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**The US Financial Crisis, Global Recession and Monetary Policy:
An Assessment from the East Asian Perspective**

A.M. Akhtar Hossain*
School of Business
Faculty of Business and Law
University of Newcastle
NSW 2308, Australia

Tel: 61-2-49218842

Fax: 61-2-49216911

Email: akhtar.Hossain@newcastle.edu.au

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ABSTRACT This paper reviews the sources of the US financial crisis with a linkage to the East Asian currency crisis of the late 1990s, discusses its impact on the global economy and draws implications for the roles of monetary and fiscal policies in macroeconomic management. The sources of the US financial crisis are reviewed from a global context, with an emphasis on factors that have created large current account surpluses in East Asia and caused associated capital flows to the United States since the early 2000s. The large-scale current account surpluses in some East Asian countries were partly due to their heavily depreciated real exchange rates of currencies that resulted from the currency crisis of the late-1990s. Available evidence, however, does not suggest that these countries maintained undervalued real exchange rates as a strategy of rapid economic growth. In contrast, the United States adopted expansionary fiscal and monetary policies for fear of deflation since the collapse of the dot.com boom in 2002 that might have raised unemployment or slowed economic growth. Given the dominant position of the United States in the global economy, the US financial crisis that started in 2007 impacted both developed and developing economies and the panic situation that has prevailed since then has affected both credit markets and trade flows and consequently, has caused global recession. In response, following the advice of the IMF in particular, many developed and developing countries have implemented discretionary fiscal and monetary measures to revive their recessionary economies. Whether such expansionary monetary and fiscal measures have been necessary to raise output or lower unemployment, however, remains a matter of contention. The paper has drawn some lessons from, and policy implications of, this crisis, especially for developing Asia. In a global context, the US financial crisis has reinforced the importance of rules-based monetary and fiscal policies for macroeconomic stability.

KEY WORDS: The US financial crisis, current account deficits, global saving glut, global recession, monetary policy, fiscal stimulus

JEL Classification: F32, F41

The factors behind the ongoing global financial crisis that started in the United States in mid-2007 are yet to be firmly established. The global impact of the US financial crisis has been much deeper and broader than it was predicted. Some commentators have compared the current crisis with the Great Depression of the 1930s. The policy responses of this crisis have so far been comprehensive, in the sense that they encompass monetary, fiscal, trade and social policies. The present paper reviews the sources of the US financial crisis with a linkage to the East Asian currency crisis of the late 1990s, discusses its impact on the global economy and draws implications for the roles of monetary and fiscal policies in macroeconomic management.

The origins of the US financial crisis and its consequences were predicted by some prominent American economists such as Krugman (2005) and Frankel (2006). Professor Roubini, who was called ‘Dr Doom’ by Mihm (2008), also announced the brewing up of this crisis in September 2006.¹ Other economists made similar prediction

¹ Loungani (2009:4) remarks on Roubini’s thinking about this issue as early as 2005:

Starting in 2005, and increasingly in 2006, Rubini says the runup in asset prices, relaxed lending practices of the financial and corporate sectors, and the large current account deficits had him thinking: “Hey, wait a moment. The U.S. looks like an emerging market. Why hasn’t it gone belly up?”

after observing the introduction of expansionary monetary and fiscal policies in the United States since the 2001 recession that later created housing bubbles and associated large-scale current account deficits (Frankel, 2006; Mussa, 2007) (Table 1).

Side by side with popular writings in most newspapers and magazines, a body of academic literature on the global financial crisis has now appeared in journals. Most authors have observed that the factors that led to the US financial crisis have been interrelated. As both domestic and international factors took a long time to create this crisis, they analyse it in a historical context.² To be specific, the US financial crisis bears some resemblance to the East Asian currency crisis of the late 1990s. Like the East Asian currency crisis, the US financial crisis has been associated with massive foreign capital inflows.³ In East Asian crisis, large-scale foreign capital funded investment mostly in the private sector. Foreign funds were, however, intermediated by a weak, poorly supervised financial sector while the governments' fiscal accounts were largely balanced. The East Asian currency crises were therefore not directly linked to the profligacy of the governments.⁴ In the US financial crisis, large-scale foreign capital inflows funded the US budget deficits, as well as housing investment and consumption for which funds were intermediated through a weakly unregulated and poorly supervised financial sector.⁵

In the East Asian crisis, sudden, massive outflows of capital caused a sharp depreciation of the currencies of most affected countries. This led to banking and financial crises because of mostly unhedged foreign currency-denominated liabilities of the financial sector. In the United States, the busting of housing bubbles induced investors to dump most of high-risk, mortgaged-backed securities. This caused liquidity and solvency problems for financial institutions. The associated credit squeeze⁶ affected

² See Claessens, Kose and Terrones (2008) and references therein.

³ There are, however, differences between the nature of capital flows to the United States and East Asian countries. Capital flows to the United States were largely passive, in the sense that they financed large current account deficits generated by expansionary monetary and fiscal policies in the United States. In contrast, in East Asia, capital flows were largely active as they were part of portfolio diversification of institutional investors of developments countries who were in search of high returns in rapidly growing East Asian economies. Until the currency crisis, most East Asian countries did not experience large-scale policy-induced current account deficits. For details, see Hossain (2006), IMF's World Economic and Financial Surveys: *World Economic Outlook* (various issues) and references therein.

⁴ This contrasted with the Latin America debt crises of the 1980s. For details, see Sachs and Larrain (1993).

⁵ Since the East Asian currency crisis, investment environment in East Asian countries did not improve rapidly and therefore was not highly attractive for many investors. In contrast, the booming US economy attracted some foreign capital, which financed housing investment and consumption.

⁶ Blanchard (2009) points out that in a modern context, credit squeeze reflects the inability of financial institutions at risk to borrow from the money markets and therefore they need to sell assets sometimes at 'fire-sale-prices' to say maintain their capital asset ratios. Failing to borrow funds from outside investors, they need to lower the size of their balance sheets by selling assets or reducing lending.

economic activity in the United States, which had a follow-on effect on economic activity in other countries.

In the current environment, there is yet to be any sharp fall in the value of the US dollar, although this may happen if the global economic environment does not improve soon and/or the United States adopts policies to lower its budget deficits. It appears that investors have moved away from the toxic financial assets and shifted their funds to safer government securities. This has kept the US Treasury bill rate relatively low. Whether there would be a large-scale move away from the US dollar-denominated financial assets is yet to be seen. In fact, Frankel (2006), for example, suggested that a future crash in the United States was more likely to come in bond markets, than in currency markets, equity markets, commodity markets, or even real estate markets although these markets remain vulnerable and may come under attack at any time. As the event evolved, the housing sector was hit hard which had a massive impact on the equity markets.

The epicentre of the crisis remains the United States. Some US policy-makers continue to believe that this crisis originated from outside and has nothing to do with economic policies of the United States. This assessment differs from the East Asian crisis in that the countries concerned accepted their excesses and therefore introduced both structural and economic reforms. The contagious effects of the US crisis have spread throughout the globe and their implications for the roles of monetary and fiscal policies could be far reaching.⁷ The remainder of the paper explores in detail the origins of the US financial crisis, examines its implications for the fiscal and monetary policies and draws some lessons for developing Asia which has heavily integrated into the global economy.

Origins of the US Financial Crisis: Alternative Views

Economists remain divided on the roots of the US financial crisis because it can be analysed from both the US and global perspectives. Looking from a macroeconomic viewpoint, the issue can be simplified as the debate on the origins of large-scale current account imbalances in the United States vis-à-vis East Asia in general and China in particular. Interestingly, the present debate has some similarity with the debate on large-scale current account deficits of the United States with Japan during the early 1980s (Ito, 2009). As for the case of the earlier US-Japan trade friction, the present crisis can be examined from either the US side or the East Asian (or the Chinese side) or both.

Monetary origins of the US financial crisis

There are at least two dominant views on the origins of the US financial crisis. The first is that loose monetary policy in the United States, especially during 2002-2004, created a housing bubble in this country that busted in mid-2007 when international oil prices rose

⁷ The IMF's World Economic Outlook Update (April 2009) has reported that the global economy has started to pull out of a recession but the recovery is expected to be sluggish. Therefore the view that the world economy may head towards depression appears to be alarmist.

sharply, requiring an increase in the interest rate to control inflation.⁸ The housing bust in the US was reflected in mortgage delinquencies and foreclosures on a massive scale. Consequently, most financial institutions became illiquid and/or insolvent when investors dumped risky mortgage-backed securities. Although the US government rescued some of the ‘too-big-to-fail’ financial institutions and offered support to the others on the ground that any further loss of confidence of the public would lead to a collapse of its financial system, the sharp rise in credit risk and the plummeting of the capital base of financial institutions resulted in a pervasive credit squeeze and interbank lending failure. Furthermore, the loss of consumer and business confidence lowered consumption⁹ and investment demand which diminished economic activity. As happened in East Asia during the currency crisis of the late 1990s, the financial and trade linkages of developed and developing economies with the United States spread the crisis across the globe (IMF’s *World Economic Outlook*, various issues).

Taylor (2008a:1-2) has postulated the ‘monetary excess’ hypothesis for the origin of the US financial crisis and also provided some empirical evidence:

The classic explanation of financial crises, going back to hundreds of years, is that they are caused by excesses – frequently monetary excesses – which lead to a boom and an inevitable bust. In the recent crisis we had a housing boom and bust which in turn led to financial turmoil in the United States and other countries. I begin by showing that monetary excesses were the main cause of that boom and the resulting bust... Figure 1 [not reported] shows that the actual interest rate decisions fell well below what historical experience would suggest policy should be. It thus provides an empirical measure that monetary policy was too easy during this period [2001-2005], or too “loose fitting” as *The Economist* puts it. This was an unusually big deviation from the Taylor rule. There was no greater or more persistent deviation of actual Fed policy since the turbulent days of the 1970s. So there is clear evidence that there were monetary excesses during the period leading up to the housing boom.

Using the structural vector-autoregressive (SVAR) modeling approach, Brackke and Fidora (2008) have investigated three structural shocks in different regions of the global economy: (1) monetary shocks (excess liquidity hypothesis), (2) preferences shocks (savings glut hypothesis), and (3) investment shocks (investment drought hypothesis). Their results also show that monetary shocks explain the largest part of the variation in real and financial imbalances and financial market prices. Therefore they have concluded that a liquidity glut has been the more important driver of real and financial imbalances in the United States and emerging Asia than any global savings glut (discussed below).

The global saving glut hypothesis

An alternative view on the US financial crisis is that the low interest rates in the United States during 2001-2005 were caused by some global factors that were beyond the control of the monetary authorities in the United States. To be precise, the low real interest rates in the United States were the outcome of an upsurge of global savings – the global saving glut hypothesis. This hypothesis was propagated by Ben Bernanke, the present Chairman of the Federal Reserve System (the Fed) in 2005 (Bernanke, 2005).

⁸ This was reflected in the rise in the Treasury bill rate from 1.4 per cent in 2004 to 4.4 per cent in 2007. This represented a rise in the real interest rate from -1.3 per cent in 2004 to 1.6 per cent in 2007 (Table 2).

⁹ This reflected a decline in household wealth.

He, as a member of the Federal Reserve Bank Board, delivered a speech on 10 March 2005, which was entitled, 'The Global Saving Glut and the US Current Account Deficit'. In this speech, he argued that the major cause of the US current account deficit was not due to US domestic policy rather it was due to excessive global savings (Bernanke, 2005:8):

I have presented today a somewhat unconventional explanation of the high and rising U.S. current account deficit. That explanation holds that one of the factors driving recent developments in the U.S. current account has been the very substantial shift in the current accounts of developing and emerging-market nations, a shift that has transformed these countries from net borrowers on international capital markets to large net lenders. This shift by developing nations, together with the high saving propensities of Germany, Japan, and some other major industrial nations, has resulted in a global saving glut. The increased supply of saving boosted U.S. equity values during the period of the stock market boom and helped to increase U.S. home values during the more recent period, as a consequence lowering U.S. national saving and contributing to the nation's rising current account deficit.

Thus, according to Bernanke, the important reason behind the global saving glut was the metamorphosis of developing world from a net user to a net supplier of funds to the international capital markets. This shift occurred because of financial turbulence in developing countries, for example, the East Asian financial crisis of the late 1990s. Other crises in developing countries included the Mexican crisis of 1994, the Russian crisis in 1998, the Brazilian crisis of 1999 and the Argentinean crisis of 2002. In each of these crises, the borrowed funds of developing countries were intermediated through poorly-regulated or poorly-supervised banking systems and not used productively. Large-scale capital inflows, which were often linked to expansionary government policies, led to overvalued real exchange rates which created unsustainable external imbalances. However the East Asian case was different where the private sector, rather than the government, was behind the large-scale borrowing of funds from international banks which channeled funds of large institutional investors who were in search of high returns. The sudden and large-scale capital outflows from Thailand in mid-1997 started the East Asian currency crisis, which quickly spread in the neighbouring countries such as Malaysia, Indonesia and South Korea. These countries were 'forced by the IMF' to abandon their exchange rate pegs and to float their currencies. As an overreaction, the currencies of these countries experienced sharp depreciations of such magnitudes that were sufficient to generate large current account surpluses.¹⁰ Some major developing countries in the region, such as China and India, which did not suffer from the currency crises had by this time achieved success as exporters of labour-intensive goods through maintaining competitive real exchange rates and opening their economies to foreign direct investment in export-oriented sectors. Over time, these countries, by maintaining large current account surpluses, had accumulated foreign reserves large enough to serve as 'war chests'.

An implication of the global saving glut hypothesis is that the policy-makers in the United States were able to argue that the causes of global imbalances lie outside

¹⁰ The sharp depreciation of the real exchange rate was associated with a reduction in government spending. This represents a standard IMF structural adjustment programme that intends to lower aggregate expenditure (given income) for generating trade surplus. See Sachs and Larrain (1993) for an illustration of how a country experiencing trade deficit turns into a country of trade surplus under a structural adjustment program.

the United States and are not in any way linked to the poor quality of monetary and fiscal decisions. The *Economist* (2005b:2), for example, criticised this view as self-serving in a report at the time:

His [Bernanke's] suggestion that the causes of global imbalances lie elsewhere conveniently deflects attention from monetary and fiscal decisions made by American policymakers. It suggests that Mr Greenspan's loose monetary policy and George Bush's tax cuts are not responsible for the imbalances in the global economy. That may seem a little self-serving, coming from a man who has subsequently moved from the Federal Reserve to become Chairman of Mr Bush's Council of Economic Advisors. Taken at face value, the notion of a global saving glut is not borne out by the facts. 'Glut' suggests an unusually large amount, as in a summer glut of strawberries. In fact, figures published in the IMF's latest *World Economic Outlook* show that the rate of global saving as a proportion of global output, measured at market exchange rates, has mostly been heading downhill over the past 30 years, with a particularly steep plunge between 2000 and 2002... Although it has since risen slightly, the global saving rate is now close to its average for the past two decades, rather than unusually high.

The *Economist* in an earlier issue (2005a) suggested that America's loose monetary policy, which was reflected in the negative real interest rate, had in fact spilled abroad and caused a rapid growth of the global liquidity at an annual rate of more than 20 percent during 2003-2004.

The next section of this paper examines the reasons behind expansionary fiscal-monetary policy mix in the United States since the early 2000s.

The Fed's Discretionary, Expansionary Monetary Policy

The United States operates under a floating exchange rate system. Therefore it has monetary policy independence, in the sense that it can set a policy interest rate or change the money supply growth rate but not both at the same time.¹¹ The idea that the United States introduced a discretionary, expansionary monetary policy implies that the Fed set the policy interest rate too low or increased the money supply growth at a rate which was higher than the rate compatible with its medium-term objective of price stability – meaning low and stable inflation. The reference interest rate is the Taylor rule-generated interest rate that links the policy interest rate with 'output-gap' and inflation deviation from a pre-determined target rate of inflation.¹² Taylor (2008a,2009) argues that the Fed kept its interest rate too low compared with the interest rate that would have prevailed if the Fed had operated under the Taylor-rule. He considers this evidence to support his view that the Fed adopted a discretionary, expansionary monetary policy during 2001-2005.

This raises the question why did the Fed adopt a discretionary, expansionary monetary policy during 2001-2005? Mishkin (2007), in a general context, views it as one of the problems with the US strategy of monetary policy.¹³ Contrary to the view that the

¹¹ Since 1982 the Fed has conducted monetary policy in a discretionary manner without having the benefit of an explicit nominal anchor to prices. Unlike some developed countries, the United States does not have a monetary or an inflation targeting strategy of monetary policy. In the absence of such a strategy, monetary policy remains non-transparent and lacks credibility. For details, see Hossain (2009).

¹² For an illustration of the Taylor rule, see Blanchard (2006, pp.544-45).

objective of monetary policy should be long-term price stability, Alan Greenspan, as Chairman of the Fed, conducted discretionary monetary policy to achieve multiple objectives. He simultaneously pursued economic growth (or employment) and price stability, as objectives of monetary policy. Apparently he was consistent with the Fed's charter by targeting employment as an objective of monetary policy. However, as it is now widely accepted, monetary policy in the medium or long-run cannot change output or employment and therefore it should target inflation as the sole (or primary) objective of monetary policy.

It appears that the rapid opening of the US economy to foreign trade since the early 1980s led to a low-inflationary environment because of the arrival of cheap imports from China and other Asian countries. Consequently, the Fed was able to target unemployment as its key objective of monetary policy while inflation remained subdued due to cheap imports. Achieving and maintaining low unemployment became a worthwhile objective of monetary policy especially during Democrat Bill Clinton's Presidency. Another 'worthwhile goal' was added to the list of monetary policy objectives during the conservative Republican Presidency of George W. Bush. This additional goal was raising the proportion of house ownership in the United States through a low interest rate policy in the midst of lax regulations of housing mortgages. Taylor (2009:3) argues that 'these low interest rates led to the acceleration of the housing boom and to the increased use of adjustable rate mortgages and other-increasing searches for yield. The boom then resulted in the bust, with delinquencies, foreclosures, and toxic assets on the balance sheet of financial institutions in the USA and other countries.'

Monetary policy and current account deficits in the United States: An illustration

The housing boom-bust cycle in the United States has some resemblance to asset bubble-bust cycle in Japan. In each case, the country concerned misused monetary policy to achieve an unachievable objective. Economists generally attributed the stability of the Japanese economy and low inflation in this country since the mid-1970s to the adoption by the Bank of Japan (BOJ) of a monetarist policy framework that saw the introduction of a stable long-run money growth to control inflation (Friedman, 1983b; Cargill and Hutchison, 1988). Although the BOJ remained committed to keep inflation low through monetary targeting, financial innovations and deregulation in Japan allegedly reduced the usefulness of the monetary aggregate (M2+CDs) as an indicator of monetary policy. The BOJ then started to use monetary policy to stabilise the exchange rate. The Japanese economy experienced asset bubbles during the late 1980s, caused by excessive money growth. To contain speculation on land and stock prices, the BOJ introduced a tighter monetary policy in 1989 when it sharply lowered the money growth rate. This led to a sharp decline in land and stock prices, with the bubble economy

¹³ Within the presently dominant market-based economic system, there is an emerging consensus that price stability should be the sole or overriding objective of monetary policy. At an analytical level, this reflects a consensus on four basic propositions (Friedman, 1963;1968a,1968b,1969a; Fischer, 1992; Masson, Savastano and Sharma, 1997): (1) monetary expansion has a lasting effect only on the price level, not on output or employment; (2) inflation is costly, both in terms of resource allocation (efficiency costs) and long-term output growth (breakdown of super-neutrality of money); (3) monetary policy has transitory effects on a number of real variables, but there is imperfect understanding of the nature and/or the size of such effects, and (4) monetary policy affects the inflation rate with lags of uncertain duration and with variable strength, which undermines the central bank's ability to control inflation on a period-by-period basis.

collapsing. The economy experienced a decade long deflation that lasted until 2002 (Ito, 1989, 2004, 2006).

Using a conventional IS-LM-BP model (Figure 1 below) this section explains the view that the US financial crisis was caused by the use or misuse of a monetary policy instrument (money supply growth or the nominal interest rate) to pursue a real objective (low unemployment).

The basic idea is that Alan Greenspan, as Chairman of the Fed, did not want to bind himself under any monetary policy rule. Mishkin (2007), somewhat 'mischievously', suggested that for the United States, Greenspan (not money!) was the anchor to prices. Greenspan conducted monetary policy to achieve 'twin objectives': that is, to hit two birds with one stone! Price stability remains an important objective of monetary policy in the United States. However, targeting low unemployment (say, below the natural rate) made monetary policy responsive to shocks which by definition are random and transitory. For the United States, one such shock came in the form of 'fear of deflation' as derived from the decade-long Japanese deflationary experiences since the early 1990s. The dot.com bubble collapse in 2001 triggered the Fed to introduce an expansionary monetary policy, without taking a lesson from Japan that the latter's property boom-bust cycle itself was originated from an expansionary monetary policy in the mid-1980s. Dowd (2009:156-157) has also provided some background information on the expansionary monetary policy in the United States that Greenspan introduced around 2002.

The main objectives of U.S. monetary policy are to control inflation and protect the stability of the real economy, but the Federal Reserve has considerable discretion in how to achieve these objectives. Consequently, U.S. monetary policy is acutely dependent on the views of policymakers. A key factor here is the 'Greenspan Doctrine', set out in 2002, that the Fed could do nothing to stop asset bubbles from occurring, but would stand by to cushion the fall if they did occur. This effectively promised a partial bailout of bad investments and produced the so-called put – an option to sell depreciated assets to the Fed (i.e., yet another moral hazard). A second key concern of Fed policymakers – and of Ben Bernanke especially – has been fear of deflation. In late 2002, then-governor Bernanke persuaded Alan Greenspan that the main danger facing the U.S. economy was the prospect of it falling into a Fisherian debt-deflation spiral. This 'false deflation scare' led the Fed to put its foot on the monetary accelerator and squeeze the Fed funds rate down to just over 1 percent in July 2003, and to keep it at that level for a year. The combination of the Greenspan put and artificially low interest rates then set off what Steve Hanke (2008) memorably describes as the 'mother of all liquidity cycles and yet another massive demand bubble'.

This expansionary monetary policy in response to the fear of deflation led to current account deficits. This was represented by an overvalued real exchange rate of the US dollar at a relatively low real interest rate. This idea is illustrated next by deploying a simple IS-LM-BP model.

Assume that Figure 1 is the IS-LM-BP model for the United States. This is a short-run Keynesian representation of an open economy with capital mobility.¹⁴ For simplicity, both wages and prices are assumed fixed. In this model, the vertical axis measures the real interest rate (r) and the horizontal axis measures real income (y). The LM curve is upward sloping and derived for both a given real money stock (defined

¹⁴ This is the Mundell-Fleming model under a flexible exchange rate system with imperfect capital mobility. For an illustration of this model and its applications, see Dornbusch, Fischer and Startz (2008) and Hossain and Chowdhury (1998).

broadly) and a stable money demand function. The IS curve is downward sloping and derived to show a relationship between real income and the real interest rate when the goods market is in equilibrium. The position of the IS curve is determined by the exchange rate (e), which represents the nominal or real exchange rate because both domestic and external prices are assumed fixed. The real exchange rate is a determinant of aggregate demand, implying that a depreciation of the real exchange rate shifts the IS curve to the right and an appreciation of the real exchange rate shifts the IS curve to the left.¹⁵ The BP curve is assumed upward sloping but flatter than the LM curve, implying imperfect capital mobility which brings equality between the domestic and foreign real interest rates in the medium or long-run. The BP curve is drawn at a given exchange rate (e). When the $IS_0(e_0)$, $LM_0(M_0)$ and $BP_0(e_0)$ curves intersect say at point A, it represents both internal and external equilibrium. The domestic interest rate is r_0 and income is y_0 . At equilibrium A, r_0 equals the world interest rate r_w .

Assume that the world real interest rate (r_w) is determined in the international capital markets by the interaction of world saving and investment. The real interest rate in the United States is assumed to converge to the world real interest rate in the long run. In the short-run, the US real interest rate may deviate from the world real interest rate but it triggers capital inflows or outflows. At equilibrium point A, there is no tendency for capital inflows or outflows and the real exchange rate is at its equilibrium level (e_0). The real interest rate parity condition ensures that the rate of depreciation of the real exchange rate (x) at point A is zero:

$$r = r_w + x \quad (x = 0 \text{ at equilibrium point A, such that } r_0 \cong r_w) \quad (1)$$

Assume that the US economy experienced a negative demand shock, which took the form of ‘fear of deflation’ or a dot.com boom-bust shock that occurred around 2001.¹⁶ Consequently, decreased consumption or increased saving shifted the IS_0 curve from $IS_0(e_0)$ to $IS_1(e_0)$, which intersected the $LM_0(M_0)$ curve at point B. The outcome was the simultaneous decrease in the real interest rate from r_0 to r_1 and income from y_0 to y_1 . This created some ‘Keynesian unemployment’ given the unchanged real wage rate. This follows that employment at y_1 was lower than the assumed full employment at y_0 . At this time the short-term interest rate (Treasury bill rate) was much lower than the long-term interest rate (long-term bond yield), which indicated that there was an expectation that the economy would recover soon and the interest rate would rise in the near future. Consequently, the implied yield curve was upward sloping (Table 2).

However, as the recovery was slow the monetary authorities in the United States, in order to maintain full employment following the shock, raised the money supply from M_0 to M_1 . This, given a stable money demand relationship, shifted the $LM_0(M_0)$ curve to $LM_1(M_1)$. At point C where the $IS_1(e_0)$ and $LM_1(M_1)$ intersected, the real interest rate was r_2 and income was y_2 . This expansionary monetary policy was effective in the sense that it raised output from y_1 to y_2 given a much lowered real interest rate r_2 . Points B and C, however, represented a condition of current account deficit because the real exchange rate was overvalued at the original level (e_0). Under these circumstances, the external

¹⁵ In the short-run, depreciation (appreciation) of the real exchange rate can be brought about by depreciation (appreciation) of the nominal exchange rate at a given price level. To be realistic, it can also be assumed that prices in the goods market adjust less rapidly than the exchange rates in foreign exchange markets and therefore changes in nominal exchange rates bring changes in real exchange rates.

¹⁶ This was the time when the US economy was in recession (Blanchard, 2006).

balance would be restored when the BP curve shifts to the right because of a depreciation of the real exchange rate say from e_1 to e_1 . A depreciation of the real exchange rate would also shift the $IS_1(e_0)$ curve to the right $IS_2(e_1)$. At point D, both the internal and external balances are restored but at a lower real interest rate r_3 than that of the original equilibrium r_0 . Therefore the point D represents medium-term equilibrium where the domestic interest rate remains lower than the global real interest rate r_w , assuming that there remain some capital market distortions including taxes, home country preferences etc. In the long-run the price level would decrease due to the rise in income (given the money supply), the real exchange rate would depreciate further (given the foreign price level) due to capital outflows at low real interest rates and this would restore the original internal and external balance at point A. However, if the money supply is increased, the increased money supply may exceed the increased money demand and therefore the price level may rise rather than fall. The real exchange rate may then not depreciate and the current account may remain in deficit.

In summing up, the fear of deflation as occurred in Japan during the 1990s and the dot.com bust during 2001 induced the Fed to implement an expansionary monetary policy. This decreased the real interest rate that also fell earlier due to lower consumption or increased saving arising from the fear of deflation. At the lower real interest rate, the real exchange rate became overvalued and created large current account deficits which were financed by foreign capital inflows. This suggests that capital inflows were passive and current account deficits, which represent excess spending over income, were caused by expansionary monetary and fiscal policies. As the model shows, the rectification of this situation involves a depreciation of the real exchange rate, say through capital outflows. This process has started in the United States around 2007. Table 2 shows that the real effective exchange rate of the US dollar has depreciated from 126.8 in 2002 to 89.4 in 2008. Consequently, the US current account deficit decreased from 6.2 per cent of GDP during 2005-2006 to 5.6 per cent of GDP during 2007-2008. However the United States has a long way to go to bring its external sector into balance, a situation that had existed in 1996. This adjustment process could be complete through a depreciation of the US dollar or a fall in US inflation or a rise in global inflation or a combination of these three. Unfortunately, the US has implemented a monetary strategy since the start of the crisis that has created scope for rapid money growth and high inflation in the near future (Taylor, 2009a, 2009b).

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Figure 1 Adapted from Corden (2009) and Salvatore (2006)

The Twin-Deficit Hypothesis

The nature of, and causes behind, sustained capital flows to the United States are yet to be firmly established. In particular, whether capital flows to the United States were active or passive need to be determined. There are different interpretations; the most prominent one has been the large-scale budget deficits in the United States since 2002. In fact the large-scale capital flows to the United States can be explained by deploying the 'twin-deficit' hypothesis, which became popular during the 1980s when the US trade deficits with Japan exploded and were explained by showing a linkage between budget deficits and trade deficits. This thesis was also deployed to explain the external debt crisis in Latin America during the 1980s.

Consider the national income identity:

$$Y = C+I+G + X-M \quad (2)$$

where Y is output, C is consumption, I is investment, G is government spending, and $X - M$ is the trade/current account balance (CAB).

Define $C+I+G = A$ as domestic absorption. Then equation (2) reduces to:

$$Y - A = X - M \quad (3)$$

Equation (3) shows that the balance of payments on current account is a macroeconomic phenomenon and that it must always be equal to the difference between domestic production and domestic absorption. Therefore the current account deficit arises when domestic absorption grows at a faster rate than the growth of output.

One can get more insight when Y is classified into its component uses:

$$Y = C + S + T \quad (4)$$

where S is domestic private saving and T is taxes. A rearrangement of equations (2) and (4) yields:

$$(S - I) + (T - G) = CAB \quad (5)$$

which shows that the private saving-investment balance ($S-I$) plus the government budget deficit ($T-G$) equals the current account balance (CAB).

Equation (5) shows that if the private-sector saving-investment balance ($S-I$) remains unchanged, any rise in budget deficit ($T-G$) would lead to an increase in the current account deficit (CAB). By definition, a current account deficit suggests a capital account surplus (or capital inflows). In the present context, if, for example, the United States runs large budget deficits and foreign funds are used to finance those deficits, there could be capital inflows (capital account surpluses) and current account deficits. Salvatore (2006:701) has provided a chain-relationship behind the twin-deficit hypothesis as follows:

According to open economy macroeconomics, a government budget deficit leads to a current account deficit. The link is as follows: a budget deficit leads to an increase in the real domestic interest rate; this attracts foreign capital and results in an appreciation of the domestic currency, which leads to a current account (imports plus net transfers abroad, minus exports) deficit. Thus, the entire current account deficit and part of the budget deficit is financed by a net capital inflow.

An implication of the absorption approach to the balance of payments is that the condition for an improvement in the current account balance is the reduction of absorption relative to income. Such a reduction in absorption can be achieved through a combination of expenditure-switching and expenditure-reducing policies. The IMF's structural adjustment program to lower trade deficits includes currency devaluation and a reduction in government expenditure as expenditure-switching and expenditure-reducing policies (Alexander, 1952; Sachs and Larrain, 1993; Hossain, 2000).

The US budget deficits and current account balances: 1980-2008

Table 2 reports data for the key macroeconomic indicators of the United States during 1980-2008. It shows that since its recession in 1991 the United States sustained economic growth of about 3.0 per cent per annum during 1992-2008 and its average

unemployment over this period was about 5.3 per cent. Economic growth in the United States decelerated in 2001 which raised its unemployment rate to about 6 per cent during 2002. As pointed out earlier, this was the outcome of the dot-com bust episode which induced the Fed to implement an expansionary monetary policy. In fact this expansionary monetary policy was combined with an expansionary fiscal policy which originated from large tax cuts and an increase in defence spending. In particular, the government's budget deficits increased sharply during 2003-2005. This was followed by a sharp rise in the private sector's saving-investment gap during 2005-2007, resulting largely from a decline in the rate of private saving. The decline in the rate of private saving was the outcome of a rise in expected income in a booming environment and the prevailing low real interest rate (Taylor,2009a,2009b). Therefore, either the government or the private sector or both contributed to a steady rise in the current account deficit over the period 2003-2008.

INSERT

TABLE 2 The United States: Macroeconomic Indicators, 1980-2008

The United States generally does not monetise the budget deficit but rather issues Treasury bills to finance them. Foreign investors purchase and hold the Treasury bills, which are shown as foreign reserve accumulation by countries that have large current account surpluses. Presently, China, South Korea, Japan, Germany and most oil-exporting Gulf countries run large capital account surpluses (Table 1). Consequently, they have accumulated large foreign reserves over the years.

Bond financing of budget deficits generally raise the interest rate. However, when an increase in the supply of say the US Treasury bills is accompanied by a similar or even greater increase in demand for those Treasury bills, the prices of the Treasury bills may not fall and therefore the yields on the Treasury bills remain low. The main reason why the yields on the US Treasury bills have remained low since the early 2000s is that most East Asian countries continued purchasing large quantities of the US Treasury bills to build foreign reserves. This was a precautionary measure to defend the East Asian currencies in the event of any speculative attacks, as happened in the late 1990s (Corden, 2007).

A stylistic representation of current account balances in the United States

As pointed out above, the large saving-investment gap (budget deficit) in the United States was filled by the large saving-investment surplus in some countries of East Asia, Germany and oil-exporting countries of the Gulf region (Table 1). This phenomenon can be illustrated by a simple saving-investment diagram (Figure 2).

Following equation (5), the current-account balance (CAB) for a country *i* can be written as the difference between aggregate saving S_i minus aggregate investment I_i :

$$CAB_i = S_i - I_i \tag{6}$$

For the global economy, the sum of the current account balances must be equal to zero, such that the following condition holds:

$$CAB_i + CAB_{row} = 0 \tag{7}$$

For illustrative purposes, note that in 1996 the United States had a small current account deficit and the rest of the world had some current account surplus. This initial situation is represented in the figure as a negative saving-investment gap in the United States ($I_i > S_i$) and a positive saving-investment gap in the rest of the world ($S_{row} > I_{row}$) (Figure 2a-2b). In the figure, it is shown that the US finances its deficits at the world interest rate r_w , such that $CAB_i(r_w) = -CAB_{row}(r_w)$ (or $AB = CD$). The world interest rate r_w is shown lower than the US interest rate under autarky (r_{US}). Assuming that the US is a large country, the global interest rate r_w is also shown higher than the rest of the world's interest rate under autarky (r_{row}). The world as a whole is a closed economy and therefore the world interest rate is determined at the level where the world saving equals world investment. The United States is assumed to be a large saver/investor and its saving-investment behaviour does have impact on the world interest rate. Therefore, when there is perfect capital mobility, the domestic interest rate in the US economy would equal the world interest rate. Any discrepancy between the two represents capital market imperfections, country risks and any other factors that restrict capital flows and slow the adjustment process in the short run. In the long-run the real interest rate parity holds.

Table 2 shows that in 1996 the current account deficit in the United States was about 1.6 per cent of GDP. In 1996 the saving-investment in newly industrialising economies was also roughly balanced (Table 1). Following the East Asian currency crisis in 1997, the investment rates in most East Asian countries dropped sharply relative to their rates of saving. Such decline in investment was autonomous, in the sense that the East Asian economies took time to recover from the crises and therefore both domestic and foreign investments in these countries fell. This increased the size of the saving-investment balance. In Figure 2a-2b this is shown as a leftward shift of the investment schedule in the rest of the world given an unchanged saving schedule.

The leftward shift of the investment schedule in the rest of the world increased the positive saving-investment gap (C^*D^*) while the decline in the saving rate in the United States increased its negative saving-investment gap (A^*B^*), such that the global current account identity did hold. Assuming that the decline in the rate of investment in the rest of the world was higher than the decline in the level of saving in the United States, the global interest rate declined from r_w to r_w^* . The larger current account surplus in the rest of the world then matched the larger current account deficit in the United States. That is, $CAB_i(r_w^*) = -CAB_{row}(r_w^*)$. In Figure 2a-2b, this is shown as $A^*B^* = C^*D^*$.

The figure used for illustration here is drawn in such a way that the real borrowing rate for the United States is shown to have remained lower than the rate that might have prevailed under autarky. This suggests that the positive saving-investment gap in East Asia, for example, following the 1997 crisis can be considered a contributory factor to the so-called global saving glut. However, as pointed out, the increased saving-investment gap in East Asia was not due to any sharp rise in the rate of saving but rather represented a sharp fall in the rate of investment. Simultaneously, there was an increase in the investment-saving gap in the USA and this was due to a sharp decline in the rate of saving, possibly due to a rise in expected income in a booming economy caused by expansionary monetary and fiscal policies, and some modest increase in the rate of investment. Figure 2a-2b shows that the global current account balance was achieved by a simultaneous rise the current account deficit in the United States and a rise in current account surplus in the rest of the world.

The issue remains whether such developments in the United States represented policy changes. The next section reviews Ben Bernanke's global saving glut hypothesis that suggested no major changes in US policies that might have contributed to its large current account imbalances since 2002.

INSERT

Figure 2 Saving-Investment Gaps and Current Account Balances

Source: Adapted from Sachs and Larrain (1993:176)

Bernanke's global saving glut hypothesis versus Taylor's monetary excess hypothesis
As indicated earlier, Bernanke proposed the global saving glut hypothesis in 2005 to explain the rising current account imbalances in the United States since the early 2000s. Not many economists have agreed with this hypothesis. Data reported in Table 2 show that the US budget deficits increased significantly during 2003-2005. This was largely due to the government's policy measures. Corden (2009) suggests that the decline in the private sector saving rate in the United States was, however, partly endogenous, in the sense that the fall in the global interest rate, as shown in Figure 2, raised the private sector's wealth which increased consumption spending through the wealth effect and therefore lowered the rate of saving. While the rate of saving decreased, the investment rate increased because of the decline in the interest rate. The result was an increase in the private sector's saving-investment gap. The private sector used borrowed funds to finance big-item purchases including houses and various financial assets. The US current account deficits since were therefore linked to both budget deficits during 2003-2005 and the investment-saving gap of the private sector during 2005-2008.

The financial crisis originated from inefficient investment in the housing sector in particular. In a booming and deregulated economic environment, there was minimal control over credits to the housing sector. This was partly because house ownership through the government-linked institutions was explicitly favoured by policymakers. Financial institutions, on their part, originated massive housing loans but shifted their risks to investors across the globe through selling mortgage-backed securities. However, those financial institutions which invested foreign funds in mortgage-backed securities became insolvent once the housing boom ended because of the rise in both interest rates and oil prices during 2006-2007. Therefore, the housing boom-bust cycle in the United States can be compared with what happened in East Asia. Ee and Xiong (1998:2-4) have made such comparison:

In the Asian financial crisis, credit imprudence came in the form of connected lending to large corporate entities or to megaprojects and property developments that were of dubious commercial viability. In the subprime crisis, that search led to the proliferation of mortgage loans in the subprime category, the so-called ninja (no income, no job, and no assets) loans...the credit imprudence shown by lenders in both crises reflected the classic principal-agent problem. During the Asian financial crisis, shareholders' interests were ignored by bank managers, who lent indiscriminately to certain companies and projects, either at the behest of governments or because these projects were related to influential shareholders. In the subprime crisis, CDO and MBS investors expected mortgage lenders to maintain credit standard. But with the 'originate and distribute' model, lenders had little incentive to worry about credit standards because they did not retain loans.

Although the low interest rate policy in the United States created the housing bubble, the Fed did not use monetary policy to pierce this bubble because such action

was expected to create recession and raise unemployment. This explains why the use of monetary policy to target a real objective has been the root cause of the US financial crisis. Krugman (2005:1) alerted the Fed about this crisis and its consequences as early as in 2005:

If Mr Greenspan had said two years ago what he's saying now, people might have borrowed less and bought more wisely. But he didn't, and now it's too late. There are signs that the housing market either has peaked already or soon will. And it will be up to Mr Greenspan's successor to manage the bubble's aftermath. How bad will that aftermath be? The U.S. economy is currently suffering from twin imbalances. On one side, domestic spending is swollen by the housing bubble, which has led both to a huge surge in construction and to high consumer spending, as people extract equity from their homes. On the other side, we have a huge trade deficit, which we cover by selling bonds to foreigners. As I like to say, these days Americans make a living by selling each other houses, paid for with money borrowed from China. One way or another, the economy will eventually eliminate both imbalances. But if the process doesn't go smoothly – if, in particular, the housing bubble bursts before the trade deficit shrinks- we're going to have an economic slowdown, and possibly a recession. And here's where Mr Greenspan is still saying foolish things... [such as] the end of the housing bubble will automatically cure the trade deficit, too. Sorry, but no. A housing slowdown will lead to the loss of many jobs in construction and service industries but won't have much direct effect on the trade deficit.... unless something else [must occur], like a plunge in the value of the dollar, makes U.S. goods more competitive on world markets, leading to higher exports and lower imports.

Like Alan Greenspan, Ben Bernanke, as member of the Fed, defended the Fed's hands-off approach to monetary policy in so far as housing bubble was concerned. In October 2002 he gave a speech to the National Association for Business Economics, in which he said: 'First, the Fed cannot reliably identify bubbles in asset prices. Second, even if it could identify bubbles, monetary policy is far too blunt a tool for effective use against them'. Greenspan made such an argument during the dot-com era and reiterated it during the housing boom. As it was later revealed, most financial institutions ignored risks associated with subprime housing loans during the boom. This took a pervasive form through the securitisation of mortgages. Mishkin (2008:2) highlighted problems associated with the securitisation of mortgages which had been ignored by all concerned:

The subprime crisis exposed problems with the securitization of mortgages. In particular, it became clear how poor the underwriting and credit-risk analysis were for a wide range of products. Some appraisers, brokers, and investment banks were motivated by transaction fees and had little staked in the ultimate performance of the loans they helped to arrange. Many securitized products were complex, and the ownership structure of the underlying assets was opaque. Investors relied heavily on credit ratings instead of conducting due diligence themselves, and credit rating agencies failed to fulfil their *raison d'être*. The result has been rising defaults, particularly in the subprime mortgage markets, with losses to both investors and financial institutions.

In summing up, this suggests that the housing boom-bust cycle in the United States was a sad story of the misuse of monetary policy under discretion to achieve multiple objectives. The US financial crisis episode reminds a similar asset boom-bust cycle in Japan, which resulted from misuse of monetary policy under discretion and caused a decade-long recession during the 1990s. Ben Bernanke, who is one of the acknowledged authorities of the Great Depression of the 1930s and current Federal

Reserve Chairman, made the following remarks on the occasion of Milton Friedman's 90th birthday in 2002:

I would like to say Milton [Friedman] and Anna [Schwartz]: Regarding the Great Depression. You're right, we did it. We're very sorry. But thanks to you, we won't do it again.

Cited in Dornbusch, Fischer and Schwartz (2008:469)

Although it is yet to be firmly established that the Fed did it again, there is evidence that the Fed was the key, if not the sole, contributor to the present US financial crisis.

Political Economy of Foreign Reserve Accumulation in East Asia

China and some other East Asian countries have maintained large current account surpluses since the early 2000s. China's current account surpluses in recent years were very high, which reached to about 11 per cent of GDP in 2007. Some other countries, especially Hong Kong, Japan, Malaysia, Singapore and Taiwan, also maintained large current account surpluses over the past decade or so. Many in the US administration see China's large current account surpluses in particular as the outcome of its 'real exchange rate targeting' policy. China presently holds about \$2 trillion of international reserves (Ito, 2009). Some policymakers in the United States see such reserves as circumstantial evidence of China's efforts to 'manipulate' its currency value to keep it undervalued.¹⁷ Therefore there is pressure for China to appreciate its real exchange rate, to lower its trade surpluses with the United States and to stop building up such reserves.

Most international economists view the rapid accumulation of foreign reserves in East Asia from a global political economy perspective. Recall that the East Asian countries suffered from the financial crisis during the late-1990s when they experienced large-scale capital outflows. Having exhausted foreign reserves to defend their currencies which came under speculative attacks, they went to the IMF. The IMF, which is literally controlled by the United States and some West European countries, imposed stringent conditions on lending to affected countries, especially Indonesia, and in the process 'humiliated' some of them in public. In response, the East Asian countries wanted to generate sufficient foreign reserves to defend their currencies in the event of future currency crises. This goal was accomplished by default. They sustained their saving rates at a high level but their investment rates after the crisis fell due to the prevailing uncertain economic condition. The sharply depreciated real exchange rates during the crises made their exports competitive and generated large current account surpluses. This was in particular the case for Korea and Thailand. What happened in East Asia was a textbook example of the structural adjustment process that transforms an economy from large trade deficits to trade surpluses through measures like cutting government expenditure and depreciating the real exchange rate of domestic currency (Sachs and Larrain, 1993). Given the

¹⁷ There is no consensus on the extent of undervaluation of the Chinese currency. Dunaway, Leigh and Li (2006), for example, estimated the degree of undervaluation of the Chinese currency (*renminbi*) within the range of zero to fifty percent. Cheung, Chinn and Fujii (2007), however, found little evidence to suggest that the renminbi is undervalued. Cheung, Chinn and Fujii (2009) have updated their earlier estimate using the World Bank's Price Surveys and found that the extent of undervaluation of the renminbi remains at most 10 percent as of 2006.

overshooting of the exchange rates during the crises, the real exchange rates of the currencies of most East Asian countries later appreciated and therefore some of these countries subsequently experienced a reduction in current account surpluses. Most East Asian countries, which accumulated large reserves, have invested them in the form of US Treasury bills. Corden (2007) has called this the ‘parking theory’ of foreign reserves.

As indicated above, the US and some European countries complain that China manipulates the exchange rate of its currency and keeps it undervalued. Empirical studies have not validated this view. In fact, China has done nothing more than fixing the exchange rate of its currency with the US dollar and maintained controls over capital flows to gain monetary policy independence. The Chinese government maintains that pegging the exchange rate of its currency to the US dollar is a legitimate form of exchange rate management under the agreed IMF articles. Many other countries (especially the oil-exporting countries in the Gulf region) operate under pegged exchange rate arrangements on the argument that their economies are heavily linked to the United States through trade, investment and finance. These countries also maintain large current account surpluses and hold large-scale US Treasury bills.

The key issue is whether holding such foreign reserves is politically sustainable and economically sensible. The debate is more relevant to a developing country like China rather than to a matured economy like Japan. Consider the case for China. China’s large current account surpluses mean a transfer of its savings to the United States with low returns. In fact the late American economist Rudiger Dornbusch was critical of this type of investment on the ground that this is a waste for a poor country and that such policy helps the rich. China is thus helping the United States, not taking advantage of its policy profligacy. China’s high saving rate, which has become an issue, is apparently part of its rapid economic transformation. Corden (2008:15), for example, does not see any problem when a developing country like China keeps its consumption low and save more at some stage of its development:

There will always be savers who want to lend and others who want to borrow, whether within a country or across borders. This is a form of inter-temporal trade, and there are potentially gains from such trade, as from ordinary trade in goods and services. It should also be remembered that in countries with rapidly ageing populations (notably Japan and Germany) it is likely to be thoroughly rational to have a high level of savings relative to income for certain periods, while fruitful investment opportunities may be limited. They are thus likely to have current account surpluses (see Cooper, 2007). We can always expect periods when some countries have high savings levels, perhaps temporary, while others have investment booms leading to current account deficits... One can think of important examples in the nineteenth and early twentieth century when there were significant imbalances. But it is certainly desirable that current account deficit countries use their funds for investment rather than consumption, other than during wars and environmental disasters. The fault and failures in this recent crisis have been not ultimate lenders or borrowers – other than US sub-prime mortgagees – but with the financial intermediaries, often highly paid.

Along with China, other East and Southeast Asian countries, especially Indonesia, Korea, Malaysia, the Philippines and Thailand, accumulated large foreign reserves as a precautionary measure to face future financial crises. Nasution (2007) has made a frank assessment of this phenomenon on the basis of two perceptions. The first was that the IMF and the international community were not able to supply them

with a sufficient quantity of liquidity during the crisis of the late 1990s. The amount of IMF credits was inadequate even though the size of the loan package for each country exceeded the normal operational limit of about 300 per cent of a member country's agreed quota. The crisis-hit countries also could not get access to bilateral assistance, which constitutes the second line of defense. The second perception was that the East Asian countries were discriminated against by the IMF itself. For example, to cope with the later crises in Russia, Brazil, Turkey and Argentina, the IMF provided large-scale liquidity support to defend their fixed-exchange rate regimes which subsequently collapsed. In contrast, the IMF warned the East Asian countries about the danger of fixed-exchange rate regimes at the outset and forced them to switch to a floating exchange rate system before their economies stabilised. The fact is that these countries were not ready for a sudden switch from the pegged to a flexible exchange rate regime. The sudden collapse of the exchange rates caused extreme hardship to their people. Excessive exchange rate volatility was also considered harmful to their export-oriented development strategy. Consequently, the recovery processes in some countries were long and painful. This indicates that the East Asian countries have a trust-deficit with the IMF and possibly with other financial institutions on issues such as liquidity support in the event of any future financial crises. Such trust-deficit was one of the factors that led some East Asian countries to argue for the establishment of the Asian Monetary Fund. This was torpedoed by the United States with some support from Singapore, which remains a staunch ally of the United States and maintains a frosty relation with countries like Malaysia and Indonesia.

Finally, most East Asian countries are not amused to see the change of face of the IMF on the roles of monetary and fiscal policies since the onset of the US financial crisis. Instead of telling the US to introduce belt-tightening measures, the IMF has become an enthusiastic supporter of expansionary monetary and fiscal policies in developed countries. Such policies appear popular but are likely to create moral hazard problems and even jeopardize the hard-earned fiscal-monetary policy discipline in developing Asia. Ee and Xiong (2008:4) have highlighted clear policy differences during the subprime and the East Asian crises:

In the subprime crisis, major central banks have intervened aggressively to provide liquidity to contain disruptions and contagion in financial markets. At the same time, the U.S. Federal Reserve has cut interest rates substantially to ease monetary conditions, and the U.S. Congress has approved a fiscal stimulus package. In the Asian crisis, monetary and fiscal policies were initially tightened to support exchange rates because of massive capital outflows and a run on foreign reserves, which contributed to a downward spiral in the real economy. Only after exchange rates had stabilized at a lower level did governments adopt more expansionary fiscal policies to support the real economies.

Exchange rate protection and current account surplus

As earlier pointed out, there is an allegation that China and other countries resorted to exchange rate targeting to generate large current account surpluses. In fact there is a body of literature that considers sustained depreciation of the real exchange rate as a potential strategy of economic development. Real exchange rate movements affect production and consumption decisions between domestic and international goods and therefore policymakers may consider employing the real exchange rate as a tool for export promotion. For example, currencies can be kept undervalued over time to create a booming export sector, which, through positive externalities, may raise economic growth. There is some evidence to support this approach to development. For example,

capital controls and undervalued exchange rates were the key elements in the export-oriented development strategy for both Japan and Germany after World War II. The issue is whether China and other East Asian economies have used capital controls and undervalued exchange rates to promote export growth (Dooley, Folkerts-Landau and Garber, 2003).

This is an empirical issue, which is not examined in this paper. In general, real exchange rate targeting involves the use of aggressive devaluations to maintain the real exchange rate at a targeted level or at a depreciated level relative to its equilibrium level. One of the implications of real exchange rate targeting is that the country concerned loses control over inflation when there is capital mobility. This implication is derived from the model developed by Calvo, Reinhart and Vegh (1995). They have shown that, in the absence of changes in fiscal policy, a more depreciated level of the real exchange rate can be attained only temporarily. This can be achieved by means of higher inflation and/or higher real interest rates, depending on capital mobility. When there is perfect capital mobility, a policy that aims at depreciating the real exchange rate would result in a temporary rise in inflation; when there is no capital mobility, the impact of the policy rule would be reflected in higher real interest rates. Since neither extreme adequately depicts the reality, the implication is that any attempt to depreciate the real exchange rate beyond its equilibrium level would be accompanied by a mix of higher inflation and rising real interest rates.

INSERT

Table 3 Inflation in selected countries of the Asia-Pacific, 1980-2008

INSERT

Table 4 Real interest rates in selected countries of the Asia-Pacific, 1980-2007

Tables 3 and 4 report data for inflation and real interest rates for selected countries of the Asia-Pacific over the period 1980-2007, which are not consistent with the implications of real exchange rate targeting in East Asia. The East Asian countries do not seem to have resorted to systematic depreciation of their currencies, except that they pegged their currencies to the US dollar, implicitly or explicitly. Consider the case of China. China does not have free capital mobility; however, there is a view that there are large-scale non-reported capital flows. Assuming that there are heavy capital controls, China should have experienced high real interest rates in the event that it heavily depreciated real exchange rates under exchange rate targeting. In contrast, if it is assumed that China has *de facto* capital mobility, a real exchange rate targeting should generate high inflation. Data for China and other countries are not consistent with such implications of real exchange rate targeting. Nevertheless, Corden's (2008b:16) maintains that China may have used 'exchange rate protection policy', albeit unintentionally, to protect its export-sector:

It is my impression that this huge surplus is completely unplanned or unintended. It is the combined effect of the saving and investment behaviour of state and non-state corporations and of households, and of the government's exchange rate policy. The latter policy has not been motivated by a desire to build up foreign exchange reserves (though it was in earlier years), but rather by a desire to protect – or to avoid adverse effects on – the export industries. China's export industries have boomed. There has been steady productivity improvement, there has been heavy investment in the export industries, a substantial part being foreign capital, international markets have been built up, and there has been a learning process which has certainly borne fruit. Insofar the industries have

been indirectly subsidised through an exchange rate policy which has avoided significant real appreciation, one might say that there has been ‘exchange rate protection’, and the possible justification would be based on the infant industry argument for protection.

Global Recession, Fiscal and Monetary Policies and Their Effectiveness

The ongoing global economic crisis has highlighted how integrated the world economy has become over the years. The epicentre of this crisis remains the United States and the main cause of this crisis has been its monetary and fiscal excesses. It does not make sense to blame other countries, especially those in East Asia, for this crisis. The issue is how to get out of the mess? It is not straightforward to suggest that recessionary economies can get quick recovery through a large-scale fiscal stimulus that policymakers of the orthodox Keynesian persuasion prescribe. In fact there is no guarantee that such stimulus would work in the medium to long-run. Whether there is a role for monetary policy in economic recovery also remains a debatable issue. Suffering from the massive financial crises of the late-1990s, the East Asian countries undertook comprehensive financial and economic reforms, as suggested by the IMF, the World Bank and other financial institutions, and brought both monetary and fiscal discipline. However the crises brought hardship for their people. It took long time before most economies in the region settled to their pre-crisis growth paths. This section reviews the roles of fiscal and monetary policies in economic stabilisation.

Fiscal Stimulus

Most countries facing the grim prospect of long and deep recession have introduced policy measures that include large-scale government spending and monetary expansion. The international financial institutions, especially the IMF, have discarded the idea of fiscal prudence and suggested that developed countries in particular should adopt expansionary fiscal policy to avoid deep recession. Accordingly, countries such as Australia, China, India, Japan, Singapore, the United Kingdom, Germany and the United States have introduced large-scale fiscal stimulus measures. Their fiscal measures have been in conjunction with a sharp reduction in the interest rate (or an expansion of the money supply) although the traditional Keynesian view has re-surfaced that monetary policy may not be effective during recession. While there is support for expansionary fiscal measures to avoid deep recession, there is concern that fiscal measures which have been introduced or in the process of introduction have been excessive and such measures, without addressing the root causes, could be ineffective in bringing sustained economic recovery. Taylor (2008b:8) in particular has been pessimistic about the role of discretionary fiscal policy in bringing economic recovery in the United States:

There is little evidence that short government impulses will jump start an economy adversely affected by other forces. In the current recession, the economy has been pulled down by the housing slump, the financial crisis, and the lagged effects of high energy prices. Expectations of future income and employment growth are low because the effects of the financial crisis are expected to last for years into the future. Unless these effects are addressed, a short-term fiscal stimulus has little chance of causing a sustained recovery. The theory that a short-run stimulus will jump start the economy is based on older “Keynesian” theories which do not adequately include, in my view, the complex dynamic or general equilibrium effects of a modern international economy.

While the governments across the globe have been enthusiastic about fiscal stimulus as a remedial measure to prevent deep recession, they in the process of justifying fiscal stimulus have created ‘panic’ among the public. Even if one does not

invoke the Ricardian equivalence proposition (which suggests no major impact of government extra spending on aggregate demand when the public takes into consideration of its impact on future taxation or money creation), the very fact that there is panic among the public any extra transfer payments or an increase in household disposable income due to tax cuts may raise saving, not consumption. This is likely to neutralise the impact of fiscal measures on aggregate demand even in the short run. Significantly, any sharp rise in the debt-GDP ratio can cause problem for the economy, in the form of say high inflation or a rise in taxes or both. Using some preliminary estimates of the debt-GDP ratio for the United States, Taylor (2009:4-5) points out a scenario of high inflation in the near future:

Regarding of how the government versus the market debate is settled regarding the crisis so far, the federal government is the bigger systemic risk going forward. Consider first the enormous deficits and growing debt of the federal government. According to the Congressional Budget Office, the federal debt was 41 percent of GDP at the end of 2008 and it is projected to grow to 82 percent of GDP by 2019... The deficit in 2019 is expected to be \$1.2 trillion about the same as the most recent Administration budget for 2010... What is the purpose of running trillion plus dollar deficits as far as the eye can see? There is certainly no stimulus effect from such deficits, and they put a very heavy burden on the not so distant future. This is a systemic risk because it will affect the entire financial system and the real economy. ... To bring the debt to GDP ratio down to the level at the end of 2008, [in the absence of a sharp rise in income tax revenues], it will take a doubling of the price level, [which is roughly 10 percent inflation for 10 years].

Monetary Policy

The policy approach adopted by most countries to end recession is conventional. It is a package of monetary, fiscal and trade/commercial policies. The idea is that, given a stylistic IS-LM-BP model, fiscal policy would shift the IS curve to the right. If the LM curve does not change, this may raise the real interest rate and cause an appreciation of the real exchange rate. If this happens, the IS curve would shift back to the original position because of the impact of the appreciated real exchange rate on trade balance. Therefore, fiscal policy could be more effective only if the LM curve is shifted to the right so that the real interest rate does not increase. An expansionary fiscal-monetary policy mix is therefore considered effective in raising output under a flexible exchange rate system.¹⁸ The only concern, where the interest rate is already very low such as in the United States, is whether there is scope for further cuts in interest rates. In practice, there is no need for such concern. A zero-bound interest rate is not a problem as the central banks can expand the money supply simply through purchases of say foreign assets, especially foreign financial assets. Such monetary expansion would raise consumption through the real balance channel and when there is massive money supply increase that would depreciate the currency with the expectation of high inflation, which is considered a fool-proof strategy for reviving recessionary economies. Therefore, as Taylor (2008:11) remarks, monetary policy remains effective even during recession:

In my view, however, the experience during the past decade does not show that monetary policy is ineffective or that fiscal policy is more appropriate when the short term interest rate reaches the lower bound to zero. Indeed, the lesson from Japan is that it was the shift toward increasing money growth – quantitative easing – in 2001 that finally led to the end of the lost decade of the 1990s. It was certainly not discretionary

¹⁸ For a standard discussion on the effectiveness of fiscal and monetary policies under both fixed and flexible exchange rate systems, see Hossain and Chowdhury (1998, Chapter 3).

fiscal policy actions. Increasing money growth –or simply preventing it from falling as in the Great Depression – remains a powerful countercyclical policy.... There is no evidence in the past decade that suggests that monetary policy has run out of ammunition and must be supplemented by discretionary fiscal actions.

The main concern is that given the lagged and uncertain effects of monetary expansion, any aggressive expansion of the money supply may lead to high and unstable inflation if recession ends sooner rather than later. Monetary economists therefore do not see any problem in continuing with expansionary monetary policy to revive a recessionary economy even though they remain uncomfortable with a discretionary monetary policy as an instrument to neutralise business cycles, which are caused by both real and monetary shocks and may not require active policy intervention.¹⁹ Any attempt to do so have the danger of creating a boom-bust cycle, as happened in two major economies, namely Japan and the United States, where monetary policy has been implemented in a discretionary fashion to achieve multiple, and conflicting, objectives.

Lessons and Policy Implications for Developing Asia

Although Asian developing countries have so far not been affected heavily (except Singapore), they have not been immune from the global recession. Financial reforms in East Asian countries undertaken since the late-1990s have helped them to face the crisis on a stronger footing. Kuroda (2009:1) has strongly made this point:

Given the degree of financial integration and global economic interdependence, Asia was bound to be at least somewhat impacted by the crisis. ... [however] the corrective measures undertaken in the wake of the Asian Financial Crisis have helped the Asian economies to face the latest turmoil with greater confidence and on a much stronger footing. As a result of these reforms, most of the Asian economies have robust economic fundamentals, sound banking supervision and prudential guidelines. As well, commercial banks exposure to toxic foreign assets has been rather limited, resulting in stronger balance sheets. Relative to exports, external debt is far more manageable and exchange rates more flexible. Had Asia not undertaken some of these reform measures, it would have been more susceptible to the contagion effects of the present crisis.

For developing Asia, the major concern is that any insistence on adopting expansionary policy measures may create future problems, as most of them only recently brought fiscal and monetary discipline under IMF and World Bank-supported stabilisation and structural adjustment programs. The actual or perceived IMF-license for breaking policy discipline (fiscal-monetary) could be a recipe for future macroeconomic problems. This is the reason why the IMF has lately cautioned that fiscal stimulus may not be appropriate for low-income developing and emerging market countries. It suggests that the response to financial crises should be based on individual country circumstances and past experiences (IMF's *Survey*, various issues). The problem is that policymakers in developing countries could be encouraged to come up with some sort of justification for expansionary monetary and fiscal measures that may cause more problems than any problems such policy measures were supposed to solve. This has already happened in many countries, for example in Bangladesh where the government has developed a comprehensive subsidy-package for various sectors to stop recession by

¹⁹ For a review of the real and monetary sources of short-term economic fluctuations and the roles of monetary and fiscal policies for growth and stabilisation, see Barro (2008) and Hossain (2009).

ignoring the objections of the World Bank. In fact the IMF and the World Bank have now lost credibility in many countries and, since their policy prescriptions are often ignored as a matter of policy, their surveillance of poor economies in particular appears to have become less effective.

Therefore, the major lesson for developing Asia is that it should not discard its fiscal and monetary policy discipline that has been earned slowly to respond a crisis that has been created due to monetary and fiscal excesses in the first place. The fact is that East Asian countries achieved long-term economic growth in a low-inflationary environment. The financial crisis of the late-1990s was an impetus to institutionalisation of price stability as the key objective of monetary policy. Although fiscal activism was not a problem for most countries of East Asia, there is a fear that the present crisis may encourage some policymakers to use discretionary fiscal policy to stabilise their economies which are subject to external shocks.

As indicated above, the global crisis has also given an impetus to the debate on the relative importance of monetary and fiscal policy in economic stabilisation. As dust has now been settled, it does not appear that there would be a major shift in the role of monetary policy in price stability. It is nonetheless expected that central bankers would find it challenging to maintain monetary independence and gain price stability in an environment where fiscal policy is given some prominence in stabilisation. The danger is that any upgrade of the role of fiscal policy in stabilisation may reinstate the discredited 'macroeconomic populism' that provides a rationale for fiscal activism for solving deep-rooted economic, social and political problems in developing countries.²⁰ This common feature of 'financial repression' existed in many developing countries during the 1950s to the 1980s, which slowed economic growth and development (Hossain, 2009).

Rather than trying to rewrite the roles of monetary and fiscal policies in the presently integrated economies, Taylor (2008a), for example, has argued for the return to disciplined monetary policy under policy-rules to avoid financial crisis. According to him, in the United States the Fed should return to the set of principles for setting interest rates so that it can achieve steady-economic growth in a low-inflationary environment.²¹ He also opposes a greater systemic regulatory power to the Fed to contain a 'poorly-defined or undefined 'systemic risk', which is created mostly by the government through undisciplined and clumsy monetary, fiscal and bailout actions and provisions. He explains how imparting the Fed such power and responsibility is expected to (1) dilute its key mission of economic and price stability, (2) reduce its credibility, (3) create a conflict of interest, and (4) ultimately threaten its independence regarding monetary policy (Taylor, 2009). In so far developing Asia, monetary policy rules should remain important. They should maintain monetary discipline and continue developing financial markets and institutions. Central banks in particular should continue improving the management of large-scale foreign capital flows, exchange rate risk, credit booms, and

²⁰ For a discussion on the concept of macroeconomic populism and its implications for growth, poverty and income distribution in developing economies, see Dornbusch and Edwards (1990,1991).

²¹ Many US economists argue for 'inflation targeting', so that it can anchor inflationary expectations (Mishkin, 2007). Inflation targeting in the end is a commitment to keep inflation low and stable. This is essentially a rule, which goes against the discretionary form of monetary policy that is conducted in the US. Lucas (2007) considers inflationary targeting essentially a form of monetary targeting, which does not allow much discretion in the conduct of monetary policy.

asset bubbles. Above all, developing Asia should not discard the lessons learnt from the East Asian financial crisis and indulge in creating policy-induced macroeconomic imbalances even if there are temptations to generate inflation surprises for output or employment gains. Ee and Xiong (2008:10) have given such a timely reminder to policymakers in developing Asia:

Asia's healthy long-term growth prospects should mean that the region is poised to ride, or even lead, the next economic boom. The challenge is to ensure that its development does not get derailed by financial land mines along the way. The region should exploit its firmer footing to build on the lessons of the 1997 and current crises.

Asian developing countries should also continue to remove restrictions over trade and capital flows. To avoid financial crisis, there is need for continual improvement in banking regulations and prudential supervision. The present financial crisis does not necessarily indicate the demise of free markets rather it indicates the need for well-designed prudential regulations and controls. Earlier financial crises provided such lessons but they were ignored by banking regulators or policymakers in countries such as the United States. This is especially important as financial deregulation has led to financial innovations which remain complex and difficult to regulate. Bhagwati (2008:2) has emphasised this point by drawing lessons from recent financial crises:

In recent times, we have had four major crises, including the present one. In the October 1987 crisis, the 'Black Monday' when stocks collapsed, everyone thought Capitalism had collapsed: it did not. Then, we had the LTCM (Long Term Capital Management) Hedge Fund Crisis, where the problem was highly leveraged investments by this hedge fund, with pension funds and banks heavily invested in LTCM and the fear of systemic spread of the crisis was enormous. Then, we had the East Asian Financial Crisis which began in July 1997 and went through 1998. And we finally have the current crisis. What is the common theme? In each case, the problem was that we succumbed to the euphoria that surrounds each 'innovation' in financial policy or financial instruments, rather than simple 'deregulation'.... The problem has been that new instruments and new policies were introduced without careful thought... the chief lesson of these 'systemic' financial crises is that the regulators and monitors of the system must ensure that 'innovation' does not go beyond 'comprehension' of the possible downsides.

Transparency remains critical for financial supervision and market discipline to be effective. The subprime crisis has shown that ordinary loans can become a major source of risk and uncertainty when they are securitised into complex, nontransparent structured financial products, and when they are held in varying concentrations by any number of potential investors, including banks' off-balance-sheet investment vehicles. Regulators should therefore ensure that comprehensive information on any new products and entities is available to allow the supervisors and market analysts to understand and monitor any incremental risk to the financial system (Ee and Xiong, 2008).

Finally, although some East Asian countries, which themselves are in recession, may not feel badly to see some mighty countries (which lectured them for so long) are in trouble, there should be no complacency in so far maintaining economic fundamentals in sound condition. It is a pity that during the 1997 crisis the popular view in the West was that the East Asian currency crisis was a manifestation of crony capitalism. Radelet and Sachs (1998a:1) summed up this view as follows:

East Asia had exposed itself to financial chaos because its financial systems were riddled by insider dealing, corruption, and weak corporate governance, which in turn had caused inefficient investment spending and had weakened the stability of the banking system.

This might have been true to a large extent but some went overboard. For example, the *Australian Financial Review* published an editorial on October 14 (1997:16) that made a wholesale denunciation of what it called 'Asian values':

[Although] South-East Asia's financial meltdown may be largely a case of an inevitable bust of a speculative mania that reflects simple excesses of human behaviour..., [it] has exposed the dark side of the 'Asian values' of cronyism and corruption that have fuelled its capital flight and revealed a drag on its economic potential. The longer South-East Asia's crisis extends, the more it takes on the flavour of Latin America.

It is good that the East Asian media has not followed this path and has largely avoided indulging in making fun of the West. Most developing countries of the Asia-Pacific have made considerable tangible gains in terms of poverty reduction by engaging in global trade and establishing economic, political and other interactions with developed countries. The present financial crisis has shown that there is need for cooperation among major countries and coordination of their economic policies for the healthy development and functioning of the global economy. The G-20 meeting in London in 2009 has rightly emphasised the need for stringent regulations of financial institutions and hedge funds, for crackdown on tax havens and for developing supervisory institutions to alert problems in the global financial system. The IMF has also gained a greater role in global surveillance but that should not be targeted to only at developing countries. It has been promised large funds by major shareholders to perform such a role but it will take some time to regain credibility lost since the East Asian crisis. There are suggestions that some funds may be better spent if they are provided to regional development institutions for projects which build infrastructure and develop institutions without imposing onerous conditions of dubious nature such as those imposed in the past by the IMF and the World Bank (Khan, 2009). To remain effective in maintaining international financial stability, the IMF needs to avoid prescribing such policies and measures that may at best bring short-term economic and political gains but raise long-term risks.

Summary and Concluding Remarks

This paper has reviewed the sources of the US financial crisis with a linkage to the East Asian currency crisis of the late 1990s, discussed its impact on the global economy and drawn implications for the roles of monetary and fiscal policies in macroeconomic management. The sources of the US financial crisis have been reviewed from a global context, with an emphasis on factors that have created large current account surpluses in East Asia and caused associated capital flows to the United States since the early 2000s. The large-scale current account surpluses in some East Asian countries were partly due to their heavily depreciated real exchange rates of currencies that resulted from the currency crisis of the late-1990s. Available evidence, however, does not suggest that these countries maintained undervalued real exchange rates as a strategy of rapid economic growth. In contrast, the United States adopted expansionary fiscal and monetary policies for fear of deflation since the collapse of the dot.com boom in 2002 that might have raised unemployment or slowed economic growth. Given the dominant position of the United States in the global economy, the US financial crisis that started in 2007 impacted both developed and developing economies and the panic situation that has prevailed since then has affected both credit markets and trade flows and consequently, has caused global recession. In response, following the advice of the IMF in particular, many developed and developing

countries have implemented discretionary fiscal and monetary measures to revive their recessionary economies. Whether such expansionary monetary and fiscal measures have been necessary to raise output or lower unemployment, however, remains a matter of contention.

The paper has drawn some lessons from, and policy implications of, this crisis, especially for developing Asia. In a global context, the US financial crisis has reinforced the importance of rules-based monetary and fiscal policies for macroeconomic stability. This follows the fact that unlike some developed and developing countries, the United States avoided introducing a rule-based monetary policy for price stability since the mid-1980s. As the boom-bust cycle happened in Japan due to its discretionary monetary policy since the late 1980s, the expansionary US monetary policy to achieve a real objective since 2002 has been inconsistent with the best practices of monetary policy and has contributed to the present global financial crisis.

The most important lesson for developing Asia is that it should introduce, or continue with, rule-based monetary policy to maintain price stability. Although the role of fiscal policy in economic stabilisation has been upstaged since the onset of the present global crisis, it does not necessarily imply that monetary policy has become ineffective in reviving an economy from recession. In addition, developing Asia should maintain macroeconomic stability, improve financial and corporate governance through prudential regulations and supervision, and also remain cautious about financial innovations that impose excessive risk taking.

Although the present global crisis did not originate in East Asia, this does not mean that there is no scope for improvement of macroeconomic policies in countries like China, Korea and Japan. The saving glut hypothesis has been a self-serving proposition and the idea of exchange rate manipulation is an exaggeration. However, there is a general suggestion that China should adopt a more flexible exchange rate, remove controls over its capital flows and gain monetary policy independence. This would make the economy more efficient and would better allocate its resources. Yongding (2006) points out that China suffers from 'twin-surpluses' (both current and capital account surpluses) and therefore needs to develop a balanced development strategy.

Given the interdependencies of both developed and developing economies, the present global crisis has reinforced the importance of policy coordination, compatibility and transparency across the globe. The United States, given its economic dominance, needs to maintain policy discipline rather than propagate self-serving views that only undermine its credibility. For example, most reputed economists in the United States have already repudiated Bernanke's saving glut hypothesis that implicitly blamed China or Japan or other countries for say the present current account deficit problem of the United States. This also happened during the 1980s when the United States blamed Japan for its large trade deficits.²² Frankel (2006:657) has made a more frank assessment

²² Ito (2009) has compared the two episodes of US fiscal and trade deficits in the 1980s and in the mid-2000s and has reported the following findings:

While the United States has been experiencing a savings drought in both episodes, the Japanese current account surplus was driven by underinvestment in the 1980s and by over-saving during the 2000s. Furthermore, although the current Chinese current account surplus is driven by its over-saving, there is no evidence of excess domestic saving in the Asian market countries; rather, they seem to have suffered from depressed investment in the wake of the 1997 financial crises (p.1).

of the US trade deficit problem from a broader context, which comes closer to what countries like China, Japan and others think about the issue:

Ben Bernanke, followed by others, has said that the problem [large US current account deficit] is a global savings glut, not a US saving shortfall. They are correct that the forces determining the foreign net lending to the US is determined by conditions among the foreign lenders as much as in the US. But 'savings glut' is a slightly misleading word. Global savings and investment are not up. Rather, global investment is down. There is of course much that China and other countries should do in terms of macroeconomic policy and, especially, structural reform, to improve their economies. But the US is in no position to lecture on this score. The temptation to blame others for our trade deficit is political. Even in the Clinton years, when the US fiscal and economic position was very strong, sending delegations abroad to lecture others about the superiority of the US model did not go over very well. Now we have no standing at all. It is our responsibility to get our own house in order first. If anything, we need delegations from Chile, Estonia and Slovakia to tell us how to run our economies, delegations from Argentina, Brazil, and Korea to tell us how to bounce back from overindebtedness, delegations from Mexico and Chile to tell us how to develop reliable electoral institutions, and delegations from Northern Europe to tell us how to be good global citizens and abide by international commitments, etc.

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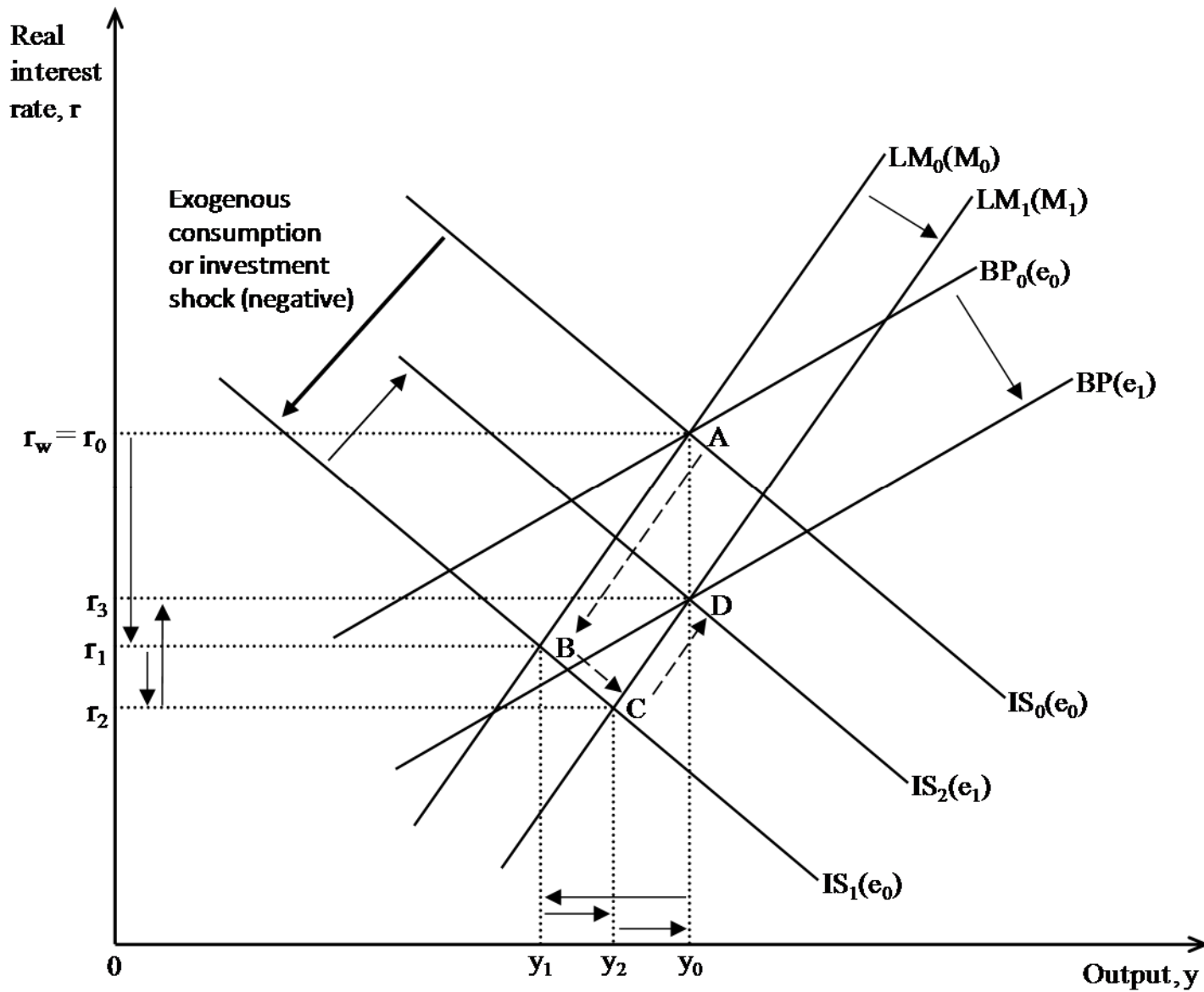


Figure 1 The IS-LM-BP model and adjustment to shocks

Source: Adapted from Corden (2008a) and Salvatore (2006)

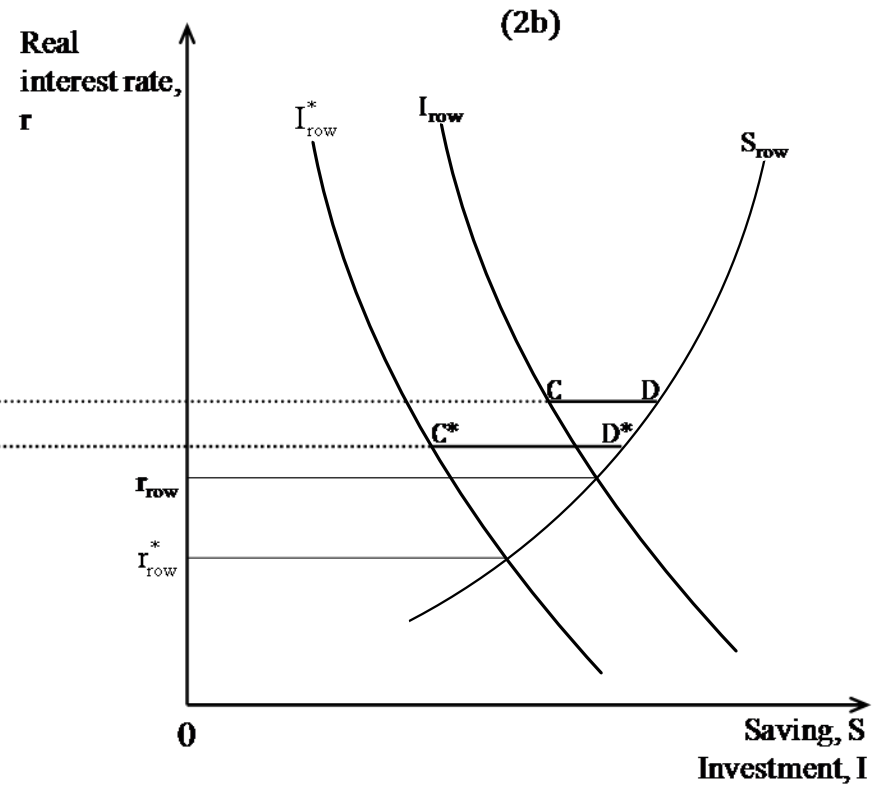
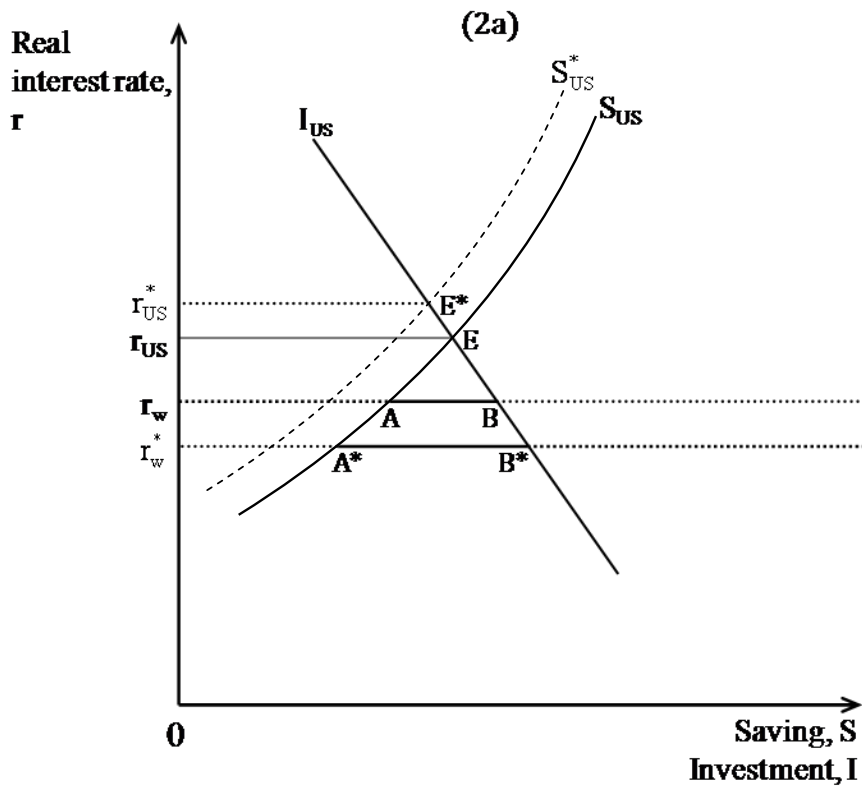


Figure 2 Saving-Investment gaps and Current Account balances

Source: Adapted from Sachs and Larrain (1993: 176)

2-Aug-09

Table 1 Current Account Balances of Selected Countries, 1996-2009
(US\$billion; percent of GDP)

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
China														
\$billion	7.2	37.0	31.5	15.7	20.5	17.4	35.4	45.9	68.7	160.8	249.9	371.8	399.3	439.7
% of GDP	0.8	3.9	3.1	1.4	1.7	1.3	2.4	2.8	3.6	7.2	9.4	11.3	9.5	9.2
France														
\$billion	19.4	37.8	38.6	45.9	22.0	26.1	19.8	14.7	12.5	-13.6	-15.4	-30.6	-83.5	-82.3
% of GDP	1.2	2.7	2.6	3.1	1.6	1.9	1.4	0.8	0.6	-0.6	-0.7	-1.2	-2.8	-2.7
Germany														
\$billion	-29.6	-14.0	-10.0	-16.3	-26.9	-32.6	0.4	40.6	49.7	127.9	145.3	177.7	252.5	279.0
% of GDP	-1.2	-0.6	-0.5	-0.7	-1.3	-1.7	0.0	2.0	2.0	4.7	5.2	6.1	7.6	7.3
Hong Kong, China														
\$billion	-4.0	-7.7	2.5	10.3	7.0	9.8	12.4	16.5	15.7	20.2	22.9	28.0	26.2	24.6
% of GDP	-2.5	-4.4	1.5	6.3	4.1	5.9	7.6	10.4	9.5	11.4	12.1	13.5	11.7	10.3
India														
\$billion	-6.1	-3.0	-6.9	-3.2	-4.6	1.4	7.1	8.8	0.8	-10.3	-9.8	-15.5	-34.6	-41.5
% of GDP	-1.7	-0.7	-1.7	-0.7	-1.0	0.3	1.4	1.5	0.1	-1.3	-1.1	-1.4	-2.8	-3.1
Indonesia														
\$billion	-7.3	-3.8	4.0	5.8	8.0	6.9	7.8	8.1	1.6	0.3	10.8	11.0	0.5	-0.4
% of GDP	-2.9	-1.6	3.8	3.7	4.8	4.3	4.0	3.5	0.6	0.1	3.0	2.5	0.1	-0.1
Japan														
\$billion	65.7	96.6	119.1	114.5	119.6	87.8	112.6	136.2	172.1	165.7	-124.8	-140.4	-213.5	-299.8
% of GDP	1.4	2.3	3.1	2.6	2.6	2.1	2.9	3.2	3.7	3.6	3.9	4.8	4.0	3.7
Korea, South														
\$billion	-23.1	-8.3	40.4	24.5	12.3	8.0	5.4	12.0	28.2	15.0	5.4	6.0	-12.3	-7.0
% of GDP	-4.1	-1.6	11.6	5.5	2.4	1.7	1.0	2.0	4.1	1.9	0.6	0.6	-1.3	-0.7
Malaysia														
\$billion	-4.5	-5.9	9.5	12.6	8.5	7.3	8.0	13.2	15.1	20.0	25.2	29.2	31.8	30.4
% of GDP	-4.4	-5.8	13.0	15.7	9.0	7.9	8.0	12.0	12.1	14.5	16.1	15.6	14.8	13.2
Philippines														
\$billion	-3.9	-4.3	1.5	-2.9	-2.2	-1.7	-0.3	0.3	1.6	2.0	5.3	6.4	4.2	4.0
% of GDP	-4.6	-5.2	2.3	-3.8	-2.9	-2.4	-0.4	0.4	1.9	2.0	4.5	4.4	2.4	2.2
Russia														
\$billion	10.8	-0.1	0.2	24.6	46.8	33.9	29.1	35.4	59.5	84.4	94.3	76.2	115.3	69.7
% of GDP	2.8	0.0	0.1	12.6	18.0	11.1	8.4	8.2	10.1	11.0	9.5	5.9	6.5	3.4
Saudi Arabia														
\$billion	0.7	0.3	-13.2	0.4	14.3	9.4	11.9	28.1	52.1	90.6	99.6	95.8	171.7	135.2
% of GDP	0.4	0.2	-9.0	0.3	7.6	5.1	6.3	13.1	20.8	28.7	27.9	25.1	32.5	23.8
Singapore														
\$billion	13.9	14.9	18.3	14.4	10.7	10.7	11.1	21.6	18.2	22.3	29.8	39.2	37.1	35.5
% of GDP	15.0	15.5	22.2	17.4	11.6	12.5	12.6	23.2	16.7	18.6	21.8	24.3	19.2	17.0
Switzerland														
\$billion	22.0	25.5	26.1	29.4	30.7	20.0	23.3	41.8	47.0	50.5	57.2	70.8	45.7	41.8
% of GDP	7.2	9.6	9.6	11.0	12.3	7.8	8.3	12.9	12.9	13.6	14.7	16.6	9.3	8.7
Taiwan														
\$billion	10.9	7.1	3.4	8.0	8.9	18.9	26.4	30.5	19.7	17.6	26.3	33.0	33.1	28.7
% of GDP	3.8	2.3	1.2	2.7	2.8	6.5	8.9	10.0	6.0	4.9	7.2	8.6	7.8	6.5
Thailand														
\$billion	-14.4	-3.1	14.3	12.5	9.3	5.1	4.7	4.8	2.8	-7.6	2.2	15.8	8.3	5.9
% of GDP	-7.9	-2.1	12.8	10.2	7.6	4.4	3.7	3.4	1.7	-4.3	1.1	6.4	3.1	2.0
United Kingdom														
\$billion	-9.9	-1.6	-5.3	-35.4	-39.1	-30.4	-28.0	-29.9	-46.2	-59.5	-83.0	-105.2	-101.5	-92.8
% of GDP	-0.8	-0.1	-0.4	-2.4	-2.6	-2.1	-1.7	-1.6	-2.1	-2.6	-3.4	-3.8	-3.6	-3.4
USA														
\$billion	-124.8	-140.4	-213.5	-299.8	-417.4	-382.4	-461.3	-523.4	-625.0	-729.0	-788.1	-731.2	-664.1	-485.9
% of GDP	-1.6	-1.7	-2.4	-3.2	-4.3	-3.8	-4.4	-4.8	-5.3	-5.9	-6.0	-5.3	-4.6	-3.3
Memorandum items														
World (\$ billion)	-48.5	-0.4	-85.9	-124.4	-178.4	-159.7	-136.3	-64.8	9.0	53.7	163.0	265.3	354.7	344.3
Advanced countries														
\$billion	27.4	75.6	22.6	-105.0	-264.8	-200.9	-213.2	-209.3	-206.1	-392.2	-454.0	-368.8	-430.2	-268.6
% of GDP	0.1	0.3	0.1	-0.4	-1.0	-0.8	-0.8	-0.7	-0.6	-1.1	-1.3	-0.9	-1.0	-0.6
Euro Area														
\$billion	n/a	96.0	53.0	31.6	-35.2	8.3	49.8	48.4	120.3	46.7	32.9	29.3	-65.5	-54.3
% of GDP	n/a	1.4	0.8	0.5	-0.6	0.1	0.7	0.6	1.2	0.5	0.3	0.2	-0.5	-0.4
Newly Industrialising economies														
\$billion	-2.3	5.9	64.6	57.1	38.9	47.5	55.3	80.5	81.9	75.0	84.4	106.1	84.1	81.8
% of GDP	-0.2	0.5	7.4	5.8	3.5	4.6	5.0	6.9	6.4	5.2	5.3	6.2	4.7	4.3
Emerging & developing economies														
\$billion	-75.9	-75.9	-108.5	-19.5	86.5	41.2	76.9	144.5	215.1	445.9	617.0	634.2	784.9	612.9
% of GDP	-1.3	-1.2	-1.8	-0.3	1.3	0.6	1.1	1.9	2.4	4.1	4.9	4.1	4.1	2.9
Developing Asia														
\$billion	-37.4	9.7	49.5	38.3	38.6	36.6	64.6	82.5	89.3	161.5	277.6	403.4	380.0	410.2
% of GDP	-1.9	0.5	2.5	1.8	1.7	1.5	2.4	2.7	2.6	4.0	5.9	7.0	5.4	5.2
ASEAN-5														
\$billion	-32.0	-18.7	28.3	29.1	24.7	18.2	19.6	24.5	19.4	14.1	43.4	55.3	34.1	28.9
% of GDP	-5.0	-3.1	7.3	6.3	5.0	3.9	3.7	4.0	2.9	1.9	4.8	5.1	2.7	2.1
Middle East														
\$billion	17.8	13.0	-23.5	15.1	71.5	39.9	30.3	59.1	97.0	204.7	253.9	257.0	438.6	365.0
% of GDP	3.4	2.4	-4.6	2.7	11.3	6.3	4.7	8.3	11.7	20.0	21.1	18.4	22.9	17.1
Western hemisphere														
\$billion	-38.3	-65.4	-89.9	-56.6	-48.5	-53.9	-16.3	7.8	20.6	35.2	47.7	16.2	-37.3	-72.6
% of GDP	-2.0	-3.1	-4.3	-3.0	-2.3	-2.7	-0.9	0.4	0.9	1.3	1.5	0.4	-0.8	-1.6

Source: IMF, World Development Outlook, April 2009

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Table 2 The United States: Key Macroeconomic Indicators, 1980-2008

Macroeconomic indicators	1980-1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	1992-2008
Real GDP Growth Rate (%)	2.6	3.0	2.7	4.0	2.7	3.6	4.4	4.3	4.1	3.8	0.3	1.6	2.5	3.6	3.1	2.9	2.2	0.7	2.9
Unemployment Rate (%)	7.1	7.5	6.9	6.1	5.6	5.4	4.9	4.5	4.2	4.0	4.7	5.8	6.0	5.5	5.1	4.6	4.7	5.8	5.4
Money Supply Growth																			
Narrow money (M1) growth rate (%)	7.0	11.7	9.7	0.1	-0.9	1.4	3.5	3.5	10.3	-1.7	-16.1	3.4	7.0	5.2	-0.3	-0.7	-0.1	17.2	3.1
Broad money (M2) growth rate (%)	7.9	1.7	1.5	0.0	5.6	6.1	6.6	10.1	8.2	6.9	23.1	5.1	4.3	5.6	8.2	9.4	12.0	8.3	7.2
CPI-Inflation (%)	5.4	3.0	3.0	2.6	2.8	2.9	2.3	1.5	2.2	3.4	2.8	1.6	2.3	2.7	3.4	3.2	2.7	2.3	2.6
Nominal Interest Rates																			
Treasury Bill Rate	8.5	3.5	3.0	4.3	5.5	5.0	5.1	4.8	4.7	5.8	3.5	1.6	1.0	1.4	3.2	4.7	4.4	1.5	3.7
Medium term govt bond yield (%)	9.8	5.3	4.4	6.3	6.3	6.0	6.1	5.1	5.5	6.2	4.1	3.1	2.1	2.8	3.9	4.8	4.3	2.2	4.6
Long-term govt bond yield (%)	10.2	7.0	5.9	7.1	6.6	6.4	6.4	5.3	5.6	6.0	5.0	4.6	4.0	4.3	4.3	4.8	4.6	3.7	5.4
Real Interest Rates																			
Treasury Bill Rate	2.9	0.4	0.0	1.6	2.6	2.0	2.7	3.2	2.4	2.4	0.6	0.0	-1.2	-1.3	-0.2	1.4	1.6	-0.8	1.0
Medium term govt bond yield (%)	4.2	2.2	1.4	3.6	3.4	3.0	3.7	3.5	3.2	2.8	1.2	1.5	-0.2	0.1	0.5	1.5	1.6	-0.1	1.9
Long-term govt bond yield (%)	4.6	3.9	2.8	4.4	3.7	3.4	3.9	3.7	3.4	2.6	2.1	3.0	1.7	1.5	0.9	1.5	1.8	1.3	2.7
Current Account Balance (% of GDP)	-1.6	-0.8	-1.3	-1.7	-1.6	-1.6	-1.7	-2.5	-3.3	-4.3	-3.8	-4.4	-4.8	-5.4	-6.1	-6.2	-5.7	-5.5	-3.6
Fiscal Deficits (% of GDP)	-4.0	-4.7	-3.9	-2.9	-2.2	-1.4	-0.3	0.8	1.4	2.4	1.3	-1.5	-3.5	-3.6	-2.6	-1.9	-1.2	-2.7	-1.6
Saving-Investment Gap (private) (% of GDP)	2.4	3.8	2.6	1.2	0.7	-0.2	-1.5	-3.3	-4.7	-6.7	-5.1	-2.9	-1.3	-1.8	-3.4	-4.1	-4.2	-2.8	-2.0
Real Effective Exchange Rate (2005=100)	142.8	109.9	112.4	110.8	105.5	111.3	102.1	104.2	109.7	116.1	114.9	126.8	114.8	103.8	100.0	99.5	94.2	89.4	107.4

Note: A rise (fall) in the value of this index indicates an appreciation (depreciation).

Source: Author's computations/compilation based on IMF's International Financial Statistics Yearbook (various years), and IMF's World Economic Outlook (various years)

2/08/2009

Table 3 CPI-Inflation in selected countries of the Asia-Pacific, 1980-2008
(annual; per cent)

Country	1980-1985	1986-1990	1991-1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Bangladesh	12.0	8.7	5.6	6.7	4.0	8.7	7.1	2.8	1.9	3.4	5.7	9.2	7.1	6.8	9.1	
China	4.0	10.7	13.1	8.3	2.8	-0.8	-1.4	0.4	0.7	-0.8	1.2	3.9	1.8	1.5	4.5	3.9
Hong Kong, China	10.4	7.2	9.5	6.3	5.8	2.8	-3.9	-3.7	-1.6	-3.0	-2.6	-0.4	0.9	2.0	2.0	3.2
India	9.6	8.4	10.5	9.0	7.2	13.2	4.7	4.0	3.7	4.3	3.9	3.7	4.2	5.8	6.4	
Indonesia	11.1	7.4	8.9	8.2	6.1	58.4	20.5	3.7	11.5	11.8	6.7	6.2	10.4	13.1	6.4	
Japan	3.6	1.3	1.4	0.1	1.8	0.6	-0.3	-0.7	-0.8	-0.8	-0.3	0.0	-0.3	0.3	0.0	
South Korea	10.9	5.4	6.2	5.0	4.4	7.6	0.8	2.3	4.1	2.7	3.6	3.6	2.7	2.3	2.5	
Malaysia	5.0	1.8	4.3	3.5	2.6	5.3	2.8	1.6	1.4	1.9	1.0	1.5	2.9	3.6	2.0	
Philippines	19.2	7.9	10.1	9.0	5.8	9.7	6.7	4.4	6.8	3.0	3.5	6.0	7.6	6.2	2.8	
Singapore	4.2	1.3	2.6	1.4	2.0	-0.3	0.0	1.4	1.0	-0.4	0.5	1.7	0.4	1.1	2.1	
Taipei, China	4.1	2.2	3.8	3.1	0.9	1.7	0.2	1.3	0.0	-0.2	-0.3	1.6	2.3	0.6	na	
Thailand	7.4	3.9	4.8	5.8	5.6	8.1	0.3	1.5	1.6	0.7	1.8	2.8	4.5	4.7	2.3	
United States	6.9	4.0	3.1	2.9	2.3	1.5	2.2	3.4	2.8	1.6	2.3	2.7	3.4	3.2	2.7	2.3
Vietnam	66.0	264.0	30.9	5.6	3.1	7.9	4.1	-1.6	-0.4	4.0	3.2	7.7	8.3	7.5	7.3	7.6

Source: Author's computations based on IMF's *International Financial Statistics Yearbook* (various years), and IMF's, *World Economic* (

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Table 4 Real interest rates^{*} in selected countries of the Asia-Pacific, 1980-2007
(per cent)

Country	1980-1985	1986-1990	1991-1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<i>Australia</i>															
Real yield on govt short-term bonds	4.3	5.3	5.3	4.8	5.7	4.2	3.9	1.6	0.6	2.3	2.1	2.9	2.5	2.1	3.9
<i>China</i>															
Real interest rate on deposits			-4.5	-0.8	2.8	4.6	3.7	1.8	1.5	2.8	0.8	-1.6	0.4	1.0	-0.3
<i>Hong Kong</i>															
Real interest rate on deposits			-3.4	0.0	-0.7	3.5	12.8	9.9	7.1	5.8	3.4	0.5	-0.6	-0.3	1.0
<i>Indonesia</i>															
Real interest rate on deposits	-1.1	9.1	7.8	8.4	13.1	-12.2	4.3	8.5	3.6	3.3	3.7	0.2	-2.1	-1.5	1.5
<i>Japan</i>															
Real interest rate on deposits	0.5	0.9	1.1	0.2	-1.5	-0.3	0.4	0.7	0.9	0.8	0.3	0.1	0.6	0.4	0.8
<i>Korea</i>															
Real interest rate on deposits	1.3	4.4	2.8	2.4	6.1	5.3	7.1	5.5	1.6	2.2	0.7	0.2	1.0	2.2	2.6
<i>Malaysia</i>															
Real interest rate on deposits	3.6	2.9	2.2	3.5	5.0	3.1	1.3	1.8	1.9	1.3	2.1	1.4	0.1	-0.4	1.1
<i>Philippines</i>															
Real interest rate on deposits	-3.7	5.0	2.3	0.7	4.3	2.4	1.5	3.9	2.1	1.6	1.8	0.2	-2.1	-0.9	0.9
<i>Singapore</i>															
Real interest rate on deposits	3.4	2.2	0.7	2.0	1.4	4.9	1.7	0.3	0.5	1.3	0.0	-1.3	0.1	-0.5	-1.5
<i>Taipei, China</i>															
Real interest rate on deposits		5.2	3.9	3.2	5.0	4.6	4.9	3.7	3.8	2.4	1.8	-0.2	-0.5	1.5	
<i>Thailand</i>															
Real interest rate on deposits	5.3	6.0	5.2	4.3	4.7	2.3	4.4	1.7	0.9	1.3	-0.4	-1.7	-2.5	-0.2	0.6
<i>United States</i>															
Medium term govt bond yield	4.7	3.8	2.6	3.0	3.7	3.5	3.2	2.8	1.2	1.5	-0.2	0.1	0.5	1.5	1.6
<i>Vietnam</i>															
Real interest rate on deposits				3.7	6.2	3.3	2.8	7.9	7.2	3.7	3.8	-0.2	0.0	0.9	0.4

Notes: ^{*}The real interest rate is computed as: $[(1 + \text{interest rate in decimal figure}) / (1 + \text{CPI-inflation rate in decimal figure}) - 1] \times 100$.

Sources: Author's computation based on IMF's International Financial Statistics Yearbook (various years), and ADB's Key Indicators of Developing Asian