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Domestic Policy Challenges of Managing Capital Inflows

S. Ghon Rhee

University of Hawaii

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S. Ghon Rhee, Ph.D.
K. J. Luke Distinguished Professor of International Finance and Banking
Executive Director, Asia-Pacific Financial Markets Research Center
University of Hawaii
e-mail: ghon.rhee@hawaii.edu
web site: http://www2.hawaii.edu/~rheesg
Tel No.: (808) 956 2535
Fax No.: (808) 956 2532

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Domestic Policy Challenges of Managing Capital Inflows

1. Introduction

According to the Institute of International Finance, capital inflows to East-Asia (China, India, Indonesia, Korea, Malaysia, Philippines, and Thailand) amounted to $180 billion in 2003, which was approximately $70 billion more than what flowed into the region in 2002. A slightly smaller amount of $140 billion is predicted in 2004 largely due to the expected decline in trade surplus and private credits. Nevertheless, trade surplus and direct foreign investment account for more than 80 percent of capital inflows in 2004.

[Insert Table 1]

Increasing capital inflows are not necessarily good news because they appreciate the local currency and cause domestic inflation. As the local currency value increases, the competitiveness of export industries deteriorates. Too much liquidity in the banking sector causes a serious headache for central banks because of over-investment and overheating of the economy. A case in point is well-illustrated by the challenges the People's Bank of China (PBOC) is facing: (i) foreign exchange reserves increased by $120 billion in 2003 alone; (ii) a large amount of speculative hot money flowed in, eyeing on higher interest income and appreciation of RMB;[1] (iii) the banking sector's excess liquidity may lead to reckless lending and larger non-performing loans in the future; (iv) even the issuance of US$-denominated domestic bonds is considered; (v) PBOC issued short-term notes to reduce liquidity beginning in 2003; (vi) discount rate was raised from 2% to 2.5%; (vii) PBOC also increased reserve requirements from 6%

[1] The Financial Times predicted that the amount was approximately $25 to $40 billion.

to 7% on September 21, 2003 for all banks and to 7.5% on April 25, 2004;[2] (viii) consumer price index climbed 3.8 percent in April, up from 0.9 percent in the same month last year and the annual inflation is expected to hit 5 percent or higher in 2004;[3] and (ix) open market operations are conducted twice a week since February 25, 2003.

In the presence of increasing capital inflows, central banks in East Asia face difficult challenges as PBOC does. In the absence of government bond markets, central banks have to rely on their short-term debt instruments for sterilization, which drive up short-term interest rates, encouraging further capital inflows into the country, to make open market operations a daunting task. Very often, central banks suffer from large losses when the proceeds from open market sale are invested in foreign assets because investment yields in these assets would be typically lower than the rates central banks pay on short-term bills sold through open market operations. In addition, sterilization of capital inflows using short-term bills could place heavy burden of debt servicing cost on the governments or central banks. Hence, the governments would prefer issuing longer-term government bonds. However, without well-developed long-term government bond markets, this switch is impossible. This means additional financial burden on the government, making the government debt managers uncomfortable. Naturally, the most serious challenge facing the region's central banks is the deepening conflicts between monetary policy and fiscal policy implementation.

There are many alternative policies to the central bank's sterilization which is conducted as part of its open market operations: (i) fiscal policy adjustment; (ii) switch

[2] Financial institutions with capital adequacy ratio below a specific level must comply with the 8% required reserve ratio. For rural and urban credit cooperatives, the required reserve ratio remains unchanged at 6%. According to PBOC, the 0.5%-increase in required reserve ratio from 7% to 7.5% will reduce the banking sector liquidity by around RMB110 billion yuan.

[3] PBOC's governor predicted a 3%-inflation in 2004 in his speech on China's monetary and interest rate policy delivered on May 12, 2004.

government deposits from commercial banks to central banks; (iii) ease restrictions on capital outflows; (iv) flexible exchange rate regime; (v) accelerate trade liberalization; (vi) variable reserve requirements on certain categories of foreign borrowing; and (vii) develop long-term government bond markets. However, all of these policy measures, with the exception of the second alternative, would not produce immediate results, and they are painstakingly slow processes (Lee, 1996).

As the central banks engage in more intense sterilization, the amount of foreign exchange reserves keep cumulating because they buy foreign currencies by selling central bank notes or bills to commercial banks. Table 2 summarizes foreign exchange reserves cumulated by the top 10 economies with the largest amount of holdings in the world. Of the top 10, seven of them are Asian economies (Japan, China, Taiwan, Korea, Hong Kong, India, and Singapore) followed by Germany, United States, and Russia. At the end of March 2004, the total amount of foreign exchange reserves cumulated by the 10 Asian economies (top 7 Asian economies plus Malaysia, Thailand, and Philippines) reached over $2.1 trillion.

[Insert Table 2]

To have some idea about where these reserves are invested, we refer to the U.S. Department of the Treasury's recent report on "Foreign Holdings of U.S. securities." Because this report is dated June 2002, the summary statistics summarized in Table 3 are somewhat outdated. Nevertheless, they provide useful information on foreigners' investments (both private and public sectors) in the U.S. financial markets. The total investments by Asian investors amounted to slightly over $1 trillion as of June 2002. Investment in Treasury securities (bills, notes, and bonds) were $620 billion, followed by government agency bonds of $200 billion and investment in common stocks of about $150 billion, and corporate and municipal bonds of approximately $80 billion. Japan and China are the major investors in the U.S. markets from Asia, followed by Hong Kong and Taiwan.

[Insert Table 3]

At the end of February this year, seven East-Asian economies (China, Hong Kong, Japan, Korea, Singapore, Taiwan, and Thailand) were holding U.S. treasury securities in the amount of US$940 billion, which is $70 billion more than what they had at the end of 2003 as reported in Table 4. This increase is largely attributed to Japan. The Bank of Japan (BOJ) swaps Japanese yen with US dollars and invests US dollars in U.S. treasury securities. Because Japanese yen is available almost at interest rate free, the BOJ is reporting a total of ¥368 billion (or approximately $3.3 billion) and ¥257 billion (or $2.5 billion) for the fiscal years ended in March 2003 and March 2004, respectively. In 2003 alone, it increased its investment in US treasury securities by $170 billion.[4]

[Insert Table 4]

2. Monetary Policy and Government Debt Management with Well-Functioning Government-Issued Securities Markets

In an ideal setting in which a country has a well-developed, liquid market for government-issued securities, its central bank relies on a greater use of market-based monetary policy instruments, namely through open market operations. In this ideal setting, the country's fiscal policy determines the aggregate amount of government borrowing, while government debt management engages in optimal trade-offs between debt servicing cost and the associated risk. In contrast, the central bank is concerned about price stability when it conducts monetary policy using open market operations as illustrated in Figure 1.

[Insert Figure 1]

The central bank of this country can expand or contract the amount of reserves in the banking system and ultimately the country's money supply through open market operations. In general, there are two alternatives in setting the central bank's target: (i)

[4] However, Japan has to think about adverse impact of huge capital losses on its holdings of U.S. Treasury securities when U.S. interest rate rises.

aiming for a target amount of bank reserves while allowing the short-term interest rate to fluctuate; or (ii) aiming at a target short-term interest rate while allowing bank reserves to fluctuate [Borio (2001, 1997), Schaechter (2001), and Axilrod (1995)].[5] With well-developed financial markets specifically for government securities in which the signaling effect is transmitted efficiently, the central bank of this country sets up a target short-term interest rate, which is dubbed as "passive" open market operations.[6] Table 5 summarizes the region's central banks' targets.[7]

Continuing with the ideal setting, government debt management can afford to focus on market risk without worrying about rollover risk. In contrast, emerging market economies, which have only limited (if any) access to foreign capital markets and relatively undeveloped domestic markets, should give higher priority to rollover risk. The central bank's open market operations in the ideal setting are conducted on the secondary market of government securities to determine the overnight interest rate largely through REPOs and reverse-REPOs, while government debt management

[5] Schaechter (2001), for example, suggests that a central bank accommodates any temporary shifts in the demand or supply of monetary base to avoid that the interest rate moves away from its targeted level under price targeting. Base money, therefore, becomes a residual variable and is endogenous. Under quantity targeting, on the other hand, a central bank does not accommodate shifts in base money demand but tolerates the resulting interest rate fluctuations as long as this is consistent with the quantity target. Naturally, interest rate becomes endogenous. He further suggests that if a central bank had perfect information about market conditions at all times, targeting the price or the quantity would be the two sides of the same coin.

[6] In the United States, Japan, and the euro area, operating objectives of open market operations are the federal funds rate, the uncollateralized call money rate, and the EONIA (euro overnight index average) rate, respectively. In March 2001, however, the Bank of Japan (BOJ) adopted new procedures for money market operations in which the balance of current accounts held by financial institutions at the BOJ. This policy is expected to continue until the deflationary pressure eases [Borio (2001) and Blenck et al. (2001)].

[7] I am grateful to Jin Kyu Oh of the Bank of Korea for sharing this table. This table was prepared at the Workshop on "Developing Government Bonds as Monetary Policy Instruments in APEC Economies" held in Bali, Indonesia on December 11-12, 2003. The Workshop was hosted by the APEC Finance and Development Program, Bank Indonesia, and the World Bank.

should be active in the primary market of government securities.[8] In this setting, long-term interest rates will be determined by the market without central bank intervention by assessing and adding appropriate inflation expectation, term premium, and risk premium to the short-term overnight interest rate which is dictated by monetary policy.

[Insert Table 5]

3. Monetary Policy and Government Debt Management with Less Developed Government-Issued Securities Markets

In general, open market operations function most effectively when a clear division is maintained between debt management and monetary policy operations. Monetary policy's major objective is price stabilization, whereas government debt management is designed to search for an optimal trade-off between the cost of government debt and the risk involved. Price stability of monetary policy and the cost/risk trade-off of government debt management are potentially conflicting goals (Mohanty, 2002). In a developed economy with well-functioning government debt market, the separation of debt management and monetary policy objectives and accountabilities can be easily achieved.

In emerging economies with less-developed government debt markets, the degree of conflicts increases, creating far reaching adverse consequences affecting monetary and fiscal policies [IMF (2002, 2001a, and 2001b)]. Furthermore, close coordination between the two policies becomes increasingly difficult and the separation

[8] Dealers in government securities use repurchase agreements, also called "repos" or "RPs," as a form of short-term borrowing. The dealer sells government securities to an investor on an overnight basis, with an agreement to buy back those securities the next day at a slightly higher price. The increase in the price is the overnight interest. The dealer, thus, takes out a one-day loan from the investor, and the securities serve as collateral. A reverse repo is the mirror image of a repo. Hence, the dealer finds an investor holding government securities and buys them, agreeing to sell them back at a specified higher price on a future date.

between two policy implementations becomes blurred. Three adverse consequences of less-developed government bond market are briefly discussed:

a. *Market Illiquidity*: In the absence of a well-functioning primary market for government securities, an easy solution for the government is to rely on captive demanders of government bonds such as financial institutions and non-bank financial institutions (pension and provident funds). These institutions are forced to subscribe at the yield lower than the market interest rates. Because a substantial gap exists between the primary market yield and the secondary market yield for government-issued securities, these institutions cannot sell unless they are willing to suffer from capital losses. As a result, both primary and secondary markets cannot develop and the government continues to rely on captive demanders, creating a significant distortion in the interest rate structure and effectively raising the cost of government debt.[9]

b. *Distortion Effects of Using Direct Monetary Instruments*: Without a well-developed market for government-issued securities, the central bank has to rely on direct monetary instruments such as reserve requirements, interest rate ceilings, credit controls, and sectoral credit allocation. Naturally, this emerging economy has to live with their distortion effects on government debt servicing cost until short-term money market and long-term government bond market are developed to allow a greater use of market-based indirect instruments. Even if the government bond market is in place, it may take a while before the market becomes efficient enough to strengthen the signaling effect of monetary policy and the credibility of monetary policy operations.

[9] In many emerging economies where the short-term Treasury bills markets are not developed, the central banks issue their own short-term papers for monetary policy operations. The Bank Indonesia's short-term notes or known as SBI (Sertifikat Bank Indonesia) in the 1990s and 1980s and PBOC's short-term notes were issued to sterilize large capital inflows during last two years. As the markets for Treasury bills are developed, another source of potential conflicts between central banks and government debt management agencies is expected to emerge in China and Indonesia.

c. *Rollever Risk*: In the absence of well-functioning liquid markets for government-issued securities, however, the government in this emerging market economy is unable to issue long-term debt with fixed coupon rate. Therefore, the government tends to issue short-term floating-rate debt, inflation-indexed bonds, in combination with foreign currency debt. This type of borrowing mix may be preferred by the central bank because the central bank believes that the credibility of monetary policy can be promoted, while government debt managers of this country fear that this borrowing mix increases rollover risk in view of the double mismatch in currency and maturity. Indeed, rollover risk emerges as a major source of the systemic risk and the country's financial sector becomes vulnerable to external shocks as we have experienced during the East-Asian financial crisis. The single most dramatic element in the recent East-Asian financial crisis was the sudden reversal of private capital flows in the neighborhood of $105 to $110 billion to Asia which includes Indonesia, Korea, Malaysia, Philippines, and Thailand between 1996 and 1997. The magnitude of domestic savings and foreign exchange reserves accumulated by the five crisis-affected economies plus five leading economies in the region, including China, Hong Kong, Japan, Singapore, and Taiwan, the magnitude of the reversal in private capital flows was less than 5% of pre-crisis combined domestic savings and was about 15% of foreign exchange reserves in the region. This reversal is a good example of an external shock which may trigger a systemic crisis for a country or a region.

4. Further Thoughts on Policy Issues on Foreign Exchange Reserves Management

A. Reserve Adequacy

As the size of the foreign exchange reserves rises in each of Asian economies, at least two issues require attention from policy makers. The first issue is the optimal level of foreign exchange reserves for any economy and the second issue is transparency and accountability in managing the reserves. Recent developments in

China and Korea suggest the need for a careful evaluation of the two issues. The Chinese authorities already diverted $45 billion to recapitalize four state-owned banks and it was reported that additional $40 billion may be used for the same purpose soon. Korea decided to divert $20 billion from the reserves to invest in the Korea Investment Corporation (KIC) to be established in 2005 with a "cashing contract" which will facilitate quick conversion of KIC assets into cash. An additional amount may be diverted as Korea's foreign exchange reserves reach $200 billion, exceeding the current level of $164 billion (as of March 2004).[10] There was no public debate regarding the optimal size of the each country's international reserves before the decisions were made to divert a portion of the reserves. Subsequent to the diversion of reserves, it remains unclear as to how transparency and accountability in managing these funds will be maintained.

An optimal level of foreign exchange reserves is an elusive concept because: (i) no commonly accepted framework is available for assessing the adequate level of foreign exchange reserves (Wijnholds and Kapteyn, 2001); and (ii) a wide range of country-specific factors must be considered in determining the adequate level.

At least four distinct approaches toward reserve adequacy are noted: (i) money supply-based approach (ratio of reserves to money supply); (ii) current account-based approach (reserves in months of imports); (iii) capital account-based approach (ratio of reserves to short-term external debt); and (iv) combination of current and capital account approaches. The first two approaches were criticized for their poor predictive power of the currency crisis. As the East-Asian financial crisis was recognized as a capital account crisis rather than a current account crisis, the latter two approaches seem to

[10] According to the Korean authorities, one of major goals of creating the KIC is to attract the global asset management industry to Korea as part of the comprehensive efforts to promote Seoul as a North East Asia's regional financial center.

gain acceptance among policy-makers and academicians [Sachs et al. (1996), Greenspan (1999), and Fischer (1999)].[11]

The country-specific factors may vary from one country to another. The most important factor is the defined range of specific objectives of reserve management which include: (i) supporting monetary and exchange rate policies; (ii) maintaining foreign currency liquidity to absorb an external shocks; (iii) meeting of external obligations; (iv) backing of domestic currency by external assets; (v) assisting the government in meeting its external debt obligations; and (vi) maintaining a reserve for national disasters or emergencies. Other factors include exchange rate regimes, monetary policy, accessibility to international financial markets by the government, fiscal situation, capital flight potential, import-export patterns, composition of capital inflows, etc.

B. Transparency and Accountability

The IMF *Code of Good Practices on Transparency in Monetary and Financial Policies: Declaration of Principles* (1999) strongly promotes public disclosures related to: (i) the allocation of reserve management responsibilities; and (ii) the broad objectives of reserve management [IMF (2003, 2001c) and IMF *MFP Transparency Code* (1999)]. Good governance and accountability in reserve management may be compromised as some portions of the reserves are transferred to separate agencies that fail to publicly disclose their operations.[12] The conduct of reserve management activities, as well as independent external audit reports, must be publicly disclosed to financial markets and

[11] The Guidotti Rule is a good example of the capital account-based approach. According to Pablo Guidotti, former Deputy Minister of Argentina, foreign exchange reserves should be large enough for a country to be able to survive without foreign borrowing for up to one year [Wijnholds and Kapteyn (2001), Lubin (2002), and Reddy (2002)].

[12] The on-going debate surrounding the establishment of KIC focuses on the question of transparency and accountability. Currently, very little financial disclosure is made by similar agencies such as the Government Corporation of Singapore and Temasek Holding Ltd. of Singapore and the Khazanah Nasional Berhad and the Minister of Finance Inc. of Malaysia.

to the general public. In addition, institutional and governance arrangements must be established to define the reserve management agencies' responsibilities and authority.

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Figure 1
Separation of Government Debt Management
from Monetary and Fiscal Policies

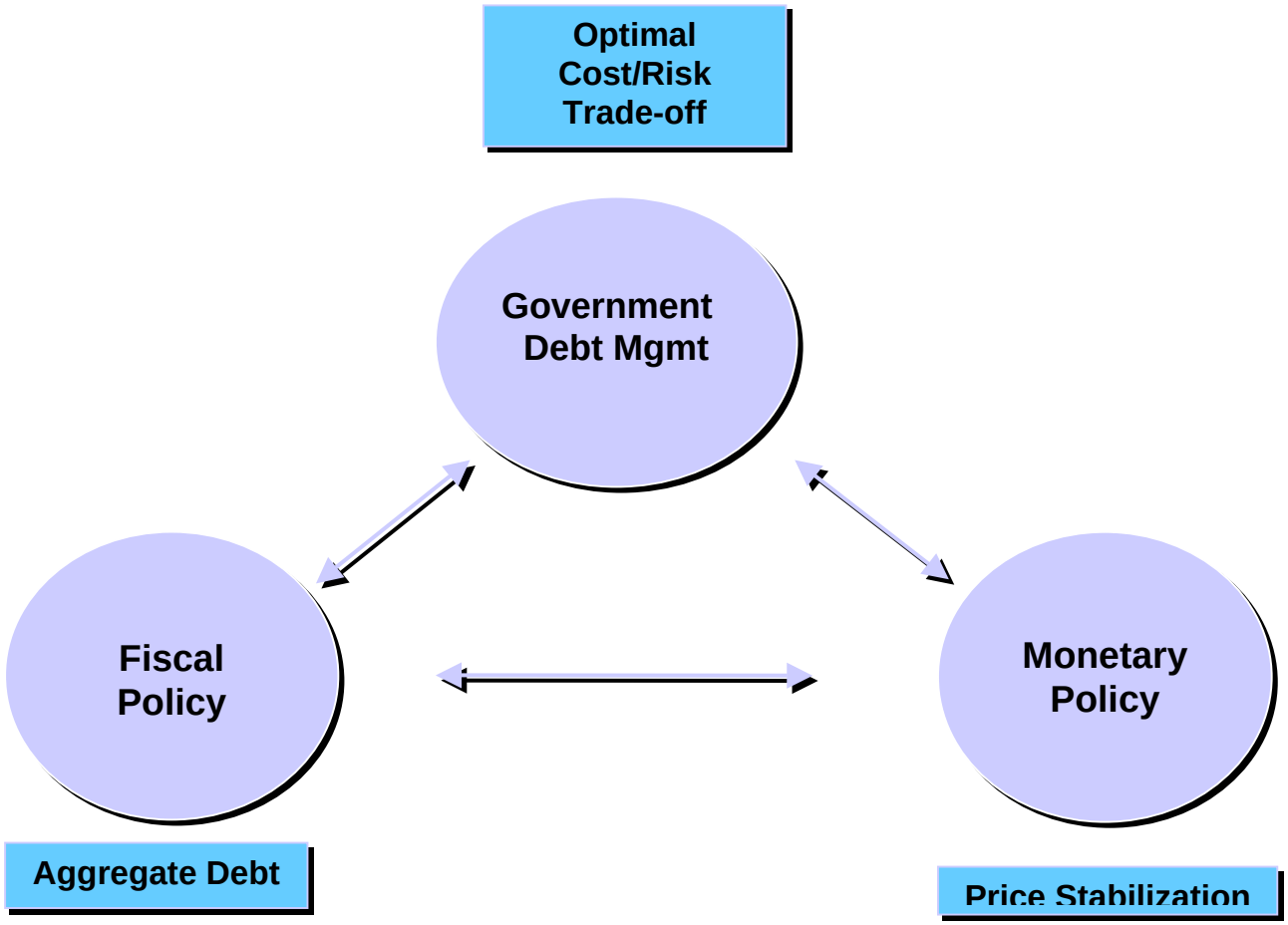

Table 1
Capital Flows to Asia+

US$ billion

	2001	2002	2003*	2004**
Current Account Balance	48.2	71.9	80.4	58.4
Direct Foreign Investment	51.7	55.9	58.3	61.5
Portfolio Investment	12.4	2.6	29.4	32.7
Private Credits	-13.1	6.3	29.0	13.8
Official Capital Flows	-8.1	-15.5	-16.0	-5.6
Resident Lending/Errors & Omissions	-20.9	-9.5	0.20	-22.7
Total Inflows	70.3	111.9	181.4	138.1

* Estimate
** Forecast
\+ China, India, Indonesia, Korea, Malaysia, Philippines, and Thailand are included.

Source: Institute of International Finance (April 2004)

Table 2
Foreign Exchange Reserves
(As of March 2004)

US$ billion

Japan	$826.6	
China	439.8	
Taiwan	226.5	
Korea	163.6	
Hong Kong	123.8	
India	110.3	
Singapore	102.8	(Preliminary)
Germany	94.5	(as of February)
United States	84.7	
Russia	83.7	
Malaysia	51.3	
Thailand	42.9	
Philippines	15.7	
Total (10 Asian Economies)	$2,103.30	

Source: Asia-Pacific Financial Markets Research Center, University of Hawaii

Table 3
Foreign Holdings of US Securities by Selected Asian Economies
(June 2002)

US$ Billion

Economy	Total	Common Stocks	Treasury Bonds	Gov't Agency Bonds	Corp. & Muni. Bonds	Treasury Bills
China	181.48	4.03	95.20	58.61	10.90	12.74
Hong Kong	84.16	15.33	37.45	12.38	4.75	14.26
Japan	636.94	118.59	259.89	88.08	62.82	107.56
Korea	43.94	0.48	30.59	7.63	1.10	4.14
Malaysia	9.65	0.37	6.10	2.61	0.23	0.33
Taiwan	70.04	4.75	34.49	25.30	2.95	2.55
Thailand	18.08	0.22	12.78	0.03	0.11	4.94
Total	1044.28	143.78	476.48	194.64	82.85	146.53

Source: U.S. Department of Treasury

Table 4
Foreign Holdings of U.S. Treasury Securities

US$ Billions

No.*	Economy	2004 (Feb)	2003 (Dec)	2002 (Dec)	2001 (Dec)	2000 (Dec)
1	Japan	607.9	545.2	378.1	317.9	317.7
2	China	145.0	149.2	118.4	78.6	60.3
3	United Kingdom	137.3	113.3	80.8	45.0	50.2
4	Caribbean Economies	74.1	69.1	49.5	33.6	37.4
5	Hong Kong	61.0	57.5	47.5	47.7	38.6
6	Taiwan	50.6	46.3	37.4	35.3	33.4
7	Germany	45.7	44.8	37.3	47.8	49.0
8	OPEC	43.4	44.5	50.3	46.8	47.7
9	Switzerland	41.5	39.6	34.0	18.7	16.4
10	Korea	37.1	43.4	38.0	32.8	29.6
14	Singapore	22.1	17.7	17.8	20.0	27.9
18	Thailand	14.7	11.0	17.2	15.7	13.8
	Total 7 East Asian countries	938.4	870.3	654.4	548.0	521.3
	Grand Totals	1629.6	1531.1	1238.6	1040.1	1015.2
	-of which official	947.8	893.9	763.1	619.4	609.2

*Rankings are of the year of 2004

Source: U.S. Department of Treasury www.treas.gov/tic/mfh.txt

Table 5
Objectives of Open Market Operations (OMO)

		Policy Objective & Operating Consideration	Central Bank Bills Available		OMO Instrument*	Repo Method	Type of Repo
1	China	P: Price Stability O: M1&M2	√	3&6m	GB, Financial Policy Bonds, CBB	Auction-offered to more than 40 Commercial Banks who are primary dealers	Competitive bid
2	Indonesia	P: Core Inflation O: Base Money	√	1-3m	CBB		Pre-determined Repo Rate:200 bps greater than Interbank
3	Japan	P: Price Stability O: Current Account Balance	√	3m	GB	Auction-offered to all 50 selected financial institutions in accordance to published criteria	Competitive Rate; Central bank sets total tender amount
4	Korea	P: Core Inflation O: Overnight Call Rate	√	≤2yr	GB, CBB	Auction offered to counterparties including non-banks	Competitive bid
5	Malaysia	P: 3-m Intervention Rate O: O/N & 1m Inter-bank	√	3, 6, 12m	GB, TB, CBB, Quasi-GB (Conventional& Islamic)	Auction-offered to 10 principal dealers	
6	Thailand	P: Core Inflation O: 14-day Repo Rate	√	1yr	GB, TB, CBB, Quasi-GB	Auction-offered to 10 primary dealers	Competitive bid for all tenderers, except 14-d Repo according to policy rate

*Notes: GB= Government Bonds TB= Treasury Bonds CBB= Central Bank Bills