

**Living with Volatilities:  
Managing Exchange Rate and Capital Flows in the SEACEN Economies<sup>1</sup>  
Bank of Thailand**

**I. Introduction**

The global financial environment has changed significantly from the time of the SEACEN Centre establishment twenty-five years ago. Ten years ago, several SEACEN economies became victims of volatile capital flows and financial market herd behaviors. Today, we live in the age of financial globalization where cross-border capital flows are rising among economies. The rise in cross-border flows has been spurred by capital account liberalization in many countries, including SEACEN member economies.

Gross capital inflows to emerging Asia have already exceeded their historic high of the mid-1990s. The current wave of capital inflows, which started around 2001, is a result of ample global liquidity, an increase in global risk appetite, as well as the region's improving fundamentals since the 1997 crisis.

One implication of these inflows has been the rapid appreciation of exchange rates in many Asian economies, which in turn complicates the authorities' macroeconomic policy management. In addition, the massive inflows have exposed the recipient countries to risks of sudden stops or outflows of capital. In the other separate development, the US dollar, which has been the global currency of choice since the end of the Second World War, is entertaining a possibility of a sharp correction as a result of the massive US current account deficits. Not helping the situation is the possibility of a global slump and financial market turmoil in the event of the US dollar collapse.

The rest of this background paper is organized as follows. Section II describes the current global economic and financial environment and their risks. Section III reviews SEACEN members' experiences in dealing with recent volatilities. Section IV discusses some policy options available to SEACEN member central banks. Section V provides concluding remarks.

**II. What are the crucial economic and financial environments that could propagate volatilities?**

Despite the current favorable global economic conditions, economic and financial risks emanating from increasing globalization continue to challenge policy makers in the SEACEN economies. Rising macroeconomic dependency among open economies particularly through growing international trade has contributed to not only mutual economic expansion but also growing global imbalances. Concurrently, fluctuations in capital movements have increasingly complicated macroeconomic policy making in the current environment of ample

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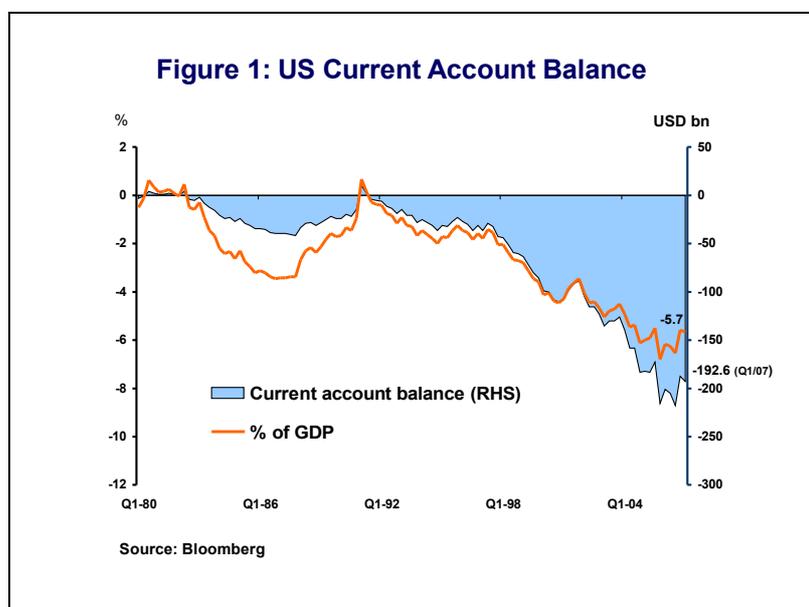
<sup>1</sup> Background paper for the 42nd SEACEN Governors' Conference during 27-30 July 2007 in Bangkok, Thailand

global liquidity, lower financial market volatilities and rising investors' risk appetite.

## A. Global financial imbalances

A growing number of economists on this side believe that a dominant position as supplier of financial assets globally due to the depth and efficiency of the US market, coupled with advance technologies, rising productivity as well as favorable economic environments will continue to make the US financial market significantly attractive to foreign investors. Hence, the huge US current account deficits will likely be sustainable into the future as long as the progressing US economy offers desirable financial investment choices for international investors.

However, contrary to the above view, several economists continue to hold the view that a sharp unwind due to a huge US dollar slide may occur after a loss of confidence and can immediately bring about harsh impacts on the global financial system and economy.



In response to this concern, the multilateral efforts to alleviate the problem have also recently been spearheaded by the IMF and agreed upon by five major economies, the US, euro-zone, China, Japan, Saudi Arabia.<sup>2</sup> Nevertheless, unlike the concrete agreement under the Plaza Accord in 1988 which led to a continued period of economic downturn in Japan, these efforts are on a mutually voluntary

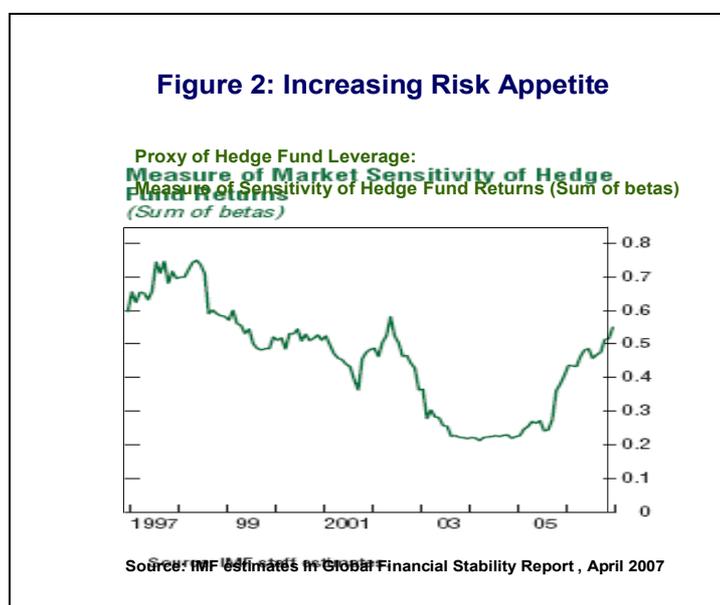
<sup>2</sup> This strategy comprises agreed plans to boost savings and enhance fiscal consolidation in US, further growth-enhancing reforms in Europe, augment structural reforms and fiscal consolidation in Japan, boost domestic demand and increase exchange rate flexibility in China, and increase public investment spending and oil production capacity in Saudi Arabia. According to IMF calculations in IMF Financial Survey (April 2007), if successfully implemented, the above efforts would reduce the extent of global financial imbalances by 1% to 1.75% of world GDP over the next four years from a baseline of about 6%.

basis. Hence, rebalancing the world economy through the above efforts does not contain predetermined milestones whereby the involved parties would adhere to. In addition, reducing the current account deficits in the US requires greater tangible efforts on expediting fiscal consolidation, providing incentives to boost private savings, and increasing energy efficiency. Moreover, increasing exchange rate flexibility in China will likely be at a gradual pace whereas Saudi Arabia still indicates an intention to maintain a tight peg to the US dollars.

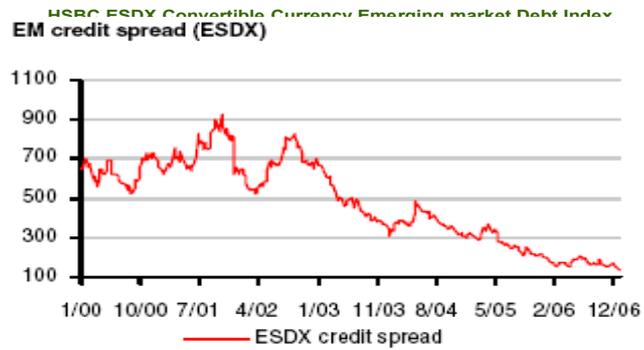
The recent IMF's adoption of the Decision on Bilateral Surveillance in June 2007 aims to encourage members to eliminate large exchange rate misalignments manifested through current account development and avoid policies that would result in external instability. However, maintaining external stability and restraining exchange rate misalignment could mean sacrificing internal stability and sustained growth and therefore will likely face with continued resistance from a number of emerging markets who rely heavily on export-led growth policy. In addition, measuring exchange rate misalignments is also subject to selective approaches which could result in persistent disagreement. The question about what the IMF could and should do if a member fails to or opts not to follow this guideline also needs to be further answered.

## B. Increasing financial flows in search of higher returns

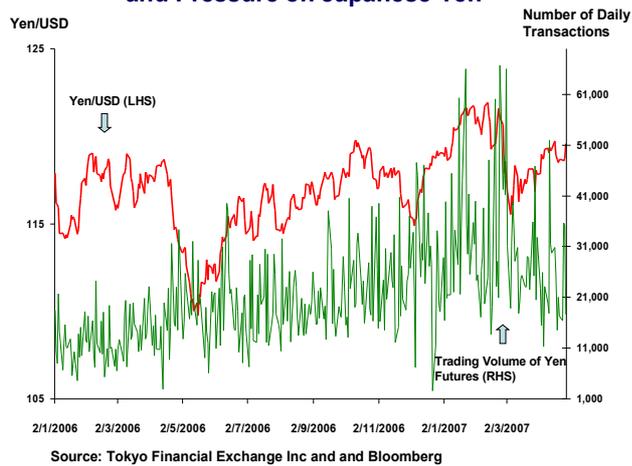
Unlike emerging efforts on the macro side to deal with global imbalances, general views still indicate that international capital flows including those through hedge funds should be left driven by market forces. Against this background, increasingly integrated global finance, buoyant global economic conditions and a more muted current business cycle have contributed to evidently rising investors' risk appetite and increasing carry-trade investment for the past 4-5 years. Indeed, international investors have been venturing into new markets and acquiring more high-yield assets especially in the emerging markets. This led to rising carry-trade investment through borrowing from the low interest markets to lend in the foreign markets with high returns, which in turn poses a threat from possibly sharp and abrupt adjustments to global financial stability. Evidently, low risk premia across asset classes resumed quickly following the recent episodes of risk aversion and have sustained thereafter.



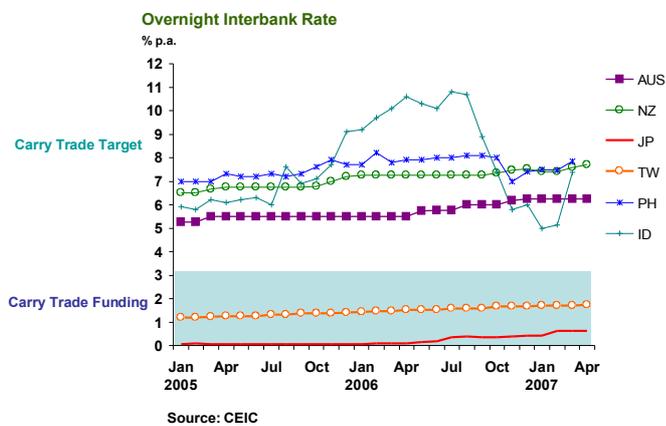
**Figure 3: Declining Emerging Market Spread**



**Figure 4: Increasing Yen Carry-trade Investment and Pressure on Japanese Yen**

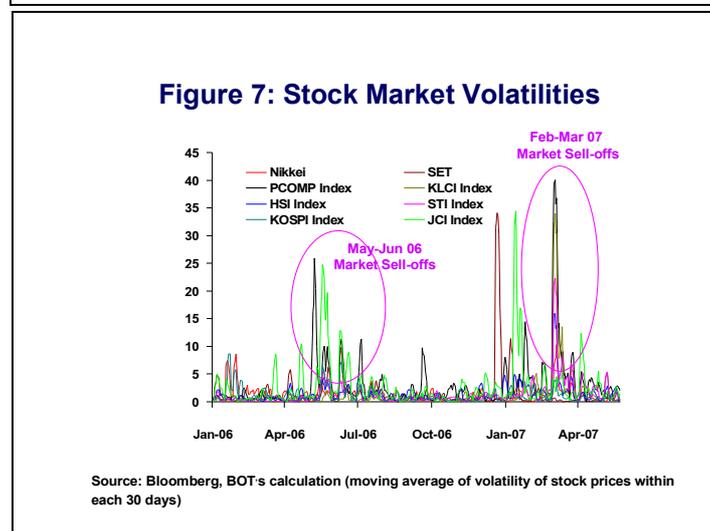
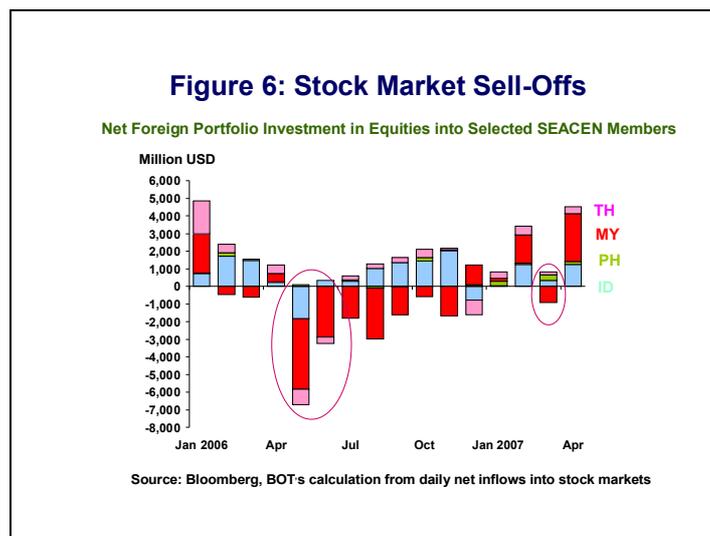


**Figure 5: Interest Rates in Funding and Target Markets**



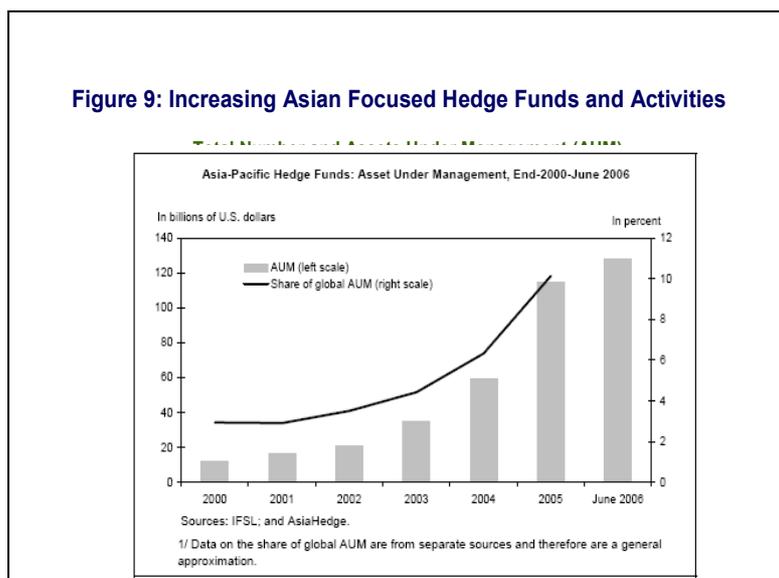
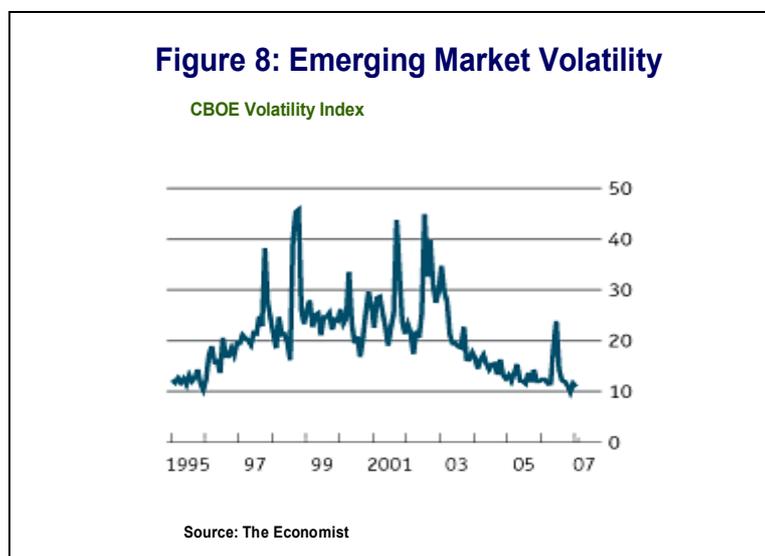
An important question then is whether the environment buttressing an increase in risk appetite will continue to prevail into the future. In other words, “are the factors behind the persistently low risk premia more permanent or temporary in nature?”. The first permanent factor is reduction in the costs of cross-border financial transactions through capital account liberalization, financial innovation especially those facilitating credit risk transfers, as well as technological advancement in information technology. The second factor relates to increasing demand for higher returns in emerging assets from aging population in the advanced economies through investment vehicles such as pension funds. The third factor is the structurally high saving rates of consumers in emerging markets in Asia, given the less developed social welfare and pension systems, which have been contributing to increasing global liquidity. The fourth factor involves the recent moves by some authorities to diversify foreign reserve investment by establishing sovereign wealth funds that would invest in more diverse foreign assets.

In contrast, the two episodes of a sudden rise in risk aversion in May to June 2006 and February to March 2007 have highlighted that risk premia could rise abruptly due to reassessment of the underlying economic fundamentals following changes in market measures, and market information revelation, suggesting that compression in risk premia can also be both temporary and reversible.



Firstly, low interest rates especially in the major economies, thanks to increasing integration of emerging economies particularly China into the international production network and the effective and timely use of monetary policy in combating inflation, have led to search for higher returns in riskier assets. This low interest rate environment may not persist once further steps of Chinese integration into the world production network contributes less to containing inflation and the accommodative cycle of monetary policies comes to an end.

Secondly, the current low volatility in emerging markets due to sustained economic stability, improved credit ratings, and increasing transparency could be subject to an abrupt change in sentiment due to any unexpected deterioration of macroeconomic conditions as well as the aforementioned risks from global imbalance and carry trade unwinding.



Thirdly, with the rising number of Asian focused hedge funds(AHFs), rising hedge fund activities together with increasing usages of new derivative-based instruments could increasingly propagate capital flow volatility. This is because they can lead to “one-way” markets and occasional periods of price corrections, as markets rebalance and liquidity is provided only at less favorable prices. It could also increase the possibility of a financial crisis through momentum trading and herding behavior. The increasing levels of their leverages and the off-market nature of their transactions which involve transfers of risk across different agents can potentially pose rising systemic risks to the regional and global financial markets particularly in the forms of increased and extreme market volatility in time of stress.

### C. What have the SEACEN members’ experiences been in dealing with a surge in capital flows and carry trade unwinding? Are we well-prepared?

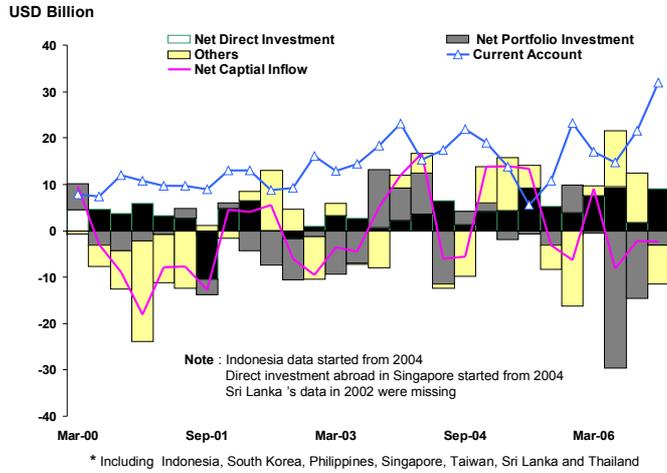
Most of the SEACEN economies have been facing unrelenting upward pressures on currencies in the second half of 2006. The pressures have continued to complicate monetary and exchange rate policies in several member economies up until these days. On one hand, the recent robust current account surpluses have been a crucial driving factor behind these pressures. On the other hand, although net capital flows peaked in 2004, both gross capital inflows and outflows have been significantly larger and on the rise. Portfolio investment inflows have significantly contributed to pressures on regional exchange rates. In particular, the foreign exchange pressure in a number of regional economies has been to a large extent due to capital inflows related to demand for hedging future export receipts against further exchange rate appreciation. This has been reflected by increasing “other investment” inflows into the economies as exporters expecting an income in US dollars sold dollars forward to domestic banks who in turn reduced their US dollar asset positions abroad. Moreover, carry trade investment has also reportedly contributed to rising capital inflows and exchange rate pressures in some member economies with relatively high interest rates such as Indonesia, and the Philippines.

**Table 1: Exchange Rate Appreciation in SEACEN**

Local currency /US dollar	25 June 2007	% Δ from 31 Dec 03	% Δ from 31 Dec 04	% Δ from 31 Dec 05	% Δ from 31 Dec 06
Brunei	1.53	9.9	6.7	8.1	0.6
Cambodia	4086	-2.9	-6.1	0.9	1.2
Fiji	1.599	7.2	3.6	8.6	4.3
Indonesia	9035	-7.3	2.5	8.1	-0.5
Korea	926.6	22.3	10.5	8.3	0.4
Malaysia	3.466	8.8	8.8	8.1	1.7
Mongolia	1163.5	-3.3	3.9	5.0	0.1
Myanmar	6.42	0	0	0	0
Nepal	65.208	10.7	6.9	9.7	8.5
Papua New Guinea	2.946	9.9	4.1	3.2	0.6
Philippines	46.15	16.9	18	13.1	5.8
Singapore	1.536	9.6	5.8	7.6	-0.2
Sri Lanka	110.99	-14.5	-6.5	-8.8	-3.2
Taiwan	32.73	3.6	-3.1	0.3	-0.4
Thailand	34.56	12.8	11.2	15.8	2.5
Vietnam	16125	-3.1	-2.2	-1.3	-0.4

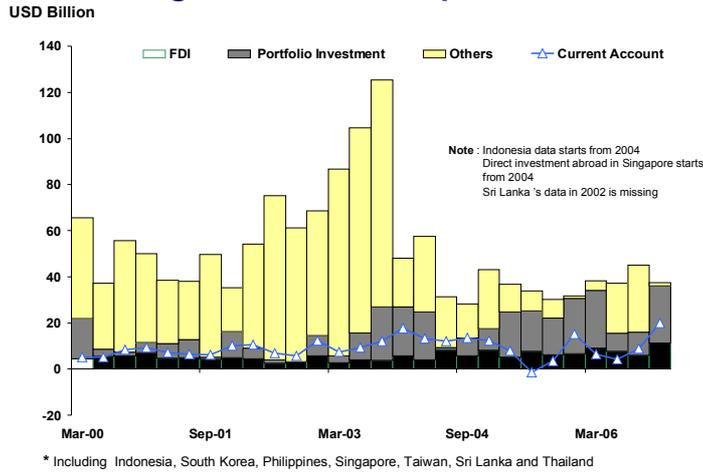
Sources: CEIC, IFS

**Figure 10: Net Capital Inflow and Current Account\***



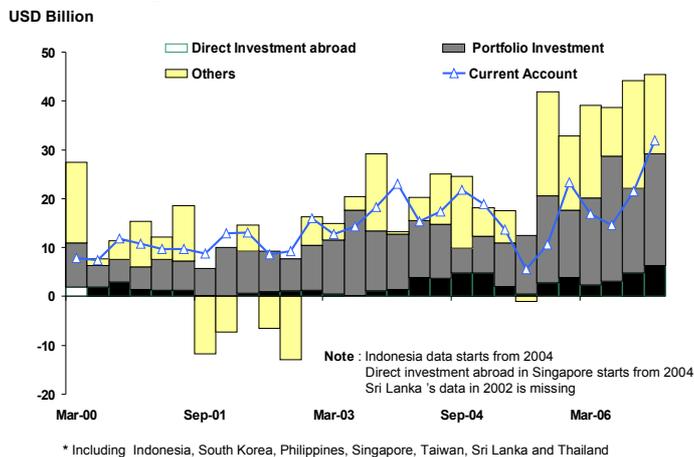
Source: CEIC, and National Statistics

**Figure 11: Gross Capital inflow\***



Gross capital inflow = increase in nonresidents' domestic assets + decrease in nonresidents' domestic liabilities  
Source: CEIC, and National Statistics

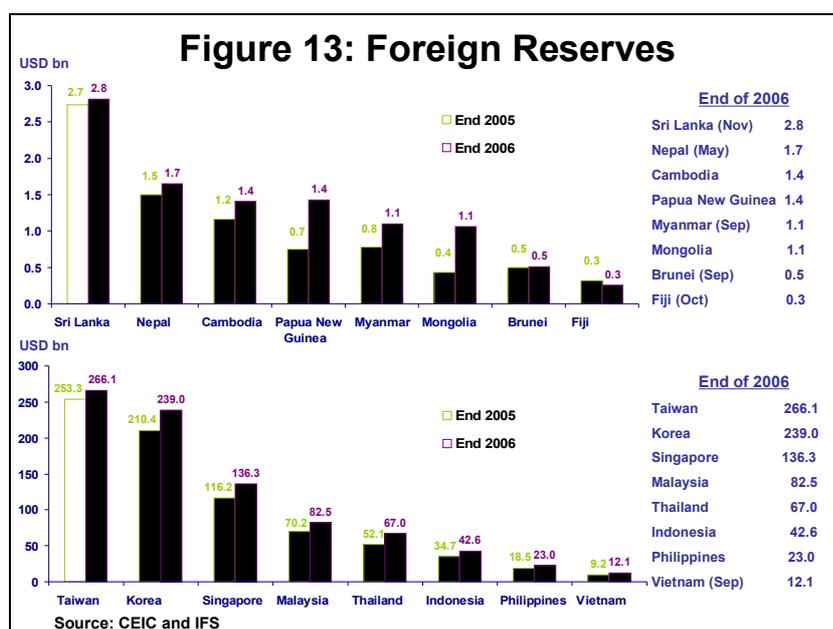
**Figure 12: Gross Capital Outflow\***



Gross capital outflow = increase in residents' foreign assets + decrease in residents' foreign liabilities.

Source: CEIC, and National Statistics

Member central banks have been trying to cope with the unyielding exchange rate pressure in order to avoid potential rising volatility and preserve export competitiveness. The common measure is foreign exchange intervention which has contributed to historically high levels of foreign reserves across the region. To avoid inflationary pressure from such measure, sterilization has been undertaken. In doing so, the extent of sterilization seems to depend on the degree of the pressure as well as practical and legal limitations tools. Sterilization incurs interest costs from the spread between yields paid on sterilization debt instruments and yields received on foreign asset holdings and exposes member central banks to exchange rate risks from currency mismatches between foreign currency-denominated assets and domestic currency-denominated liabilities.



Aside from foreign exchange interventions, different choices of capital control policies both on limiting inflows and encouraging outflows have been adopted by some member economies. It should be noted that pressures on the exchange rates were supposedly less distressing in the economies where capital outflows by residents had been more progressively liberalized before hand.

In Thailand, capital control measure namely “Unremunerated Reserve Requirement” (URR) has been employed to fend off speculative inflows.<sup>3</sup> It has been subsequently relaxed for inflow transactions with fully hedged positions, concurrently with further liberalization of capital outflows through relaxation of

<sup>3</sup> Since December 19, 2006, all financial institutions must withhold 30 per cent of all foreign currency transactions (excluding sale proceeds from goods, payment of service fee, foreign direct investment, and investments in the Stock Exchange) for one year, otherwise, only two-third of the withheld amount would be refunded.

foreign currency holdings by residents and increasing ceilings on outbound direct and portfolio investment.<sup>4</sup>

In Korea, various restrictions have been eased to boost overseas investment through exempting capital gain tax for residents' investment in on-shore equity funds for overseas financial products, increasing the ceiling of resident's real estate investment abroad, allowing the government pension fund to invest directly in foreign bonds and stocks, and increasing guarantee and financial support for residents' overseas investment through the EXIM Bank.

However, in Malaysia, further liberalization of foreign exchange rules have been on both the inflows through relaxing the rules on nonresidents' investment in Ringgit assets and financial products and the outflows through providing greater flexibility to licensed onshore banks to undertake foreign currency business and allowing residents to increase foreign currency borrowing and invest more in foreign currency assets.

In Taiwan, the authorities have taken a cautious approach towards allowing greater private outflows. In the beginning of June 2007, the authorities have imposed an overseas investment limit of NTD 10 billion on all new mutual funds as a precaution against the risks involved (beyond that, permission is required). In addition, the authorities have adopted a case-by-case and gradual approach towards the policies of raising the overseas investment ceiling limit for insurers from 35% to 45% of their funds (effective mid June 2007).

Despite those above attempts, it is utmost important to step back and answer the question of whether member economies are well-prepared to cope with potentially rising volatilities that could be disruptive to economic growth and stability. The answer to this question could vary from economy to economy as the SEACEN economies encompass various combinations of exchange rate regimes, monetary policy frameworks, capital flow policies, and structure and level of development of the financial systems, reflecting different macroeconomic structures, levels of economic development, nature of shocks affecting the economies. Hence, different member economies will likely face different magnitudes of fluctuations and may need different approaches and tools to deal with the problem.

With a closed capital account, risks from volatile capital flows would not exist. However, with increasing capital account openness, calibrating macroeconomic policy mix becomes more and more important in smoothing out fluctuations emanating from capital flows. Currently, according to the Chinn and Ito's measure, which indicates the degree of capital account openness (the higher, the more open), most member economies differ significantly in terms of levels of restrictions on capital transaction.<sup>5</sup> Those with relatively open capital accounts

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<sup>4</sup> The maximum amount of residents' direct investment abroad has been increased from 10 to 50 million USD per person per year and domestic individuals and companies whose fundings are originated from overseas without future exchange obligation have been allowed to hold up to USD 50,000 of and USD 2 million in foreign currency deposit accounts respectively.

<sup>5</sup> The Chinn and Ito's measure is calculated from the binary dummy variables that codify restrictions on cross-border financial transactions reported in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions with the following elements:

tend to adopt more flexible exchange rate settings. Nevertheless, the chosen monetary policy frameworks differ across those with relatively open capital accounts.

In an environment of capital influx, member economies at the floating exchange rate corner need to prepare for eroding price competitiveness of exports whereas those pegged exchange rate corner need to bare the cost of sterilization and the opportunity cost of reserves accumulation. On the other hand, when the time of a sudden stop of capital inflows and capital reversal arrives, sufficient amount of foreign reserves to fend off speculation will be crucial for the former while the latter will have to bare the costs associated with exchange rate depreciation including inflationary pressure from rising import prices and increasing foreign debt burden.

On the positive side, so far, the overall favorable economic growth and stability should help contain adverse consequences of volatile capital flows to a certain extent. Furthermore, external indicators including current account to GDP, external debt to GDP, and foreign reserves to short-term debt have been at respectable levels, compared with the period leading up to the Asian crisis, due to a continued period of robust export performance. However, in terms of the structure of the financial systems, even though there has been a clearly encouraging development in terms of the size of both equity and bond markets in the region, the depth and width of them in most member economies may not be sufficient to help smooth resulting capital flow fluctuations.

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restrictions on capital accounts transactions, restrictions on current account transactions, foreign exchange surrender requirements export proceeds, and presence of multiple exchange rates. The latter three elements are included to capture the intensity of the capital controls more accurately. The more open the country is to cross-border capital transactions, the higher value the index is.

**Table 2: Exchange Rate Arrangements, Monetary Policy Frameworks, and Capital Account Openness**

Exchange Rate Regime (No. of Countries)	Monetary policy Framework			
	Exchange rate anchor	Monetary aggregate target	Inflation targeting framework	Other*
<b>Currency board</b>	Brunei (N.a.)			
<b>fixed</b>	Against a single currency			
	Nepal (-1.10)			
	Vietnam (-1.10)			
	Against a composite			
	Fiji (-1.1)			
<b>Managed floating</b>		Cambodia (0.65)	Thailand (-0.06)	Myanmar (-1.77)
		Sri Lanka (0.18)	Indonesia (1.22)	Malaysia (-0.06)
		Mongolia (1.22)		Papau New Guinea Singapore (2.60)
<b>Independently floating</b>		Taiwan (n.a.)	Korea (-0.06)	
			Philippines (0.18)	

**Chinn and Ito's measure**

More than 2	Between 1 to 2	Between 0 to 1	Between (-1) to 0	Between (-1.77) to (-1)

\*Economies that have no explicitly stated nominal anchor, but rather monitor various indicators in conducting monetary policy

Source: IMF's Annual Report on Exchange Arrangement and Exchange Restrictions 2006

**Table 3: Capital Account Openness**

	Brunei	Cambodia	Fiji	Indonesia	Korea	Malaysia	Mongolia	Myanmar	Nepal	Papua New Guinea	Philippines	Singapore	Sri Lanka	Taiwan	Thailand	Vietnam
Capital transactions Controls on:																
Capital market securities		■	•	•	•	•	•	-	•	•	•	•	•		•	•
Money market instruments		■	•	•	•	•	•	-		•	•		•	•	•	•
Collective investment securities		■	•	•	•	•	•	-	-	•	•		•		•	•
Derivatives and other instruments		■	•	•	•	•	•	-		•	•		•	•	•	•
Commercial credits			•	•	•	•	•	•	•	•	•		•			•
Financial credits			•	•	•	•	•	•	•	•	•	•	•	•	•	•
Guarantees, sureties, and financial backup facilities			•	•	•	•		•	•	•	•				•	•
Direct investment	•	•	•	•	•	•	■	•	•	•	•		•	•	•	•
Liquidation of direct investment			•					•	•	•			•			-
Real estate transactions	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•
Personal capital transactions	•		•		•	•	•	•	•	•	•		•	•	•	•

• Indicates that the specified practice is a feature of the exchange system

- Indicates that the data were not available at time of publication

■ Indicates that the specific practice is not regulated

Source: IMF's Annual Report on Exchange Arrangement and Exchange Restrictions 2006, Classification by BOT staff for Taiwan's

**IV. What really constitute policy options going forward?**

When it comes to dealing with the current global financial environment, roles of SEACEN member central banks differ according to each country's degree of capital account openness and exchange rate objective. Central banks in

countries where capital account transactions are largely restricted probably will not have to worry much about external stability, for their economies are safely shielded from volatile capital flows. The task to maintain economic stability becomes much more difficult in countries that have already opened their capital accounts to a certain extent. For this group of countries, volatile capital flows can at times be highly destabilizing, as vividly evidenced by the 1997 Asian financial crisis.

The fact that a closed capital account is the absolute defense against volatile capital flows does not mean that SEACEN member economies should sever their ties with the international capital market. Despite their associated risks, it is widely recognized that free cross-border capital flows can make major contributions to economic development. The key challenge for policymakers is to design a policy framework that will help the economy reap maximum benefits of cross-border flows at minimum risks. A closed capital account may protect a country from events such as sudden stops and contagious international financial crises, but at the expense of long-term economic growth and development.

To achieve the optimal balance between openness of capital account and growth and stability of the domestic economy in the current global financial environment, SEACEN member central banks need to have in place a set of mutually reinforcing and consistent policies with regard to capital flows. In coming up with the appropriate policy mixes, the following four policy areas will need to be considered along with each country's individual circumstances. The importance of individuality cannot be understated, for there is no single approach that applies to all the countries.

## **A. Monetary policy**

Discussion over the use of monetary policy to deal with capital flows often surfaces in times of market volatility. However, the effect of monetary policy on capital flows is difficult to predict. This is because interest rate differential is not the only determinant of capital flows. Among other things, agents' expectations of future economic activity play a major role on capital movements. The 1997 crisis has shown a valuable lesson that a tight monetary policy stance, instead of slowing down capital outflows, may perversely accelerate capital flights when economic agents believe that a prolonged period of high domestic interest rates will result in widespread firm and household insolvency.

In an opposite situation, an interest rate reduction may not deter capital inflows if investors take it as a sign for a stronger future economy. In this case, capital inflows may even accelerate.

Despite monetary policy's potential ineffectiveness in dealing with volatile capital flows, strong and credible monetary policy frameworks are essential in central banks' ex-post reactions to a sudden stop or a global hard landing. Central banks' ability to stabilize output in such events depends not only to the extent that they act appropriately, but also on their credibility to guide private-sector expectations.

## B. Capital flow policy

Capital flows have different effects on an economy depending on its exchange rate regime and hence different policy implications. Under the fixed exchange rate regime, the effect of capital flows is transmitted through the domestic price level whereas under the floating rate regime, the effect hits first through the nominal exchange rate. For countries with fixed exchange rates, a policy question is simply to sterilize or not to sterilize exchange rate intervention. For countries with flexible exchange rates, there is also a policy choice to let the exchange rate adjust freely.

Since many SEACEN member countries rely on exports as engine of economic growth, a real exchange rate appreciation that is more rapid than those of regional peers almost always raises a concern that a country may lose its export competitiveness. In the current episodes of continued capital inflows into the region, economies with fixed exchange rate tend to do better in this respect as the price level tends to be stickier than the nominal exchange rate (i.e., slower real exchange rate appreciation).<sup>6</sup> For several SEACEN member central banks operating under flexible exchange rates, this presents a difficult policy dilemma between letting the economy adjust to changes in relative prices and intervening in the foreign exchange market.

Changes in official reserve figures suggest that all member banks in the latter group have chosen the latter course. To prevent inflationary pressure, most also sterilize their foreign exchange interventions. However, sterilization has its limitations. First, when the exchange rate appreciation is part of a long-term trend, sterilized interventions often fail to resist exchange rate movements except in a very short term. Second, sterilization typically becomes increasingly costly as a central bank accumulates more reserves. Finally, domestic instrument availability represents a practical constraint on how much a central bank can sterilize its foreign exchange purchases.

Thus, SEACEN member central banks may need to formulate their foreign exchange intervention strategies in a way that maximizes efficiency of sterilization. Given that it is not easy to identify “excessive” exchange rate shocks, one strategy worth considering is perhaps for the central banks to aim at preventing major exchange rate volatility rather than at maintaining a particular absolute or relative exchange rate level. This approach appears to work well for Chile, which has now opened completely to capital flows (Central Bank of Chile, 2004).

One way to relieve pressure on the exchange rates and official reserves from capital inflows and hence the need for intervention is the use of selective capital outflow measures. The logic is that in an economy where opportunities to invest abroad are limited, there is pent-up demand for capital outflows (arising

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<sup>6</sup> Nevertheless, central banks with an exchange rate peg should keep in mind that fixed exchange rate and free capital flows may sow the seed of a currency crisis over the long run. The 1997 Asian financial crisis presents a case in point.

from diversification motives of domestic investors). Yet at a practical level, this is not an easy thing to do. Opening up too little will not be effective at inducing domestic outflows, but opening up too much will leave the economy with significant risks. If domestic investors can take their money out at will, they may choose to run away, for example by putting most of their money in FCDs, if they perceive that the economy is in trouble, precipitating a capital flight that exacerbates the situation. Another unwanted circumstance is when greater liberalization through the removal of capital outflow restrictions encourages more capital inflows, putting even greater pressure on the exchange rate

One intermediate approach to liberalizing capital outflows adopted by some SEACEN member countries is to raise the limits (amount and/or scope) that national pension funds can invest abroad. Despite marked increases in these countries, pension fund outflows have been no match for the large inflows that come in, leaving still appreciating pressures on the exchange rates. In light of these experiences, SEACEN member central banks seriously thinking about dealing with large inflows may want to consider alternative approaches to capital account liberalization such as the one proposed by Prasad and Rajan (2005) which involves securitization of official reserves through close-end domestic mutual funds.<sup>7</sup>

A final policy option with regards to capital flows is capital control measures. Many believe that capital controls are ineffective except in a short term and impose significant costs on the economy. Others, including economists Dani Rodrik, Jagdish Bhagwati and Joseph Stiglitz, argue that capital controls can be valuable tools for imposing stability given the potential volatility in international capital markets.

The use of an Unremunerated Reserve Requirement (URR) measure by the Bank of Thailand to restrain one-way baht appreciation near the end of 2006 has brought into attention controls of capital inflows. Capital controls however apply as well to outflows. In the context of the current global financial environment, control of outflows could be a useful tool to deal with a sudden reversal. Here, it is worth noting that even financially-open Singapore and Chile retain the right to impose short-term, price-based restrictions on capital outflows in the event of a crisis in their trade agreements with the United States.

Still, because their implementations are difficult and costly, capital controls should probably be considered as the last line of defense. They should be implemented reluctantly and only temporarily. Ideally, they should also be executed carefully to avoid creating excessive shocks to market participants.

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<sup>7</sup> Other proposals involving a “securitization” feature include central bank’s direct sale of foreign-currency-linked, local-currency-denominated bonds to domestic residents as well as indirect sale through central bank-setup special purpose vehicle holding foreign securities. Note however that in contrast to the Prasad and Rajan proposal, these alternatives create a direct link between the central bank and investors, which could be detrimental when the underlying foreign assets perform poorly.

### **C. Foreign reserve management**

A large amount of international reserves helps insulate a country against external shocks for three major reasons. First, it allows the central bank to intervene credibly in the foreign exchange market. Second, it acts as a buffer against liquidity shocks. Third, by virtue of the first two reasons, it reduces a country's risk premium, lowering its external financing costs. Yet beyond a certain point, an extra amount of reserves becomes unnecessary except under a very exceptional circumstance. Meanwhile, having a lot of reserves entails a high carrying cost, especially when these reserves were acquired as a result of sterilized intervention.

With the precautionary value of foreign reserves falling and their explicit financing costs rising, reserve management becomes crucial. Most SEACEN member central banks however hold reserves in the form of industrial country government securities whose returns may not compensate for their carrying costs.

To boost the return on reserves, one model that warrants consideration by SEACEN member central banks is Singapore's Government Investment Corporation (GIC), which actively manages a substantial portion of the nation's reserve assets on commercial grounds. GIC's success with reserve management has been an inspiration for Brunei Investment Agency (BIA), Korea Investment Corporation (KIC) and the recently announced China's State Foreign Exchange Investment Corporation (SFEIC) as well as a proposal by Genberg, McCauley, Park, and Persaud (2005) to create an Asian Investment Corporation to manage a pool of Asian central banks' reserves.

Another important consideration for SEACEN member central banks is a translation loss of their reserve holdings when currencies appreciate. This is likely to happen when the currency appreciation rate is higher than the rate of return on reserves. It is important for central banks facing this situation to communicate clearly to the public that these are nonmaterial accounting losses so as to prevent a possible public outcry.

### **D. Crisis prevention**

Even acting coordinately, SEACEN member central banks will not be able to prevent a USD collapse, an unwinding of carry trades, or a shift in global risk aversion. Crisis prevention here means how SEACEN member central banks can buffer their economies from a sudden stop or a global economic slowdown most effectively. In this respect, three policy measures stand out as possible crisis prevention tools: financial system development, closer regional financial integration, and capital controls.

In the world of volatile capital flows, a sound domestic financial sector serves as a precaution against international financial crisis and lowers the necessity for a central bank to hold a large amount of reserves. In contrast, a fragile

financial sector tends to exacerbate a boom-bust cycle associated with capital flows.

In most SEACEN economies, a central bank is a caretaker of financial institutions. To ensure a strong, efficient, and well-managed financial institution system, it is imperative that these central banks have in place a long-term plan for financial institution development as well as effective regulation and supervision. With regards to the latter, risk-based supervision and the ability to take remedial actions will be the key success factors for supervising central banks.

One important lesson from the 1997 crisis is that a sound financial sector needs also a developed capital market. In the language of Alan Greenspan, capital market acts as a spare tire for financial intermediation. When financial institutions are in distress, capital market provides a viable alternative source of financing for the private sector, preventing a harmful credit crunch.

To the extent that equity and bond markets are major destinations of short-term capital inflows in most SEACEN member economies, resiliency of both the equity and the bond markets will be critical for domestic financial stability should a sudden reversal occur. Although the ensuing correction will be painful regardless, it will be milder in the case of deep and liquid markets.

Central banks can help promote the development of capital markets in several ways, including maintenance of a stable macroeconomic environment and participation in the bond market. In addition, central banks' policies, particularly those related to foreign exchange regulations, can have a significant bearing on capital market development.

Over a long term, greater regional financial integration helps countries within the region to deal more effectively with potential volatilities of the global financial environment. It is believed that a significant amount of short-term capital inflows to this region have been recycled from the region's saving flows to developed economies. Boosting the level of international integration would potentially keep these long-term funds within the region, improving regional financial stability. Furthermore, financial integration can help a country to develop its financial sector, hence increasing the resiliency its economy to volatile flows.

In the extreme case when everything else fails to stop massive outflows and/or inflows, capital controls may once again be an effective tool for buying time until things subside. Note that beyond taxes and reserve requirements on capital flows, there also are possible alternatives such as "circuit breakers" or temporary suspension of exchanges and "financial system holidays" to stop all cross-border transaction. For more details of these alternatives, see Dietrich (2006).

## **V. Concluding Remarks**

Most of the SEACEN economies have benefited substantially from increasing cross-border flows. However, the risks associated with greater financial globalization are also immense. Although the views about the global financial

imbalance problem have recently shifted more toward a likely gradual unwinding process, the possibility of sharp unwinding risks remains and practicality and effectiveness of the multilateral efforts continue to be debated. On the other hand, rising investors' risk appetite and the analogously carry trade investment will continue to pose a threat from possibly sharp and abrupt adjustments to global financial stability.

To deal with those risks, the appropriate role of central banks in the SEACEN region differs depending on each country's degree of capital account openness and exchange rate objective. The use of the control on capital inflows may be effective in the short term but can have large adverse consequences on investors' confidence especially in the stock markets. On the other hand, for the measures on relaxing controls on capital outflows, the challenge is in determining the degree of opening up so that it is effective but do not expose the economy to considerable risks.

As macroeconomic stability and competitiveness are both important concerns for SEACEN members, a difficult policy dilemma arises between allowing the automatic adjustment of the economy to changes in relative prices and intervening in the foreign exchange market. To prevent inflationary pressure, employing an appropriate strategy for foreign exchange intervention is crucial as sterilization is costly and has its limitations. Despite monetary policy's potential ineffectiveness in dealing with volatile capital flows, strong and credible monetary policy frameworks are essential in central banks' ex-post reactions to a sudden stop or a global hard landing. Increasing resiliency of both the equity and the bond markets through deeper and more liquid markets will also be critical for domestic financial stability should a sudden reversal occurs.

Though member economies may choose different approaches to deal with increasing risk from volatile capital movements, the key question is, given the macroeconomic structure and policy framework, how to best enhance resiliency in response to the evolving global economic and financial environments.

## Reference

- BIS (2007), “ International banking and financial market developments”, BIS Quarterly Review, Mar 2007
- Central Bank of Chile (2004), “Institution Building in a World of Free and Volatile Capital Flows: A Case Study of Chile,” Economic Policy Papers, December.
- Chinn, M.D., H. Ito (2006), “Current Account Balances, Financial Development and Institutions: Assaying the World “Saving Glut” ”, NBER Working Paper No. 117161
- Dietrich, J. Kimball (2006). “Volatile Capital Flows: Assessment of the Current Policy Environment,” ABAC Financial Working Group, FWG 26-004A.
- Genberg, H., R. McCauley, Y.C. Park, and A. Persuad (2005). “Official Reserves and Currency Management in Asia: Myth, Reality, and the Future,” Geneva Reports on the World Economy, London, U.K.: Center for Economic Policy Research.
- International Monetary Fund (2007), “Finance and Development”, March 2007.
- International Monetary Fund (2007), “IMF Survey”, April 2007, Vol 38, No 7.
- International Monetary Fund (2007), “Global Financial Stability Report”, March 2007.
- International Monetary Fund (2007), “Regional Economic Outlook: Asia and the Pacific,” April 2007.
- Monetary Authority of Singapore’s Macroeconomic Review, January 2003
- Papademos, L.D.(2007), “ Monitoring Hedge Funds: A Financial Stability Perspective”, Financial Stability Review No. 10, Banque de France
- Prasad, E.. and R.G. Rajan (2005), “Controlled Capital Account Liberalization: A Proposal, IMF Policy Discussion Paper No. 05/07.
- Prasad, E., K. Rogoff, S.-J. Wei, and M.A. Kose, (2004), “Financial Globalization, Growth and Volatility in Developing Countries,” NBER Working Paper 10942
- Purfield, C., H. Oura, C. Kramer, and A. Jobst (2006), “Asian Equity Markets: Growth, Opportunities, and Challenges”, IMF Working Paper, No. 06/266.
- Xafa, M.(2007), “ Global Imbalances and Financial Stability”, IMF Policy Discussion Paper No. 07/111.