Alan Bollard: Learnings from the Global Financial Crisis

Paper by Dr Alan Bollard, Governor of the Reserve Bank of New Zealand, and Mr Tim Ng, for the Sir Leslie Melville Lecture at the Australian National University, Canberra, 9 August.

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1. Introduction

The global financial system went through major convulsions in 2008, putting great pressure on an already weakening global economy. A massive global economic recession followed, contributing to the emergence of a sovereign debt crisis in the euro area. European sovereign debt problems remain a dark cloud overhanging the world economy.

These extreme events have provoked us to re-think what is known and where economic research should focus, in some cases fundamentally. We had long known that banks that appear individually sound can be vulnerable to problems affecting the whole banking system, and that such problems can amplify economic shocks. But the crisis sharply accelerated the study of financial fragility, contagion and instability nonetheless.

The crisis has also challenged us as financial regulators and monetary and fiscal policymakers. We are all working to understand, contain and repair the damage to financial systems, to economies and to governments' financial capacity. The policy choices in many areas involve difficult and uncertain tradeoffs.

This paper discusses some lessons from the crisis experience to date, and some analytical and policy challenges. Australia and New Zealand escaped the worst of the financial crisis, but not without extraordinary policy actions of our own at various times, and not without a certain legacy of issues to deal with in our own neighbourhood.

We find it useful to structure the discussion in three parts: the episode of near-seizure in many advanced-country financial systems in 2007–08; the global recession of 2008–09; and the current situation of extreme fiscal weakness in many parts of Europe. (Of course, real events have not been as simple and linear as that structure might suggest – expectations and feedback loops have played a substantial role.) We conclude with some reflections about research and policy strategy in this new world.

2. Financial system disruption, 2007–08

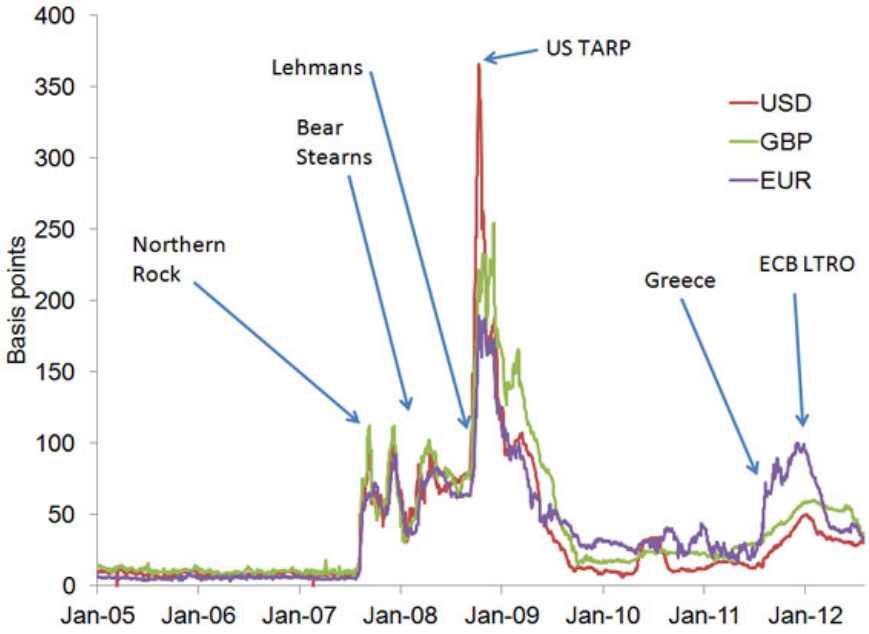
Global financial markets sharply became unsettled in July and August 2007, when a number of large US and European financial institutions suspended redemptions in investment vehicles linked to US mortgage debt and their derivatives. Through the following year, concerns mounted about the extent and complexity of global bank exposures and vulnerabilities to growing economic weakness. These concerns soon embraced a very wide sweep of financial products in the US and elsewhere. Bear Stearns was effectively bailed out by the US taxpayer on the basis that it was too interconnected to be allowed to fail. But the shock bankruptcy of Lehman Brothers in September 2008 saw investors panic, as perceptions about the safety of financial institutions in general took a sudden turn for the worse. Each of these events saw funding spreads in interbank markets worldwide spike (Figure 1).

Firms, investors and regulators generally failed to anticipate quite how financial system fragilities could interact. Prior to the crisis, they had viewed hedging markets and financial engineering as powerful means of detaching credit and liquidity risk from a wide range and large volume of circulating private-sector securities. The rapid growth and use of apparently low risk private-sector securities in funding markets was itself due to a number of interacting factors. These included a strong global demand for low-risk assets (mis-sold or mis-used on the basis of inaccurately high credit ratings), loose monetary policy, and credit-fuelled

housing booms in a number of advanced economies, which encouraged financial innovation to meet the demand for low-risk assets.

Figure 1

LIBOR-OIS spreads



Source: Bloomberg.

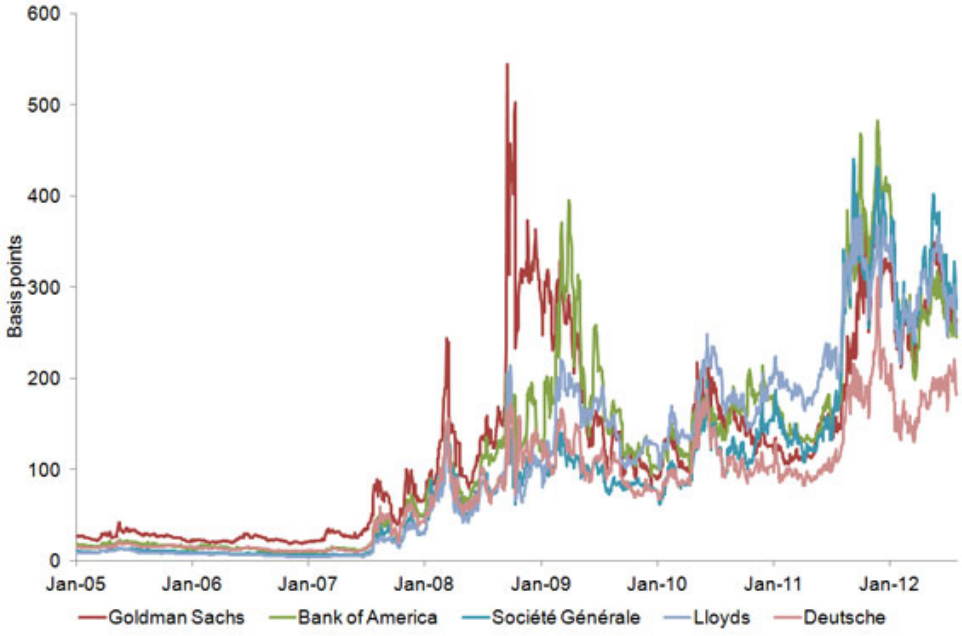
In many large advanced countries, an overall result leading up to the crisis was increased leverage and funding fragility in both the financial system and the "real" economy. Many could see that these growing imbalances were unsustainable and would need to correct, and that the correction might be very disruptive. But to anticipate fully the magnitude of the subsequent event would have required connecting many apparently disparate pressures and signals. Among the most important of these were two factors: first, the funding fragilities created by the shadow banking system; and second, the catastrophic collapse of liquidity caused by investors' sudden doubts about the credit risk and marketability of previously "safe" assets, and about the standing of counterparties.

The dumping of risky financial assets and indiscriminate cutting of funding caused asset return correlations to jump. The shock rapidly spread between global banks, partly reflecting high-frequency marking-to-market. The cost of credit default insurance for the large financials shot up (Figure 2). Bottlenecks in market or institutional hubs impeded or prevented risk shedding. The fire sales and chain reactions proved very difficult to halt.

Faced with disappearing private-sector funding markets, central banks stepped in to supply funds in large quantity to solvent banks. To limit their own (and hence their governments') financial exposure, the idea was to take good collateral at interest rates and haircuts high enough to recognise the lending risks. However, lending terms could not be so punitive as to discourage use of the facilities, which would defeat their purpose. This was easier said than done given the shrinking supply of good collateral.

Figure 2

CDS spreads, selected global banks

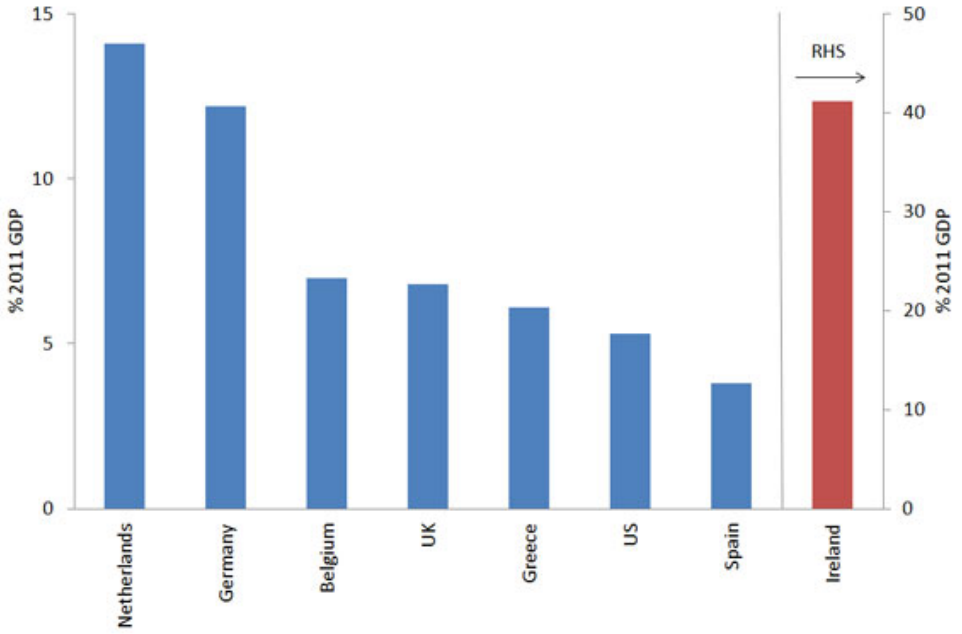


Source: Bloomberg.

Banks that became insolvent despite central bank funding assistance presented their governments with tough choices about rescue. Financial support in the form of direct injections of equity or debt blew out government balance sheets in many cases (Figure 3), and guarantees of bank debt added sizeable contingent liabilities.

Figure 3

Gross government outlays to support financial sector since crisis



Source: IMF.

In New Zealand and Australia, problems in the core banking system during the crisis were comparatively mild, reflecting our more vanilla-flavoured banking sector and relatively sound bank capital structures. There was little exposure to complex instruments and opaque interconnections in our markets. Nevertheless, during the period of extreme market nerves, like other authorities we had to act rapidly to support system liquidity and banks' ability to fund themselves, including by issuing government guarantees of bank liabilities.

Regulatory responses

Regulators worldwide have responded to the financial crisis experience with a large and ongoing programme of reforms. Among the most important include strengthening requirements on banks' capital and liquidity structures, and bolstering domestic and international financial supervision.

Basel III is a key international process to facilitate the parts of these reforms focused on bank balance sheets. We do note, however, that not all the proposed reforms relate to problems in the Australasian banking system. Neither is it clear that all countries that experienced banking system problems will adopt all the reforms.

In our simpler banking systems it is generally easier to recalibrate regulatory standards. Capital levels have not been heavily eroded by the crisis, so capital and liquidity standards can be strengthened quickly compared to those advanced economies struggling with weak or complex financial systems. In some economies there is a risk that banks will meet higher capital or liquidity ratio requirements by contracting lending, rather than by increasing capital. This has slowed the strengthening of bank balance sheets and crimped the availability of credit to firms for investment. With the current risk that global funding conditions could turn adverse very suddenly and our banking system's dependence on offshore wholesale funding, in New Zealand we have placed priority on strengthening liquidity standards even before increasing capital ratios.

3. Global recession, 2009–10

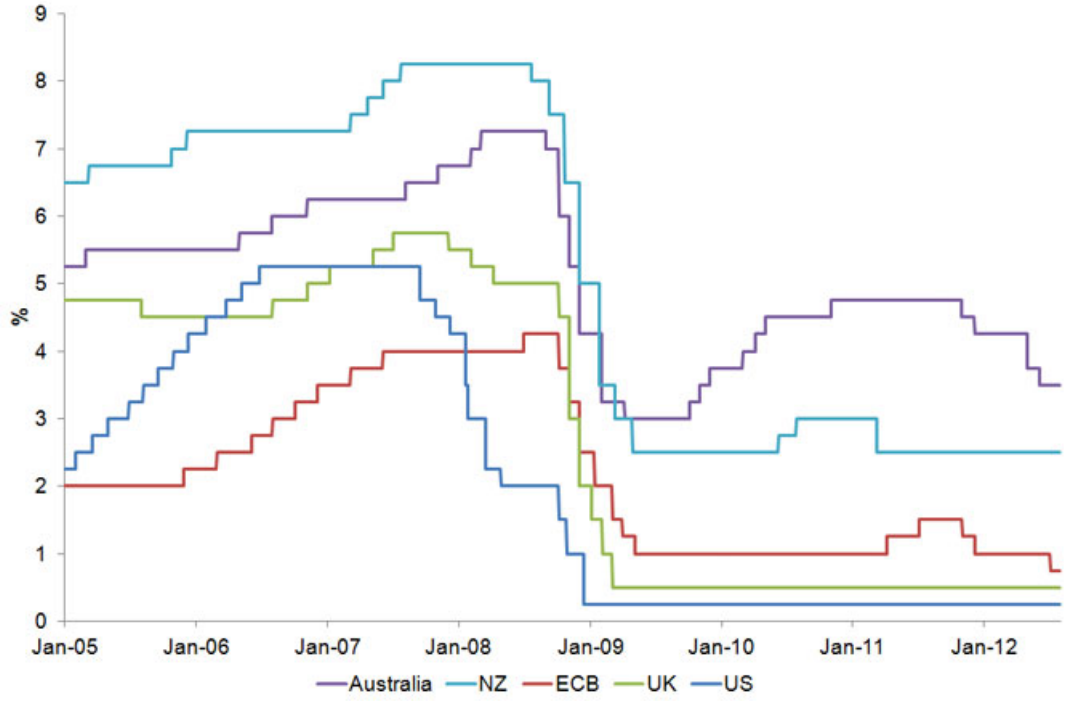
The rapid deterioration in financial and economic conditions in late 2008 and early 2009 quickly caused a collapse in business and consumer confidence, exacerbating the interruption of economic activity across the world. Cross-border spillovers through regional supply chain structures and global customer markets were accelerated by short-term funding disruptions, such as in trade finance. Now economies without large direct financial exposures to "toxic" assets, such as Asian export-oriented economies, were sucked into the downdraft. The abrupt marking-down of the outlook for Western growth and consumption of high-value goods saw inventories pile up, especially in those countries positioned as manufacturing hubs or producers of capital goods. In six months or less, industrial production in Japan, Singapore and Korea, for example, fell 30, 25 and 19 percent respectively.

The damage to bank balance sheets from suspect loans and marked-down asset valuations, as well as the sudden exit from the scene of many financial intermediaries, showed up in restricted lending capacity and greatly expanded funding spreads. Accordingly, those non-financial firms and households that still wanted or needed credit either had to pay elevated rates or to deleverage, further depressing activity.

When central banks recognised the magnitude of the recessionary forces in train, they cut policy interest rates very quickly (Figure 4). In some Northern Hemisphere markets, the dysfunction in the financial system had loosened the link between official policy rates and lending rates to firms and households. As well as cutting official interest rates, the US Federal Reserve and the Bank of England stepped in directly to key credit markets to lower interest rates in those markets.

Figure 4

Policy interest rates



Source: Bloomberg.

The relatively high level of interest rates before the recession meant that deep cuts were possible. The New Zealand and Australian Reserve Banks, for example, cut policy rates by 575 and 425 basis points respectively between July 2008 and April 2009.

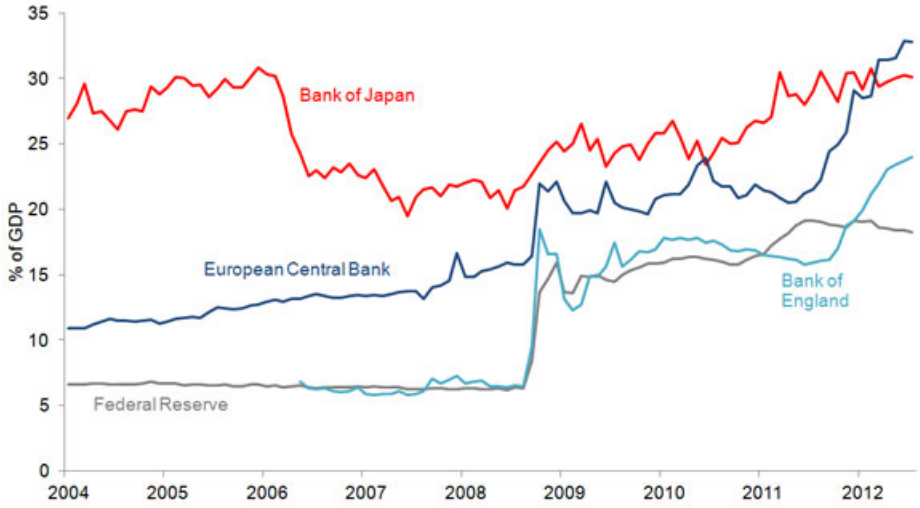
Crisis then brought opportunities. Monetary policy researchers had always wondered what might happen if price inflation and interest rates approached zero in several major countries, or even went negative. Now we would find out. The case of Japan no longer seemed so unique. As monetary policy interest rates approached zero in a number of advanced countries, some central banks began to try to influence general financial conditions through "unconventional" tools, meaning tools other than the official short term interest rate (the "cash rate" in this part of the world).

One such tool is purchases of long-maturity financial securities in large volume on the open market, called "quantitative easing" or QE. These purchases have been most prominently carried out by the US Fed and the Bank of England, causing roughly a tripling and quadrupling, respectively, of their balance sheet sizes to date (Figure 5). One channel by which QE is believed to work is by increasing demand for the targeted securities, raising their prices and hence reducing interest rates on them, which should then flow through to longer-term interest rates in general. Other possible channels include exchange rate impacts and signalling of a central bank's expectations to keep policy rates low.

Unconventional policies can have unconventional side effects. We are currently observing spillovers from large economy QE impacting capital flows and exchange rate pressures in small open economies. Continuing exchange rate pressure is problematic for a country like New Zealand.

Figure 5

Central bank asset holdings

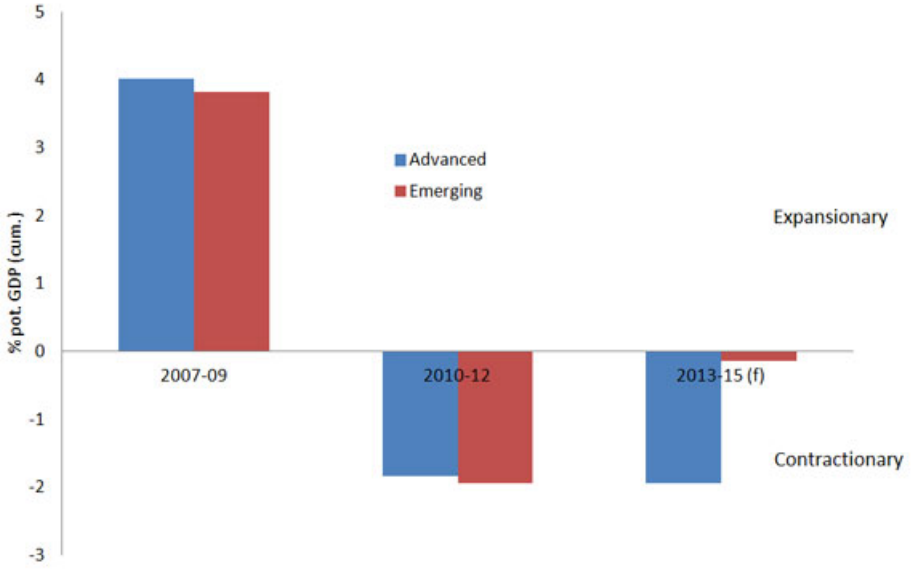


Source: Bloomberg.

In the face of plummeting demand, many countries hurriedly enlisted discretionary fiscal policy also. With a fiscal and credit stimulus package of 4 trillion yuan (about 600 billion US dollars, or 14% of Chinese GDP), China carried out the biggest fiscal stimulus in post-war history. Fiscal stimulus packages were typically worth several percent of GDP, with the cumulative expansionary shift of the fiscal stance over the three years from 2007 to 2009 amounting to four percent of GDP in both advanced and emerging economies. These expansions are now being wound back (Figure 6).

Figure 6

Shifts in fiscal stance



Source: IMF.

4. Sovereign credit challenges, 2010–

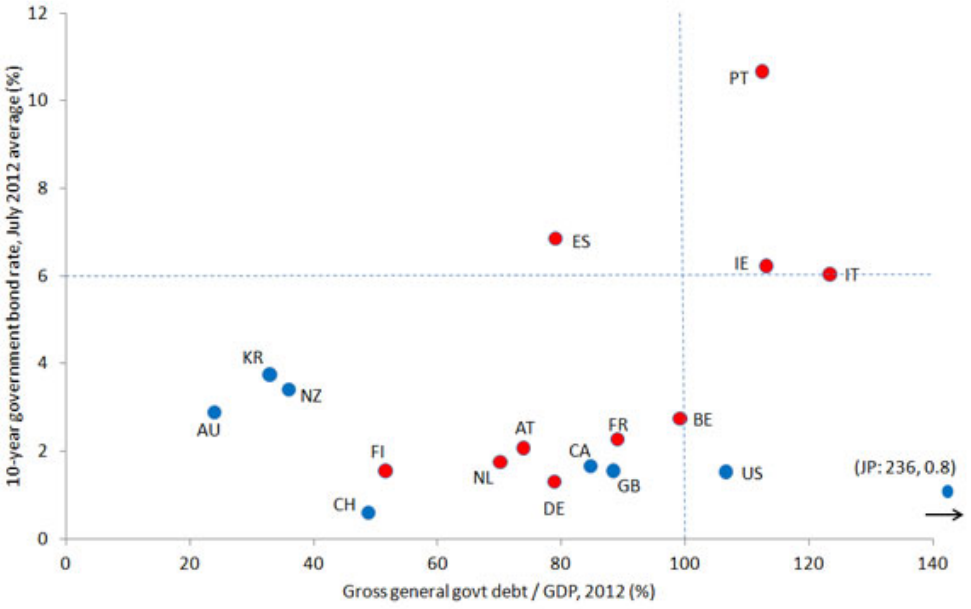
In many advanced countries, the recession-induced reductions of tax revenue and increased social spending were compounded by governments taking on debt to support the banking sector. These actions brought forward sovereign debt sustainability problems in some countries, particularly in Europe. By the second quarter of 2010, sharply rising concerns about the fiscal position of first Greece, and then other non-competitive indebted euro area countries, were quickly reflected in the interest rates they had to pay in sovereign funding markets. Markets made and continue to make sharply differentiated judgements about sovereign creditworthiness across the euro-area countries, placing considerable strain on euro-area political and economic institutions.

The crisis also refocused public and market attention on the fiscal cost of aging populations. The projected sharply increasing cost of state-funded health care and income support for retirees, at the same time as a reducing working population, had been recognised for some time. But now, the problem has come forward in time, with the potential national incomes available to support future fiscal expenditure looking much lower. Some severe implications for wealth and transfers between generations are starkly apparent, and these will be politically and socially difficult to manage.

While market fiscal sustainability concerns are especially focused on the euro area currently, governments elsewhere are also drawing lessons for the re-alignment of fiscal settings with reduced growth prospects. In some ways these are difficult lessons to accept, as well as to debate publicly. Where countries are under strain, fiscal austerity measures may be needed to signal the political commitment to achieving consolidation, even though this can also reduce growth, at least in the short term. The cost and availability of funding for many euro area countries remains very sensitive to fiscal sustainability projections, probably exacerbated by the inability of these countries to issue the currency of their debt.

Figure 7

Government debt ratios and bond rates



Sources: Haver Analytics, IMF. AU=Australia, AT=Austria, BE=Belgium, CA=Canada, CH=Switzerland, DE=Germany, ES=Spain, FI=Finland, FR=France, GB=United Kingdom, IE=Ireland, IT=Italy, JP=Japan, KR=Korea, NL=Netherlands, NZ=New Zealand, PT=Portugal, US=United States.

Governments needing to finance deficits have had to pay considerable attention to market conditions and perceptions. In general, where discretionary fiscal measures were quickly implemented, and were seen to be extraordinary, targeted and sunsetted, markets have been more forgiving. To date, the US, Germany, Japan and the UK have retained the confidence of investors and their status as safe havens – despite government debt ratios that are high even by the standards of the troubled euro area countries. Australia and New Zealand have continued to benefit from relatively low public debt ratios (Figure 7).

5. A new world

Five years after the first tremors in 2007, the world looks rather different. Interest rates are much lower. Risk pricing is much more sharply differentiated. The threat of deflation is now real for several countries, and inflation is very low for others. In most advanced countries since the crisis, real per capita GDP growth has been insipid at best.

Although weak banks appear to be much less of a problem in Australasia, impaired bank balance sheets in the Northern Hemisphere are casting a long economic shadow. Some banking systems remain weighed down by non-performing loans, while markets for securitised loans are still largely moribund. Financial institutions and their funders appear to have recognised the importance of robust funding, loss-absorption capacity and clarity about bank balance sheet exposures.

The risk aversion in global credit markets is still reaching our shores via bank funding markets, in the form of elevated funding spreads and a heightened demand for local deposits. Although these developments at least partly reflect a transition to “new normal” balance sheet structures, it is also possibly a sign that the pre-crisis model of highly leveraged and interconnected banking may no longer attract investors. That of course could be a helpful thing for macro-financial stability and for the rebalancing of non-bank balance sheets – provided it persists when good times return.

The new environment creates some structural and strategic challenges for the global financial industry. Much-reduced financial engineering and weaker financial institutions are likely to see some retrenchment of certain banking activities. Also, with very low yields, financial institutions subject to obligations or strong expectations to pay fixed returns (such as pension funds) face pressure to increase holdings of risky assets, so they can support these returns. A renewed search for yield for these reasons raises the risk of excessive investment or bubbles in such lower quality assets.

Global spending and investment appear very cautious, and seem likely to remain so for some time, given the overhang of debt from before the crisis. In advanced economies, deleveraging in the private sector appears to have started, but will take a long time – perhaps a generation. Very cautious households are a large part of the story of a slow and fragile recovery. They have been hit hard by sustained labour market weakness, and in the US and some other advanced economies this has been compounded by loss of housing wealth and balance sheet weakness.

The apparently lower appetite for debt among New Zealand and Australian households is an interesting departure from the recent past, or perhaps a return to the more restrained standards of post-war years. In New Zealand, this continues, despite an emerging pickup in housing market activity (albeit off a very low base). For example, New Zealand household credit growth has traditionally tracked the value of house sales, but this relationship has loosened since the crisis.

Household caution is understandable given the restrained growth outlook, and the continued need for external rebalancing. But it is also consistent with cyclically weak labour and housing markets. We have yet to see whether deleveraging will continue as the gradual recovery proceeds, or if households instead revert to pre-crisis behaviours.

Currently, business sector balance sheets after the crisis are generally in better shape than following previous recessions. The labour market weakness probably means some shift in the share of national income in favour of capital. Furthermore, a reluctance to invest in the current environment of uncertainty (the Australian mining sector being a notable exception) means that many firms are actually quite cash-rich.

Asia-Pacific impacts

Increased saving and reduced investment in advanced economies, and the beginnings of a shift towards domestic expenditure and away from exports in emerging economies, are starting to reduce the global imbalances that had grown markedly pre-crisis. However, in the meantime, the reduced investment is also holding back global productivity and potential growth. This probably adds to the pressure for re-balancing of external and domestic growth drivers in emerging economies.

While world growth has fallen overall, the share accounted for by emerging markets, particularly in Asia, has continued to grow. This shift, combined with the strong rebalancing forces, has produced an unusual constellation of economic conditions in Australia and New Zealand.

The high exposure of Australia and New Zealand to emerging Asian demand for industrial raw materials and protein has sent the relative prices of those products, and hence our real exchange rates, to high levels. While that shift has encouraged labour and capital to move to those sectors, high real exchange rates are also promoting expenditure switching towards foreign goods and away from domestic ones. Non-resources sectors and regions are squeezed as a result.

At the same time, in New Zealand we have our own post-crisis debt, resulting from pre-crisis debt-fuelled household expenditure, which is now proving to be a restraint on demand. And although our fiscal positions are favourable relative to many other advanced economies, the debt overhangs, dependence on offshore funding and its sensitivity to sustainability concerns suggest that the current tilt of fiscal policy towards consolidation may persist for a while.

Moreover, the pressure of the high nominal exchange rate is not the only relevant “headwind” for our economies. Sectors other than those directly exposed to resources are seeing their relative productivity and cost-competitiveness decline. This reflects the ongoing and rapid industrialisation of Asia, and perhaps globalisation more generally. In New Zealand, the most obvious relative decline is in import-substituting sectors.

Research and analysis

The crisis has re-oriented the economic research agenda. Beliefs that self-stabilising processes in the economy and financial system generally dominate destabilising herd behaviour have been shaken up. The potential and proper roles of financial, fiscal and monetary policy, have also been seriously challenged by experience.

The management of tail risks is the supposed province of regulators, financial experts and insurance contracts. Yet the industry’s extensive risk-management apparatus failed to anticipate and struggled to cope with the financial crisis. Some markets that locked up involved recent financial instruments such as complex mortgage derivatives, whose behaviour under stress had never really been tested.

When markets struggle to clear at any price, and when cross-border exposures grossly multiply the number of relevant variables, formal modelling to support risk management becomes difficult. By definition, tail risk analysis is about extrapolation of observed behaviour to speculate about scenarios never before seen. We should be humble about our frameworks’ ability to capture these scenarios.

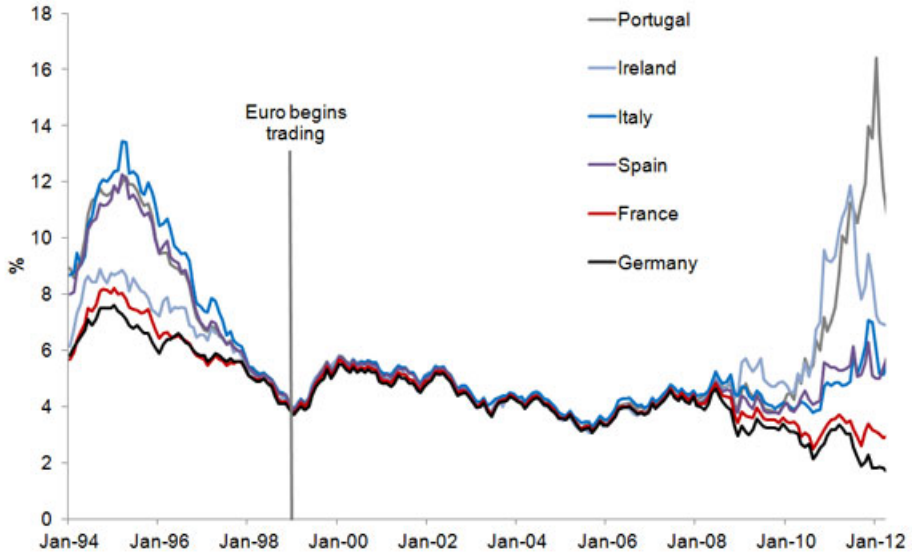
Economists have yet to get fully to grips with the complex roles of the financial system, financial frictions, asset prices and credit flows in international macroeconomic dynamics.

The research and policy communities are now busy introducing richer financial behaviour in models. Some promising avenues include study of how financial margin behaviour can propel economic booms, financial incapacity can exacerbate busts, and diffusion of bad news can generate panics. Experimental economics is using lab settings to study human reactions to imperfect information and discontinuous events.

But uncovering enduring and reliable inferences about behaviour from discontinuous and perhaps unique real-life observations is daunting. Non-linearities, contagion and large-scale failures are a far cry from familiar linear models with diversified exposures and rational expectations. The jury is still out on whether extreme behaviour is forecastable in a useful way at all, even if it can be modelled in the abstract. A good example is the sudden change of perceptions about current monetary and fiscal arrangements for euro area. From barely perceptible differences between euro area government bond rates since the euro began trading in 1999 until 2008, we now face divergences many times greater than those seen even during the convergence period before the euro's creation (Figure 8).

Figure 8

Euro area government bond rates



Source: Bloomberg.

Policymakers' models are usually built around a well-defined economic equilibrium. In the current environment, knowing exactly where equilibrium is and whether it is unique seem like especially big asks. More than usual, the financial industry and policymakers alike appear to be groping to understand how things will look in the next decade.

Modelling approaches based on chaotic dynamics and multiple equilibria are not new to the profession. But their utility has been limited due to their extreme sensitivity to assumptions, and the difficulty of extracting a simple story on which to base decisions. Yet at least they remind us of the limits to predictability and certainty.

Policy strategy

What does all this mean for macroeconomic and financial policy strategy in the years ahead? As a first goal, and one that is unchanged by the crisis, macroeconomic and financial policy should seek to provide a stable backdrop for economic activity. The familiar guideposts of price and financial stability remain relevant. As a second goal, policy might try to buffer and insulate the economy to some extent from disturbances. Third, while buffering to the degree

possible given limited knowledge, policy should allow resource allocation signals to come through as undistorted as possible.

Within this high-level policy framework, the stresses on fiscal and monetary policy in many economies have led to new policy challenges. Policy interest rates are very low and fiscal deficits very large in many countries. In New Zealand and Australia, policymakers must manage ongoing exposures to offshore financial disruptions as well as generalised deleveraging pressures at home and abroad. Finally, exchange rates and relative prices and wages are shifting due to commodity market developments.

Financial regulation and supervision

The crisis confirmed that the financial system's central economic role, and sudden escalation of systemic problems, make it politically very difficult to ensure that a bank's shareholders and creditors bear the full costs of the bank's failure when the entire system is under threat. Weak banks, effectively holding the economy to ransom, readily pass their liabilities and risks on to governments. Authorities' priority in the midst of a financial crisis tends to be focused on ensuring that the liquidity crunch conditions sparked by bad banks do not drag good banks under.

All the various forms of official support involve unpalatable market distortions and incentives for further bad behaviour (moral hazard). While equity stakes capture some upside from the rescue for the government, they also involve difficult governance problems. Junior debt leaves the government with credit risk but no influence over risk-taking. Senior bank debt limits the government's credit risk, but can make the bank's fragility worse by scaring off private investors. Government guarantees of deposits and other liabilities might limit the upfront cashflow implications of financial support, but cast the shadow of moral hazard very broadly.

Moral hazard can probably never be eliminated, only reduced, especially after the widespread bailouts and government guarantees seen in the crisis. Some level of regulation and supervision to constrain the extremes of risk-taking behaviour will therefore always be necessary.

With reduced credit demand, costly funding and stricter regulations, the banking sector is going to have to get used to more restrained returns. The financial system's basic function is to make credit judgements across uncertain investment propositions, to monitor borrowers' performance and creditworthiness, and to price credit accordingly. Restoring that function is the ultimate goal of financial reform. In doing so, we need to ensure that regulation does not overly increase the costs of banking, especially in more vanilla systems such as Australia's and New Zealand's. Our systems are already focussed on utility banking, rather than on the riskier types of investment banking.

The sobering experience of the crisis underlines the difficulty of getting the right balance of light-handed versus heavy-handed supervision. Supervisors, financial institutions, credit rating agencies and everyone else inevitably see financial and economic developments imperfectly, both ex ante and ex post. It is therefore unrealistic to expect to be able to reduce the probability of a systemic crisis to zero. Part of the strengthening of the financial system overall must therefore include practical preparation for further crises. This includes regulation and supervision with an eye to ensuring that a crisis can be dealt with effectively, should it eventuate.

In our integrated Australasian banking system we have learned the value of strong home-host cooperation in regulating trans-Tasman entities. We have also learned the value of having the capacity in each jurisdiction to deal with failed institutions expeditiously, whatever their size or parentage. In New Zealand, we have emphasised having mechanisms to allocate losses appropriately to creditors and shareholders and to release residual claims on the bank quickly, in the event of trouble at the banks.

Macro-financial policy

We learned in the crisis that a "micro-prudential" focus on the soundness of individual institutions does not ensure that the whole system will continue functioning under adverse conditions. Part of the international response is macro-financial policy, a new focus of policy development concerned with the stability of the financial system as a whole, and on financial behaviour and its interactions with the economy.

Macro-financial policy acts on the structure of financial institution balance sheets and behaviours across the whole system. Such controls add to micro-prudential controls to ensure the soundness of individual institutions considered in isolation. Macro-financial policy settings are intended to deliver automatic stabilisation akin to that of fiscal (tax and benefit) systems, as well as larger buffers against system-wide shocks and some degree of leaning against strong credit upswings. The settings would be reviewed from time to time to suit changing financial and economic circumstances. Macro-financial settings would be expected to change much less frequently than monetary policy.

Like most policy interventions, macro-financial measures (such as capital and liquidity buffers or restraints on certain kinds of risky lending) involve costs in the form of potential distortions to financial activity. Such interventions are likely to complement monetary policy, but this cannot be guaranteed. Indeed, we have very limited practical experience of macro-financial policy.

These concerns suggest that macro-financial policy should not seek to be too activist. Distortions will be most likely to occur where a policy intervention creates an opportunity for regulatory arbitrage between the regulated and unregulated sectors, or between regulated and unregulated activities. And the incentives for arbitrage will be greater under strong credit demand conditions, suggesting the likelihood that any restraining effect of macro-financial tightenings on business cycle upswings is likely to be small.

Under such conditions, the appropriate response to a future credit-fuelled upswing could well be a combination of measures. Macro-financial tightening would counter banks relaxing credit standards and undermining the stability of the overall system, while monetary policy tightening would address rising inflationary pressures associated with the strong credit demand. But in comparison with other policy areas, macro-financial policy knowledge is still immature, and we have a lot to learn.

Fiscal policy

The experience of sovereigns in less favourable fiscal positions demonstrates how quickly and catastrophically a sovereign can lose credibility for ongoing prudent fiscal and economic management, especially if the exchange rate is not available as an adjustment mechanism and internal cost structures are not flexible. That credibility is a vital resource.

Although we have our own versions of the aging population problem, we went into the crisis from a fairly healthy government financial position. Australia's position now appears still to be relatively favourable, while New Zealand is more in the middle of the pack of advanced countries.

Yet, other features of our national balance sheets give some cause for concern should another global funding pressure event occur. It will take a long time for the structural causes of financial fragility in Europe to be addressed, and for the process of public and private balance sheet repair to run its course. In the meantime, crises may reoccur and cause either funding disruption to Australia and New Zealand, or even worse, a renewed global economic downturn.

Local issues include the relatively heavy dependence of our economies on bank lending, the relatively heavy dependence of the banks on foreign funding, and the high degree of concentration of the banking sectors. We therefore seem to face a similar priority to other advanced economies in reducing the risk that investors will progressively tighten constraints

on the room for fiscal action. Countries with high debt/GDP positions remain exposed to the longer-term economic outlook, putting a premium on structural reform measures to promote growth. Of course, implementing such reforms is easier said than done, especially when their short-term effect on demand is usually adverse.

The fiscal balancing act over the next few years is to restore headroom through consolidation where possible, while taking into account any adverse short-term impacts on activity. This should help reduce the chances of getting backed into the very difficult and constrained space in which a number of advanced economies now find themselves. However, this is of course yet another policy challenge in the category of things easier said than done. Moreover, the link to monetary policy is particularly important in the current environment, because of the zero lower bound on interest rates. Fiscal austerity is probably not as contentious when monetary policy loosening can offset its short-term effects on economic activity.

Monetary policy

The events of the past five years have led monetary policy into unfamiliar territory. After responding largely successfully to the priority of reducing and stabilising inflation following the 1970s experience, monetary policy now faces a number of new concerns.

First, financial cycles are evidently able to destabilise the economy without necessarily implying large inflation fluctuations. Second, the financial system is far from neutral "plumbing" for the real economy. Instead, it substantially modulates economic shocks and can generate shocks itself. It can also materially affect monetary policy's effectiveness in stabilising economic activity. We can probably expect that, for some time, risk premia on private and public debt will remain much more variable and differentiated, and a source of noise in the policy formulation process.

How monetary policy strategy should account for these complications is not at all settled. It does not help that monetary policy settings and interventions themselves have been highly unusual in many countries. Many researchers are studying the possible adverse effects of very low interest rates on investor risk-taking, and the effects on global financial conditions of large-scale QE activities by major central banks.

There are other questions, such as how to set interest rates in a deleveraging environment. Increased saving promotes the longer-term stability objectives of stronger balance sheets, but its impact on demand needs to be accounted for. In addition, the exchange rate effects of monetary policy are no doubt important, but distinguishing these impacts from other influences is far from straightforward. Currently it appears that a large part of the Australasian currencies' strength can be attributed to emerging market demand underpinning global markets for New Zealand and Australian commodity exports, at least on a medium-term view. Shorter-term volatility seems to have increased with foreign exchange markets swinging between willingness to back economic outperformance of the region (so called "risk on"), and aversion to anything that looks "peripheral" (so called "risk off").

The growth of resource-hungry Asia (China especially) will gradually shift domestic labour and capital allocation. This shift is certainly not easy, and maybe beyond the realm of stabilisation policy to manage. Instead, the key factor in smoothing the transition is flexible capital and goods markets, and clear relative price signals. The challenge for all is to look through aggregate and shorter-term cyclical effects and read the longer-run signals from real exchange rate and relative price developments.

In the current volatile environment, the zero lower bound on nominal interest rates is not very far away. Policy rates fell a lot further during the acute phase of the crisis. Conventional monetary policy is safer known ground, but central banks, including in our region, are realising they may be pushed by events into unsafe territory.

Fortunately there is now experience at home and abroad with market-supporting liquidity interventions that can be activated at short notice, as well as some tentative lessons from the QE experience in the major advanced economies. Nevertheless, QE remains new ground for central banks in many ways. The early evidence suggests that it does work to some degree to stimulate the economy, although the precise mechanisms involved are still a matter of some debate. The large expansion of the central bank's balance sheet under QE markedly increases the central bank's financial risk, and its dominance in the targeted markets distorts market pricing (indeed, the distortions are one means by which QE is believed to work). These factors place limits on how much QE can be relied upon as an additional tool.

In a globalised world, big players lowering their domestic interest rates, whether by QE or any other tool, will (all else equal) tend to promote capital flows to other countries and appreciation of their exchange rates. As a small open economy, New Zealand has often seen the effects of carry trades on the exchange rate. This can be distortionary and problematic, because an economy relies on its exchange rate as a signalling price.

6. Conclusion

The combination of G7 weakness and rapid growth of the resource-hungry and populous emerging world is unique in post-war economic history. Over the next few years, Australian and New Zealand firms will need to make strategic decisions about how to make the most of these opportunities. Their success or otherwise will depend on how well they can extract resource allocation signals from volatile data.

We are living in a new economic world, albeit one that may be best enjoyed from hindsight. Until then we will keep on learning.