

The Effectiveness of Capital Controls and Monitoring: The Case of Non-internationalization of Emerging Market Currencies

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Abstract

Many emerging markets, including EMEAP economies, are in the process of bolstering their resiliency to liquidity crises. Part of these efforts is the introduction of regulations designed to reduce transactions in the home currency in offshore markets, or the “non-internationalization of the currency”. The aims of these regulations are to restrain exchange rate volatility and restore latitude to monetary policy through the control or elimination of offshore markets in the home currency. Regarding the effectiveness of these regulations, the evidence is mixed. Country experiences to date seem to indicate that there are four factors which may influence the effectiveness of non-internationalization (or capital controls more generally). These are (i) degree of macroeconomic distortion and market stress at the time of introduction of regulation, (ii) monitoring capacity of the authorities and incentive on the part of market participants to comply with regulations, (iii) comprehensiveness of regulations, and (iv) past history of capital account liberalization/regulation. It should also be noted that non-internationalization may reduce risk-hedging capacity among market participants and impose excessive regulatory costs on genuine investors. Balancing the benefits and costs of regulation will be one of the major challenges for policy makers in emerging markets.

¹ EMEAP (Executives' Meeting of East Asia-Pacific Central Banks) consists of the Reserve Bank of Australia, People's Bank of China, Hong Kong Monetary Authority, Bank Indonesia, Bank of Japan, The Bank of Korea, Bank Negara Malaysia, Reserve Bank of New Zealand, Bangko Sentral ng Pilipinas, Monetary Authority of Singapore, and Bank of Thailand.

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1. Introduction

In the four years since the Asian Currency Crisis, a great deal of theoretical and empirical research has been done. Much has been discussed on how currency crises are generated and how they could be prevented and solved.

Obviously, currency crisis prevention requires maintenance of sound economic fundamentals and appropriate economic policy management. However, even with sound economic fundamentals and a right direction on macroeconomic policy and structural reform, a country or region can still be susceptible to liquidity crises originating elsewhere. It is difficult, if not impossible, to fully prevent the transmission of crisis given the unpredictable nature of investors' behavior. There are, nonetheless, two important things that the central bank can do as the guardian of the financial markets: 1) to fully understand the actual flow of speculative money that contribute to liquidity crises, and 2) to put in place the market infrastructure, regulation and monitoring systems that are resilient to liquidity crises.

Many emerging markets, including EMEAP members, are in the process of bolstering their resiliency to liquidity crises. They are endeavoring to restore soundness to their macro economy and financial systems, while introducing safeguards such as regulations on external capital transactions, and improving market monitoring methods. Of particular note are regulations designed to reduce transactions in the home currency on offshore markets, or the "non-internationalization of the currency". Indeed, some monetary authorities of EMEAP members have introduced new regulations. They understand that offshore transactions of hedge funds, seen during the currency crisis, actually triggered exchange rates to plummet and exchange-rate volatility to amplify. This eventually led to reduction in the latitude of monetary policy. While regulation and monitoring do have some benefits, they also have costs, and balancing the costs and benefits will be one of the major challenges for policy makers in emerging economies.

This paper begins with a general examination of the flow of speculative funds at the time of the currency crisis, which is the motivation for new regulation. It then considers both the effectiveness and costs of regulation.

2. Flow of funds behind exchange rate movements

The experiences of emerging market currency crises indicate that, from the perspective of the flow of funds, there are three major mechanisms for foreign exchange rates to plummet: 1) short positions in the local currency taken by non-residents, 2) withdrawal of short-term funds and portfolio investments by non-residents, and 3) capital flight by residents. We will look into the details of these three mechanisms.

(a) *Short positions in the local currency taken by non-residents*

There is a risk that non-resident speculators take short positions in the local currency when there are routes (deposits, loans, foreign exchange swaps) that lead the local currency to offshore markets. For example, prior to the currency crisis, Thailand, Malaysia and Indonesia maintained regulations or guidelines on local currency borrowing by non-residents, but allowed foreign exchange swaps between residents and non-residents and deposit taking by offshore banks. Speculators used these available routes in currency attacks. Meanwhile, the Philippines restricted non-resident local currency borrowings, foreign exchange swaps and external transfers of the peso. The peso was not supplied to offshore markets.

(b) *Withdrawal of short-term funds and portfolio investments by non-residents*

Overseas investors can easily withdraw their funds rapidly when foreign borrowings and portfolio investments are not restricted, should there, for whatever reason, be a significant change in market sentiment. For example, the liquidity crises in Thailand and Indonesia were in part triggered by the rapid collection of loans by foreign banks; prior to the crises, these countries had accumulated short-term bank borrowings to an amount larger than their reserves. In Malaysia, non-residents held a large amount of equity, and the outflow of funds from the domestic equity market at the time of the crisis played a big role in the fall of the exchange rate.

(c) *Capital flight by residents*

The fall of the home currency can be accelerated when countries and regions do not regulate foreign currency deposits. Exporters may increase their "leads and lags" transactions as the potential for a drop in the home currency mounts. Residents may convert the home currency to foreign currency deposits. Capital flight also occurs in countries that have no regulation on overseas deposits when residents lose confidence in the domestic financial system. For example, as Indonesia had no regulations on foreign currency deposits, residents in Indonesia increased their foreign currency

deposits at the time of the crisis. By contrast, as Thailand and Malaysia had repatriation requirements and surrender requirements, only few residents deposited their money in foreign currency.

3. Current non-internationalization policies

It is clear from the discussion above that there is more than a single flow of funds that causes rapid changes in exchange rates during a currency crisis. Comparison between the Asian currency crisis (particularly the experiences of Thailand and Malaysia) and those occurred in Mexico (1994), Russia (1998), Brazil (1998), Turkey (2001), and Argentina (2001) indicates that short positions in the local currency taken by non-resident speculators (Route 2-1 above) played a relatively important role as a trigger. Thailand and Malaysia saw a rapid increase in non-resident swap transactions on the foreign exchange market between 1996 and 1997 (Chart 1). As a backdrop to these phenomena, the following two points can be made: 1) the crises occurred when the offshore markets for ASEAN currencies³ were relatively well developed⁴, and 2) the crisis occurred when macro hedge funds were fairly active around the world. Because of this, Thailand, Indonesia and Malaysia have introduced regulations designed to reduce transactions of their currencies in the offshore markets (non-internationalization of the home currency) (Table 1). They have also strengthened foreign exchange monitoring in order to mitigate the risk of another outbreak of a currency crisis.

Below is an outline of the non-internationalization regulations countries have adopted.

Thailand

- Thailand did not have any regulations with regard to non-residents before the crisis. But in May 1997, it imposed a restriction on baht credit facilities to non-residents. During the period from May 1997-January 1998, Thailand imposed

³ Unless otherwise noted, "ASEAN" refers to Indonesia, Malaysia, the Philippines and Thailand.

⁴ ASEAN currencies (Thai, Malaysian, Indonesian etc.) began to be actively traded on the Singapore market in the 1980's and 1990's. The foreign exchange market survey, conducted by the BIS once every three years, provides a breakdown by currency of the foreign exchange trading on the Singapore market. From April 1995 until April 1998, the share of trading between "US dollars" and "other currencies" (a category that includes currencies other than the Japanese yen, European currencies, the Canadian dollar and the Australian dollar and thought to be made up largely of Asian currencies) rose from 14% to 23% (approximately doubled in value terms). This indicates a rise in the trading volume between US dollars and Asian currencies.

the restriction of a two-tier market approach for non-residents. The regulation stipulated that non-residents were allowed to borrow from commercial banks the amount equivalent to their underlying trade and investment transactions in Thailand. Subsequently, after abandoning the 2-tier market approach in January 1998, Thailand issued a regulation to impose ceilings per counterparty on credits without underlying economic transactions, instead of a complete ban. In October 1999, however, Thailand strengthened these regulations of credit ceilings, including the clarification on “per counterparty” from an individual financial institution basis to a consolidated basis.

Indonesia

- Before the outbreak of the currency crisis, the only regulations Indonesia had were on rupiah loans to non-residents. In August 1997, it introduced ceilings on swaps with non-residents. Later, in January 2001, Indonesia substantially reinforced its regulations by: 1) lowering the ceiling on swaps between domestic banks and non-residents, 2) banning external transfers of the rupiah by domestic banks, and 3) introducing additional regulations on the movement of funds on non-resident rupiah accounts (except for movements backed by underlying trade and investment).

Malaysia

- Before the crisis, the only regulations Malaysia had on ringgit transactions were those on ringgit loans to and from non-residents. In August 1997, it introduced ceilings on swaps against non-residents. In September 1998, Malaysia banned all ringgit credit facilities against non-residents (except RM200,000 which could be used for any purpose in Malaysia and property loans for eligible non-residents). In July 1999 and December 2000, non-resident stockbroking companies and custodian banks were allowed ringgit credit facilities with an intra-day limit of RM200 million and an overnight limit of RM10 million solely to finance the purchase of shares on the domestic market.

Philippines

- The Philippines has always required central-bank permits for the supply of pesos to the offshore markets for amounts exceeding 10,000 pesos. It did not introduce any new regulations following the crisis.

4. The effectiveness of non-internationalization

It behooves us to ask how effective currency non-internationalization policies are in achieving their goals (to restrain volatility in foreign exchange rates and maintain the latitude of domestic monetary policy by controlling offshore transactions). While rigorous verification is not possible, this section does discuss the implications of such evidence as is available⁵.

(1) Evidence from country experiences

Regulation does seem to have had a measure of effect from the perspective of controlling offshore markets (i.e. reducing transactions in the home currency and eliminating arbitrage against the offshore market), which is its immediate objective. Malaysia, which regulates both the supply of ringgit to the offshore market and the movement of funds on non-resident ringgit deposit accounts, has seen the offshore market virtually disappear (as has Indonesia)⁶. Even Thailand, which only regulates the supply of baht to the offshore market, consistently has been able to maintain onshore-offshore spread, which eliminates much of the arbitrage between these two markets (Chart 3)⁷.

Have regulations been effective in restraining the volatility of exchange rates and restoring latitude to monetary policy? The regulations introduced by Malaysia in September 1998 have to some extent achieved their initial policy objectives, but the policy effects of the regulations introduced by Thailand and Indonesia are not clear. The evidence available therefore points to only mixed results. In September 1998, Malaysia imposed capital regulations (which included policies for currency non-

⁵ Experts have mixed views about currency non-internationalization. For example, in its policy recommendations to prevent currency crisis, the Research Institute of the Asian Development Bank (2000) argues, "In small open economies, holding of national currencies by non-residents may be restricted," indicating support for non-internationalization. By contrast, Ishii (2001: IMF Working Paper) recognizes that non-internationalization may be effective in restraining short-term speculation, but emphasizes that over the medium and long term this effectiveness will be reduced as market participants attempt to circumvent regulations, and also that the cost will rise.

⁶ Generally, the non-internationalization of the currency leads to the development and expansion of a derivative offshore "non-deliverable forward" (NDF) market for the currency. Speculative activities on this market can affect domestic foreign exchange markets. It is notable, however, that as of the current writing, of the three Asian countries choosing non-internationalization (Thailand, Malaysia and Indonesia) an NDF market had developed for the Indonesian rupiah only (see Appendix 1).

⁷ In the case of the Korean won, where domestic banks are allowed to participate in both the onshore and offshore markets, arbitrage keeps the spread low (Chart 3).

internationalization) and moved to a dollar-pegged exchange rate regime. Short-term interest rates began to decline immediately after the regulations were imposed. Later, Malaysia continued the dollar peg but administered its policies with a degree of independence from US monetary policy--for example, Malaysia maintained an easy monetary policy when the United States began tightening in mid-2000 (Chart 4). What this means is that under the constraints of the "impossible trinity," Malaysia has enjoyed the combination of a "fixed exchange rate," "half-way open capital," and "reasonably independent monetary policy." By contrast, the regulations introduced by Thailand in May 1997 were not a sufficient breakwater to prevent the rapid drops in the foreign exchange rate that were subsequently seen.⁸ Indonesia strengthened its regulations in January 2001, but the rupiah has continued to experience large volatility because of volatile political conditions (Chart 5).

The indication from these experiences is that policies for the non-internationalization of local currencies do not necessarily contribute to stable foreign exchange rates and greater degree of monetary policy latitude. The country experiences to date seem to indicate that there are four important factors that may impact the effectiveness of non-internationalization (or capital regulations, more generally).

(a) Degree of macroeconomic distortion and market stress

The existence of regulations and the choice of unsustainable macro policies or exchange rate regimes may lead to interest or exchange rates at wide variance with equilibrium levels (or may cause the market to perceive them as such). If the rewards are large for circumventing regulations, then regulations may well lose effectiveness. Countries with strong capital regulations have seen black markets develop for foreign exchange, and countries with interest rate regulations have seen black markets develop for deposits and loans. In 1997, the dominant perception in the market was that Thailand's pegged exchange rate regime was, in fact, not sustainable because the country was running a large current-account deficit. The authorities had also substantially depleted their foreign exchange reserves. These factors generated strong speculative pressures in the market. While the regulations enacted by Thailand on the supply of baht to the offshore market contributed to a rise in offshore baht interest rates, they were

⁸ The restriction was imposed only on non-residents without underlying trade or investment in Thailand, and was aimed to quell speculative attacks by non-residents. Its objective was, to some extent, achieved, and there was an unwinding of speculative position by non-residents. However, the Bank of Thailand did not impose any new restrictions on the residents or bona fide offshore investors. Thus as the economic fundamentals deteriorated, the capital outflows from residents and offshore investors continued to exert pressure on currency.

unable to quell speculation that the currency would be devalued.

(b) Monitoring capacity

When the authorities do not have sufficient capacity to enforce and monitor regulations or when the punishment for violations is light, there is little cost incurred in circumvention, and this will reduce the effectiveness of regulations. As will be described later, some EMEAP members have reinforced their foreign-exchange market monitoring systems since the currency crisis, and in this sense regulations have become more effective than they used to be. In addition, we must point out that the punishments for violation extend beyond such explicit sanctions as fines levied against violators. Ishii (2001), for example, notes that an offshore NDF market did not develop after Malaysia took its currency non-international in September 1998, and as a reason for this cites the potential that "offshore banks possibly refrained from engaging in creative transactions such as NDF to circumvent the controls so as not to risk their local franchise."⁹ In countries where major market players have strong incentives to build and maintain good relationships with regulators, the effectiveness of regulations is more likely to be ensured.

(c) Comprehensiveness of regulations

Under ordinary circumstances, capital regulations must be fairly comprehensive or trading will merely shift from one route to another, and the regime as a whole is unlikely to function in a satisfactory manner. For example, there are cases of countries imposing stringent regulations targeted on currency attacks by non-residents on offshore markets, but still experiencing speculation in the form of resident capital flight.

(d) Past History of capital account liberalization/regulation

Regulations are more difficult to implement if they are being re-imposed on markets or trading that was liberalized in the past. ASEAN currencies were actively traded on the Singapore market throughout the eighties and nineties. Once this kind of market infrastructure and trading expertise is developed and accumulated, fairly strong regulations must be imposed in order to return to the *status quo ante*, and it is more

⁹ It should be noted that point Ishii raised is not the only factor that hinders the development of the NDF market. In the case of Malaysia, the absence of a reference exchange rate for the settlement of NDF contracts among market players is also a factor. Moreover, exchange controls in Malaysia prohibit domestic banks to undertake forward foreign exchange transactions with offshore counterparties. Thus, restricting availability for offshore institutions to hedge their exposure derived from the NDF contracts hinders the development of the market.

likely that these regulations will have side effects. Malaysia is a case in point among the non-internationalization of ASEAN currencies. Not content to merely stop new flows of funds to the offshore markets, Malaysian regulations also made it impossible to settle any funds already on the offshore markets, and this is what ensured the effectiveness of its regulations¹⁰.

(2) *Contagion from the recent crisis of Turkey and Argentina*

The crises in Turkey and Argentina have not spilt over very much into Asia (Charts 6 and 7), and there is now a debate on whether the non-internationalization policies adopted by Asian countries and regions can claim credit for this. Certainly, Asian countries and regions have seen significant improvements in their macroeconomic conditions and external positions since the time of the currency crises. Comparisons between Indonesia and the Philippines, two Asian countries given speculative ranks in sovereign ratings by rating agencies, and Argentina, Brazil and Turkey, the epicenters of recent international financial instability, show the two Asian countries to be maintaining far better balances in their external positions (Table 3). The size of emerging-market hedge funds has also contracted significantly from what it was at the outbreak of the Asian currency crisis. This is also a powerful explanation for why the contagion was limited¹¹. It may therefore be somewhat hasty to conclude that non-internationalization policies insulated Asia from the most recent contagion.

5. The cost of non-internationalization

It could be argued that even if non-internationalization of the currency contributes to the achievement of policy objectives, countries may incur even greater costs over the long term. This section examines the potential for such outcome. While it is extremely difficult to quantify the medium and long-term costs of non-internationalization, the following perspectives need to be taken into account.

¹⁰ Chinese capital regulations have been relatively effective, and can thus be benchmarked against the four criteria discussed above. 1) China has regulations, but its interest and exchange rates do not deviate widely from levels which can be sustained over the medium term. 2) China has a high capacity to monitor regulations and all market participants, including foreign financial institutions, have strong incentives to maintain good relationships with authorities because of the outlook for business expansion in the country. 3) Chinese regulations are comprehensive and have few loopholes. 4) China has been consistently cautious towards liberalization of capital accounts, so the historical effect is not apparent. Nonetheless, we should note that even in China, regulations could lose their effectiveness if some of these conditions should collapse.

¹¹ It is estimated by some market analysts that hedge funds hold approximately 10% (35-40% at the time of the Russian crisis) of the outstanding international debt issued by emerging economies.

(1) *Reduced risk-hedging capacity among market participants*

The creation and development of offshore markets is usually encouraged by domestic (onshore) markets that lack convenience because of regulatory, tax or infrastructure problems; investors shift transactions to more convenient offshore markets. One of the benefits in this process is that financial transactions concentrate at specific offshore centers (mostly Singapore for ASEAN currencies), and these centers gain the advantages in terms of liquidity, and the variety of both financial products and participants available. If ASEAN currencies are to become non-international and ASEAN countries wish to shift transactions from offshore to onshore markets, they will need to enhance domestic market infrastructure. It will not be easy, however, for ASEAN countries to catch up with Singapore on the market infrastructure immediately. Non-internationalization may therefore lead to contraction or elimination of offshore markets that have greater liquidity and better infrastructure than domestic markets. This could have a negative impact on the risk-hedging capacity of market participants (overseas investors investing in ASEAN countries and local ASEAN enterprises).

For example, many local ASEAN enterprises have Singapore affiliates. They use Singapore banks and Singapore markets for export/import-based foreign currency transactions, and also for investing and raising fund. Many developed-country multinational corporations with operations in Asia also use Singapore as a center for their ASEAN currency hedging operations. They are being forced to review these operations as the Singapore offshore market for ASEAN currencies is contracting or disappearing^{12 13}.

A country can make its currency non-international and can cause the contraction or elimination of the offshore market in that currency. This, however, does not necessarily result in an increase in domestic market trading volumes. Thailand and Indonesia both provide examples. During the currency crisis, speculative transactions by hedge funds caused foreign exchange trading volumes to rise in an abnormal speed

¹² In interviews with the market participants on this point, most indicated that no major problems were being experienced at the current point in time, but some said that hedging costs were rising. For example, the onshore markets of Thailand and Indonesia etc. have less liquidity in longer-term foreign exchange forwards than the Singapore market.

¹³ The elimination of highly liquid forward and swap markets may make it more difficult for domestic companies and banks to hedge foreign exchange risks by shifting risks to non-residents with greater risk-taking capacity.

and then decline rapidly, as has already been discussed (see Chart 1). Rigorous requirements that foreign exchange transactions be based on underlying trade and investment can have the positive impact of stabilizing foreign exchange rates, as long as they drive from those players who exhibit highly speculative behavior. However, it is also a fact that a decline in market liquidity will usually amplify the volatility of exchange rates. The declining presence of non-residents will also raise the potential for large swings in the exchange rate due to, for example, "leads and lags" on the part of domestic exporters and importers.¹⁴

(2) *Administrative costs*

Regardless of non-internationalization, the implementation of capital regulations will incur administrative costs. A recent survey of five EMEAP members (Indonesia, Korea, Malaysia, Philippines, Thailand) indicates that monetary authorities in each of these countries have substantially beefed up their monitoring of the foreign exchange markets since the currency crisis (Appendix 2). While different countries perform monitoring in different ways, the basic strategy in all cases is to require reporting of detailed information on the name of the customer and the transaction behind a foreign exchange trade over a certain threshold value. Some countries have even introduced online reporting systems to monitor foreign exchange trends on a real-time basis. Regardless of these enhancements in monitoring, several monetary authorities have commented on the technical difficulties in monitoring non-internationalization regulations and requested information from their offshore counterparts. The effect of capital regulations is diluted if they are not implemented rigorously. However, over-caution because of over-emphasis on restraining speculation may impose excessive regulatory costs on genuine investors¹⁵. Frequent changes in regulatory regimes and monitoring systems, or insufficient explanations when changes are made, can also have a negative impact on investor confidence.

¹⁴ Some also argue that the declining presence of non-resident players due to capital regulations will serve as an impediment to the deepening and advancement of domestic financial and capital markets, not just foreign exchange markets. For example, the IMF notes that in Malaysia, which adopted an explicit non-internationalization policy and imposed restrictions on portfolio investments (September 1998), the Kuala Lumpur Options and Futures Exchange (KLOFFE) experienced a sharp decline in trading volumes (principally equity futures). The volume remains sluggish even after portfolio investment regulations were eliminated and the macroeconomic situation recovered (Chart 8).

¹⁵ For example, rigorous enforcement of the principle that foreign exchange transactions be based on real demand means that the screening and permit processes require time. Foreign exchange rates may change during that time, or the obligation to report client names may violate confidentiality clauses between the bank and the client.

6. Concluding remarks

The jury is still out over non-internationalization policies for Asian currencies. An "international currency" is by definition a currency that is used as "a medium of international transactions," "a yardstick of value," and "a store of value." It generally refers to only a handful of currencies--the US dollar, euro, Japanese yen, and British pound. The internationalization of these currencies is an expression of their external credibility (or, in a broader sense, the country's economic and political strength). The ASEAN currencies examined in this paper have never functioned as international currencies in this sense. Rather, it can be said that the inadequacies of onshore markets have driven transactions overseas. As a result, transactions concentrated on specific markets. This is internationalization only in an extremely limited sense.

In a globalized market, large amounts of funds can move instantaneously. The internationalization of currencies from emerging countries and regions with undeveloped domestic financial markets and institutions increases the risk of disruptive influences on the domestic economic and financial systems. It can be said that greater volatility of exchange rate triggered by non-resident speculation has more demerits than merits. This implies that it may be desirable if improvements were made in the domestic financial market infrastructure of these countries, trading in their currencies naturally return from the offshore markets to the onshore. However, it is also a fact that significant amount of time will be required to increase the competitiveness of domestic financial markets. Also, competitiveness itself being a relative matter, it would be difficult to restrain offshore trading without the help of some sort of regulation, in an environment that allows free capital movements. Within this context, imposing regulations designed to achieve the non-internationalization of the currency may be a realistic policy tool for countries with relatively immature financial markets. While it is difficult to provide quantitative evidence regarding the costs and benefits of non-internationalization, it will nonetheless be important to continue monitoring market trends from the perspectives outlined in this paper. What kind of regulatory frameworks and market infrastructures should emerging markets try to develop in order to finance funds for growth while maintaining the stability in external capital flows? This is a challenging issue that should be further explored particularly in the fast-evolving trend of global financial environment.

7. Issues for discussion

- Does non-internationalization contribute to increased resiliency against currency and financial crisis? Is there a causal relationship between non-internationalization policies in Asia and the fact that the Argentine crisis did not spill over into the region?

- Do non-internationalization policies hamper the risk-management capacity of overseas investors and local enterprises through reduced liquidity in the foreign exchange market? Does the existence of capital regulations, including non-internationalization policies, impede the enhancement and deepening of financial and capital markets?

- Is the current foreign exchange market monitoring strong enough to ensure the effectiveness of regulations? Is there room for mutual cooperation among EMEAP members in the area of monitoring?

Chart 1-1: Thailand: Foreign Exchange Transaction
(Monthly turnover)

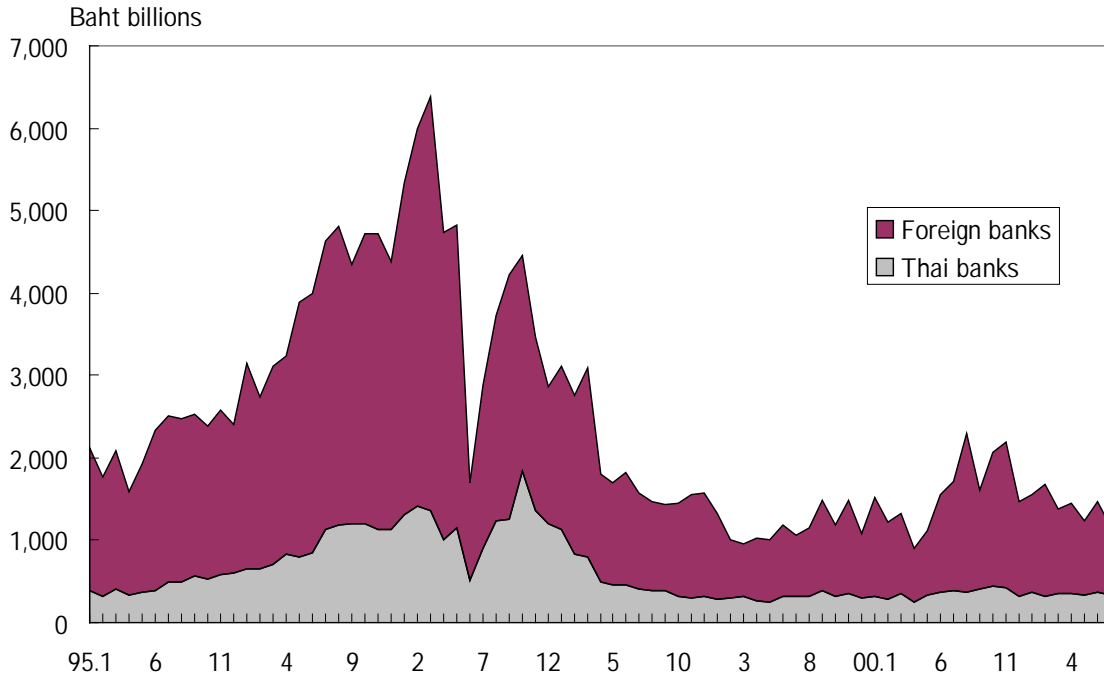


Chart1-2: Malaysia: Foreign Exchange Transaction
(Monthly turnover of Ringgit/USD)

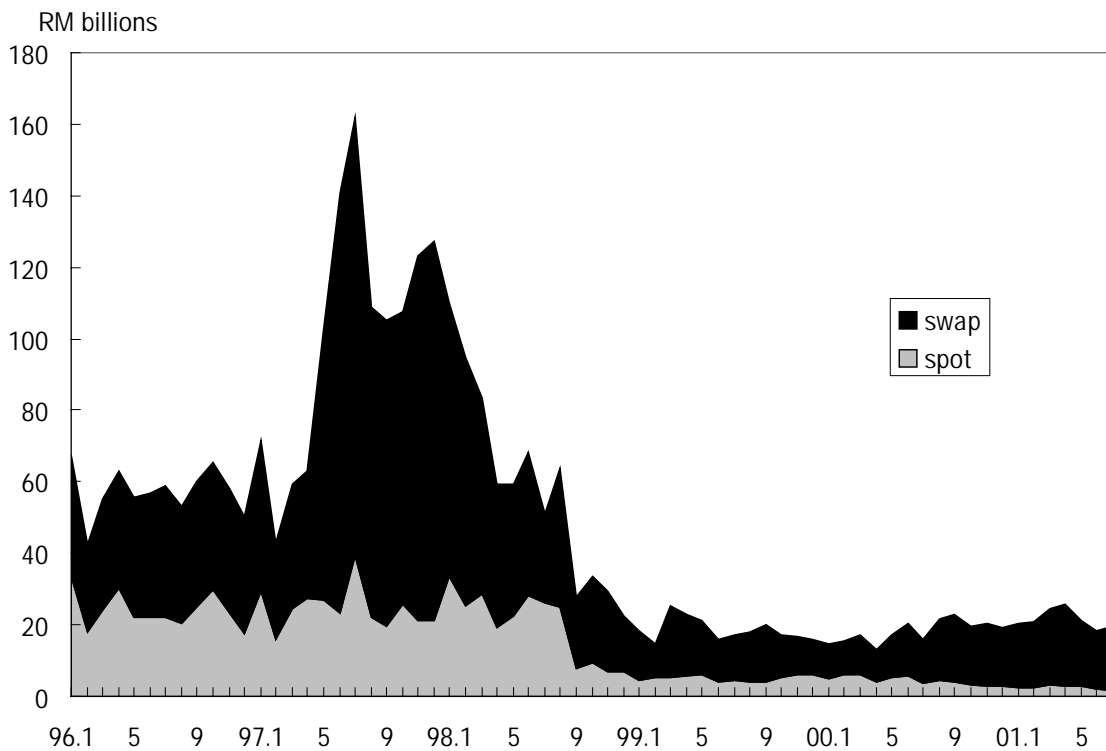
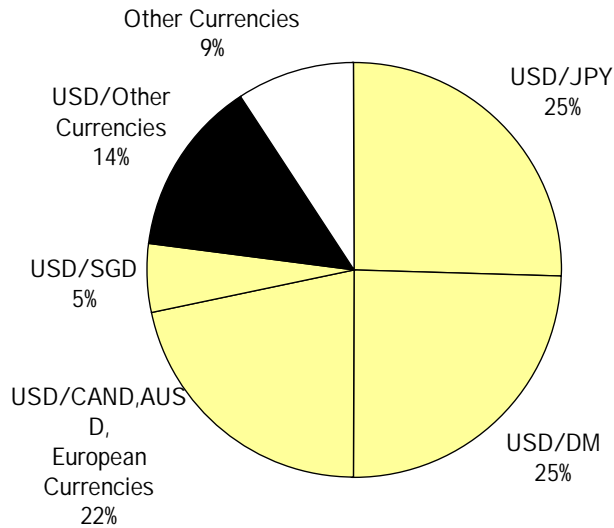
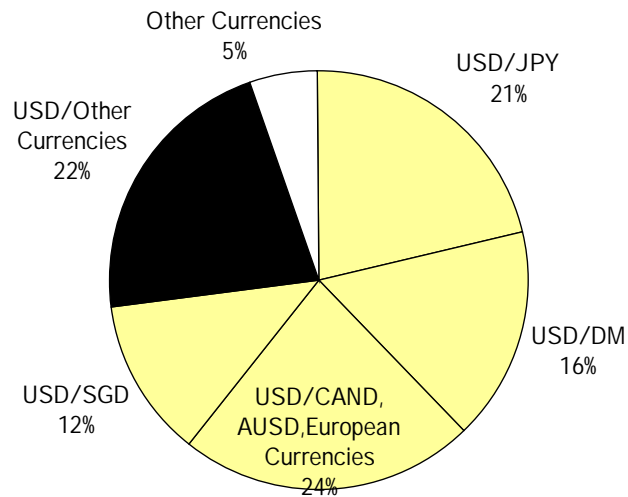


Chart2: Singapore: Reported Foreign Exchange Turnover by Currency

1995: Total=105bil.USD(daily average)

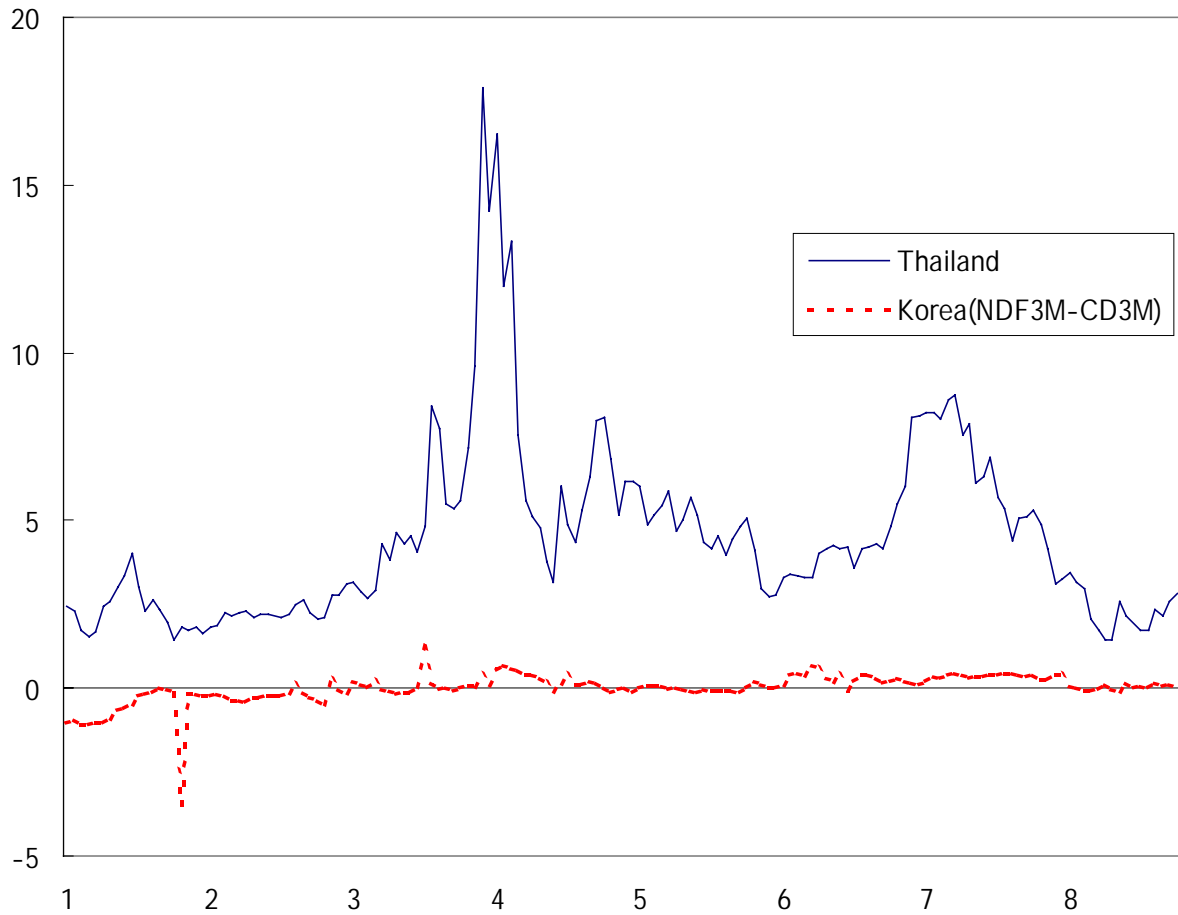


1998: Total=139bil.USD(daily average)



Source: BIS "Central Bank Survey of Foreign Exchange and Derivatives Market Activity"

Chart3: Onshore-Offshore Interest Rate Differentials
(In Percent, 3month)



Sources: CEIC, Reuters

Note: Implied interest rates for won offshore are obtained by using the NDF(3M) rate against the U.S. dollar, spot rate of won/US\$ and the U.S. interest rate.

Chart4: Malaysia: Short-term Interest Rate Differential vis-a-vis the US (In percent)

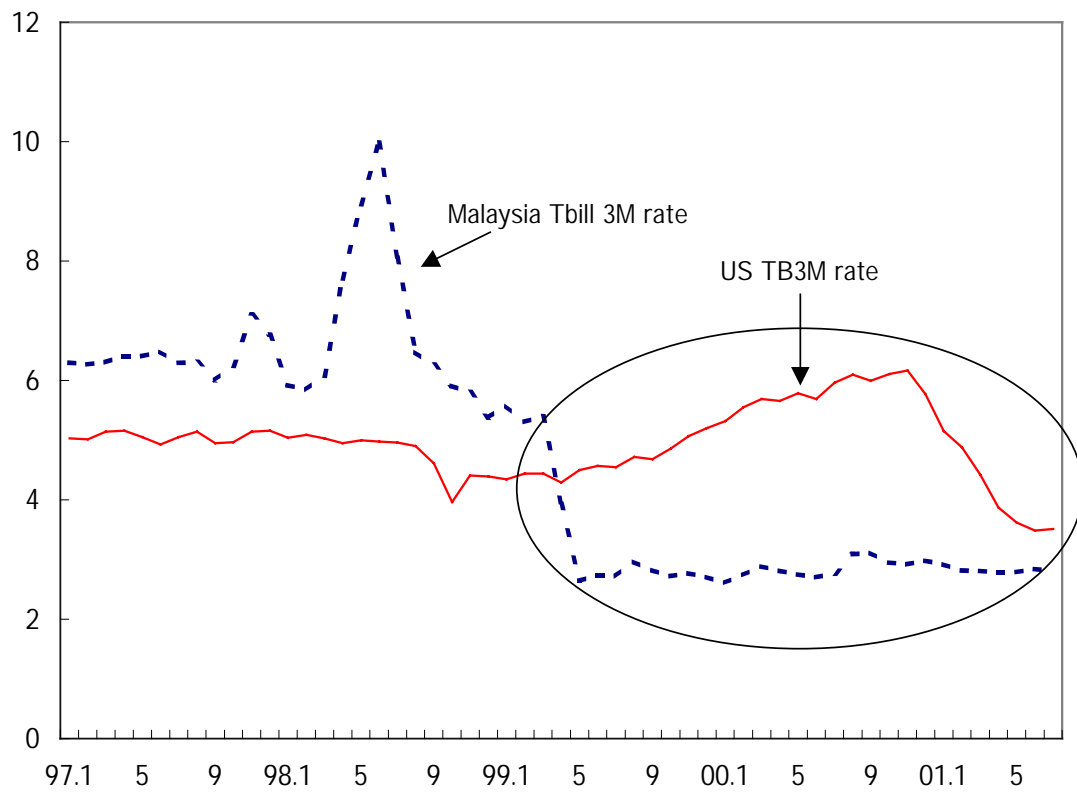


Chart5-1: Thailand: Exchange Rate Volatility
(Monthly average of daily standard deviations of Baht/USD)

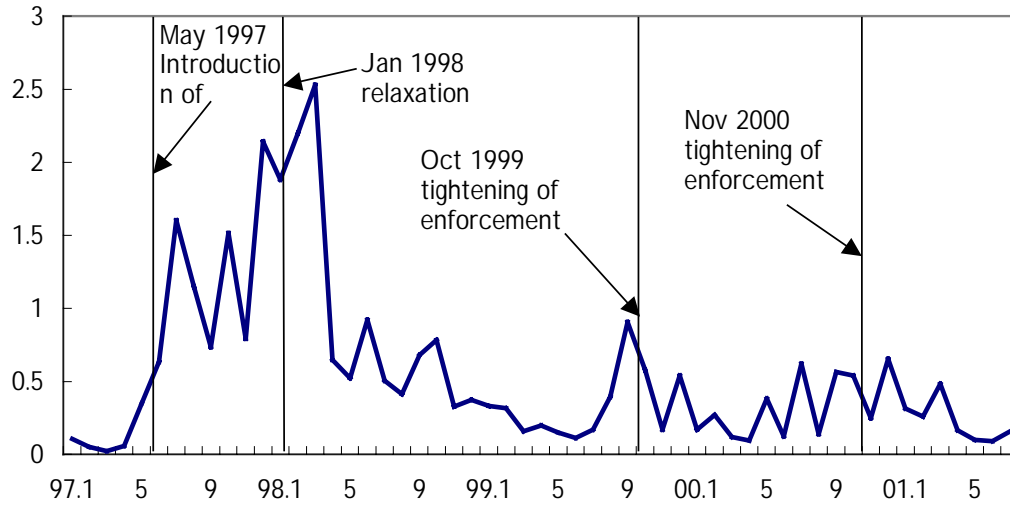


Chart5-2: Indonesia: Exchange Rate Volatility
(Monthly average of daily standard deviations of IDR/USD)

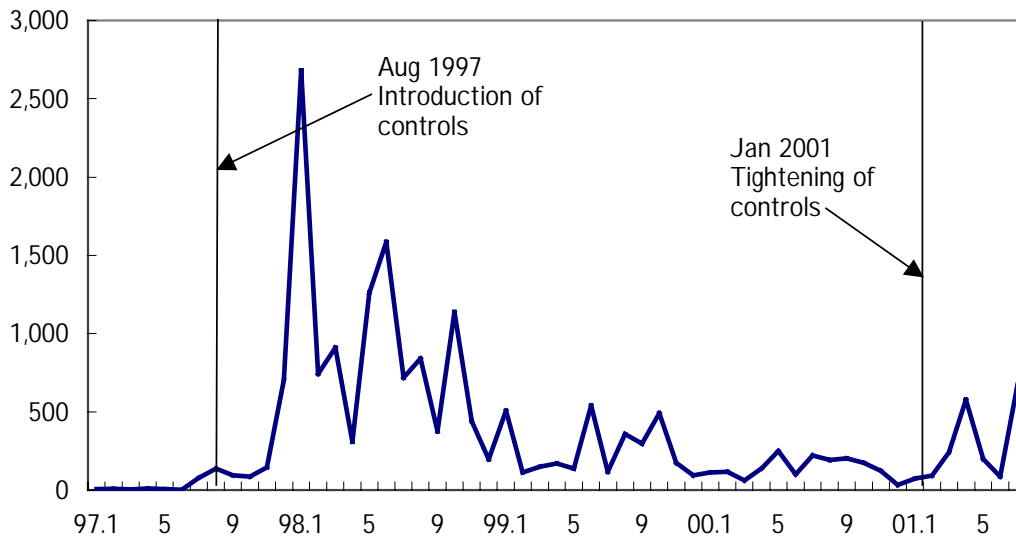


Chart5-3: Malaysia: Exchange Rate Volatility
(Monthly average of daily standard deviations of
RM/USD)

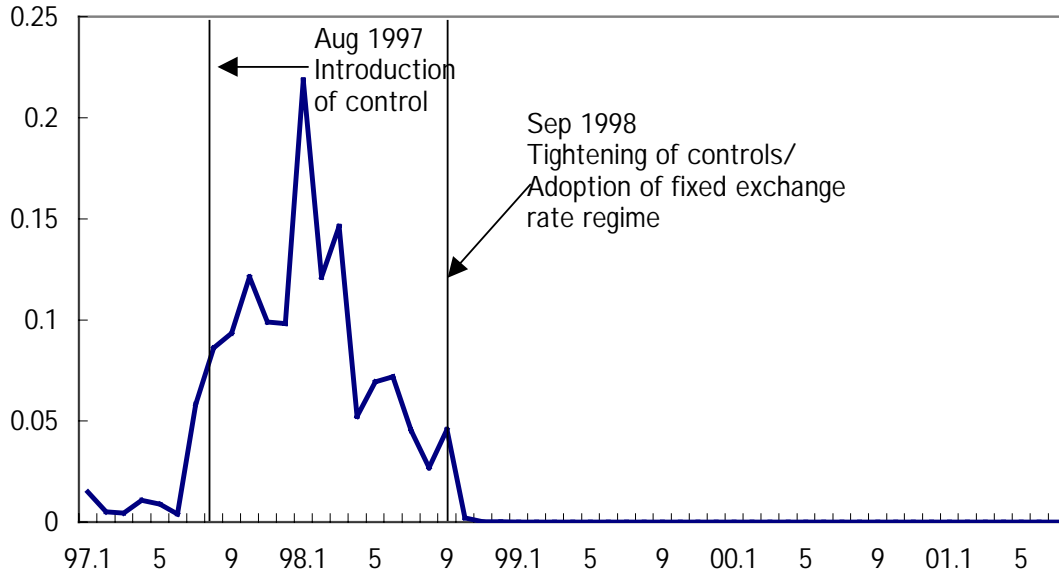


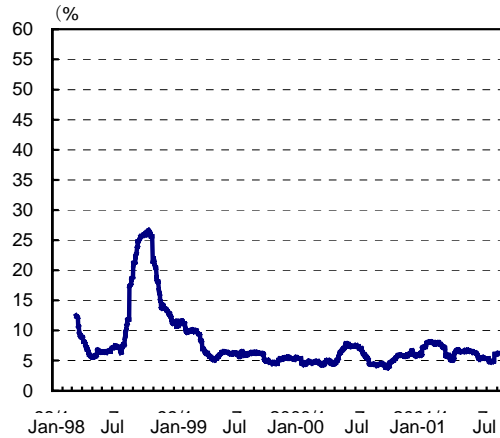
Chart 6: Volatility in Emerging Bond Markets

EMBI Global



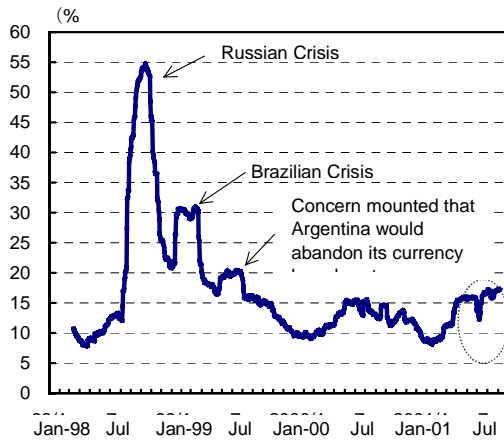
Comprised of Asia, Latin America, Eastern Europe/the Middle East, and Africa (Algeria, Cote d'Ivoire, Morocco, Nigeria, South Africa).

Asia



Comprised of China, Malaysia, the Philippines, Korea and Thailand.

Latin America



Comprised of Argentina, Brazil, Colombia, Chile, Ecuador, Mexico, Panama, Peru and Venezuela.

Eastern Europe/The Middle East



Comprised of Bulgaria, Croatia, Ukraine, Hungary, Poland, Russia, Turkey and Lebanon.

Calculations:

1. Calculate daily rate of change in price index.
2. Calculate the standard deviation of 50 business days using figures obtained in 1.
Convert it into an annual rate.
3. Take the simple average of volatility of each country in each region.

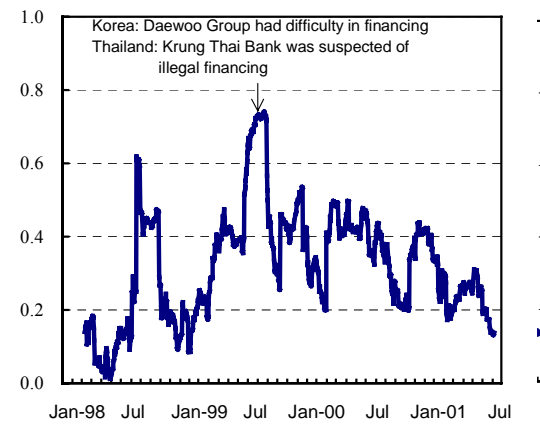
Chart 7: Correlation Coefficient in Emerging Bond Markets

EMBI Global



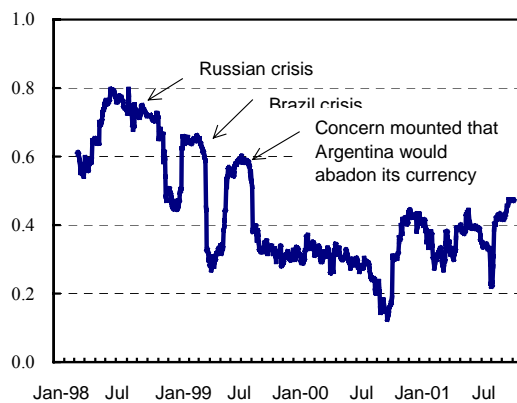
Excluding Algeria, Cote d'Ivoire, Morocco, Nigeria, and South Africa

Asia



Comprised of China, Malaysia, the Philippines, Korea, and Thailand.

Latin America



Comprised of Argentina, Brazil, Colombia, Chile, Ecuador, Mexico, Panama, Peru, and Venezuela.

Eastern Europe/The Middle East



Comprised of Bulgaria, Croatia, Hungary, Ukraine, Poland, Russia, Turkey, and Lebanon.

Calculations:

1. Calculate the daily rate of change in price index.
2. Perform a regression analysis (only the the rate of change in US bond is used as explaining variable, no constant variable is used). Calculate the residual from the regression result.
3. Calculate correlation coefficient of 50 business days from the figures obtained in 2.
Take the simple average of each country in each region.

Chart8: Malaysia: Average Daily Trading Volume at KLOFEE
(Number of Contracts)

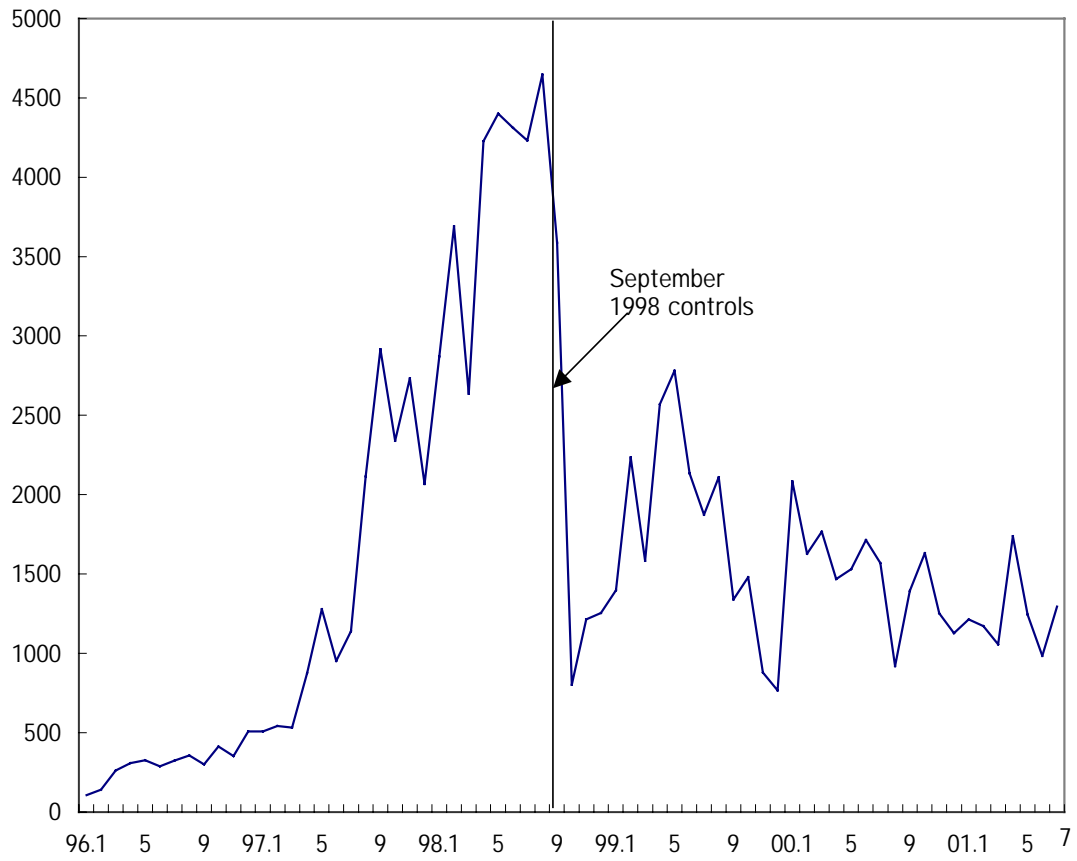


Table 1-1: Selected Foreign Exchange Regulations in ASEAN Countries (Thailand & Indonesia)

		Thailand		Indonesia	
		Pre-crisis period	Current period	Pre-crisis period	Current period
Short selling of local currency by non-residents	Lending to nonresidents in local currency	Free	In the case that there are no underlying trade and investment activities in Thailand, Thai baht credit facilities, including swap and forward exchange contracts obtained by a nonresident from all domestic financial institutions combined, are subject to a maximum outstanding limit of B 50 million.	Not permitted	Not permitted
	Swap transaction with nonresidents			Free	Subject to limit of 5 mil. Dollars since Aug 1997. The limit was lowered in Jan 2001.
	Accounts in domestic currency held abroad	Free		Free	Free
Withdrawal of capital by non-residents	External borrowing	Free (BIBF was established in 1993.)	Free	Free	Free
	Purchase of stocks by nonresidents	The purchase of share was limited to 49%. * 25% for local financial institutions.	The purchase of share is limited to 49%. * More than 49% of the shares of the local financial institutions are allowed to be held for 10 years.	The purchase of share was limited to a maximum of 49% of total shares issued by an individual company listed on the Indonesia Stock Exchange	Free
Capital flight by residents	Convertibility from domestic currency to foreign exchange without underlying trade & investment activities	Not permitted	Not permitted	Free	Free
	Foreign Exchange accounts held domestically(surrender requirement)	Foreign exchange proceeds must be surrendered to authorized banks or deposited in foreign currency accounts with authorized banks in Thailand within 15 days of receipt, except for proceeds used to service external obligations.	Foreign exchange proceeds must be surrendered to authorized banks within 7 days of receipt. Foreign exchange earners are allowed to deposit their foreign exchange in their foreign currency accounts only if they have obligations to pay out such amounts to nonresidents abroad within three months of the deposit rate.	Free	Free
	Foreign Exchange accounts held abroad(repatriation requirement)	Export proceeds exceeding B500,000 must be received within 180 days from the date of exportation.	Export proceeds exceeding B500,000 must be repatriated immediately after payment is received and within 120 days from the date of export.	Free	Free

Table1-2: Selected Foreign Exchange Regulations in ASEAN Countries (Malaysia & Philippines)

		Malaysia		Philippines	
		Pre-crisis period	Current period	Pre-crisis period	Current period
Short selling of local currency by non-residents	Lending to nonresidents in local currency	Subject to a maximum outstanding limit.	Not permitted	Not permitted	Not permitted
	Swap transaction with nonresidents	Free * Subject to a maximum outstanding limit of 2 mil dollars since April 1997.	Not permitted since September 1998		
	Accounts in domestic currency held abroad	Not permitted	Not permitted	Not permitted	Not permitted
Withdrawal of capital by non-residents	External borrowing	Free for approved borrowing	Unchanged	Non-exporters are required to receive approval.	Unchanged
	Purchase of stocks by nonresidents	The purchase of share was limited to a maximum of 30% of total shares issued by an individual company.	Unchanged *The restriction on repatriation was totally lifted in May 2001.	The purchase of share was limited to a maximum of 40% of total shares issued by an individual company.	Unchanged
Capital flight by residents	Convertibility from domestic currency to foreign exchange without underlying trade & investment activities	Not permitted	Not permitted	Not permitted	Not permitted
	Foreign Exchange accounts held domestically(surrender requirement)	Exporters are allowed to retain a portion of their export proceeds in foreign currency accounts with designated banks up to RM10 million depending on average monthly export proceeds.	Unchanged	Free	Free
	Foreign Exchange accounts held abroad(repatriation requirement)	Export proceeds must be repatriated when contractually due which in any case should not exceed 180 days from the date of export. Proceeds can be retained in foreign currency accounts maintained with domestic banks up to the permissible limit or converted into ringgit.	Unchanged	Free	Free

Note: Shadows represent “highly regulated”.

Table2: Share of Foreign Currency Deposits in Selected Countries

(As of end period, %)

	Thailand	Indonesia	Malaysia
1996	0.4	19.9	0.5
1997	1.3	31.0	1.0
1998	1.1	25.0	1.3
1999	1.4	21.2	1.5
2000	1.5	22.9	2.1

Table 3 External Position of Selected Emerging Market Economies*

(bn \$US, %)

		1997	1998	1999	2000	2001**
Argentina	Amount necessary for financing (A) Foreign	42.6	55.5	51.7	53.1	57.1
	Exchange Reserves (B)	31.3	32.0	33.6	33.8	20.0
	(B)/(A)	0.7	0.6	0.6	0.6	0.4
	External debt/GDP	42.6	47.1	51.2	51.6	—
Brazil	Amount necessary for financing (A) Foreign	84.8	90.5	72.3	67.5	68.5
	Exchange Reserves (B)	52.2	44.6	36.3	33.0	34.8
	(B)/(A)	0.6	0.5	0.5	0.5	0.5
	External debt/GDP	24.8	30.7	45.6	39.7	—
Turkey	Amount necessary for financing (A) Foreign	16.9	19.0	25.0	35.3	33.7
	Exchange Reserves (B)	20.1	20.9	24.2	20.6	20.0
	(B)/(A)	1.2	1.1	1.0	0.6	0.6
	External debt/GDP	43.4	47.1	55.0	56.6	—
Indonesia***	Amount necessary for financing (A) Foreign	42.6	34.2	20.1	13.7	17.4
	Exchange Reserves (B)	17.4	23.5	24.4	29.4	29.0
	(B)/(A)	0.4	0.7	1.2	2.1	1.7
	External debt/GDP	n.a.	152.5	103.8	n.a.	—
The Philippines	Amount necessary for financing (A) Foreign	13.5	12.0	2.4	0.0	2.6
	Exchange Reserves (B)	8.7	10.8	15.0	15.0	14.3
	(B)/(A)	0.6	0.9	6.3	—	5.5
	External debt/GDP	59.1	77.7	71.9	72.4	—

* Amount necessary for financing comprises external debt that is to be repaid within a year and current account deficits.

** The external position of year 2001 = External debt at the end of year 2000 that is to be repaid within a year + Projected current account deficits of year 2001

Foreign exchange reserves of year 2001 are calculated using August data.

*** Definition of foreign exchange reserves has changed since 1999.

Appendix 1: Developments in the Non-deliverable Forward Market

One important issue encountered by monetary authorities pursuing non-internationalization policies is the non-deliverable forward (NDF) market. NDFs are derivative products traded over-the-counter. The parties contract a forward rate for a currency and settle the transaction by paying in a convertible currency (usually US dollars) the difference between the contracted rate and the prevailing market rate on the settlement date. Most of the trading takes place in New York (Latin American currencies), London (Eastern European and Russian currencies), and Hong Kong and Singapore (Asian currencies).

1. Outline of the NDF market

NDFs are required when non-residents have hedging needs but there is no (or not enough) domestic forward trading, or there is a domestic forward market but non-residents are unable to access it (or risk being unable to access it). In the case of Latin America and a few other countries and regions, trading taxes and the like raise the costs on the forward market. This has also led to the development of NDF markets (Table 1).

Foreign exchange rates formed in the NDF market affect the domestic market by the following routes.

- A. **Arbitrage between domestic and offshore markets:** When residents (domestic banks) are allowed to participate in the offshore NDF market, domestic banks will trade local currency on domestic foreign exchange markets in order to adjust positions taken in NDF trades.
- B. **Adjustment of consolidated positions within a bank:** If, for example, a customer of the Singapore branch of Bank A brings in an NDF baht sale, the branch may not cover the NDF. Instead, it may have the Bangkok branch of Bank A cover it on the Bangkok market, which will therefore influence the domestic foreign exchange market in Thailand. The scope for such trading will be limited, however, as there are position limits on the Bangkok branch of Bank A.
- C. **Market sentiment:** Trends on the NDF market will influence the sentiment of participants on the domestic foreign exchange market.

Authorities basically do not have the means of directly controlling offshore derivative products like NDFs. They can, however, insulate themselves from arbitrage between the NDF market and the domestic market by banning domestic banks from participating in the NDF market. Authorities can also issue negative messages regarding the expansion of the NDF market, which may reduce the incentives for active market making in the offshore market by foreign banks with branches in the country (this is a form of moral suasion). Still, NDFs are one potential route for speculation in emerging currencies, so authorities must monitor trends carefully.

2. Recent NDF market trends in Asia

NDF markets currently exist for six Asian currencies: the Korean won, Taiwan dollar, Philippine peso, Chinese yuan, Indian rupee, and Indonesian rupiah. In all cases, these markets are the result of inconvenient (or impossible) access to domestic forward markets for non-residents.

Of particular note recently is the new creation of an NDF market for the Indonesian rupiah. In the past, rupiah forwards were actively traded on the offshore market in Singapore and there was no need for an NDF market. But the capital regulations introduced in January of this year eliminated offshore trading and resulted in the formation of a new NDF market the following month (the classic example of non-internationalization policies encouraging the formation of an NDF market). However, there are currently no moves to create NDF markets for the Malaysian ringgit or the Thai baht, even though these countries are pursuing non-internationalization policies similar to those for the rupiah. (However, there are reports of small volumes of customer trading for the ringgit recently.)¹⁶

Trading on the rupiah NDF market remains low in volume after more than six months since its establishment. Although the offshore market in rupiah forwards has been eliminated and the alternative, the NDF market, is low in volume, there have been few, if any, complaints heard from foreign companies and investors. This could be a reflection of the fact that the Indonesian onshore market is functioning effectively as a replacement for the offshore market. Meanwhile, it could also be the result of many foreign companies and investors denominating trades with Indonesian companies in dollars, and therefore transferring foreign exchange risks to the Indonesian side. Careful

¹⁶ It should be noted that the ringgit is currently pegged against the US dollar and there should therefore be little need to hedge foreign exchange rates. For the baht, offshore market trading is still possible, although the size of the market has substantially declined. There is also little exchange rate hedging demand for the Chinese yuan since the rate is only allowed to trade within a very small band .

monitoring will be required to understand how Indonesian companies are managing their foreign exchange risks with reduced non-resident participation in foreign exchange forward markets.

Appendix Table 1: Offshore NDF Markets in Asia, Latin America and Russia

	NDF markets	Domestic forward market	Accessibility to domestic forward market by non-residents
South Korea	Yes	Yes	No
Taiwan	Yes	Yes	No
Hong Kong	None	Yes	Yes
Singapore	None	Yes	Yes
Thailand	None	Yes	Yes (Only transactions with underlying trade and investment activities)
Indonesia	Yes	Yes	Yes (Only transactions with underlying trade and investment activities)
Malaysia	None	Yes	No
Philippines	Yes	Yes	No
China	Yes	None	
Mexico	Yes	Yes	Yes
Brazil	Yes	Yes	No
Argentina	Yes	Yes	No
Russia	Yes	Yes	No

Appendix 2

**Summary of Survey on
Foreign Exchange Market Monitoring**

This survey was carried out in August 2001 in the aim to compare the foreign exchange market monitoring systems among five countries (Indonesia<ID>, Korea<KR>, Malaysia<MY>, the Philippines<PH>, and Thailand<TH>).

1. Reporting institutions

What institutions are obliged to report foreign exchange transactions to the central bank or the relevant authorities?

	Domestic banks	Foreign bank branches	Foreign exchange brokers	Other
ID	√	√	√	
KR	√	√	√	Merchant banks
MY	√	√	√	
PH	√	√	√	Offshore Banking Units
TH	√	√		The Industrial Finance Corporation of Thailand and Export-Import Bank of Thailand

2. Coverage of the report

(1) Inter-bank transactions

What do they report?

	Transaction volume	Type of transactions (spot, forward, option, etc.)	Counter party	Price	Other
ID	√	√	√	√	Realized/unrealized P/L, outstanding transaction, purpose of the transaction
KR	√	√	√	√	Transaction date, value date, maturity date, currency denomination,
MY	√	√	√	√	Transaction date, value date, maturity date, outstanding transaction
PH	√	√	√	√	Type of account, i.e. regular banking unit or foreign currency deposit unit
TH	√	√	√	√	

Do they report aggregate data or each transaction?

	Aggregate data	Each transaction	Other
ID	√	√ When transaction volume is more than US\$ 10,000.	
KR		√	
MY	√	√ When transaction volume is more than US\$ 1,000,000.	
PH		√	
TH		√	

(2) Transaction with customers

What do they report?

	Transaction volume	Type of transactions	Counter party	Price	Other
ID	√	√	√	√	Realized/unrealized P/L, outstanding transaction, purpose of the transaction
KR	√	√	√	√	Transaction date, value date, maturity date, currency denomination
MY	√	√	√	√	Transaction date, value date, maturity date, outstanding transaction
PH	√	√	√	√	Underlying transaction (purpose of foreign exchange purchases and sales)
TH	√	√	√	√	

Do they report aggregate data or each transaction?

	Aggregate data	Each transaction	Other
ID	√	√ When transaction volume is more than US\$ 10,000.	
KR		√ When transaction volume is more than US\$ 1,000.	
MY	√	√ When transaction volume is more than US\$ 1,000,000.	
PH		√	
TH		√ When transaction volume is more than US\$ 1,000,000.	

Do they report underlying transactions (trade, investment, etc.) of customers?

	Yes	No	Other
ID	√ When transaction volume is more than US\$10,000.		
KR		√	
MY	√ When transaction volume is more than US\$1,000,000.		
PH	√ When foreign exchange purchase/sales is US\$250,000 and above for banks or when US\$10,000 and above for foreign exchange corporation		
TH	√		

Do they report the names of individual customers?

	Yes	No	Other
ID	√ When transaction volume is more than US\$10,000.		
KR	√		ID number, resident status, nationality
MY	√ When transaction volume is more than US\$1,000,000.		
PH	√		Optional for foreign currency deposit unit
TH	√ When transaction volume is more than US\$1,000,000.		

3. Frequency of report

How frequent do they report?

	Daily	Weekly	Monthly	Other
ID	√	√	√	
KR	√			
MY	√		√	
PH		√ Commercial banks, foreign exchange corporations	√ Thrift banks, Offshore Banking Units	
TH	√			

4. Reporting method

In what form do they report?

	Paper format	On-line system	Hearing by phone	Combination of the three
ID	√	√		
KR		√		
MY		√		
PH	√ Foreign exchange corporations	√ Commercial banks, thrift banks, overseas banking units		
TH		√		

5. Restrictions on offshore use of local currencies

After the currency crisis, restrictions on offshore use of local currencies have been introduced or strengthened in this region. But it is argued that enforcement of such restrictions is not easy. Among major regulations that affects offshore transactions listed below, which ones are relatively difficult to enforce or monitor?

	Regulations on domestic currency lending to nonresidents	Regulations on currency swaps with nonresidents	Regulations on domestic currency deposit abroad	Regulations on fund transfer between domestic currency accounts held by nonresidents	Regulations on exportation of domestic currency (banknotes)	Other
ID			√	√	√	√ Export proceed held by exporters on banks abroad
KR						
MY						
PH			√	√		
TH						√ More information is needed from offshore counterparties

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