

Alan BOLLARD**Governor***Reserve Bank of New Zealand*

Two asset prices that are of particular interest for policymakers in most small open economies are house prices and the exchange rate. Over the past decade, the “global savings glut”, declining interest rates and a search for yield drove up exchange rates for many small open economies such as Australia and New Zealand and also helped fuel a sharp increase in house prices in many countries. Recent developments in global markets stand to have further impacts on housing markets and exchange rates and create some new challenges on both the monetary policy and financial stability fronts.

The experience of the past decade is now doubtlessly familiar. The decline in interest rates was reinforced by the “Great Moderation” in the apparent variability of most economies. Investors became more willing to accept risk, partly in order to maintain returns as risk free interest rates dropped, and partly because the risks seemed smaller.

From a monetary policy perspective, the past decade highlighted some of the challenges that we face in trying to run an independent monetary policy in a connected world. In targeting inflation, as many small open economies do, we set a domestic policy interest rate, which has some bearing on domestic monetary conditions. But domestic monetary conditions also hinge on what is happening to interest rates across the rest of the world. Sometimes global interest rate developments are “in sync” with domestic monetary policy and support it. At other times, they are “out of sync” and can work against it, making monetary policy spongier, and perhaps less effective at the margin than would otherwise be the case.

At times over the past decade, monetary policy in New Zealand and some other smaller open economies had to contend with global interest rates that were considerably lower than domestic economic conditions would warrant. Financial institutions in these countries were able to access cheaper funding than they could obtain domestically, exchange rates rose to uncomfortable levels on the back of the carry trade and some asset markets –such as housing– were able to surge on the back of lower effective interest rates than domestic policy settings might suggest.

A strong element of the capital flow into New Zealand –and this is a financial innovation, though now a relatively old one– has been the issuing of fixed income NZ Dollar securities to international retail investors by very high quality international names such as the World Bank. The willingness of these investors to take NZ Dollar risk at elevated currency levels has helped keep the currency relatively high and short term interest rates a bit lower than would otherwise have been the case. This has been far from an ideal mix of monetary conditions at a time when most of the inflation pressures have been concentrated in interest rate sensitive sectors like the housing market. The possibility of collateral damage on the country's tradable sector has to be taken seriously. In New Zealand, we have done significant work, documented in a number of studies on our website, on whether there might be additional regulatory measures or other policies that may have helped adjust the balance of monetary policy pressure to better match the underlying inflation pressure. It will not surprise anyone in this room to know we have not found a “silver bullet”, although analysis continues.

Besides retail investors, we have also seen the presence of institutions such as hedge funds engaged in the “carry” of funds borrowed in low yielding markets to invest in markets like New Zealand. An unresolved debate is whether these hedge funds actually provide additional market liquidity for smaller economies or whether they effectively soak it up –particularly in troubled times. The role that these hedge funds can play at the stage where an over-valued exchange rate begins to adjust back to a more normal level is also unclear. Whether hedge funds assist the adjustment process or whether they make it more abrupt and costly, is debatable.

Many countries have seen pronounced strength in property markets over the past decade. Strong residential property markets have often gone hand in hand with strong consumer spending. New Zealand has been a leading example. House prices have risen substantially as a ratio to income over the past five years. As longer term interest rates have risen recently in New Zealand, and housing turnover has slowed, the elevated level of house prices has looked increasingly unsustainable.

One interpretation of recent housing cycles is that a “glut of capital” lowered interest rates and put upward pressure on house prices, creating a persistent tailwind for some economies. As houses change hands and are more heavily borrowed against, equity is withdrawn by the seller, who may often choose to spend the money. This has helped to keep demand very robust in New Zealand for a number of years and seems to have supported consumer spending as well.

With recent developments in global finance markets, we now seem to be moving into a new era and policymakers are facing some new challenges on both the monetary policy and financial stability fronts. We are only just beginning to understand what is prompting such a marked shift away from risk taking and the pursuit of yield to heightened risk aversion. A ready pool of investors and an appetite for risk appear to have encouraged substantial financial innovations and the creation of a new set of financial instruments, some of which ultimately proved to be a lot riskier than they initially seemed. Much of this activity was concentrated in the US.

The creation of these instruments involved the following elements which I only mention here, but are likely to be worthy of further study and analysis in years to come:

- Origination of credit on riskier terms. A clear example is the covenant-lite debt that private equity firms were able to obtain until 2007, and the increased flow of mortgage lending in the US that would previously not have occurred.
- Contracting out of origination, and securitisation of the completed loan, both of which have at least the potential to create moral hazard.
- Pooling of risk and assumptions about correlation which were based on historical data but did not always prove accurate *ex post*.
- Credit guarantees, often from the so-called “Monoline” insurers.
- The use of conduits by financial institutions to expand credit creation and asset holdings above and beyond the usual balance sheet constraints.

- A relatively relaxed approach to liquidity risk, with an implicit assumption that wholesale funding was not at risk –as seen in the Northern Rock case, for example.

These events are having important implications for smaller open economies, including New Zealand, Australia and the economies of Scandinavia and Eastern Europe which have a substantial reliance on the international capital markets. Most of these countries have not been very directly affected by the problems arising from the complex innovations described above. In New Zealand, for example, we have not really seen the development of any of the complex financial instruments at the heart of the US’s current financial problems. However, as a net borrower and a participant in international markets, New Zealand is certainly affected by the sharp changes in interest rates, credit spreads and exchange rates that have occurred as a result of recent developments. We are currently seeing increased funding costs in global markets for reasons that are largely not of our own making.

We currently face something of a mixed bag at present in terms of global interest rates. At one level, a loosening in monetary policy in the US and some other countries is putting downward pressure on medium to longer-term interest rates. For those smaller economies like New Zealand and Australia which are facing relatively strong inflation pressures at present, that would ordinarily make the monetary policy challenge harder. On the other hand, higher credit spreads are actually increasing the effective cost of funds for many of our financial institutions and businesses accessing funds through the global capital markets. So we actually face some quite difficult judgements in assessing how policy settings and global conditions will affect domestic economic activity and inflation in the months ahead.

Despite increased global risk aversion, it is not yet evident that the carry trade is dead. We have still seen a relatively strong issuance in the New Zealand dollar in recent months *via* Uridashi bonds for example. The New Zealand dollar remains at relatively high levels and has recently been at a post-float high against the US dollar, albeit largely reflecting the weakness in the US dollar itself. However, as one might well

expect, exchange rate volatility has been high of late and there is perhaps more than the usual uncertainty around the likely path of the exchange rate over the months ahead.

With banks' funding costs on the rise, mortgage rates have been increasing in New Zealand and Australia and in some other small open economies recently. This occurs at a time when New Zealand's housing market is already slowing due to the effects of past policy tightening. Whilst we are projecting the housing slowdown to be of the soft landing variety, there is obviously some risk of a more pronounced slowdown. History shows us that either scenario can happen. Clearly, the path of global interest rates from here on will have some bearing, given their influence on bank funding costs.

Of course, monetary policy is not our only focus. Global market developments also have important ramifications for financial system stability in smaller open economies. The banks in many of these countries are net borrowers in global markets, New Zealand and Australia being two examples. Recent events have highlighted some risks and vulnerability that institutions and regulators need to ensure are properly managed. We always used to talk about these risks but they have come into sharper focus. Our institutions need to be able to cope with sharp changes in the cost of funds in the global market place. But as we saw in July last year, we also need to confront the possibility that global funds may not always be as readily available as we perhaps used to think. Financial market liquidity policies and the management of funding by financial

institutions are two areas that are likely to receive considerable policy attention in many countries over the coming months.

Specifically, I note a very timely and comprehensive analysis of liquidity issues was prepared in a special *Financial Stability Review* by the Bank of France in February. In New Zealand, we have also been keenly aware of the liquidity risks that recent events have demonstrated. Banks have had an important role intermediating capital account flows into New Zealand (and Australia), and have accepted a significant amount of short term capital flows in order to minimise funding costs. We want to look at whether the vulnerabilities that this can create have been adequately priced and managed –noting that some of the costs of a liquidity event are probably externalities that would ultimately be borne by other New Zealand parties.

Breakdown of short term lending markets is one specific challenge we would expect to confront if the financial stability situation deteriorates markedly further in one or more of the major advanced economies. There will doubtless be other flow-on effects as well. Like the transmission of subprime issues to monolines and seemingly unrelated markets, many of these flow-on effects could surprise us. However, the potential for a deterioration in financial stability to further intensify risk aversion seems significant. For countries like New Zealand with substantial borrowing from abroad this could clearly have an impact on our cost of funds and/or our access to funds in some global financial markets.

Arvind KRISHNAMURTHY**Professor of Finance**

Kellogg School of Management – Northwestern University

Thank you for the opportunity to be a part of this panel and share my views on globalisation and financial stability. The bulk of my comments are going to be devoted to the link between financial innovation and stability.

The main thesis that I am going to put forward today is that a financial innovation, while welfare enhancing in the long-run, often encounters bumps in the road. I will refer to some historical examples, beginning with the current financial crisis, to argue that financial crises are often associated with the rapid proliferation of a financial innovation. I will highlight that uncertainty, in a manner that I will explain, is the key link between innovation and crises. I will then suggest that there is a strong impetus for financial innovation today. In particular, there are important trends in today's globalised landscape that incentivise financial innovation. To close, I will present some thoughts on how these observations should inform policymaking.¹

Knightian uncertainty and crises

A good place to begin illustrating my points is in the current financial market turmoil. Perhaps the single largest change in the financial landscape over the last 5 years has been in complex credit products: collateralised debt obligations (CDOs), collateralised loan obligations (CLOs), and the like. These instruments have proliferated rapidly. Because of their rapid proliferation, market participants have only had a limited historical record of dealing with them. When the defaults on subprime mortgages occurred last year, many market participants were taken by surprise. They realised that they didn't understand their investments and were confused. A prominent example of this is the case where AAA subprime tranches suffered losses.

In this situation of uncertainty the natural response of investors is to disengage. They go back to the drawing board to figure out what type of models they should be using. In the meantime, they make decisions so as to be insulated against the uncertainty that they don't understand.

Let me pause at this point. I am using the word uncertainty in a very specific way. There is a long tradition in Economics, going back to Frank Knight, which distinguishes uncertainty –risks that are unknown and immeasurable– and risk –which is quantifiable and measurable. Human behaviour when faced with uncertainty is to act to minimise the effect of uncertainty: in short, to disengage from that which creates uncertainty. Faced with risk on the other hand, agents smoothly adjust decisions and pricing policies to reflect the risk. The financial sector specialises in managing measurable risk. Indeed, in addition to the behavioural response to uncertainty, I think that uncertainty is inherently difficult for a financial organisation to deal with.

If uncertainty was only in subprime investments, given the relatively small size of the subprime sector, the financial system could have easily absorbed these losses. However, investors started to question the valuation of the myriad other credit products –not just mortgage– that had been structured in much the same way as subprime investments. The result was uncertainty across the entire credit market.

To understand how uncertainty can lead to a liquidity crunch, an analogy may be useful. Take the children's game of musical chairs. The rules are that there is always one more child than chairs. The children circle around the chairs until the music stops. When the music stops, one child will be left without a seat. Now suppose that the children are confused about these rules –it is a new game. Suppose that each is convinced that he will be the one left without a seat. Chaos may erupt. Kids may start grabbing on to chairs, running backwards, refusing to play, etc.² This is what uncertainty does.

In the credit crisis, uncertainty led every player to make decisions based on imagined worst-case scenarios. Liquid players stayed out of markets or pulled back dramatically. Some players questioned whether their counterparties had hidden losses on their books and stopped trading. Others hoarded their own liquidity because they were sure they would

¹ An academic reference for these ideas is "Collective risk management in a flight to quality episode", coauthored with Ricardo Caballero and forthcoming in the Journal of Finance. My ideas are also drawn from discussions with Ricardo, who should not be held accountable for any flaws in my presentation.

² For further development of this point see "Musical chairs: a comment on the credit crisis" in the Banque de France's Financial Stability Review, Special Report on Liquidity (February 2008).

receive some worst-case shock. But for financial markets to function, they need participants and their liquidity. When you have many players disengaging due to uncertainty, the effective supply of liquidity in the financial system contracts. Players who need liquidity are unable to get it. Markets turn illiquid. The last half a year has shown that illiquidity can have far reaching macroeconomic consequences.

In reviewing this episode, note the importance of lack of history. If market participants had a historical record within which to understand events, we would have been in a situation of risk but not Knightian uncertainty. The crisis dynamic in that case may have been far less severe.

Financial innovation

Consider then the role of financial innovation. As I will argue, the recent crisis is an example of a more general phenomena associated with financial innovation. A successful financial innovation is a product that meets a market demand and is therefore taken up widely. The subprime case is an example of a successful financial innovation. But, by its very nature, a successful financial innovation provides market participants with only a short history. Things will happen that people don't expect. In this case it is easy to see how an uncertainty-driven crisis may occur.

Let me elaborate on this point and give you three historical examples.

Let us start with the 1970 Penn Central Railroad default. Penn Central defaulted on USD 82 million of prime-rated commercial paper. The commercial paper market at the time was not as mature as it is today. It had developed rapidly through the 1960s to meet growing corporate borrowing needs. However, ratings were not fine tuned. Back-up liquidity facilities, which are standard practice today, did not exist. When the default occurred, it spooked money-market investors. These investors went back to the drawing board to re-evaluate their credit models and ratings guidelines. The result was disengagement. Investors stopped buying commercial paper completely. The Fed had to step in and encourage banks to buy commercial paper, before the market normalised.

Contrast this event with those of 1997. In 1997, Mercury Finance –another commercial paper borrower– defaulted on USD 500 million of paper. The default was much larger in real terms than Penn Central and was similarly a surprise to the market. In contrast to the Penn Central case, there were no effects on the commercial paper market. The reason is that it quickly became clear that the default was a case of fraudulent accounting in Mercury Finance. There wasn't the uncertainty element that had been important in 1970.

Another example to illustrate these points is the stock market crash of October 19, 1987. The new innovation in this episode was portfolio insurance strategies –that is, the computerised replication of put options. This was a strategy that had become increasingly common among investors in this period. However, nobody knew how widespread these strategies were. Moreover, nobody knew how financial markets would equilibrate in the presence of portfolio insurance strategies. The speed of the market decline on October 19 took everyone by surprise. Market makers widened their bid-ask spreads and other key market players pulled out of the market completely. The result was a lack of liquidity. The computerised sales into an illiquid market pushed prices down further and worsened matters, snowballing into a market crash.

My last example is the hedge fund crisis of the fall of 1998. In this scenario, hedge funds were still a relatively new and opaque financial vehicle. Assets under hedge fund management had grown from around USD 10 billion in 1991 to USD 80 billion in 1997. Notice that this is still far less than the trillions under management today. In the fall of 1998, even sophisticated market participants such as Long-Term Capital Management were taken by surprise by the comovement of many bond spreads. Russian government bond spreads, Brazilian spreads, and US Treasury bond spreads were all moving together in an unprecedented fashion. The standard risk management models that people used were no longer applicable. The result was that financial market participants searched for new models and made decisions based on worst-case scenarios. We now know that hedge funds had similar strategies and had filled up a similar asset space, and that this was the source of the correlations.³ But at the time,

³ Something similar happened with Quant funds in August 2007. Many Quant funds had similar strategies, but none of the market participants realised the extent to which this was true, and the extent to which they had filled up the same asset space. On the other hand, from the behaviour of asset prices and with the knowledge of what had happened in 1998, fund managers quickly deciphered the situation. The Quant dimension of the crisis was relatively contained.

hedge funds did not know this and certainly creditor banks did not understand this point. The result of this uncertainty was illiquidity and crisis.

In each of these cases, the financial innovation was eventually absorbed into the marketplace. Once people understood what could happen, they accounted for it in their decision making. When Mercury Finance defaulted in 1997, people knew about Penn Central, and there was little disruption to the market. Similarly, in the mini-crash of October 1989, people knew about portfolio insurance and there was no stock market crisis. It is worth noting that portfolio insurance and other sophisticated computerised trading strategies are quite common today. Today, as opposed to in 1998, people understand that asset prices should comove during periods of illiquidity. Creditors understand the risk involved in lending to hedge funds. While in 1998 hedge funds were still a novel financial vehicle, the large reported losses of the Amaranth hedge fund in 2006 barely caused a ripple in financial markets.

Of course, hindsight is 20/20. That is not the point of these examples. What these examples show is that a crisis dynamic is likely when something happens that is not expected. This is natural. What we can learn from these examples is that the unexpected happens more often with new financial innovation. Over enough time, the market's decisions encompass more of the event space. Only as this happens is the innovation absorbed into the marketplace.

Globalisation and asset demand

So far I have discussed the link between innovation and crises. Let me next turn to a point which is more speculative but possibly very important. There is an important trend in the world today having to do with the demand for developed economy financial assets. This is a trend that many people here have commented on and has been noted by many prominent academics and policymakers. We understand that this demand plays a role in global capital flows as well as in low world-wide real interest rates.

The trend is also important for financial innovation. An increase in asset demand will be met by an increase in asset supply. There are only two ways in which asset supply adjusts. First, the real sector undertakes investment and produces more real assets.

Second, the financial sector operates on the current base of real assets and engineers more financial assets. It is this second force that is important for financial innovation. In part, I see the engineering of credit products over the last 5 years as due to the increase in asset demand.

Policy

It is apparent that the asset demand trend is here to stay. The impetus for financial innovation is also likely to remain. While the recent innovation was in credit products, there will be a next innovation in a different product space. Let me conclude by offering some thoughts for how this should guide policy.

First, at some level, we must recognise the limitations of policy. The newness of financial innovation, which is the source of market uncertainty, also poses a problem for policymakers. Policymakers are in the same boat as market participants. They can't and won't know how things may go wrong.

Nevertheless there are still lessons to be learned. It is possible to proactively identify trouble spots. I have suggested focusing on financial innovation. I could add complexity as a precondition of a trouble spot. The uncertainty dynamic is caused by a lack of information. It is important therefore to understand as much as possible about the trouble spots. It is also important to create situations where information is shared among market participants.

Second, during an uncertainty crisis, central banks may be the only source of certainty. A credible lender of last resort policy can act as a backstop during a crisis. That is to say policy can play an important part in helping to reduce anxiety over worst-case outcomes. In fact, any ambiguity over central bank policies dulls the effect of policy. Certainty provision is the important dimension of central bank policy. I think it is important that central banks fine tune their arsenal of lender-of-last-resort instruments, and deploy them in a clear manner during a crisis.

As I said at the start of this talk, innovation brings long-run benefits. But in the short-run, there are bumps. Prudent oversight of financial innovation is about enjoying the benefits of innovation while limiting the inevitable costs brought about by short-run instability.

Yaga Venugopal REDDY**Governor***Reserve Bank of India*

I am thankful to the Banque de France for giving me this opportunity to participate in the International Symposium on “Globalisation, inflation and monetary policy”. I will present some of the aspects of the Indian experience on the subject and conclude by briefly flagging select issues in the light of recent global developments.

Financial sector reforms

In India, reforms to improve efficiency and soundness of the financial sector started early in the reform cycle that commenced in 1991 –in some ways anticipating the gains that would accrue from the resultant flexibility in product and factor markets. However, the process of strengthening of the functioning of the financial institutions in terms of prudential framework, operational efficiency and regulatory/supervisory regimes has been gradual. It was also calibrated with the development of money, forex, government securities and equity markets. At the same time, the pace and content of reforms in banking, financial and external sectors are closely aligned with the progress in reforms in the real and fiscal sectors and in the public sector as a whole, considering in particular that the banking sector in India is dominated by the public sector. Our attempts to align the financial sector with the global best practices do take into account progress achieved in public policy in regard to similar alignments in related areas, especially the real sector flexibilities, fiscal health and overall governance standards.

In the Indian context, considerable weight is currently accorded by the Reserve Bank of India (RBI) to price and financial stability while recognising its twin objectives of growth and stability. The large segments of the poor tend to reap the benefits of high growth with a time lag while the rise in prices affects them instantly. Further, we recognise the limited capacity of the poor to bear risks that may occur in the real sector by virtue of developments in the financial sector, in the absence of social security mechanisms and public safety net.

Let me illustrate with two examples of emphasis on stability in relation to financial institutions and financial markets. First, the centrality of the banking sector, especially the retail deposit base and credit disbursement, is maintained while gradually expanding the practice of diversified universal banking. Second, in regard to financial markets, in view of a persisting, though moderating, high combined (*i.e.* federal and provincial debt together) public debt to GDP ratio of over 70 per cent, coupled with current levels of fiscal deficits, almost the whole of sovereign debt, mostly at fixed interest rates, is denominated in domestic currency and is held almost entirely by residents. A small component is open to Foreign Institutional Investors and multilateral/bilateral agencies. At the same time, the government securities market is well developed and is paving the way for the healthy development of an expanding corporate bond market.

Capital account liberalisation

Liberalisation of the capital account has been a gradual process with a distinction being made between households, corporates and financial intermediaries, along with the recognition of a hierarchy of preferences for capital flows. The equity markets are more liberalised, relative to debt markets. Experience has shown that investment in equities, especially in terms of foreign direct investment, may bring in collateral benefits such as technological and organisational know-how. There is, therefore, considerable openness in regard to equity along with active management of external debt.

While the policy readily recognises the benefits of liberalisation of trade, it constantly weighs the risks and rewards based on both domestic developments and global conditions in regard to management of capital account. Thus, the process of liberalisation of the capital account reckons the pace of concomitant developments in domestic financial sector, fiscal health and flexibilities in the real sector.

Capital account management

It is possible to argue that just as “stabilisation funds” take care of current account shocks, capital account management and market interventions are justifiable to take care of cognisable capital account shocks.

A continued focus on financial market development and its sophistication would, no doubt, mitigate the challenge of capital flows in the medium term. However, it is important to recognise that maturation of financial markets takes time. Hence, sometimes capital flows may have to be managed through other instruments in the short term, while continuing to work on development of the financial markets.

Increase in absorptive capacity of the economy could be a mitigating factor in the context of large inflows. It is not easy, however, to develop absorptive capacity of an economy in the short run and in any case it is very difficult to calibrate the absorptive capacity of an economy to match capital flows if they happen to be volatile. Furthermore, the level of current account deficit in respect of emerging market economies that is generally considered as sustainable by the global financial markets may be lower than the sheer volume of capital inflows in these economies.

It is sometimes suggested that encouraging outflows would be a good solution to manage surging inflows. While there is some merit in this approach, liberalising outflows may not be of great help in the short run because a more liberalised regime generally attracts higher inflows. Hence, such a policy has to be combined with other measures which could help to effectively manage the flows.

In implementing a calibrated process of liberalisation of capital account, co-terminus with developments in other sectors, there are several issues that are addressed in regard to managing capital flows in the short run. These are:

- whether the capital flows are judged to be large and lumpy;
- whether they are assessed to be temporary;
- the limits to effectiveness of interventions if the exchange rate movements are unidirectional;

- the desirable extent of sterilisation, considering costs and the available instruments;
- above all, the likely impact of the relevant policy stance and procedural measures on the exchange rate expectations.

Needless to say, monetary and exchange rate and reserve management are rendered complex in the context of the well known “trilemma”, especially in the current global environment.

Monetary policy

Monetary policy recognises the growing importance of global factors but the domestic developments play a dominant role. No doubt, the structural transformation underway and the continued significance of public sector in financial sector as well as notable prevalence of administered interest rates make the tasks particularly complex. While there has always been a dual mandate of the RBI, it has, in recent years, successfully articulated a self-imposed tolerance limit of five per cent on headline inflation. The tightening of monetary policy commenced in October 2004 and there have been seven increases of 0.25 per cent in the repo rates till March 2007, to address early signs of possible overheating during the period. To meet the challenges of excess liquidity on account of surge in capital flows, the cash reserve ratio in regard to banking system has been increased in ten instalments since September 2004 till date, aggregating three hundred basis points. Currently, there are acute policy dilemmas arising from global food and energy prices as also from financial market turbulence that need to be factored-in in evolving appropriate policy responses.

Supervision of banks

In recent years, partly reflecting the buoyant economy, credit growth has been very high, particularly in select segments, and the asset prices have been accelerating. The RBI made it clear that while it does not have a view on the market valuations, it would like to sensitise the banking system to the potential risks of rapid escalation in prices. The actions taken since December 2004 to address these issues include increase in risk weights in respect of housing loans and sensitive sectors viz., commercial real

estate and capital market exposure. Further, since November 2005, provisioning requirement for standard advances, except for agriculture and SMEs, were increased while the increases in respect of sensitive sectors were steeper. Several procedural and suasive measures, and supervisory review processes over select banks were also undertaken to sensitise them in this regard. In particular, the RBI's concerns about credit quality in the expansion phase of credit, the recourse to non-deposit resources to fund their assets, the uncomfortable loan-to-value ratios and excessive reliance on wholesale deposits were repeatedly expressed, and this has been followed up with interactions with select banks, as needed. As a result, overall credit growth as also advances to sensitive sectors have since moderated. The RBI has been urging the banks to also monitor carefully larger unhedged foreign exchange exposures of their corporate clients.

In view of the tendency of some of the banks to utilise non banking financial companies as conduits to channelise funds leading to regulatory arbitrage and discomfort, limits on both direct and indirect exposures were imposed and transparency in their relationship with banks was insisted. Further, supervisory review process has been undertaken in regard to the few banks that rapidly expanded their off-balance sheet exposures so as to secure supervisory comfort.

As regards complex financial products, the structured credit market is in its infancy. Both mortgage-backed and asset-backed securities are in vogue, but in the light of differing market practices and concerns relating to accounting, valuation and capital adequacy treatment of such products, the RBI issued guidelines on securitisation of standard assets in February 2006. Permitting introduction of credit derivatives, currency futures as well as interest rate futures with modified product design in India are under active consideration and the process of extensive consultations with market participants is underway.

Regulatory focus on liquidity

The overall liquidity in the system is actively managed by the RBI mainly through the operation of Liquidity Adjustment Facility on a daily basis in addition to sterilisation through several instruments.

While the RBI has prescribed prudential guidelines for asset liability management by the banks and they

have flexibility in devising their own risk management strategies as per Board-approved policies, subject to regulatory limits on mismatches prescribed for short-term time buckets, the RBI has taken steps to mitigate risks at the system level as well.

RBI had, early on, recognised the risks of allowing access to the unsecured overnight market funds to all categories of entities and, therefore, restricted the overnight unsecured market for funds only to banks and primary dealers.

Like other supervisors, the asset liability management guidelines for dealing with overall asset-liability mismatches have been issued by the RBI. Since excessive reliance on call money borrowings by banks could cause systemic problems, prudential limits in relation to net worth have been stipulated on both lending and borrowing in call money market in addition to those on inter-bank liabilities.

The guidelines on securitisation of standard assets have laid down detailed regulations on provision of liquidity support to special purpose vehicles (SPVs). It *inter alia* enables grant of liquidity facility, by the originator or a third party, to help smoothen the timing differences faced by the SPV between the receipt of cash flows from the underlying assets and the payments to be made to investors. The liquidity facility is subject to certain conditions to ensure that the liquidity support was only temporary and gets invoked only to meet cash flow mismatches and for absorbing losses. Any commitment to provide such liquidity facility is to be treated as an off-balance sheet item and attracts 100 per cent credit conversion factor as well as 100 per cent risk weight.

Select issues

Keeping in view the Indian experience and recent global developments, I will venture to pose some select issues for consideration. First, arguably globalisation had helped to bring down inflationary pressures. An interesting issue would be as to whether globalisation of trade has contributed more to such a process than globalisation of finance or whether it is a combined effect. China's manufacturing industry and to some extent, India's services sector, have admittedly contributed to the downward inflationary pressures while more recent upward pressures on prices of food and fuel

do not suggest significant role for finance relative to trade. The impact of extensive use of derivative instruments in respect of commodity trade on oil and food prices is still indeterminate.

Further, as illustrated by China and perhaps India, major contributors to the price moderation so far, consequent upon global integration, have remained relatively less open on capital account and have a moderately integrated financial sector.

Second, the link between open capital account and growth performance is not fully confirmed by the experience of the two largest emerging markets, though such a link is not entirely refuted either. In view of limited experience so far it is also useful to explore the link between movement in asset prices and financial integration *vis-à-vis* trade integration. In any case, the assumption that a managed capital account generates adverse sentiments in financial market is not fully borne out so far by the two aforesaid examples which experience large capital inflows. This points to the need for assigning greater weight to macro-economic fundamentals than to the state of capital account openness.

Third, recent turbulence in financial markets/institutions and the importance of harmonised and coordinated response of public policies indicate the significance of countercyclical fiscal and monetary policies. Is it possible to argue that similar harmonisation between monetary policy and prudential policies would be of some value as part of counter cyclical measures?

Fourth, in regard to regulation and supervision over banks, it is useful to explore whether the special status of banks in the financial system and the need for active coordination among regulators/supervisors needs to be reaffirmed. Further common persons in most of the societies would like to have a set of institutions where almost total safety of funds is assured and these traditionally are the banks. Hence, if the concept of reasonable expectation in public policies is accepted in regard to banks (as evidenced by the experience with Northern Rock), the pre-eminence of depositors' interests come out prominently. In this light, a reassessment of "originate-to-distribute" models, off balance sheet items and liquidity requirements of banks may warrant a closer examination in regard to banks. Moreover,

the debate on financial innovation and regulation has to be considered in terms of potential and systematic relevance of such innovations besides the capabilities for bringing them effectively under the regulatory umbrella. The extent of relevance of reputational risks in the conduct of the banking business relative to the past may also be worth considering.

Fifth, relative to trade in goods, externalities are more prevalent in regard to financial sector, especially the banking sector. Hence, some regulation is essential and it tends to be national. However, the financial flows are rapid due to modern technology and could be quite substantial, but in view of global scale, it becomes extremely difficult to identify or enforce the rules of origin in regard to financial flows. In this regard, the scope of and limit to global harmonisation of banking regulations in a convincing and enforceable manner may have to be continuously assessed so that the national regulators appropriately build into their regulatory regimes the requisite global requirements and domestic compulsions of reasonable expectation from the common person that ought to govern the public policy.

Sixth, currently there appear to be simultaneous challenges from several angles to the conduct of monetary policy emanating from recent financial turbulence. These relate to abrupt and large shifts in monetary policy measures of the major economies, major realignments in exchange rates within a short period and unprecedented inflationary pressures due to food and energy prices. These warrant significant and innovative ways of cooperation among the central bankers.

Finally, from a purely academic perspective, it may not be out of place to explore the issues concerning international policy coordination including the political economy considerations, in terms of interaction between governments and the financial sector, which may have been influenced not only by the growing importance of finance but also by the cross-border linkages in the financial flows. Recent debates on the Northern Rock, Sovereign Wealth Funds and financial innovations being ahead of regulation, are symptomatic of this broader issue. If I recall, Prof. McKinnon and Prof. Jagdish Bhagwati, among others, had alluded to some of these aspects some years ago.

Hélène REY

Professor

London Business School

One of the key words of this conference and of this panel is “globalisation”. And one of the most intriguing features of the current events in the financial markets is how the US subprime crisis managed to globalise itself in an international financial turmoil whose dynamics is still highly uncertain. I would like to propose a few ideas, some of them speculative, regarding the spreading of the crisis and the current nature of its dynamics.

Rather than being very general, I am going to discuss three market dysfunctions. I take these three examples because I think they are very important in the current dynamics. These three dysfunctions have to do with the originate-to-distribute model; the credit default swap (CDS) market; and the accounting rule of marking to market.

The originate-to-distribute model, which consists of securitising loans that one issues, of packaging them, slicing them, and selling them to other market participants, has some virtues. Risk diversification is one, and indeed we have seen that some American risk has landed in some German balance sheets, so this has worked. But there are also flaws. A few recent academic papers have shown that because of this model, the incentive to screen and monitor loans as they are securitised has gone down a lot, and quantitatively this matters. As tranches of risk are packaged and sold, globalisation of risk has increased, and so has globalisation of doubts on asset values. This globalisation of doubts has increasingly touched balance sheets of different financial institutions in different countries.

Here comes the second market dysfunction, which I will link to the credit default swap market. This is a market in which market participants can exchange contracts to cover the default risk that they have on a bond they hold. With the globalisation of doubts, loss of confidence has also appeared in the CDS market. Spreads have been widening. If CDS spreads widen, investors ask for a higher yield on the paper issued by a bank, say. So if a bank sees its spread widening on the CDS market, this will lead to an increase in its cost of capital. Now, as the cost of capital for the bank increases, the bank cannot raise as much funds as it wants or may

delay the raising of funds because of the current cost. It has to find alternative sources of funding; for example, it can compete on the market for deposits, but so do other banks at the same time, so it is not easy. Or it can raise equity, and we have seen some of that happening; it also comes at a cost.

All this means that the balance sheet of the bank is likely to worsen further, and therefore, enter into a vicious circle. The CDS spreads may widen even further. As the cherry on the cake, a rating agency may consider downgrading the bank at this point, in a classic backward looking fashion, and make the dynamics even more perverse.

Now, is it all theoretical? Well, let me give you a simple example coming from the North, the case of the main Icelandic banks, which as late as July 2007 saw their CDS traded at 30 basis points, and these days the CDS for these banks trade at around or close to 700 basis points. This means it is expensive to insure the debt from these banks, and this certainly increases their cost of capital. It is interesting to note that these banks had no exposure at all, or very little exposure, to the subprime crisis. So the CDS prices seem to have taken on a life of their own in these markets. They are becoming disconnected from the fundamentals.

As a result, some of these banks delay raising capital, delay issuing debt; for how long? Well, it depends on the solidity of their balance sheet. This story is a classic vicious circle. CDS spreads widen; investors demand higher yields; cost of capital goes up; balance sheet deteriorates; CDS spreads widen. To all the academics in the room, this type of mechanism is extremely familiar. We have lots of them, we love modelling them. I will make a provocative parallel with the debt crisis. We have a similar type of vicious circle in the classic cases of debt crisis that we have seen in the past: loss of confidence in government debt with an increase in the risk premium; the cost of debt increases; the fiscal burden goes up and the loss of confidence goes further. This is a kind of picture we know about. This is also a kind of picture that is pretty nasty because typically this means models with multiple equilibria, or at least models with strong self-fulfilling elements. So I will make the provocative statement that maybe the banking

sector in 2008 could be compared to Brazil in 2002. In this type of situation, the academic literature is focusing on how we select the right equilibrium if we have self-fulfilling elements in a crisis.

If we look back at what we do in the case of a debt crisis, the IMF is key. IMF intervention may or may not work; this depends on several things, like the sizes of a package and the ability to convince the market that actually the fundamentals are good, so that people actually coordinate on the good equilibrium. If we draw the parallel some more for the current situation, clearly such bank intervention is there, and liquidity injections are welcome. Maybe cutting the policy rate can help, even though it is unclear if the policy rate affects much the market rate at five years, which is where most of the CDS market operates. Another possibility is that the banks which are affected by this type of balance sheet effect raise some more capital. And there, there are fascinating issues relating to the amount of money available from sovereign wealth funds. Are geopolitical concerns that may come up, but I won't talk about that here.

But clearly, these strategies have to be also helped by a discussion on the solidity of the balance sheets, so one has to convince the market that assets are good, just like the fundamentals for Brazil were good after all. And there I think we are hit on the head by a third market dysfunctionality, which is the marking to market accounting rule. It is fair to say that valuing assets at market value in distress times is probably not such a great idea, in the sense that it certainly amplifies the balance sheet problem. There is a nice paper by Plantin from London Business School, Shin from Princeton and Sapra from Chicago which shows that there is a clear trade off between using historical cost accounting and marking to market. We know that historical cost accounting had problems in the past. You may end up with Zombi assets in your balance sheet for a while, and this is why actually we switched to marking to market at some point. But on the other hand, what

they show is that marking to market injects artificial risk that degrades information values of prices. So in distress times liquidity dries up and, in fact, there is a lot of noise in the prices of assets. They find in the theoretical model that this noisy effect on prices is actually worse for claims which are longed lived, illiquid and senior. These are typically the claims that are in the balance sheets of insurance companies and some banks. So it seems pretty clear that the marking to market accounting rule here creates a problem and an amplification mechanism for the current turmoil.

I will make a second provocative comparison: what would have happened if the 1982 debt crisis had been marked to market? We did not have these accounting rules at the time. A lot of people in the room know more about this crisis than I do, but my understanding is that the nine New York money center banks had at the time an aggregate exposure to Latin America sovereign debt of around 250 percent of their equity capital. So imagine, when some countries started not to repay, that there had been a market at that time. And let's say the market valuation of these assets would not have been greater than 60 cents on the dollar. It is very likely that it would have been lower than 50 cents on the dollar if these markets had existed in fact. All these banks would have gone under. The amplification mechanism that can come simply from this account rule of marking to market is pretty powerful! One could argue that if there had been marking to market, maybe these players would not have gotten into these positions. I have my doubts about that.

To conclude, as Claude Bébear put it very recently, it is not because your neighbour sells his house at a depressed price that your house is worth a depressed price if you do not need to sell it. The problem is that for banks accounting losses have to be met with real capital, even if they are not economic losses. Taken together with the self-fulfilling elements I have been discussing before, marking to market magnifies the crisis.

Martin WOLF

Associate Editor and Chief Economics Commentator

The Financial Times, London

Houston, we have a problem! For three decades now we have been promoting the joys of a liberalised financial system and what has it brought us? “One massive financial crisis after the other” is the answer. This is not to say that liberalised finance brings no benefits. It has certainly made a substantial number of people extraordinarily rich. It may well have brought economic benefits, as well. On that, the evidence appears mixed. But of one point, there can be little doubt: the crises have been frequent and costly, not least for innocent bystanders. Fiscal costs have been particularly disturbing. Gerard Caprio and Daniela Klingebiel provide information on no fewer than 117 systemic banking crises (defined as ones in which much or all of bank capital was exhausted) in 93 countries (that is, half the world) since the late 1970s. In 27 of the crises for which they have been able to obtain the data, the fiscal cost of the bail out was 10 per cent of GDP, or more, sometimes vastly more.¹

This was not a happy story. But an optimist – me, for example – might still believe, or at least hope, that regulation was becoming better, management of financial institutions more adept and risk-management more sophisticated. Above all, such an optimist could – indeed, did – believe that the most advanced financial systems in the world, particularly that of the United States, represented a promised land of sophisticated new transactions-oriented finance.

I even wrote a piece on “the new financial capitalism” just before the crisis broke.² In this I argued that we have today “the triumph of the global over the local, of the speculator over the manager and of the financier over the producer. We are witnessing the transformation of mid-20th century managerial capitalism into global financial capitalism. Above all, the financial sector, which was placed in chains after the Depression of the 1930s, is once again unbound”. I concluded the piece, however, by noting that: “Our brave new capitalist world has many similarities to that of the early 1900s. But, in many ways, it has gone far beyond it. It brings exciting opportunities. But it is also largely untested”.

The test came remarkably promptly. This is why the latest crisis – the “subprime *cum* credit-freeze” of 2007 and 2008 – is, I believe, far and away the most significant of the crises of the last three decades. It may also end up as the costliest, in absolute terms, simply because its epicentre is the United States (though it will certainly not be the costliest in relation to gross domestic product).

What makes this crisis so significant? It tests the most evolved financial system we have. It emanates from the core of the world’s most advanced financial system and from transactions entered into by the most sophisticated financial institutions, which use the cleverest tools of securitisation and rely on the most sophisticated risk management. Even so, the financial system blew up: the commercial paper and inter-bank markets froze for months; the securitised paper turned out to be radioactive and the ratings proffered by ratings agencies to be fantasy; central banks had to pump in vast quantities of liquidity; and the panic-stricken Federal Reserve was forced to make unprecedented cuts in interest rates.

Moreover, losses just keep bleeding out. Nobody believes we have reached the end of them. Sovereign Wealth Funds have helped recapitalise damaged institutions. But it is far too early to be confident that a direct bail-out by the US government will be unnecessary. Nouriel Roubini of New York University’s Stern School of Business, not the most cautious of analysts, it is true, but largely accurate in his prognostications of the looming recession, has recently argued that total losses of the financial system might end up USD 3,000 billion.³ In that case the US financial system would presumably be bankrupt and the rescue might even cost US taxpayers 20 per cent of GDP. In any case, an indirect bail out by the Federal Reserve is already under way. Meanwhile, as a footnote, though it is hardly that, one of the UK’s most dynamic banks, Northern Rock, imploded, generating the first bank run for over a century and forcing the government, in effect, to guarantee the liabilities – yes, I do, alas, mean the entire liabilities – of the

¹ See Caprio and Klingebiel (2003).

² See Wolf (2007).

³ See www.rgemonitor.org.

British banking system. The United Kingdom prided itself on having as advanced a financial system and as sophisticated a system of regulation as anywhere. It can no longer do so, alas.

So what has gone wrong? That seems to me to be the first question. Why has an era of globalisation, economic convergence and low inflation led to a plethora of bubbles, crises and financial mishaps? In the newest edition of the late Charles Kindleberger's classic work on financial crises, Robert Aliber of the University of Chicago Graduate School of Business argues that "the years since the early 1970s are unprecedented in terms of the volatility in the prices of commodities, currencies, real estate and stocks, and the frequency and severity of financial crises".⁴ I do not know whether that is true. But this is certainly the only significant industry whose safety standards seem to be no higher than a century ago. So what, if anything, can or should we do about it? That will be my second question.

What has gone wrong?

How do we explain this pattern of repeated failure? The alternative perspectives on crises are particularly well displayed in discussions of the most recent one, that in the United States.

One view is that this crisis, like most others, is largely the product of an irretrievably defective financial system. An email I received a few weeks ago laid out the charge: the crisis, it asserted, is the product of "greedy, immoral, solely self-interested and self-delusional decisions made throughout the 2000s, and earlier, by very real human beings at the very top of the financial food chain".

The argument would be that a liberalised financial system, which offers opportunities for extraordinary profits, has a parallel capacity for generating self-feeding mistakes. The story is familiar: financial innovation and an enthusiasm for risk-taking generate rapid increases in credit, which drive up asset prices, thereby justifying still more credit expansion and yet higher asset prices. Then comes a top to asset prices, panic selling, a credit freeze, mass insolvency and recession. An unregulated credit system, then, is inherently unstable and destabilising.

This is the line of argument associated with the late Hyman Minsky, who taught at Washington University, St Louis. George Magnus of UBS distinguished himself by arguing early that the present crisis is a Minsky moment: "A collapse of debt structures and entities in the wake of asset price decay, the breakdown of 'normal' banking functions and the active intervention of central banks". This followed an extraordinary dependence on credit growth in the recent cycle.

Economists would offer two contrasting explanations for this fragility. One is in terms of rational responses to incentives. Another is in terms of the short-sightedness of human beings. The contrast then is between misdirected intelligence and simple folly.

Those who emphasise rationality can readily point to the incentives for the financial sector to take undue risk. This is the result of the interaction of "asymmetric information" – the fact that insiders know more than anybody else what is going on – with "moral hazard" – the perception that the government will rescue financial institutions if enough of them fall into difficulty at the same time. There is evident truth in both propositions: if, for example, the UK government feels obliged to rescue a modest-sized mortgage bank, such as Northern Rock, moral hazard is rife.

An obvious reaction to this line of argument is that the failure was one of regulation. If regulators had done their job, by ensuring prudent mortgage lending, curbing the growth of off-balance-sheet vehicles, overseeing regulatory agencies, and so forth, the crisis would never have happened. Yet it is also evident that everybody involved – borrowers, lenders and regulators, too – are all too often swept away in tides of euphoria and panic. To err is human. That is one of the reasons regulation is rarely countercyclical: regulators are swept away, as well. The financial deregulation and securitisation of the most recent cycle merely encouraged an unusually wide circle of people to believe they would be winners, while somebody else would bear the risks and, ultimately, the costs.

An alternative view is that this is a crisis not of markets, but of government intervention. Governments provide the explicit and implicit guarantees. Governments heavily distort the market

⁴ See Kindleberger and Aliber (2005).

for housing, particularly in the United States, *via* government-subsidies for long-term lending. Governments subsidise borrowing in the tax code. At the same time, governments do not – or perhaps cannot – create a regulatory regime capable of offsetting the incentives for perverse behaviour created by such subsidies.

Yet there is a very different perspective. The argument here is that US monetary policy was too loose for too long after the collapse of the Wall Street bubble in 2000 and the terrorist outrage of September 11 2001. This critique is widely shared among economists, including John Taylor of Stanford University.⁵ The view is also popular in financial markets: “It isn’t our fault; it’s the fault of Alan Greenspan, that ‘serial bubble blower’”.

The argument that the crisis is the product of a gross monetary disorder has three variants: the orthodox view is simply that a mistake was made; a slightly less orthodox view is that the mistake was intellectual – the Fed’s determination to ignore asset prices in the formation of monetary policy; a still less orthodox view is that man-made (fiat) money is inherently unstable. All will then be solved when, as Mr. Greenspan himself believed, the world goes back on to gold. Human beings must, like Odysseus, be chained to the mast of gold if they are to avoid repeated monetary shipwrecks.

A final perspective is that the crisis is the consequence neither of financial fragility nor of mistakes by important central banks. It is the result of global macroeconomic disorder, particularly the massive flows of surplus capital from Asian emerging economies (notably China), oil exporters and a few high-income countries and, in addition, the financial surpluses of the corporate sectors of many countries. This was a global real interest rate shock, with particular force in the United States, where the capital was directed.

In this perspective, central banks and so financial markets were merely reacting to the global economic environment. Surplus savings meant not only low real interest rates, but a need to generate high levels of offsetting demand in capital-importing countries, of which the United States was much the most important.

In this view (which I largely share) the Fed could have avoided pursuing what seem like excessively expansionary monetary policies only if it had been willing to accept a prolonged recession, possibly a slump. But it had neither the desire nor, indeed, the mandate to allow any such thing. The Fed’s dilemma then was that the only way to sustain domestic demand at levels high enough to offset the capital inflow (both private and official) was *via* a credit boom. This generated excessively high asset prices, particularly in housing. It has left, as a painful legacy, stretched balance sheets in both the non-financial and financial sectors: debt deflation, here, alas, we come. This is not to deny that the Fed over-egged the pudding. But it had reasons for doing so.

When I read these analyses, I am reminded of the story in which four people are told to go into a dark room, hold on to whatever they find and then say what it is. One says it is a snake. Another says it is a leathery sail. A third says it is a tree trunk. The last says it is a pull rope.

It is, of course, an elephant. The point that it is, indeed, an elephant comes out clearly when one looks at the similarity with earlier crises. In a recent column (February 26th 2008), I argued that most crises began with capital inflows from foreigners seduced by tales of an economic El Dorado. This generated low real interest rates and a widening current account deficit. Domestic borrowing and spending surged, particularly investment in property. Asset prices soared, borrowing increased and the capital inflow grew. Finally, the bubble burst, capital flooded out and the banking system, burdened with mountains of bad debt, imploded. With variations, this story has been repeated time and again. It has been particularly common in emerging economies. But it is also familiar to those who have followed the US economy in the 2000s.

What can be done?

I want to conclude with a discussion of the lessons of this painful experience. I have to stress that my thinking is at an early stage. I no longer know what I used to think I knew. But I also do not know what I think now. So the discussion will lay out alternatives, in two main areas: regulation and monetary policy.

5 See Taylor (2007).

Regulation

Optimistic opponents of further regulation argue that the banks have learnt their lesson and will behave more responsibly in future. Pessimistic opponents fear that legislators might create a Sarbanes-Oxley squared. The Act passed by the US Congress in 2002, after Enron and other scandals, was bad enough, they say. The banks might now suffer something worse.

My reply to the optimists is “dream on”. To the pessimists, I respond: yes, the danger of over-regulation is real, but so is that of doing nothing at all.

Two points shine out about the financial system over the past three decades: its ability to generate crises, and the mismatch between public risk and private reward.

It is true, on the first point, that none of the financial crises of this period has gravely damaged the world economy, although some have devastated individual economies. But it is probably just a matter of time. It is also true, on the second point, that the banking sector is the recipient of massive explicit and implicit public subsidies: it is largely guaranteed against liquidity risk; many of its liabilities seem to be contingent claims on the state; and central banks create an upward-sloping yield curve whenever banks are decapitalised, thereby offering a direct transfer to any institution able to borrow at the low rate and lend at the higher one. In addition, banking institutions suffer from huge agency problems – between clients and institutions, shareholders and management and management and other staff. All this is also exacerbated by the difficulty of monitoring the quality of transactions until long after the event.

The United States itself looks almost like a giant hedge fund. The profits of financial companies jumped from below 5 per cent of total corporate profits, after tax, in 1982 to 41 per cent in 2007, even though their share of corporate value added only rose from 8 to 16 per cent. Banking profit margins have been strong, until recently. Now, at last, earnings per share and valuations have collapsed.

Yet can anything effective be done to contain the risk-taking this implies? To answer this, we must distinguish “micro-prudential” controls over

institutions from “macro-prudential controls” over the entire system.

On the former, the consensus of regulators seems to be that we need tweaks to the existing system. This could include: greater attention to liquidity management, alongside the focus on capital requirements in Basel II; more stress-testing of “value at risk” models; greater transparency throughout the businesses; and greater independence of ratings agencies from issuers.

I would argue, however, that none of this will make a sufficient difference. Regulators must also pay attention to the incentives – particularly the structure of pay – within the businesses. I would argue, in addition, that regulators would have to take a much tougher approach than most did in the past cycle. More broadly, there is a case for much higher capital requirements, particularly as a cushion against failure, combined with ruthless marking of assets and liabilities to market. I am also interested in the idea of forcing regulated banks to issue subordinated debt to one another, with the price being used as a relatively well-informed indicator of stress. Finally, originators must clearly be forced to hold the riskiest tranches of subsequently securitised loans on their books.

More radically still, we might ask whether the Glass-Steagall Act was really so unreasonable. A clear distinction exists between banking as a safe, low return utility, designed to provide services to the public at large, on the one hand, and investment banking, on the other. It is far from clear to me that combining a utility with a hedge fund is a good idea, not least because the result is close to being impossible to manage or regulate. Of course, one might wish to go even further and turn the utility part into narrow banks.

The bigger point still, however, concerns macro-prudential regulation. As William White of the Bank for International Settlements has noted, banks almost always get into trouble together.⁶ The most recent cycle of mad lending, followed by panic and revulsion, is a paradigmatic example.

One response would be to raise capital requirements counter-cyclically, in response to the growth of credit, as Charles Goodhart of the London School of Economics and Avinash Persaud of Intelligence Capital have suggested.⁷ They also suggest a variable maximum loan-to-value ratio for mortgages. Mr. White adds the need for tighter monetary policy.

These are all reasonable ideas. Yet, as Mr. White also notes, the strength of the pressures against taking “away the punchbowl just as the party gets going”, in former Fed Chairman William McChesney Martin’s famous phrase, is formidable. In addition to bureaucratic inertia, such action is subject both to unavoidable uncertainty about the dangers of current trends and to resistance from private interests. Furthermore, regulators are in constant danger of losing sight of the systemic wood for the institutional trees.

Monetary policy

The second area for consideration is monetary policy. Here the big question is what role should be played by asset prices in the formulation of monetary policy. The conventional wisdom – or at least the Federal Reserve’s conventional wisdom – has been that one cannot recognise bubbles before the event and can clean up the mess after it. I had an open mind on this proposition. No longer. It is now clear that neither proposition makes sense. One can judge when prices are moving a long way from fundamentals and it is hard to clean up the mess afterwards, particularly if much debt has been accumulated, using the overpriced assets as collateral. Worse, this is a one-sided policy that tolerates booms, but not busts. It now seems clear that the best policy is to lean against the wind, when asset prices are soaring, even if that means pushing inflation below target for a while. This, after all, is not a situation in which deflation is a danger, by definition. The danger of deflation comes

after the bust and the bigger the boom, particularly the asset price boom, the bigger the bust is also likely to be. Central banks must surely pay more attention to asset prices in future. It may be impossible to identify bubbles with confidence in advance. But central bankers will be expected to exercise their judgment, both before and after the fact.

I would add to all this the simple fact that freedom of US monetary policy has been seriously constrained by the monetary and exchange-rate policies of others, notably of China. Monetary disorders are global. If important countries pursue radically destabilising exchange rate policies, global monetary and balance of payments disorder is the inevitable consequence.

Those who do not learn from history are condemned to repeat it. A fundamental lesson concerns the way the financial system works. Outsiders were aware it had become a gigantic black box. But they were prepared to assume that those inside the box at least knew what was going on. This can hardly be true now. Worse, the institutions that prospered on the upside expect rescue on the downside. They are, alas, only too right to expect this. But this can hardly be a tolerable bargain between financial insiders and wider society. Is such mayhem the best we can expect? If so, how does one sustain broad public support for what appears so one-sided a game?

This crisis is a wake-up call. We are going to have to think again.

6 See White (2004).

7 See Goodhart and Persaud (2008).

Bibliography

Caprio (G.) and Klingebiel (D.) (2003)

“Episodes of systemic and borderline financial crises”,
World Bank, January
www.worldbank.org

Goodhart (Ch.) and Persaud (A.) (2008)

“A proposal for how to avoid the next crash”,
The Financial Times, January 31st

Kindleberger (C. P.) and Aliber (R. Z.) (2005)

“Manias, panics and crashes: a history of financial
crises”, Palgrave

Taylor (J. B.) (2007)

“Housing and monetary policy” (presented at the 2007
Jackson Hole Conference, August), September 1st
www.kc.frb.org

White (W. R.) (2004)

“Making macroprudential concerns operational”, BIS
www.bis.org

Wolf (M.) (2007)

“Unfettered finance is fast reshaping the world
economy”, *The Financial Times*, June 18th