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GLOBAL FINANCIAL CRISIS: MACROECONOMIC POLICY ISSUES FOR ASIA

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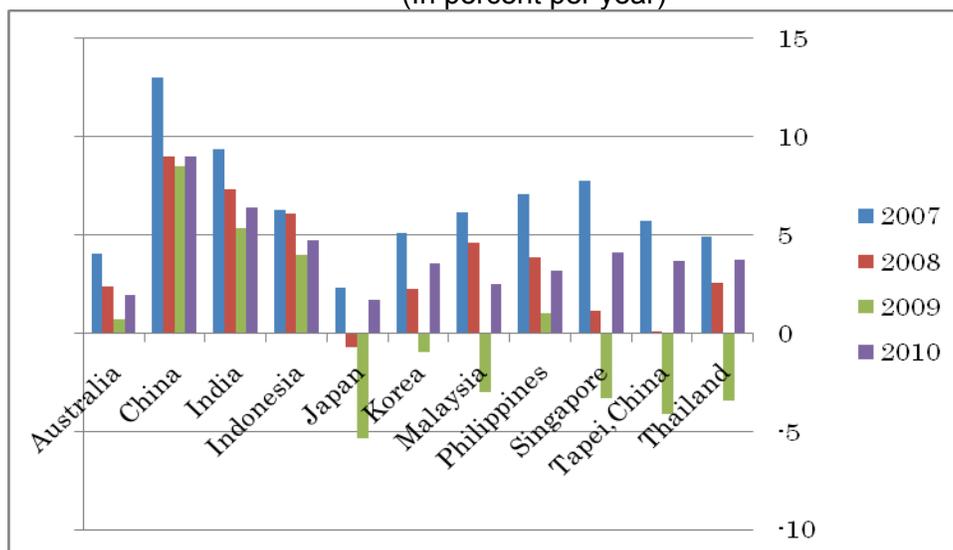
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I. Introduction

The global financial crisis severely impacted Asia from late 2008 to early 2009. Although the initial impact appeared limited, the region was directly hit when the crisis spread to the real sector and caused the volume of world trade to collapse (Figure 1). According to the latest estimates by the IMF (October 2009), among the region's economies, hardest hit in terms of output decline were Japan, Taipei, China, Singapore, Thailand, and Malaysia, which all experienced a large drop in real GDP growth from 2008 to 2009. While the adverse impact appeared large at the outset, Korea somehow managed to pull itself out in early 2009 though the growth for the year as a whole was negative. Most other Asian economies were able to maintain positive growth, notably China, India, and Indonesia. Even so, they also did not escape the negative impact of the crisis on the growth of GDP. China and India experienced a significant deceleration of output from 2007 to 2008 and early 2009, and Indonesia from 2008 to 2009.

Figure 1. Real GDP Growth in Selected Asian Economies, 2007-10
(In percent per year)

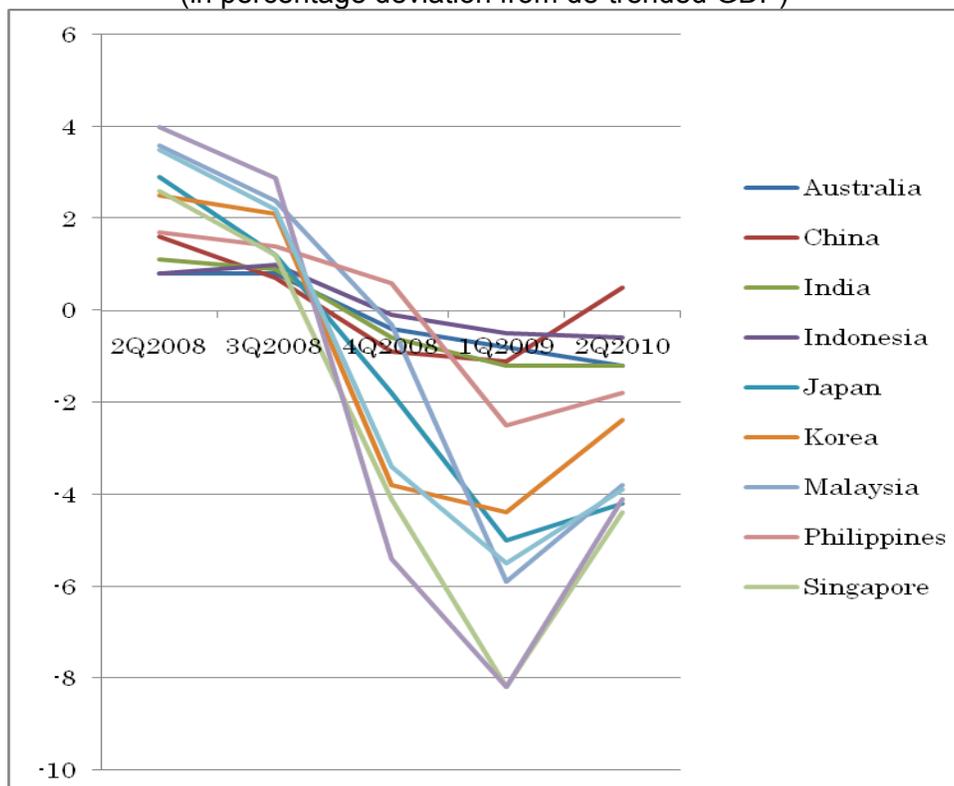


Source: International Monetary Fund, WEO database.

Though policymakers in almost all economies in the Asia-Pacific region responded to the sharp contraction of output by easing macroeconomic policies

substantially, the output gaps they faced in late 2008 and early 2009 were quite different, reflecting the differences in the phase of their business cycles. In terms of output gap, the countries that were most severely affected in the fourth quarter of 2008 were Taipei,China (output undershot potential by an estimated 5.4 percent), Singapore (4.1 percent) and Korea (3.8 percent), while the output gaps in Indonesia (0.1 percent), Malaysia (0.3 percent), and Australia (0.4 percent) were not very large (Figure 2; also, Table 1, columns 1-3). In the first quarter of 2009, the negative impact intensified particularly for Singapore (the gap increased to 8.2 percent), Taipei,China (also to 8.2 percent), and Japan (from 1.8 to 5 percent), but the impact on China (0.9-1.1 percent) and India (0.6-1.2 percent) is estimated to have remained relatively limited over the two quarters. Subsequently almost all economies in the region experienced a narrowing of the output gap, with China even showing a positive gap (of an estimated 0.5 percent) as early as the second quarter of 2009.

Figure 2. Quarterly Output Gaps in Selected Asian Economies, 2Q2008-2Q2009 (in percentage deviation from de-trended GDP)



Sources: estimates by Peter Morgan of the ADB Institute; for Australia only, authors' own estimates; de-trended GDP data are obtained by the HP filter.

The purpose of this paper is to draw broad lessons from the recent and ongoing macroeconomic policy experience of the region's economies. To do so, we proceed in the following sequence. Sections II ("Monetary Policy Issues") reviews the principal measures taken by Asian and other economies in response to the global financial crisis in the area of monetary policy and discuss the issues that emerged out of the experience. Section III ("Fiscal Policy Issues") and Section IV ("Exchange Rate and Reserve Management Policy Issues") cover much the same ground in the areas of fiscal and exchange rate/reserve management policies, respectively. Finally, Section V concludes the paper with a forward-looking discussion of longer-term measures to improve the effectiveness of macroeconomic policies. The focus throughout the paper is placed on the Asia-Pacific region's 11 major economies (Australia, the People's Republic of China, India, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Taipei, China, and Thailand) although occasional references are made to other countries both within and outside the region.

II. Monetary Policy Issues

Monetary policy measures in Asia

Although all economies in the region eased monetary policy in the latter part of 2008, the background at the outset of the crisis was somewhat different for each. Japan still maintained the legacy of an extremely easy monetary policy it had inherited from the beginning of the millennium. Most other economies in Asia, on the other hand, came into the onset of the global financial crisis with substantially tight monetary policies. The U.S. subprime crisis had little impact on these economies, whose pressing concerns instead were about the inflationary consequence of overheating and rising commodity prices as inflation picked up from 2007 to 2008 (Table 1, columns 4-5).¹ With monetary policy focused on price stability, the People's Bank of China (PBC), for example, raised reserve requirements in April, May and June of 2008. Likewise, the Reserve Bank of India (RBI) raised the policy interest rates through early September 2008. Similar policies were followed by the central banks of such economies as Korea, the Philippines, and Taipei, China. In the meantime, the Monetary Authority of Singapore (MAS) continued to allow its currency to appreciate in nominal effective terms as it managed its exchange rate-centered monetary policy. Indonesia even maintained the tight policy stance for

¹ Australia and New Zealand in particular were two Asia-Pacific countries that particularly benefited from rising commodity prices through early 2008.

quite some time, well into late 2008. In view of pressure on the foreign exchange reserves as international liquidity tightened,² Bank Indonesia (BI) raised its policy rate (BI rate) as late as October, from 9.25 to 9.5 percent. Likewise, the Bank of Thailand (BOT) kept the prevailing policy rate in October 2008 when its monetary policy committee met for the first time following the Lehman shock.

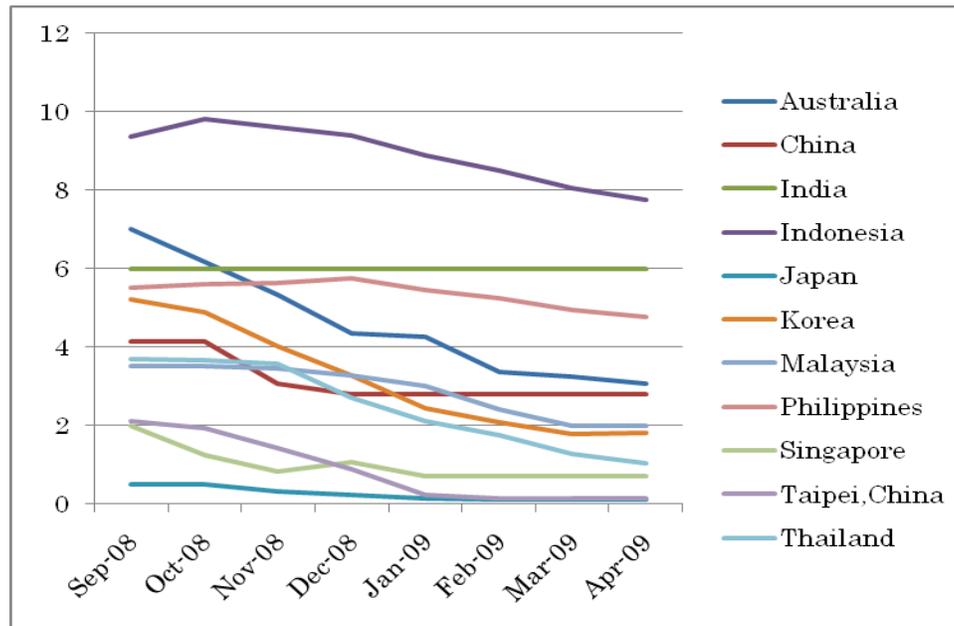
When the real impact of the global crisis was felt, all central banks in the region shifted to monetary easing. The subsequent softening of energy and commodity prices allowed the monetary authorities to cut policy interest rates aggressively, especially after the failure of Lehman Brothers in September 2008, aided by the substantial monetary policy space they possessed in terms of the level of policy interest rates (Table 1, columns 6). As noted, however, there was a considerable variation in the pace with which they acted and the specific measure they took (see Appendix I for detailed monetary policy actions adopted by some of the region's central banks). New Zealand was the first country to shift to monetary easing when its central bank cut the policy rate (the official cash rate, OCR) in July 2008; from July to April 2009, the Reserve Bank of New Zealand would reduce the OCR in several steps from 8.25 percent to 2.5 percent. Australia was the next to follow. From September 2008 to February 2009, the Reserve Bank of Australia lowered the policy rate (the cash rate) by 4 percentage points, from 7.25 percent to 3.25 percent; it would further cut the rate to 3 percent in April 2009.

Following the Lehman shock, the response of the PBC was immediate. On September 16, 2008, it reduced the benchmark lending rate by 27 basis points, from 7.47 to 7.2 percent; it would subsequently cut the rate further by an additional 189 basis points through the end of the year. The next to cut the policy rate was the central bank of Taipei, China, which on September 25, 2008 reduced the key policy rates by 12.5 basis points each (the discount rate from 3.625 to 3.5 percent; the collateralized accommodation rate from 4 to 3.875 percent, and the uncollateralized accommodation rate from 5.875 percent to 5.75 percent); it would further cut the policy rates six more times by a total of 225 basis points through February 2009. Other central banks, including those in India, Korea, and Thailand, took similar actions between October and December 2008. The Bank of Japan (BOJ), with little policy pace, pushed the policy rate (the uncollateralized overnight call rate) downward from 0.5 percent to 0.3 percent on October 31 and further to 0.1 percent on December 19, 2008. As a result of these

² Indonesia's balance of international reserves had declined from \$60.6 billion in July 2008 to \$57.1 billion in September 2008.

actions, market interest rates in Asia edged downward in late 2008 and early 2009, though the levels of interest rates remained high in Indonesia, India, and the Philippines (Figure 3).

Figure 3. Market Interest Rates in Selected Asian Economies (In percent per year)



Source: International Monetary Fund, *International Financial Statistics*, on-line database; for Taipei, China only, Central Bank of the Republic of China, Financial Statistics. In both sets of data, market interest rates refer to line 60b.

Some Asian central banks not only cut interest rates but also attempted to increase the flow of credit through conventional tools. For example, the PBC removed limits on credit growth, which led to an extraordinary expansion of bank lending in the first quarter of 2009. At the end of March 2009, broad money (M2) was higher by 25.5 percent from a year earlier, while bank credit was higher by 27 percent, and the pace of growth continued. With a drying up of capital inflows and the associated rise in demand for credit from the domestic banking system, the initial response of the RBI, on September 16, 2008, was to raise the ceiling on deposit rates. Though Bank Indonesia did not begin to cut the policy interest rate until December, it immediately responded to the onset of the global crisis by lowering the overnight repo rate on September 16, 2008 to maintain liquidity. The Bank of Japan (in October) and the Bank of Korea (in December) began to pay interest on excess reserves and required reserves, respectively.

A number of central banks also cut statutory reserve or cash requirements. For example, the PBC reduced reserve requirements four times from September to December. The RBI made a one-time cut in liquidity requirements in November. Similar actions were taken by the central banks of Indonesia, Malaysia, the Philippines, and Taipei, China. Exchange rate policy was another tool of monetary easing in some countries. In the second half of 2008, China abruptly halted the policy of allowing the RMB to appreciate gradually against the US dollar. In October 2008, Singapore shifted to a zero percent appreciation of the nominal exchange rate, in the reversal of a policy of gradual appreciation it had followed since April 2004. In a further move, in April 2009, the MAS, while keeping the zero appreciation policy, re-centered the policy band to the prevailing level of the nominal exchange rate, which represented an effective depreciation of the currency.

Unconventional monetary policies

The effectiveness and utility of unconventional policies, used not only in Asia but more importantly in the U.S. and Europe, is perhaps the single most important monetary policy issue that came out of the crisis experience. The literature generally classifies unconventional policies into two types. First, *quantitative easing* refers to policies that aim to increase free reserves of the banking system, through open market operations or foreign exchange market intervention. It is well known that the BOJ pursued this policy from 2001 to 2006 when it faced deflationary pressure against the zero interest bound. During the current crisis, the BOJ raised outright purchases of government bonds from 1.2 trillion yen per month (which had been set in October 2002) to 1.4 trillion yen in December 2008 and further to 1.8 trillion yen in March 2009. The Bank of England adopted a type of quantitative easing when it set a target for reserve deposits in March 2009 (which it raised in May).

Second, *credit easing* (or *qualitative easing*) refers to policies aimed at affecting the composition of the central bank's balance sheet leaving the size unchanged, for example, through an exchange of government bills for government bonds or purchases of private sector assets. Although credit easing includes direct lending to market participants and therefore, like quantitative easing, generally involves an increase in the size of the central bank's balance sheet, the focus is on the composition of assets, not the size of liabilities. Most of the measures used in Asia (see below) fall in this category,

including bilateral currency swap agreements with the Federal Reserve.³ To the extent that central banks purchase private sector assets, they assume significant credit risk.

Credit easing measures were actively used by the central banks of advanced economies. For example, the Federal Reserve created a number of new credit facilities to mitigate stresses in various market segments, including the Term Auction Facility, the Term Securities Lending Facility, the Primary Dealer Credit Facility, the Asset-Backed Commercial Paper Money Market Fund Liquidity Facility, the Commercial Paper Funding Facility, the Money Market Investor Funding Facility, and the Term Asset-Backed Securities Loan Facility. The Bank of England accepted as collateral commercial paper, corporate bonds, bonds issued under the UK's credit guarantee scheme, syndicated loans, and asset-backed securities created in viable securitization structures. Within Asia, the BOJ downgraded the credit rating of corporate bonds acceptable as collateral from A- to BBB, and accepted debt instruments issued by real estate investment corporations as collateral; it began outright purchases of commercial paper (CP) and asset-backed CP (ABCP) in January 2009 and corporate bonds in February 2009.

As noted, most of the unconventional measures adopted by Asian central banks during the crisis fell in the category of credit easing. Many of them involved expanding the scope of central bank market operations. Bank Indonesia, for example, extended the term for fine tune operations as well as for foreign exchange swaps; and relaxed conditions for access to its liquidity facility. A number of them extended credit to the private sector through various channels. BI began to purchase exporters' bankers' acceptances (BAs). The central banks of Korea, Malaysia, the Philippines and Taipei, China expanded the range of eligible collateral or eligible institutions for their standing facilities. The RBI introduced a rupee-dollar swap facility for Indian banks; and a refinance window for non-banking financial companies, making resources available to banks to refinance credit extended to small industries, housing, and exports. In India, however, all allocation of liquidity was channeled through banks, and the RBI's balance sheet did not expand very much because of the unwinding of the government securities the central bank had purchased to sterilize the impact of capital outflows on base money (Mohanty 2009).

³ The Federal Reserve concluded bilateral currency swap arrangements with 14 foreign central banks, including the Reserve Bank of Australia, the Bank of Japan, the Bank of Korea and the Monetary Authority of Singapore (within the region) as well as the Bank of England, the European Central Bank, and the Swiss National Bank (outside the region).

Effectiveness

There is a well-established consensus in the literature that monetary policy is a powerful instrument of countercyclical macroeconomic policy during *normal* times. The effectiveness of countercyclical monetary policy is more ambiguous, however, when economic downturn is associated with a financial crisis or the zero interest bound is reached. A recent study by the IMF (2009), in a “duration analysis” of over 100 recessions and recoveries in advanced countries, show that expansionary monetary policy was typically associated with shorter recessions. Specifically, a 1 percent reduction in the real interest rate beyond that implied by the Taylor rule was found to raise the probability of exiting a recession in a given quarter by about 6 percent. When recessions are associated with financial crises, however, the effect of monetary policy on the duration of a recession becomes statistically insignificant. This is consistent with the view that a financial sector problem can impair the working of the interest rate and bank lending transmission channels of monetary policy.

Because the financial sectors in Asian economies were for the most part sound, it is believed that the usual transmission channels of monetary policy were intact, and that the aggressive monetary easing helped boost the pace of economic recovery. This must be particularly true with those economies in which the level of interest rates was sufficiently high to begin with. In India, for example, Mohanty (2009) claims that the changes in the RBI’s policy rates were quickly transmitted to the money and debt markets, though the transmission to the credit market was slower. Park et al. (2010) used a sample of 26 countries and regions to obtain evidence that monetary policy had a statistically significant impact on generating aggregate demand during the recent crisis in Asia’s emerging market economies, by finding a statistically significant impact of monetary policy on the gap between predicted GDP and actual GDP (where monetary policy is measured by the policy interest rate as well as the term spread as a proxy for quantitative easing designed to lower expected future interest rates).⁴

In the countries where the level of interest rates was already low (or virtually zero in some cases) to begin with or where the financial sector was in difficulty, the usual interest rate transmission mechanism was probably impaired. Morgan (2009) discusses the effectiveness of unconventional monetary policies in such cases, though recent evidence is hard to come by. The available empirical evidence, which is largely based on

⁴ The sample consists of all G-20 economies (including the European Union), Hong Kong SAR, Malaysia, the Philippines, Singapore, Taipei, China, and Thailand.

the past experiences of Japan and the U.S., suggests that, among the several channels through which unconventional policies might work, the commitment or duration effect (whereby verbal commitments by central banks to maintain very low interest rates for a certain period affect market expectations) seems to work. In fact, most studies of the commitment effect in Japan and the US suggest that central bank statements do lower market interest rates, though the impact is mainly limited to short-term rates.

On the other hand, empirical evidence on the effectiveness of quantitative easing is less conclusive, though most studies find the impact on interest rates and economic activity to be generally positive. In terms of the current crisis experience, Morgan (2009) observes that, after the announcement of a target for reserve deposits by the Bank of England in March 2009, the spread between the 3-month sterling LIBOR and the base rate narrowed rapidly. As to the effectiveness of credit easing, the impact of outright purchases of government bonds on bond yields looks limited. Morgan (2009) notes that the recent experience of the Federal Reserve and the Bank of England was not encouraging, though Filardo and Genberg (2009) note that central bank purchases of government bonds were more successful in reducing the term premiums. In contrast, credit easing was successful in relieving credit-related stresses in other market segments. The Federal Reserve's Term Auction Facility and currency swaps programs with foreign central banks seemed to achieve their intended objectives, as did the Bank of England's move to provide unlimited dollar liquidity to the banking sector.

Designing monetary policy for the future

Exiting from the extraordinary easing of monetary policy has two dimensions: the level of interest rates and unconventional measures. Some central banks, such as the PBC, have a relatively straightforward task, as they did not resort to unconventional measures in responding to the crisis. Their task is a usual countercyclical response—determining the timing of raising reserve requirements and the policy interest rate—a step that has begun in China in January 2010. Monetary tightening is important not only from the point of view of preempting any surge in inflationary pressure as economy recovery takes hold, but also from the point of view of securing sufficient policy space during good times. The current experience has shown that those economies that came into the crisis with a sufficiently high level of interest rates were able to use monetary policy more effectively. The economies with extremely low interest rates must therefore resist the natural tendency towards the asymmetric use of monetary policy (i.e., interest

rate action tends to be more decisive during downturns than during upturns) by raising interest rates decisively when recovery firms up.

In terms of unwinding the unconventional measures, even though the scale of intervention in Asia was modest compared to the U.S. or the U.K, the policy measures nonetheless represented a more intrusive intervention of the public sector in the allocation of credit, which during normal times should best be left to the market. By taking on credit risk, moreover, the central bank runs the risk of having to ask the government for additional capital in case a significant portion of its credit portfolio underperforms, which could compromise its independence and lead to a deterioration of its ability to carry out its mandate (Filardo and Genberg 2009). In this respect, the execution of exit policy in Japan may have been made easy by the time-bound nature of the unconventional measures that were introduced. Communication is essential to convey right signals, so that market participants may not ascribe too much to each decision (Smaghi 2009). The BOJ appears to be careful by announcing well ahead of time that a particular measure would expire as scheduled⁵ while making sure to avoid the impression that it is withdrawing monetary stimulus prematurely.

Filardo and Genberg (2009) discuss medium-term issues for monetary policy, including the type of policy regime Asia's central banks should adopt, going forward. Prior to the global financial crisis, almost all central banks in Asia aimed for price or exchange rate stability as the overarching objective of monetary policy. Empirical evidence suggests that inflation rates in Asia remained well anchored for both inflation targeting and non-inflation targeting central banks. It is thus clear that as long as there is a right policy focus, inflation targeting is not the only way to achieve price stability (Filardo and Genberg, 2009).

Much less consensus exists on the extent to which central banks should take account of asset prices in the conduct of monetary policy. The conventional wisdom until recently was that central banks should not lean against possible financial imbalances as they build up but should respond aggressively once they collapse—on the assumption that significant imbalances are nearly impossible to detect with confidence in real time and the costs of the clean up are generally expected to be low and manageable. But the crisis has opened up the debate regarding “leaning versus cleaning” (Filardo and

⁵ In October 2009, the BOJ made an announcement that special funds-supplying operations to facilitate corporate financing would expire at the end of March 2010; outright purchases of CP and corporate bonds would expire at the end of 2009.

Genberg 2009). There is now a widely held view that too narrow a focus by central banks on price stability created a speculative bubble in the asset market and led to excessive risk taking in financial markets, and monetary policy therefore should give greater attention to financial stability.

In the aftermath of the crisis, there are indeed increasing calls for central banks to be more proactive in responding to signs that an asset bubble may have emerged: “lean against a bubble.” At the same time, most central bankers are aware that monetary policy is too blunt an instrument to prick bubbles effectively because it cannot be targeted precisely and will affect other financial and macroeconomic variables; the typical changes in interest rates that a central bank might contemplate are likely to be too small to produce big changes in asset prices in any case (Evans 2009). Some therefore argue that the focus of monetary policy should be to achieve financial stability broadly defined, rather than identifying and purging asset bubbles per se. Regulatory policy may be a better instrument to deal with undesirable market developments. When there are indications that asset markets may be exuberant, for example, capital requirements could be raised.

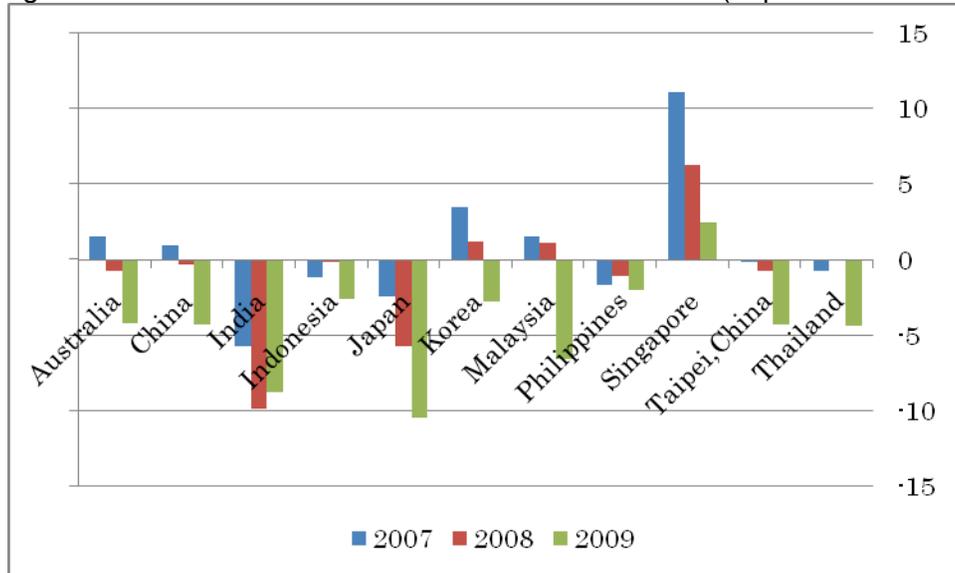
This argument does not mean that central banks should formally be assigned the task of achieving financial stability because assigning such a task would be difficult without providing an operational definition of financial stability. Unlike price stability, it is difficult to agree on a single numerical indicator of financial stability, against which the success or failure of central banks is assessed. Stabilizing asset prices would be a mistake as it would require such large adjustments in the policy interest rate that it would be destabilizing for inflation, output and employment. Financial stability, however defined, should not come at the expense of price and macroeconomic stability. Based on these considerations, Filardo and Genberg (2009) argue that price and financial stability are not mutually incompatible, and that central banks can achieve financial stability without being given an explicit mandate. As long as their objective is to minimize some combination of fluctuations in inflation around a target value and fluctuations of output around its natural level, central banks are supposed to consider all relevant information, including asset prices.

III. Fiscal Policy Issues

Fiscal policy measures in Asia

Given the unprecedented collapse of real economic activity, and the awareness in some countries that further monetary easing might be limited, many governments in the region, as elsewhere, resorted to aggressive easing of fiscal policy. The fiscal positions deteriorated sharply throughout Asia from 2007 to 2008, and further in 2009 (Figure 4). The sharpest deteriorations from 2008 to 2009 were experienced by Malaysia (from a surplus of 1.1 percent of GDP to a deficit of 6.6 percent), Japan (a rise in the deficit of 4.7 percent of GDP), and Singapore (from a surplus of 6.3 percent of GDP to 2.5 percent). Except in Japan, such an active use of countercyclical fiscal policy was a radical departure from the fiscal conservatism that had characterized the economic policymaking of most Asian economies. In fact, emerging Asian economies had not used countercyclical fiscal policy actively, except at the time of the Asian crisis of 1997-98.

Figure 4. Fiscal Balances in Selected Asian Economies (In percent of GDP)



Sources: IMF, WEO database; Public Information Notices (PINs) for Article IV consultations. The figures for 2009 are projections.

Of course, not all of the fiscal deterioration in a country was due to the introduction of a crisis-related fiscal stimulus package, as automatic stabilizers also kicked in (though automatic stabilizers in emerging Asia are not as well developed as in advanced countries). It is not easy to estimate the size of the fiscal stimulus package, net of the automatic stabilizers and the spending or tax reduction measures that had

already been planned;⁶ the announced spending increase in some cases, moreover, also included prospective contributions from the private sector and may even include an amount which will never be implemented in the end. When all these adjustments are made, FAD (2009) estimates that the size of the crisis-related discretionary fiscal measures relative to 2007 was particularly large in China (3.1 and 2.7 percent of GDP in 2009 and 2010), Australia (2.9 and 2.0 percent of GDP), and Korea (3.6 and 4.7 percent of GDP) (see Table 2). These compare with the G-20 average of 2 percent of GDP in 2009 and 1.6 percent of GDP in 2010 (Horton 2010). On average, among the G-20 countries, the size of stimulus measures was larger in Asia. In view of the estimated GDP gaps (see Table 1, columns 1-2), however, a case can be made that the fiscal reactions of some countries, especially Australia and China, was excessive.

Table 2. Fiscal Policy in Major Asian Countries in 2009 and 2010 (In percent of GDP, change with respect to pre-crisis year 2007)

| | 2009 | | 2010 | |
|-----------|-----------------|--|-----------------|--|
| | Overall balance | Crisis-related discretionary fiscal measures | Overall balance | Crisis-related discretionary fiscal measures |
| Australia | -5.8 | -2.9 | -6.8 | -2.0 |
| China | -4.8 | -3.1 | -4.8 | -2.7 |
| India | -6.0 | -0.6 1/ | -5.6 | -0.6 |
| Indonesia | -1.4 | -1.4 | -0.9 | -0.6 |
| Japan | -7.4 | -2.4 | -7.5 | -1.8 |
| Korea | -6.2 | -3.6 | -6.2 | -4.7 |

Source: Estimates from FAD (2009), Annex Table 2.

Note 1/ IMF staff report for 2008 Article IV consultation (released to the public in June 2009) estimates that the size of the discretionary fiscal measures provided in the budget and the two supplementary budgets amounted to 3 percent of GDP.

It was the relatively healthy state of government finances that allowed aggressive use of counter-cyclical fiscal policy in many (and certainly not all) Asian economies (see Table 1, columns 7-8). With the exceptions of India and Japan, public debt-to-GDP ratios were significantly lower in Asia than in many countries in other parts of the world. In

⁶ In the Philippines, for example, only 50 billion pesos of the 160 billion peso package represented a net increase in government spending, with the rest coming from a reallocation of funds which would have been spent in any case (Doraisami 2009).

particular, years of fiscal discipline had created a significant space to expand fiscal policy in Australia, China, Indonesia, and Korea; Singapore's large fiscal reserves provided ample scope to use fiscal policy to counter adverse external shocks without running a deficit. Japan and India, despite the limited fiscal space, nonetheless expanded fiscal policy substantially. Coinciding with the election-related increase in spending, and a surge in subsidy associated with the rise in international oil prices, the stimulus measures implemented in India in 2008 eliminated all the gains made in fiscal consolidation since 2004 (Kumar and Soumya 2010).⁷ With the state budgets included, the general government deficit was estimated to be close to 10 percent of GDP in 2009. The Philippines was also somewhat constrained in its ability to expand fiscal policy with a debt-to-GDP ratio of 56 percent of GDP in 2008, but it still managed to go ahead with a stimulus package amounting to 4.1 percent of GDP.⁸

Doraisami (2009) notes that infrastructure spending has in the past accounted for 47 percent of stimulus packages in developing and emerging economies, while it has been about 15 percent in advanced countries. Tax cuts, on the other hand, have accounted for 34 percent in advanced countries, while they have claimed only 3 percent in developing and emerging economies. Focusing on the experience with fiscal policy during the current global crisis, Horton (2010), estimates that a typical stimulus package adopted by the G-20 countries in 2009 consisted of expenditures on public consumption and transfers (37 percent of total), public investment (35 percent), and tax cuts (32 percent). Among G-20 advanced economies, automatic stabilizers accounted for 1.7 percent of GDP in 2009, compared to 1.1 percent in G-20 emerging economies; in Asia as a group, the overall effect of automatic stabilizers was smaller, at less than 1 percent of GDP. Horton (2010) further notes that, of the average deterioration of the fiscal position of 7 percentage points of GDP for G-20 countries, fiscal stimulus accounted for 2 percent and automatic stabilizers another 2 percent (with the balance accounted for by underlying trends and financial sector support).

A closer look at individual stimulus packages adopted in Asia reveals that the share of capital spending on infrastructure was considerable (see Appendix II for a list of

⁷ India achieved a considerable fiscal consolidation, in part driven by strong revenue performance, between 2004 (when the Fiscal Responsibility and Budget Management Act came into effect) and early 2008.

⁸ In 2004, the Philippine government adopted an aggressive agenda to bring down the fiscal deficit over the medium term and successfully reduced the debt-to-GDP ratio by more than 20 percent between 2004 and 2008.

major fiscal policy actions adopted by some of the Asia-Pacific economies). Such spending was particularly large in China, Korea, the Philippines, and Thailand, accounting for more than 60 percent of the fiscal packages (Doraisami 2009). In China, for example, more than 85 percent of the RMB 4 trillion stimulus package announced in November 2008 (amounting to some 16 percent of GDP) was accounted for by investment spending. In contrast, the share of spending on health care and education was a mere 150 billion yuan or less than 4 percent of total. An important exception to this observation was Thailand's first fiscal package, a large portion of which consisted of transfers. Notable among these was a cash payment ("stimulus checks") to a large number of households, including B2000 to those registered with the social security scheme and public servants who earned less than B15000 a month. Such cash transfers were also included in the packages adopted by Australia, Japan and Taipei, China. Japan's stimulus packages predominantly included public consumption and transfers; Korea's packages were more balanced, with about 50 percent public consumption and transfers, the rest divided between investment and tax cuts (FAD 2009). In a nutshell, general and targeted transfers dominated Japan's stimulus packages, while government investment dominated those adopted by the governments of emerging Asia.

Fiscal policy implementation

Aside from the issue of effectiveness, an important drawback of fiscal policy as a countercyclical measure is the lag it typically involves in implementation. From this standpoint, some of the fiscal stimulus measures adopted in Asia failed to achieve full impact because they could not be implemented expeditiously. Most of these involved public spending on infrastructure, the size of which was too large for the absorptive capacity of the governments concerned. In Indonesia, for example, although infrastructure projects were set to start during the first half of 2009, delays in parliamentary approval and problems with disbursements held up implementation until the second half of 2009. At the end of September 2009, less than a quarter of the amount allocated for infrastructure projects had been spent (Park et al. 2010). In Malaysia, at the end of September 2009, only 60 percent of the first package (announced in November 2008, with 85 percent allocated to infrastructure) had been spent, while the rate of disbursement for the second package (announced in March 2009, with implementation over two years) was 26 percent. In China, about a quarter of the 7.62 trillion yuan earmarked for 2009 was reported to remain unused at the end of

November.⁹ In contrast, implementation rates were higher for revenue measures and social transfers (FAD 2009). For example, the implementation of tax cuts was quick in Indonesia;¹⁰ likewise, the distribution of “stimulus checks” in Thailand was quick, with 90 percent of the targeted population paid within four months (Jitsuchon 2010).

Infrastructure spending entails additional implementation problems, because not all investment projects are profitable and some can even lead to corruption. Tanaka (2009) presents a detailed analysis of China’s fiscal stimulus package of 4 trillion yuan announced in November 2008, most of which involved investment outlays in infrastructure to be spent by the end of 2010 (of this total, central government investment was 1.18 trillion yuan, with the rest made up of local government and private sector investment). Subsequent to the announcement of the package by the central government, 24 Chinese provinces announced investment plans worth almost 16 trillion yuan without specifying how the investment would be funded. Thus, the announcement of the economic stimulus package by the central government led to a resurgence of “blind investment and duplicate construction” under local government leadership that has long been recognized as a structural problem of the Chinese economy (though it is not clear how much of the announced local investments would actually be implemented). The prudent stance of fiscal policy established in 2008 was thus reversed.

Tanaka (2009) further argues that symmetrical application of countercyclical fiscal policy is difficult in China because of interest groups who would benefit from fiscal spending, such as provincial officials and the State Development Planning Commission. Given stiff opposition, it took the Chinese government more than six years to unwind the expansionary fiscal policy adopted in August 1998 in the aftermath of the Asian crisis. By the time a more neutral stance of fiscal policy was finally adopted in December 2004 (after two years of lobbying by the Ministry of Finance), the economy was already seriously overheated. In China, perhaps as elsewhere, what is intended as a temporary measure could become permanent.

Going forward, Tanaka (2009) identifies three additional problems with fiscal policy implementation in China if the world economy remains weak and the government thus continues to maintain the expansionary stance. First, there may be a shift toward increasing investment in the mainstream industrial areas, which would further expand

⁹ “2 Trillion Yuan Spree Looms on Mainland,” *South China Morning Post*, December 14, 2009, p. 1.

¹⁰ IMF, Staff Report for the 2009 Article IV consultation with Indonesia, p. 13.

the already excessive production capacity. Second, there is a strong demand for investment in the rural areas, but not all investment projects can be profitable. This may create insolvency concerns for the provincial governments and non-performing loans for state-owned banks. Third, it is not clear if the investment funds have actually been invested. According to Tanaka (2009), the huge expenditure program would exacerbate the problem of corruption among senior local government officials.

Effectiveness

Theoretically, the impact of expansionary fiscal policy on aggregate demand is ambiguous. An IMF study (IMF 2009), based on a duration analysis of some 140 recessions and recoveries in advanced countries, concluded that expansionary fiscal policy was typically not associated with shorter recessions: whether fiscal policy is measured by changes in the primary balance or in government consumption, it was not found to have a significant impact on the duration of recessions. When recessions were associated with financial crises, however, the study found that expansionary fiscal policy tended to shorten the duration of recessions: a 1 percent increase in government consumption was associated with an increase in the probability of exiting a recession of about 16 percent, suggesting that fiscal policy is effective when economic agents face liquidity constraints.

According to Spilimbergo et al. (2009), estimates of the fiscal multiplier are 0.3-0.6 for revenue measures, 0.5-1.8 for capital spending measures, and 0.3-1 for other spending measures. Estimated fiscal multipliers for developing countries tend to be smaller than for advanced countries (ranging from negative to 0.5) possibly because fiscal expansion could quickly translate into fiscal sustainability concerns. They suggest a rule of thumb for policymakers: 1.5-1 for spending in large countries; 1-0.5 for medium sized countries, and 0.5 or less for small open economies. Moreover, multipliers are likely smaller (about half) for revenue and transfer measures, and are slightly larger for investment spending. Spilimbergo et al. (2008) further argue that spending increases and targeted tax cuts and transfers have higher multipliers than general tax cuts or subsidies because the impact of the latter would depend on the uncertain response of households and firms to an increase in their income. Transfer and tax measures targeted at credit-constrained consumers (e.g., greater unemployment benefits, expansion of safety nets) should be particularly effective.

The relative effectiveness of different types of fiscal policy measures is indicated by Freedman et al. (2009), who used the IMF's Global Integrated Monetary and Fiscal

Model to simulate the joint impact of monetary and fiscal policy measures.¹¹ Considering four types of measures (an increase in government investment; a lump-sum transfer to all households; a targeted transfer to liquidity-constrained households; and a tax cut on labor income), they came to the following conclusions (a stimulus measure is assumed to amount to 1 percent of pre-crisis GDP and to remain for two years):

- An increase in government investment leads to a 1.2 percent rise in GDP without monetary accommodation and a 1.8 percent increase with two years of monetary accommodation (the larger effect of government investment comes from its impact on aggregate supply and productivity);
- A lump-sum transfer to all households raises GDP by less than 0.2 percent without monetary accommodation;
- A targeted transfer to liquidity-constrained households increases the multiplier by 4 times (given the assumption that the share of liquidity-constrained households is 25 percent); and
- The multiplier of a tax cut on labor income is slightly larger than that of a general lump-sum transfer (as it increases the supply of labor by households).

The experience of Asia during the current crisis clearly shows that general transfer measures do not work and are wasteful. Japan's Cabinet Office, based on a survey of households, concluded that only 33 percent of the cash paid out by the government as part of the emergency fiscal measures was actually spent on consumption (see Cabinet Office 2010).¹² Likewise, according to a survey conducted by the Thai National Statistical Office in May 2009, only 20 percent of those who cashed the "stimulus checks" actually used the money for "extra" spending; moreover, a design problem allowed the program to reach only 10 percent of the lowest income group (Jitsuchon 2010). Outside Asia, Sahm et al. (2009) used similar household surveys to estimate the effects on consumer spending of the \$96 billion stimulus payments that US households received in 2008, and concluded that only about one-third of the rebate income was spent during the year.

A weak response of aggregate demand to general transfers is also suggested by Eskesen (2009), who used the IMF's Global Integrated Monetary and Fiscal Model

¹¹ The model incorporates both liquidity-constrained households to allow for the short-term effect of fiscal policy and finite-horizon agents to generate long-run crowding out.

¹² The second supplementary budget for fiscal 2008 distributed some 2 trillion yen between late May and late November 2009, with 20000 yen for all persons over 65 and under 18, and 12000 yen for all others.

calibrated for Korea to examine the relative effectiveness of investment and targeted transfers. The study shows that an increase in investment raises GDP by 0.8 percent, while income transfers raise GDP only by 0.1 percent (because of leakage into imports and households with a low propensity to consume). On the other hand, if the transfer is targeted at liquidity-constrained households, the impact rises to 0.3 percent. Likewise, a tax cut is shown to have a small impact on GDP (of 0.1-0.15 percent).

Evidence has emerged from the current crisis to show that a targeted tax cut stimulates demand effectively. As an example of such a measure, the waivers and reductions of real estate-related taxes introduced by Thailand appear to have supported the real estate sector, judging from the pickup in the sale of houses in the Bangkok metropolitan area in 2009 (Jitsuchon 2010). On the other hand, an injection of capital, as opposed to direct government purchases or tax cuts, does little to help liquidity-constrained firms. In a survey of small and medium-sized enterprises (SMEs) in Malaysia, respondents stated that a reduction in corporate tax and electricity tariffs would be more helpful in dealing with the impact of the crisis than the provision of government funds as working capital, as was done in the stimulus package of March 2009 (Doraisami 2009).

When the stimulus packages of Asia are taken as a whole, the aggressive use of countercyclical fiscal policy appears to have had a measure of success in pulling the economies out of the deepest recession in recent decades. Park et al. (2010) used a sample of 26 countries and regions to obtain some evidence that fiscal policy had a marginally significant impact on generating aggregate demand in Asia, but not in other economies. While general government expenditure or revenue had no statistically significant effect, an interaction term between government expenditure and the dummy variable for developing Asia had a significant effect upon the gap between predicted GDP and actual GDP during the recent global crisis.¹³

Building frameworks and institutions for fiscal policy

The conventional wisdom in modern macroeconomics is that debt-financed fiscal spending has a negative effect on capital formation and growth. This result derives from the fact that, when Ricardian equivalence does not hold, people consume out of government debt and cause the consumption-to-income ratio to rise. There is empirical support to the adverse impact of debt on long-term interest rates. Horton (2010) cites

¹³ The sample consists of all G-20 economies (including the European Union), Hong Kong SAR, Malaysia, the Philippines, Singapore, Taipei, China, and Thailand.

recent IMF work showing that an increase in the overall fiscal deficit of one percent of GDP raises bond yields by about 20 basis points over the medium term, with a higher effect for emerging markets (about 30 basis points); countries with public debt above 80 percent of GDP or initial deficits above 2 percent of GDP experience sharper increases in interest rates on government bonds from a one-percent-of-GDP increase in the overall fiscal deficit, by 5 basis points and 15 basis points, respectively. An increase in a country's fiscal deficit of 5 percent of GDP could lead to a rise in long-term interest rates of 100 basis points; with the combined effects of weak initial condition, poor governance, and elevated global risk aversion, this effect could increase up to 270 basis points.

The effectiveness of countercyclical fiscal policy seems to be related to the perception of debt sustainability. IMF (2009) shows that fiscal stimulus in economies that have low levels of public debt has a higher impact on the strength of the recovery relative to economies that have higher levels of public debt. The point estimate for the impact becomes negative for debt levels that exceed about 60 percent of GDP. These findings point to the importance of a commitment to medium-term fiscal sustainability to accompany any short-term fiscal stimulus. Doubts about debt sustainability can slow the recovery process through lower consumer spending and higher long-term real interest rates. The importance of fiscal institutions is indicated. Horton (2010) cites IMF research showing that countries with weaker institutions and higher political risks have more pronounced impacts on yields, by an additional 10 basis points, from an increase in the overall fiscal deficit.

Fortunately for most of Asia, debt sustainability does not appear to be a serious concern over the medium term, though the balance of public debt may be understated in some countries (including China and the Philippines) if contingent liabilities are fully recognized (Table 3 for debt projections in G20 Asian countries). Japan has an extremely high debt-to-GDP ratio of over 200 percent. The high debt level has constrained the flexibility of fiscal policy, especially as the country faces an aging population with an expected rise in social expenditures, and Japan must seriously confronts the challenge of fiscal consolidation over the coming years. Even so, debt is denominated in yen and almost all of it is held by domestic residents; the country maintains a surplus in the current account. India is another country with a high debt-to-GDP ratio, especially for an emerging market. But India is expected to grow rapidly over the coming years and has already been pursuing a rule-based fiscal policy under the 2003 Fiscal Responsibility and Budget Management Act (FRBMA).

Several other governments in Asia also have legal frameworks for fiscal policy, including Australia, Singapore, the Philippines, and Indonesia. The Australian government, under the Charter of Budget Honesty (enacted into law in 1998), is pursuing a medium-term policy to achieve budget surpluses on average, keep tax revenue as a share of GDP below the 2007/08 level, and improve the government's net financial worth. Likewise, Indonesia has operated under a rule-based fiscal policy framework since 2003, which mandates capping the fiscal deficit to 2 percent and the balance of public debt to 60 percent of GDP.

These observations do not mean that Asia needs no vigilance with respect to the medium-term management of fiscal policy. To the contrary, binding legal frameworks may be necessary for some of the economies that do not have them at the present. The existing frameworks could be strengthened for others. India's FRBMA, for example, has a loophole that encouraged the increasing use of subsidy-related bonds to meet current spending needs, as the issuance of such special bonds is excluded from current spending and the authorities' definition of the deficit. The FRBMA framework could therefore benefit from strengthening by specifying the accounting definitions of fiscal targets, expenditure rules, and a debt target, and by introducing sanctions for noncompliance (Simone and Topalova 2009).

Table 3. Gross Government Debt in Major Asian Countries (In percent of GDP)

| | 2007 (actual) | 2009 (estimate) | 2010 (projection) | 2014 (projection) |
|-----------|---------------|-----------------|-------------------|-------------------|
| Australia | 9.8 | 16.9 | 22.7 | 27.8 |
| China | 20.2 | 20.2 | 22.2 | 20.0 |
| India | 80.5 | 84.7 | 85.9 | 78.6 |
| Indonesia | 35.1 | 31.5 | 31.2 | 27.1 |
| Japan | 187.7 | 218.6 | 227.0 | 245.6 |
| Korea | 29.8 | 34.9 | 39.4 | 35.4 |

Source: Projections from FAD (2009), Annex Table 1.

What is more urgent in terms of institution building is to improve the working of automatic stabilizers, especially on the expenditure side. What has proved particularly

useful as a countercyclical measure during the current crisis are targeted transfers to credit-constrained individuals, which can easily be incorporated into the fiscal system as automatic stabilizers, for example, by enhancing the system of unemployment benefits. Another area of fiscal reform concerns the composition of expenditure. India would need to raise the share of public investment in the budget (which is currently only about 2 percent of GDP) by reducing consumption subsidies or targeting them more narrowly at low-income population. On the other hand, China and other significant surplus economies should increase the share of government consumption, especially on projects to strengthen social safety nets. To the extent that investment remains significant, it would also be useful to put in place procurement procedures for public works that minimize the scope for corruption.

IV. Exchange Rate and Reserve Management Policy Issues

Exchange rate policies

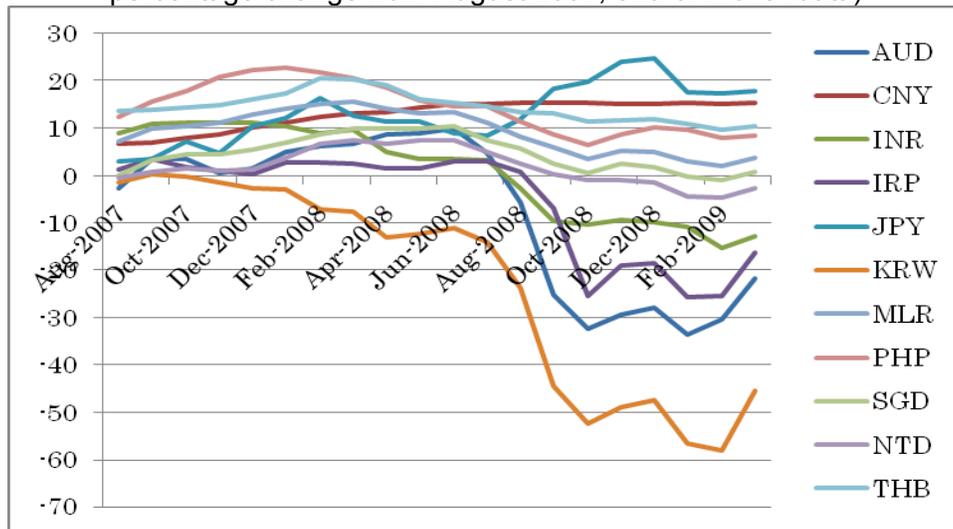
Asian economies entered the onset of the crisis with considerable diversity in exchange rate arrangements. The Australian dollar and the Japanese yen were among the few bona fide free floating currencies. In the rest of the region, some currencies (such as the Korean won and the Indonesian rupiah) appeared to be floating with some flexibility, while others (such as the Chinese RMB and the Vietnamese dong) remained tightly managed, especially with respect to the US dollar. This diversity (and the apparent greater flexibility of some major Asian currencies) masked the continued tendency of Asian monetary authorities to limit the fluctuations of their currencies against the US dollar. Patnaik and Shah (2009), identifying structural breaks in the parameters of the Frankel-Wei regression applied to eleven Asian currencies (where the US dollar, the euro, the British pound, and the Japanese yen entered the equation as the explanatory variables) between January 1981 and May 2009,¹⁴ found that the degree of exchange rate flexibility in Asia (measured by the mean and median of the R^2 s of the Frankel-Wei regression) was only marginally greater in the post-Asian crisis period than in the period prior to the crisis (the median value still remained around 0.9); even for the Korean won, they obtained the Frankel-Wei weight of 1.25 for the US dollar during the period 1995-2009.

¹⁴ The 11 countries are China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taipei, China, Thailand, and Vietnam.

Kim and Yang (2009) approached this issue from the point of view of monetary independence. If a country pursues a fully flexible exchange rate policy, it should be able to pursue a fully autonomous monetary policy, such that domestic interest rates should not be significantly affected by monetary developments abroad. Building on this line of reasoning, they obtained evidence that before the onset of the global financial crisis most Asian economies had in fact been limiting the flexibility of their currencies against the US dollar. In particular, their structural VAR model shows that, during the period 1999-2007, domestic interest rates in all presumed free and managed floaters (Korea, Singapore, the Philippines, Thailand, and Taipei, China) responded strongly to US interest rate changes, while those in China and Malaysia did not. They interpret this result to mean that the de jure floaters actually gave up monetary autonomy by limiting exchange flexibility while China and Malaysia (with de facto US dollar pegs) restricted the capital account. In their sample, Japan was the only country for which the conventional exchange rate channel operated, such that a flexible exchange rate allowed the country to maintain monetary independence.

Divergence in exchange rate regimes during much of the post-Asian crisis period therefore characterized, not the difference between floaters and peggers, but the difference between Australia, Japan, and New Zealand on the one hand and the rest of Asia on the other. With the onset of the global crisis, the divergence became even more pronounced (Figure 4). The two presumed floating currencies (the Indonesian rupiah and Korean won) utilized their flexibility to depreciate sharply (along with the Australian dollar and New Zealand dollar), while China and Singapore terminated the policy of allowing their currencies to appreciate gradually against the US dollar. Vietnam, in late 2008, devalued the dong and widened the trading band against the US dollar. As most other currencies also softened against the US dollar, these developments meant that the Japanese yen, which remained flexible, became the only currency in the region that appreciated against the US dollar. These exchange rate movements placed a huge negative burden of adjustment on the Japanese economy, while allowing the other Asia-Pacific economies to benefit from the beggar-thy-neighbor type depreciation. From the onset of the subprime loan crisis to the height of the global financial crisis, the divergence between the most appreciated currency in Asia (the Japanese yen) and the most depreciated currency (the Korean won) amounted to nearly 80 percent.

Figure 4. Movements of Selected Asian Currencies vis-à-vis the US Dollar (In cumulative percentage change from August 2007; end-of-month data)



Sources: IMF, *International Financial Statistics*, on-line database; for Taipei, China only, Central Bank of the Republic of China, *Financial Statistics*.

Benefits and Costs of foreign exchange reserves

The propensity of Asian countries to manage exchange rates, especially when the currencies were under appreciation pressure, meant that they accumulated large balances of foreign exchange reserves following the Asian crisis. In fact, the rise in Asia's balance of international reserves was spectacular indeed: the balance for 10 major economies (which include India but excludes Japan) rose from a mere \$560 billion at the end of 1998 to over \$3 trillion at the end of 2007. Much of the increase was accounted for by China whose balance of international reserves rose from less than \$150 billion to over \$1.5 trillion over the same period (and nearly \$2 trillion at the end of 2008). Among the crisis Asian countries, Korea's gains were most noticeable, with the balance rising from \$52 billion to over \$260 billion (though this amount proved insufficient in late 2008). Taipei, China, another significant accumulator, saw the balance increase from less than \$100 billion in 1998 to over \$270 billion in 2007. With Japan included, Asia's balance of international reserves amounted to over \$4 trillion in 2008.¹⁵

Aizenman et al. (2009) observed that, in terms of the configuration of what they called "trilemma indices" (measures indicating monetary independence, exchange rate

¹⁵ Although the Japanese authorities in principle allowed the yen to be determined freely by market forces, they at times intervened in the foreign exchange market. The last foreign exchange market intervention (conducted during January 2003-March 2004) was especially large. As a result, the balance of foreign exchange increased from \$450 billion at the end of 2002 to over \$820 billion at the end of 2004.

stability, and free capital mobility), Asian emerging market economies during the 2000s achieved middle levels in all of the three measures, which they claim was made possible by holding large foreign exchange reserves (in other words, these economies at least partly achieved all of the three policy objectives, only two of which could normally be achieved simultaneously given the impossible trinity). Although the reserve accumulation was first and foremost an outcome of their mercantilist tendency to keep the exchange rates depreciated in order to maintain export competitiveness, the findings of Aizenman et al. (2009) suggest that accumulating reserves also served as an insurance against a sudden reversal of capital inflows. This allowed these economies to open their capital account to some extent and to increase exchange rate flexibility somewhat while attempting to retain some monetary independence.

Reserves appear to bring about additional economic benefits (Aizenman et al. 2009). Countries holding large reserves appear less likely to experience large output loss during crisis (defined as a period of significant economic underperformance). Likewise, a country seems to be able to offset the volatility of investment and output that comes from keeping the exchange rate stable (by virtue of loss of monetary independence) by holding large foreign exchange reserves (of more than 12 percent of GDP). Reserves evidently allow countries to pursue exchange rate stability while also achieving some degree of financial openness. Thus, emerging market economies have been able to pursue both greater exchange rate stability and greater financial openness while retaining some monetary independence. An implication is that a country can free itself from the binding constraint of the impossible trinity to some extent if it holds large enough reserves.

At the same time, holding large foreign exchange reserves entails costs as well. Fukuda and Kon (2009) argue that holding reserves would reduce liquidity risk, namely, the costs associated with a sudden reversal of capital inflows, thus allowing a country to borrow from abroad by issuing lower-cost, more liquid (shorter maturity) debt. But, once the government decides to accumulate foreign exchange reserves for whatever reason, private agents would act accordingly and bring about macroeconomic consequences. They consider a model in which a utility-maximizing representative agent decides consumption, capital stock, labor input, and the amounts of liquid and illiquid debt, subject to the amount of foreign exchange reserves. Comparing steady state values, they show that an increase in the amount of reserves leads to a permanent decline in consumption (to the extent that interest rates on reserves are lower) and a transfer of

labor from the non-tradable to the tradable sector (in order to generate net exports). Growth may be higher if the tradable sector is more capital-intensive, but it comes at the expense of consumption. These predictions are broadly supported by data for some 130 countries during 1980-2004.

Whatever the benefits of holding large international reserves may be from the point of view of individual countries, the outcome was costly from a more global standpoint. It allowed large US current account deficits to be financed at low cost and contributed to the global imbalance, the unwinding of which was in part a triggering cause of the global financial crisis. As Kim and Yang (2009) argue, as long as Asian countries restrict the flexibility of exchange rates, it might lead to the resurgence of another global imbalance problem. The choice of exchange rate policy by one economy could therefore have regional and global implications, making it a subject for useful cooperative discussion.

Policies to facilitate global rebalancing

It is clear from these observations that a reform of the current system is necessary over the medium term to allow economies in Asia to have an insurance against a sudden reversal of capital and a buffer against macroeconomic volatility without accumulating a large balance of foreign exchange reserves, especially in the form of US government debt. A reform at the global level has been progressing since early 2009. The International Monetary Fund (IMF) has augmented its resources in recent months, by obtaining credit lines from a number of countries (notably Japan and the EU for about \$100 billion each), securing agreement on a new allocation of SDRs amounting to about \$250 billion, and setting up an arrangement whereby member countries can purchase SDR-denominated notes it issues.¹⁶ Parallel to these developments has been a “modernization” of conditionality, designed to remove the “stigma” attached to IMF borrowing. The newly established Flexible Credit Line (FCL), for pre-qualified “strong performing” economies, has done away with conditionality.¹⁷ For other, existing lending facilities, the IMF now relies “more on pre-set qualification criteria (ex-ante conditionality) rather than on traditional (ex post) conditionality.” Structural

¹⁶ China became the first country to purchase such notes, amounting to \$50 billion in September 2009.

¹⁷ The FCL has already attracted Colombia, Mexico and Poland as customers.

reforms are monitored in the context of program reviews, and the use of structural performance criteria was discontinued in all arrangements.¹⁸

Despite these efforts to remove the stigma of IMF borrowing, the prognosis for Asia is not encouraging. Some regional economies lost reserves and many more experienced a decline in the pace of reserve accumulation during the height of the global financial crisis (Figure 5). But this appears to have been a rather temporary phenomenon. In view of the pressure experienced on the international reserves,¹⁹ some countries, notably Korea and Indonesia, appear to have resumed accumulating foreign exchange reserves again. This only represents a return to the pre-global crisis regime, the recent reforms of IMF lending notwithstanding. In this respect, a welcome development is the recent decision of ASEAN+3 Finance Ministers to multilateralize the Chiang Mai Initiative (CMI) and to create an independent surveillance unit to support decision-making in the management of the pooled international reserves.²⁰ Asia's economies must make this scheme sufficiently large, user-friendly and truly cooperative in nature, so that they may no longer have an incentive to hold a large amount of reserves for insurance purposes.

Such a scheme is also desirable from the standpoint of global rebalancing, which requires that Asia should allow its currencies to appreciate against the US dollar. The flipside of reserve accumulation is a policy of limiting the appreciation of its currencies. By providing an alternative insurance, the regional system of mutual financial assistance, in the form of the CMI multilateralized (CMIM), could potentially play a role in encouraging the region's economies to assume greater exchange rate flexibility. In this context, countries with a large holding of US dollar reserves may be reluctant to allow a significant appreciation of its currencies against the US dollar because it would entail a significant capital loss. This only argues for a globally and regionally cooperative solution, which ensures an orderly adjustment of exchange rates and the composition of reserve assets over time. In view of the economic recovery already in progress in some of the region's economies, emerging Asia will likely be among the first to consider exiting from the extraordinarily easy stance of monetary policy. Such a course of action is necessary

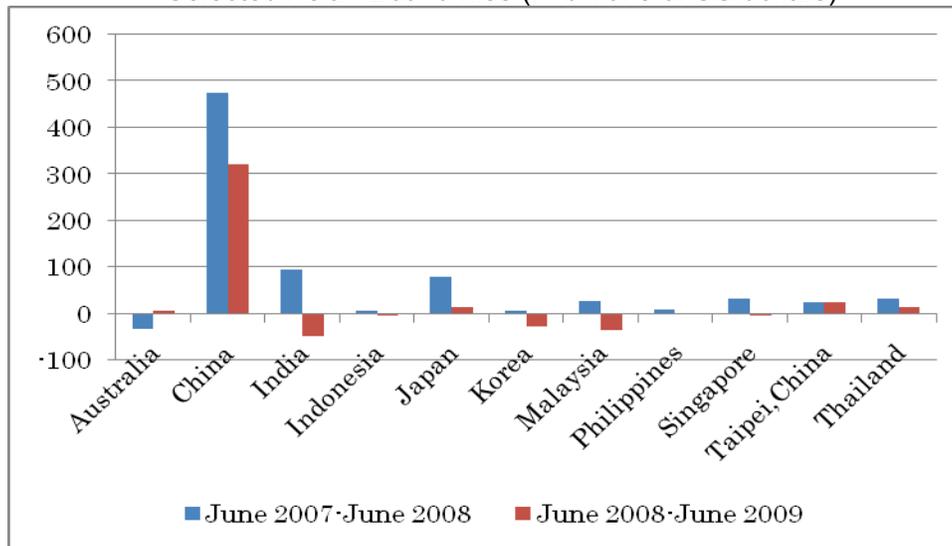
¹⁸ See "modernizing conditionality," at www.imf.org.

¹⁹ Korea lost almost \$40 billion during the last quarter of 2008.

²⁰ The Joint Media Statement of the 12th ASEAN+3 Finance Ministers' Meeting in Bali, Indonesia on 3 May 2009. ASEAN+3 comprises the ten member countries of the Association of Southeast Asian Nations (ASEAN) plus the People's Republic of China (PRC), Japan, and the Republic of Korea.

to prevent domestic inflationary pressure. Regional cooperation is therefore helpful for domestic reasons as well—to encourage countries to raise interest rates promptly when recovery takes hold and as a consequence to accept an appreciation of their currencies.

Figure 5. Changes in the Stock of Foreign Exchange Reserves in Selected Asian Economies (In billions of US dollars)



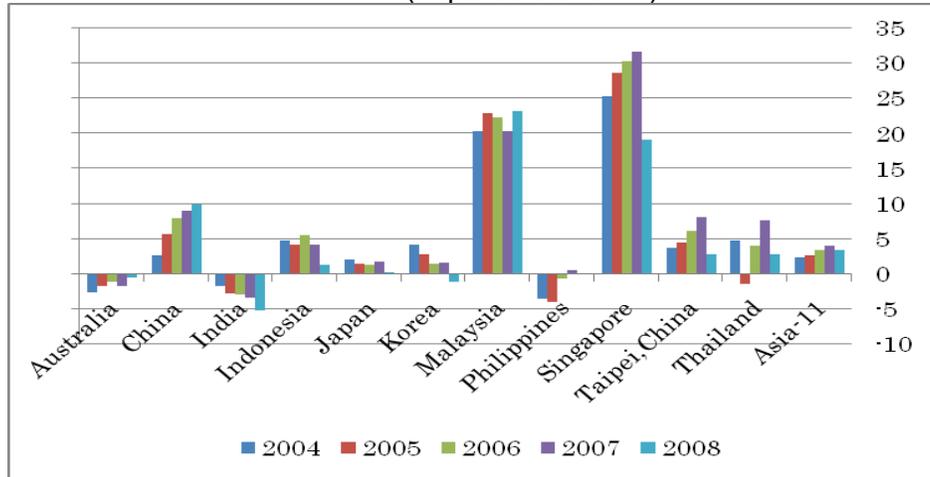
Sources: IMF, *International Financial Statistics*, on-line database; for Taipei, China only, Central Bank of the Republic of Taiwan, *Financial Statistics*.

The role Asia can play in the global rebalancing of demand is significant. In terms of imbalances as a percent of GDP, considerable policy adjustments are required of Singapore, Malaysia, and China whose current account surpluses equaled 10-30 percent of GDP in 2008 (Figure 6). The large current account surpluses of Singapore and Malaysia reflect the high saving rates which to a considerable extent result from the government-directed compulsory saving schemes. In terms of absolute size, however, China must clearly lead the way. In 2008, China's current account surplus of over \$400 billion was equivalent to more than half of the US deficit of over \$600 billion (Figure 7). In contrast, the combined surpluses of Japan and other Asian economies were relatively small. China must cut the share of net exports by raising the share of consumption, which stood only at 55 percent of GDP during 2003-07.²¹ Barnett and Brooks (2010) show that increasing government spending on health care (but not so much on education) is an effective way of promoting private consumption in China by reducing

²¹ China's share is comparable to Singapore's. The share of consumption in India, Korea and Thailand was almost 70 percent of GDP, while it was about 75 percent in Japan.

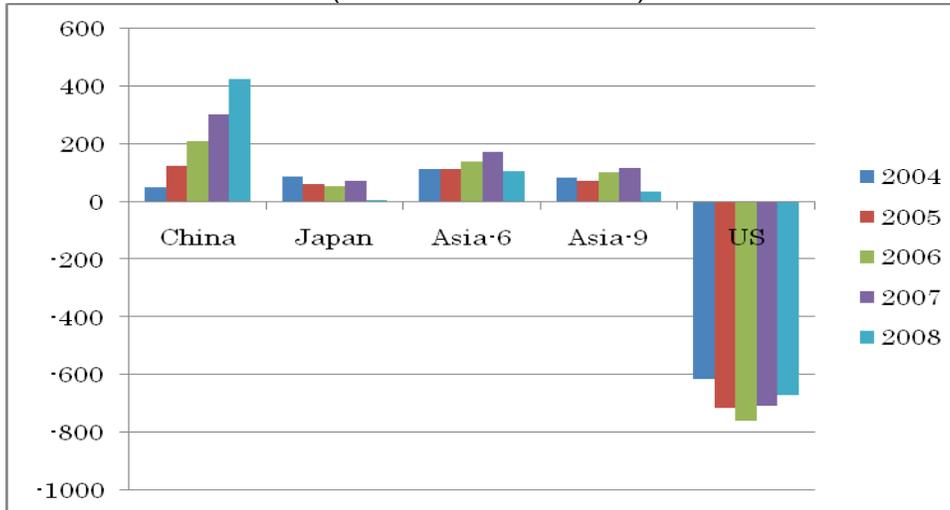
precautionary savings.²² The need to build better social safety nets as a way of promoting consumption applies equally well to other countries in much of emerging Asia.

Figure 6. Current Account Balances in Selected Asian Economies (In percent of GDP)



Sources: IMF, International Financial Statistics; for Taipei,China only, Central Bank of the Republic of Taiwan; these come from the national income accounts data, not from the balance of payments data.

Figure 7. Global Rebalancing: Current Account Balances in Asia and the US (In billions of US dollars)



Sources: IMF, International Financial Statistics; for Taipei,China only, Central Bank of the Republic of Taiwan. Asia-6 excludes, besides China and Japan, the current account deficit countries of Australia, India, and the Philippines; Asia-9 excludes only China and Japan.

²² Using provincial data for 1994-2007, they show that a 1 percent (of GDP) increase in public health spending would boost private consumption by 2 percent, thus yielding a total demand effect of 3 percent for every 1 percent increase in health spending.

Managing capital inflows

How to manage capital inflows is an important aspect of the strategy to ensure macroeconomic stability while facilitating the required global rebalancing. This is especially so because emerging Asia is expected to be among the first to recover from the crisis. As emerging Asia exits from the easy monetary policy and raises interest rates, it will undoubtedly begin to receive an increasing volume of international capital flows. If the countries maintain the policy of stabilizing their exchange rates with respect to the US dollar in face of these inflows, they will experience an accumulation of international reserves, which not only is contrary to the requirements of global rebalancing but if unchecked may lead to inflationary pressure. The policy of stabilizing nominal exchange rates in order to maintain international price competitiveness may then prove counterproductive as inflation will cause the real exchange rates to appreciate over the medium term. How best to manage capital inflows is an important policy issue for Asia.

Emerging Asia was a significant recipient of international capital flows in the mid-2000s until the onset of the global financial crisis, receiving around \$300 billion of net inflows in 2007 and 2008 (Table 4). As a percent of GDP, Asia's gross private capital inflows and outflows were also significant (which peaked at 16 and 13 percent, respectively, in 2007), although they were smaller than the percentages recorded prior to the Asian financial crisis, as well as compared to some other regions of the world. The significant net private inflows, despite the large current account surplus Asia has recorded against the rest of the world since the Asian financial crisis, correspond to the accumulation of large international reserves over the period. In 2009, net private inflows declined sharply (to a net outflow of \$47 billion), but they are expected to pick up in the coming months.

Table 4. Net Capital Flows to Developing and Emerging Asia
(in billions of US dollars; annual averages)

| | 1990-96 | 1997-02 | 2003-06 | 2007 | 2008 | 2009 1/ |
|----------------------------------|----------------|----------------|----------------|-------------|-------------|----------------|
| Current account balance | -23 | 40 | 154 | 406 | 422 | 481 |
| Private capital flows, net | 59 | 11 | 82 | 165 | 128 | -47 |
| Direct investment, net | 32 | 59 | 83 | 138 | 223 | 162 |
| Private portfolio flows, net | 17 | -3 | -23 | 11 | -66 | -192 |
| Other private capital flows, net | 11 | -45 | 23 | 15 | -29 | -16 |
| Official flows, net | 0 | 1 | -19 | -37 | -13 | -11 |
| Change in reserves | -37 | -80 | -309 | -673 | -634 | -514 |

Notes: 1/ projections; 2/ Negative sign indicates increase in reserves.

Source: IMF, World Economic Outlook database, April 2009.

Large capital inflows can pose various types of risks, including the macroeconomic risk of creating overheating and inflation and the financial stability risk of pushing up asset prices excessively and reducing the quality of assets (Kawai and Takagi 2008). Because capital inflows can reverse themselves quickly within a short period of time, they can also create a risk of currency crisis. Managing these risks are not easy, short of allowing exchange rates to appreciate. The empirical and policy literature generally suggests that there is no single solution to the problems posed by capital inflows, and that authorities need to use all the available instruments, including sterilized intervention, prudential regulation, capital controls, and fiscal tightening. Over the medium term, there may also be scope for regional cooperation to mitigate the adverse impact of large capital inflows, to the extent that international investors have a regional focus and a region tends to experience a similar cycle of cross-border flows.

Sterilized intervention has been the favorite tool applied by many emerging Asian economies to prevent nominal and real exchange rate appreciation and economic overheating in face of large capital inflows. As the supply of government debt is limited, a large number of central banks in the region, including in China, Indonesia, Korea, Malaysia, the Philippines, Taipei, China and Thailand, have issued central bank securities for sterilization purposes; the Reserve Bank of India in 2004 introduced an innovation in the form of Market Stabilization Scheme (MSS) for this purpose (Mohan and Kapur 2009). By and large, sterilization saw some success in Asia. For example, overnight market rates in these economies are said to have generally remained within the corridor set by the policy rates (Ho and McCauley 2008). Grenville (2008) notes that, with the exception of India, the central banks were able to insulate the growth of monetary aggregates from large purchases of foreign exchange (Grenville 2008), and Ho and McCauley (2008) find no evidence suggesting that the large reserve accumulation led to inflation. But sterilization has costs, the most important of which is the quasi-fiscal cost associated with the difference between the domestic interest rates paid on sterilization bonds and the foreign interest rates earned on international reserves. Sterilization is not a sustainable policy tool for large and persistent capital inflows.

Prudential regulation can mitigate the negative impacts of capital inflows in two ways. First, it can slow down the expansion of bank lending and also can minimize the deterioration of asset quality. Second, over the longer term, it can contribute to strengthening the financial system, making it less vulnerable to external shocks. India and China raised cash reserve requirement (CRR) ratios to moderate the expansionary

impact of large capital inflows on domestic monetary and credit aggregates between 2004 to around mid-2008 (Mohan 2008).²³ India also tightened prudential norms—risk weights and provisioning norms—during 2005-07 in regard to real estate and stock markets where relatively high credit growth was being witnessed (Mohan and Kapur 2009).²⁴

Capital controls can be effective for countries that have not substantially liberalized the capital account. In fact, these countries, notably China, India and Vietnam, fared better when they experienced a surge in capital inflows. In India, for example, access norms to external commercial borrowings were tightened in August 2007 in the wake of heavy inflows (which were relaxed in 2008); interest rate ceilings on non-resident deposits with the banking system were reduced during 2006-07 to moderate the inflows (which were raised again in 2008). For countries with a more open capital account, however, capital controls can entail significant side-effects. When Thailand introduced unremunerated reserve requirements (URR) in December 2006, it met an immediate and extremely adverse equity market reaction and was forced to withdraw the measure with respect to equity flows. The URR on fixed income flows, however, remained until March 2008 when capital inflows moderated. Korea was another country to introduce a form of capital control in April 2007, when it advised foreign banks not to respond to strong arbitrage incentives to swap dollars for Korean won. Limits on lending in foreign currency to Korean firms were reimposed; the non-taxable amount that foreign bank branches can borrow from their parent companies was reduced from 6 times capital to 3 (“thin capitalization rule”) in January 2008; the use of foreign exchange loans by banks was limited to real demand (financing imports and real investment) in August 2007. Although the empirical literature on the temporary use of capital controls is generally skeptical of their effectiveness (in view of substitutability between types of inflows and the scope for evasion), McCauley (2008) finds that these restrictions on capital flows in Asia were effective.

Fiscal policy tightening may well be the only viable tool to mitigate the effect of large and sustained capital inflows, short of allowing the exchange rate to appreciate. In Asia, fiscal policy has not yet been explored thoroughly as an instrument for managing

²³ The increases in these ratios were rolled back in late 2008 and early 2009 as capital flows reversed.

²⁴ The prudential norms were rolled back in late 2008 in the aftermath of the global financial crisis.

large capital inflows. Although there is no theoretical presumption on the impact of fiscal policy on capital flows, evidence from country experiences suggests that countries that use fiscal tightening tend to perform better than others in managing the adverse consequences of large capital inflows (Schadler 2008). Tightening fiscal policy in face of a surge in capital inflows has often been found to help reduce the risk of an overheating economy and the appreciation pressure on the domestic currency. Although fiscal policy is not a flexible policy instrument, fiscal tightening is consistent with the region's need to exit from the significant fiscal easing of recent months and should receive serious consideration from the region's policymakers as they face a pickup in the pace of capital inflows.

Regional cooperation to manage capital inflows should be explored over the medium term, to the extent that the reluctance of many economies to allow their currencies to appreciate lies at the heart of the capital inflow problem. Available measures, including sterilized intervention and capital controls, may be effective in the short run but many of them cannot be a permanent solution to large and sustained capital inflows. Some of the measures, such as fiscal tightening and prudential regulation, should be pursued in any case because they contribute to sound economic policymaking in the long run. But sooner or later, the economies in the region must address the issue of how much longer they should continue to limit the nominal appreciation of their currencies in face of capital inflows and let the balance of international reserves continue to rise. Regional cooperation, for example to coordinate a collective appreciation of their currencies against the US dollar, may be useful in helping these governments overcome the fear of losing export competitiveness through unilateral appreciation and avoid the consequence of dealing with the difficult challenge of managing large and sustained capital inflows. In order for such a solution to work, there must be an effective mechanism of policy dialogue and cooperation. There is much to be expected from the planned enhancement of surveillance among the ASEAN+3.

V. Conclusion

The recent experience with the implementation of macroeconomic policies in Asia suggests two overarching lessons. First, countries must secure adequate monetary and fiscal policy space during good times by maintaining sufficiently high interest rates and by keeping public debt-to-GDP ratios sufficiently low. Second, with sufficient policy space, countries can pull themselves out of a global recession of the magnitude last

seen almost 100 years ago, by easing monetary policy and expanding fiscal policy aggressively. The experience of Korea, Indonesia, Australia and New Zealand also suggests that substantial currency depreciation is helpful in stimulating aggregate demand, but this cannot be a lesson to be learned from the recent crisis experience. Against each depreciating currency is an appreciating currency. As a country with the only currency that has seen significant appreciation during the crisis, Japan has assumed an exorbitant share of the burden of adjustment. Rather, the world and the region should strive to create a system in which exchange rate policy does not serve as an instrument of countercyclical policy, especially when the whole world finds itself in recession.

In addition, the recent crisis experience teaches more specific lessons about fiscal policy. For instance, fiscal policy must be targeted at economic agents who are liquidity-constrained to be effective; general spending measures and tax cuts are ineffective and wasteful. Likewise, public investment can entail serious implementation problems especially when it involves a large sum. In view of the long-term usefulness of productive investment in infrastructure, however, it would be difficult to argue that governments should have no investment spending in their stimulus programs. Rather, the lesson seems to be that investment should ideally involve an acceleration of projects that are already under way. Over the medium term, building sound fiscal institutions is key to making fiscal policy effective. With a binding fiscal rule, governments are more likely to be able to use fiscal policy countercyclically without creating debt sustainability concerns, which could raise interest rates and offset any positive impact. In the light of the effectiveness of targeted spending measures and tax cuts, enhancing automatic stabilizers (designed to benefit those likely to be adversely affected by an economic downturn) should receive high priority in Asia.

How to exit from the extraordinary stance of monetary and fiscal policies in the region will be a challenge. In this context, some countries have already begun the process of unwinding the easy monetary policies in recent months. Australia, benefiting from a pickup of global demand for commodities, became the first G20 country, and the first country in the region, to raise the policy interest rate in October 2009. China and India followed in January 2010 by raising reserve requirements as they saw a moderate rise in inflationary pressure. As long as the global economy remains weak, however, there is always the risk of withdrawing stimulus prematurely. Especially for other economies whose recovery from the crisis is not yet firm, there is a tendency to err on

the side of caution. During and sequent to the lost decade, Japan tightened policies twice only to see the weak recovery to slip back. In April 1997, the Japanese government embarked on a program of fiscal consolidation by cutting investment spending and raising taxes (the consumption tax was raised from 3 to 5 percent), but the country was hit again by a negative shock (largely associated with the banking sector) in late 1997 and saw economic growth to fall for four consecutive quarters. And again, in August 2000, the Bank of Japan terminated its zero interest rate policy by raising the uncollateralized overnight call rate, only to find the Japanese economy adversely affected by the collapse of the IT bubble in the United States (it then returned to monetary easing in March 2001 with the adoption of quantitative easing). On the other side of the argument, Japan's aggressive macroeconomic policy easing, adopted in the aftermath of the Plaza Agreement of September 1985 but sustained too long after the country's recovery from recession in late 1986, is largely credited as a major factor contributing to the bubble economy of the late 1980s. The risk of being too late must be carefully weighed against the risk of being too early.

However Asia may eventually exit from the easy macroeconomic policies over the coming months, one thing is certain: it cannot repeat the mistakes of the past. Asian economies cannot go on keeping their exchange rates stable against the US dollar and piling up international reserves. This would be the same recipe that led to unsustainable global imbalances, the unwinding of which in part contributed to the global financial crisis. Global rebalancing and domestic macroeconomic stability require that the region's economies do two things: (i) allow their currencies to appreciate against the US dollar; and (ii) exit from the easy monetary policy promptly when recovery takes hold even if it means raising interest rates ahead of other countries.

Regional cooperation may help these governments overcome the fear of unilateral appreciation and loss of export competitiveness. In this respect, the ongoing multilateralization of the CMI, with a strengthened surveillance mechanism, should press forward. Such a scheme should also be able to reduce the incentive to accumulate foreign exchange reserves for a precautionary reason. A closer framework of macroeconomic coordination would make the use of countercyclical fiscal policy more effective when an extraordinary event calls for fiscal activism again (Kawai and Zhai, 2009). Both theory and empirical work (e.g., Eskesen 2009) suggest that fiscal policy coordination would be the only way for small, highly open economies to benefit substantially from discretionary fiscal policy. Exchange rate cooperation can be made

more permanent. At a minimum, there must be a mechanism of dialogue when the region's currencies diverge from each other abruptly and substantially (as they did during the recent crisis, as much as 80 percent in the matter of a few months). In view of the need for global rebalancing of demand, cooperation can foster a *collective* appreciation of the region's currencies against the US dollar. The immediate focus of such cooperation is not necessarily on the stabilization of intra-regional exchange rates (though helpful in itself) but on increasing the currencies' collective flexibility against the US dollar.

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Appendix I. Global Finance Crisis: Major Monetary Policy Actions
in Selected Asian Economies, Fall 2008-Early 2010

| Economy | Major actions |
|-----------|--|
| Australia | <ul style="list-style-type: none"> ● On September 3, 2008, the cash rate was cut by 25 basis points to 7 percent; on October 8, a further 100 basis point cut to 6 percent was made; from November to April 2009, the cash rate was cut four times by a total of 300 basis points to 3 percent. ● On September 24, 2008, a US\$10 billion swap was arranged with the US Federal Reserve to address the elevated pressures in US dollar short-term funding markets. ● On September 24, 2008, a domestic term deposit facility was set up to enhance the flexibility of liquidity management operations. ● On October 8, 2008, the Reserve Bank of Australia removed restrictions on using residential mortgage-backed securities and asset-backed commercial paper as collateral in repo operations. ● On October 7, 2009, the cash rate was raised by 25 basis points to 3.25 percent, followed by similar adjustments on November 4 and December 2 (in early 2010 the rate stood at 3.75 percent). |
| China | <ul style="list-style-type: none"> ● On September 16, 2008, the one-year RMB benchmark lending rate was cut by 27 basis points, from 7.47 percent to 7.2 percent; the rate was cut further on four occasions by an additional 189 basis points (to 5.31 percent) through December 2008. ● On September 25, 2008, RMB reserve requirements were lowered; reserve requirements were reduced further on three occasions through December 2008. ● On October 27, 2008, conditions for housing loans were eased. ● In November 2008, “moderately loose” monetary policy was announced. ● On November 27, the one-year central bank liquidity lending rate was lowered from 4.68 percent to 3.6 percent; the rediscounting rate was lowered from 4.32 percent to 2.97 percent; on December 23, these rates were further reduced to 3.33 percent and 2.80 percent, respectively ● On January 10, 2010, reserve requirements were raised in a reversal of easy monetary policy. |
| India | <ul style="list-style-type: none"> ● On October 11, 2008, the cash reserve ratio (CRR) was cut by 250 basis points from 9 percent to 6.5 percent of net demand and time liabilities (NDTL); the CRR was cut further by an additional 150 basis points (to 5.0 percent in January 2009). ● From October 20, 2008 to April 21, 2009, the repo rate was cut by 425 basis points to 4.75 percent. ● From December 8 to April 21, 2009, the reverse repo rate was cut by 275 basis points to 3.25 percent. ● On November 8, 2008, there was a one-time cut in statutory liquidity requirements, by 100 basis points to 24 percent of NDTL. ● A scheme was introduced to repurchase market stabilization bonds. |

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| | <ul style="list-style-type: none"> ● A 14-day term repo facility was introduced to allow banks to on-lend to other institutions. ● Foreign exchange (rupee-dollar) swaps with local banks were introduced. |
| Indonesia | <ul style="list-style-type: none"> ● On September 16, 2008, the overnight repo rate was lowered in order to maintain liquidity. ● On September 23, 2008, the term for fine tune operations was extended from 1-14 days to 1day-3 months in order to secure greater flexibility for liquidity management. ● October 7, 2008, the Bank Indonesia (BI) rate was raised by 25 basis points to 9.5 percent in order to curb inflation and to stabilize the exchange rate. ● On October 14, 2008, the maximum term for foreign exchange swaps was extended from 7 days to one month in order to provide dollar liquidity. ● On November 18, 2008, the terms for access to the central bank's liquidity facility were relaxed. ● On December 4, 2008, the BI rate was cut for the first time after the onset of the global financial crisis, from 9.5 percent to 9.25 percent; the BI rate was cut further eight more times, by a total of 375 basis points, to reach 6.5 percent in August 2009. ● On December 5, 2008, a scheme to purchase exporters' bankers' acceptances was introduced. ● Banks' reserve requirements were lowered. ● Liquidity was injected through repos. ● The range of eligible collateral for short-term central bank financing was expanded. |
| Japan | <ul style="list-style-type: none"> ● October 14, 2008, the range of eligible Japanese government bonds (JGBs) for repo operations was expanded, and the minimum fee rate for the Security Lending Facility was reduced from 1 percent to 0.5 percent; it was announced that the frequency and size of CP repo operations would be increased; and the range of asset-backed CP acceptable as collateral was broadened; and US dollar funds-supplying operations were expanded. ● October 31, 2008, the uncollateralized overnight call rate was cut by 20 basis points, from 0.5 percent to 0.3 percent; the basic loan rate under the complementary lending facility was cut by 25 basis points, from 0.75 percent to 0.5 percent; and the Complementary Deposit Facility was introduced, under which the Bank of Japan pays interest on excess reserves, in order to supply liquidity. ● December 2, 2008, the range of corporate debt acceptable as collateral was expanded (from A- or above to BBB or above); and a scheme was introduced to provide liquidity against corporate debt as collateral at the average uncollateralized overnight call rate. ● On December 19, 2008, the uncollateralized call rate was cut further by 20 basis points (to 0.1 percent); the basic loan rate under the complementary lending facility was reduced further by 20 basis points (to 0.3 percent). ● In January 2009, outright purchases of JGBs were increased from 1.2 trillion yen per month to 1.4 trillion yen; outright purchases of CP and ABCP were introduced, up to 3 trillion yen. |

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| | <ul style="list-style-type: none"> ● In February 2009, outright purchases of corporate bonds were introduced, up to 1 trillion yen ● In March 2009, outright purchases of JGBs were increased to 1.8 trillion yen per month. |
| Korea | <ul style="list-style-type: none"> ● On October 9, 2008, the base rate was cut by 25 basis points from 5.25 percent to 5 percent; the base rate was cut five more times by a total of 200 basis points to 2 percent in February 2009. ● On December 3, 2008, the Bank of Korea began to pay interest on banks' required reserves in order to provide incentives for lending. ● Swap lines with foreign central banks totaling \$90 billion were arranged, including a \$30-billion swap with the Federal Reserve in October 2008 (about \$16 was drawn at the peak), a 180 billion yuan/38 trillion won swap with the People's Bank of China in December 2008, and an expansion of the existing swap arrangement with the Bank of Japan in December 2008, from \$3 billion to \$20 billion. ● In November and December 2008, the range of eligible securities and eligible financial institution counterparties was expanded for open market operations and repurchase operations. ● In November 2008, a scheme was introduced to provide up to 5 trillion won to financial institutions subscribing to the Bond Markets Stabilization Fund. |
| Malaysia | <ul style="list-style-type: none"> ● On October 16, 2008, the scope of eligible institutions was expanded for the central bank's liquidity facility. ● On November 24, 2008, the overnight policy rate was cut to 3.25 percent, from 3.5 percent; the policy rate was further cut in January and February to reach 2 percent. ● In December 2008, statutory reserve requirements were reduced, from 4 to 3.5 percent. ● A bilateral swap arrangement was agreed with the People's Bank of China for 80 billion yuan and 40 billion ringgit. |
| Philippines | <ul style="list-style-type: none"> ● On October 17, 2008, a repo facility was introduced to provide US dollar funds; the range of eligible collateral was expanded for the standing peso repo facility. ● On November 6, 2008, the amount of available funding was increased under the peso rediscounting facility, from 20 billion peso to 40 billion peso. ● On November 14, 2008, reserve requirements on bank deposits were reduced by 2 percentage points. ● On December 18, 2008, the reverse repurchase (RRP) rate was reduced from 6 to 5.5 percent, and the repurchase (RP) rate from 8 to 7.5 percent; these key policy rates were lowered four more times by a total of 1.25 percent to reach 4 percent and 6 percent, respectively, in July 2009. |
| Singapore | <ul style="list-style-type: none"> ● October 10, 2008, the appreciating trend was removed from the NEER band (policy shifted to a zero percent appreciation of the NEER). ● October 30, 2008, a \$30 billion swap was agreed with the US Federal Reserve. ● On April 14, 2009, the NEER band was re-centered around the prevailing level of the exchange rate (indicating an effective devaluation of the |

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| | Singapore dollar). |
| Taipei, China | <ul style="list-style-type: none"> ● On September 18, 2008, reduced required reserve requirements were lowered on bank deposits; the list of securities acceptable as collateral for central bank lending was expanded. ● On September 25, 2008, the key policy rates were cut by 12.5 basis points each (the discount rate from 3.625 to 3.5 percent; the collateralized accommodation rate from 4 to 3.875 percent, and the uncollateralized accommodation rate from 5.875 percent to 5.75 percent): the policy rates were cut six more times by a total of 225 basis points to reach 1.25, 1.625 and 3.5 percent, respectively, in February 2009. ● On September 25, 2008, the scope of repo facility operations was broadened, by expanding the list of eligible counterparties. ● In October 2008, the credit lines were raised for lending to securities firms. |
| Thailand | <ul style="list-style-type: none"> ● On December 3, 2008, the policy interest rate (the overnight repo rate) was cut by 100 basis points, from 3.75 to 2.75 percent; the policy rate was cut two more times by an additional 125 basis points to reach 1.5 percent in February 2009. |

Sources: national central banks.

Appendix II. Global Finance Crisis: Major Fiscal Policy Actions in Selected Asian Economies, 2008- 2010

| Economy | Major actions |
|-----------|---|
| Australia | <ul style="list-style-type: none"> ● Discretionary fiscal measures, amounting to 0.8 percent of GDP in 2008, 2.9 percent in 2009, and 2 percent in 2010, centered on temporary transfers to almost 40 percent of the population (of up to A\$900 each) and temporary increases in infrastructure spending. |
| China | <ul style="list-style-type: none"> ● In November 2008, a 4 trillion yuan stimulus package (equivalent to 13 percent of GDP) for 2009-10 was announced, including 908 billion yuan annual central government outlays for public investment in housing, transportation infrastructure, public utilities, rural development and others. ● In January 2009, additional expenditure measures of 1.45 trillion yuan were announced in January 2009, including support to healthcare reforms and investment spending on scientific and technical innovation. |
| India | <ul style="list-style-type: none"> ● In December 2008, January 2009, and February 2009, three fiscal stimulus packages were introduced, totaling 1.86 trillion rupees or 3.5 percent of GDP. The measures included a 4-percentage point cut in excise duty, additional spending, authorization for state governments to borrow, and an interest subsidy on export finance. India Infrastructure Finance Company was authorized to raise Rs 400 billion (0.8 percent of GDP) over the next 18 months. States were allowed to exceed the 3 percent fiscal deficit target in the next fiscal year. ● The revised FY2009/10 budget contained additional measures, including 391 billion rupees for labor market initiatives for the rural sector. |
| Indonesia | <ul style="list-style-type: none"> ● A stimulus package of 73 trillion rupiahs amounting to 1.5 percent of GDP was announced for 2009 (against the background of election-related spending), including public investment on infrastructure; 60 percent of the measures involved tax cuts and exemptions, and another 25 percent for |

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| | <p>subsidies, with only about 17 percent allocated to infrastructure.</p> <ul style="list-style-type: none"> • A stimulus package of 61 trillion rupiahs was announced as part of the 2010 state budget, including a much larger share of spending on infrastructure than the 2009 package. |
| Japan | <ul style="list-style-type: none"> • Four packages (one main budget and three supplementary budgets) were announced, totaling roughly 26 trillion yen in fiscal measures and 130 trillion yen in projects. The stimulus measures, amounting to 2.6 percent of GDP in 2009 and 2.2 percent of GDP in 2010, included cash payments, public works, subsidies for energy-efficient purchases, a higher gift tax exemption to support spending, and vocational training. • With a change in government in September 2009, a new stimulus package was prepared, totaling 7.2 trillion yen in fiscal measures and 24.7 trillion yen in projects. • The main budget for fiscal 2010 represents a 4.2 percent increase from the previous year. |
| Korea | <ul style="list-style-type: none"> • In November 2009, the first stimulus package was announced, totaling about 14 trillion won (equivalent to 1.4 percent of GDP), including 4.6 trillion won for infrastructure spending, 1 trillion won as transfers to low income households, and 3 trillion won in tax cuts. • In December 2009, the second package of 35.6 trillion won (equivalent to 3.5 percent of GDP) was approved, including 25 trillion won to social overhead capital projects and 5 trillion won for labor market measures. • In January 2009, another stimulus plan was announced, providing 50 trillion won of investment in environmental-friendly projects over 2009-2012 (with 38 trillion won to be financed out of the national budget). • In March 2009, a supplementary budget (of 28.9 trillion won or 2.8 percent of GDP) was approved, including 17.7 trillion won in fiscal expenditures (e.g., labor market measures and support to SMEs) and the remaining 11.2 trillion won to cover the expected revenue shortfall. • In August 2009, further tax cuts were announced for low income groups, self-employed entrepreneurs, and SMEs. |
| Malaysia | <ul style="list-style-type: none"> • In November 2008 and March 2009, two stimulus packages were announced, totaling about 10 percent of GDP. The first package amounted to 1 percent of GDP, with 85 percent directed towards improving infrastructure. The March 2009 package involved 60 billion ringgit or appropriately 9 percent of GDP, but was to be spent over two years, including funding and consumption subsidies to support certain sectors, the creation of funds to assist SMEs, corporate investment through the government fund (Khazanah) in strategic sectors, and infrastructure spending. |
| Philippines | <ul style="list-style-type: none"> • In February 2009, a stimulus package was announced, totaling 330 billion peso or 4.1 percent of GDP, of which 100 billion peso was earmarked to large infrastructure spending, 160 trillion pesos to community-level infrastructure projects, and 40 billion peso to income tax cuts. • The target year for fiscal consolidation was postponed to 2011. |
| Singapore | <ul style="list-style-type: none"> • In January 2009, a stimulus package was prepared, totaling about 8 percent of GDP. The package included incentives for companies to maintain or increase their workforce through grants, the assumption of 80 percent of loan loss risk in bank lending, public investment on infrastructure, and |

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| | <p>spending on welfare.</p> |
| Taipei, China | <ul style="list-style-type: none"> • From September 2008 to February 2009, a series of fiscal stimulus measures were announced, totaling about NT350 billion. The packages included tax breaks for new business investment, discounted sales of industrial land, increased financial support for SMEs, and public investment; cash transfers to low income families, subsidies for consumers to buy energy saving products; shopping vouchers (NT\$3,600) given to all citizens. • NT500 billion for infrastructure spending would be spent over 4 years, 2009-12. |
| Thailand | <ul style="list-style-type: none"> • Fiscal stimulus measures for 2008/09 were announced, amounting to 2.4 percent of GDP. The package included transfers and subsidies to the vulnerable and credit-constrained households (about 1 percent of GDP, approved in January 2009), tax measures (0.7 percent), and increased public investment (0.5 percent). • In March 2009, a medium-term stimulus package of about B1.5 trillion, equivalent to 15 percent of GDP, was approved; over 70 percent of the measures relate to infrastructure investment, to be spent over the next three years, 2010-12. |

Sources: Jia (2010); Kumar and Soumya (2010); Jitsuchon (2010); Patunru and Zetha (2010); Doraisami (2009); Park et al. (2010); and IMF, various staff reports for Article IV consultations, latest issues.

Table 1. Macroeconomic Conditions at the Onset of the Global Financial Crisis in Selected Asian Economies

| Economy | GDP gap (percent) 1/ | | | CPI inflation (percent per year) | | Key policy interest rate (percent per year) | General government fiscal balance (percent of GDP) | Gross public sector debt (percent of GDP) |
|---------------|----------------------|------------|------------|----------------------------------|----------|---|--|---|
| | 3Q2008 (1) | 4Q2008 (2) | 1Q2009 (3) | 2007 (4) | 2008 (5) | Peak in 2008 (6) | 2007 (7) | 2007 (8) |
| Australia | 0.8 | -0.4 | -0.8 | 2.3 | 4.4 | 7.25 | 1.5 | 9.8 |
| China | 0.7 | -0.9 | -1.1 | 4.8 | 5.9 | 7.47 | 0.9 | 20.2 |
| India | 0.9 | -0.6 | -1.2 | 6.4 | 8.4 | 9.0 | -5.8 2/ | 80.5 |
| Indonesia | 1.0 | -0.1 | -0.5 | 6.0 | 9.8 | 9.5 | -1.2 3/ | 35.1 |
| Japan | 1.2 | -1.8 | -5.0 | 0.0 | 1.4 | 0.5 | -2.5 | 187.7 |
| Korea | 2.1 | -3.8 | -4.4 | 2.5 | 4.7 | 5.25 | 3.5 3/ | 29.6 |
| Malaysia | 2.4 | -0.3 | -5.9 | 2.0 | 5.4 | 3.5 | 1.5 | 50.6 |
| Philippines | 1.4 | 0.6 | -2.5 | 2.8 | 9.3 | 6.0 | -1.7 3/ | 60.9 |
| Singapore | 1.2 | -4.1 | -8.2 | 2.1 | 6.5 | n.a. | 11.1 | 96.9 |
| Taipei, China | 2.9 | -5.4 | -8.2 | 1.8 | 3.5 | 3.625 | -0.2 | n.a. |
| Thailand | 2.2 | -3.4 | -5.5 | 2.2 | 5.5 | 3.75 | -0.2 | 38.1 |

Notes: 1/ percentage deviations from quarterly GDP series detrended by HP filter; 2/ fiscal year; 3/ central government only.

Sources: International Monetary Fund, International Financial Statistics, on-line database; International Monetary Fund, World Economic Outlook database, October 2009; FAD (2009), Annex Table 1; Central Bank of the Republic of China; and calculations by Peter Morgan of the ADB Institute, except for Australia (for which the same methodology was replicated by the authors).