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House price collapses: policy responses and lessons learned

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This article considers several episodes of house price collapses around the globe over the past 30 years, a period that encompasses the Nordic financial crises that began in the late 1980s, the Asian financial crisis of the late 1990s, and the more recent global financial crisis (GFC). I focus on the policy responses to these problems and lessons that current policy makers can derive from these experiences.

The paper does not seek to cover the factors that may have contributed to property price booms in the first place, nor the full range of consequences of the bust – except to the extent that addressing these influences may form part of the policy response. More general assessments of the causes and implications of property market cycles, including in the New Zealand context, can be found elsewhere.[1]

Not all housing busts lead to or coincide with a more generalised financial crisis, and not all financial crises are accompanied by house price collapses. For example, Hong Kong and Singapore had property price busts in the late 1990s without these leading to the depth of financial crisis seen elsewhere in the region at that time. Conversely, house prices in Germany were relatively stable through the GFC period. As discussed below, however, housing downturns and financial crises do often go together. It is therefore difficult at times to distinguish policy responses to a housing bust from responses to a wider financial crisis. Hence, while this paper focuses as far as possible on housing market issues, much of the discussion on responses and lessons has broader scope than this market alone.

1 Some characteristics of housing busts

Before looking into the policy side in more detail, it may be useful to consider why housing market cycles matter and why housing busts generally necessitate a public policy response. Several cross-country studies have assessed the economic implications of housing market downturns, including in comparison with other asset price declines. Although some of the details differ – depending, for example, on how housings busts are defined and the episodes covered – several general characteristics tend to emerge from this work:

1 See, for example, Reinhart and Rogoff (2009), Thornley (2016) and various issues of the BIS *Annual Report*.

- The cycle of booms followed by busts appears stronger with house prices than with equities. By some estimates, around 40 to 50 percent of housing booms end in a bust, compared with about a quarter or fewer of equity booms.[2]

- House price collapses last significantly longer than equity busts. Equity market busts tend to be sharp and short (a V-shaped cycle), with prices falling for about two years before fully recovering over the next couple of years. While house prices may fall by less than equities in a bust, they show a more protracted, U-shaped pattern of downturn and recovery, with downturns lasting around 4 to 6 years.[3]

- On the real side, soft landings in the residential investment cycle are rare: one study finds no cases of a mild and gradual drop in the residential investment rate out of 49 boom-bust episodes looked at.[4]

- Partly reflecting these points, downturns in the housing market – both volumes and prices – have been found to be reliable predictors of broader economic difficulties and the likelihood of recession.[5] In particular, the impact of housing busts on output, wealth, credit growth and other macroeconomic measures tends to be greater than with equity price collapses, a result in part of deeper imbalances that need to be unwound. Output losses from housing price busts have been found in some work to be at least double those of equity busts. That includes deep and protracted falls in private consumption and investment, especially construction investment.

- The housing market tends to magnify the impact of economic cycles, reflecting the combined impact of cyclicality in house

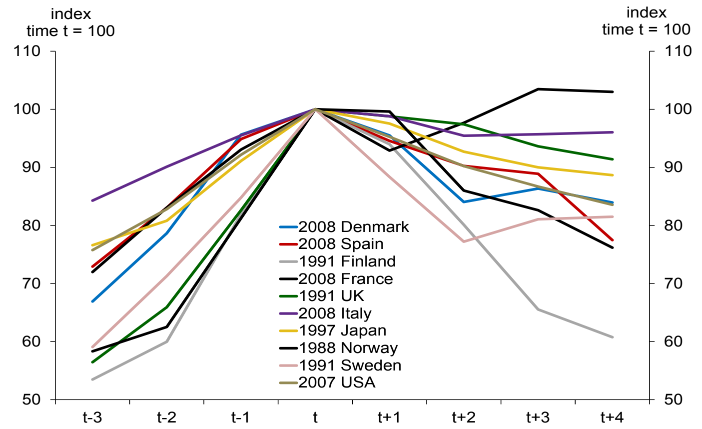
2 See, for example, Bordo and Jeanne (2002).

3 See Reinhart and Rogoff (2009) and IMF (2003). Note that Reinhart and Rogoff focus on house price collapses that occur around the same time as banking crises.

4 Hoeller and Rae (2007).

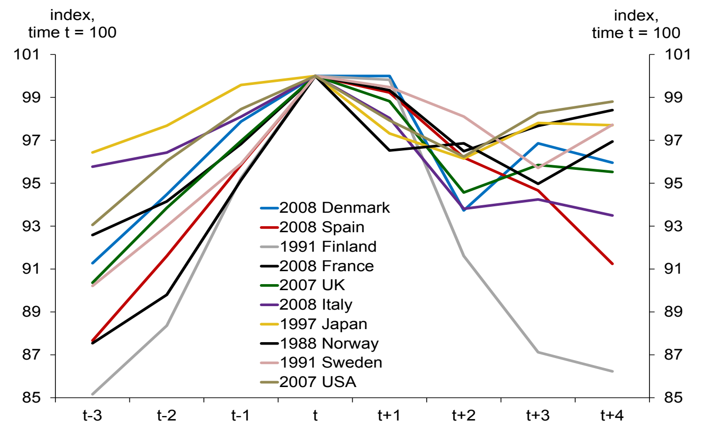
5 See, for example, Leamer (2007), IMF (2003).

Figure 1
House price falls in selected crisis episodes
(t= year of crisis)



Source: Jorda, Schularick and Taylor (2017) dataset, RBNZ calculations

Figure 2
GDP declines in selected crisis episodes
(t= year of crisis)



Source: Jorda, Schularick and Taylor (2017) dataset, RBNZ calculations construction and cyclicality in wealth and spending as house prices fluctuate. In that regard, spending propensities out of housing wealth tend to be greater than out of financial wealth, and are highest in countries with the largest mortgage debt ratios (as a share of GDP) and the highest rates of home equity withdrawal.[6]

- The financial implications of housing market cycles – on both the upside and downside – may be felt disproportionately among low-income, first-time home buyers.[7] In the lead-up to the GFC, for example, the strongest house price appreciation in the US tended to be with smaller homes in cheaper areas–price growth that reversed when the crisis hit.

- There is a strong association between housing busts and banking crises. In their wide-ranging assessment of boom-bust cycles, Reinhart and Rogoff (2009) rate real house price movements second only to real exchange rate developments as a reliable indicator of banking crises – a stronger impact, for example, than balance of payments indicators or equity prices. Other work finds that all of the major banking crises in industrial countries in the post WWII period have coincided with housing price busts.[8]

- The macroeconomic impact of housing busts appears to be greater in bank-based financial systems compared with market-based systems, while the latter are more affected by equity busts.[9] This larger impact under bank-based systems may stem from the adverse effect of housing busts on banks' bad loan provisioning, capital, and profits, which may impair the ability of banks to finance private sector activity more widely following a bust.

6 These countries include the US, UK, Canada, and Australia, while the lowest include Germany, France, and Italy; c.f. Hoeller and Rae (2007).

7 Leamer (2007).

8 IMF (2003), drawing on Eichengreen and Bordo's (2002) chronology of banking crises.

9 As measured, for example, by the relative importance of bank lending vs equity funding in the domestic economy. By this measure, NZ is included as a bank-based system along with Japan, Germany, France and others, while the US, UK, and Australia are among those assessed as having market-based systems.

Policy responses and lessons learned

A housing bust can, therefore, have a deep and prolonged impact on the real economy, especially when accompanied by a more general financial crisis. In this context, the priorities for policy makers are to prevent a deeper deterioration in economic and financial confidence, support the restoration of a healthy financial system, and hence promote a steady improvement in macroeconomic conditions. This policy response typically has a number of dimensions, as illustrated in the following lessons that can be learned from past crisis episodes.

Lesson 1: Standard macroeconomic policy levers are usually the first line of defence when crisis hits, but their scope and impact can quite quickly be exhausted.

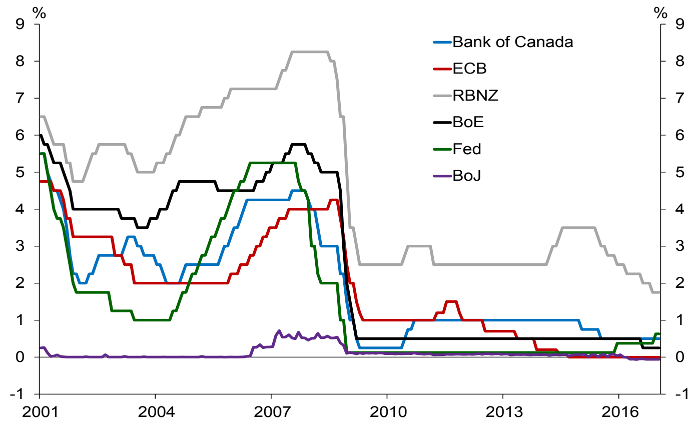
Both the role and limits of standard macroeconomic tools were clearly illustrated during the GFC. When the US subprime mortgage problems exploded into a much deeper and broader financial crisis, most central banks reacted by aggressively cutting policy rates, eventually to record-low levels. With some lags, monetary easing was generally accompanied by significant fiscal measures, initially as part of bank rescue packages and then in broader support of aggregate demand and output. In both areas, policy makers generally had room for manoeuver. Before the GFC, most banks had been steadily tightening policy settings in response to rising concerns about inflation; and fiscal balances and public debt positions had generally been improving in a context of strong economic activity.

These monetary and fiscal responses appear to have had limited ability to restore demand, however. The repeated interest rate cuts as the crisis unfolded meant that the zero lower bound on interest rates (at least as it was widely viewed then) was quickly approached (figure 3), particularly among the major advanced economy central banks. More significantly, though, the extreme turmoil and dysfunction in the global financial system greatly impaired the monetary transmission mechanism and blunted the stimulative effects that lower rates might normally have been expected to produce.[10] For example, rising credit and liquidity risk premia (reflected, for example, in higher corporate bond yields), and tightening credit standards, more than offset the impact of lower policy rates. Borrowers were also actively seeking to deleverage. As a result, many central banks turned to unconventional measures to protect and support financial activity.

On the fiscal side, the rescue packages for banks (and in some cases corporates), along with introduction of various forms of government guarantee, probably played a key role in supporting confidence and preventing further collapse in the financial system. The automatic fiscal stabilisers were also important in buffering the economic downturn. Beyond these measures, though, the impact of more discretionary tax and spending measures on economic activity appears to have been quite limited, especially given concerns about rapidly rising public debt. Personal tax cuts were widely deployed in response to the GFC, perhaps as they can be introduced relatively quickly and are politically popular. In principle, while issues of fairness also come into play, tax cuts

10 See BIS (2009).

Figure 3
Major central bank policy rates since 2001



Source: Reuters

targeted on households with lower incomes (and usually higher spending propensities) tend to have a stronger effect on spending and output than across-the-board measures. This more targeted approach was used to some degree during the GFC.[11] Even then, though, the stimulative role of tax cuts is likely to have been lower in the climate of high uncertainty, declining wealth, and extensive deleveraging that prevailed in the GFC. The contribution of public spending packages, typically on infrastructure projects, to short-term economic activity was impaired by implementation lags along with other factors.[12]

In contrast with the GFC pattern, the initial macroeconomic response to housing busts and subsequent financial crises has in some cases involved a significant tightening of policy. In Finland, Sweden, and Norway, financial deregulation in the 1980s was followed by a boom then bust in property markets toward the end of the decade and full-

11 E.g., the US Economic Stimulus Act of 2008 provided tax rebates for low and middle-income families.
12 See, e.g., Elmendorf (2009).

blown banking crises in the early 1990s.[13] The initial policy emphasis in these countries was to preserve their currency pegs within the European Exchange Rate Mechanism (ERM). Measures included a major tightening of policy rates (up to 500 percent in Sweden), massive foreign exchange market intervention (Norway using nearly half its foreign currency reserves in a 2 day span), and a fiscal austerity package in Sweden (that eventually failed to be accepted). These efforts proved insufficient to stem the tide, however, and by the end of 1992 all three currencies had been floated.

There were some similarities in the Asian crisis later in the decade. After the property and equity market bubbles burst across the region, a series of banking and exchange rate crises erupted in the late 1990s, especially in Indonesia, South Korea, Malaysia, the Philippines, and Thailand. All of these countries were unable to maintain pegged (or at least managed) exchange rate regimes despite sizeable increases in short-term interest rates and some fiscal austerity measures, with all five currencies depreciating heavily after mid-1997.

During the Asian crisis, Hong Kong and Singapore met with greater success in their macroeconomic responses to the bursting of property and equity market bubbles in the late 1990s. Hong Kong mounted an aggressive interest rate defence of its currency board, preserving this generally credible arrangement. Singapore allowed increased flexibility in its exchange rate and experienced a much milder depreciation than seen in the emerging economies of the region. Anticipating points to be covered below, these countries' stronger regulatory regimes also helped them avoid full blown banking and exchange rate crises.[14] In particular, their banking systems were better capitalised and regulated compared with the emerging Asian economies, and hence better able to absorb the asset price shock. Both countries also made prior efforts to take some steam out of their property markets, including by increasing the supply of land for development.

Overall, however, the main message of this section is that conventional macroeconomic responses, whether through policy easing or tightening, may in general be relatively powerless to counteract the major changes in market sentiment that can follow a property price bust, especially if this spreads into broader financial difficulties. A significant easing of policy, as widely seen in the GFC, may help mute the depth of a downturn but may by itself have limited effectiveness in boosting short-term activity and restoring healthy economic and financial conditions. And attempts to support exchange rates through tighter policy settings have been problematic, especially if there is a significant loss of confidence, if the exchange rate is fundamentally misaligned, or if a different policy stance is warranted by the country's cyclical position.

Lesson 2: Unconventional measures – especially monetary – have recently played an important role, but these, too, have their limits and produce additional risks.

Faced with the scale of financial implosion during the GFC, along with the diminishing scope for and influence of further cuts in policy rates, all the major central banks (and others) quickly turned to "unconventional" measures to bolster economic activity. These have included security purchases of a much larger scale and wider scope than seen before, and a range of other adjustments to funding and reserve conditions.[15] While a detailed assessment of such measures is beyond the scope of this note,

13 In addition, Finland especially was hit by the breakdown in its exports to the (former) Soviet Union, and all three countries were caught up in the broader turmoil in European currency markets in the early 1990s.

14 Senhadji *et al*. (2002).

15 See for example BIS (2009).

they were probably crucial at the time of the GFC to maintain and support interbank market conditions and to reduce volatility in financial markets more broadly. Over time, the repeated rounds of quantitative easing appear to have helped extend the reach of monetary policy, including into longer-term interest rates.

Nearly 10 years on from the start of the GFC, however, important questions and concerns surround both the ongoing pursuit of unconventional measures among some of the major central banks, and the implications of extended monetary stimulus more generally. For example:

- The significant expansion in some central bank balance sheets has raised questions about their financial vulnerability and their ability to help counter potential further rounds of market turmoil or economic downturn.

- The prolonged period of exceptionally low interest rates has led to growing concerns about implied distortions to savings and investment decisions, about the pressures such rates impose on the pension and insurance industries, and also about the readiness of financial markets to tolerate a withdrawal of exceptional monetary stimulus.

- Globally, the policies pursued by the major central banks have had important spillovers on to smaller, open economies (such as New Zealand), including significant upward pressures on exchange rates, credit growth, and asset prices. These spill overs have constrained the policy options facing central banks in these economies and added to countries' economic and financial vulnerability to further domestic or global shocks.

Lesson 3: Unhedged foreign currency borrowing may lead to significant economic and financial difficulties, especially if exchange rates fall unexpectedly.

Both the Asian crisis and the GFC highlighted the risks of accumulating foreign-currency denominated debt, especially when this debt is unhedged and when foreign borrowing has occurred under the assumption that a fixed or managed exchange rate regime will remain in place. When difficulties arise – such as the bursting of a property market bubble – there can be a "sudden stop" in the availability of further foreign funding, at least on acceptable terms; the domestic currency can come under severe downward pressure; and if it falls, the foreign debt burden can explode relative to the domestic resources available to repay it.[16]

Thailand was particularly hard-hit by this problem during the Asian crisis. Foreign capital inflows, which had been actively sought by domestic financial institutions, were largely channelled into the rapidly growing local property market.[17] When the bubble in this market burst, foreign financing stopped and the exchange rate collapsed. Banks and finance companies then faced an unmanageable debt burden that spread rapidly into a more generalised economic and financial crisis. Similar difficulties, albeit with somewhat different causal pathways, arose elsewhere in the region, including in Indonesia and South Korea.

The dangers with foreign funding have again been evident during and after the GFC. Inside the euro zone, Ireland, Portugal, Spain, and Greece experienced significant economic and financial pressures arising from increased net external liabilities, higher funding costs, and concerns (most notably in the case of Greece) about the viability of staying with the

16 Hargreaves and Watson (2011), Goldstein and Turner (2004).

17 Collyns and Senhadji (2002).

euro. Similar difficulties have arisen elsewhere in the region. In Hungary and Iceland, the problems stemming from high foreign currency liabilities were compounded by large exchange rate depreciations. Latvia also had significant foreign borrowing and experienced the largest property bubble among the Baltic economies in the lead-up to the GFC. When this bubble burst, Latvia managed to maintain its currency peg to the euro, but had significant banking sector difficulties and went through the most severe economic contraction (or "internal devaluation") of any economy at that time.[18]

Lesson 4: A key priority for policy makers following a property price collapse is to address banking sector problems quickly and effectively.

One particularly clear message shows up in a review of property market busts over recent decades: the effectiveness of policy makers' responses to banking sector problems arising from the bust is a key – possibly *the* key – determinant of the prospects for and quality of subsequent economic recovery. Such a lesson is apparent, for example, in the policy responses to the Nordic crises, which have been viewed as "best practice" in this regard;[19] in the more mixed pattern of responses to the Asian crises–especially if the long-lasting problems in Japan are also included; and in the lingering difficulties that some regions are having in getting over the GFC, notably in Europe.

The main principles underlying an effective response to banking sector difficulties are early recognition of the scale of the problem, a rapid response, and intervention that is in-depth and wide-ranging. While details will depend to some extent on the circumstances faced, such interventions appear to have several crucial elements. These include full accounting of losses; clear and complete disposal of bad assets; recapitalisation of the banking system; and removal of excess capacity from the system.[20] In contrast, measures that attempt to sustain credit growth and demand, without addressing the capital and health of the banking system, can instead have the effect of prolonging underlying weaknesses in the system and delaying recovery prospects. Some countries have rules requiring regulators to address capital deficiencies, notably the "Prompt Corrective Action" provisions in US law.[21]

Policy responses to the Nordic crises largely involved the above principles and practices underlying successful resolution, and contributed to the relatively rapid recovery of these economies and their banking systems. Some details differed across the countries concerned – e.g. in how private shareholders were treated, the use of guarantees, the extent of public ownership, and the eventual fiscal costs.[22] But all three countries applied rapid and wide-ranging government interventions that came with severe conditions – including fully recognising losses, writing down equity, and shrinking balance sheets and branch networks. Appropriate loss recognition brought Nordic banks closer to book insolvency than many banks during the GFC, and this is also likely to have strengthened the authorities' hands to apply clean-up actions in the former case.[23]

18 Latvia's GDP loss during this recession was about 24 percent, with unemployment rising to more than 20 percent (Wesbrot and Ray (2011)). Latvia formally joined the euro zone in 2014.

19 BIS (2009).

20 BIS (2009).

21 See Stackhouse (2008)

22 See BIS (2009), and Sandal (2004).

23 The BIS (2009) notes that mark to market accounting, as applied during the GFC, can lead to earlier loss recognition than historical (or accrual) accounting; but the former approach may also weaken policy makers' ability to enforce balance sheet cleanup actions because "marked to market losses have wounded institutions but have not made them objectively insolvent" (BIS op. cit. Box VI.B).

The principles outlined above generally ended up being following in the Asian crises, albeit with variations in pace and depth across the countries concerned, and with substantial controversy in some cases. An initial focus on private-sector-led recapitalisation of banks generally gave way to more centralised approaches, including injections of public capital. This change appears to have been made in recognition of the long length of time required for private-sector-led reform, along with the risks and inefficiencies of continuing with a weak and undercapitalised banking system. Weaknesses in the financial system also constrained the role of monetary policy in these reforms, with central banks in the region hesitant to introduce a more aggressive stance out of concerns about weakening further an already fragile system.

Relatively common features of the policy response were the closure of insolvent institutions; public capital injections; and establishment of publicly operated and funded entities for taking over bad debts from the banking system.[24] All these countries strengthened regulation and supervision of their financial systems, addressing some of the weaknesses that had contributed to their property market bubbles and the subsequent financial crises. Attention was also paid to structural reforms, including governance measures to reduce risks arising from the close links in some countries between government, corporates, and financial institutions.

In the GFC, a wide range of emergency measures was put in place to support the financial system as the crisis unfolded, including guarantees on banks' assets and liabilities, direct public lending to banks against an unusually wide range of collateral, capital injections and nationalisations, and public support for some asset prices. These and other measures were probably needed at the time to support confidence and avert the risk of full financial collapse. In the US, some institutions were rescued through the voluntary involvement of other private sector entities, but many deals also required public funds (for example, some risks from the Bear Stearns balance sheet were passed to the Federal Reserve when the remainder of the firm was sold to JP Morgan). The US Treasury also compelled a set of key banks to take capital support in 2009, partly because if only some banks voluntarily took support they might have appeared weak to financial markets.

Of concern, however, is that in at least some regions these short-term measures have not been followed up by consistent and comprehensive steps to resolve fundamental weaknesses in banks' balance sheets.[25] For example, the current pressures facing some European banks[26] may be symptomatic of broader tendencies of policy makers and institutions to not fully address the underlying problems in the sector.

In addition to the slow pace at which some "emergency" measures have been withdrawn, other factors may also have had the effect of easing pressures for restructuring. These include the maintenance of extraordinarily accommodative monetary conditions; fiscal concerns that have held back further public support for government recapitalisation of some banks; emphasis on supporting credit and demand growth rather than on adjustment; and a relatively voluntary, market-driven approach to adjustment (compared, for example, with the Nordic case).

24 Berg (1999).

25 Indicators of such difficulties may be an overhang of underperforming assets, and excess capacity in the system.

26 E.g. Regan (2016).

Lesson 5: Designing effective measures to help underlying borrowers has proved challenging, especially given the accompanying need to return the banking system to full health.

Policy measures to support banks in the wake of the GFC may have also mitigated the distress of underlying borrowers. For example, public financial support has given the banking system more headroom to work with troubled borrowers, or to fund loans to new buyers that can allow troubled borrowers to repay their loans. In addition, policies have been devised to support the underlying borrowers directly. Reacting to widespread homeowner distress during the GFC, many governments introduced schemes to help mortgage holders to remain in their houses. These schemes generally sought to reduce mortgage payments by reducing interest rates and/or extending repayment periods, in most cases combined with increased government support to borrowers and/ or lenders. For example, the Home Affordable Modification Program (HAMP) in the US sought to reduce borrowers' housing expenses to 31 percent of their gross monthly income, mainly through interest rate reductions.

The take-up of these voluntary programmes has generally been well below initial expectations, however. For example, although more than 1 million homeowners have eventually seen mortgage adjustments through HAMP, this is only about a quarter to a third of initial expectations and probably just a small proportion of homeowners facing difficulties during the GFC. The same pattern has been observed in parts of Europe.[27]

Several factors appear to have contributed to low take-up rates. Eligibility requirements tended to be quite tight, with the schemes aiming for a necessary but at times awkward balance across support for those in greatest need, fairness to others (including borrowers still able to meet their commitments), and budgetary limitations. These eligibility restrictions were reflected in complex application processes that may have been poorly understood by potential participants.

Modifying loans to reduce foreclosures was particularly complex where loans had been securitised (particularly the US). This was unfortunate because securitisation also often made it difficult for the owner of the mortgage to directly negotiate with the borrower, which probably exacerbated the US foreclosure crisis.

In markets where banks held most mortgages, banks themselves showed more forbearance than might have been expected. They often preferred to work with customers in difficulty – at least those meeting some minimum repayment requirements and with reasonable medium-term prospects. The alternative option of forcing mortgage holders out of their homes has at times been unattractive to banks as they would then have to recognise the foreclosed assets on their books and dispose of them (worsening the downturn).

An underlying lesson from these responses is the need for support for underlying borrowers to be compatible with the rapid restoration of banks to full financial health. In that regard, the more voluntary approaches to resolution and adjustment discussed above may be adequate *provided* they are consistent with the medium- to long-term viability of banks and their customers. Of concern, however, is that homeowner support programmes may at times have worked against these longer-term economic and financial goals. The risk is that these programmes have the, probably unintended, consequence of maintaining the status quo and slowing adjustment – including in banks' balance sheets, house

27 Scanlon *et. al*. (2010)

prices, and consumer behaviour.[28] In such cases, greater degrees of compulsion, less forbearance, and different forms of public support would need to be considered. For example, public interventions and public capital may need to be better targeted using the adjustment principles and goals outlined in the previous lesson – including timely recognition of the problems facing the financial system, and their full and rapid resolution.

Lesson 6: Crises often indicate that regulation and supervision of the financial sector needs to be strengthened.

To a large extent, all of the crises considered here (and others) reflect the outcome of rising financial sector liberalisation under systems of regulation and supervision that prove, at least *ex post*, to be inadequate. While financial institutions themselves have generally instituted (although not necessarily maintained) more prudent lending practices following a crisis, much of the policy emphasis has been on strengthening the framework for regulation and supervision. In response to the Asian crisis, for example, widespread measures were pursued to bring domestic standards in all the countries affected closer to international best practice in such areas as foreign exchange exposure, connected lending, loan concentration and loan provisioning.[29] Attention was also paid to improving governance in financial institutions, including ensuring owners and managers were appropriately qualified, and to strengthening the autonomy, authority, and competence of supervisors. As noted earlier, the experiences of Hong Kong and Singapore are also instructive – demonstrating how relatively well regulated and supervised banking systems were able to avoid full-blown financial crises despite facing severe falls in property prices.

More recently, a wide range of measures have been pursued since the GFC to strengthen financial regulation and supervision. Details of these have been much discussed elsewhere[30] and won't be repeated here, but the main features include a global effort to strengthen prudential capital and liquidity standards under the Basel III process; reining in contagion and other risks that can arise with systemically important (or "too big to fail") financial institutions; and much greater emphasis on macroprudential policies, including new tools to address risks in this area. Considering in particular the role of property markets in precipitating the financial crisis, two underlying themes or objectives in recent reform efforts have been to:

- Take more central responsibility for lending and other practices that had previously been left to individual institutions and private market disciplines. That includes setting tighter standards for mortgage assessments, including banning self-certification mortgages in some jurisdictions; and imposing lending limits through, for example, loan to value ratio (LVR) restrictions.

- Rein in the pro-cyclicality of credit growth and asset prices – a key problem evident in the lead-up the GFC and in other financial crises. For example, counter-cyclical capital buffers are now being phased in under the Basel III process; and there is also scope for cyclical adjustments to controls like LVRs.

Another common theme in regulatory responses to crisis episodes has been the need to control risks of moral hazard. This has been a key

28 Concerns have been expressed in the case of HAMP, for example, that this programme is delaying the inevitable for some homeowners, and that default rates will go up as programme interest rate rise in the coming years (c.f., Goodman and Zhu 2014). See also Scanlon *et al* (2010).

29 Lindgren *et al*. (1999).

30 E.g., BIS *Annual Reports*, RBNZ *Bulletin* articles and speeches.

issue, for example, in discussions during and after the GFC on how best to handle the systemically important financial institutions. But it has also been of broader concern as a result of policy measures that (intentionally or otherwise) have had the effect of protecting creditors, shareholders and management of financial institutions. In the Asian crisis, moral hazard concerns were heightened by implicit or explicit deposit guarantees in many countries, weak shareholder oversight, poor accounting standards, and ineffective legal remedies.[31] In contrast, the more rigorous write-downs in equity in response to the Nordic crises, together with contractions in balance sheets and branch networks, probably helped rein in moral hazard risks in that case.

These crises have also illustrated the importance of having frameworks for bank resolution that are transparent and credible, preferably put in place before crisis hits. Amongst other things, these frameworks need to make clear the expectations and responsibilities facing shareholders, creditors, depositors, and management, including their potential burden-sharing roles.

In a number of crisis episodes, data deficiencies have impeded the ability of regulators and others to recognise, respond to, and resolve financial sector difficulties. In the Asian crisis, for example, debt restructuring agreements were much more difficult to reach in Indonesia (e.g. compared with South Korea) because of lack of information on the external debt owed by hundreds of non-financial firms.[32] Reviewing the Nordic and Japanese crises, the BIS (1993) cites the problems caused by lack of adequate data on non-performing loans, including difference in national disclosure and accounting practices for such data. Weaknesses in information and accounting systems can then create difficulties in assessing asset quality, increase risks of losses being understated and undetected, and obscure the growth of distress.

More recently, in considering how to improve early warning systems in light of the GFC experience and earlier crises, Reinhart and Rogoff (2009) argue for longer-term and more comprehensive data on debt. That includes debt for all levels of government and for quasi-state entities; data on implicit state guarantees and other contingent liabilities; and long-term debt series for consumers, banks, and corporates. They also argue that international institutions (such as the IMF) need to play a greater role in collecting and monitoring such data as part of more effective surveillance practices for national and global risks.

Lesson 7: Short term thinking can lead to errors: for example, households may not recognise important risks; and bankers need a longer-term and more risk-averse orientation.

In a review spanning over 200 years of boom-bust cycles in US real estate markets, Glaeser (2013) concludes that “the dominant mistake that investors make is to underestimate the impact that elastic long-run supply of land, structures and crops will have on future land values”. Along similar lines, Hoeller and Rae (2007) point out the destabilising impact that backward looking or extrapolative expectations can play in the housing market. With a long-term trend of declining interest rates since the 1980s, housing has been a good investment for most buyers (particularly in countries such as New Zealand that have not suffered severe downturns). Nevertheless, a key lesson from the long history of boom-bust episodes around the world is that property market participants – including borrowers and lenders – need to have a more forward-looking, longer-term perspective on potential market risks. Public support is probably needed in this area. For example, through “jawboning” and education campaigns, policy makers and others can support efforts to

31 Senhadji *et al* (2002).
32 Berg (1999).

increase property owners' understanding of potential risks in the housing market and their implications. These include risks of falling house prices, rising interest rates, and other shocks that could affect employment and income, and hence the ability to service mortgage commitments. In this context, new borrowers may currently under-appreciate the extent to which, in an environment of low inflation and low real income growth, they are committing themselves to spending about the same proportion of their income on mortgage service costs well into the mortgage term. That stands in contrast with earlier periods when rising nominal and real incomes would usually reduce mortgage burdens quickly.

The GFC and earlier crises have also highlighted the need for behavioural change in the financial sector. In part, this involves sector participants recognising the same risks as noted above for property owners and factoring these into their lending decisions – leading to longer-term and more risk-averse perspectives on lending. Improved governance of risk management is important in this regard, including strengthening the incentives on and role of risk managers and top management in controlling the activity of market traders.[33] At an operational level, there has been much discussion of the need to move away from compensation schemes geared to short-term returns and market growth. Such schemes contributed heavily to rising leverage and risk in the lead-up to the GFC, but the traders who benefited during the upturn were in general not comparably exposed during the subsequent crash. Berndt *et al*. (2010) look at the role played by mortgage brokers, who originated nearly two-thirds of all US subprime mortgages before the crisis hit. They find a poor alignment between the incentives facing brokers and the quality and performance of the loans they arranged. In particular, loans that were associated with higher broker profits had a greater risk of becoming delinquent. Reflecting such findings, mortgage brokers in the US, New Zealand, and elsewhere have now become subject to tighter regulations on their activities and compensation.

The GFC also drew attention to the need to strengthen the rating agencies, whose failings in appropriately assessing risks in mortgage-backed securities and other products have been well publicised. Key directions of reform propounded for this sector include improving these agencies' ability to evaluate risks arising under new and complex products, increasing transparency and competition in their operations, and ensuring rating agencies pursue incentives that are independent of those facing issuing institutions. Deep reforms have been hard to achieve, however: while they face stronger oversight from regulatory bodies, the dominance of the "Big Three" agencies remains largely intact, as does the issuer-pays model of funding.

Lesson 8: International cooperation and support can play important roles in crisis management and recovery.

The growing scale and complexity of global financial integration – as illustrated, for example, by the increased prominence and focus on the regulation of the global systemically important banks – imply that economic and policy developments in one region can quickly spill over to other regions. Moreover, at least some sorts of integration (e.g. the establishment of currency unions, or foreign currency denominated borrowing by domestic sectors) can limit the effective independence and room for manoeuvre of national policy makers. In these circumstances, some degree of global cooperation and coordination may be needed in response to financial shocks, even if these stem originally from just one region or one part of the financial system.

Such an approach was evident in the GFC, where coordination reached unprecedented levels. For example, the major central banks announced

33 BIS (2010).

coordinated interest rate cuts in October, 2008 as the crisis escalated in scale and scope. And, led initially by the Federal Reserve, central banks established foreign currency swap lines to address foreign currency funding shortages in interbank markets. These measures have been generally viewed as being appropriate for the circumstances that were faced and yielding positive results.

Concerns have, however, been expressed about the lack of coordination and cohesion in regulatory responses during the GFC. For example, different approaches to bank rescue and resolution in different jurisdictions risked creating distortions to competition and an uneven playing field for global banks.[34] While the Basel Committee on Banking Supervision works to harmonise standards in key areas across member countries, Reinhart and Rogoff (2009) argue that an international financial regulatory institution is needed to provide a more coordinated response in financial regulation. Such an institution would help address concerns arising from the growth of cross-border capital flows "often seeking light regulation as much as high rates of return". It could also support efforts to regulate the major global financial institutions.

International cooperation is also evident in the financial support provided by multilateral and regional organisations to countries in distress. There was clearly an expansion of such programmes during and after the GFC, with assistance provided to a number of countries facing severe funding difficulties. Global, regional, and bilateral assistance also supported the emerging economies hardest hit by the Asian crisis, providing official financing at a time when other sources of funds had become very costly or inaccessible.

Conclusion

Housing market crashes are costly. They often lead to broader economic and financial difficulties; tend to last longer than equity market busts; and may have a disproportionate impact on lower-income, first-time home owners. Such outcomes have generally led to a public policy response, directed in particular at stabilising the economy and financial system as well as addressing regulatory and other weaknesses that contributed to the crisis. A number of lessons can be learned from the responses to crisis episodes over recent decades.

On the macroeconomic front, stimulus provided through easier fiscal and monetary policies has helped mute economic downturns following a property market crash. But these policies have generally been less effective at supporting ongoing recovery in economic and financial conditions, especially in the face of heightened uncertainty, strong risk aversion, and deleveraging pressures. Similarly, while the unconventional monetary measures deployed over recent years by the major central banks helped address some key financial sector weaknesses during the GFC, these measures have also led to further uncertainties and pressures – including on small, open economies and on the pension and insurance industries. Some earlier crisis episodes illustrate the problems in trying to maintain exchange rate pegs through tighter macroeconomic policies, especially when external confidence in the economies concerned has fallen significantly. And unhedged foreign currency borrowing, often driven by the (mis)perception of exchange rate stability, can quickly lead to severe economic and financial difficulties if external funding dries up and the exchange rate falls following a crash.

34 BIS (2009).

With housing busts often leading to wider financial problems, a key determinant of subsequent economic and financial recovery has been how effectively policymakers address banking sector difficulties. Essential elements in this response are to recognise the problems early, deal with them rapidly, and pursue responses of sufficient depth and scope. Public support that may be provided to underlying borrowers following a crisis should not give banks a means or opportunity for banks to resist pressures to restructure. Recent crises have also revealed weaknesses in the frameworks for bank regulation and supervision, and addressing these concerns has formed part of the policy response. Following the GFC, for example, policymakers have been taking wide-ranging steps to tighten standards surrounding banks' lending decisions, reduce the procyclicality of credit growth and asset prices, and address the contagion and moral hazard risks that can arise with systemically important financial institutions.

Housing market crashes have highlighted the need for borrowers and lenders to take more forward-looking, longer-term perspectives on their exposure to market developments. For example, borrowers need to be aware of and prepared for risks that could arise from falling house prices or rising interest rates. And governance of risk management among lending institutions needs to be strengthened, including reducing incentives for excessive risk-taking that can arise under compensation schemes geared around short-term returns and volume growth.

Finally, with growth in global financial integration, recent crises have illustrated the importance of international coordination and cooperation to address and avert financial risks. That includes cooperative efforts to deal with global spill-overs from economic shocks in one region or sector; to address the risks associated with global financial institutions; and to better harmonise regulatory standards.

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