

Hannes Androsch

# **Exchange Rate Regimes and Economic Crisis**

**A Tribute to Stephan Koren**

Special edition. A translation of this article was first published in a volume commemorating the 90<sup>th</sup> anniversary of Stephan Koren's birth (Ein Steuermann in stürmischen Zeiten. Erinnerungen zu Stephan Korens 90. Geburtstag.)

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# Exchange Rate Regimes and Economic Crisis<sup>1</sup>

Hannes Androsch

*“No single exchange rate regime is right for all countries or at all times.” Jeffrey Frankel (1999)*

*„Der Zustand des Geldwesens eines Volkes ist Symptom aller seiner Zustände.“ Joseph A. Schumpeter (1929)*

Stephan Koren was no stranger to economic crisis. Nor did he shirk from taking a clear and uncompromising stance on important policy questions that confronted him in the execution of public office. As finance minister in the Austrian Federal government from 1968 – 70, he was actively involved in the dying throes of the Bretton Woods System. For some of this time, the Under Secretary in the US Treasury with responsibility for international monetary affairs was none other than Paul Volcker. Moreover, Dr. Koren served as President of the Austrian Central Bank from 1978 – 88; at almost exactly the same time, Paul Volcker was Chairman of the Federal Reserve System.

Both men were linked by much more than that their careers seemed to run in parallel. Paul Volcker is largely credited with having succeeded in

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<sup>1</sup> The author would like to thank Ciarán Cassidy and Wilhelm Hankel for their support and suggestions in the preparation of this paper.

getting US inflation under control in the 1980s. He did this by the determined pursuit of policies of monetary control, often in the face of considerable political opposition. Stephan Koren was a staunch supporter of the hard-currency regime, and a critic of deficit spending. His priority was also the achievement of stable economic growth at low rates of inflation. It is easy to see that both men had much in common.

My choice of topic for this contribution is partly inspired by the international financial crisis which dominates economic discourse at present and in which Stephan Koren would have felt quite at home. Financial crisis is frequently linked to the exchange rate in the public perception, with the implication that the latter is in some sense responsible for the former. Top of the agenda in the aftermath of crisis is the reform of the exchange-rate system and its institutional architecture. Predictably, we have recently had President Sarkozy and Chancellor Merkel calling for a “new Bretton Woods”.

In my view, the true culprit is not so much the system as the way the system has been operated. We jettisoned the gold standard when it failed to meet the needs of the day; only later did we realise that human error rather than technical failure was at the root of the problem. Exactly the same can be said of the Bretton Woods system which was undermined by a glut of dollars in the international economy. This was a direct consequence of US policy, waging war in Vietnam, implementing the social programme the “Great Society” at home, and the space programme; the additional public expenditure was to be attained without increases in tax revenues. The additional expenditure was to be realised by increasing the money supply, and much of the excess found its way into the international economy.

In the end, it was obvious that the United States could not meet its convertibility commitments with regard to short-term dollar liabilities held outside the United States; this bluff was called by President Charles de Gaulle along with his advisor Jacques Rueff. Contrary to what one might expect, the international role of the dollar was to continue as a medium of exchange and unit of account thanks to an agreement reached by Henry Kissinger with the Saudi Arabian government in 1974. This agreement effectively established the petro-dollar standard. Henceforth, oil was to be priced and invoiced in dollars. This led to sustained demand and a massive recycling of dollars in the global economy, an arrangement which claimed its first victim when Mexico defaulted in 1982.

And now, history seems to be about to repeat itself, yet again, although no one has yet pointed out any convincing link between the exchange rate system and the financial crisis.

Three goals are set for this contribution. First of all, it is intended to analyse the three principal exchange rate systems the world has experienced since the middle of the 19th century. These are the gold standard, Bretton Woods and the period of floating, with many shifts of paradigm, which we have had since 1973. I wish to focus on the rationale for each, show why it worked (when it did) and why it ultimately failed. In each case we will see that our inability to operate the system within its technical specifications was the primary cause of failure. This exercise should also serve to refresh our memories of historical reality and avoid a nostalgic idealisation of the past. This will take up most of the paper.

The next goal is to analyse the global financial crisis of 2008, which is sure to leave a heavy footprint on our psyche for quite some time to

come. Here, I suggest that the cause, or rather causes, are complex and cannot be meaningfully reduced to the avarice of the capitalist system. Rather, we need to consider the interplay between long-term global economic trends and more micro-developments on national capital markets.

And, finally, I would like to suggest some tentative solutions to the problem, although these are designed to end the war rather than to manage the ensuing peace. In the short run it is imperative to halt the “melt-down” of the financial system. But the long-run prerequisite is the same and as self-evident as ever, i.e. that no country can live beyond its means indefinitely, even if institutional features such as the reserve-currency status of its domestic money supply might appear to alleviate this constraint. On the other hand, the long-run stability of the system is equally threatened by countries which pursue “mercantilist-type” policies and seek to achieve growth and wealth accumulation via an obsession with exports and the suppression of domestic demand. By this we have in mind a number of Asian economies, chiefly among them China whose political stability is very much dependent on export-led growth.

But first, we turn to consider the exchange-rate system and consider how this has been associated with financial crises.

## **The Classical Gold Standard (1880–1914)**

In the past 150 years or so, we have experienced three fundamental shifts of regime, with any number of sub-variants sharing the limelight. These are the classical gold standard of fixed exchange rates, which reached its apex as a global system at the end of the 19th century; the Bretton

Woods System, an adjustable-peg system, which operated more-or-less effectively from the end of World War II until the end of 1971; and the period of generalised floating post 1973.

In Europe we can now add a fourth – the Economic and Monetary Union, or EMU, which commenced in 1999 – although this is more a regional arrangement than a global system. The EMU is also much more than an exchange-rate regime. However, its currency, the euro, can be viewed as a pillar, along with the dollar and the yen, in an emerging tripolar global currency system, Androsch (2008a).

In the popular perception, there has never been a simpler, more efficient or a more stable system of currency arrangements between countries than the gold standard. It provided automatic correction of payments imbalance between countries, automatic and self-correcting price stability, and stabilising international capital flows which kept exchange rates at, or close to, their legal parities. It effectively came to an end with the outbreak of the First World War. Subsequent attempts were undertaken to bring it back in one form or another. It has contributed ever since to the romantic fascination with gold as a monetary asset and as a safe haven for wealth conservation.

And, its performance was impressive. It provided an extended period of exchange-rate stability, during which parities were maintained within narrow bands of about 1%. Labour was free to move internationally; investors enjoyed relatively open access to international capital markets and there was an absence of exchange controls between countries.

**The Theory of the System.** Three simple mechanisms were used to explain how the system worked. David Hume developed the Price-



Specie-Flow mechanism as a counter to the mercantilists, who felt that a country would be enriched by perpetual external surpluses or impoverished by perpetual deficits. Yet, it seemed to fit perfectly to two countries on a common gold standard. Hume had argued that a deficit country loses gold reserves, which reduces the money supply and depresses domestic demand. This reduces the demand for imports and releases more goods for export. The surplus country acquires monetary reserves, which boosts domestic demand, thereby reducing the quantity of domestic goods available for export and increasing the demand for imports from the deficit country. Hence, an external deficit or surplus is automatically self-correcting thanks to the flow of gold specie from deficit to surplus countries and the symmetric impact this has on demand in both countries.

The price-stability mechanism was developed by John Stuart Mill. In a gold-standard country, gold is the value unit of account and the values of all other goods are indirectly specified in terms of gold. An over-supply of gold is inflationary because as its price falls, all other prices rise in terms of gold and currency. A shortage of gold is deflationary, for exactly the opposite reason. When gold is scarce, its relative price rises (deflation), so that gold-prospecting activity is stimulated (and, presumably, the rate of new discoveries). This counteracts the increase in the price of gold. When gold is plentiful, its price falls (inflation) and this discourages prospecting activity. This tends to reverse the fall in the price of gold. Mill argued that fluctuations in the relative value of gold would influence prospecting activity and thus the rate of new discoveries (very much in the way an increase in the real value of petroleum today stimulates exploration and the rate of discovery of new oil reserves).

That exchange rate stabilisation should also work automatically arose from the complete confidence of all concerned that any deviations from exchange-rate parity would be quickly corrected by the relevant central bank. Thus, for example, should sterling depreciate against the French franc, speculators would rush into sterling to benefit from the perfectly anticipated capital gains when the Bank of England took corrective action. But such speculative flows were stabilising because the resultant demand for sterling would correct the exchange parity without any need for the Bank of England to intervene.

**The reality.** The working of the gold standard was rather different. For a start, the economy did not behave as these simple mechanisms predicted, at least not in the short run. As with most simple mechanisms in economics, there is little empirical support for their operation in spite of their logical elegance. Nor did the gold standard come into existence because its superior performance was evident to all – when it did emerge, its operation was punctuated by crises, even suspensions, and its heyday lasted a mere 34 years.

**The Arithmetic of the Gold Standard.** The essential difference between a gold-standard country and any other economy is that the price of gold is fixed in currency terms (e. g. \$35 per oz.) and that complete convertibility is assured both in the domestic economy as well as the international economy. The authorities are committed to intervene in the gold market, when necessary, to fix the price of gold in domestic currency terms.

A problem arises with inflation, whereby the average price level rises in currency terms. For simplicity, let's assume all prices increase by 10%.

However, the price of gold is fixed by the authorities and is not allowed to rise. We then have a classic example of the government intervening in a market and fixing a maximum price (for gold) which is below the market-clearing price.

In our inflation economy, we have no problem in the markets for goods whose prices have risen by 10%. But the currency is overvalued in terms of gold; gold is undervalued in terms of currency and all other goods. Therefore, gold purchases represent excellent value (it is cheap) and many will want to buy more of it. The government has to keep selling gold in order to prevent its price from rising, but this can only continue as long as stocks last.

Sooner or later the government will have to take remedial steps – (1) devalue the currency in terms of gold (e. g. to \$38.5 per oz so that the price of gold has also risen by 10%), (2) deflate the domestic economy until goods prices fall back by 10% to their pre-inflation level, or (3) refuse to sell gold for currency, i. e. suspend convertibility. Option (3) meant leaving the gold standard; option (1), while possible, involved a loss of credibility and national prestige, so that option (2) was that generally used.

**Emergence of the Gold Standard.** Although there is no official date for the commencement of the gold standard, it is widely accepted that it existed as an international standard from about 1880 and lasted until the outbreak of World War I in 1914, Eichengreen and Flandreau (2005). Although Great Britain had adopted a gold standard as early as 1821, some say sooner, other countries, including India, Britain's largest colony, were slow to follow her example. India adopted the gold standard

as late as 1898. One reason for this tardiness was a fear of inflation which might follow new gold discoveries.

But another reason why a global gold standard took off only slowly was that many countries preferred either a silver standard, or opted for a bimetallic standard. This involved gold and silver coins, of equal value, in simultaneous circulation, or the convertibility of paper currency into either gold or silver. France was the leading bimetallic country and fixed the mint silver-gold exchange ratio at 15½:1 for much of the century.

It was not until mid-century when a series of countries, one after the other and for a variety of reasons, adopted a gold standard for their currencies. This gave the gold standard a critical mass, so that a positive network effect made gold ever more attractive for additional members. But the debate over gold versus silver continued. The US presidential election of 1896 was dominated by the issue.

The Democratic candidate, William Jennings Bryan, advocated a silver coinage programme and proposed to flood the market with silver coins to alleviate the deflation and depression which had plagued the United States for many years (much as the Federal Reserve flooded the credit markets with liquidity when confronted with the Dot-com crisis of 2000 and the credit-market crisis of 2007-8). This proposal won particular approval from debtor groups, such as small farmers, whose debts would be eroded by inflation. The Republican candidate, McKinley, advocated a gold standard approach to prosperity, which was perceived to be non-inflationary and won the backing of creditor groups, such as banking.

With McKinley's victory, the United States joined the Gold Standard officially in 1900, although the dollar had been convertible into gold

since 1873. Throughout the 1870s, virtually all the major economies either adopted the gold standard, or were already on it. These included, inter alia, Germany and Japan (1871), the Latin Monetary Union (Belgium, Switzerland, France, Italy and Greece) in 1873, the Scandinavian Monetary Union (Denmark, Norway and Sweden) in 1875, Spain (1876), Finland (1878). By 1880, the gold standard was in full flight.

In Austria, meanwhile, the situation was more fluid. Gold coins were introduced in 1857, but their use was largely confined to payments settlement with countries which were already on the gold standard. Following the “Accommodation”, or “Ausgleich”, between Austria and Hungary in 1867, it was envisaged that the dual-monarchy would issue a gold-backed currency. This measure was delayed by the opposition of interest groups which hoped to benefit from the competitive advantage afforded by a depreciated Austrian currency. The introduction of a gold coinage was decided upon in 1892 and this became legal tender in 1900. However, gold coins were never predominant as the circulating medium of exchange, as Austrians preferred paper currency and the gold coins invariably ended up back in bank vaults, Androsch (1985).

**Not a Uniform System.** But it was not a uniform system in all participating countries. In relatively few countries, the USA, France, Germany, were gold coins generally in circulation. Some countries, such as Great Britain and the USA issued predominantly paper currency which was fully convertible into gold, alongside gold coin. Frequently, countries were permitted to maintain less than 100% gold reserves backing their currencies. Occasionally, countries could hold part of their reserves, not as gold but in the form of claims on currencies which were convertible into gold, Austro-Hungary, Sweden, or could even allow their

reserves to fall below 100% on the payment of a tax, Austro-Hungary, Russia and Japan.

How stable was the system? Here, the evidence is mixed. Michael Bordo (1981) has contrasted price stability during the gold standard, Bretton Woods and the era of floating in the 1970s. No single system emerges as a clear winner on this count. What the gold standard did produce was a relatively constant price level, on average, over a period of thirty years, in which bouts of inflation were interspersed with prolonged periods of deflation and economic depression.

By general consensus, the “long depression”, from 1873 to about 1896, can be attributed to the shortcomings of the gold standard. The contemporaneous Second Industrial Revolution, marked by technological advances in the chemical, electrical, petroleum and steel industries in particular, was restrained by a simple shortage of money and liquidity. The main problem was that the gold standard was not flexible enough to respond to the growing liquidity needs of expanding economies. As a result, the problems encountered by many industries during this period unleashed protectionist sentiments and led many countries, including the USA, France and Germany, to introduce protective tariffs.

Deflationary pressures were finally relieved through new gold discoveries at the end of the 19th century in the Klondike, South Africa and elsewhere. This relieved the constricting monetary shortages and heralded a period of inflation and rapid growth, which lasted until the outbreak of World War I, Eichengreen and Flandrau (1997).

Ignoring economic depression was politically possible in the 19<sup>th</sup> century because combating unemployment was not perceived as a socioeconomic

objective of government until the beginning of the 20<sup>th</sup> century. In many countries, unemployment was regarded as a somewhat negative reflection on the moral character of the unemployed, rather than the fault of a central bank for having increased interest rates in a recession to defend the external value of the currency.

Charles Kindleberger has argued that the stability of the gold standard was largely due to the leading role of the Bank of England, especially in setting the discount rate. This lead was then passively adopted by other central banks in the system. In this way, system-consistent monetary policy was pursued in all participating countries. This was very much assisted by the fact that governments followed a balanced budget rule, with expenditure being determined by tax revenue. Barry Eichengreen (2008) disagrees – the stability of the system rested on the institutional credibility of the many central banks in the system in their total commitment to the external value and convertibility of their currencies in terms of gold. Credibility was based on commitment, and strongly reinforced by international cooperation.

**The Gold Standard: An Epilogue.** The gold standard did not eliminate financial panics and economic crises which befell the system from time to time. As examples we can consider the crash of 1873 which began when the Vienna stock exchange suffered severe losses, and culminated with the railway construction bubble which burst in the USA; the near collapse of Barings Brothers Bank in London following failed investments in Argentina (1890), or the bank panic in the USA (1907) when a credit crisis was triggered by a dramatic fall in the stock market.

Furthermore, countries suspended their participation in the system periodically, especially in times of war, only to rejoin at their pre-war gold parity on the cessation of hostilities. Hence, it was quite normal that the convertibility of currency into gold should be suspended on the outbreak of the First World War.

During this war, Great Britain suffered a huge drain of gold reserves in paying for essential wartime needs. In addition, sterling-denominated prices rose by 40% relative to their pre-war level. The return to gold in 1925 was a mistake, rendered calamitous by Britain's insistence on returning at sterling's pre-war parity. Sir Winston Churchill, as Chancellor of the Exchequer, was primarily responsible for this, for which he was subsequently severely criticised by John M. Keynes. Thus, the return to gold could only be achieved by a horrendous deflation, an economic form of blood-letting the much-weakened economy was hardly in a position to sustain. As many countries, curiously excluding the United States, abandoned gold convertibility in 1931, the system collapsed. This was the beginning of a decade of economic depression characterised by tragic levels of unemployment and exacerbated by competitive devaluations of currencies and advancing inconvertibility.

Mundell (1999) has identified Britain's misguided policy concerning gold, along with the hard-nosed insistence of the Federal Reserve in clinging to its gold parity throughout much of the 1930s, as the chief causes of the Great Depression. At a time when the global economy needed substantial infusions of liquidity, its two leading central banks were pursuing deflationary policies in the pursuit of exchange-rate integrity. One could easily interpret the words of Professor Y. C. Jao, referring to a different crisis in a different age, as a suitable epitaph for the gold standard:



*“At the end of the day, it is economic welfare that really counts. After all, what is the point of a permanently fixed exchange rate if the economy is dead.” Y. C. Jao (2003)<sup>2</sup>*

## **The Bretton Woods System (1945–1971)**

The Bretton Woods System was designed and shaped by the United States as the dominant power in the world at the end of the Second World War. The dominance of the United States is evident from the fact that this country accounted for 50% of world output at the time. American imperialism was promoted by the ailing President Roosevelt, and after the war the currency became a vehicle for fiscal statecraft. The might of the dollar was felt everywhere and it was to become a political instrument of US policy. Its influence was felt on markets with a corresponding diminution in the role of the “invisible hand”.

The Bretton Woods system differed from the gold standard in a number of important respects. First, it existed in a period of significant growth in the global economy. As a result, a relatively fixed money supply, determined by gold reserves, could not meet the changing liquidity requirements of the age. Second, despite the fact that the US dollar was the anchor currency in the system, and nominally linked to and convertible into gold, Bretton Woods took the form of a fractional reserve system whereby the United States was required to hold gold reserves amounting to no more than 25% of the issued currency. Thirdly, international capital and money markets were developing rapidly, increasing the volume and the speed with which funds could flow internationally. And

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<sup>2</sup> Written views on the governance of the Hong Kong Monetary Authority, May 24 2003.

finally, Bretton Woods functioned properly for no more than a very short period of time once exchange controls were removed in 1959.

The international financial arrangement which is known as the Bretton Woods System was negotiated at a conference convened in New Hampshire in July 1944. It was attended by representatives of 44 countries, including the Soviet Union, although the Soviets declined to ratify the final agreement. It is scarcely surprising that Great Britain should put forward some of the most perceptive ideas, given that no less a personality than J. M. Keynes led the British delegation. But it is also no surprise that the United States should dominate the final outcome considering the devastation suffered by most economies during World War II and their dependence on the United States for their recovery.

The objective was to create a new international financial order which would avoid the worst excesses of the Great Depression – competitive devaluations, import restrictions and capital controls – which all but strangled international trade and payments and was directly responsible for deflationary spirals in many countries. Keynes proposed a world central bank which would issue and administer a global reserve currency, the *bancor*. This currency would be linked to a basket of 30 commodities, including gold. Payments imbalances between countries would be the joint responsibility of the surplus and the deficit countries, necessitating expansionary policy in the former as well as contractionary policy in the latter; in this way, a deflationary bias in the global economy could be avoided.

The United States was not particularly enamoured with this proposal. As the most likely surplus country for the foreseeable future, it was feared

that the commitment to expansionary policy would be inflationary. At the end of the day it was agreed that the US dollar would perform the role of the reserve currency, with its value pegged to gold at \$ 35 per oz. Given that the United States held some 65% of the World's gold reserves at the end of the War, this peg seemed credible. It was also agreed to establish an International Monetary Fund (IMF) to oversee the new order.

With the establishment of the IMF in December 1945, a new institution was created which would facilitate international settlement by providing countries in need with emergency access to exchange reserves. This would obviate the need for immediate deflation in deficit countries. The IMF would also oversee the exchange-rate parity system: The dollar was linked to gold and all convertible currencies linked to the dollar within bands of  $\pm 1\%$ . In the event of "fundamental disequilibrium" in the balance of payments, a country could receive permission to alter its exchange parity by up to 10%.

Two pressing problems prevented this system from becoming fully operational in the immediate post-war period. Six years of all-out war had left the European industrial base, along with much else, in ruins. Reconstruction necessitated a very specific allocation of resources so that European economies had to assume characteristics of command economies. Market freedoms of all sorts had to be curtailed. It was not until 1959 that most currencies became fully convertible, the yen in 1964, so that Bretton Woods only then came into operation as a fully fledged system.

The second problem concerned the acute shortage of dollars, the so-called dollar gap, outside of the United States. Nor was it at all obvious where they might come from, given that the United States was a habitual current balance of payments surplus country, absorbing rather than expanding global liquidity.

Several factors were important in increasing the international stock of dollar liabilities held outside the United States. The United States extended post-war loans to some of its wartime allies (Great Britain and France) and grant aid of extraordinarily generous proportions (Marshall Plan 1948 – 51) to sixteen western European countries. In addition, the United States maintained extensive military bases throughout the globe which also constituted a significant financial drain. Finally, the advent of the Cold War in the late 1940s resulted in the large-scale withdrawal by the Soviet Union of dollar balances held in the United States and their transfer to London. The reason for this transfer was that the Soviet Union and her allies were concerned that the United States might freeze those accounts, so they were moved beyond easy reach. This transfer had the unintended side-effect of enabling the creation of what was to become known as the Eurodollar market. An attempt to increase international reserves was also undertaken by the IMF in 1967 with the creation of the SDR, or Special Drawing Rights. The dollar gap was to become a dollar glut.

No sooner was the system up and running than the cracks began to appear. Robert Triffin warned in 1960 that the system contained the seed of its own destruction in the form of an internal inconsistency – the United States had to run external payments deficits to put dollars into external circulation, but these same deficits would undermine interna-

tional confidence in the convertibility of the dollar into gold. The need to increase international liquidity was inconsistent with the need to maintain confidence in the dollar. Given the gold-dollar link, it was also imperative to stabilise the free-market price of gold.

Essential repairs commenced almost immediately, as the system was submitted to market testing. In 1961, the Gold Pool was established in London to smooth the free-market price of gold and, especially, to eliminate price spikes. As with many attempts to stabilise prices at a level which is at variance with market expectations, this consortium of central banks failed in its objective when gold sales over time exceeded gold purchases. After a particularly heavy run on the dollar (and sales of gold), the Gold Pool was suspended in March 1968. Thereafter, the gold peg of the dollar was largely a fiction, restricted as it was to the club of central banks.

Other crises were quick to follow. The crisis of 1964-7 led to the devaluation of sterling from \$ 2.80 to \$ 2.40 in November 1967, despite all-out attempts by the Labour government to defend the exchange rate. More significantly, this clearly showed that currency speculation was a one-way, riskless bet, and speculative pressure on the dollar grew. In the following year, the French franc was devalued in the wake of internal unrest known as the “student revolt”. In 1969, the West German mark was re-valued, only to be floated in May 1971 just three months before President Nixon took the dollar off gold and closed the “gold window” whereby central banks had been able to redeem dollars for gold. Thereafter, Bretton Woods became a dollar system, Garber (1993).

In December 1971, a final attempt was made to patch up the system, known as the Smithsonian Agreement. The dollar was devalued to \$ 38 per oz of gold, and the trading bands were widened to  $\pm 2.25\%$ . But the system was beyond redemption, especially as US monetary policy continued to be far too expansionary. In 1973, the US dollar standard, which had been officially in operation since the closure of the Gold Window in August 1971 and informally since the abolition of the Gold Pool in 1968, could no longer withstand speculative pressures. Currencies were allowed to find their own levels on international markets and a period of floating commenced.

What went wrong? The short answer is that the monetary policies of the participating countries were incompatible with a pegged exchange-rate system. Domestic monetary policy was geared towards domestic objectives rather than external equilibrium. The United States, as reserve-currency country, carried the responsibility for controlling the global money supply and global inflation. Instead, it financed extensive policy goals at home and abroad by means of the printing press, i. e. by levying an inflation tax on the Bretton Woods world. The responsibility of other countries in the system required them to maintain their external accounts in balance, or at least to avoid persistent surpluses or deficits. Few did. Germany was quite unprepared to expand its economy to eliminate its current surpluses just as Britain was incapable of eliminating its deficits. It was not only the United States that failed the system; Germany, the UK and France, now loud in calling for a re-enactment of Bretton Woods, failed in their responsibilities as well.

As a consequence, the acute shortage of dollars in the 1940s, and to a lesser extent in the 1950s, turned into a glut in the 1960s. It required no great insight to realise that the United States was not capable of redeeming all the short-term dollar liabilities held in foreign hands, so that a clear first-mover advantage existed. The first mover turned out to be France. Between 1962 and 1966 US gold stocks fell by over US \$ 3 billion, while French gold stocks grew by a little less over the same time period. No other country showed significant fluctuations in gold reserves. Whereas the United States held 67% of total gold reserves in 1945, this figure had fallen to 16% by 1970. By late 1967, the situation was deteriorating rapidly and was no longer sustainable. Convertibility had to be suspended.

Furthermore, despite the dollar link to gold and the fact that liquid dollar liabilities in foreign hands were (theoretically) freely convertible into gold, Bretton Woods was not a gold standard. Internal convertibility in the United States was prohibited. Moreover, the United States was only required to hold fractional gold reserves for the currency issued. Consequently, a balance of payments deficit did not force any sort of monetary correction until this threshold was breached. The United States did not act as a conservative central banker to the world economy despite its impeccable record in this respect domestically in the first half of the century.

Today it may seem rather curious, but the United States current balance of payments first turned into deficit in 1971. The flooding of the global economy with dollars occurred through the capital account, which greatly exceeded the current account surplus. The capital outflow was in response to interest rate differentials, but it meant that the United

States was temporarily spared the inflationary consequences of its own monetary policy. Inflationary pressure was exported through the foreign exchange market. Ultimately, the rest of the world was not prepared to accept this.

The emergence of inflation added to the seigniorage tax the United States was able to levy on the rest of the world. This means that the United States was issuing paper money but receiving real resources in exchange from those who wanted, or needed, dollars. As inflation accelerated, the value of dollar balances diminished, so that the global economy needed even more dollars to finance the same volume of transactions. A large part of this tax was unavoidable in any case – the non-US world needed dollars as an international currency, especially since the reserve currency role of sterling had been terminated by the Bank of England in the mid-1960s. The needed dollars could only be obtained in exchange for goods or assets. But, as US and world inflation accelerated towards the end of the 1960s, the seigniorage tax increased. Dollar balances were losing in value so that even more dollars were required to finance international trade. The store of value function of the currency was being eroded.

Where dollar liabilities in the form of currency are held, for example in countries such as Ecuador, El Salvador or Panama where the dollar is the official currency, or like Russia or Israel where dollar currency is extensively used, the full inflation-induced seigniorage tax is levied. But in other countries, foreign exchange reserves are held by central banks and other institutions, not as currency, but in the form of short-term, US money-market securities. While this tends to reduce seigniorage, it does not eliminate it. With increasing inflation, the yield curve becomes



steeper. Money-market securities attract less than a full inflation premium, so protection is less than complete.

Under these circumstances, it is only to be expected that the international role of the dollar would have declined. That this did not happen was due to two factors. First, there was really no alternative. None of the hard-currency countries was willing to take over the role of reserve currency. Secondly, Henry Kissinger and Treasury Secretary William Simon reached an agreement with the oil exporting countries to the effect that oil would be priced, and invoiced, in dollars. Other primary producers followed suit. As a result, the international usefulness of the dollar was not only prolonged, but enhanced.

## **Floating Exchange Rate Regimes**

The traditional argument in favour of fixed exchange rates rests on two precepts. First, it is held that a fixed exchange rate encourages trade and investment and is particularly advantageous between countries with similar economic structures. Secondly, fixed exchange rates impose an anchor for the monetary policies of the participating countries, which can be beneficial if governments, or domestic institutions, lack credibility in keeping prices, or inflation rates, reasonably stable. The argument in favour of flexible rates rests on the fact that flexibility frees monetary policy from an external restriction to pursue more importantly ranked domestic goals. The (flexible) exchange rate insulates the economy from external shocks, such as a sharp reversal in the terms of trade.

The gold standard, with complete capital mobility, worked in its heyday because monetary policy was anchored to the requirements of the exchange rate. Fiscal policy was compliant, and consistent, except in wartime. But, the cost of this system amounted to extended periods of deflation and economic adversity, lasting years if not decades at a time. The gold standard collapsed when the pain became too great and governments assumed responsibility for unemployment; policy choice on the internal trade-off, or Philips curve, was no longer fixed at zero inflation. Bretton Woods succeeded at first because capital mobility and currency convertibility were severely restricted. As soon as those restrictions were lifted by the end of the 1950s, the system went into decline. The participating countries, the reserve currency country of course but equally so other participating economies, were not willing to subjugate their monetary and fiscal policies to the rigours the system required.

By 1973, it was apparent to all that Bretton Woods was history. The dollar, the Deutsche mark and the yen had begun to float freely against each other. Earlier, in March 1972 at a meeting in Basel, the original six EU members plus the three prospective new members established a Smithsonian-type exchange-rate arrangement amongst themselves, based on the Deutsche mark rather than the dollar. It was meant to set fluctuation limits for the relevant currencies which were even tighter than those implied by the Smithsonian Agreement. It became known as the “snake in the tunnel”, or “snake” for short. The rationale was that intra-community trade was not being assisted by exchange-rate gyrations.

The times were not auspicious and it proved to be highly unstable. It was replaced in March 1979 by the European Monetary System (EMS) which had, at its core, an Exchange Rate Mechanism (ERM). The prime movers

in setting up this arrangement were Chancellor Helmut Schmidt of West Germany and President Valéry Giscard d'Estaing of France. This mechanism was a complex arrangement of bilateral central rates with bands of fluctuation around these central rates of  $\pm 2\frac{1}{4}\%$ , what is known as a “target zone” arrangement. All nine member countries joined the EMS although the UK did not participate in the ERM until shortly before it collapsed, and then only briefly.

In the autumn 1973, another event took place, which proved to be a watershed in the course of economic events – a four-fold increase in the price of oil. This turned out to be cataclysmic in its impact on the global economy because demand elasticities for oil were so low, at least in the short run.

The response of the oil-importing countries divided into two camps. Countries such as West Germany determined to internalise the price shock as quickly as possible and accelerate the adjustment to the terms-of-trade shock. Other countries, typified by the United Kingdom, postponed adjustment by accommodating aggregate demand. The first group of countries developed into a low inflation – hard currency block; the latter into a high inflation weak currency group. The Netherlands, Austria and Switzerland, by means of firm links with the Deutsche mark became part of the hard-currency block.

The oil-price increase had another unintended side effect – the oil-exporting countries had no possibility of absorbing the oil revenues by means of increased domestic expenditure and were obliged to “recycle” through the international banking system. The result was the explosive growth in syndicated lending – banks with staggering deposit inflows

cannot sit on this excess liquidity but have to lend it somewhere. Many of the oil-importing countries proved willing takers. This process was assisted by means of an attitude in banking circles, elevated to the rank of dogma, that sovereign lending was riskless. Governments, so the common belief went, could always repay their borrowing because they enjoyed the sovereign power of taxation. A government couldn't go bankrupt.

The so-called "sovereign debt" crisis broke in August 1982 as Mexico suspended repayment on its international debts. As the credibility bubble burst, large international banks cut off their lending to Latin America and South-East Asia for most of the ensuing decade. In Latin America, the sovereign debt crisis resulted in seven years of adversity, as investment, consumption and growth ground to a halt, real wages dropped sharply and poverty increased, Dean (2003). This volatility-cycle in international lending became a regular feature of successive crises – excess lending prior to the crisis, driven by a herd instinct and moral hazard and sometimes based on a suspect credo, followed by an almost universal drying-up of lending activity caused by adverse selection when the crisis broke.

At a risk of over-simplification, I would suggest that some such force has been behind many of the financial crises we have experienced in recent decades. In addition to the sovereign debt crisis, affecting principally Latin America in the 1980s, the second half of the decade witnessed the S&L crisis in the USA at a cost of some two-and-a-half thousand banks and about US \$ 560 billion to the taxpayer, Dean (2003), as well as the Japanese asset-price bubble from which the stock market took 13 years to recover. In 1992-3, we had the Scandinavian banking crisis, leading

into the ERM crisis, which all but terminated that mechanism as a realistic target-zone arrangement. In October 1987, stock markets around the world fell sharply, for reasons which have never been fully clarified. At that time, programme trading was felt to be a significant factor. This was followed in 1997-8 by the Asian “emerging markets” crisis, concentrated on Thailand, Indonesia and South Korea, followed by crises in Turkey and Russia in 1998. The Dot-com, or technology stocks, bubble which burst in the USA in 2000 had been based on a highly questionable belief in a “new economy”. And finally, we have had the “sub-prime mortgage” crisis in 2007-8 resulting in a global financial crisis, fuelled by a conviction that asset price bubbles were, in reality, a justifiable realignment in relative prices. All of these were individual, and in a sense unique. But many of them also shared unmistakable common characteristics.

How has our perception of a suitable exchange-rate regime been fashioned by these crises? Did they assist us in identifying an optimal exchange-rate regime? I am afraid the short answer is “not really”, and most of the post-crises recommendations have amounted to little more than shifting the goal posts each time the markets have scored another goal.

With the collapse of Bretton Woods, considerable optimism prevailed in the beginning concerning the efficacy of free-floating exchange rates. This was largely due to the pronouncements of recognised experts, such as Milton Friedman (1953) and Harry Johnson (1972), who argued that floating rates would be stable and reflect fundamentals. Today, this view is regarded as naïve. Meese and Rogoff (1983) were unable to identify the so-called “fundamentals” which should determine the appropriate

exchange rate, or at least those considered appropriate by the market. This implies that comments by policy makers that exchange rates are at variance with, or do not reflect, fundamentals are void of any empirically verifiable content. Financial flows through the capital accounts of many countries have resulted in exchange-rate volatility which, by general consensus, has been excessive. Even Robert Mundell (1999) has acknowledged that the convergence of inflation rates in the global economy in recent years has not produced any commensurate dampening in exchange-rate volatility.

Nor could a freely floating exchange rate insulate an economy from external shocks, as Mundell pointed out in his legendary work on “optimum currency areas”. This could only be expected to occur if the borders of an economy happened to coincide with those of an economic region, defined on the basis of factor mobility and homogeneity of productive structure. Otherwise, a terms-of-trade shock was likely to set off a boom in one part of the economy and a recession in the other.

Few countries pursued free floating exchange rates in any case. Instead, we have witnessed a plethora of crawling peg arrangements, target zones etc. Moreover, countries may use interest rates, or direct intervention, without announcing any exchange-rate target to influence their supposedly floating rates.

Many of these “half-way-house” solutions between fixed and free-floating rates were implemented in an attempt to combat the disruptive effects of volatility on trade and investment. But they fell out of favour with influential sections of the economics profession following the Asian crisis in 1997. The failure of soft peg arrangements to protect these economies

from the worst consequences of capital flows led to what became known as the “bipolar view”. According to this view, countries should either allow their exchange rates to float freely, or participate in a “hard fix”, by which is meant a currency board, dollarisation or a currency union. In the final two, the country in question has no independent legal tender.

This disaffection with soft, or adjustable, pegs has become rather widespread; “Soft pegs have simply not proved viable over time, especially for countries integrated or integrating into international capital markets” Stanley Fischer (2001). But this conclusion is not new. It was propounded more than a decade earlier by Sir Alan Walters, former economics advisor to Margaret Thatcher, when it became known as the Walters Critique. Walters argued that an adjustable-peg system was inherently unstable. This is most apparent when a country with a higher rate of inflation joins a pegged exchange-rate system. The removal of capital controls leads to instability and the collapse of the system, due to (nominal) interest-rate arbitrage which causes disruptive differences in real interest rates. In Walters view, Britain should not join the ERM and currencies should float freely. His critique, which led to the resignation of Nigel Lawson, Chancellor of the Exchequer, anticipated the collapse of the ERM in 1993, but it has been either disputed, or ignored, ever since.

Proponents of the bipolar view point to a “hollowing out” of intermediate exchange rate regimes in the 1990s. Between 1991 and 1999, the number of countries with an intermediate exchange-rate arrangement declined from 98 to 63. The number implementing corner solutions (ultra hard peg or free floating) increased from 61 to 122 (Fischer (2001), citing IMF sources). These figures include the member countries of the EU in transition from EMS/ERM to EMU.

But not everyone is convinced. A currency board, as a form of hard peg, did not prevent currency collapse in Argentina in 2002 and it is well known that a currency board suffers from the absence of a lender-of-last-resort function. Moreover, several commentators have pointed out that the main reason China, India and to a lesser extent Malaysia were spared during the Asian crisis was due to the introduction of exchange controls rather than any exchange-rate arrangement, Grenville (2000). Of course, it is heresy at present to advocate such controls as the *Zeitgeist* runs in the direction of globalisation and free movement of capital. But a hard fix may be greatest benefit for a small dependent economy with relatively immature financial structures. In all other cases, a pragmatic approach may be more appropriate.

Capital flows in the absence of exchange controls have become a problem. Since the Second World War in particular, we have witnessed the emergence of enormous financial funds run by professional managers. No matter what they are called, private banking, wealth management funds, pension and social security funds, investment, hedge funds, private equity, or sovereign funds, they all perform basically the same task. They utilise complex portfolio techniques to allocate the resources of the fund among different asset classes. Their goal is to maximise return for a given level of risk.

Asset allocation is carried out in a global environment. When these fund managers decide that they would like to increase their involvement in the securities of emerging markets, Latin America, or whatever, these regions will experience quite staggering capital inflows. Should fund managers decide that the risk outlook in the region in question has dete-



riorated, the capital outflow will be equally breathtaking. Meanwhile, the exchange rate is on a roller coaster.

For large currency blocks which are relatively closed, this is not too much of a problem. For smaller currencies, it can trigger an acute financial crisis. And for small currencies without a mature financial system and impeccable currency credibility, it can imply a horrendous economic crisis in the wake of the financial crisis. This is because much of the debt in the balance sheets of larger economic enterprises, in the public and private sectors, will be denominated in foreign currency. As the exchange-rate plummets, the domestic currency value of this debt will increase, forcing contraction and, in many cases, insolvency, Cavallo (2005).

For such economies, it is imperative to keep the exchange rate pegged. Where the monetary authorities of the country lack credibility or the flows are too great to be manageable, exchange controls may be the only option. This option should not be rejected lightly.

One sort of hard peg is a common currency, and this is the option most closely identified with Robert Mundell (1961). Mundell suggests that the entire world constitutes an optimum currency area and that a single global currency would provide huge benefits in terms of reduced transaction costs, Mundell (1999) and (2008). However, as the recent global financial crisis reveals, global trust may fall short of what is required to benefit from reduced transactions costs.

## **The Global Financial Crisis 2008**

What has become universally known as the US sub-prime crisis was not about sub-prime mortgages alone, but also included sub-prime lending in general, i. e. sub-prime car loans, Bloomberg (2008), credit-card loans and other forms of household, corporate and financial debt. Had it been confined to the mortgage market, the problem might have been relatively easily contained – the sub-prime mortgage market, at about US \$ 1 trillion, amounts to a little under 10 per cent of the \$ 11 trillion mortgage market in the USA.

Nor was sub-prime lending confined to the USA as can be seen from asset bubbles in the UK, Irish and Spanish property markets, developmental projects in Central and Eastern Europe, as well as stock markets the world over. So why did this crisis lead to such incomparable financial meltdown and contain within it such portentous risk for the global real economy?

In attempting to answer such questions we need to consider that while the crisis may have broken in the United States, and in the real estate market in particular, the underlying causes run far wider and deeper. At one level we had a classic case of governments attempting to manipulate exchange rates to their own national advantage; at another, we had the US government attempting to administer the domestic financial system in the interests of domestic social, and other, policy goals.

At the international level, the Chinese government held the exchange rate of the renminbi at artificially low levels against the dollar, with a view to forcing export-led growth. This, and similar policies in other Asian countries, generated huge financial imbalances in the interna-

tional economy. Other imbalances were produced by a sharp upsurge in agricultural prices and the price of oil in the middle of the decade. Not only are such imbalances nearly always a prelude to crisis; when the crisis breaks, they are like a ship's cargo which has broken loose in the middle of a storm at sea.

Another important consideration is the intermediation role undertaken by banks and other financial institutions. The transformation of savings into loans, each with quite different characteristics, involves substantial risk. These risks do not disappear, but remain within the balance sheets of banking institutions, Hankel (2008). When problems arise with the loans, and savers seek to withdraw their funds, then we have a full blown banking crisis.

In addition to “normal “ intermediation risk, there are strong indications that financial institutions were also subjected to extensive fraud, certainly in the United States but possibly elsewhere as well. According to one informed commentator, fraudulent behaviour on the part of lending institutions had already reached epidemic proportions in 2004, Black (2008).

Moreover, there is little doubt that the role of the rating agencies deserves special scrutiny in this sorry tale. The role of these agencies, such as Moodys, Standard and Poor's etc. is particularly sensitive, precisely because the efficiency of the market is based on trust that security valuation is appropriate. Why they failed so extensively and so disastrously will need to be fully investigated. It would not be the first time that they have been guilty of allowing their judgement to be coloured by conflict of interest. The only other explanation would be

gross incompetence on an industry-wide scale, which would be the case if they were unaware of what was happening in their industry. Insofar as the current crisis represents the collapse of the market system in the financial industry (at least), the role of these agencies will be covered in ignominy.

The final dimension of the crisis centres on the activities of the US government to manipulate lending behaviour in the pursuit of social policy goals. We do not attempt to judge the goals, or to provide an exhaustive account of this process, but the irreconcilable incentives thus engendered was bound to end in grief, Androsch (2008b). The present focus on financial innovation, moral hazard, lax regulation of the shadow banking system, and an inappropriate structure of rewards were all proximate causes, but they do not provide the full picture.

**The Macroeconomic Imbalance.** Much has been written about the advent of globalisation, or integration, in the world economy. Understandably, much attention focuses on the interaction between the United States and China as both, combined, account for about a quarter of the world's population, a third of its GDP and 60 per cent of cumulative world growth in the period from 2002–2007, Ferguson and Schularick (2008). The action may have centred on those two economies but was not confined to them.

As the table below shows, the United States has been running a persistent current account deficit for well over a decade at least. The deficit increased in every year with the exception of the recession year 2001 and the crisis year 2007. The central government's budget also deteriorated strongly between 2000 and 2004, but the real problem does not seem to

lie here. Between 1995 and 2007, central government debt as a percentage of GDP declined from about 50% to 37%. Over the same period, the ratio of US central government debt to that of the entire OECD remained stable at about 0.3.

So, while government deficits undoubtedly played their part they cannot be singled out as the sole cause of the observed current account deficits.

FINANCIAL RATIOS: USA 1995-2007

year	Current account deficit to GDP (%)	Central government deficit to GDP (%) (- = surplus)
1995	1.5	2.3
1996	1.6	1.6
1997	1.7	0.4
1998	2.4	-0.6
1999	3.2	-1.0
2000	4.2	-2.8
2001	3.8	-0.5
2002	4.4	2.1
2003	4.8	3.4
2004	5.4	3.3
2005	5.9	2.4
2006	6.0	1.8
2007	5.3	1.5
2008		

Source: OECD: MEI

The main reason for the US current account imbalance was the very low, and decreasing, savings ratio of the private sector. Personal consumption was driven along by a powerful wealth effect emanating from rising house prices and a buoyant stock market. Over this period, Americans displayed a noticeable willingness to sustain very high levels of consumption, financed partly by remortgaging the equity component of their assets but also by the accumulation of debt. In 2005 alone, US homeowners withdrew some US \$ 750 billion in home equity loans of which the lion's share was spent on personal consumption.

What Ferguson and Schularick (2008) have described as a "Sino-American symbiosis" or "Chimerica" amounted to Americans living far beyond their means on Chinese imports (mainly), while the Chinese were happy to finance this in order to secure growth and jobs in China. However, this cosy arrangement produced some negative external side-effects.

That the United States could live beyond its means for such an extended period was due to the willingness of the rest of the world to accumulate US dollar liabilities, what Lawrence Summers (2004) has described as "international vendor finance". In the case of China, the central bank added to the effect by holding the renminbi at artificially low levels in the pursuit of export-led growth. This requires the central bank to intervene in foreign exchange markets and purchase dollars in exchange for renminbi, effectively lending to the Federal Reserve. Otherwise, the current account imbalance would have forced an appreciation of the renminbi. The principal "lenders" to the United States were Japan, China, India and the newly industrialised economies of Asia. The United States, for its part, acted as "importer of last resort", Summers (2008).

The strategy of holding a country's exchange rate at an artificially low level, through central bank intervention, is not without risk. It may impart a competitive advantage in trade, but the surplus creates a huge liquidity overhang in the economy. The risk of inflation is very great, and even monetary sterilisation can only counteract this for a while. Japan had pursued such a policy in the 1970s and 1980s, and the consequence was the Japanese bubble in the late 1980s from which Japan has yet to recover fully, Summers (2004). The same pent-up pressures may be building up in China, masked for the time being by abnormally high corporate and household savings, Ferguson and Schularick (2008).

But while the central banks of the Asian surplus countries were channeling exchange reserves back through the banking system of the industrialised countries, it was not the only source of capital inflow. The sharp increase in commodity prices, mainly agricultural commodities and oil, in the middle of the decade, led to a redistribution of financial capital in favour of countries with limited capacity to absorb it. There was little option but to redirect it back through the international banking system. There was no shortage of funds for willing borrowers.

Thus, we arrive at the curious situation where the deficit United States was being required, even begged as it were, to accept financing from surplus economies. Had the inflow been demand driven, yields on US securities would have increased sharply as the authorities struggled to finance the persistent deficit. Instead, yields dropped to historically low levels suggesting the inflow was supply driven. The interest received on short-term US securities is close to zero in dollar terms. Were the lending countries to experience exchange-rate appreciation, as one might reasonably expect under normal circumstances, then the losses on this

lending in local currency terms could turn out to be very significant, Summers (2004).

With yields so low on money-market securities, alternative investment opportunities were clearly required. There is little doubt that the inflows kept the stock market rising, channelled through intermediaries in the official and shadow banking systems. The same can be said for commodities such as oil. Other suitable investment outlets were found in the plentiful supply of mortgage-backed securities (MBS) and other forms of collateralised debt obligations (CDOs). Not only did these offer attractive yields but they came with an “ultra safe” rating. Foreign central banks and other institutions invested heavily in the bonds issued by Fannie May and Freddie Mac – the untold damage a default here would have inflicted on the US debt market was a prime consideration in taking these faltering institutions into conservatorship.

**US Housing Finance Policy:** That excess liquidity should find its way into the stock market and real estate is no surprise. This is the classical route such international imbalances take, with commodities offering another channel. But the coincidence of an abundance of cheap liquidity and public policy made the US property market particularly susceptible to a bubble.

Affordable housing had long been a priority of social policy in the United States. In 1977, the Community Reinvestment Act (CRA) was enacted to stop commercial banks and Savings and Loan Associations from discriminating against low-income neighbourhoods in the granting of loans, including mortgage finance. The practice of “redlining” was discouraged,



i. e. where location, and not just commercial criteria, was taken into account in lending policy. However, this was not a subprime programme.

In the early 1990s, Fannie Mae was required to allocate a certain percentage of its lending to the affordable housing programme, and by 1999 this was extended to include lending to individuals who could not otherwise obtain mortgage finance. By November 2000, Fannie Mae was required by the Department of Housing and Urban Development (HUD) to allocate 50% of its loan activities to low and moderate income families, and this obligation could be fulfilled by the purchase of securities backed by subprime mortgages. In 2004, Fannie Mae and Freddie Mac were directed to increase their affordable housing lending to 56% of their entire credit activities. As a result, these institutions purchased US \$ 81 billion of securities backed by subprime mortgages in 2003, and a further US \$ 434 billion between 2004 and 2006. In this way they helped to sustain the market for such securities, in addition to signalling its supposed safety.

In some respects, the announcement by President Bush in June 2002, that home ownership among minority groups should increase by at least 5.5 million by 2010, could be contrasted with the remarks attributed to King Henry IV of France (1555–1610),

*“Si Dieu me prête vie, je ferai qu’il n’y aura point de laboureur en mon royaume qui n’ait les moyens d’avoir le Dimanche une poule dans son pot.”*

Loosely translated, King Henry wanted every labourer in his kingdom to be able to afford a chicken in the pot, on Sundays. King Henry was revered for his noble aspiration although he was astute enough not to

make any personal, or policy commitments. President George, on the other hand, set about changing best financial practice with a view to making his promise a reality.

First, we had the semi-official mortgage institutions, Fannie Mae and Freddie Mac, being instructed to channel their funds into financial securities backed by subprime mortgages. In 2001, the Commodity Futures Modernisation Act facilitated the trade in credit default swaps (CDS) by the shadow banking sector, including investment banks and hedge funds etc. The insurance giant, AIG, became a major player in this market. This legislation removed them from effective supervision and regulation, and by reducing credit risk, may have encouraged lenders to be less cautious.

In 2003, mortgage lenders were allowed to ignore conventional lending criteria, e. g. income, credit rating, debt-servicing ability, etc, in making mortgage loans. Instead, the most important consideration became the lender's ability to securitise subprime loans. And in 2004, the Securities and Exchange Commission (SEC) waived the net capital rule for the big five investment banks to enable them to leverage their balance sheets even further in the issuance of subprime mortgages and related securities. They did so, some up to a gearing ratio of 30 : 1, or even 40 : 1.

Whereas the easing of regulations and controls facilitated the headlong rush for quick profits by the financial industry, the combination of pure greed and a herd instinct also led to white-collar fraud. This took three different forms, Black (2008). First, loans were made "knowingly with misrepresentations" where the banks knew full well that the borrower would never be able to repay, and documents were falsified by bank officers to enable the loan to go through. Secondly, this information was not

revealed in public reports. And thirdly, these loans were sold to third parties without informing the purchasers that the loans would never be repaid. According to Black, this “fraud epidemic” may have involved 50% of all non-prime mortgages, i.e. subprime and Alt-A, and all lending institutions, including IndyMac, Washington Mutual, Countrywide, and many more. The likelihood is that such fraud was neither confined to mortgage lending, nor to the United States.

The attraction of subprime mortgages to low and moderate income families is obvious. House prices began to rise rapidly from 1997 onwards and the easing of normal creditworthiness criteria meant that everyone could benefit. The structuring of mortgages so that low “teaser” rates of repayment applied in the early years, 100 per cent mortgages or interest-only mortgages, are devices to permit households to leverage far beyond what would otherwise be possible. In this, households were being afforded an opportunity to benefit from a buoyant market in a manner which had only been available to financial and manufacturing companies. It is not obvious from the terms of subprime mortgages that they contained any financial benefit over the life of the mortgage itself.

By means of home equity loans, they also permitted low and moderate income families to participate in the consumer boom.

**Financial Market Developments.** Policy changes certainly assisted in stimulating important structural developments which were occurring on financial markets at this time. The profit motive in an atmosphere of lax regulation would do the rest.

First we had the widespread avoidance, or easing, of prudential regulations, whose purpose it is to protect the financial system from precisely

those risks to which it fell victim. This took place through the development of a shadow banking system, largely exempt from supervision. The regulations in question are the reserve-deposit ratios and liquid asset ratios of banks as well as the gearing and capital adequacy ratios of a wide range of financial and quasi-financial institutions. Add to this the separation of bank balance sheets into “loan book” and “trading book”, with few if any regulations governing the latter.

Regulations were abused, in spirit if not in law. By means of special purpose entities (SPEs), or conduits, legal entities which were also at the heart of the Enron scandal, assets were adroitly moved off banks’ balance sheets, but frequently not even out of the building. They made way for other higher-yielding assets on the balance sheet while still providing income in the form of management fees for the initiating bank. Monetary authorities were constrained either by excessive allegiance to the ideology of the free market – the Federal Reserve – or constrained by the ponderous response of a centralised authority – the ECB. Meanwhile, we could witness how highly regulated banks diverted business into unregulated spheres, and reaped profits from circumventing regulation.

Of particular importance were structured investment vehicles (SIVs) and special purpose vehicles (SPVs). These were typically set up by banks as legally separate entities, thereby supposedly insulating the bank from bankruptcy risk of the SIV or SPV. The legal shell would then buy long-term securitised loans from the bank, financing the purchase through the issuance of asset-backed commercial paper (ABCP). The ABCP was backed by the financial assets in the balance sheet of the SPV. But, the ABCP had to be rolled over every 90 to 180 days, whereas the securitised loans were long term and, possibly, risky. For as long as the market

functioned, the spread was very favourable. But in 2007-8, many of the long-term assets declined dramatically in value, and lenders declined to purchase the ABCP. This led to fire sales of assets or, in some cases, the originating bank accepting the questionable assets back onto its balance sheet.

Secondly, we experienced a number of financial-market innovations which made it possible to create multiple layers of debt resting on a relatively narrow and unsound foundation. First, we had the expansion of subprime mortgages, relatively new instruments which violated the rules of sound finance but which enjoyed strong official backing. Next came the layer of debt securitisation. By means of expert financial engineering, i.e. the bundling and unbundling of cash flows and their division into risk tranches, it was possible to produce securities whose labyrinthine cash flows were difficult to unravel, had anyone cared to do so. As the ultimate investor was far removed from whoever carried out the credit risk analysis of the borrower, normal standards of caution were dispensed with.

And because rating agencies found the structure of MBSs (mortgage backed securities) and CDOs (collateralised debt obligations) so “opaque”, as the current preferred terminology goes, they would appear to have applied the same rating criteria to these as they did to similar-sounding but quite different securities. How else could one explain that any tranche of a security based on sub-prime mortgages, or other sub-prime lending, could attract AAA rating? This transformation defies credulity and had as a consequence that it made them suitable as investment instruments for sensitive financial institutions, pension funds etc., not only in the United States, but worldwide.

However, the scale of the problem would appear to have multiplied many fold at the next stage. The financial industry got in on the act of insuring all sorts of debt repayments by issuing CDS, or credit default swaps. A lender would purchase a CDS to insure against the risk that a borrower would default – fundamentally a splendid idea. Despite the fact that the size of the CDS market is about US\$ 65 trillion, there is no organised exchange for these derivative securities – they are strictly an over-the-counter security. This makes the pricing of CDS subjective and obscure and, by and large, almost impossible to calculate. Add to this that a CDS, once issued, was valid for about five years.

All kinds of insurance policies can be wonderfully profitable, no matter how imperfectly the risks are assessed, until the claims come rolling in. As a new insurance product, insuring against adversity and introduced at a time of prosperity, the CDS market experienced fantastic growth and profitability. The remuneration of swap writers was based on the volume of business they generated, so that a CDS, once written on a particular loan, was sold perhaps ten or more times – once to the lender who was hedging his risk, and nine times to pure speculators who had no involvement in the loan and were simply gambling on the default of a third party, Gilani (2008a) and (2008b).

At present, there is considerable disagreement as to the true risk exposure presented by the CDS market. Many of the contracts are offsetting – e. g. bank A insures a loan extended by bank B. Instead of retaining the risk exposure, bank A then purchases a CDS from bank D which, in turn, does the same with bank E. We now have three CDSs, but only one loan to insure. The other contracts are offsetting. The size of the CDS market certainly overstates the level of risk but we can only guess to what extent.

Somewhat reassuring is the smooth functioning of the CDS market in the wake of the collapse of Lehman Brothers investment bank.

That securitised loans were sold worldwide, and imitated elsewhere, is not surprising. As discussed above fund managers, including banks, seek out high-yielding assets with favourable risk characteristics. The new securities with their super ratings and favourable yields offered a wonderful opportunity. This improved risk-return constellation could be rationalised on the basis of some improved efficiency which had been tweaked out of the financial system, or could be due to some other more sinister factors at play. Unfortunately, it turned out to be the latter.

The crisis broke in two waves. In the first wave, financial institutions with suspect securities, or “toxic waste”, in their balance sheets were severely punished by the markets. Stock prices tumbled and investors withdrew their funds. This difficulty was intensified by unobservable linkages between asset valuation, “fair value” reporting requirements and capital adequacy. It was affected still further by holders of CDS who might find their insurance worthless if the writers of the CDS should fail – as almost happened with AIG. Circumstances could change so quickly, and several bank CEOs had no idea their banks were in any danger even days before they were engulfed by adverse market developments.

The second wave is in many respects more difficult to deal with. Financial institutions with excess liquidity are no longer prepared to intermediate these funds onwards to further borrowers because of adverse selection. The wheels of the financial system have, as it were, stopped turning. Attempts by the Federal Reserve, the European Central Bank,

and others, to alleviate the crisis by cutting the bank rate and pumping liquidity into the market have, so far, fallen short of solving this problem.

It is not helpful to pump the banks with liquidity when the same banks are too scared to lend this liquidity forth due to adverse selection. Rather, the recipient banks will sit on their liquidity bundle and feel slightly less threatened by the fear of what might be happening in other parts of their asset portfolios. Likewise it is pointless to expect anything worthwhile from cutting banks' funding rates by the occasional one quarter of one per cent. Better forego 1 or 2 percent return than lose the entire loan.

But there is another possible explanation for the limited success of measures taken to date. The simple fact is that many banks are under-capitalised. This could be due to excessively aggressive leveraging when times were good, but it could equally be due to losses incurred when asset values dropped. If banks feel an urgent need to de-leverage due to under-capitalisation, they are unlikely to borrow from anyone, not even the central bank, as this involves moving in the wrong direction. In this case, not even profitable intermediation opportunities will appear attractive.

The international contagion of the crisis took on a new dimension when Lehman Brothers was allowed to go bankrupt. This may have had to do with the excessive admiration for the American system which our political leaders have espoused for years, creating expectations that Europe would treat its banks in the same way. The rescue of Bear Sterns was a shock, but the fate of Lehman was one shudder too many – the feeling of reassurance took a hammering.



## **Recommendations to Resolve the Crisis**

The first thing to remember is that every crisis comes to an end sometime – or, at least, this has been the experience of mankind to date. This one, too, will pass, although at what cost remains to be seen.

But what should be done depends on whether we are talking about putting out the flames in an emergency, or if we are in a normal post-crisis state of preventing a recurrence.

As for banks in the midst of crisis, the most useful lesson from recent experience is that a social guarantee, issued on behalf of society by the government, is the most powerful measure to implement. The guarantee should cover all deposits, corporate as well as personal, large as well as small, term deposits as well as demand deposits. As pointed out by Rhodes, Stelter, Saumya and Kronimus (2008), the financial system rests on three pillars of capital, liquidity and confidence. An unconditional state guarantee satisfies all three. But, it is not a desirable long-term solution.

Once the immediate crisis is past, the first prerequisite is to get the money markets working again. This is no easy task in the face of adverse selection. However, the Federal Reserve has shown that the inter-bank market can un-jam if banks are provided with suitable government guarantees. Alternatively, the government, or its agent the central bank, can become intermediary of last resort and act as a clearing house for all inter-bank loans.

The commercial paper and repurchase markets are also vital because they act as sources of working capital for large corporations. Market

failure here will accelerate the transmission of financial crisis into the real economy. The government, or central bank, may also be required to underwrite those markets.

Once the main crisis has passed, a pressing issue will be the re-capitalisation of banks and other financial institutions. This is important for several reasons. First, capital markets will be very weak in the immediate post-crisis period so that banks may be unable to turn to capital markets for supplementary capital. Secondly, undercapitalised banks may be forced to deleverage which implies they will be unable to perform their role of providing credit for commercial purposes for the duration. And finally, undercapitalised banks will be exposed to the risk of predatory takeover by bargain hunters.

But capital injections should always take the form of a common stock holding. Understandably, bank shareholders and management do not like this. But if the government rescues a bank when it is in a weakened position, why should the government and the taxpayer not obtain the up-side benefit of the share-price recovery as the business climate gradually improves? Furthermore, the fact that shareholder interests may be hurt by the government's capital injection will help to ensure that they take a more active interest in management activities in future. This should help to reduce the agency problem, as well as the moral hazard problem a bailout, in the form of soft capital loans, would create.

And one further problem which needs to be urgently addressed is the question of regulation of the financial system. There should be no unregulated, or lightly regulated, financial intermediaries. All intermediaries should be subject to the same laws of disclosure and supervision,

whether they be banks, hedge funds, monoline insurers, or whatever. No hedging activity should create grounds for an exception. After all, the objective is reasonable regulation, not strangulation.

Turning to the international environment, certain emerging and developing countries have been particularly hard hit by the crisis. These are mainly countries which are heavily dependent on foreign currency loans, and which may suffer excessively from the short-term fluctuation of their exchange rates. In times of crisis, such countries should have no hesitation in imposing exchange controls. This is no different, in principle, from the frequently-observed phenomena of stock markets closing temporarily when trading conditions get too turbulent.

But whether countries should seek to repair the exchange rate regime in the aftermath of the financial crisis is open to question. While euro countries were spared exchange-rate volatility with close trading partners, they were not spared from the financial crisis itself. If one wants to be spared exchange rate fluctuations, this can only be realised in a single-currency world à la Mundell (2008). Otherwise, exchange rates act as a kind of shock absorber in the global economy. Any measure to diminish their effectiveness in this regard will only serve to accentuate other problems – such as the international transmission of inflation. It's a matter of choice!

And finally, the G20 Leaders Summit in Washington on Financial Markets and the World Economy, 14-15 November 2008, was remarkable in a number of respects. For the first time countries such as China, India, Mexico, Turkey etc. were present at the high table in discussing global economic reform and not confined to a lesser role of onlookers. This

clearly signals a reweighting of the global balance of power. The meeting also created a clear and detailed outline of the solution to the global crisis; globally coordinated fiscal and monetary measures, international supervision of major global banks, revision of international accountancy standards and the strengthening of the role of international institutions, such as the IMF and the World Bank. Greater detail can be expected following the next meeting of the G20 finance ministers on March 31, 2009. This signals a measure of hope for the future.

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## **The Author: a Biographical Note**

Dr. Hannes Androsch was born in Vienna, Austria in 1938. In the 1970s and 1980s, he was one of the foremost politicians in Austria, serving in successive Bruno Kreisky administrations as Finance Minister and Vice-Chancellor. After leaving politics, he served as general director of the Creditanstalt-Bankverein and as a consultant with the World Bank. Today, Dr. Androsch manages his holding company which consists of a range of industrial enterprises and is also active in scientific and cultural institutions. Dr. Androsch is widely sought after for his views on important financial, economic and political events in Europe and is a regular contributor of articles and commentaries to a wide range of journals and periodicals. [www.androsch.com](http://www.androsch.com)