchange market. Aided no doubt by the intrinsic nature of globalized markets, foreign exchange is no longer just a price that is driven and determined by external trade. Instead, it has become both a means for cross-border transaction as it is a commodity by itself that is governed by its own pricing framework.

To get a sense of how much cross-border activity has increased through the years, we can refer to the data compiled by the Bank of International Settlements (BIS) from jurisdictions and institutions voluntarily disclosing such information.[6] For BIS-reporting banks, their cross-border position increased more than 10-fold from USD421.7 billion at the end of 1977 to USD4,981 billion by end-1996 or a compounded growth of 15.6% per annum. For the securities market, the BIS reports that the USD895.6 billion in international debt securities outstanding as of 1987:Q1 had grown to USD3,111.4 billion by end-1996. And despite the array of financial shocks worldwide since then, 2004 data has the cross-border position at USD9,209.1 billion (Q1) with international debt securities at USD12,332 billion (Q2). This is separate from the USD197,167 billion in notional amounts outstanding for over-the-counter (OTC) derivatives as of end 2003.

[6]Data is lifted from the BIS website. Growth rates are calculated using the standard equation assuming continuous-compounding.

Table 5
Funds Activity By Residents versus Foreigners
(For 1996; In Million US Dollars)

	Thailand	Philippines	Indonesia	Korea
Resident Inv't Abroad				
Direct	931.20	182.00	600.00	4,670.70
Portfolio	40.98	191.00	n.a.	6,412.60
Others	2,661.35	1,745.00	n.a.	13,486.80
Foreign Investments				
Direct	2,335.88	1,517.00	6,194.00	2,326.00
Portfolio	3,585.10	5,126.00	5,005.00	21,514.40
Others	11,875.90	6,370.00	248.00	24,571.30

Source of data: International Financial Statistics, IMF

While these figures are staggering by themselves, we should emphasize one point that is relevant for the rest of this paper: since 1996, the build-up of banks' cross-border position has slowed to an annual growth of 8.8% but international debt securities have since increased its growth to 20.1% per annum with money market instruments and floating-rate bonds & notes growing at 17.6% and 25.7% per annum respectively. As for OTC derivatives, BIS data suggests an annualized growth of 20% from June 1998 to December 2003 despite its public reputation of being a risky undertaking.

The full extent of cross-border activity may be fully appreciated and seem quite obvious at this point but most pundits will readily remember that this was not the case in the mid-90s. After the Mexican Peso devalued in December 1994, it became normal fare in the financial markets to make bets on where the next "Tequila hangover" would occur. These bets were for the most part just that, i.e., "bets" without any analytical framework that was universally acceptable.[7] To be sure, parts of the puzzle had already been identified — capital "surges", overheating domestic financial markets, policy inconsistencies — but the link to form the basis of anything signaling crisis proportions remained loose. What was emerging was that capital flows had invariably taken an *a*

[7]This is not to suggest though that funds were not allocated in support of these bets. Unfortunately, unless data is available for forward market transactions, it would be quite difficult to formally document the object and extent of the bets.

priori negative persona even though market practitioners and residents in the crisis-hit economies were not exactly unaware of off-shore opportunities (table 5).

This brought about a dichotomy in the discussions. On one hand, capital flows were considered unstable sources of funding given its fungibility and its short-term nature. Yet in the same token, there was at least implicit recognition that capital was a scarce resource which developing economies were fundamentally short of and as such foreign saving will have to be considered a partner in financing the development of a capital-scarce economy. Although some strong views have been put forward on foreign funding, in general the difficulty was not in determining the need for external resources to augment domestic saving but rather in deciding how to manage the mix. Indeed, an "upside" nexus between growth and foreign saving could very well be argued since foreign saving could generate higher growth which in turn attracted foreign capital which could further finance more growth. Yet at the back of this virtuous spiral is the basic point that capital flows are driven by their own objectives which can at times be inconsistent with the needs of the recipient country. It is this divergence in objectives which is at the heart of the ill-repute of capital flows as "fair-weathered friends".

This then raises two policy issues. ***First***, the immediate concern is how best to manage the downside risk of capital flows. If there is a recognition that foreign saving:

a) is part and parcel of the paradigm of globalized markets;
b) provides additional resources beyond domestic saving in fueling economic activity;
c) can be erratic in pursuing its own objectives

then the real challenge is to protect against the immediate impact of herd-like reversals in the flow of flows (notably outflows). What makes this "tricky" is that these flows are attracted by realizable gains which are in turn premised on their particular view of market prices (i.e., different segments of the yield curve to create gapping strategies and on the exchange rate between the recipient economy and their own country). Once their views are compromised, then it opens the floodgate of fund reversals, increased instability, and further fund withdrawals. Since expectations will inherently differ across market agents, the task is to prevent the periodic fluctuations in market prices to escalate into a systemic problem.

Principally, this is seen as an issue of access to liquidity that could stabilize temporary shocks. It has been suggested that a liquidity intervention was "warranted" in the early part of the 1997 crisis to calm market jitters and would have helped contain the

would-be contagion. Without counter-factual evidence, however, it is difficult to argue on this point. Nonetheless, it should be made clear that "liquidity" is not just the access to a pool of temporary funding but also the entire process of managing the attendant risks. While it is true that Japan, China, Hong Kong and Singapore had reserves[8] in excess of the billions that flowed out in the early months of the crisis, it is not clear the extent to which reserves from these four economies were openly available without risking their own economies.[9] Already, some USD32.5 billion or 27% of the USD117.9 billion in official assistance provided to Thailand (USD17.2 billion), Indonesia (USD42.3 billion) and South Korea (USD58.4 billion) were funded by ASEAN+3 so the issue does go beyond simple "access".[10]

The ***second*** policy issue builds from the first. The larger issue beyond liquidity and its attendant risks is that of regional integration. Again, in the context of a globalized financial market, there are very few economies that can unilaterally dictate the pace and direction of economic activity. The individual economies in Asia, despite the years of the "miracle", would not be in a position to do so. The consequence is that in times of a regional crisis, international support mechanisms do take time to mobilize and harness.

Collectively, however, Asia offers quite a potential, both as a market of consumers and as mobilizers of saving. But in order to achieve this integration akin to the experience of the European Union, Asia must have a surveillance system upon which the liquidity mechanism must be premised. To meet this, ultimately exchange rate stability becomes the overarching objective. Given today's free flowing capital and the idiosyncratic differences among Asian economies, this is an expensive and ambitious proposition. However, the alternative is to put our respective economies on stand-alone footing and be exposed to the nuances of herd-like funds flow and its contagion possibilities.

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[8]Based on IFS data, these four economies (i.e., Hong Kong was not yet a Special Administrative Region of China then) collectively had USD481 billion in foreign exchange reserves in June 1997 and increased their holdings to USD511 by year end.

[9]There is considerable disparity in the figures being cited as having flown out in late 1997 due to the crisis. Wang & Andersen (2002) cites a USD150 billion figure but does not identify a source for this information. In contrast, the IMF's 1998 International Capital Market report cites in table 2.1 (page 13) that there was a net outflow of USD11 billion from the four affected economies of Thailand, the Philippines, Indonesia and Korea. This USD11 billion outflow interestingly is the product of USD21.4 billion in inflows from FDI and portfolio investment and a USD32.3 billion outflow "Net Other Investments".

[10]Figures cited are taken from Wang & Andersen (2002), page 93.

This is the context by which we believe the Chiang Mai Initiative (CMI) was conceived. Given the task of exploring various means of enhancing the CMI, the above narrative provides an idea of how this paper will approach the issue. In particular, it is our contention that the CMI should look beyond the liquidity standpoint. The fact that foreign exchange is both a unit of scale and a commodity by itself in a cross-border environment suggests that the issue is not just about getting the "price right" in the context of external trade. Instead, the issue is one of "valuation", particularly of the opportunities that arise given the presence of competing and fungible capital flows which inherently put their own interest ahead of any other concern.

This is not to suggest that the liquidity aspect will not be explore. We are in fact structuring our approach so that CMI is taken foremost as a liquidity mechanism. Where we take a different route from previous studies on the CMI is that the liquidity issue is explored not for its own sake but rather for what is driving it as a needed support mechanism. By doing so, we focus on the underlying issue of risk (i.e., what risks are involved, how are they generated) and the subsequent risk incidence (i.e., who bears the risk in both the spot and forward legs of the transaction) can be aligned to these core issues. Conveniently, this leads us to some discussion of regional integration and the broader issues it raises (i.e., surveillance, exchange rate stability).

The rest of this paper is therefore meant to focus on the financial risk issues that impinge on the CMI and how this is related to our reading of the state of the regional market. In the next section, we revisit the swap agreements that premise the CMI. Since the CMI is an "upgrade" of but basically retains the core structure of the swap agreement, we devout considerable attention on the ASEAN swap mechanism that was introduced in 1977 and was a possible tool going into the 1997 financial crisis. This gives us a good way of appreciating the "whys" and "hows" of the CMI which we discuss next. One finds, for example, that many of the issues that apply to the CMI are the same ones that confronted the original swap agreement. Subsequently, we explore the regional market, highlighting possible vulnerabilities in the context of the risk incidence of CMI. Final comments are given in the last section.

2. The ASEAN Swap Agreement (ASA)

2.1 The Original 1977 Agreement

Country-level swap transactions between ASEAN-member economies date back to August 1977 when the original ASEAN Swap Agreement (ASA) was signed in Kuala Lumpur (see Annex 1). With five ASEAN member economies providing USD20 million each, the notional swap facility was therefore USD100 million.

As an instrument established in the early stages of ASEAN, it could indeed be argued that this was a significant undertaking towards cooperation and solidarity. Without underestimating that "signaling" value, this facility would have had a more modest impact for four basic reasons. ***First***, international reserves among the five ASEAN member economies was already at USD10.4 billion as of end-1976, rising to USD12.1 billion the following year. The USD100 Million swap facility is thus less than 1% of foreign exchange reserves which is highly unlikely to make a significant difference. The two countries with portfolio flows (liabilities) in excess of the swap limit per economy — Malaysia and Singapore — also have the most in foreign exchange reserves, certainly enough to mitigate the difficulties commensurate of the times then.

Table 6A
Foreign Exchange Reserves
(In Million US Dollars)

	IND	MAL	PHILS	SGP	THAI
1976	1491.8	2266	1581	3352.9	1725
1977	2399.8	2688	1456	3846.3	1735
1978	2461.3	3123	1746	5285.6	1974

Source of data: International Financial Statistics, IMF

Table 6B
Portfolio Flows, Liabilities
(In Million US Dollars)

	IND	MAL	PHILS	SGP	THAI
1976	n.a.	51.54	n.a.	82.16	-1.03
1977	n.a.	62.57	9	135.69	0.05
1978	n.a.	79.01	4	11.87	75.67

Source of data: International Financial Statistics, IMF

Second, the design of the facility limited the access of each economy to USD40 million. While the amount could in principle be renewed once after the initial drawdown, the agreement called for prioritizing new requests from other members over renewal. Thus, each economy effectively only had an incremental liquidity in the pipeline in the amount of USD20 million which was over and above the USD20 million it contributed to

the pool. This would make it limiting precisely in the context of the recorded portfolio flows per economy.

Third, since a requesting economy could effect a USD40 million swap from the total pool of funds, it then follows that only two economies could be accommodated by the swap arrangement on a simultaneous basis. This then presumes that the temporary liquidity for which the swap was arranged was of an isolated nature per economy and did not involve an ASEAN-wide liquidity problem. In short, the swap facility effectively assumed that the liquidity problems were not only temporary but mostly uncorrelated across the five member economies.

Fourth, the incremental liquidity that the swap would have provided was not structured to be a "instantaneous response" mechanism. The guidelines of the swap actually called for a lead time of seven working days before the funds could be availed. Today's 24/7 online technology probably makes this much more difficult to appreciate as surely during those times the turnover of market activity did not require as immediate a response. Having said that, the 7-working day lead time still suggests that the requesting economy must have a fairly good way of forecasting its requirements. Of course, if the needs are all programmed flows, this reaction time would be a non-issue.[11] But it does rule out the swap as a viable facility for addressing temporary illiquidity due to unforeseen events of any nature. Since these unexpected liquidity problems do arise, it does beg the question of how they can be addressed.

The swap arrangement also provided an "out clause" in case a member economy would not be in a position to contribute its full share due to "exceptional financial circumstances".[12] While the Memorandum of Understanding does indicate that the other participants take up the shortfall on equal sharing, this is more prescriptive (i.e., "as far as possible") than mandatory. More importantly, a literal reading of Article 5 of the memorandum seems to suggest that the limit that an economy can avail of from the swap facility is pegged at USD40 million regardless of the circumstances of the other economies.[13]

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[11]By extension, there ought to be no problem whatsoever as well since all flows can be "properly" timed and thus arranged for.

[12]The specific context of what constitutes "exceptional" or an enumeration of these circumstances is not provided for in the Memorandum.

[13]Even if we make a liberal interpretation of the provisions in Article 5, the notional limit of availment would still only be USD50 million, based on a gearing ratio of 1:2 and assuming that one economy cannot provide its USD20 million share which is then financed by the other four

The structure of the swap is actually fairly straightforward. United States dollars (USD) will be sold to the requesting economy against its local currency plus a reversing transaction at the maturity of the swap. Unlike a conventional FX swap, however, no "physical" exchange of currencies actually takes place since the local currency leg of the swap stays with the requesting economy in a non-interest bearing account maintained in the Central Bank or Monetary Authority of the requesting economy.[14] The local currency funds placed in this account are encumbered because they cannot be used except for the purpose of reversing the swap at a designated future date.

The pricing of the swap is defined simply as:[15]

$$Forward\ Rate = Spot\ Rate\left(1+ r\frac{t}{360}\right)$$

where r = Euro-dollar deposit rate quoted by Bank of International Settlements two-working days prior to the value date of the swap

t = actual number of days of the swap

From the perspective of the economies providing the USD, the transaction takes on the nature of a simple time deposit in the Euro-dollar market. Conversely, the requesting economy is essentially borrowing at the preferential rate of a euro-dollar deposit instead of a conventional market loan rates.

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economies equally, raising the contributions of these four economies to USD25 million.

[14]As a matter of proper terminology, we differentiate an FX swap with a Currency swap. The former is a short-term arrangement that involves a spot sale (or purchase) of one currency for another currency plus a forward transaction reversing the sale (or purchase). The difference between the spot and forward rate is a pure one-time interest rate differential (referred to as *forward points*). A currency swap, in contrast, is a longer-term arrangement between counterparties where one party makes periodic payments in one currency and the other party makes periodic payments in another currency on agreed future dates until the maturity of the agreement.

[15]The formula in the actual document has 360 as the denominator for the term (1+ rt). This may be a typographical error because its literal interpretation would mean that the Forward Rate would always be numerically lower than the Spot rate, giving the borrower a premium and the lender a penalty. In this case, the swap would never be transacted.

2.2 Supplementary Agreements and Amendments

Between 1978 and 1992, the ASA has modified a total of six times, five of which were supplementary agreements with one amendment. The first supplemental agreement was made in September 1978 (Annex 2) and it basically alters the original MoU in two aspects:

a) extends the 1977 agreement for another 1 year; and
b) doubles the facility to USD200 million by increasing each participant's notional contribution to USD40 million

Since the gearing ratio of 1:2 was maintained, each requesting economy can now avail of USD80 million from the facility at the maximum.

All succeeding Supplementary Agreements basically extend the life of the facility. The 2nd supplementary agreement (Annex 3) foregoes the usual 1-year time frame and instead allows for the swap facility to be in place for 3 years commencing August 5, 1979. The 3rd to the 5th Supplementary Agreements (Annexes 4 to 6) subsequently provide for 5-year extensions at the expiration of the prevailing agreements then, keeping the facility enforceable up to August 4, 1997.

Beyond the extensions, there are three other modifications worth noting. First, the swap facility was amended in Colombo Sri Lanka on January 16, 1981 (Annex 7) before the 3rd Supplementary Agreement was signed. The amendment draws up procedural details of how the swap should be handled if the Agent Bank also happens to be the requesting economy.[16] More importantly, it introduces explicit language and procedure for swaps that are settled prior to the stated maturity date.

Second, an accession provision was included in the Fourth Supplementary Agreement (1987). With Brunei Darussalam becoming a member of ASEAN in 1984, it would not have been a signatory to the Third Supplemental Agreement (1982) and we speculate then that this is the basis of the accession provision in the 1987 agreement. In particular, it provides for the participation of the monetary authority of an ASEAN member economy in the swap facility even if it was not a signatory to the previous agreement. This provision would become particularly useful since Vietnam, Lao PDR,

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[16]The Agent Bank is the Central Bank or Monetary Authority designated by the swap participants from among themselves which shall act as the coordinating institution for the swap. The tenure of the Agent Bank was set for 1 year and rotated among the participating Central Banks or Monetary Authorities. By design and stated explicitly since the original 1977 MoU, the Agent Bank bears all of the administrative charges in coordinating and effecting the swap.

Myanmar and Cambodia all became ASEAN members only in the later half of the 90s.

Third, the Fifth Supplementary Agreement formalized the "out clause" that was always part of the swap facility. Instead of just "exceptional financial circumstances", the 1992 agreement allows a participant to "refrain from swapping" and give reasons for such a decision only at its discretion but not mandatorily. Although the other remaining participants are again encouraged to fill up the missing share, there is now explicit mention that should the collective commitments from the participating economies fall short of the requested amount, it is the requested amount which will adjust accordingly.

2.3 Some Preliminary Analysis[17]

According to Henning (2002) and Park (2000), the swap facility was used only five times, once each by Indonesia (1979), Malaysia (1980), Thailand (1980) and twice by the Philippines (1981, 1992). More importantly, the facility was apparently not activated even when the Thai Baht was first attacked in May 1997, much less when the situation deteriorated into the financial crisis in the following months. While we cannot discount the possibility that the swap was not activated simply because the effectivity of the agreement itself was about to lapse in early August (following the 5-year period indicated under the 5th supplementary agreement), the fact that it has been used only five times in 20 years should raise a number of serious questions about its viability and usefulness as a financial policy tool.

2.3.1 The Size of the Liquidity Pool

Perhaps the easiest issue to raise is that of size. Data from the ARIC database of the ADB show that gross international reserves, GIR, (not including gold) for the original five ASEAN member economies declined by USD27,729 million from 1996 to 1997, the majority of which surely must have been incurred in the 2nd half of 1997. This actual decline is roughly 138 times that of the total swap facility and it is hard to imagine what USD200 million would have been able to do in terms of managing the volatile situation then.

Again, it bears repeating that the full USD200 million facility is actually ***not*** available to each economy. Instead, the incremental liquidity provided is only USD40

[17]Since the Chiang Mai Initiative (CMI) is basically an expansion of the ASA, much of the analysis is expected to be the same. On this basis, some preliminary evaluation is included at this point instead of postponing it under the section of the CMI.

Table 7
Gross International Reserves (Excluding Gold)
(In Million US Dollars)

	1996	1997	1998
ASEAN 1	169,868.19	142,139.06	161,263.58
Indonesia	18,251.10	16,586.90	22,713.40
Malaysia	27,009.40	20,788.20	25,559.40
Philippines	10,029.69	7,295.66	9,237.68
Singapore	76,846.80	71,288.80	74,928.00
Thailand	37,731.20	26,179.50	28,825.10
ASEAN 2	2,400.37	2,646.37	2,753.67

Source of data: ARIC Database, ADB
ASEAN 2 = Cambodia, Lao PDR, Myanmar, Vietnam

million and this amount is even more insignificant when compared with the actual declines in GIR. In fact, one can also juxtapose the size of the liquidity pool versus the USD169,868 million in non-gold reserves the five original ASEAN member economies had at the end of 1996. Effectively, it is as if we are expecting a liquidity pool which is just over $^{1}/_{10}$ of 1% of the so-called "war chest" of international reserves to provide some stabilizing effect over the remaining 99.9%.

2.3.2 Pricing and Forward Points

FX swaps in general are meant to match cashflows in different currencies instead of being tools for altering the bilateral rate between the involved currencies. In this context, these swaps are more about "timing" than they are about "valuation".

The pricing of the swaps should then reflect this fact. In the form first agreed upon in 1977, the premium of the forward rate over the spot rate was simply defined by the Euro-dollar deposit rate for the appropriate tenor, giving the effect of a providing a USD loan to the requesting economy at the rate of a simple off-shore deposit. In the spirit of regional cooperation, this would be the appropriate policy track as it provides the added USD liquidity at a price that is not of a burden.

However, a problem *may* arise in the context of maintaining FX rate consistency.

Since the swap arrangement involves a forward transaction, the issue is not the direction of the change in the rate (i.e., not whether the forward rate is at a premium or discount over the spot rate) but rather the magnitude of this change. By definition, an FX swap bears no foreign exchange risk.[18] There is nonetheless a market valuation issue since market agents may take a view on whether the interest rate differential used in calculating the forward rate (i.e., the forward points) is either too high or too low.[19]

As used in the ASEAN agreement, the Euro-dollar rate provides a proxy for the interest rate differential between the local currency of the requesting economy and US interest rates. If this proxy does not accurately reflect actual interest rate differentials then the forward leg of the ASEAN swap transaction either exaggerates or undervalues the expected movement of the (bilateral) foreign exchange rate. This could add to further volatility, precisely the shock which the ASA was suppose to pacify. This would not likely have been a real issue three decades ago but under contemporaneous market conditions, this would be more of a consideration.

2.3.3 Settlement Date and Response Time

Since the swap facility was meant to be a liquidity lifeline, a quick response would be another factor of concern, particularly under the current environment of cross-border high-turnover flows. Unfortunately, there is no indication in any of the supplemental agreements that the seven-working days lead time (i.e., from request to value date) has been adjusted downward.[20] More importantly, there is no evidence that we have been able to uncover that would indicate that settlement dates, by reason of urgency, pre-dated the seven-working day value date. This time lag curtails the effectiveness of the swap to provide what is typically referred to as “funding liquidity”

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[18]This is because the swap already pre-determines the foreign exchange rate that will be applied at maturity regardless of what the actual market rate will be. Without this element of uncertainty, there is no risk *ipso facto*.

[19]If the interest rate used in the swap is “higher” than expected, then the forward rate will effectively be numerically higher than what is expected to be the future foreign exchange rate. In principle, one can enter into this swap and at maturity gain a windfall by converting the proceeds from the swap at the then-market rate. It is in this context that a positive market value occurs.

[20]One must make a distinction between value date and settlement date. The former is the date at which a transaction is ***intended*** to be consummated through the actual exchange of the instrument and its corresponding payment. Settlement date on the other hand is the ***actual*** date the transaction is settled after addressing all unforeseen delays and unintended oversights.

and this could easily deteriorate into an "asset liquidity" problem.[21] Liquidity after all is best applied as a preventive tool and it is able to do this if it is *perceived* to be available on call and in sufficient amounts. Indeed, once asset illiquidity sets in, it will take an increasing amount of funds just to stem the market tide.

2.3.4 Correlated Shocks

The prevalence of cross-border finance must also raise the related issue of correlated shocks. The swap's current design (i.e., the gearing ratio in relation to the full extent of the liquidity pool) makes it difficult to activate more than two transactions at any given point in time. Thus, if a regional perturbation ensues for whatever reason, the swap facility would be hard pressed to offer some relief to several ASEAN member economies. The fact that the facility allows participating economies to refrain from the swap is all the more exacerbated under some regional distress. This magnifies the responsibility of the agent bank as the coordinating institution for the facility even if this may be a procedural task under normal situations. Underlying all these is of course the bigger issue of surveillance, not only in differentiating a "temporary liquidity problem" from deeper structural difficulties but more so in designing a stable system that can reasonably generate actionable information on the condition of the participating economies.

2.3.5 Credit Risk

There is no provision anywhere in the ASA that would cover for credit risk.[22] Certainly as a cooperative agreement, there is absolutely no intention to renege on the commitment to undertake the forward leg where the encumbered local currency is used to acquire the USD which will be returned to the participating economies. However, it would also not be productive to have no such provisions in the agreement since an orderly process must be in place even in the unlikely event that it may occur. In the bigger context, the ramifications of credit risk become all the more telling if and when

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[21] Funding liquidity is the ability to have the amount and mix of funds as they are needed. Asset liquidity, on the other hand, is the ability to derive ready value for an asset in the open market. In the case of the ASA, the liquidity in question is foremost the type that requires funds to be available. The absence of these funds can then lead to a run on the domestic currency which forces the disposition of the local currency at increasingly lower values relative to a baseline currency (i.e., a depreciation)

[22] We formally define credit risk as the risk that a counterparty wold not be able to pay its obligations when they fall due. In the case of the ASA, the promise is to "repay" in the forward leg (plus premium) the same USD that were "borrowed" in the spot leg.

the temporary liquidity problems become systematic to the region i.e., when shocks become more correlated.

2.3.6 Impact of the Swap

Beyond all these design issues, one still needs to go back to the most basic question: what does the swap achieve?

At value/settlement date, the requesting economy gets additional USD. These funds can be used (1) to pay due obligations denominated in USD without the necessity of converting into local currency and/or (2) to purchase local currency to support its price from speculative attacks. In the case of the former, the availability of swap-based USD allows for the settlement of an maturing obligation that would otherwise have had some difficulty in being funded. Had this occurred, the would-be default would have clearly introduced a significant element of volatility.

In the case of the latter, basic trading dynamics would suggest that buying local currency and the sale of the contra foreign currency would induce a strengthening of the local currency (and a corresponding weakening of the foreign currency on a bilateral basis). This would again provide a useful support if the local currency was under speculative attack. Coincidentally, the fact that local currency would have to be set aside also means that there is less domestic liquidity which speculators can use against the local currency.[23]

For all of these reasons then, the swap clearly has value added to the requesting economy in terms of providing funding liquidity and asset liquidity.[24]

The problem though is that at maturity the currency flows are reversed. The requesting economy must now undertake a sale of USD and a purchase of the local currency which it is holding in behalf of the participating counterparties. This creates difficulties at two levels. First, there is an obligation to deliver USD when in fact in all likelihood, the requesting economy no longer has physical possession of the foreign

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[23]To speculate against a currency, the key ingredient would be the availability of domestic liquidity. Essentially, the idea is to incur a liability in a currency you expect to weaken and create an asset denominated in a currency you expect to strengthen. Arbitrage is built into this scheme by funding the asset with proceeds from the liability. The entire scheme then rests on the premise that speculators can borrow in the currency they wish to attack.

[24]The “asset” in question being the local currency.

currency.[25] This creates a demand for a foreign currency *vis-a-vis* the local currency. All things equal, this puts pressure on the local currency to weaken versus the foreign currency thus countering the stabilizing gains of the swap at the spot leg.

Second, the reversal of the flows is not going to be one-for-one. To compensate the central banks and/or monetary authorities who participated in the swap, the amount of USD for which the requesting economy is obligated to deliver at maturity is definitely more than the amount of USD it received at the spot leg. Thus, to the extent that the maturing swap creates a demand for foreign exchange then the premium of the forward rate over the spot rate exacerbates the pressure on the local currency to weaken.

These two difficulties suggest that we have a time consistency problem: the gains created by the spot transactions appear to be offset by the impact of the forward transactions. If indeed this is the case, then the swap is creating a spiral where liquidity support is followed eventually by larger price movements as the liquidity support is not only reversed but creates an obligation for a bigger demand for foreign exchange. In this context, the swap is contributing to the very volatility that it was meant to address.

We should make it clear though that the foregoing is *not a unilateral indictment of the swap arrangement itself*. Instead, the issues are only raised in order to appraise the areas that need to be improved. If anything, the preliminary analysis of the ASA raises a number of concerns that not only stand on valid grounds but more importantly have not been pointed out in most prior evaluations of ASA.

3. The Chiang Mai Initiative (CMI)

It would be quite difficult to determine at this point why the ASA was not actively resorted to during its effectivity. Certainly in the 20 years from its launch in 1977 to the onset of the 1997 financial crisis there would have been many occasions where the need for temporary liquidity support would have presented itself within ASEAN. And yet, according to Henning (2002), ASA was only activated five times.

Perhaps the clearest *ex post facto* indication that something was awry with the ASA was that it was not activated as the 1997 crisis was brewing. The very idea that a "response" had to be crafted, first with the proposed Asian Monetary Fund then later the

[25] Obviously, there must have been a reason why an economy would request the activation of the swap agreement. To this end, we envision that the USD sourced from the swap must have been used either to pay maturing obligations or to buy the local currency in the open market to contravene a speculative attack.

so-called Manila Framework, is itself prima facie evidence that the mechanisms at that time were inadequate for the needs of the region. As summarized in Manupipatpong (2002), the fact that the Manila Framework called for, among others, (1) a regional surveillance, (2) improving the ability to respond to financial crises and (3) cooperative financing agreements raises the same concerns pointed out above, specifically with respect to correlated shocks and its implications of surveillance, the response time and the size of the cooperative financing mechanisms.[26]

Still in the midst of nurturing a recovery from the 1997 crisis, ASEAN then took a pro-active stance in its vision of the international financial architecture and the process of both reforming it and strengthening it (Annex 8). With this common position at hand, the initiative of expanding the cooperative financing agreement was the logical next step. Thus came the Chiang Mai Initiative (Annex 9).

3.1 The Structure of the Expanded ASA

The CMI is actually more than one financing scheme. At the most basic level, there is the Expanded ASEAN Swap Agreement (Expanded ASA). Following Bergsten and Park (2002), Manupipatpong (2002), Wang and Andersen (2002) and Henning (2002), the Expanded ASA differs from its 1977 predecessor in the following aspects:

a) inclusion of all ASEAN member economies;
b) increasing the tenor of the swap up to 6 months with the possibility of a one-time renewal of another 6-months;
c) extending the swap currency to USD, euros and Japanese yen (JPY);
d) corresponding use of the euro, yen and Euro LIBOR rate in the pricing of the swap;
e) the swap facility has been increased to a pool of USD1 billion; and
f) the contributions to the pool are not of equal share.

Item “a” is a natural recourse of the expansion of ASEAN to 10 economies from the original five countries. Item “b” is more interesting because it literally suggests that the requirement for “temporary liquidity” can now go beyond the 3 months originally

[26]The Manila Framework came after an earlier proposal for an Asian Monetary Fund was strongly opposed by the IMF and the US largely on the grounds of moral hazard and duplicity with the IMF functions. Not surprising therefore, the orientation of the Manila Framework is explicitly cognizant of the role of the IMF. The Manila Framework Group (MFG) — the body formed to further the November 1997 agreement — terminated its existence on December 4, 2004 as it says it has completed the tasks it laid out for itself.

assumed in the 1977 agreement. This is a significant modification because, given larger cross-border capital flows that turnover faster, this is an implicit recognition that the transition path for FX rate adjustments will tend to be more volatile under current market conditions. It is not only that there is volatility. Instead, it is taking (implicit) cognizance that handling the transition is just as important as "getting the price right".

With the increased volatility, one would argue that larger & faster flows need to be managed by a larger liquidity pool. This is precisely the case as noted in item "e". However, unlike in the ASA, the contributions are no longer strictly equal (item "f). Following Rana (2002), the seed funds to the Expanded ASA are as follows:[27]

Group 1	USD Millions
Brunei, Indonesia, Malaysia, Philippines	150 each
Singapore, Thailand	41.5
Group 2	
Viet Nam	60
Myanmar	20
Cambodia	15
Lao People's Democratic Republic	5

Since the 1:2 gearing ratio was retained from the ASA, the five original ASEAN member economies (and Brunei) are now in a position to leverage the equivalent of USD150 million in swap funds instead of the previous USD40 million. With the swap currency extended to both the Japanese yen and the euro, the rate benchmark for setting the forward rate has likewise been modified to include Japanese and euro interest rates.

What the foregoing simply suggests is that the Expanded ASA provides for a bigger pool of liquidity, uses other major currencies in the swap and therefore prices itself accordingly. Fundamentally then, it is just a bigger version of the ASA with two other currencies of significance to consider.

3.2 Bilateral Swap Agreements and Repos

Apart from the Expanded ASA, the CMI provides for a network of Bilateral Swap

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[27] This is lifted verbatim from Table 1, page 9 of Rana (2002). One notes immediately that the contributions do not sum to USD 1 billion. This may be a typographical error since an earlier version of the Rana paper lists Singapore and Thailand contributing USD150 million each as well.

Agreements (BSA) and Repurchase Agreements (repos) as additional means of financing support to help alleviate situations of temporary liquidity difficulties.

The BSA retains the 90-day tenor under the original ASA but allows for a renewal of up to seven times, in principle taking it as far as a 2-year transaction. The pricing is LIBOR based and adjusts according to the number of renewals. The original draw and the first renewal will be priced at 150 basis points over LIBOR. Subsequent renewals will command an additional rate, specifically 50 basis points for every 2 renewals. At the maximum then, the BSA will be priced at 300 basis points over LIBOR by the time the 6th and 7th renewals are requested.

At its core though, what really differentiates the BSA from the Expanded ASA are three particular features. First, there is that qualifier that the transaction is at the "bilateral" level. Instead of pooling the resources of ASEAN to help a fellow ASEAN menber economy, the BSA is a transaction that is strictly between two economies. This allows the requesting economy to customize the swap according to her specific needs. And from the perspective of the economy who is "lending", there is also the same flexibility that allows for the structuring of the transaction based on the differentiated profile of different counterparties. After all, unlike in the original ASA or the Expanded ASA, the credit risk under a BSA is borne by only one economy.

Second is the composition of the participating economies. Instead of ASEAN helping itself from within, the BSA is a network between the 10 ASEAN economies and the three economies from Northeast Asia, in particular China, Japan and South Korea. Given their relative size and the bilateral nature of the transaction, one would expect to establish 33 BSAs, 10 each between one northeast asian economy with ASEAN plus 3 more from among the three northeast asian economies. Latest available data suggests that we are more than half-way through.

This arrangement gives this financing scheme utmost flexibility. Instead of being limited to a USD1 billion liquidity pool as in the Expanded ASA, the BSA has already structured roughly USD36.5 billion in bilateral liquidity that can be eventually activated.[28] Of course, this amount is not a collective pool that is available to everyone. But on an individual economy basis, the funding is significantly higher than what can be leveraged out of the Expanded ASA. Indonesia and the Philippines, for example, have BSAs of

[28]Some of these swap agreements are "two-way" swaps. Under this structure, each party can request the other party to provide liquidity up to the amount specified by their agreement and in the currencies pre-determined. For purposes of counting the BSAs that have been concluded, the normal practice is to count these two-way swaps twice.

USD6 billion while Thailand has USD7 billion. These amounts are considerably higher than the USD40 million incremental under the ASA or the USD150 million structured under the Expanded ASA. However, there is a bit of a caveat which is the crucial third differentiation.

This third feature is that the BSA is specifically structured to be complementary to IMF assistance. Specifically, only 10% of the BSA amount can be activated between the counterparties subject only to their bilateral terms.[29] The balance is subject to the condition that the requesting economy "accept an IMF program for macroeconomic and structural adjustments" (Rana, 2002, page 9) or if the said economy is already under an IMF programme, she may be eligible for other IMF assistance such as the Contingent Credit Line (Manupipatpong, 2002).[30] In this context, the renewal provision that would allow a 3-month swap to be extended effectively up to 2 years is really not so far fetched. Implicitly, what is being suggested is that structural problems underpin the difficulties with liquidity and the remedial actions involve both a quick disbursing facility (i.e., the 10% of the BSA) and a structural adjustment programme under IMF supervision.

To further bolster the financing options, repurchase agreements are also possible under the CMI.[31] Similar to the BSA, the repos are also bilateral arrangements. The tenor of these repos will be one week which highlights the idea that the funding is really a quick disbursement for truly temporary needs. Eligible securities are either US Treasuries with remaining maturity of less than 5 years or the government security of the "lending" party.[32] Pricing for the repo will be a premium of either 2% if the underlying security is US Treasuries or 5% in the case of non-US government securities.

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[29]The 10% limit will be raised once the region develops its surveillance framework.

[30]In response to the critique that its procedures were not responsive enough during crisis, the IMF instituted the Supplemental Reserve Facility (SRF) in late 1997 and then later the Contingent Credit Line (CCL). The SRF was meant to be a quick disbursing fund while the CCL is a prototypical credit line for economies who manifest sound policies.

[31]A Repurchase Agreement (repo) is where one party sells eligible securities for cash to a counterparty with the understanding that the securities will be repurchased in the future. Since the transaction is basically a security-for-cash deal, it really takes the nature of a loan with the security providing the collateral.

[32]In practice, the market price of fixed income securities with remaining tenor of 5 years and below do not tend to be as volatile as the effective yield moves closer to par value. This feature of price stability makes it suitable for a repo transaction.

Table 8
Bilateral Swap Agreements
As of End-2004

	Counter Party	Currency	Type	Date	Amount (Billion USD)
THAILAND					
	Japan	$/Baht	One-way	July 2001	3.0
	PRC	$/Baht	One-way	Dec 2001	2.0
	Korea	$-Won/Baht	Two-way	June 2002	1.0
PHILIPPINES					
	Japan	$/Peso	One-way	Aug 2001	3.0
	Korea	$/Peso	Two-way	Aug 2002	1.0
	PRC	RMB/Peso	One-way	Aug 2003	1.0
MALAYSIA					
	Japan	$/Ringgit	One-way	Oct 2001	1.0
	Korea	$-Won/Ringgit	Two-way	July 2002	1.0
	PRC	$/Ringgit	One-way	Oct 2002	1.5
INDONESIA					
	Japan	$/Rupiah	One-way	Feb 2003	3.0
	PRC	RMB/Rupiah	One-way	Dec 2003	1.0
	Korea	$/Rupiah	Two-way	Dec 2003	1.0
OTHERS					
	Japan-Korea	$/Won	One-way	July 2001	2.0
	Japan-PRC	Yen/RMB	Two-way	Mar 2002	3.0
	PRC-Korea	RMB/Won	Two-way	June 2002	2.0
	Japan-Singapore	$/SGD	One-way	Nov 2003	1.0

Source: ADB Progress Report on Chiang Mai Initiative, October 2003
Most recent data from the internet

4. Evaluating the CMI: A Focus on Risk

It was fairly straightforward to evaluate the ASA because its design could always be related to the 20-year history behind it. This is not the case with the CMI as the market situation has not presented itself calling for the activation of these arrangements. Without counterfactual experience, the instinctive thing to do is simply to juxtapose it against the ASA.

As is apparent in the following comparative matrix, the Expanded ASA under the CMI is very much akin to the ASA in spirit. The BSA side of the CMI on the other hand does improve on each of the issues for which the ASA and/or the Expanded ASA has attracted critical commentary. For example, the difference between the billions that can be provided for Malaysia, Indonesia, the Philippines and Thailand under BSAs is significantly greater that the incremental USD150 million available under the Expanded ASA. Having swap arrangements using different currencies gives the BSAs added flexibility which the counterparties can basically tailor fit to their specific needs. Because it is a bilateral arrangement, one expects less procedural delays in activation and the LIBOR pricing gives it a better market feel. There is even a window for immediate funding requirements via repos which would not be possible under the Expanded ASA. And with funding assistance that can theoretically be extended up to 2 years, the BSA goes beyond the liquidity issue and extends itself to impose a structural adjustment program with the IMF.

On paper then, the BSA component of the CMI is a substantial step forward for ASEAN. Whether it will be enough to address the needs during the *next* liquidity crunch or the *next* capital withdrawal is however a separate issue altogether. With the markets continuously evolving, it will be hard to accurately foretell whether the BSA numbers as they are currently structured will actually be adequate when called upon.

Notwithstanding this limitation, it is critical to subject the CMI to a risk incidence. This is not about evaluating specific features. Instead, it is about the structure of the CMI in terms of how the risks are managed. On this point, two questions are critical: (1) what are the underlying risks and (2) who bears these risks? The answers to these questions are in turn dependent on the objective(s) of the CMI and for this purpose, we make a distinction between the immediate undertaking (i.e., liquidity support) versus the more long-term issue of regional integration.

4.1 In the Narrow Context of a Liquidity Mechanism

The CMI needs to be seen at the minimum as a regional funding assistance to

Table 9
Comparative Matrix of Key Features

Feature	ASEAN Swap Agreement	Expanded Swap Agreement	Bilateral Swap Arrangements
Type of Arrangement	Collective Fund	Collective Fund	Bilateral Arrangements
Contribution to Liquidity Pool	Equal	Tiered	Not Applicable
Size of Liquidity Pool	USD200 Million	USD1 Billion	Not Applicable
Incremental Funding Provided by Mechanism	USD40 Million	Maximum of USD150 Million or 2 times the amount contributed to the pool whichever is less	Depends on bilateral agreements concluded
Original Tenor	1, 2 or 3 months	Up to 6 months	3 months
Maximum Tenor	First-time requests from other economies are given priority over a renewal	One renewal for a potential tenor of 12 months	Seven renewals of 1 quarter each for a cumulative period of 2 years
Currency	US Dollar	euro, Japanese Yen, US Dollar	Determined bilaterally
Pricing	Based on Euro dollar deposit rate quoted by BIS	euro, Yen and Euro LIBOR rate	LIBOR-based; Spread increasing at further renewals but capped at 300 bps

Table 9 (continued)
Comparative Matrix of Key Features

Feature	ASEAN Swap Agreement	Expanded Swap Agreement	Bilateral Swap Arrangements
Credit Risk	Borne by Collective Group	Borne by Collective Group	Strictly on bilateral basis
Administration	Through Agent (Central) Bank appointed on rotating basis	Through Agent (Central) Bank appointed on rotating basis	Terms and conditions are on bilateral basis
Participants	Original 5 ASEAN member economies; Accession clause included in 1987 amendment	Original 5 ASEAN member economies; Accession clause included in 1987 amendment	10 ASEAN economies plus Japan, Peoples Republic of China and South Korea
Other Features	An economy has the option not to participate in a particular swap transaction; Economies who are participating are encouraged to make up the shortfall in funding on equal-sharing basis	An economy has the option not to participate in a particular swap transaction; Availability of liquidity is subject to what the participating economies have made available	Not vulnerable to “out clause” provision since the agreement is kept on bilateral basis.
			Linked to IMF assistance; Only 10% of the swap arrangements can actually be disbursed bilaterally
			Repurchase Agreements are also available under the CMI subject to the use of eligible securities as collateral

provide foreign exchange liquidity to participating economies. This raises the issue of whether an FX swap is the best instrument for this objective and what — if any — other concerns arise from the exchange of cash flows under the swap agreement. In sections 2.3.1 to 2.3.5, we already identified a number of design features that had a direct bearing on the effectivity of these swap arrangements. The same concerns can be raised here inasmuch as the Expanded ASA is structurally similar to the original ASA. In section 2.3.6, we put all of these concerns together by exploring the impact of the cash flows under the ASA and we argued that there is a time consistency problem between present benefits and future costs. This consistency problem is not unique to the ASA and similarly applies to both the Expanded ASA and the BSAs. In fact, outside of an outright grant, it is generic to all means of bridge financing i.e., repayment causes a reversal of both the cash flows and the benefits that accrue with said flows.

The extent of this problem would of course be dependent on a number of domestic factors (i.e., the profile of the requesting economy). While it may be benign in some instances, it could be quite significant in cases where the market continuous to be volatile — and thus the need for liquidity remains sensitive — as the swap matures. Thus, the swap "works" only if the problem is both (1) indeed temporary and (2) that of funding liquidity where the core issue is the timing of flows rather than the valuation of the underlying asset. In cases where the problems are more systemic (i.e., chronic deficiency in available foreign exchange and/or a significant misalignment in the foreign exchange rate), the swap only provides a temporary lifeline but could actually aggravate the problem by allowing the misalignment to persist waiting for a rather large and sudden correction.

This is where the BSA is fundamentally different from the ASA and/or the Expanded ASA. Instead of just looking at operational (i.e., liquidity) issues, it takes explicit account for possible structural (i.e., solvency and valuation) problems that need to be addressed over the longer-term. This is not just an issue of flexibility but one of mitigating risks at its source. As we have already alluded to previously, illiquidity is symptomatic of the factors that drive the flows but by definition cannot resolve any misalignments and/or arbitrage opportunities that underlie the flows in the first place.

Having said that, there is that central issue of who bears the risks, principally credit risk (see section 2.3.5). Here it should be rather obvious that the FX swap under the BSA and the funding mechanism provided by the ASA are at polar extremes. The former relies on one-on-one agreements while the latter employs a collective fund. No matter how frequent we premise BSAs with the term "network", the fact remains that these swaps and repos are inherently bilateral in nature. This puts the risk of default

squarely on the "lender".

One can correctly argue that this risk ought not to be a significant concern for such cooperative agreements. After all, the BSA and the repos are *not* intended to be commercial transactions and even when the difficulties may be quite deep, there is the linkage to an IMF adjustment programme to provide further support.

However, what makes this a concern is precisely the nature by which capital flows tend to exhibit herd-like behavior. Griffith-Jones (2002) offers explanations of why and how capital flows have become pro-cyclical among which is the observation that

> "*financial markets are currently dominated by investment managers with a short-termist philosophy who are willing — and able — to move in and out of different markets in a relentless quest for short-term returns*".[33]

Furthermore, Zhang *et al* (2003) provide some empirical support for how structural shocks within East Asia are correlated noting in particular that the "financial crisis improved the number of significant correlations of shocks in these economies".[34] On the whole, one should take as given that the movement of capital tends to be highly correlated across fund managers. This is precisely why the term "contagion" came into vogue. It is not to represent any increase in the correlation *per se* but to signify that the link between capital flows *across markets* is precisely statistically significant.

This is relevant to the CMI because of the *distribution* of the swap funds. Out of the USD36.5 billion already committed under table 8, USD16 billion is from Japan alone while China and Korea account for USD10.5 billion and USD6 billion respectively. Thus, 89% of the swap values are provided by the "Plus 3" economies, 44 percentage points of which is provided by Japan alone.

While this is obviously the design of the BSA, it does raise the concern of correlated risk. Surely, the funding liquidity envisioned under these arrangements may arise not just because of individual needs from individual economies. Instead, there is an increasing likelihood that the need may arise for a cluster of economies. Again, we do emphasize that the fact that funds can be simultaneously mobilized for this purpose is already a major achievement of the BSA over its predecessor arrangements.

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[33] Quote is from page 11.

[34] See in particular tables 4 and 5 on pages 12 and 15 respectively.

Nonetheless, we must also acknowledge that the burden of the risk is borne by the providers of the funds which under the present structure of the BSAs are common counterparties to the economies who are most likely to request activation of the swap.

The point is that this correlated activation does put the credit risk on Japan, China and Korea. Even though only 10% of the swap funds can be disbursed without any linkage to an IMF programme, the USD3.25 billion that this 10% represents is significant not for its absolute size but for the signal that a collective default represents. To what extent this risk becomes problematic is again one of those issues which only experience will eventually determine. However, we do note that each of the “Plus 3" economies do have their own difficulties. Japan is still continuing its efforts to regain its full economic strength, China is preventing itself from overheating while Korea was one of those economies prominently affected by the 1997 crisis. These suggest that absolute immunities from future crises do not exist. As if to acknowledge this possibility no matter how small, we find it interestingly that each of the 5 BSAs which Korea has concluded has been of the two-way variety. The point then is that there is always some amount of vulnerability despite the postulated buffer in international reserves and the use of swap funds from common counterparties under a scenario of correlated shocks can worsen such vulnerabilities if not properly mitigated.

4.2 In the Broader Context of Regional Integration

The significance of within-region correlations makes an intriguing case to re-consider the CMI as a platform for regional integration and not just a cooperative arrangement. While the need for funding liquidity may still arise from time to time, the nature of capital flows suggests that asset liquidity may be the lead issue. In effect, it is no longer just a question of the *irregular timing* of the flows and instead may actually be already an issue of the *valuation* of the underlying asset i.e., investment and/or arbitrage opportunities carried out through the medium of foreign exchange.

Taken in this context, the bigger issue is that of exchange rate stability. Since each forex rate is a bilateral price, regional stability requires that each leg of the these bilateral prices must be dynamically consistent and stable. For ASEAN+3 alone, we are talking of at least the 13 currencies plus those of the US dollar and the euro since the bulk of these currencies are tradable in the open market. With open market trading all about demand and supply, it should be easy to concede that stabilizing the value of the respective forex rates within ASEAN+3 on a day-to-day real-time basis is going to be a very expensive proposition.

Since active participation in the trading markets is not a practical option, the challenge is to pursue price stability before it gets to the point of "defending" the integrity of the price itself. This means that we need something that is pre-emptive rather than reactive and this brings us to the issue of surveillance.

Unfortunately, this is one area where development is very much "in progress". In the post-Mexican and Asian crises years, the IMF has settled on the Kaminsky-Lizondo-Reinhart (KLR, 1998) model and the Developing Countries Studies Division model (1999, DCSD) as their internal models while monitoring other models used in the private sector. ADB has also recently fitted an indicator-based model along the lines of KLR for the crisis affected economies (Zhuang and Dowling, 2002). While all of these model suggest some predictive power, the recent assessment of Berg, Borenzstein and Pattillo (2004) of the KLR, DCSD and 3 other popular private sector models finds that there is a notable drop in performance for out-of-sample data. In fact, part of their conclusion is that "the results reinforce the view that EWS models are not accurate enough to be used as the sole method to anticipate crises".

Abiad (2003) suggests — correctly in our view — that the main weakness of these models is that the sample dates crises before the fact. The models have been fitted using some definition of what constitutes a "crisis" rather than allowing the model itself to determine a crisis. For our purposes, this feature of endogenous determination is quite central to our intent of using these EWS models as a pre-emptive tool.

In contrast, ASEAN takes a different route. It now has a program to monitor developments in 6 areas, namely the real, monetary, fiscal, external, corporate and social sectors. To put this in proper perspective, Manupipatpong (2002) reviews the developments that led to the creation of the ASEAN Surveillance Process (ASP) in 1998 and describes in detail the efforts within ASEAN to this effect. When compared with the IMF's model-based approach, the ASP is more informal, subject to peer review but remains nonetheless complementary to the surveillance performed by the IMF.

The peer review gives the ASP a more "local" grounding that was felt to have been lacking when the multilateral agencies first responded to the 1997 crisis. Making it complementary to the surveillance efforts of the IMF provides consistency that is critical since the large part of the BSA funds are linked to an IMF adjustment programme. However, the less-than-comforting econometric results of the stylized EWS models is a concern because there is an obvious need to anchor the surveillance on a common framework of leading signals. Ideally, we would prefer to start from a common base and then allow the peer reviews the leeway to deviate to give a better feel.

On the whole then, surveillance efforts are still in their nascent stages despite extensive initiatives thus far. Unfortunately, to move forward on the challenge of exchange rate stability, the CMI needs to have a systemic and robust model for the simple reason that there is a need to appropriately forewarn and minimize false alarms. An intriguing possibility that should be further explored is the Markov-switching approach of Abiad (2003) because it allows crisis-classification to be an endogenous function. CMI would benefit from this because it can distinguish a speculative attack (which requires funding liquidity) from a structural misalignment (which involves asset valuation). This gives the CMI the balance it requires to work with the operational side (which can be addressed theoretically by the repurchase agreements or some further modification of the BSA) and the structural adjustment that comes with the IMF programme. And because the model provides econometrically-significant lead signals, CMI further benefits from knowing the factors & thresholds that eventually "trigger" a crisis. Note further that the Abiad model can incorporate variables that may be idiosyncratic to specific economies instead of relying on a one-model-fits-all approach.

All these technical difficulties come with using the CMI as a prelude for regional integration. It moves away from the "fire fighting" mode of a liquidity assistance and into a self-regulating mechanism (SRO) for the region. This makes the CMI a mechanism for managing relevant market information using the funds as a means to pre-empt windows of risk. Exchange rate stability plays into this because it mitigates the vulnerabilities in individual economies by substituting it for the collective strength of an aggrupation. Without this risk substitution, the region will be perennially vulnerable to contagion just by the mere fact of the correlated nature of both the capital flows and the structural shocks. This may well underlie the irony of the paradigm shift from the East Asian miracle to being the crisis-affected economies.

5. Appraising the Vulnerabilities of the Regional Financial Market

Moving forward, it is tautological to argue that the success of the CMI rests to a large extent on whether its structural design and operational details are well suited to address the needs of the regional market. This naturally leads us to ask what and where the market's vulnerabilities are because these constitute the "demand" for the CMI as a regional assistance mechanism.

5.1 Reforms and Rehabilitation

The assessment of these potential vulnerabilities is certainly not uncommon and is in fact a recurring output of the multilateral institutions. For example, in the Asia

Table 10
Asia Pacific External Financing
(In Billion USD)

	2002	2003	2004f	2005f
Current Account Balance	**71.3**	**98.8**	**92.7**	**88.1**
External Financing, Net				
Private Flows, Net	**60.7**	**118.1**	**110.1**	**100.4**
Equity Investment, Net	59.9	90.1	84.9	86.2
Direct Investment, Net	56.6	54.8	62.0	62.4
Portfolio Investment, Net	3.4	35.3	22.9	23.8
Pvt Creditors, Net	0.8	28.0	25.2	14.3
Commercial Banks, Net	-1.1	13.8	15.6	10.5
Nonbanks, Net	1.8	14.2	9.6	3.8
Official Flows, Net	**-11.7**	**-15.5**	**-6.6**	**-6.4**
Intl Financial Institutions	-8.7	-9.8	-2.1	-3.4
Bilateral Creditors	-3.1	-5.7	-4.4	-3.0
Resident lending/other, Net	**-6.8**	**-12.8**	**-12.9**	**-12.3**
Reserves (negative = increase)	**-113.5**	**-188.7**	**-183.4**	**-169.8**

Source: Institute for International Finance, 2004
Asia Pacific includes China, India, Indonesia, Malaysia, Philippines, South Korea and Thailand

Economic Monitor (July 2004), the ADB is of the view that the region's vulnerability to external shocks is low at this time. At the core of this view is the build up in international reserves and the improving balance sheet of the banking sector. Both of these became central issues post-1997 and in this sense it is not surprising that these are the core remedial measures in the recovery years.

The ADB notes that the increase in the international reserve position has come

via current account surpluses and capital inflows.[35] This has resulted in a better external debt position in relation to reserves i.e., external debt — defined either as short-term debt or total debt — as a percentage of international reserves has decreased. Coming from a severe crisis driven by capital flows, this build up in reserves is itself important.[36] However, there is also the newer inclination to juxtapose international reserves against external obligations *en toto* rather than the common but more limiting practice of benchmarking against the equivalent number of months of import bill.

As for improving bank balance sheets, this is an important step forward granting that the financial system of Asian economies are still generally bank-dominated. Not only would these improvements offset the significant losses the banking industry incurred in the late 90s, there is also the matter of the underlying forward linkages created by financial intermediation. With the BIS framework taking deeper roots by virtue of time and circumstance, capital adequacy ratios have been above the mandated best practice minimum.[37] This has also been accompanied by a deliberate effort and the opportunity for workouts and the orderly resolution of problem accounts. With the economies generally showing a rebound in economic growth, the improvements in the balance sheet of banks has been met with some uptick in the demand for credit and thus resuscitating the mobilization-intermediation process.[38]

Virtually the same position is taken by the IMF in its Global Financial Stability Report (GFSR, September 2004). In particular, the report argues its view of reduced vulnerabilities for the Emerging Markets by observing the same build up in international reserves and the increased use of active debt management operations which has decreased debt servicing pressure. In addition to the reserves build up, the IMF report also notes the prevalence of floating exchange rates which now allows forex rates to better reflect evolving demand-supply pressures and thus reduce the basic incentive to speculate against a currency. The IMF report likewise cites the improvements in the

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[35]Table 10 is from *Capital Flows to Emerging Market Economies (2004)*, a regular publication of the Institute of International Finance. The ADB's Asia Economic Monitor cites the IIF's estimates of these capital flows from an earlier release of this publication.

[36]This is not meant to prejudge one way or another the issue of whether the build up in reserves has been excessive and thus inefficient.

[37]The market risk amendment to Basel I was incorporated right around the time of the 1997 financial crisis where foreign exchange revaluation was a significant factor.

[38]The health of the banking sector takes on a greater role in Asia because the nonbank capital market component is still being developed and is therefore not a significant source of intermediated capital, particularly those of longer-term funds.

Table 11A
Bank Regulatory Capital to Risk Weighted Assets
(In Percentage)

	IND	MAL	PHILS	SGP	THAI
1998	-13.0	11.8		18.1	10.9
2000	21.6	12.5	16.2	19.6	11.9
2003	22.3	13.7	16.3	17.9	14.0

Source of data: Global Financial Stability Report, Table 22
Note: The Philippines formally adopted the Basel framework in 2001

Table 11B
Bank Return on Assets
(In Percentage)

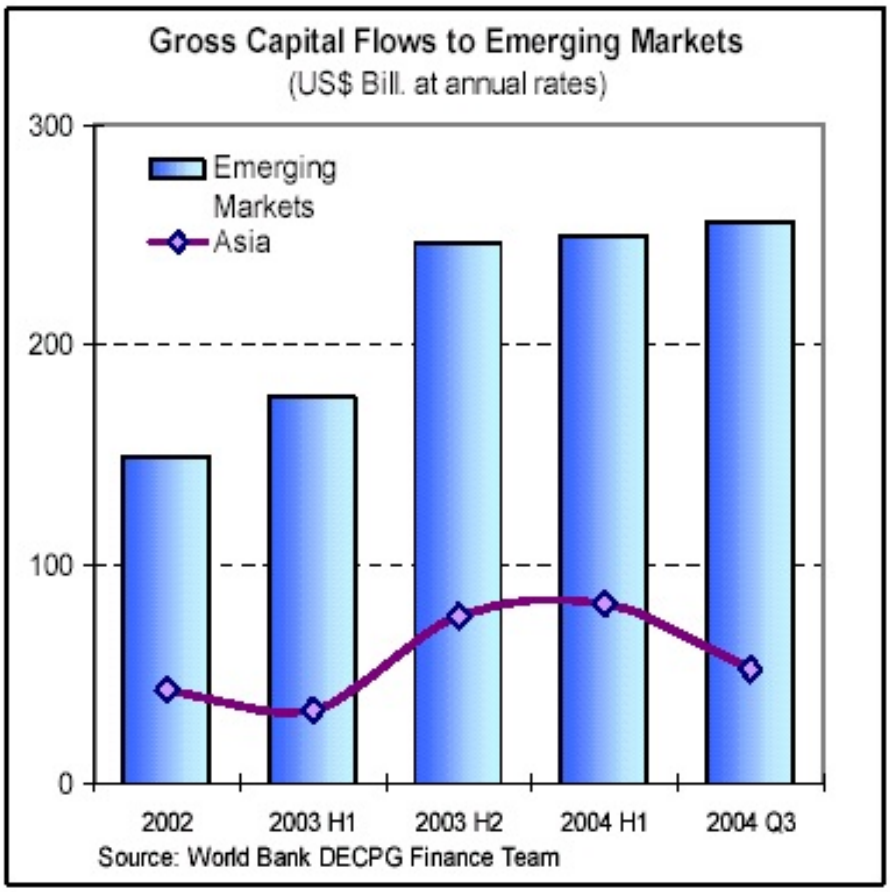
	IND	MAL	PHILS	SGP	THAI
1998	-19.9		0.8	0.4	-5.6
2000	0.3	1.5	0.4	1.3	-1.7
2003	1.6	1.4	1.1	0.9	0.8

Source of data: Global Financial Stability Report, Table 26

Table 11C
Moody's Weigted Average Bank Financial Strength Index
(0 = Lowest; 100=Highest)

	IND	MAL	PHILS	SGP	THAI
Dec '01	1.7	30.4	17.5	75.0	15.8
Dec '02	3.0	31.7	20.4	74.7	15.8
Dec '03	3.0	33.3	20.4	74.7	15.8
May '04	7.3	36.8	19.2	74.7	16.7

Source of data: Global Financial Stability Report, Table 28



capital adequacy, asset quality and earnings of banks which provide the stronger balance sheets from which banks operate in the performance of their intermediary function. (See table 11).

5.2 The Return of Confidence and Capital Inflows

The significance of the above notwithstanding, perhaps the most critical observation to-date is that capital flows are back in Asia. The World Bank's East Asia Update (November, 2004) notes that the large inflow to the Emerging Markets in the 2nd half of 2003 is the first such occurrence since the 1997 crisis. As can been seen from the figure above (which is exhibit 19 of the cited World Bank publication), Emerging Asia shares the same pattern..

Table 10 basically reiterates what the World Bank has noted. One can readily verify that out of the USD57.4 billion increase in net private flows from 2002 to 2003,

Table 12
Financial Flows to Emerging Market Economies, Net
In Billion USD

	2002	2003	2004f	2005f
Private flows	**125.0**	**212.8**	**225.9**	**229.3**
Latin America	16.3	30.5	37.0	49.3
Europe	46.6	60.7	68.3	73.7
Africa/Middle East	1.4	3.6	10.4	5.8
Asia Pacific	60.7	118.1	110.0	100.4
Official flows	**-6.4**	**-21.6**	**-19.9**	**-26.7**
Latin America	4.4	-0.4	-6.0	-10.2
Europe	2.1	-3.7	-5.4	-9.0
Africa/Middle East	-1.2	-2.0	-2.0	-1.1
Asia Pacific	-11.7	-15.5	-6.6	-6.4

Notes: f = IIF forecast
Source: International Institute of Finance, 2004

USD31.9 billion (55%) is due to portfolio investments while another USD27.2 billion (47%) is attributable to increased credits from banks and nonbank financial institutions. The World Bank points out that this indicates renewed investor confidence as Emerging Market securities in general are back in demand. This is in recognition of the post-crisis reforms — precisely the buildup in international reserves, the current account surpluses and the strengthening of the balance sheets of the respective banking sectors — and in spite of more recent global uncertainties. This is similar to what the Asian Economic Monitor observes as the shift out of lower yielding assets and into higher yielding (but riskier) securities, effectively a rebuilding of investor confidence.

Table 12 takes the message of the above World Bank chart one further step: aside from having similar trends, IIF estimates show that roughly half of Emerging Market flows actually accrue to the Asia Pacific region. When one focuses further on the five crisis-affected economies (table 13), the trends described thus far are remarkably robust. In particular, there is a sharp turnaround in net portfolio equity investments which practically accounts for the full increase in net private flows. For reasons already stated, it also helps that commercial bank credit has turned positive

Table 13
Net Private Capital Flows to the Five Crisis-Affected Economies
(In Billion USD)

	98	99	00	01	02	03
Net Private Flows	**-36.44**	**1.73**	**15.11**	**4.82**	**9.79**	**25.51**
Equity Investment, Net	**17.81**	**31.01**	**24.64**	**19.34**	**7.27**	**21.02**
Direct Investment, Net	13.54	16.45	13.12	9.70	7.68	5.94
Portfolio Investment, Net	4.26	14.55	11.53	9.64	-0.41	15.08
Pvt Creditors, Net	**-54.25**	**-29.28**	**-9.54**	**-14.52**	**2.52**	**4.49**
Commercial Banks, Net	-50.95	-28.96	-13.00	-7.71	2.81	4.71
Others, Net	-3.30	-0.31	3.46	-6.81	-0.28	-0.22

Source: Institute for International Finance, 2004, as cited in the Asian Economic Monitor, ADB

after several years of being a net negative flow.

These are not insignificant details. Just by the mere fact that the 1997 crisis came about because of the exit of foreign capital "amidst mounting evidence of falling asset prices and strained finances of firms and banks" (McCauley 2003), the return of capital inflows in the magnitude and structure just described is both reassuring (i.e., on the investor confidence aspect) and potentially problematic (i.e., the ever-present issue of sudden capital reversals).

5.3 ASEAN as a Player in the Market for Capital and Risk

The return of capital inflows is, however, just one side of the issue. The flip side of this is the reversal of ASEAN's current account balance from perennially negative prior to 1997 to one which is positive since the crisis (table 14). In fact, what is significant is not only the turnaround in the balance but more so the comparative magnitudes involved. From a cumulative 6-year deficit of just under USD57 Billion between 1992 to 1997, the six years hence has generated an aggregate balance of roughly USD305 Billion, driven principally by surpluses in the trade balance.

This is relevant because it suggests that the Capital and Financial account in the

Table 14
ASEAN Current Account Balance
(In Million USD)

Year	Balance	Year	Balance
1992	– 6,663.80	1998	47,812.81
1993	– 9,543.67	1999	55,871.14
1994	– 5,909.97	2000	49,501.47
1995	– 16,074.70	2001	41,593.75
1996	– 16,876.36	2002	47,986.95
1997	– 1,792.74	2003	62,094.40
Sub-Total	**– 56,861.24**	**Sub-Total**	**304,860.52**

Source of data: International Financial Statistics, IMF

Balance of Payment must be showing a negative balance.[39] This can only mean that ASEAN residents are increasing their outward transactions with the rest of the world. Indeed, this is the case as the Financial account of ASEAN member economies has been collectively net negative from 1997 onwards and in fairly significant amounts (see table 15).[40]

Thus, there are now two sides to the flow of capital that is of note to the region in general and to ASEAN in particular: the return of portfolio inflows into the region while ASEAN is itself collectively investing abroad in larger amounts. Effectively then, ASEAN has become a net exporter of capital in the post-crisis years.[41]

This is an interesting new development that has significant implications on

[39]The CD-Rom of the IFS data series has largely incomplete data on the capital account for ASEAN member economies. This is partly the reason why we infer instead its balance through the current account, reinforcing in the process the finding of the new trend of trade surpluses within ASEAN post-1997

[40]Financial account includes direct investments, portfolio investments, financial derivatives and other investments. Asset entries represent resident investments abroad (an outflow) while liabilities are inflows of foreign investments into the home country.

[41]The Emerging Markets as a whole has actually become a net exporter of capital. See chapter 4 of the Global Financial Stability Report (September 2004) of the IMF for a detailed discussion.

Table 15
ASEAN Financial Account Balance
(In Million USD)

Year	Assets	Liabilities	Balance
1992	– 5,605.82	35,160.68	29,554.86
1993	– 23,294.37	52,427.64	29,133.29
1994	– 26,035.53	39,873.29	13,837.70
1995	– 28,162.16	72,188.73	44,026.56
1996	– 31,465.95	76,782.66	45,316.70
1997	– 74,608.55	60,931.63	– 13,676.82
1998	– 26,612.66	– 15,492.26	– 42,105.03
1999	– 73,203.11	36,027.08	– 37,176.08
2000	– 54,468.32	24,093.12	– 30,375.20
2001	– 50,658.05	20,749.05	– 29,909.00
2002	– 33,435.74	10,194.51	– 23,241.24

Source of data: International Financial Statistics, IMF

regional mechanisms such as the CMI. At one level, it highlights the challenges that regulators face in trying to deal with private flows using public policies. Today's market conditions differ sharply in the sense that international flows in the 70s and up to the late 80s at least were driven by official flows. Since the onset of the 90s, private flows have dominated official flows so much so that the day-to-day dynamics poses unique challenges as far as public policy is concerned.[42]

At another level, however, there is also the attendant issue of how the volatilities are being generated. From the perspective of a regional cooperative mechanism such as the CMI, it is always relevant to be able to anticipate — rather than react to — flows given the damage that they can potentially generate under a contagion situation. But finding ASEAN to be a net exporter of capital adds a new perspective that had no opportunity to be explored previously. The interesting question that can now be raised

[42]Data on capital flows from the 90s onwards is commonly cited in IMF, WB or IIF publications. For data going back to the 70s, see Lee and David (1989) appendix 3.

Table 16
Components of the Financial Account Balance of ASEAN
(In Million USD)

Year	Direct Investment		Portfolio Investment		Financial Derivatives		Other Investment	
	Asset	Liability	Asset	Liability	Asset	Liability	Asset	Liability
1992	-1463.5	11719.9	976.5	1268.5	0	0	-5118.8	22172.3
1993	-3115	14927.8	-8782.2	10316	0	0	-11397.2	27183.8
1994	-5981.1	18213.4	-8476.5	5728.6	0	0	-11578	15931.3
1995	-4882.9	24098.9	-8713.8	10124.6	0	0	-14565.5	37965.2
1996	-7947.1	27589.8	-14986.7	14427.8	0	0	-8532.2	34765
1997	-9849.2	31277.3	-13951.5	1829.2	0	0	-50807.9	27825.2
1998	-689.9	21235.1	-10747.9	-880.5	0	0	-15174.9	-35846.8
1999	-7144.9	24120.7	-12986.2	8047.1	159.7	-291.1	-53231.7	4150.3
2000	-7962.8	18150.7	-12848.2	-5616.8	279.5	-219.7	-33936.8	11778.9
2001	-10005.6	14781.8	-11796.8	201.3	-234.5	-2.6	-28621.2	5768.6
2002	-13851.8	12963.2	-13227.1	700.2	-173.7	-139.5	-13851.8	-3329.5

Source of data: International Financial Statistics, IMF

is the extent to which ASEAN's concerted effort to mitigate the externalities of capital inflows is overshadowed by the fact that it is actually manifesting private capital outflows on balance.

This is all the more important when you look closer into the components of the financial account of ASEAN. What you will find is that direct investments are not significant on a net basis. In fact, there are still substantially more "lasting interest" coming into ASEAN than ASEAN funding direct investments abroad. What has really turned around the financial account balance is the combination of portfolio and other investments. By definition, portfolio investments include securities (debt and equity) and money market instruments. Other investments on the other hand cover trade credits, loans to finance trade & other advances, financial leases, repurchase agreements, currency and deposits as well as miscellaneous receivables and payables.[43]

The point of all these is two-fold. First, while efforts are continuously being exerted to strengthen the so-called self-help mechanisms such as the CMI because of the volatilities inherent in the capital market, IFS data shows instead that the bulk of the capital that flowed into ASEAN from 1998 to 2002 are actually "lasting interests" in the form of direct investments.[44] On net, total foreign direct investments made into the ASEAN over this period were six times the amount of incoming portfolio and other investments.

Second, while some USD39.6 Billion were invested abroad as direct investments, ASEAN residents also made portfolio and other investments totaling a staggering USD206.4 Billion in the aggregate. Thus, the issue is not only that ASEAN now invests more abroad than the amount of foreign saving going into ASEAN but also that its participation in the international capital market is in instruments that are tradable (i.e., securities) or normally of short-term tenor (i.e., trade finance, repos, receivables, and payables). It is one thing to find ASEAN in a position of being a net exporter of capital but the policy implications are quite different if the capital being exported are mostly in fungible form as well (rather than for real capital formation).

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[43] See IMF Balance of Payments Manual, 5th edition, for detailed discussion.

[44] IFS CD-Rom as of June 2004 only has incomplete data for 2003 and is thus not included in table 16. We do acknowledge however that estimates suggests a very strong inflow of portfolio funds in 2003.

5.4 What is Driving the Flow of Capital

All of the above beg the question of what is driving the capital flows. Is the pursuit of returns under a "short-termist philosophy" as described by Griffith-Jones above sufficient explanation? If so, why is foreign saving flowing into ASEAN when ASEAN residents themselves seem to be investing overseas? Shouldn't capital simply converge to a common corner-solution specially now that information is well disseminated? To explore these questions, it becomes necessary to consider the dynamics of inflows and outflows separately as the underlying stimuli are quite different.

5.4.1 Private Capital Inflows Into ASEAN

It is quite tempting to suggest up front that the simple reason for the return of portfolio inflows to the region is the renewed confidence generated by the reforms — and its results — which post-crisis Asia has undertaken. These include precisely the improving bank balance sheet, the build up in international reserves, an improved external debt position and the increasing prevalence of floating foreign exchange rates which the ADB, IMF and World Bank cite in their respective reviews. This however side steps the broader issue of why the funds flowed into the region in the first place and what caused the subsequent withdrawals.

In the context of this broader issue, a distinction between "push" and "pull" factors have been made in the literature and analyzed extensively. In the case of the former, conditions in the industrial economies are said to "push" capital towards the developing countries. As pointed out by the World Bank (1997):

> *"As private capital flows to developing countries began to surge in the early 1990s, coinciding with declining global interest rates, it was generally assumed that these flows were being driven primarily by cyclical factors in the industrialized countries. This assumption was supported by early econometric analysis."*

The seminal work in this area is attributed to Calvo, Leiderman and Reinhart (1993) who looked at Latin America and tested whether the private flows were due more to cyclical international factors or to economic fundamentals. Their findings suggested that the main drivers of these flows were the economic slowdown and the decline in global interest rates. Expanding the sample to include Asian economies, Fernandez-Arias and Montiel (1996) provide empirical evidence to show that the surge in capital to developing countries in the early 90s can be attributed to falling interest rates in the US. Fernandez-Arias (1994) in fact found that 86% of the increase in portfolio flows to the

average emerging market can be attributed to global interest rates.

Interestingly, while estimates reported by the World Bank (1997) show a high degree of co-movement between flows to Latin America and East Asian between 1990 to 1993 and that this co-movement was statistically related to US interest rates, it also shows evidence that the degree of co-movement between the flows to the two regions declined from 1993 to 1995. As this occurred against the backdrop of rising US interest rates and amidst the Mexican crisis, this weakening correlation is taken to suggest the emergence of "pull" factors as the more dominant factors of late. In fact, a recent study by Hernandez, Mellado and Valdes (2001) shows that real US interest rates are statistically insignificant in explaining private capital flows and that much of the drivers of the capital surges in the 70s and 90s can be explained by so-called fundamentals of the economies and by contagion.[45]

A possible middle ground is provided by Taylor and Sarno (1997) who also investigated capital flows from the US to Latin America and Asia in the 1988 to 1992 period but look at portfolio flows specifically. Instead of arguing for either "push" or "pull" factors, they find that both sets of factors help explain portfolio flows over the long-term. Where the results are most striking is when the portfolio flows are disaggregated into equity and debt components. What they find is that over the long-term global and domestic factors equally influence equity flows but the former dominates the latter in explaining bond flows. In fact, they find that global interest rates are important in driving the short-run dynamics of portfolio flows, particularly in explaining bond flows to developing countries.[46]

These results are particularly instructive because they rephrase the debate in the context of the varied risks inherent in differentiated instruments within the financial market. Direct investments, by virtue of being "lasting interests", are supposed to have a long-term view of market conditions and are therefore not expected to be as sensitive to changes in high-frequency data as portfolio flows. With the stream of cash flows of fixed income instruments such as bonds known in advance, its market valuation (outside of outright default) is completely driven by changes in the benchmark interest rates.

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[45]3-month US dollar LIBOR rate net of 3-month CPI inflation is used as a proxy for international interest rates. As for the contagion aspect, they provide empirical evidence to suggest that an economy actually receives private capital just because these funds are generally available to all emerging markets.

[46]There is an implicit presumption that domestic interest rates and international rates are not independent. Arbitrage and the interest rate parity theorem formalize this unless the policy decision has been made that the price adjustment would come out of the foreign exchange rate.

Discounting also applies to equities but there is the added complication of not having deterministic cash flows which exposes it to the vagaries of local conditions. This may well explain why domestic and global factors are important determinants of equity flows but the interest rate aspect of the latter is the most critical factor for bond flows.

This risk-return framework can account for the dynamics of capital inflows into ASEAN. For direct investments, its continued inflow into ASEAN in the post-crisis years can be seen as part of the basic pursuit of diversified returns. For a number of reasons, the general expectation is for direct investments to generate higher returns in emerging markets than in industrialized economies. Lehmann (2002) looked at US affiliates in 23 emerging markets and provides empirical validation that indeed this is the case after controlling for a host of local conditions.[47] However, this is not simply an issue of *arbitraging* for better returns all things equal. Emerging Asia has its own set of risks and the added return on equity estimated by Lehmann is a reflection of this incremental risk. This is why it's a diversification strategy particularly when one considers that the nature of direct investments is not meant to be a short-term economic and/or financial position.

Data on the equity component of FDIs within ASEAN adds a further insight. These flows predominantly accrue to the five original member economies of Indonesia, Malaysia, Philippines, Singapore and Thailand (IMPST) where interest rates — as a general proxy for corporate ROEs — are generally higher than that of the US. A closer inspection of the data will reveal however that 62% of these flows from 1999 to 2003 went into the organized market of Singapore alone where interest rates are normally lower than in the US. In this sense, the FDI flows can further be seen as embarking on a *foothold strategy* precisely into a region whose upside potentials in retail power and comparative production cost are well documented.

Portfolio flows can be argued to follow similar dynamics. The market has long held the view that Asian bonds provide some diversification benefits to otherwise global portfolios. Quite naturally, what is underlying this view is the belief that Asian bonds provide returns that either are not perfectly correlated with global return benchmarks or may actually be in excess of the attendant risks.

Although this market view has been the norm for sometime, it was often argued in publications of private circulation, mostly from analysts in international brokerage houses to their client base. Fortunately, a recent paper by McCauley and Jiang that

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[47] The Lehmann study covers the period from 1983 to 1998. Not surprisingly, the 1997 crisis reverses this trend with 1998 data.

Table 17
Equity Component of FDIs Into the Five Original ASEAN Economies
(In Million USD)

Source Economy	1999	2000	2001	2002	2003
Japan	2,252.10	1,207.36	3,224.01	2,550.18	1,662.00
USA	3,707.30	2,298.98	1,738.36	105.47	2,699.28
EU	7,683.74	4,456.40	5,885.95	654.85	4,921.89
ASEAN	1,495.44	824.88	1,038.72	1,673.77	1,683.08
Others	6,276.08	4,465.20	1,214.45	1,333.11	3,125.05
TOTAL	21,414.66	13,252.82	13,101.49	6,317.38	14,091.30

Source of data: ASEAN FDI Database, ASEAN Secretariat

Table 17B
Equity Component of FDIs Into Singapore
(In Million USD)

Source Economy	1999	2000	2001	2002	2003
Japan	1,051.20	170.70	1,528.70	689.90	744.80
USA	2,056.70	1,458.90	1,197.90	-79.60	2,433.90
EU	5,329.30	2,678.30	4,953.30	563.00	3,448.70
ASEAN	481.90	387.20	319.50	625.00	420.00
Others	2,737.60	2,577.70	2,148.40	948.90	3,512.40
TOTAL	11,566.70	7,273.80	10,147.80	2,747.20	10,559.80

Source of data: ASEAN FDI Database, ASEAN Secretariat

appears in the September 2004 issue of the BIS Quarterly Review gives formal validation to this view. Specifically what they find is that:

> *"Asian local currency bonds offer scope for diversification since their returns co-move only moderately with their US Treasury counterparts. In particular, their correlations with US Treasury bonds mostly lie below*

> *those of euro area or Australian government bonds. If Asian bonds' risk is measured by just the volatility of returns, then only by being combined in a portfolio would they offer a favourable risk-return trade-off relative to US Treasury bonds. If risk is measured by co-movement with the US bond market, almost every Asian bond market shows a very favourable risk-return trade-off".*

There are several interesting specific results in the McCauley and Jiang work. For example, they find that the returns on dollar-denominated Asian bonds are not strongly correlated with the returns of US Treasuries. However, the returns of local-currency-denominated Asian bonds are more correlated to US Treasuries. This gives the impression that exchange rates create econometric noise. Pursuing this further, McCauley and Jiang then test for "pass-through effects" from US yields to local currency and find a wide range of results, from the zero effect for China & India, to the 20%-35% for the crisis-affected economies, to 50% for Singapore and finally full pass-through for Hong Kong's Exchange Fund paper.

This pass-through effect therefore influences the covariance between the yield on US Treasuries and the counterpart yield on local currency-denominated Asian Bonds. The less the pass-through effect, the lower will the covariance be and the more domestic factors influence the Asian bond. Such bonds provide the best upside for portfolio diversification purposes.

The point then is that the central attraction for portfolio inflows is caused by the low correlation with US benchmarks. This is a *relative* factor whose impact & influence differs from economy to economy. This then suggests that the array of mainstream domestic (pull) factors are instructive indicators but may not provide absolute triggers in and of themselves.

5.4.2 ASEAN Residents' Investments Abroad

The other side of this story is the new twist where capital is flowing outward from ASEAN. Essentially, these funds end up in the US and the largely portfolio flows from ASEAN are really financing the current account deficit of the US.

The IMF cited this deficit in the GFSR (September 2004) as a major global imbalance, raising issues about its sustainability. Data in table 18A reveal however that this deficit is not a new phenomena. Instead, the US has been incurring a trade balance deficit over the past 2 decades which has subsequently created a corresponding current

Table 18A
Key Accounts in the Balance of Payments of the US
(In Billion USD)

	CURRENT ACCOUNT	TRADE BALANCE	CAPITAL ACCOUNT	FINANCIAL ACCOUNT	Direct Investment	Portfolio Investment	Other Investment
1983	-44.22	-67.09	0.16	23.01	2.73	1.75	18.53
1984	-99.01	-112.48	0.16	80.8	12.41	24.96	43.43
1985	-124.47	-122.18	0.16	105.2	5.95	68.54	30.71
1986	-147.17	-144.64	0.3	117.97	11.42	81.51	25.04
1987	-160.65	-159.24	0.37	160.19	23.44	61.68	75.08
1988	-121.25	-126.61	0.49	143.87	35.21	65.87	42.79
1989	-99.5	-117.04	0.34	74.83	24.8	73.64	-23.61
1990	-78.96	-110.27	-6.58	62.44	11.29	-6.76	57.91
1991	3.69	-75.7	-4.48	40.63	-14.72	11.86	43.49
1992	-48.03	-95.13	-0.56	92.34	-28.46	22.81	98
1993	-81.95	-130.55	-1.3	82.91	-32.57	-35.25	150.73
1994	-117.71	-163.78	-1.72	124.6	-34.05	79.1	79.55
1995	-105.19	-172.33	-0.93	95.91	-40.98	87.84	49.05
1996	-117.16	-189.1	-0.65	130.54	-5.36	182.95	-47.05
1997	-127.68	-196.18	-1.04	220.18	0.77	214.13	5.27
1998	-204.67	-244.74	-0.74	82.51	36.39	63.37	-17.24
1999	-290.87	-343.72	-4.84	227.82	64.51	169.36	-6.05
2000	-411.46	-449.79	-0.8	456.63	162.06	298.09	-3.53
2001	-393.74	-424.11	-1.06	420.5	31.62	340.44	48.44
2002	-480.86	-479.38	-1.29	531.68	-98.21	437.24	192.64
2003	-541.83	-546.16	-3.05	577.44	-72.77	451.47	198.74

Source of data: International Financial Statistics, IMF

Table 18B
US Portfolio Investments
(In Billion USD Unless Otherwise Stated)

	Net Equity Securities	Net Debt Securities	TOTAL SECURITIES	Residents	Non Residents	Residents (In %)	Non Residents (In %)
1983	2.30	-0.55	1,163.44	999.88	163.56	85.94%	14.06%
1984	- 2.23	27.19	1,360.81	1,160.52	200.29	85.28%	14.72%
1985	0.63	67.91	1,586.59	1,360.20	226.39	85.73%	14.27%
1986	16.75	64.76	1,802.22	1,532.83	269.39	85.05%	14.95%
1987	17.16	44.52	1,944.60	1,648.30	296.30	84.76%	15.24%
1988	- 3.98	69.85	2,082.29	1,728.45	353.84	83.01%	16.99%
1989	- 8.23	81.87	2,227.02	1,803.28	423.74	80.97%	19.03%
1990	-23.37	16.61	2,465.77	2,027.41	438.36	82.22%	17.78%
1991	-20.24	32.10	2,757.80	2,281.51	476.29	82.73%	17.27%
1992	-38.01	60.82	3,061.55	2,541.21	520.34	83.00%	17.00%
1993	-42.43	7.18	3,309.88	2,715.33	594.55	82.04%	17.96%
1994	-47.21	126.31	3,465.57	2,833.00	632.57	81.75%	18.25%
1995	-48.89	136.73	3,608.52	2,788.36	820.16	77.27%	22.73%
1996	-71.79	254.74	3,755.08	2,707.82	1,047.26	72.11%	27.89%
1997	9.45	204.68	3,778.27	2,612.58	1,165.69	69.15%	30.85%
1998	-59.40	122.77	3,723.67	2,538.72	1,184.96	68.18%	31.82%
1999	- 2.02	171.38	3,652.68	2,572.24	1,080.44	70.42%	29.58%
2000	86.89	211.21	3,357.76	2,331.62	1,026.14	69.44%	30.56%
2001	12.32	328.13	3,352.74	2,313.04	1,039.70	68.99%	31.01%
2002	35.52	401.72	3,609.75	2,395.52	1,214.24	66.36%	33.64%
2003	-54.34	505.82	4,008.20	2,519.16	1,489.05	62.85%	37.15%

Source of data: International Financial Statistics, IMF

account deficit recurring over the same period. This in turn has been financed by a surplus in the financial account, initial driven by "other investments" but has turned towards portfolio investments as the dominant factor since 1995.

Table 18B disaggregates the portfolio flows and shows that the financing really has come out of debt securities. In fact, the data series manifests a significant break as debt instruments increased 17-fold from USD7.18Billion in 1993 to over USD126 Billion the year after. This of course times well with the shift from other investments to portfolio investments in the financial account. To further show how foreign saving has become a factor in the US economy, one can also easily see from table 18B that the share of securities held by non-residents has been increasing. Specifically we note the sizeable jump between 1994 and 1996 amounting to 960 basis points after a cumulative rise of only 419 basis points over a 12-year period from 1983 to 1994.[48]

Of course, the mere fact that the US has been incurring a persistent current account deficit does not necessarily explain either the outflows or its timing but only provides a possible destination for ASEAN capital outflows. In effect, the US deficit provides the opportunity but *ipso facto* is not the motive.

One possible explanation for the capital outflow in the post-crisis years may be the crisis itself. On the private sector side, the pronounced depreciation of regional currencies against the US dollar reinforced the latter's traditional role as a safe-haven currency. One would expect then that market players would re-balance their portfolio by shifting into USD-denominated assets and move out of local currency instruments when and where this opportunity presents itself. For high networth investors, this could actually be effected by buying into USD-denominated debt instruments. For the vast majority of investors, this could be as simple as building up foreign currency (notably US dollars of course, back then) bank deposits sourced either domestically or cross-border.

Unfortunately, this portfolio re-balancing is difficult to document. Most economies lump their deposit data (demand, savings, time and foreign currency) and express this in local currency terms making it impossible to determine whether any change in value is due to a movement in volume (i.e., the outstanding balance of USD deposits) or a revaluation due to depreciating local currency. On cross-border deposits, this too is notoriously difficult to track and has become a perennial problem for compilers

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[48]The percentage share due to non-residents was actually consistently declining from 17.46% in 1980 to 14.06% in 1983. If we had used 1980 as a reference instead, the actual point-to-point increase up to 1994 was only 79 basis points which all the more makes the subsequent 960 bps increase quite significant.

Table 19
Official Foreign Exchange Holdings

	1998		2002	
	Billion USD	Share	Billion USD	Share
Eat Asia ex-Japan	562.9	34.6	908.8	40.0
Japan	203.2	12.5	443.1	19.5
Australia & NZ	17.2	1.1	19.9	0.9
World Total	1,627.8	100.0	2,274.2	100.0

Source: Taken from McCauley (2003), page 49.
Note: East Asia comprises China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand

of BOP statistics and for central bank monitoring.

On the public sector side, the conscious effort was to accumulate international reserves. McCauley (2003) points out the extent of this build up, increasing the share of East Asia to 40% of the world's aggregate holding of international reserves by 2002. Left to its own however, the build up in reserves will represent foregone opportunity unless these are channeled into productive placements in the meantime. This "opportunity" is in fact provided by US Treasuries both because of its increased supply brought about by the current account deficit and because of its highly marketable nature which therefore provides liquidity as the need arises. According to Kadlec (2004), Asians now hold the bulk of US debt papers, something which can readily be verified by data from the Treasury International Capital reporting system of the US Treasury Department.

5.5 Some Regional Issues to Consider

In considering the region's vulnerabilities, we can look towards the array of macroeconomic factors that have already been cited elsewhere. For example, there is the sharp rise in world oil prices and how this will have a negative impact on the cost of doing business in the region. Although Emerging Asia seems to be enjoying record growth again, there appears to be a slowdown in the developed markets. This will surely cascade back to Asia in terms of external trade dynamics as well as possible adjustments in capital flows. And at the industry level, it has been mentioned that the technology sector is poised for a cyclical downturn which will again bear directly on East

Asia since much of the production emanates from our region.

Beyond these concerns, however, the very nature of financial markets under the contemporaneous condition of cross-border finance suggests that the market will invariably respond more to high-frequency data. One cannot expect financial prices to be stagnant in the 90 days that span announcements of quarterly macroeconomic information. Instead, fund movements are driven by opportunities in valuation whether they be of the short-term or longer-term nature. This risk-adjusted return framework underlies the approach used in this paper and our view of the region leads us to highlight a few issues that will influence changing valuation which in turn could impinge on regional arrangements such as the CMI.

5.5.1 Large and Increasing Exposure to US Debt Instruments

The US deficit situation has been analyzed repeatedly and extensively. Much of the focus is on the sustainability — or lack thereof — of the deficit position and what the economic impact of this will be.

To appreciate where and how the risks arise in this situation, it is important to get a feel of the relevant numbers. As of end September 2004, the US Treasury reports that its outstanding debt was USD7.379 Trillion of which USD4.307 Trillion is debt held by the public.[49] Taking out the USD698.2 Billion in public issues held by Federal Reserve Banks leaves USD3.605 Trillion of public debt issues held by private investors. Of this amount, roughly 52% or USD1.862 Trillion is estimated to be in the hands of foreign nationals and/or institutions. Data from the Treasury International Capital (TIC) reporting system shows that out of the USD1.844 Trillion in Treasury securities, Japan, China, Hong Kong SAR, Korea, Singapore and Thailand are among the major foreign holders representing some USD1.048 Trillion.[50] For the week ending December 29, 2004, the Federal Reserve has just announced that US Treasuries held by foreign central banks amount to USD1.34 Trillion.[51]

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[49]The US Treasury actually has a day-to-day to-the-penny reported balance of its debt. As of December 28, 2004, the total debt is USD7.536 Trillion of which USD4.415 Trillion is held by the public. We report end September data in the main text to align the data to other debt data reported in the paragraph.

[50]Figures cited are taken from the US Treasury website and/or the December 2004 issue of the US Treasury Bulletin.

[51]News release available at http://asia.news.yahoo.com/041230/3/1u0sp.html

For our purposes, there is increasing market risk as Asia continues to accommodate the US deficit. As the debt situation worsens, interest rates are generally anticipated to make an upward adjustment. For Asian holders of the US Treasuries, any increase in the benchmark rate represents a mark-to-mark loss i.e., the market value of this fixed income instrument is falling as discount rates rise. Although central banks espouse a risk-based framework in fulfilling their oversight responsibilities, almost all central banks — if there are exceptions at all — will report their investment holdings at either par value or acquisition cost. This keeps the mark-to-market loss as a contingent liability should the need for liquidity — the main point for which such mechanisms such as the CMI — arise.

As the US dollar depreciates further versus other benchmark currencies such as the euro, these US Treasuries are also losing their intrinsic value. Liquidating these securities in a falling USD market is not an attractive option because a sell-off is likely to exacerbate the fall in the value of the securities. Holding onto them however is equally costly as the contingent losses further mount. Under status quo conditions therefore, Asia is already incurring losses regardless of whether these losses are recognized outright or not. Clearly, the longer the US deficit situation persists, the more likely changes in benchmark rates — either interest rates or with the USD itself — will occur. At this point, the depreciating market values are inevitable and the greatest risk is in effecting a disorderly wind down of the investment positions.

5.5.2 Absence of Regional Capital Market

The fact that East Asia is even in a position to accommodate the US deficit suggests that indeed there is some free cash flow, on net, that can be disbursed. This can only be sourced one of 2 ways: (a) out of existing wealth and (b) new saving from economic activity.

This is an issue to the extent that these resources are being diverted out of the region and placed in developed markets, notably the US. The magnitude of these flows only exaggerates the point but the fundamental weakness is unchanged. The fact of the matter remains that investors are more comfortable financing off-shore opportunities rather than rec-cycling the funds within the region.

The irony here of course is that the self-help mechanisms like the CMI were drawn up precisely to provide bridge financing in times of liquidity needs. If the collective magnitude of the capital outflow is any indication, indeed ASEAN has the resources to provide such financing. However, these resources are private sector funds

whose objectives are not always necessarily aligned with the sovereign interests. In fact, the mere fact that these resources are invested off-shore in foreign currency denominated instruments should suggest that they are themselves creating some of the price volatility that CMI is structured to address.

The challenge then moving forward is to provide a venue for these funds to be kept within the region. At a high level, this involves a regional money and capital market whose viability rests on its ability to maintain liquidity i.e., that participants can buy and sell instruments at transparent market prices as the need arises. While there are initiatives towards this objective within ASEAN, for example, prolonging its absence is a mounting vulnerability since the option is to invest these funds out of the region, depriving the region of liquidity and generating some price volatility in the process.

5.5.3 Alignment of Pricing

Defining such a market within the region is however not just an issue of desire or policy prescription. At the end of the end, a regional market can be developed if the individual markets in the respective economies are themselves stable. This allows the crafting of the regional market to be the logical "next step" because it enhances liquidity, integrates varied opportunities and provides a wider array of differentiated products to a diverse group of market participants.

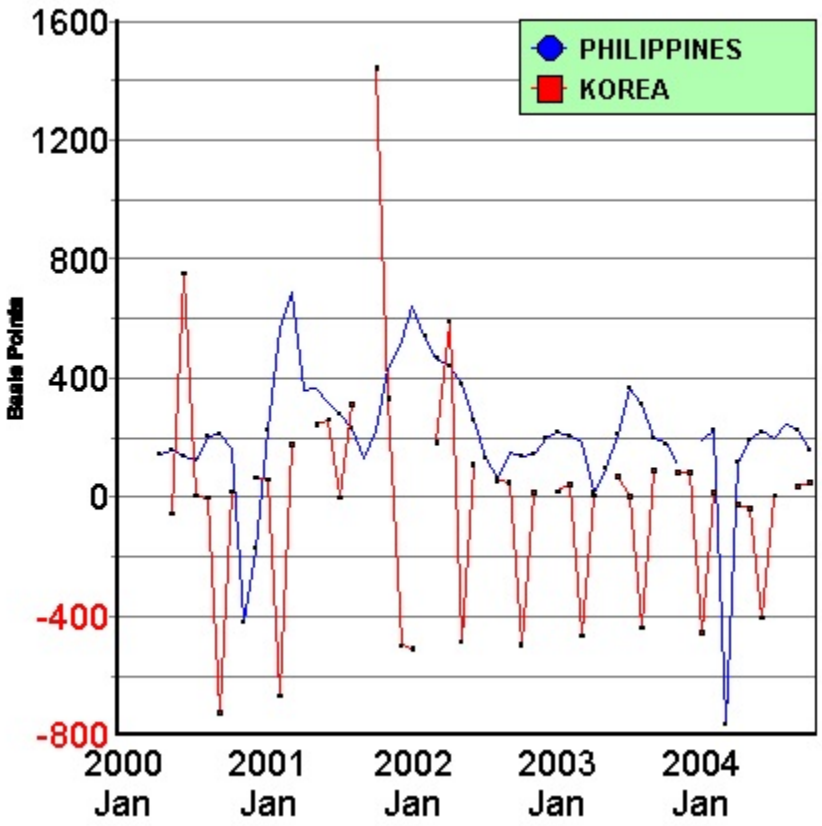
This "stability" is not determined by the amount of resources available in any given market. Instead, financial markets are best phrased in the context of the "price discovery" function. What this suggests is that financial prices must naturally arise from market dynamics and such information of valuation should be accessible. This in turn depends on prices maintaining certain levels of consistency so that market activity is driven by basic demand & supply rather than by arbitrage.

Specifically, we test for consistency in the area of interest rate levels and in the foreign exchange rate. In the case of the former, we calculate the implied forward rate embedded in the yield curve and compare this with the rate that materializes in the future. This should tell give us an indication whether interest rates across competing tenor buckets are internally consistent. In the case of the latter, we calculate the implied swap points using US interest rates as a benchmark. This allows for a simple market test of the extent to which the foreign exchange rate responds to interest rate differential with the US.

Unfortunately, we find that there is still notable pricing inconsistencies in the

region except in an established financial center like Singapore. Between January 2000 and October 2004, implied 91-day interest rate is generally higher than the spot 91-day rate in the Philippines and South Korea. The actual gap between the implied and the outright forward varies, ranging from the very pronounced in the case of the Philippines to minor differences in Malaysia and Thailand.

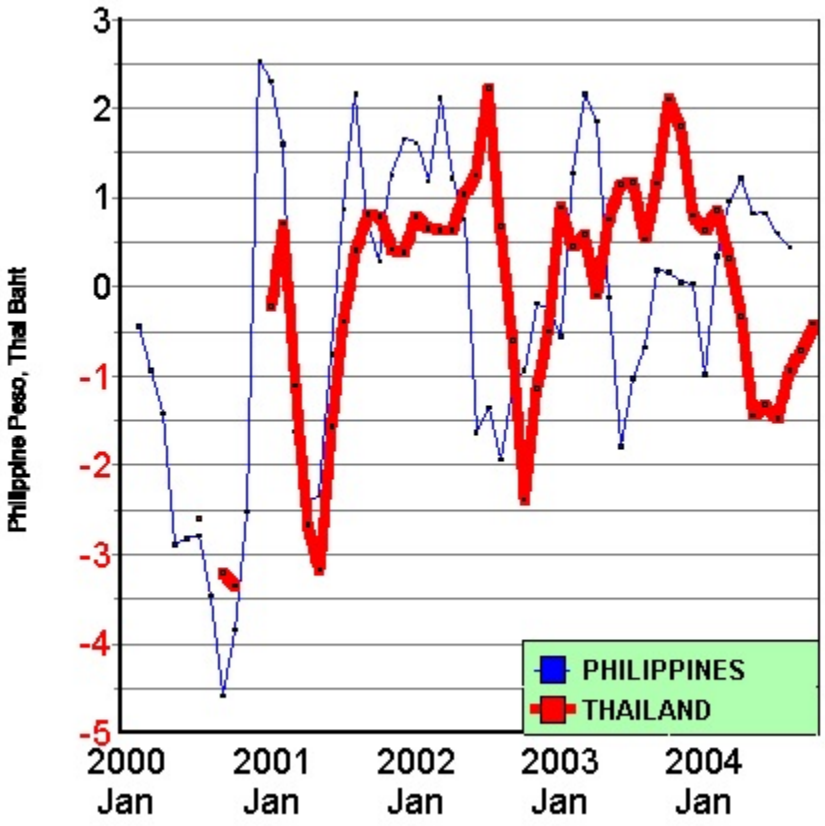
Figure 2
Interest Rate Gaps
(Implied Less Actual)



The direction of the gap literally suggest that it is more profitable to purchase a 6-month instrument in these economies rather than invest sequentially in 3-month instruments. The implication is that either the yield curve is too steep or that the short-term rate is being managed downwards by policy design. Neither of these is appealing as it impacts on the incentive structure: it penalizes borrowers with longer-term needs and provides economic rent to certain savers.

On the foreign exchange side, we find the Philippines and Thailand have implied rates that are numerically lower than the eventual foreign exchange rate, expressed in local currency per USD terms. This would indicate that the Peso (PHP) and the Baht (THB) may be undervalued if the basis is purely interest rate differentials with the US. In contrast, we find that the implied rate for the Indonesian Rupiah (INR) is numerically higher than the spot INR-USD rate. In the case of Singapore (SGD), South Korea (KRW) and Malaysia (MYR), the difference between implied and actual is too minor to make a substantial difference.

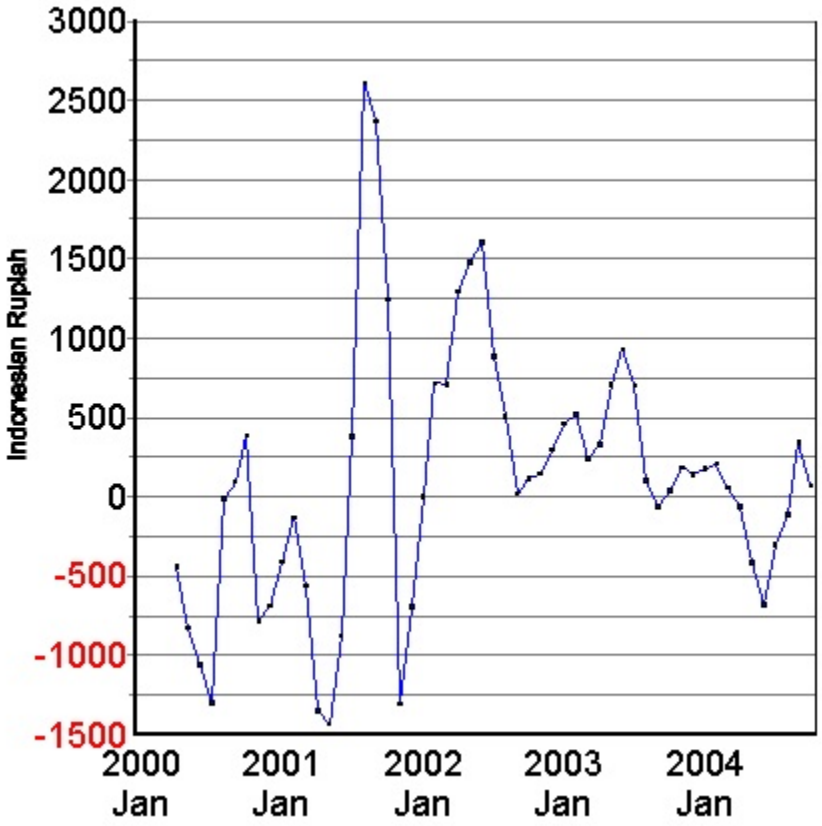
Figure 3
Foreign Exchange Gaps
(Implied Less Actual)



Again, it bears repeating that the caveat in the foreign exchange parity condition calculated above is that interest rate differentials against the US determine the direction and magnitude of the change. Having said that, there is still valid policy interest

because it suggests that the cross-border pricing is not being mapped one-for-one to bilateral exchange rates with the USD. This again raises a slew of arbitrage possibilities for investors with the means and the risk appetite.

Figure 4
Foreign Exchange Gap
(Implied Less Actual)



6. Moving the Chiang Mai Initiative Forward

Nothing that has been argued in section 2.3 and section 4 should be construed as suggesting that the CMI has lost its relevance. To the contrary, the renewed active movement of capital points to an even greater role for cooperative undertakings such as the CMI. However, at the very least, the foregoing analysis suggests that there are several issues that complicate the effective functioning of the CMI. The need for

sovereign liquidity assistance, for example, is difficult to dimension accurately when private capital so freely flows in and out of the region. There is also the fact that ASEAN is confronted with distinctly different funding interests i.e., outflows tend to be portfolio investments into the US market while inflows are predominantly in the more lasting interests of direct investments. Given the intrinsic difference in the nature of these flows, it is particularly relevant that capital outflows from ASEAN now routinely exceeds its capital inflows. In effect, one can in fact question whether the new market dynamics have ironically positioned ASEAN to be generating the exchange rate volatility for which ASA — and lately the CMI — was setup to mitigate in the first place?

For the moment, we can leave that as a rhetorical question. We can simply argue that to be able to provide for adequate and timely liquidity support, ASEAN must:

a) increase the available funds from the swap, both the full value and the percentage that can be drawn without automatically triggering a structural adjustment programme;
b) institute a faster response to any request for assistance; and
c) review the opt-out clause.

These are the improvements to the CMI that have been most often recommended in previous analyses. These come naturally because it is in the intrinsic nature of liquidity support to be effective only if the needed amount can be provided at a specific point in time. And since the ASA and the CMI are cooperative undertakings, caution must be exercised that the opt-out clause would not unduly shift the burden of assistance only to a limited few, eroding in the process the underlying cooperative spirit.

At one level, the task then is to find newer solutions to these 3 design issues. But how much is adequate and how fast a response are we really talking about?

Data from the 2004 BIS Triennial Central Bank Survey shows that the *average daily* turnover in the foreign exchange market (in April 2004) of those participating in the survey is USD2,408 Billion. Of this amount, USD133 Billion comes from IMPST (i.e., the 5 original ASEAN economies) and another USD322 Billion is accounted for by the “Plus 3" economies of China (inclusive of Hong Kong, SAR), Japan and Korea.

These figures are useful because they give us a relative magnitude of the *daily* volumes in the respective foreign exchange markets. One can argue that any liquidity pool must be adequate to provide for a portion of these flows. The actual proportion needs to be determined by further empirical tests but the base amount must be a

percentage of USD8 billion as this is the collective activity in Indonesia, Malaysia, the Philippines and Thailand. If contagion is to be considered — and there is no reason to argue against its likelihood, at least as a matter of both historical fact and natural precaution — the problem quickly magnifies because of the necessary inclusion of the regional financial centers like Singapore (USD125 Billion) and Hong Kong, SAR (USD102 Billion). In effect, we need to consider the liquidity requirements of markets whose activity range from USD8 billion to USD235 Billion.

Two further technical qualifications are important. First, these figures represent *daily* turnover. As the funding problem extends beyond one single day, the liquidity requirement naturally increases as well. In all likelihood however, it would be more than just a monotonic increase as the herd-like behavior of market players is an add-on effect that needs to be considered as well. Second, there is a bit of a concentration risk. By this we mean that China, Japan and Korea — who are the basic providers of swap funds under the BSAs — must also contend with perturbations in their own markets which account for USD220 billion in foreign exchange activity on a daily basis. Thus, it is no longer an obvious question of whether the “Plus 3" economies have significant international reserves. Instead, the funding line for calming markets within ASEAN must be held separate from those needed in their own active domestic markets.

ASEAN then faces an allocation problem at two levels: (1) a pure liquidity problem in the context of its own daily market turnover and (2) what can be provided by the “Plus 3" economies given the latter’s high-volume-high-turnover requirements in their own economies. The solution to either allocation problem is not at all obvious and deserves further technical work. In turn, this suggests that the 3 most common recommendations are not final objectives themselves. What they represent effectively are necessary but not sufficient conditions for attaining the desired end goal of stability.

If we concede that foreign exchange is no longer just for settling cross-border trade transactions but an asset by itself, then a solution to the stability problem lies in the intricate pricing framework and the active trading dynamics of the foreign exchange market in a 24-7 environment. This must be the case because, as argued previously, we need to address the factors driving the flows instead of mitigating their after-effects. The implication for the CMI is that liquidity assistance is no longer the ultimate objective but is just one among many issues towards regional integration.

The bottomline is that ASEAN is not likely to have enough public resources to fully offset the volatilities generated in the foreign exchange market. The sheer size of private flows is astonishing and they have the an advantage of surprise. Others before

have tried but the basic message remains unchanged: direct intervention in the trading market is bound to be short lived and expensive. Thus, what ASEAN really needs is something pre-emptive rather than reactionary, managing in the process the risks attendant to the flows. On this point, a 3-stage strategy is suggested by this paper.

6.1 Managing Signals: A Course of Action in the Short-Term

In section 5.4 we may recall that one of the results of Taylor and Sarno (1997) was that interest rates are the key determinant for portfolio (equity and bond) flows in the short-term. McCauley (2004) on the other hand showed how Asian local currency bonds provide a strong diversification benefit for a USD-denominated portfolio while Lehmann (2002) makes the same point for equity investments.

What these results suggest is that there are signals embedded in financial prices and these signals are inherently actionable. These signals phrase the investment decision in terms of alternative incentives within the context of the fundamental risk-reward framework. At the heart of this framework is a choice that is made on the basis of whether certain prices are “out of line”, the latter determined by basic “parity conditions” that bind interest rates and foreign exchange rates.

To digress a bit, parity is defined for interest rates both along the benchmark yield curve as well as across alternative yield curves. The former institutes consistency over time (via forward rates) while the latter makes a point about the difference in the risk of the issuer and/or the structure of the instrument (credit and instrument risks). For exchange rates, the parity condition is defined by so-called swap points which is the magnitude that the foreign exchange rate must hypothetically adjust to fully offset the difference in interest rates across the 2 economies for a given length of time.

As a matter of practical consideration, the most immediate action that ASEAN can take is to *develop the active and transparent use of forward prices*. This is because these prices provide the information that would initiate investment flows that would enforce *ex-post facto* parity conditions. This parity in prices is not an automatic outcome of market activity as this study has already identified cases of systematic deviations from parity conditions. However, the task is not to rigidly set the “correct” price levels (because incentives evolve faster than prices can be set) but rather to be transparent about any misalignment in prices. While this misalignment will certainly invite capital flows to take action in the immediate term, the upside is that these deviations will be corrected through the natural work of market forces. Despite transitions that are neither always smooth nor cost-free, market adjustments are still likely the best option for any

pricing misalignments in the market.

The actual method of institutionalizing forward prices will actually differ from economy to economy, depending to a large extent on the depth of the respective financial markets. For some, this may already be in the form of a developed derivatives market which would provide both the signaling and hedging functions. For the most part though, much of ASEAN is still far from this level of market sophistication. At the minimum, what is only required is for a means to widely broadcast the implied forward rates for interest rates and foreign exchange rates of varying lengths of time. This simple dissemination serves as the first step so that market signals can be acted upon as part of the necessary process of correcting misalignments.

6.2 Managing Ex-Ante Risks: A Medium-Term Position

Elevating the market signals embedded in financial prices to the consciousness of all stakeholders certainly helps. Unfortunately, this would not be sufficient *ipso facto*. For one, the objectives of market players need not always coincide with the defined best interests of the aggregate public. For another, market failures do arise from time to time for reasons that have nothing to do with any breakdown in governance. Thus, it is important to assist the dynamics of the market by way of pre-emptive diagnostics which in turn provides complementary information.

This of course brings us back to the issue of surveillance and putting in place an early warning system (EWS). For purposes of policy formulation, it helps to distinguish between the two perspectives that now govern the use and value of EWS. At one level, an EWS is a descriptive framework that should identify where and how pressure points build up. This makes it primarily a tool of (static) analysis where its obvious value lies in it being descriptive (i.e., what is causing what) and prescriptive (i.e., what then can be done). At the next level though, an effective EWS must be an intertemporal forecasting model. Within-sample tests are of use for *ex post* analysis but there is an obvious further requirement for a pre-emptive signal. Here its value is not to explain crisis triggers but precisely to limit the fallout from any potential shocks by allowing policymakers the leeway to make *ex ante* corrective action.

Taken from this perspective, the surveillance system is a means of managing *ex ante* risks. The reported weak results for out-of-sample tests is therefore particularly problematic since in the end ASEAN needs to anticipate the problems rather than just react to one as it evolves. Beyond this generic problem, the immediate but specific challenge is whether economic diversity allows for performance indicators both to cut

across the ASEAN+3 market and across time. Within ASEAN, it is rather clear that the 10 member economies are not always directly comparable in terms of economic structure, size and sophistication. This makes it difficult to define a diagnostic model that would be reasonably robust for the 10 economies. To the extent that the policy concern is precisely that of the aggrupation called ASEAN, this cross-economy model becomes a must. Intertemporal sampling too would be a bit of an issue since, prior to 1997, the only other period of banking/financial market difficulty in the region in the past 2 decades was that of the early-mid 80s. Given the significant time lag between the two crises and the limited number of overall "samples", it is quite doubtful that some relevant time-series information can still be generated from the sample.

One approach that ASEAN+3 may wish to explore at this time is to focus on a *surveillance system that uses high-frequency data, specifically financial prices*. As argued in section 6.1, market flows do respond to changing financial prices because they fundamentally alter the incentive structure (risk-reward trade-off) of competing instruments. High-frequency data addresses the current problems with EWS because the information content in interest rates and foreign exchanges rates is essentially the same regardless of the economy in question. This may not be the case for economic variables. Since financial prices are precisely available on high frequency and for the different economies, there is considerable potential for actionable information. There is also the added benefit of a reality check in knowing that there is activity within financial markets even as conventionally released (quarterly and monthly) economic variables are stagnant or become stale.

To complement the use of high-frequency data, any initiative to pursue the *endogenous detection of crises within econometric models* is likely to reap substantial rewards. This should complete the surveillance system as a signaling tool because it becomes preventive rather than reactive. Correspondingly, the value for the CMI is that it makes liquidity support much less a corrective tool. Instead, it could be used as a first line of bridge-financing for random and temporary surges

6.3 Managing Resources: The Long-Term Structural Solution

If price-embedded signals can be handled so as to manage risks before they materialize, fund flows should be much less erratic. This would contribute to stabilizing exchange rates within ASEAN thus achieving a key long-term objective of the CMI.

This assumes of course that there is a market through which the funds can actively interact to respond to the signals. Unfortunately, the individual markets are still

generally bank-dominated. This tends to keep the yield curve limited to the short-end of the market or — in case long term funds are intermediated from short term deposits — forces it to be quite steep. In either case, the information generated from the yield curve is likely to reflect more of the structural constraints rather than the signals which section 6.1 alludes to.

What is particularly relevant is that the evidence presented in this study points to a strong and continuing tendency for capital to flow out of ASEAN and be invested into the US Treasury market. This should be seen as a policy issue. At the very least, this is a macroeconomic issue of a leakage in saving which could have been mobilized intra-region. Then there is the fact that the conversion of local saving into a foreign currency, principally the US dollar, generates an exchange rate adjustment which is itself feeding the volatilities faced by the CMI.

But beyond both of these, the underlying problem ultimately is the absence of an organized cross-border market. Granted, an integrated market would be a far fetched problem if at present the financial markets in the respective economies are themselves not yet fully diversified. But over the long haul, this will be a recurring structural issue, not only for its ability to provide a receptacle for intra-regional saving but more so for its corresponding effect of generating a more stable and long-dated yield curve. In short, by integrating the individual markets, more choices are provided which in principle should generate a more diversified risk-reward frontier. This ventures out of the perceived dominance of banks at the short end of the market while at the same time it also plays into the willingness of savers to diversify into non-domestic instruments, while keeping all of these resources still within the confines of ASEAN+3.

Thus, the 3rd leg of the strategy is to *develop a cross-border capital market*. It is not the mere presence of this market that is essential but rather the fact that it should lead to a *deep and liquid secondary market*. It is this secondary market that is the ultimate goal because it is only through this approach that transparent and credible yield curves are generated. These curves, in turn, are important for the reasons already raised in the two prior legs of the strategy.

The caveat however is that the development of the debt market and the guarantee of active secondary markets is not a ministerial task. There are a lot of financial governance issues, including the need to establish the required physical infrastructure (i.e., clearing and settlements system) as well as define suitable market arrangements. This is why realistically it must be a long term goal but one whose value in undiminished by the obvious difficulties that need to be hurdled along the way.

7. Final Comments

This study is of the view that the CMI needs to be seen beyond its liquidity support function. Part of it is the sheer size of the foreign exchange trading market operating under a cross-border paradigm which sets the bar quite high for an effective counter offensive against unwanted attacks. There is also the point that private funds reflect the vagaries of private interests which public policy may find difficult to contain across unimpeded markets. But then the biggest part is our contention that it is better to contain the factors that cause the capital to flow in the first place rather than to remedy the affect-attack effects.

This study has found support in the result of other studies to show that financial prices do drive these flows. Whether we label it as either “returns” or “diversification”, the fact still remains that there is a structure of incentives embedded in these financial prices which savers, investors and speculators alike respond to. Contagion just compounds the situation because of the heightened correlation within ASEAN even for investment positions that are inherently disjoined. We also showed some empirical validation that within ASEAN some of these prices remain misaligned, leaving the region exposed to the risks of further volatilities, despite the fact that the general consensus is for “low vulnerability” due to increased international reserve holdings, improved bank balance sheets and a better handling of the external debt situation.

Considering the above, our approach is to recommend a 3-prong strategy that starts with managing signals and ends with a venue to do the same. Along the way, the need for a more effective surveillance system, using high-frequency data which can lead to an endogenous determination of crises before they actually occur, becomes an absolute must. Given the advance signals in prices and the means to improve its monitoring, the long term recommendation of an integrated financial market should not come unexpected.

Stepping back from it all, the 3-prong strategy recommended by this study is a fairly straightforward view of an admittedly complex situation. Its one clear advantage, we believe, is its simplicity. We offer what is essentially a market solution to the current market phenomenon of capital flows which this study has identified as the key issue underlying the long term viability of the Chiang Mai Initiative.

Annex 1

Memorandum Of Understanding On The ASEAN Swap Arrangements
Kuala Lumpur, 5 August 1977

1.The ASEAN Central Banks and Monetary Authorities, in line with their common objective to promote monetary cooperation among ASEAN member countries, agree to establish a reciprocal currency or swap arrangement (hereinafter referred to as "the Arrangement") under the following provisions:

ARTICLE 1
Purpose

2.The purpose of the Arrangement shall be to provide immediate short-term swap facilities to participating ASEAN member countries with temporary international liquidity problems.

ARTICLE 2
Participation

3.Participation in the Arrangement shall be confined to the Central Banks and Monetary Authorities of ASEAN member countries.

ARTICLE 3
Form of Swap

4.Under the Arrangement United States (US) dollars shall be exchanged against the domestic currency of a requesting participant.

5.A swap shall be reflected through sale of US dollars against the domestic currency of the requesting participant accompanied by a forward purchase of the same amount of domestic currency by that participant against US dollars.

6.The amount of US dollars the swap shall be credited to the account of the requesting participant in accordance with its instructions. The amount of the domestic currency involved shall be credited to the respective non interest-bearing accounts maintained

with the Central Bank or Monetary Authority of the requesting participant, and shall not be used except for the reversal of the swap.

ARTICLE 4
Period and use of swap

7.A Swap transaction shall be for a period of one, two or three months and may be renewed once for a maximum of another three months unless there are other requests for use of the facility by other participants, in which case such requests shall be given preference over the request for renewal. No new application shall be made by application within a period of thirty days following the due of reversal of a renewal by that participant.

8.In the event of more than one new request, priority shall be given in chronological order of applications received provided that preference shall be given to any participant that has not availed itself of the facility.

ARTICLE 5
Amount of Swap

9.The maximum total amount of US dollars available for swap transactions under the Arrangement shall be US$ 100 million. The maximum total outstanding amount provided by each participant under the Arrangement shall be US$ 20 million.

10.In principle, the amount of swap requested by a participant shall be provided in equal shares by the other participants.

11.However, if because of exceptional financial circumstances a participant is not in a position to provide its full share or has to refrain from swapping, the shortfall shall be met as far as possible by the other participants subject to the provisions of the first paragraph of this Article.

12.The maximum outstanding amount of US dollars received by any participant under the Arrangement shall not, at any point in time, exceed US$ 40 million (on the basis of a gearing ratio of one into two (1:2).

ARTICLE 6
Spot and Forward Rates

13.For purposes of the Arrangement the spot rate of the domestic currency against the US dollar shall be the mean of the closing inter - bank rates or the mean of the buying and selling rates, as fixed by the Central Bank of Monetary Authority of the requesting participant, both prevailing two (2) working days prior to the value date of the transaction.

14.The forward rate shall be derived according to the following formula:

$$\text{Forward Rate} = \text{Spot Rate} \frac{1 + (t.r.)}{360}$$

where t = actual number of days of swap.

r = interest rate for Euro-dollar deposit for the relevant period as quoted by the Bank for International Settlements, Basle, two working days prior to the value date. The forward rate shall be expressed in six decimal places.

ARTICLE 7
Agent Bank

15.There shall be an Agent Bank, to be designated by the participants from among themselves on rotation basis, which shall act as a coordinating body for the implementation of the Arrangement. The Agent Bank so designated shall bear the administrative expense it incurs in implementing the Arrangement.

ARTICLE 8
Operational Procedures

16.A participant in need of swap financing shall make, a request by telex to that effect to the Agent Bank indicating the amount of US dollars it requires, the period and the value date which shall be at least seven working days after the date of such request.

17.The Agent Bank shall immediately inform the other participants of the request, also by telex, mentioning the amount of US dollars expected to be provided by each participant and the value date.

18.Within two working days after receipt of the Agent Bank's telex, each giving participant shall confirm the amount it could make available for the swap. If a participant is unable to participate either partially or fully, the Agent Bank shall invite the other participants to increase their shares to meet the remaining amount, subject to the provisions of the first paragraph of Article V.

19.The Agent Bank shall inform the requesting participant by telex of the amount of US dollars to be provided by each giving participant, indicating the interest rate.

20.Similar procedures shall be followed for renewal of the swap. A request for renewal should be made at least seven working days before the date of reversal of the swap.

21.A possible time sequence for a swap transaction is shown in the Annex.

ARTICLE 9
Dispute

22.Any dispute or problem arising from the implementation of the Arrangement shall be resolved through consultation among the participants initiated by the Agent Bank.

ARTICLE 10
Duration of the Arrangement

23.The Arrangement shall remain in force and effect for a period of one (1) year from the date it comes into force, subject to renewal upon agreement by the participants. The Agent Bank shall, at least two months before the expiry date hereof, initiate consultations for renewal of the Arrangement.

24.In the even of termination of the Arrangement, the provisions hereof shall be considered still in force, but only in respect of the settlement of outstanding balances existing at the time of such termination.

ARTICLE 11
Entry Into Force

The Arrangement shall enter into force on August 5, 1977.
DONE in Kuala Lumpur, Malaysia this fifth day of August 1977.

Annex 2

The Supplementary Agreements To Memorandum Of Understanding On The ASEAN Swap Arrangements Washington D.C., 26 September 1978

WHEREAS, the ASEAN Central Banks and Monetary Authorities, in pursuit of their common objective to promote monetary cooperation among ASEAN member countries, have established on August 5, 1977, an ASEAN swap arrangement ("the Arrangement") for a period of one year, as laid down in the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as "the Memorandum") signed on the said date.

AND WHEREAS, Article X of the Memorandum provides for the renewal of the Arrangement upon agreement by the participants;

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities are desirous of extending the Arrangement and enlarging the total amount available for swap transactions under the Arrangement in the, interest of closer ASEAN monetary cooperation;

THE ASEAN CENTRAL BANKS AND MONETARY AUTHORITIES hereby enter into Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as "this Supplementary Agreement") under the following provisions:

Article I

All provisions in the Memorandum concerning the Arrangement shall remain in force and effect as if they were fully set forth herein, subject however to the modifications made under this Supplementary Agreement.

Article II

Article V of the Memorandum is hereby amended by substituting therefore the following.

Article V

AMOUNT OF SWAP

The maximum total amount of United States dollars available for swap transactions under the Arrangement shall be US$ 200 million. The maximum total outstanding amount provided be each participant under the Arrangement shall be US$ 40 million. In principle, the amount of swap requested by a participant shall be provided in equal shares by the other participants. However, if because of exceptional financial circumstances a participant is not in a position to provide its full share or has to refrain from swapping, the shortfall shall be met as far as possible by the other participants, subject to the provisions of the first paragraph of this Article.

The maximum outstanding amount of States dollars received by any participant under the Arrangement shall not, at any point in time, exceed USS 80 million (on the basis of a gearing of one- is- to - two (1:2)

Article III

Article X of the Memorandum is hereby amended by substituting therefor the following.

Article X

DURATION OF THE ARRANGEMENT

The Arrangement shall remain in force and effect for a period of one year from the date this Supplementary Agreement comes into force, subject to renewal upon agreement by the participants. The Agent Bank shall, at least two months before the expiry date hereof, initiate consultations for renewal of the Arrangement.

In the event of termination of the Arrangement the provisions thereof shall be considered still in force, but only in respect of the settlement of outstanding balances existing at the time of such termination.

Article IV

This Supplementary Agreement shall be deemed to have come into force on August 5, 1978.

Done on this 26th day of September, 1978.

Annex 3

SECOND SUPPLEMENTARY AGREEMENT TO THE MEMORANDUM OF UNDERSTANDING ON ASEAN SWAP ARRANGEMENT DENPASAR, BALI, 9 SEPTEMBER 1979

WHEREAS, the ASEAN Central Banks and Monetary Authorities, in pursuit of their common objective to promote monetary cooperation among ASEAN member countries, have established on August 5, 1977, an ASEAN swap arrangement ("the Arrangement") for a period of one year as laid down in the Memorandum of understanding on ASEAN Swap Arrangement ("the Memorandum") signed on the said date;

AND WHEREAS, the ASEAN (Central Banks and Monetary Authorities, Article X of the Memorandum providing for the renewal of the Arrangement, have on September 26, 1978 , entered into supplementary Agreement to the Memorandum of understanding on ASEAN Swap Arrangement (hereinafter referred to as "the First Supplementary Agreement") to, inter alia, renew the arrangement for a further period of one year from August 5, 1978, and 1978, and to modify certain provision of the Memorandum,

AND WHEREAS, Article X of the Memorandum as modified by the First Supplementary Agreement provides for the further renewal of the Arrangement by the participants.

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities are desirous of further extending the Arrangement in the interest of closer ASEAN monetary cooperation;

THE ASEAN CENTRAL BANKS AND MONETARY AUTHORITIES hereby enter into a Second Supplementary agreement to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as "this Second Supplementary Agreement") the following terms:

Article I

All Provisions in the Memorandum as modified by the First Supplementary Agreement concerning the Arrangement shall remain in force and effect as if they were fully set forth herein, subject h however to the modifications made under this Second Supplementary Agreement.

Article II

Article X of the Memorandum as modified by the First Supplementary Agreement is hereby amended by substituting therefor the following.

Article X

DURATION OF THE ARRANGEMENT
AND PROCEDURE FOR RENEWAL AND MODIFICATION

The Arrangement shall remain in force and effect for a period of three years from the date the Second Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement comes into force:

PROVIDED that, upon the written request of any participant served on all participants, the provisions of the Arrangement may be reviewed and, if necessary, modified by agreement;

PROVIDED ALWAYS that the Arrangement shall be terminated on the occasion of any anniversary of the date of the coming into force of the said Second Supplementary Agreement upon written notice for termination by any participant served on all participants at least one month before such anniversary.

In the event of termination of the Arrangement, the provisions hereof shall be considered still in force, but only in respect of the settlement of outstanding balances existing at the time of such termination.

The Arrangement may be renewed for such further period as may be agreed upon by the participants. The Agent Bank shall at least one by before the expiry date hereof, initiate consultations in order to review the provisions of the Arrangement either for the purpose of such renewal with or without any modification of the Arrangement as may be necessary, or for the purpose of the participants entering into a new purpose on replacement of the existing into one".

Article III

This Second Supplementary Agreement shall be deemed to have come into force on August 5, 1979.

DONE in Denpasar, Bali this ninth day of September, 1979.

Annex 4

THIRD SUPPLEMENTARY AGREEMENT TO THE MEMORANDUM OF UNDERSTANDING ON THE ASEAN SWAP ARRANGEMENT BANGKOK, 4 FEBRUARY 1982

WHEREAS, the ASEAN Central Banks and Monetary Authorities, in pursuit of their common objective to promote monetary cooperation among ASEAN member countries, have established on August 5, 1977 an ASEAN Swap Arrangement ("the Arrangement") for a period of one year, as laid down in the Memorandum of Understanding on ASEAN Swap Arrangement ("the Memorandum") signed on the said date;

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities in accordance with Article X of the Memorandum providing for the renewal of the Arrangement, have on September 26, 1978 entered into a Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as "the First Supplementary Agreement") to inter alia, renew the Arrangement for a further period of one year from August 5, 1978 and to modify certain provisions of the Memorandum;

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities, in accordance with Article X of the Memorandum, as modified by the First Supplementary Agreement, providing for the renewal of the Arrangement, have on September 9, 1979 entered into a Second Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as "the Second Supplementary Agreement") to renew the Arrangement for a further period of three years from August 5, 1979 and to modify certain provisions of the Memorandum.

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities, have on January 16, 1981 agreed upon certain Amendments to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as "the Amendments") to modify some provisions of the Memorandum;

AND WHEREAS, Article X of the Memorandum, as modified by the Second Supplementary Agreement and the Amendments provides for the further renewal of the Arrangement upon agreement by the participants;

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities are desirous of further extending the Arrangement in the interest of closer ASEAN monetary

cooperation;

THE ASEAN CENTRAL BANKS AND MONETARY AUTHORITIES hereby enter into a Third Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as "this Third Supplementary Agreement") under the following terms:

Article 1

All provisions in the Memorandum, as modified by the First and the Second Supplementary Agreements and the Amendments concerning the Arrangement, shall remain in force and effect as if they were fully set forth herein.

Article II

The Arrangement shall be renewed and remain in force for a period of five years from the date this Third Supplementary Agreement comes into force.

Article III

This Third Supplementary Agreement shall be deemend to have come into force on August 5, 1982.

DONE in Bangkok, Thailand, this fourth day of February 1982.

Annex 5

FOURTH SUPPLEMENTARY AGREEMENT TO THE MEMORANDUM OF UNDERSTANDING ON ASEAN SWAP ARRANGEMENT KATHMANDU, NEPAL, 21 JANUARY 1987

WHEREAS, the ASEAN Central Banks and Monetary Authorities, in pursuit of their common objective to promote monetary cooperation among ASEAN member countries, have established on August 5, 1977, an ASEAN Swap Arrangement ("the Arrangement") for a period of one year, as laid down in the Memorandum of Understanding on ASEAN Swap Arrangement ("the Memorandum") signed on the said date;

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities, in accordance with Article X of the Memorandum providing for the renewal of the Arrangement, have on September 26, 1978, entered into a Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as the First Supplementary Agreement") to, inter alia, renew the Arrangement for a further period of one year from August 5, 1978, and to modify certain provisions of the Memorandum.

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities, in accordance with Article X of the Memorandum, as modified by the First Supplementary Agreement, providing for the renewal of the Arrangement, have on September 9 1979, entered into a Second Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as "the Second Supplementary Agreement") to renew the Arrangement for a further period of three years from August 5, 1979, and to modify certain provisions of the Memorandum.

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities, have on January 16, 1981, agreed upon certain Amendments to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as "the Amendments") to modify some provisions of the Memorandum;

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities in accordance with Article X of the Memorandum, as modified by the Second Supplementary Agreement, entered into a Third Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement to renew the Arrangement for a further period of five years from August 5, 1982.

AND WHEREAS, Article X of the Memorandum as modified by the Second Supplementary Agreement, provides for the further renewal of the Arrangement upon agreement by the participants.

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities are desirous of further extending the Arrangement in the interest of closer ASEAN monetary cooperation.

THE ASEAN CENTRAL BANKS AND MONETARY AUTHORITIES hereby enter into a Fourth Supplementary Agreement to the Memorandum of .Understanding on ASEAN Swap Arrangement (hereinafter referred to as "this Fourth Supplementary Agreement") under the following terms:

Article I

All provisions in the Memorandum, as modified by the First and the Second Supplementary Agreements and the Amendments concerning the Arrangement, shall remain in force and effect as if they were fully set forth herein, subject, however, to the modifications made under this Fourth Supplementary Agreement.

Article II

Article II of the Memorandum is hereby mended by substituting therefor the following

Article II
PARTICIPATION

Participation in the Arrangement shall be confined to the central banks, monetary authorities or their equivalent bodies of ASEAN member countries.
A central bank, monetary authority or its equivalent body of an ASEAN member country who is not a signatory to this Fourth Supplementary Agreement, but is desirous of participating in the Arrangement may be permitted to so participate provided:

(a) all signatories agree; and
(b) the said central bank, monetary authority or its equivalent body has confirmed its acceptance of this Fourth Supplementary Agreement and has agreed to accept the role of agent bank, on rotation basis.

All communications and confirmation for the purposes of this Article shall be coordinated by the Agent Bank.

Article III

Article V of the Memorandum as amended by the First Supplementary Agreement is hereby further amended by substituting therefor the following.

Article V
AMOUNT OF SWAP

The maximum total outstanding amount of United States dollars provided by each participant under the Arrangement shall be US$ 40 million.

In principle, the amount of swap requested by a participant shall be provided in equal shares by the other participants. However, if because of exceptional financial circumstances a participant is not in a position to provide its full share or has to refrain from swapping, the shortfall shall be met as far as possible by the other participants, subject to the provisions of the first paragraph of this Article.

The maximum outstanding amount of United States dollars received by any participant under the Arrangement shall not, at any point in time exceed US$ 80 million (on the basis of a gearing ratio of one-is-to-two (1:2)".

Article IV

The Arrangement shall be renewed and remain in force for a period of five years from the date this Fourth Supplementary Agreement comes into force.
However, if a central bank, monetary authority or its equivalent body of an ASEAN member country has confirmed its acceptance of this Fourth Supplementary Agreement, the Arrangement shall remain in force for an additional period of one year for each new member.

Article V

This Fourth Supplementary Agreement shall come into force on August 5, 1987.

DONE in Kathmandu, Nepal, this twenty-first day of January, 1987.

Annex 6

FIFTH SUPPLEMENTARY AGREEMENT TO THE MEMORANDUM OF UNDERSTANDING ON ASEAN SWAP ARRANGEMENT WASHINGTON D.C., 19 SEPTEMBER 1992

WHEREAS, the ASEAN Central Banks and Monetary Authorities, in pursuit of their common objective to promote monetary co-operation among ASEAN member countries, have established on August 5, 1977, an ASEAN Swap Arrangement ('the Arrangement') for a period of one year, as laid down in the Memorandum of Understanding on ASEAN Swap Arrangement ("the Memorandum') signed on the said date:

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities. in accordance with Article X of the Memorandum providing for the renewal of the Arrangement have on September 26, 1978 entered into a Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as 'the First Supplementary Agreement') to, inter alia, renew the Arrangement for a further period of one year from August 5, 1978, and to modify certain provisions of the Memorandum;

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities, in accordance with Article X of the Memorandum, as modified by the First Supplementary Agreement, providing for the renewal of the Arrangement. have on September 9, 1979 entered into a Second Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as “the Second Supplementary Agreement”) to renew the Arrangement for a further period of three years from August 5, 1979, and to modify certain provisions of the Memorandum:

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities, have on January 16, 1981, agreed upon certain Amendments to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as 'the Amendments') to modify some provisions' of the Memorandum;

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities in accordance with Article X of the Memorandum, as modified by the Second Supplementary Agreement, entered into a Third Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement to renew the Arrangement for a period of five years from August 5, 1982:

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities in accordance with Article X of the Memorandum, as renewed by the Third Supplementary Agreement, entered into a Fourth Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement to modify certain provisions and renew the Arrangement for a further period of five years from August 5, 1987-,

AND WHEREAS. Article X of the Memorandum, as modified by the Second Supplementary Agreement. provides for the further renewal of the Arrangement upon agreement by the participants:

AND WHEREAS, the ASEAN Central Banks and Monetary Authorities are desirous of further extending the Arrangement in the interest of closer ASEAN monetary co-operation;

THE ASEAN CENTRAL BANKS AND MONETARY AUTHORITIES hereby enter into a Fifth Supplementary Agreement to the memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as “this Fifth Supplementary Agreement”) under the following terms:

Article I

All provisions in the Memorandum. as modified by the First, the second, and the Fourth Supplementary Agreements and the Amendments concerning the Arrangement, shall remain in force and effect as if they were fully set forth herein, subject, however, to the modifications made under this Fifth Supplementary Agreement.

Article II

Article V of the Memorandum as amended by the First and the Fourth Supplementary Agreements is hereby further amended by substituting therefore the following.

Article V
AMOUNT OF SWAP

The maximum total outstanding amount of United States dollars provided by each participant under the Arrangement shall be US$ 40 million.

In principle, the amount of swap granted to a participant shall be provide in equal shares by the other participants. However, a participant may refrain from swapping by informing

its decision thereof to member countries, and may at its discretion, give reasons for its decision thereto. As a consequence, other participants on a voluntary basis are allowed to increase their shares. In the case where the total amount of swap committed collectively by the participants does not suffice up to the requested amount the amount of swap granted shall be reduced accordingly.

The maximum outstanding amount of United States dollars received by any participant under the Arrangement shall not at any point in time exceed US$80 million (on the basis of a gearing ratio of one-is-to-two (1:2)).”

Article III

The Arrangement shall be renewed and remain in force for a Period of five years from the date this Fifth Supplementary Agreement comes into force,

However, if a central bank, monetary authority or it's equivalent body of an ASEAN member country has confirmed its acceptance of this Fifth Supplementary Agreement, the Arrangement shall remain in force for an additional period of one year for each new member.

Article IV

This Fifth Supplementary Agreement shall come into force on August 5, 1992.

Done in Washington, D.C., U.S.A., this nineteenth day of September, 1992.

Annex 7

AMENDMENTS TO THE MEMORANDUM OF UNDERSTANDING ON THE ASEAN SWAP ARRANGEMENT COLOMBO, SRI LANKA, 16 JANUARY 1981

WHEREAS the ASEAN Central Banks and Monetary Authorities in pursuit of their common objective to promote monetary cooperation among ASEAN member countries have established on August 5, 1977 an ASEAN Swap Arrangement ("the Arrangement") for a period of one year as laid down in the Memorandum of Understanding on ASEAN Swap Arrangement ("the Memorandum") signed on the said date;

AND WHEREAS the ASEAN Central Banks and Monetary Authorities in accordance with Article X of the Memorandum providing for the renewal of the Arrangement have on September 26, 1978 entered into a Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as "the First Supplementary Agreement") to, inter alia renew the Arrangement for a further period of one year from August 5, 1978 and to amend the Arrangement;

AND WHEREAS the ASEAN Central Banks and Monetary Authorities in accordance with Article X of the Memorandum as incorporated into the First Supplementary Agreement providing for the renewal of Arrangement have on September 9 1979 entered into a Second Supplementary Agreement to the Memorandum of Understanding on ASEAN Swap Arrangement (hereinafter referred to as the Second Supplementary Agreement") to, inter alia, renew the Arrangement for a further period of three years from September 9, 1979 and to amend the Arrangement;

AND WHEREAS the ASEAN Central Banks and Monetary Authorities are desirous of amending the Arrangement in the interest of closer monetary cooperation;

THE ASEAN CENTRAL BANKS AND MONETARY AUTHORITIES hereby agree as follows:

I

1.Article VII of the Memorandum is hereby amended by substituting therefor the following :

Article VII

AGENT BANK

2.There shall be an Agent Bank, to be designated by the participants from among themselves on rotation basis which shall act as a coordinating body for the implementation of the Arrangement. The Agent Bank so designated shall bear the administrative expenses it incurs in implementing the Arrangement. A participant designated to act as the Agent Bank shall do so for a period of one year commencing on the fifth day of August each year and terminating on the fourth day of August the following year in the event that a participant is unable to act as the Agent Bank it shall be the responsibility of that participant to arrange for another participant to act as the Agent Bank in its place.

II

3.Article VIII of the Memorandum is hereby amended by substituting therefore the following

Article VIII
OPERATIONAL PROCEDURES

4.A participant in need of swap financing shall make a request by telex to that effect to the Agent Bank indicating the amount of US dollars it requires the period and the value date which shall be at least seven working days after the date of such a request.

5.The Agent Bank shall immediately inform the other participants of the request also by telex, mentioning the amount of US dollars expected to be provided by each participant and the value date.

6.Within two working days after receipt of the Agent Bank's telex, each participant shall confirm the amount it could make available for the swap. If a participant is unable to participate either partially or fully, the Agent Bank shall invite the other participants to increase their shares to meet the remaining amount subject to the provisions of the first paragraph of article V.

7.The Agent Bank shall inform the requesting participant by telex of the amount of US dollars to be provided by each giving participant, indicating the interest rate.

8.Similar procedures shall be followed for renewal of the swap. A request for renewal should be made at least seven working days before the date of reversal of the swap.

9.The detailed operational procedures and time sequence for a swap transaction are shown in Annex 1.

10.In the case where the borrower is the participant who is also acting as the Agent Bank, the operational procedures and possible time sequence are as shown in Annex 2".

11.The Annexes mentioned in the amended Article VIII are set out in the Appendix hereto.

III

12.The Memorandum is hereby amended by inserting immediately after Article VIII the following

Article VIII A
REVERSAL OF SWAP BEFORE MATURITY DATE

13.A borrower may reverse the swap before maturity date. In such a case, the forward rate as derived in Article VI shall be re-computed based on the actual number of days of the shortened period of the swap. There will be no change in the interest rate of the swap. The value date of the reversal of the swap shall be at least seven. working days after the date of such a request.

14.The operational procedures and possible time sequence for the reversal of the swap are shown in Annex 3.

15.In the case where the borrower as the participant who is also acting as the Agent Bank, wishes to reverse the swap before the maturity date, the operational procedures and time sequence are as shown in Annex 4."

16.The Annexes mentioned in Article VIII A are set out in the Appendix thereto.

IV

17.The above amendments shall be deemed to have come into force on January 16, 1981.

Done in Colombo, Sri Lanka this sixteenth day of January, 1981.

Annex 8

Common ASEAN Position on Reforming the International Financial Architecture

(Adopted at the Special ASEAN Finance Ministers' Meeting in Manila on 30 April 1999)

1. The global effort to resolve the current crisis must recognize the diverse circumstances and priorities of individual economies at different stages of development. Any proposed solution must therefore be sufficiently flexible to accommodate these differences.

2. In view of the global nature of today's financial markets, the reform of the international financial architecture must involve the participation of all countries, including the emerging economies.

3. ASEAN shall adopt a more proactive role at various international and regional fora to ensure that its interests and priorities are given due consideration in any proposal reform the international financial architecture.

4. While the purpose of any international reform is to enhance efficiency and stability in financial markets and to promote global economic activity, such efforts must not lose sight of the overriding objective of improving living standards. Due priority must, therefore, be accorded to measures to protect the poor and most vulnerable segments of society.

5. Measures to strengthen the international financial architecture would need to include a review of the roles of the international financial institutions (IFIs), as well as the international regulatory bodies, in order to enhance their capacity and capability to contain and resolve crises.

6. Appropriate mechanisms are needed to enhance greater private sector participation in crisis management and resolution.

7. Standards of transparency and disclosure must be applied equally to the public and private sectors. In particular, large market participants, such as

highly leveraged institutions which have systemic significance, should be subject to regular and timely transparency and disclosure requirements.

8. The dissemination of necessary information will help investors to make better decisions and not rely solely on the information of rating agencies. Given the important role that credit rating agencies play in the international financial markets, there should be greater transparency in the rating process.

9. There must be closer and more coordinated monitoring of short-term capital flows. In particular, there should be global agreement on the disclosure requirements for such flows and closer collaboration and information sharing among national and international regulators.

10. To complement the ASEAN Surveillance Process, ASEAN shall explore options to strengthen regional support activities.

11. An orderly and well-sequenced approach to capital account liberalization in tandem with the degree of development of the domestic financial sector and supervisory regime should be supported.

12. Sound, consistent and credible macroeconomic policies are fundamental to the sustainability of any exchange rate regime. There is no single exchange rate regime that is suitable for all countries and that countries have a right to choose their own exchange rate regime based on their national objectives and priorities.

Annex 9

The Joint Ministerial Statement of the ASEAN + 3 Finance Ministers Meeting 6 May 2000, Chiang Mai, Thailand

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Introduction

13.Following the "Joint Statement on East Asia Cooperation" issued by the ASEAN + 3 Leaders at their Informal Meeting in Manila last November, we, the Finance Ministers of ASEAN, China, Japan and the Republic of Korea (ASEAN + 3), convened our meeting in Chiang Mai to exchange views on economic and financial situations and discuss further cooperation in the East Asian region.

14.H.E. Pehin Orang Kaya Laila Wijaya Dato Haji Abdul Aziz Umar, Minister representing the Ministry of Finance, Brunei Darussalam, presided over our meeting.

Strengthening East Asia Finance Cooperation

15.We appreciated the presentation by the Asian Development Bank on the East Asian economic and financial situations and welcomed the stronger-than-expected recovery of our member economies. To further sustain this economic growth, we agreed to strengthen our policy dialogues and regional cooperation activities in, among others, the areas of capital flows monitoring, self-help and support mechanism and international financial reforms.

16.On the monitoring of capital flows, our experts met in Manila in late April this year to exchanging views on capital flows monitoring mechanisms and discussed possible approaches to establish a regional monitoring framework in East Asia. We agreed to use the ASEAN + 3 framework to facilitate the exchange of consistent and timely data and information on capital flows.

17.As a first step towards establishing a well-coordinated economic and financial monitoring system in East Asia, we agreed to establish a network of contact persons to facilitate regional surveillance in East Asia. This would enhance the effectiveness of our economic reviews and policy dialogues.

18.In order to strengthen our self-help and support mechanisms in East Asia through the ASEAN + 3 framework, we recognized a need to establish a regional financing arrangement to supplement the existing international facilities. As a start, we agreed to

strengthen the existing cooperative frameworks among our monetary authorities through the “Chiang Mai Initiative”. The Initiative involves an expanded ASEAN Swap Arrangement that would include all ASEAN countries, and a network of bilateral swap and repurchase agreement facilities among ASEAN countries, China, Japan and the Republic of Korea.

19.We requested the ASEAN Secretariat to lead and coordinate a study on other appropriate mechanisms that could enhance our ability to provide sufficient and timely financial support to ensure financial stability in the East Asian region.

20.Recognizing the importance of human resources and the need for cooperative research to prepare for policy dialogue and consultation, we agreed to establish a network of research and training institutions to conduct research and training on issues of mutual interests. In this context, we appreciated Japan’s offer to provide technical assistance in the financial sector through training and seminars for finance officials and the dispatch of experts to meet urgent needs of improving fiscal consolidation, public debt management and monetary policy. We also welcomed China and Korea’s offer of technical assistance to finance, banking and fiscal officials in the region through training programs.

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Recommendation	As a complement to developing a robust surveillance system and the need to estimate the extent of reserves that remain notionally unencumbered, the paper argues that eliminating systemic price misalignments would be effective in reducing the volatility of capital flows. The action agenda in support of this policy recommendation can be done in stages to wit: (1) Using active forward market intervention (i.e., deliverable or non-deliverable forwards and the broadcast of forward rates) to eliminate arbitrage in the spot markets (short-term goal) (2) Using the same high-frequency data that market players rely upon in benchmarking investment choices as the core elements of a surveillance system (medium term goal) (3) Develop a cross-border market in the region to retain financial saving, reduce FX rate volatility caused by conversions into international currencies and to spur intra-regional economic development (long term goal) This makes the CMI a mechanism for managing relevant market information using the funds as a means to pre-empt windows of risk. Exchange rate stability mitigates the vulnerabilities in the individual economies as a substitute for relying upon the collective strength of an aggrupation. Without this risk substitution, the region will be perennially vulnerable to contagion which puts pressure on the CMI to be a corrective tool in magnitudes that it may not be well suited to handle.

POLICY QUESTION	AS ARGUED IN THE PAPER	NOT EXPLICITLY IN THE PAPER
What is the implication of global imbalances and the accumulation of FX reserves in the region?	PAGES 47-53 The global imbalance is largely due to the twin deficits in the US economy. Since East Asia has been funding this deficit through portfolio investments (private funds and from central bank reserves), higher interest rates and a weaker USD continues to be detrimental to the region. The US deficits have then provided an investment haven for Asian saving but also poses a grave threat to the region as market value of these investments continue to decline (market risk).	This is also a further challenge to the conventional view that reserves are clearly in excess. The valuation of these reserves is in par value but the indication is that its mark-to-market value has declined. The strongest signal that this is a policy issue is that central banks are now moving into euro-denominated asset positions in lieu of USD assets.

What is the relationship between the CMI and the IMF?	PAGES 28-30 In cases where the problems are more systemic (i.e., chronic deficiency in available foreign exchange and/or a significant misalignment in the foreign exchange rate), the swap only provides a temporary lifeline but could actually aggravate the problem by allowing the misalignment to persist which in turn nurtures a rather large and sudden correction. This is where the CMI is fundamentally different from the ASA. Instead of just looking at operational (i.e., liquidity) issues, it takes explicit account for possible structural (i.e., solvency and valuation) problems that need to be addressed over the longer-term. This is not just an issue of flexibility but one of mitigating risks at its source. Illiquidity is symptomatic of the factors that drive the flows but by definition cannot resolve any misalignments and/or arbitrage opportunities that underlie the flows in the first place. For handling these structural difficulties, an institution like the IMF would be better situated.	
What is the proper goal of the CMI?	PAGES 30-32 The CMI moves away from the "fire fighting" mode of a liquidity assistance and into a self-regulating mechanism (SRO) for the region. This makes the CMI a mechanism for managing relevant market information using the funds as a means to pre-empt windows of risk. Exchange rate stability plays into this because it mitigates vulnerabilities in individual economies as a substitute for the collective strength of an aggrupation that otherwise allows for an "opt out" clause. Without this risk substitution, the region will be perennially vulnerable to contagion just by the mere fact of the correlated nature of both the capital flows and the structural shocks.	Contagion exacerbates liquidity risk because it complicates the timing (herd-like flows) and magnifies the volume needed to stem the correlated action of market players.

How do we develop surveillance?	PAGES 52; 61-62 A surveillance system that uses high-frequency data, specifically financial prices, is the best approach. The very nature of financial markets under the contemporaneous condition of cross-border finance suggests that the market will invariably respond more to high-frequency data. One cannot expect financial prices to be stagnant in the 90 days that span announcements of quarterly macroeconomic information. High-frequency data also addresses some of the current problems with EWS models because the information content in interest rates and foreign exchanges rates is essentially homogenous regardless of the economy in question. To complement the use of high-frequency data, the endogenous detection of crises within econometric models is likely to reap substantial rewards. This should complete the surveillance system as a signaling tool because it becomes preventive rather than reactive. Correspondingly, the value for the CMI is that it makes liquidity support much less a corrective tool. Instead, it could be used as a first line of bridge-financing for random and temporary surges	Market players use the same high-frequency data to benchmark their investment choices. Technology makes these high-frequency information available practically on real-time basis.
What is the optimal size of the CMI?	PAGES 7-8; 29-30 The average daily turnover in the foreign exchange market within ASEAN+3 (already adjusting for two-sides of the trades) is significant (USD450 billion) not only because of its sheer size but also because it is driven by the same Plus 3 economies who are also the basic providers of swap funds under CMI. Thus, the size of the CMI must be enough at least to deal with the average daily turnover and then adjusted further for contagion and concentration risk.	

Should there be conditionality in the disbursement of funds?		Although not explicitly discussed by the paper, it is a basic premise that financial transactions require some amount of conditionality to avoid moral hazard. To the extent that swaps and repos are the instrument of choice, the lender should have the leeway to negotiate for these conditionalities since the credit risk is borne by the lending economy.
Should there be a permanent central body?	PAGE 28 No matter how frequent we premise BSAs with the term "network", the fact remains that the policy instruments of choice — FX swaps and repos — are inherently bilateral in nature.	The nature of the instruments matters because credit risk is integral to the issue of whether CMI evolves into a central counterparty or remains a network of bilateral arrangements.
Is there likely to be another financial crisis? Would it be like the 1997 crisis?		It would be presumptuous to assume that there will not be any crisis in the region in the future. With open-access technology continuously supportive of liberalized markets, funds will always be fungible practically on 24/7 basis. Thus the upside benefits of broader market opportunities must come in tandem with the downside risk that information asymmetries would cause chaotic markets that could easily degenerate into crises.