

# **THE FINANCIAL CRISIS, GLOBAL IMBALANCES, AND THE INTERNATIONAL MONETARY SYSTEM\***

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## **1 Introduction**

This crisis is a global macroeconomic crisis. It differs from the macroeconomic crises in Latin America in the 1980s, in Mexico 1995, in East Asia in 1997-98, in Russia in 1998, and in Argentina in 2002. Those crises were confined to emerging-market economies, and were confined to single countries, or at most to single regions of the world.

It seems likely that this crisis will join the Great Depression, and the Second World War, as a crucial influence on our understanding of macroeconomic policy. The Great Depression led to the creation of macroeconomics, as a guide macroeconomic policy-making. And the Second World War led to the creation of international macroeconomics, as a guide to the international macroeconomic policymaking, via the Bretton Woods Conference of 1944. (Vines, 2003, 2008, House, Corden and Vines, 2008). The present crisis is likely to lead to a clearer understanding of macroeconomic policy, at both the national and international levels. We will come to understand, more clearly, how to conduct policy in countries in which the financial system is more fragile than we had realized. And we will come to understand more clearly how to coordinate such policies amongst countries, in a world in which the balance of economic power is shifting toward Asia.

This paper first describes the origins of the rules-based postwar international monetary system, and its replacement by the present non-system. It argues that this non-system is highly unstable. In particular, the combination of undervalued exchange rates in East Asia *and* the use by the US of monetary policy to ensure a steady growth in demand led to an outcome in which there were global imbalances. It also led to an outcome in which interest rates fell a great deal. In the presence of a highly leveraged financial system, such a large fall in interest rates created a global economy which was highly fragile, leading to the present crisis. The paper goes on to suggest how a return to a more rules-based international monetary system might guard against this fragility.

## **2 The International Monetary System**

At the end of World War II, the US, the UK and their allies, met at the Bretton Woods Conference, and worked to establish a policy framework in which countries would be able to promote high levels of employment and output, by means of demand management policies. (See House, Vines and Corden, 2008) Such a framework would— it was hoped—avert slumps in growth and would thereby prevent the re-

emergence of the kind of global depression that had occurred in the 1930s. In this work they were inspired, in part, by Keynes' *General Theory* (Keynes, 1936). From the beginning, Keynes saw two requirements for an international monetary system.<sup>1</sup>

First, Keynes argued that policies in individual countries would not succeed without global support. This is because such policies would need to be reconciled with the requirement that each country be sufficiently competitive; that is, each country would need to be able to export enough to pay for the imports that would be purchased at full employment. Keynes argued that, for many countries, sufficient competitiveness would not be assured if the world returned to a gold standard after the War. Such a standard would require that any country with balance of payments difficulties, of the kind which Britain was likely to have, would need to rely on downward adjustment of its wages and prices, in order to make its goods sufficiently attractive in world markets; Keynes believed that such an adjustment would not be possible. In 1942, he put forward plans for a new post-war international monetary system, which he called a 'Clearing Union'. (See Keynes, 1971–88, vol. 25, pp. 41–67; van Dormael, 1978; and Gardner, 1956.) Keynes was propelled in these discussions by the knowledge that the generous provision by the US of war-time funding to the UK ('Lend Lease') would make the UK financially vulnerable after the War.

Second, Keynes also argued that global difficulties might arise, as a result of the balance-of-payments adjustment process, calling for a global coordination of policies. Without a resolution of the competitiveness problem, there was a danger that an international monetary system might impose an obligation on deficit countries, like Britain, to deflate demand below full employment. That might not be matched by symmetrical over-expansion by surplus countries. As a result there might be global pressures towards deflation of the kind which arose in the 1930s. In this view he differed radically from Harry Dexter White of the US, who feared an outcome in which liquidity would be so freely available that there would be a great post-war world-wide inflation. The negotiation on these issues between Keynes and White marked the beginnings of modern discussions of macroeconomic policy coordination.

What emerged at Bretton Woods was a rules-based global system of pegged-but-adjustable system of exchange rates, overseen by the IMF. (McKinnon, 1993). Countries would pursue their own domestic policies, but exchange rates would be adjusted, under the supervision of the IMF, to ensure external balance. The IMF would lend to countries making adjustment, so as to cushion the adjustment process. This was a world of controls on international capital flows, thereby making possible such an oversight of exchange rates by the IMF. The system underpinned the period

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<sup>1</sup> What follows is discussed in Vines (2003).

of very rapid growth after 1945. But by 1971 it was overwhelmed by the international integration of capital markets, and by the unwillingness of countries to adjust pegged exchange rates: capital outflows, and currency crises, hit countries that were experiencing balance of payments crises, culminating in the dollar crisis of 1971, and the collapse of this rule-based system. (See House *et al*, 2008, and Bénassy-Quéré and Pisani-Ferry (2009).)

This system was replaced by a floating-exchange-rate ‘non-system’. (Corden, 1983). Countries were free to pursue domestic demand management policies, and floating rates would ensure external adjustment. It was hoped that Keynes’ two problems would thereby disappear. But the behaviour of the dollar in the 1980s, and again in this decade, has suggested that a non-system is not without difficulties. And the growing importance of emerging market economies in the world economy, means that we now live in a Bretton Woods II world, in which some countries float and others peg. This is a more complex international monetary system. But it is still a non-system, in that it contains no effective rules.

This paper argues that Keynes’ two problems – the need for global support of policies in individual countries, and the need for global coordination of policies - remain with us, although in a different way from that in 1945. And it argues that, to deal with these problems, we need a return to a more rules-based system, with greater international surveillance of national macroeconomic policies.

### **3 Global Imbalances and Low Global Interest Rates**

#### **3.1 Before the Crisis: the Great Moderation**

The period prior to the present crisis was one of remarkable macroeconomic stability in advanced economies, in which there was low and stable inflation, and steady growth – a period which began in the early 1990s in most advanced economies - and even earlier in the US. Such an outcome became known as the ‘great moderation’ (See Bernanke, 2004, and Bean, 2009). It was one in which effective macroeconomic policies appear to have moved economies closer to the policy frontier which traces out the lowest achievable level of inflation volatility for a given volatility of the output gap. Outcomes in the 1970s and 1980s had been ones in which inept monetary policies failed to anchor inflation expectations, so that significant anti-inflationary contractions were required. But the pursuit of inflation targeting by independent central banks, or the pursuit of similar stability-oriented monetary policies, seemed to have been successful in anchoring inflation. And, in the presence of such low inflation, policy appeared to have become more successful in keeping demand closer

to full employment, in the face of demand shocks. Until two years ago it seemed that macroeconomic policymakers could be proud of the transformation which they had brought about. And the stability which had been achieved was not disturbed by international circumstances.

It was recognized at the time that success might have partly resulted from the fact that that the period was characterized by shocks which were unusually small, and benign. In particular, the rapid growth of exports from China and other emerging-market economies, which we discuss below, gave advanced countries access to a cheap source of manufactured goods, providing them with a terms of trade gain, and enabling lower inflation. And changes in the economic structure in advanced economies – coming from increased competition resulting from this globalization - may also have pushed in the direction of lower inflation.

The effect of this success was to bring about a very large reduction in the levels of risk, as perceived by financial markets; by 2005 measures of such risk had shrunk to very low levels. It appears that markets extrapolated from the benign experience of the preceding few years, in which the outcomes had been so favourable. Furthermore ... '(t)he Fed's reluctance to use interest rates to lean against asset price booms coupled with a willingness to relax monetary policy aggressively in the wake of sharp asset price falls ... may also have helped place a floor under expected asset prices' (Bean, 2009). This reduction in perceived risk was important for what followed.

During this period, once the Asian crisis had passed, emerging market economies also developed rapidly, pulled along by this advanced-country success. After the crisis, and the Russian crisis of 1998 - and the Argentine crisis in 2001/2 - there were no further significant emerging-market crises. So this was a successful period, globally.

But we now realize that, beneath the surface of the great moderation, there were forces at work, partly international, which would undermine the stability. In the next section I concentrate on two of these forces, global savings investment imbalances and the existence of a highly leveraged financial system, particularly in the US, and argue that these became interconnected at the global level.

### **3.2 Savings-Investment Imbalances and Low Global Interest Rates**

#### ***East Asian Savings Investment Imbalances and Current Account Surpluses***

A central feature of the period of the great moderation, up to at least 2004, was the

high level of world savings relative to world investment. Of course world savings must be brought into equality with world investment, and, as I discuss below, changes in interest rates are one way in which this happens. But for the moment we focus on changes that were independent of effects of changes in interest rates.

The fall in investment fell relative to savings, in East Asia, in the wake of the East Asian financial crisis in 1997-98<sup>2</sup>, is central to the story. As Figure 1 shows, in East Asia the share of investment in GDP fell by 10 percent at the time of the crisis and had not recovered six years later.

The cause of this fall appears to have been the riskiness of investment in East Asia that was revealed by the East Asian crisis of 1997-98, and which dampened investment demand in subsequent years. In the ‘miracle’ period of export-led growth leading up to that crisis, investment in export capacity had been highly leveraged, in part because of the absence of a well developed financial system which would have enabled a greater degree of equity finance. When the growth of exports slowed in 1996-97, firms found themselves unable to cover the interest payments due on their outstanding loans. The result was widespread bankruptcy, which spread into the banking and financial system, and led to financial crisis.<sup>3</sup> (See Corbett and Vines, 1999). Investment in East Asia has taken a long time to recover from this experience.<sup>4</sup>

China is the exception to this story. In China, investment *rose* during the first part of the present decade, but it rose by less than the rise in savings. The reasons for this rapid increase in savings include the abolition of the previous system of safety nets, so that rising private savings have been necessary (i) to provide insurance against illness, (ii) to pay for the costs of old age out of private savings, a need made more acute by a one-child-family policy, and also, (iii) for families to educate their one child as well as possible. In addition, when real incomes are growing fast, habit-persistence means that consumption is unlikely to keep pace with income.

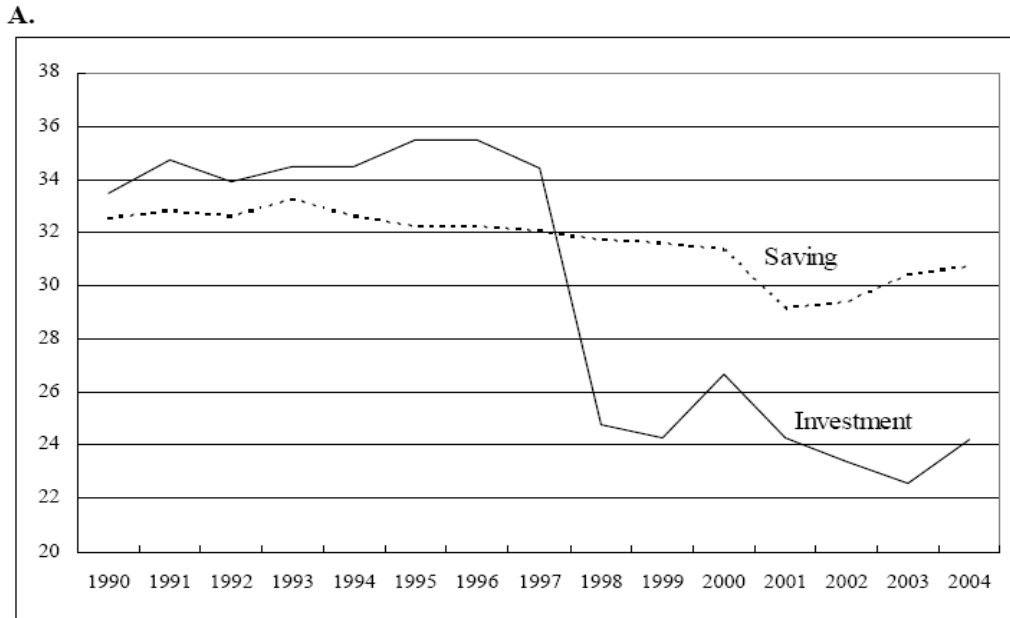
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<sup>2</sup> This subject is discussed by Bernanke (2005) Wolf (2008).

<sup>3</sup> Outcomes were worsened by the collapse of fixed exchange-rate systems, since much borrowing had been undertaken in foreign currencies; and currency collapse worsened the burden of these loans.

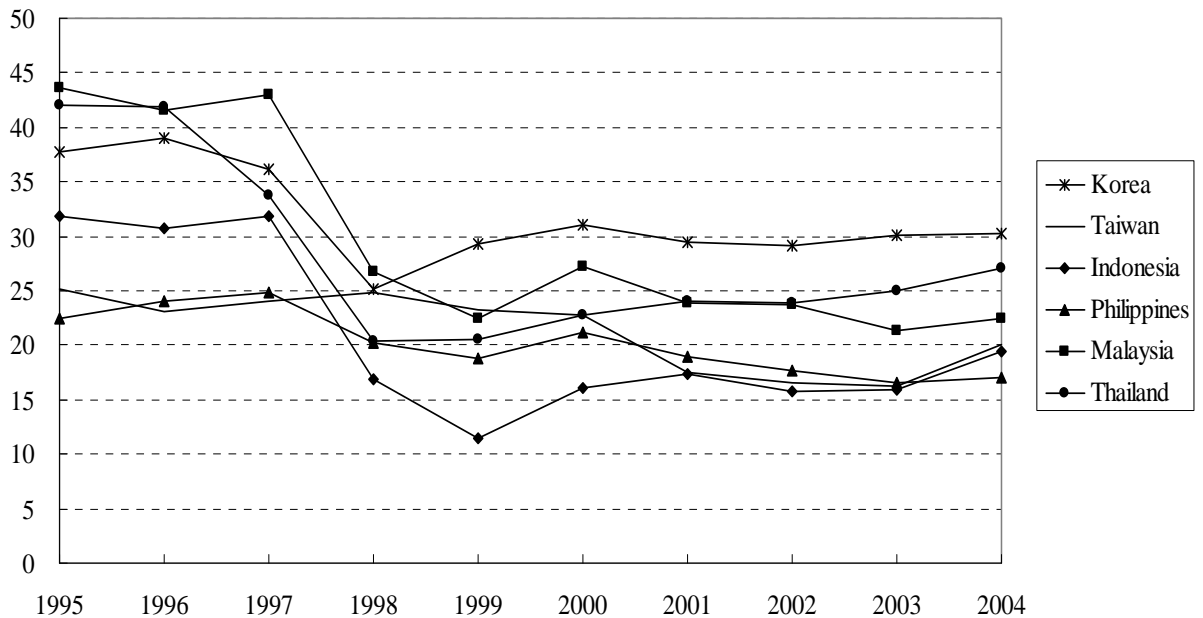
<sup>4</sup> Caballero et.al (2007) have argued that investment has continued to remain low because of the underdevelopment of financial markets. These authors posited a ‘shortage of reliable and tradable assets’ in these countries; private investors were, they argued, induced to buy foreign assets – in particular US assets - because of the breadth and depth of US financial markets and because of the abundance of ‘appropriate’ financial instruments there, causing domestic investment to fall below domestic savings for financial market reasons. See also Mendoza et al. (2007).

**Figure 1. Saving and Investment in Emerging Asia (NIEs and ASEAN-4) (as a percentage of GDP), 1990-2004**



Source: Jong-Wha Lee and Warwick J. McKibbin, KIEP Mid-Term Report – Domestic Investment and External Balances in East Asia, June 2006.

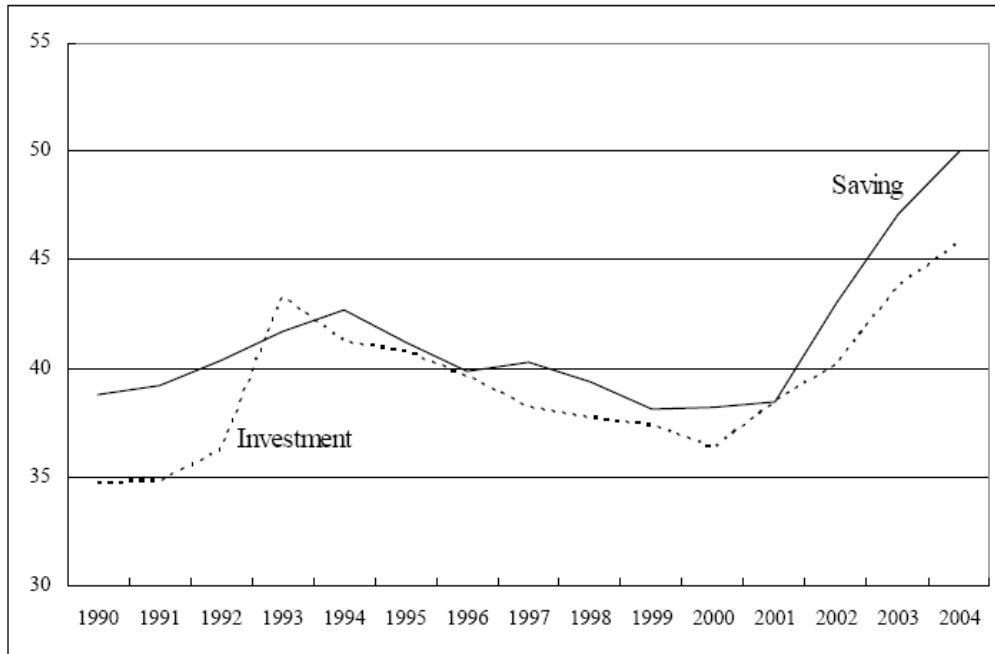
**Figure 2. Investment Share in GDP (Units Percent)**



Source: IMF, International Financial Statistics 2005.2, The World Bank, World Development Indicators 1997-2004, The World Bank World Development Report 1995-1996, OECD, and Country Sources (Figure taken from Eichengreen and Park, 2006)

**Figure 3. Saving and Investment in China (as a percentage of GDP), 1990-2004**

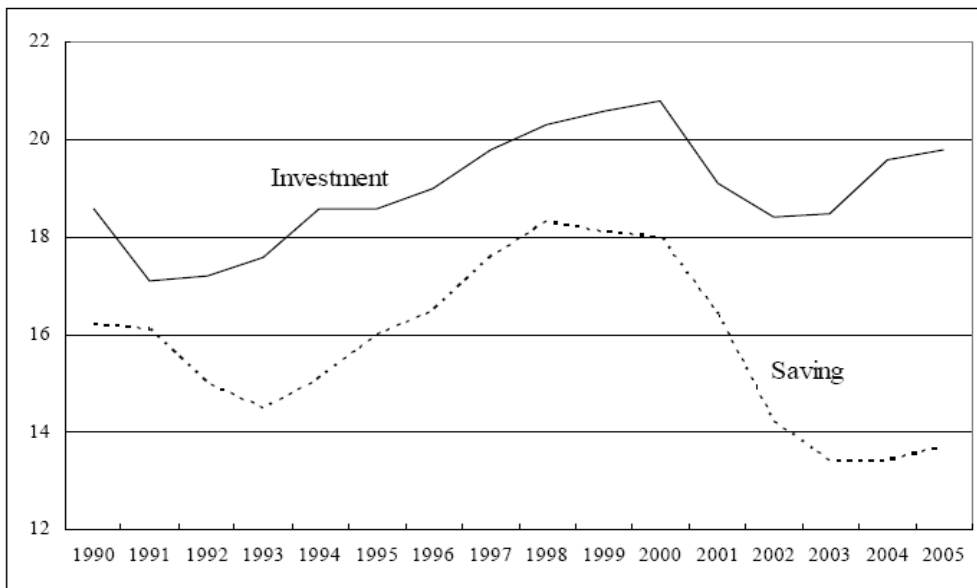
A.



Source: Jong-Wha Lee and Warwick J. McKibbin, KIEP Mid-Term Report – Domestic Investment and External Balances in East Asia, June 2006.

**Figure 4. Saving and Investment in the United States (as a percentage of GDP), 1990-2005**

A.



Source: Jong-Wha Lee and Warwick J. McKibbin, KIEP Mid-Term Report – Domestic Investment and External Balances in East Asia, June 2006.



China is the exception to this story. In China, investment *rose* during the first part of the present decade, but it rose by less than the rise in savings. The reasons for this rapid increase in savings include the abolition of the previous system of safety nets, so that rising private savings have been necessary (i) to provide insurance against illness, (ii) to pay for the costs of old age out of private savings, a need made more acute by a one-child-family policy, and also, (iii) for families to educate their one child as well as possible. In addition, when real incomes are growing fast, habit-persistence means that consumption is unlikely to keep pace with income.

Overall, as Eichengreen and Park (2006) observe, the crucial thing about what happened in Asia since the crisis of 1997-98 was not so much a savings glut, as a shortfall of investment relative to savings.

Because of this investment shortfall in East Asia, the real exchange rate of East Asian countries needed to be depreciated relative to the dollar, in order to redistribute demand away from the rest of the world and towards East Asian goods, to compensate for the low level of demand at home. Rapid growth of exports is the well-established means by which a country recovers after crisis, facilitated by exchange rate depreciation, and this happened in Asia too. Although the radically depreciated currencies of Thailand, Korea and Indonesia recovered after the crisis, their real exchange rates did not recover fully, and so remained depreciated. As a result, exports grew rapidly, and so replaced the missing domestic demand. China did not devalue at the time of the crisis, but underwent a significant period of deflation, starting from 1999 and continuing until the early years of the present decade. It pegged its exchange rate to the dollar, locking in the resulting gain in competitiveness, and maintained this peg in the face of rapid technological advance. So the Chinese real exchange rate has also been greatly depreciated, leading to a very rapid growth in exports there also.

As a result several major developing and emerging market countries, in particular China, emerged from the Asia crisis pursuing an export-led growth strategy – and maintaining undervalued exchange rates to facilitate this – with rapidly growing exports enabling them to absorb the surplus labour coming from their agricultural sectors. Why did this outward-looking growth strategy continue to be pursued - relying on rapid growth in demand from abroad, and assisted by depreciated real exchange rates - rather than relying on policies which attempted to build up investment at home and which attempted to stimulate consumption?

Reasons have already been described as to the reason for high savings and the difficulty in stimulating investment. But there are two significant further reasons for this policy of relying on external demand. One was in order to guard against future

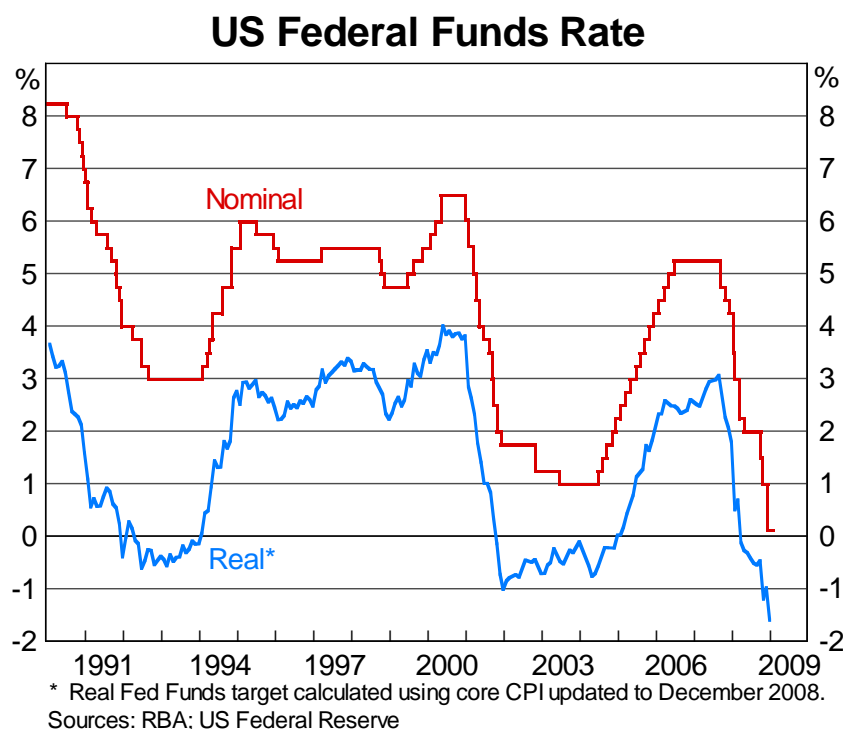
crises: the resulting surpluses enabled a building up of official reserves, in a precautionary manner, so as to deal with outflows of domestic capital, and ‘sudden stops’ in capital inflows. (Eichengreen, 2004, Portes, 2008)) This was a public sector strategy of insurance against future crises. Such an explanation sees the maintenance of a rapid growth of exports, and the resulting current account surplus, not as an end in itself but as the consequence of a desire by policymakers to build up reserves

A second different, but important, story is the ‘Bretton Woods II’ argument, provided by Dooley *et al.* (2004a, 2004b): that several major developing and emerging market countries, in particular China, deliberately pursued an export-led growth strategy because relying on rapidly growing exports, rather than on rapidly increasing domestic demand, enables one to sell into existing global markets for products, without having to build domestic markets. And one may be able to achieve rapid productivity growth in the traded goods sector - using best-practice global technology, partly introduced through FDI – and to do this faster than might be possible by growing the supply of nontraded goods for sale to domestic consumers. (This is just the Belassa-Samuelson effect.) This reason sees the strategy of growing external demand as being pursued because of the advantages of rapid growth of exports, in itself, rather than because it enables the accumulation of foreign assets.

### ***Global Imbalances and US Interest Rates***

The strategies in Asia, described above, were an important part of the reason that why global interest rates fell decisively at the beginning of this decade. But only a part.

Between 1998 and 2000 the fall in Asian investment-minus savings had been matched by a rise in investment in the US as a result of the dot-com boom, ensuring that output growth in the world remained high, and that East Asian economies recovered from the crisis by means of export-led growth. But when US investment fell from 2001 onwards, following on from the collapse of the dot-com boom, aggregate demand fell in the US. In the face of the fall in aggregate demand in the US, and in the face of a large current account deficit, demand was maintained by means of low interest rates, and by an emerging US budget deficit.



**Figure 5 US Interest Rates**

This cut in nominal interest rates – the ‘Greenspan put’ – was the appropriate response by the Fed<sup>5</sup>, since the fall in investment relative to savings led to a fall in the rate necessary to ensure full employment of resources – or the ‘neutral’ real interest rate – and the Fed’s actions were what was required to ensure that market rates fell in line with this. In the absence of inflation, this fall in nominal interest rates led to a fall in real interest rates. This reaction in monetary policy, together with the accompanying US fiscal expansion, was a *response* to the rise in US savings relative to US investment. It was a response to a fall in investment relative to savings very different in kind to that in East Asia, where recovery had been sought through export growth, facilitated by exchange rate depreciation.

Such a cut in interest rates in the US, accompanied by significant fiscal expansion there, was accompanied by cuts in interest rates in the UK, and elsewhere. This, together with the maintenance of undervalued exchange rates in East Asia and in other countries, ensured that the demand growth coming from these lower interest rates was transmitted to the rest of the world, including to East Asia. In China interest rates fell by less than in the US, thus damping the effect of this change in global monetary

<sup>5</sup> John Taylor and others have argued that the cut in interest rates was excessive; I criticize this view below.

conditions on domestic consumption and investment in East Asia, relative to what would have occurred had interest rates fallen by more. The difference between the rates at home and abroad was preserved by capital controls, which remained sufficiently effective to prevent the Chinese currency from appreciating.

One alternative to this unprecedented cut in interest rates at the end of 2001 and beginning of 2002 – and the accompanying fiscal expansion- was a very significant downturn in the US and other advanced countries, during 2002. Many feared – at the time - that such a downturn would happen. The cut in interest rates was precisely designed to prevent this happening, and to enable the ‘great moderation’ to continue.

Another alternative would have opened up if the dollar had fallen in the early part of the decade, at the same time as US interest rates were reduced.<sup>6</sup> If this had happened, the fall in US interest rates would not have needed to be so large, since some of the recovery from the dot-com crash in the US would have happened by means of an improving US current-account position. The US current account deficit was, at the time, around four percent of GDP, a level which was, until then, historically unprecedented. A reduction of a large proportion of this deficit, by means of currency depreciation, would have compensated for the fall in investment shown in figure 4<sup>7</sup>. But the dollar did not depreciate significantly at this time, and so this alternative was not possible.

The dollar did not depreciate against the euro and the yen because these countries also suffered from the dot-com boom and adopted expansionary monetary policies in line with those in the US. And the dollar did not fall against East Asian currencies because of the monetary and exchange rate policies of those countries, which were described above. As a result, East Asian savings remained high relative to East Asian investment, *even although* global interest rates fell so much. East Asian policy could have mitigated against this, by allowing interest rates to fall in line with those in the US and elsewhere. This would have helped to reduce the gap between domestic savings and domestic investment discussed above, and so have enabled rapid growth to have been consistent with a less rapid growth in exports. That, in turn, would have been consistent with currency appreciation. But East Asian policy did not make this choice.

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<sup>6</sup> Or there could have been an even larger fiscal expansion in the US,, but I put this alternative to one side.

<sup>7</sup> Investment would have fallen by even more if the interest rate had not been reduced by as much, and so the current account correction would have needed to be that much larger.

John Taylor has argued (Taylor, 2008, see also the discussion in Bean, 2009) that US interest rates need not have fallen as much as they did, by showing how much less the US interest rate would have fallen had it followed a ‘Taylor rule’, and by suggesting that the US interest rate should have followed such a Taylor-rule path. However, this argument appears to be misleading. A Taylor rule assumes that the neutral rate of interest – the rate necessary to ensure full employment of resources – is constant and shows how the interest rate should vary, relative to this given neutral rate, in order to control inflation. But the period from 2001 – 2004 was *not* a period in which controlling inflation was the central policy issue. Instead it was a time in which, for reasons discussed above, the natural rate of interest fell significantly. Following the higher interest rate suggested by the Taylor rule would have created a recession, and would have ended the great moderation. That choice might have been desirable. But the only circumstances in which steady growth could have been maintained, and yet the interest rate followed the higher path suggested by the Taylor rule, would have been one in which the dollar fell significantly<sup>8</sup>, so as to ensure that demand was sustained in the US, in the face of the fall in domestic investment, by means of rapid improvement in the current account position. This alternative was not available, in part because of East Asian policy choices.

Long-term interest rates fell, at the same time as short term interest rates. An explanation on this additional feature can be found in the expectation, prevalent at the time, that the outcome with low interest rates would continue for a long period of time.

The financial consequences of the resulting global macroeconomic imbalances were that large amounts of East Asian savings, and large holdings of foreign exchange reserves, were deposited in the US by East Asian asset holders. Such increases in East Asian asset holdings provide an additional argument as to why long-term interest rates fell, at the same time as short term interest rates. Asset holders in East Asia wished to hold long-term assets as well as short-term assets, pushing down long-term rates as a result of the short term macroeconomic outcomes.

The combination of undervalued exchange rates in East Asia *and* a use by the US of monetary policy to ensure the continuation of the great moderation was an outcome in which interest rates in the US had to fall by a very great deal. US monetary policy needed to be such as to ensure that demand growth was rapid enough to ensure full

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<sup>8</sup> This assumes that no further fiscal expansion would have been possible in the US.

utilisation of resources at home *and* a rapid growth in exports in East Asia. This fact had significant consequences.

### **3.3 Systemic Risks Created by Low Interest Rates in the US**

The *financial* consequences of a very great fall in interest rates in the US and elsewhere was a very large rise in asset prices. A very large reduction in (risk adjusted) interest rates will inevitably lead to a very large increase in the price of financial assets. Such an increase in prices of these assets will increase household wealth and will thereby lead to an increase in consumer spending. Such an increase in financial wealth acted as a crucial part of the transmission mechanism, from monetary easing to increased consumer expenditure, and is part of what the lower interest rates sought to bring about. Such a large monetary easing was, in turn, required because of the savings-investment imbalance, in particular because of those in East Asia.

But what happened was more complex than this. The fall in interest rates in the US and elsewhere led to a ‘search for yield’ by investors, who sought to maintain returns above the levels to which short term and long term interest rates had fallen after 2001. This was done by leverage, making the financial system more risky, and creating fragility. (Gertler and Karadi, 2009.). The argument in the previous paragraph suggests that, when interest rates rise again, the price of assets will fall again leading to a reduction in wealth and to a reduction in spending. Any policy which seeks to expand demand by means of interest rate reductions should recognise that a reversal will happen as interest rates rise again. The increase in leverage rendered the financial system vulnerable to collapse as the reversal got underway, in ways which were not expected; the resulting fragility was not understood at the time.

This fragility was created, particularly in the housing market, in the following way. The period coincided with a growth in the availability of mortgage-backed securities. Highly leveraged financial institutions (HLFIs) invested in such risky securities partly by equity finance, and partly by borrowing from elsewhere at lower interest rates. Such HLFIs increased their expected return on equity, as desired, by the borrowing, so as to enable them to increase the ratio of their loans to equity, or leverage ratio. At any point in time, the value of the equity of these institutions depends on the value of the investments in risky assets which they hold minus the value of their borrowing from elsewhere; their leverage ratio is equal to the value of these risky investments relative to the value of their equity, where the value of that equity is computed in the way just described. Any increase in the leverage ratio comes at the expense of an increase the risk attached to the return to equity, since the higher the leverage ratio,

the larger the effect on the rate of return on equity of a given fall in the rate of return on the risky assets in which the HLFIs are invested. HLFIs engage in leverage up to the limit of the risk that they are prepared to bear, given the expected return, and the expected variability of this return, of the assets in which they invest.

As a result of investing in mortgaged backed securities in this way, HLFIs greatly expanded the supply of mortgages, thereby driving down the price of such mortgages, and the return on them – including with subprime mortgages - to the point where any further supply increased the expected risk too far. This meant that keeping the return obtainable from mortgages high came to depend on increases in the interest rate charged over the course of the mortgage. This, in turn, came to require a continuing increase in the price of housing.

A continuing gradual increase in the price of housing was a feature of what happened, in the US until 2005, and in the UK until 2008. The rise in house prices coming from the reduction in interest rates was not immediate – as the discussion at the beginning of this section suggested it could have been. As the supply of mortgages rose, reducing their price, households increased their demand for them. With the growth of sub-prime mortgages, further households entered the mortgage market, enabling households to spend more on housing, and pushing up the price of housing. But the demanders of mortgages are collateral constrained – what can be borrowed for the purchase of housing depends on the prices of houses which, in turn, depends on what can be borrowed. (Miller and Stiglitz, 2009.) This constraint means that the increase in prices cannot be immediate, but must be gradual, along with increases in collateral. This continuing gradual increase in the price of housing underpinned the increasing supply of mortgages, provided by HLFIs, in the way described above. These institutions traded off risk and return, and came to depend on a continuing rise in housing prices. The HLFIs came to believe that they could limit the increase in the riskiness of this process, by means of asset diversification.

Investment in other risky assets, with similar leveraging, was engaged in by private equity firms, and by investment banks more generally. It was thought that the purchase of credit default swaps would help to insure the value of these risky assets, and so to reduce these other risks.

Leverage ratios well above ten have been common for investment banks, and for other financial institutions, in their attempt to increase yield in this way.

In sum, the lowering of interest rates, led to a ‘search for yield’ - an increase in the

demand not just for risk-free assets, but also for a wider class of riskier assets yielding a higher return. Leverage was the means of bringing this about - borrowing at low interest rates and investing in high yielding, more risky, assets, in particular in mortgages. The Asian crisis had given a strong warning that excessive leverage could be highly risky. But the growth of algorithmic risk models in finance led investors, and rating agencies, to believe that such risks could be offset by diversification. These models now appear to have been applied to too-short periods of data. They also appear to have been mis-specified, in particular by their ignoring systemic risks.

These systemic risks were as follows. HLFIs invested in mortgage-backed securities, financed by means of leverage, became exposed to the risk that the prices of houses would not continue to rise, so that the returns on mortgages, and mortgage-backed securities, could not be sustained. Further they were exposed to the risk that the prices of houses would start to fall, causing an increase in mortgage defaults, and so further depressing the price of mortgage-backed securities. Highly leveraged investors in other risky assets were also exposed to the risk that these other assets would also fall in value. And, essential to the argument of this paper, HLFIs became exposed to the systemic risk of rises in the interest rates at which they obtained their funds.

If interest rates not fallen so much in 2002, coming in part from what happened in Asia, then highly leveraged institutions would not have embarked on such a large increase in the supply of mortgages, and other financial institutions would not have embarked on such a large increase in highly leveraged finance. The very great fall in interest rates, coupled with the growth in leverage, led to a very great increase in the systemic risk attached to the financial system.

Financial globalisation meant that investment in US mortgages was taken up by banks and financial institutions not just in the US but in Europe. Thus countries beyond the US were also exposed to the risk of these assets falling in value.

## **4 The Crisis**

### **4.1 Onset of the Crisis**

As Figure 4 shows, interest rates in the US rose very steeply between 2004 and 2006. This was in response to the recovery in investment shown in Figure 5, and to the fiscal expansion (which increased as a result of the war in Iraq). And there was increasing inflationary pressure from rising global commodity prices, coming from the growth in East Asia continued to rise, itself a result of the rapid growth of exports.



As interest rates rose from 2004 onwards, the cost of borrowing by HLFIs began to rise, requiring them to pass on higher interest rate costs to those to whom they lent, in particular in the mortgage market. This caused the value of houses to begin to fall, and the value of mortgage-backed securities to begin to fall.

This fall in the value of mortgage-backed securities was amplified by a financial multiplier process. Since the value of the equity of HLFIs is a residual after subtracting their own borrowing from the value of their investments, the leverage ratio of HLFIs *rose* after asset prices fell, since the proportional fall in the value of their equity is more than proportional to the fall in the value of financial institutions which they held. This meant that their equity became *more* risky, and so that they needed to contract their balance sheets, by selling some of their investments and so reducing their borrowing, to reduce their leverage again. Such sales of risky assets led to further reductions in the demand for these risky assets. That led to further falls in the price of these assets. That in turn caused further contraction in the value of HLFIs' balance sheets, further sales of assets by HLFIs, further falls in asset prices, etc. etc.' Krugman (2008), and in more detail, Gertler and Karadi (2009) discuss this financial multiplier process. In the end, this process caused financial markets to seize up, leading to the collapse of Lehman Brothers.

This collapse in financial markets has led to a very large increase in household savings. For example, during the boom, the UK saw a rise in financial wealth of approximately 100 percent of GDP, in large part due to a rise in house prices. A fall in house prices of say 30% requires a very large increase in savings for this wealth to be recaptured. This increase in private sector savings has caused the financial crisis to become a demand contraction.

## **4.2 International Transmission**

The international transmission of this shock proceeded through two means. The first is the Keynesian transmission of demand, through reduction in demand for exports. Countries such as Germany and Japan, and China, highly reliant on export demand, saw foreign demand for their exports collapse. The collapse of the global financial system caused a disproportionately large effect on trade finance so making this collapse in exports particularly large.

Second there has been an international propagation of financial shocks through an international version of this financial multiplier process. A fall in asset values in one

country depressed the balance sheets of highly leveraged institutions there, depressing the demand for financial assets in other countries, reducing asset prices in those countries, leading to falls in demand for assets in yet further countries, and so to a reduction in spending in those countries. (See Krugman, 2008).

## **5 Short-term Global Policy Responses**

What we have seen globally in the short run, since the crisis struck, has been an unprecedented policy response, designed to halt, and then reverse, the downturn in demand.

The policy response to this crisis has had four components.

(i) Lowering of interest rates, to almost zero in the US and in the UK, and to very low levels in Europe and elsewhere.

(ii) Quantitative easing. This has involved an increase in the demand for long-term government paper, and private sector bonds, by the central bank, so as to ensure that long-term interest rates fall in line with short-term interest rates. Such quantitative easing has been necessary because the expectations channel – the expectations that interest rates will be sufficiently low in the future - has not been strong enough to ensure that long-term interest rates fall sufficiently to help stimulate spending.

(iii) Recapitalising of the financial system. The above discussion of financial collapse shows why recapitalisation of the financial system has been necessary, in order to avoid a reduction of lending by highly leveraged financial institutions with damaged balance sheets. This process has been led by bailouts of the financial system in the US, and in Europe. But the worsening of balance sheets has been so great that it still appears that it is in the interests of banks to deleverage and to curtail lending. In particular, as recovery begins, it has become clear that it is in the interests of banks which need to rebuild balance sheets, to increase the gap between lending rates and the rate at which they borrow. This difficulty is likely to damp the recovery, possibly very significantly.

(iv) Fiscal expansion. There has been very large fiscal expansions, something strongly supported by the IMF. (See Spilimbergo, et al 2008). This has happened in the US, Japan, UK, Germany, Australia, and elsewhere in the OECD, and also particularly in China.

A sustained global recovery will require that the reductions in interest rates, and the fiscal injections, are large enough to counteract the increase in private sector savings. Also, lower interest rates must help to discourage savings, and encourage people to borrow and stimulate investment. For the increase in borrowing and investment it is

essential that the financial system be repaired enough to prevent the blockages from continuing.

In the short run there has been a need to run large fiscal deficits, to replace private sector consumption, as described above. The other side of this coin is that there has been a need for a supply of public-sector assets, to replace the wealth in private sector portfolios which has fallen in value with the collapse in house prices, and, subsequently with the collapse in equity values. Since lowering of interest rates to zero has led to insufficient increases in private sector demand, the public sector has needed to go into deficit, by unprecedentedly large amounts. It must supply these assets, precisely because the private sector wishes to save and in the short run is unwilling to invest.

This raised a significant issue to do with the need for international cooperation. In each country there are costs of financial restructuring and bank bailouts, and costs of fiscal stimulus, in that these will generate an obligation to raise taxes in the future. Given that expansion by any one government creates spill-overs to other countries, each government would prefer a recovery to come from fiscal injections elsewhere in the world. This explains why we saw such a large emphasis on the need for co-operation in the run up to the G20 summit in London in Early April. The need for cooperation will be particularly strong as the recovery gets underway, with the governments each tempted to remove stimulus too soon in order to safeguard their fiscal position, to begin the process of reducing their deficits, so as to halt, and reverse, the accumulation of public debt.

This brings us to what is needed to ensure cooperation in the longer term, to which we now turn.

## **6 Resolving Global Imbalances in the Longer Term**

Global imbalances are an outcome of the asymmetric savings-investment gap, world wide, which has played a role in the crisis; resolution of the crisis will require that this asymmetric savings-investment gap, and so the global imbalances, are resolved. That is, we require not just an outcome in which there are low interest rates world wide, at the short end and the long end, and, to assist with this, financial sector bailouts and fiscal expansion, world wide. We also require that some of the expansion of demand in the deficit countries comes from an expansion of their exports, facilitated by a devaluation the real exchange rate of these deficit countries. Conversely it will require a disproportionate expansion of demand in the surplus countries and also an

appreciation of their exchange rates.

One risk is that there is excessive reliance on recovery of domestic demand in deficit countries, in particular in the US. That too would be part of an outcome which set the whole process off all over again.

The UK has already devalued significantly, and its recovery will be assisted by a depreciated real exchange rate. Because the UK is a small economy the effect of this sterling depreciation in causing an appreciation of the currencies of other economies will be small, and thus not particularly significant.<sup>9</sup> But of course this cannot be achieved for all deficit countries. In particular it cannot be achieved by the US - without there being significant appreciation against another major region of the world.

A converse risk is that there is insufficient recovery of domestic demand in the surplus countries, which up until now have been reliant upon growing exports, such as Germany, Japan, and countries in East Asia, including China. China appears to be moving in the required direction. There are however very real difficulties in the expansion of domestic demand sufficiently, for all the size of the fiscal injection. At present savings in China are high, not just for the reasons described above, but also because of the high level of profits, both in the old state enterprises, and in the rapidly growing private sector. Profits are not being distributed to the household sector, but are instead are being used to fund private investment. And a very large fraction of the stimulus has come from large increases in public infrastructure investment. This increase in investment increases productive capacity, so requiring a yet larger increase in domestic demand the future. This does not resolve the imbalance between domestic savings and domestic investment. That resolution requires that consumption grow, which requires a steady increase in real income, which in turn involves competitive pressure on firms to lower prices or redistribute profits to the household sector. Yu Yong Ding (2009) has argued that the current process is not sustainable, and that it will go on adding to capacity directed towards exporting. It appears that that China is not in a position to ensure the required currency appreciation along with a recovery in consumption, as recovery comes. Without such changes, there is a risk of setting off the imbalances described in Section 1, all over again.

The required appreciation of the exchange rate also will be difficult to bring about. Estimates widely suggest that the Chinese currency is 30 or 40 percent undervalued. This cannot be corrected, in a large immediate movement, without bankrupting firms geared towards producing output for export. What is required is a gradual

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<sup>9</sup> This is not true of Ireland.

appreciation of the real exchange rate, at a rate of 4 or 5 percent per annum for say 10 years, over which time the current overvaluation of the exchange rate would be removed and adjustment made for ongoing subsequent increases in Chinese competitiveness, as compared with that in the US and other advanced countries. But such a gradual appreciation offers opportunities for speculative benefit, creating the possibility of large capital inflow in search of capital gains. These could bring the appreciation forward, creating the possibility of a currency crisis in which the renminbi appreciated greatly. Any attempt to moderate such capital inflow by setting lower interest rates within China would be vulnerable to the possibility that this would stimulate a too great growth in domestic demand, in the form of investment. Making a successful move in the required direction of currency appreciation seems to necessitate sufficient restrictions on capital movements as to prevent the capital inflow from destabilising the process. It is possible that liberalising financial system within China, in such a way as to encourage an increase in holdings of foreign financial assets by Chinese residents, might create a counterbalancing capital outflow which could dampen any capital inflow. Movements of the currencies of other Asian countries will become much easier or if the Chinese currency appreciates.

If currencies of East Asia do not appreciate, but financial market pressure forces the dollar to devalue, then the world faces significant regional tensions. It is only possible for the dollar to devalue, and at the same time for currencies in East Asia not appreciate, if there is significant appreciation of the euro. This will make recovery in Europe difficult.

Within Europe there are also significant internal imbalances. Germany has been running a growth strategy based on an improvement of competitiveness with respect to the remainder of the EMU region, relying on the fact that Portugal Greece and Spain significantly uncompetitive. These countries are unable to carry out as large fiscal expansion, since, with disproportionately large falls in output tax revenues have collapsed, and budget deficits are so large that further expansion is deemed irresponsible. As a result of expansion within the European zone depends upon expansion of domestic demand within Germany, or the attainment of a more competitive position of the euro region as a whole. But, if as described above, global pressures cause the European currency to appreciate, then the latter strategy becomes unavailable. If this is true then a recovery of growth in Europe depends fundamentally upon expansion of demand in Germany, either expansion of private demand, or if that is not possible, and further fiscal expansion.

## **7 Fiscal Imbalances and Global Imbalances in the Longer Term**

When the recovery comes the fiscal positions will come under strain. The fiscal time profile in different regions that deal with these strains in the different regions must be constructed in such a way as to be consistent with a resolution of global imbalances.

As the recovery comes, investment by the private sector will increase, offsetting the increase in private sector savings, and some parts of the private sector will wish to borrow, taking advantage of the low interest rates. The value of the wealth of the private sector will have recovered, and the private sector will have begun to rebuild its savings. Spending will increase. At this point the large fiscal deficit risks becoming excessive – with public spending too high and taxes too low. There will have been very large increases in public debt. Private sector spending will recover sufficiently that interest rates will need to rise, to prevent this increase in public debt causing such an increase in consumption that it causes excess demand and inflation.

What will be needed to prevent a large rise in real interest rates, in due course, is both a return of growth – and so growing tax yields – and the ability to raise taxes, so that the supply of public-sector debt ceases to increase rapidly, and in due course that the stock of public debt begins to fall. There is a difficult middle way to be achieved here. In the short run, as described in Section 3 above, the public sector must supply enough assets, precisely because the private sector wishes to save and in the short run is unwilling to invest. But in the long run as growth returns in the position is reversed. The supply of public-sector assets must be reduced – i.e. budget deficit must be curtailed -- and, more than this, the stock public-sector assets must be reduced by a string of public-sector budget surpluses, so as to make room for assets issued by the private sector as the private sector borrows and issues equity.

Discussions of the budgetary position in the US, the UK and elsewhere make it clear how costly, and politically difficult, it will be to raise taxes in the required way. Such higher taxes will not just be difficult to raise because of the burden which they place on consumers, but they will also constrain the possibility of profits and growth. Many in private financial markets thus fear that taxes will not be increased in the future – that political institutions may not be strong enough to ensure this when we reach the longer run. This fear of high interest rates in the future, is in danger of causing high long-term interest rates to rise in the present. “Once bond yields go above a certain level – [perhaps] about 6 per cent – it becomes difficult to justify buying stocks. They could reach this level when the Treasury bond market finally chokes on the huge new issuance governments are trying to push down its throat to fund the deficit.” (Arthurs, 2009). Such a rise of long-term interest rates in the present may serve to check, or

even to prevent, the effectiveness of the policy response in Section 3.

This discussion suggests a time inconsistency – or contradiction – in the strategy described in Section 3. It is critical that fiscal institutions remain sufficiently strong that this time inconsistency can be resolved. Governments have needed to be able to expand enough in the short run. But they also need to be able to promise that they are committed to raising taxes enough in the future. If they cannot do this, that will make the recovery more difficult.

The risk of this time inconsistency is larger if there is a fear that central banks may be prevailed upon to renege on their commitment to fighting inflation in the future, as the recovery gets under way. If, in the future, higher taxes come to constrain the possibility of profits and growth, it might be argued that it is desirable to inflate the public debt away, so as to remove the resulting tax burden, and so as to enable higher profits and growth. If there is a fear that the inflation targeting framework is not strong enough to prevent this happening, then long term interest rates will rise in the short-run, not because of a fear of higher real interest rates in the future, but because of a fear of higher nominal interest rates in the future, as inflation sets in. Such a fear of future inflation will hinder the recovery in the short-term. And the value of public-sector debt will fall in the short run, limiting its ability to replace the wealth which had been held in the form of housing, thereby constraining the willingness of consumers to spend.<sup>10</sup>

This problem of public debt interacts with the problem of global imbalances. One important implication, which we will discuss, is that the level of public debt, and the flow budget deficits, must be consistent with the resolution of global imbalances. The fiscal discipline necessary in the deficit countries - in particular in the US - must be greater than the fiscal discipline in the surplus countries. A fiscal position which is disproportionately loose in surplus countries will be enable exchange rates to be appreciated there, and it will be possible for this appreciation to be assisted by rising interest rates in these countries; the expectation that this will be so will enable long-term interest rates to rise earlier there providing further assistance in helping their currencies to appreciate. Such monetary policy action will certainly help prevent them

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<sup>10</sup> Some -- e.g. Woodford -- have argued that the there is a reason for promising higher inflation in the future -- namely that this will act against deflation now. The risk of deflation seems to be passing. But even if it were not, the fear of higher inflation in the future, in order to give rise to expectations of inflation in such a way as to keep present inflation from falling, is likely to have a significant effect on dampening demand, even if it does act so as to lessen inflationary threats. Such a strategy therefore does seem risky.

from remaining excessively depreciated.

Conversely, if fiscal pressures are resisted in the deficit countries then, providing that monetary policy remains committed to inflation targeting, the fact of lower interest rates will help to ensure currency depreciation, in particular ensuring that the depreciation of dollar happens (and that the depreciation of the pound sterling is not reversed).

This could easily go wrong. In the absence of fiscal discipline in the US, global markets might come to fear that US interest rates will rise – either to control inflation, or as a result of the US attempting to inflate its way out of the crisis. Fears of this could cause longer term interest rates in the US to rise. Many G20 policymakers appear to worry about the possibility of capital being pulled into the government bond markets in the US, and in other developed countries that are running large fiscal deficits. This could then cause the dollar, and currencies of other deficit countries, to rise. That will put at risk the correction of global imbalances discussed in the previous section.

## **8 Global Surveillance by the IMF**

The global crisis that we have had could have been averted only by a different way of managing macroeconomic policy internationally.

A new alternative to the current non-system is needed, in which there are stronger underlying rules, one in which nations are induced to manage their macroeconomies in ways that do not produce external imbalances and inappropriate exchange rates, do not produce financial boom and bust, and do not produce inappropriate fiscal outcomes. That is, macroeconomic policy frameworks need to be broader than the inflation-targeting-regime which has characterised policy in the past decade, and there needs to be a move towards some external enforcement of rules relating to these frameworks.

### *Surveillance of Macroeconomic Policy Regimes*

Amongst advanced G20 countries, and others with floating exchange rates, it is necessary that nations use *three* policy instruments (monetary policy, regulatory supervision, and fiscal policy) in appropriate ways.

Interest rates need to continue to manage aggregate demand with the aim of keeping



inflation low and, after recovery from the present crisis, keeping unemployment at sustainable levels. It would be wrong to abandon the practice of inflation targeting. But it needs to be augmented with other policies.

Countries will need to regulate their financial systems so as to limit speculative risk taking. There will need to be a limit to borrowing and to the leverage of financial institutions. This involves an increase in financial regulation which would limit the allowable increases in balance sheets, and the capital requirements, of systemically important financial intermediaries. There has been much discussion of the need to separate investment banking from commercial banking, to limit state guarantees to the commercial banking sector only, and to limit the size of guaranteed commercial banks to the fiscal capacities of host governments – in order to prevent the excessively large fiscal burdens which have had to be assumed in Iceland, Ireland and the UK. It is necessary that this constraint limits the ability of financial institutions to leverage and to expand demand, so as to reduce the fragility of the financial system.

Exchange rates will continue to float. A country with excessive inflation will raise interest rates and the expectation is that this will allow the exchange rate to appreciate. Countries in which demand is too low will, as before, lower interest rates and allow exchange rates to depreciate. Movement in exchange rates need to be guided by an understanding of the rules which will guide monetary policy.

Finally, countries will need to keep fiscal policies sufficiently in line that interest rates do not need to be set in such a way as to impede recovery from the present recession. But in addition this needs to be done in a way which is consistent with exchange rate movements, over the medium term that would eliminate external imbalances.

This virtuous policy trio will not be self-enforcing, as this decade's experience has so clearly demonstrated. The experience of the last decade has shown that inflation targeting can be self-enforcing. There will need to be international surveillance concerning the other elements of policy, and the IMF needs to play a much stronger role in this process. King (2006a, 2006b), Camdessus (2005), Eichengreen (2009), Bénassy-Quéré and Pisani-Ferry (2009) and many others, have argued for the strengthening of such surveillance.

Macroeconomically, this will require a clearer identification of unsustainable policies. The IMF's *World Economic Outlook* is the natural vehicle for this analysis. But so far the Fund has been reluctant to issue strong warnings in such instances. But the IMF will need to issue stronger warnings about unsustainable policies and about the need to

correct, say, the US current-account deficit, about the inappropriateness of policies in causing such a deficit to continue, and about the movements in the exchange rate necessary to bring this correction about.

Microeconomically it is clear that, as part of this surveillance process, the IMF needs to play a role as a macro-prudential supervisor, to warn of risks of global financial instability, and to bring about changes in regulatory policies to guard against this. Financial markets now do need macro-prudential regulation, at the global level. As discussed above, global interconnections now work crucially through finance as well as through trade – the crisis spread internationally partly through financial means. It is important to work towards an outcome in which the international monetary system has a global regulator to guard against this. The G-20 has suggested that the Financial Stability Board (FSB), made up of national supervisory authorities, should take the lead in these tasks, and that the IMF should play a minor role. But it is not at all clear that this is appropriate. The IMF has a large expert staff, and is the kind of universal organization in which surveillance could take place.

Making multilateral surveillance more effective in this way will imply a loss of policy sovereignty. Far more effective global governance of the IMF will be required for this to be possible, and effective. One proposal that has been put forward would place the responsibility for the delivery of improved policies more firmly in the hands of the management of the IMF. At present, the Executive Board of the Fund involves itself in day-to-day reviews of Article IV reports. Stepping back from this activity would enable the global surveillance process to carry out the tasks just described. Evolution in this direction could strengthen the accountability of the Managing Director and his Deputies. In one version of this type of arrangement, all of the Managing Director, the Deputy Managing Directors, and Department Directors, would report on a regular basis to the Board, but Executive Directors would be more removed from many of the day-to-day decisions of the institution, including those about surveillance.

It is clear that agreement on surveillance will be difficult to achieve. It will make inroads into national sovereignty. Of course there will be a reluctance of national supervisors to surrender this responsibility to a multilateral organization. And there will be resistance to this from financial markets. But the current system, without effective surveillance, will continue to make boom-bust outcomes likely. That too would be very costly, as we have seen recently.

*Surveillance of Policy Regimes in which Exchange Rates are Pegged*

But this is not enough; changes need to be made in the way in which macroeconomic policies are managed in emerging market economies which peg their exchange rates

A central feature of a global system which will guard against the difficulties which have been described above needs to be one in which emerging market economies countries do not pursue overly competitive exchange rates. Such a system would be part of what is required to ensure that emerging market economies pursue macroeconomic policies which do not adversely affect the rest of the world. For example, an excess of Chinese savings over its investment, without an exchange rate that supported a trade surplus, would have produced a recession in China, perhaps triggering a domestic demand-expanding policy response in China. In these circumstances, policy in the US, without a huge trade deficit, would have been more moderate and would not have included such low interest rates.

This system would need the IMF to determine the appropriate exchange rate values for countries – ‘fundamental equilibrium exchange rates’. The IMF would then be given the power to require countries not to intervene in such a way as to steer their exchange rates away from these fundamental values.

It is difficult to specify equilibrium exchange rates. There are a number of ways of doing this which give different answers – the IMF has three different methods. (IMF, 2007). As a result this requirement by the Fund could only be activated if a currency was judged to be a significant distance from its fundamental equilibrium level. This would *not* involve an attempt by the IMF to impose, or fix, exchange rates. Rather it would involve a requirement that countries not intervene in an attempt to maintain exchange rates well away from their fundamental equilibrium values. There would of course be issues of transition; countries with managed exchange rates far from their equilibrium values would be given a period of time during which their managed exchange rate could be brought closer to an equilibrium value.

If such a move is to be possible the international financial system will also need to provide credible insurance to emerging-market countries that avoid setting their exchange rates at depreciated levels, and forego the resulting reserve accumulation. As Portes (2009) has suggested, this could involve central bank swap lines and more ambitious ‘reserve pooling’ arrangements. But importantly, beyond this, it should involve a new system of the provision of international reserves for emerging market economies. Such a scheme might be one in which the IMF issued SDRs to emerging market countries, and was also given the power to make emergency issues of SDRs to fight crises, making the IMF a ‘lender of first resort’ (Cohen and Portes,

2006). That would make it unnecessary for countries to seek to run current account surpluses to accumulate foreign reserves for insurance reasons, removing one of the key reasons underlying the current savings investment imbalances in emerging market economies, with which we began our discussion. This would go well beyond recent issues of SDRs, following the G20 summit meeting. A consequence of such a scheme is that the US would be less tempted to overspend, since it would lose the “exorbitant privilege” of issuing the world’s reserves.

These two changes to the international monetary system also imply a loss of sovereignty, in two ways. They would limit the ability of countries, including emerging market economies, to set their exchange rates in ways which harm the rest of the world. It would also limit the ability of countries that issue reserves, in particular the US, to run excessive deficits. But there is the possibility of making them mutually reinforcing in emerging market economies. It would be possible to link access to SDR financing to countries which were not intervening in such a way as to cause their exchange rates to be greatly undervalued – so as to make the provision of this financial insurance an alternative to running large current account surpluses.

It will be impossible to get agreement on a major role for the IMF in influencing the policies of emerging market economies unless further changes are made to the governance of the IMF, so that the Fund inspires trust and confidence in these countries. That in turn will need changes in the IMF’s distribution of power, and voting structure, so as to reflect the changing realities of the world balance of economic power. The *ad hoc* provision of increased quota shares to China, Korea, Mexico, and Turkey in 2006 under the Fund’s Medium-Term Strategy was a first step toward realigning voting power in the Fund with emerging markets’ growing share of the world economy; further steps will inevitably require decisions to reduce the shares of others.

## **9 Conclusion**

The world we live in has turned out to be highly unstable – the great moderation turned out to be a great illusion. Three features of this world have contributed to this instability - domestic policies in advanced countries that were confined only to inflation targeting, exchange rates floating in some countries but managed in other countries, and a financial system in advanced countries with a high degree of leverage. The combination of undervalued exchange rates in East Asia *and* the use by the US of monetary policy to ensure a steady growth in demand – as dictated by an inflation targeting regime - led to an outcome in which interest rates fell a great deal.

In the presence of a highly leveraged financial system, such a large fall in interest rates created an outcome in which continued growth was built on fragile foundations.

Keynes' two arguments – about the need for global support of policies in individual countries, and the need for global coordination of policies - remain valid to the present day. To satisfy these needs we again need a rules-based system, although of a very different kind from the adjustment-of-managed-exchange-rates system of Keynes' time. What is now needed is greater global surveillance of national policies.

This requires greatly enhanced global surveillance of national macroeconomic policies. Central to this is the need to ensure that fiscal policies do not support outcomes in which exchange rates remain away from the levels necessary to ensure more balanced external positions in the longer term. To this must be added a new element: stronger global surveillance of national financial systems. The aim of this would be to limit the fragility of national financial systems, and limit the international transmission of shocks through financial means.

For countries which peg their exchange rates, an additional form of surveillance is required. What is needed is some limit over the ability countries to pursue managed exchange rates at levels which are far away from their equilibrium position, and which can cause excessive movements in interest rates elsewhere in the world. To this surveillance must be added a provision of international reserves in a way not dependent on the dollar.

This proposal for such a more rules-based system sets up a demanding agenda. But something like this appears necessary to guard against a repetition of the experience of the past two years.

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