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**Article (Accepted version)  
(Refereed)**

**Original citation:**

Scanlon, Kathleen and Lunde, Jens and Whitehead, Christine M. E. (2011) *Responding to the housing and financial crises: mortgage lending, mortgage products and government policies.* *International journal of housing policy*, 11 (1). pp. 23-49. ISSN 1461-6718

DOI: [10.1080/14616718.2011.548585](https://doi.org/10.1080/14616718.2011.548585)

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This version available at: <http://eprints.lse.ac.uk/29948/>

Available in LSE Research Online: October 2012

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# Responding to the housing and financial crises: mortgage lending, mortgage products and government policies

Original word count 9409; now 8621

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**Keywords:** housing finance; mortgages; housing crisis; credit crisis; government policy

## **Abstract**

The long period of house price growth in markets across the world ended with the US and global financial crisis of 2007/08. The crisis and the consequent recession had profound effects on mortgage market actors – including households, institutions and governments – in most advanced economies, whether or not they participated in this rapid house price growth. Many of the trends observed during the boom, especially the innovations in financial instruments, were reversed.

This paper presents evidence on how mortgage markets and stakeholders responded in the initial period after the crash. In particular it reports on a 2009 survey of housing experts from 16 industrialised countries, which concentrated on how each country's mortgage system responded to the crisis and how governments addressed the problems of borrowers.

# Responding to the housing and financial crises: mortgage lending, mortgage products and government policies

## Introduction

Since 2007 housing and finance markets have experienced one of the greatest periods of volatility in modern history. The boom in house prices was followed by a bust, the massive expansion in the availability of mortgages was reversed, and mortgage terms became more restrictive. In this paper we examine some of the outcomes of the crisis. We look at several countries that experienced great volatility to see how their mortgage markets behaved and how their governments responded to the challenges presented by the financial and housing market crises.

The paper first reviews general data on house prices and financial flows before examining the variation in experience across countries in two areas: first, how mortgage systems responded to the liquidity crisis and increasing risk in the market; and second, how governments addressed the problems of individual borrowers. Finally the paper draws together the different strands to give an overview of responses to the credit crisis.

Much of the information is drawn from a survey conducted by the Housing Finance Working Group of the European Network for Housing Research. We gratefully acknowledge the important contribution of the housing experts who responded<sup>1</sup>. The survey asked about the amount and characteristics of new residential mortgage lending, the extent of negative equity, and government programmes to counteract the effects of the crisis on borrowers. It was distributed in January 2009, and replies were received in February and March 2009.

## Trends in housing and mortgage markets

### *House price movements*

After unprecedentedly strong and long-lived growth in real house prices in many countries, markets started to soften in 2006. The peak in house prices came a little later but in most countries preceded the broader-based credit crunch that followed the Lehman disaster in September 2008. Thereafter the near closure of many mortgage markets and major concerns about recession changed the nature of markets completely, and in most developed countries the pace of mortgage borrowing slowed dramatically.

The extraordinary duration and strength of the boom in most major economies had not gone unnoticed. At the end of 2005, the OECD commented that ‘a number of elements in the current situation are unprecedented: the size and duration of the current real house price increases (and) the degree to which they have tended to move together across countries...’ (Girouard et al., 2006, p.4). When the OECD analysed real house price developments since 1970, it found an average duration for house price growth of 5½ years, and 4½ years for periods of decline and stagnation (Girouard et al., 2006). The latest period of growth started in the middle of the 1990s and lasted until 2007 in most countries—that is, more than twice the historical average.

Table 1 gives data on the most recent period of house price rises in the 12 OECD countries examined in this paper, all of which saw significant real growth over the decade<sup>2</sup>. In eight of these countries real house prices peaked in 2007. Nominal house prices peaked in the same

quarter as real prices for most countries, because inflation was low. However a number of OECD countries were not part of this picture – including Germany, Austria, Switzerland and Japan—and are excluded from this discussion.

Table 1 here

The strength of real house price growth varied between countries. Ireland's was particularly high, at 404% from 2Q1987 to 3Q2006. But real house prices more than doubled in nine of the other countries including the Netherlands, Norway, Denmark, the UK, Spain, Sweden, France, Finland and Australia. The initial stages of housing market decline were gradual as transactions, output and prices started to slow. The subprime crisis in the USA took hold in the spring 2007 and prices began to fall. From the middle of that year, liquidity in the capital markets tightened and the financial crisis spread across the globe, nourished in many countries by a huge expansion in credit and high-risk developments in the financial system (Kim & Renaud 2009). This sudden decline in housing markets contributed to the financial crisis, which then fed back into housing markets, as had happened in earlier recessions in the USA (Leamer 2007). The problems tended to be most serious in countries where high percentages of households had mortgages; where the amount of mortgage credit had greatly expanded; and/or where debt levels were high (Green and Wachter 2008; OECD 2007; Scanlon et al., 2008). Table 1 shows the fall in house prices from their peak to late 2008, the relevant period with regard to the policy responses described in this paper. Only the Netherlands did not experience the decline.

Real house price movements were tightly correlated across countries. Figure 1 shows price developments in the USA, UK, France, Ireland, Australia and Denmark since 1970. The trajectory of house price movements in the latter part of the period was aptly described as resembling 'a rocket taking off' by Shiller (2005, p. 12).

Figure 1 here

There were no 'soft landings' during this period: real houses prices fell sharply after the peak, particularly in Ireland, Denmark, New Zealand and the UK—which were among the countries with the highest house price inflation. Previous downturns have shown that house price falls tend not to be monotonic; they can be interrupted by periods of stagnation or even increasing house prices. Recent statistics suggest that the rate of house price decline slowed in many countries in 2009, and prices in some countries started to rise again as central banks worldwide cut interest rates, increased public expenditure and/or reduced taxes to counter the recession.

### *Mortgage markets*

Like all markets, the mortgage market is the totality of interactions between suppliers (investors) and consumers (borrowers) with intermediaries (mortgage lenders and brokers) in between, in a framework set by law and regulation. Changes affecting any of these categories affect the characteristics and effectiveness of the market.

After a period during which mortgage funding and mortgage debt grew very rapidly—faster than GDP in most countries (EMF, 2009) —market conditions facing lenders started to change in 2007 and worsened over the following year, culminating in the worldwide collapse of finance markets after Lehman. Each bank feared that its competitors had taken on significant credit risk; this led to a sharp contraction in interbank lending and eventually to a wave of failures of banks and other financial institutions. In the mortgage markets, potential lenders judged the risk of nonpayment to be increasing and started to charge higher interest rates to mortgagors—or

simply refused to lend at any rate. In particular, those lending institutions whose funds came from money markets rather than from depositors had to lend at higher rates because they, as borrowers, were paying higher spreads above the central banks' base rates or, in some cases, were unable to borrow at all from their normal sources. As house prices fell, lenders saw the value of their collateral decline. This price fall was expected to continue, so new loans were being made against collateral whose value was expected to decline in the short to medium term.

In most countries there had been continued deregulation of financial markets and consequent product innovation (Scanlon et al, 2008). This provided borrowers with greater choice and allowed lenders more actively to manage their portfolios of assets ('treasury management'). The extent to which affected balance sheets even in countries that had not themselves followed the derivative model only became clear when the system went into collapse in late 2008.

The general economic environment worsened very rapidly. Most of Europe entered recession in late 2008. The problems were not confined to countries that had been in the forefront of the boom but also affected those with relatively stable housing markets such as Germany. This very general decline meant that risks were far more highly correlated than had been expected – and this correlation appeared to be exacerbated by the 2004 adoption of the 'Basel II' accord by the Basel Committee on Banking Supervision. This stipulated that capital-adequacy rules had to reflect risk, so banks with riskier assets should hold more capital. The capital-adequacy standards, together with 'mark-to-market' rules under which assets had to be valued at market rather than historic values, meant that as house prices fell, banks and other financial institutions had to provide significant additional capital. This further reduced their capacity to lend (though it increased their chances of survival). So lenders faced a challenging set of circumstances particularly because 'unlike other loans, the cash flow to repay a property loan is not independent of the collateral, with changes in vacancy rates or rental values being immediately reflected in the resale value of the building. Also collateral for property loans is highly specific and potentially illiquid' (Davis 1995, Chapter 10).

On the demand side, existing borrowers faced an increased risk of negative equity. Those most likely to be affected were those who had withdrawn equity (often through re-mortgaging) or bought at or near the price peak and therefore had high loan-to-value ratios. Negative equity had a spatial dimension: it was concentrated in areas where prices had increased sharply and then fallen—in the USA, for example, it was highest in Phoenix, Las Vegas etc. Negative equity is not necessarily a problem in and of itself – it depends on the wording of default legislation and whether the household needs to move – but it does reduce mortgagors' options if they face other difficulties. And that happened more often as the worsening global recession brought about job losses and pay cuts. These affected borrowers' capacity to meet mortgage payments and put pressure on both the mortgage industry and housing markets.

An important issue in some countries was that mortgages denominated in foreign currencies became unaffordable. The problems in Iceland were particularly severe. They stemmed from the collapse of Icelandic-owned banks as a result of both mismanagement and their exposure to mainland Europe, which overwhelmed the small country's economy. The Icelandic krona devalued from 54.5/Swiss franc to over 103/Swiss franc between December 2007 and October 2008, doubling the value in krona of the 9% of outstanding mortgages denominated in foreign currencies (which were mostly in Swiss francs and yen). The devaluation also increased the price of imported goods, leading to internal inflation that adversely affected the mortgage market. Those Icelandic mortgages not denominated in foreign currencies were 'index-linked'—that is, the value of the loan's principal was linked to inflation—and when inflation rose to 12.4% the value of mortgagors' debt increased correspondingly. The Icelandic residential-mortgage-

debt-to-GDP ratio increased from 75.5% at the end of 2006 to 129% at the end of 2008 (EMF, 2009).

However, in the many countries with variable interest rates existing borrowers' payments fell, often by large amounts. Households whose incomes declined could often still make mortgage repayments, although they still had to deal with serious interest-rate risk since rates could not be expected to stay low indefinitely.

New borrowers were affected by at least three types of uncertainty and change. First, even though interest rates fell across the world, the terms and conditions under which new borrowers could obtain a mortgage and the size of the down payment required often made financing more expensive. Second, although lower prices made house purchases more affordable, the expectation that prices could continue to fall made it riskier to buy – so markets remained depressed. Third, uncertainties about future incomes and employment increased the risks for mortgagor and mortgagee alike. Perceptions of risk tend to be pro-cyclical, so when markets were booming risk premia fell but when markets declined risk premia rose and lenders modified their credit-scoring systems to reduce the credit risk of their loan portfolios.

These conditions might be expected to produce:

- a substantial reduction in the overall amount of new lending (reflecting both supply constraints and fall in demand);
- large increases in arrears and to a lesser extent foreclosures (as negative income shocks hit existing borrowers);
- less generous terms for new lending, in particular an increase in the required down payment (reflecting uncertainty about both the future value of collateral and borrowers' incomes); and
- structural increases in mortgage fees and risk premia.

Government responses to sharp declines in mortgage and housing markets, and to the possibility of large-scale defaults which would affect the viability of banking institutions, could therefore be expected to target:

- the shortage of funds through central bank action or direct intervention by government-owned lenders;
- falls in the value of collateral for new/existing loans through government guarantee schemes;
- those who experienced income shocks through government assistance with mortgage payments for unemployed, sale/leaseback schemes; and
- the fall in demand through subsidised loans.

Here we examine evidence on mortgage market developments and 'mortgage rescue' policies in the early stages of the crisis. We do not address wider monetary and fiscal policies, although these measures, in particular the reduction in interest rates, also strongly influenced mortgage markets.

### **The evidence—what happened in individual mortgage markets?**

### *New lending down*

The evidence from the countries examined is generally consistent with the expectations of large-scale decline. Table 2 shows the change in gross new residential mortgage lending from late 2007 to late 2008 in thirteen countries. Data on the number of new loans were available for six of the thirteen; in all six the number of new loans was sharply down.

The figures for the value of gross new residential mortgage lending show a similar pattern. In all thirteen countries the value of new lending fell dramatically from late 2007 to late 2008—that is, in the period before and just after the collapse of Lehman Brothers in September 2008. The declines ranged from 59% in Ireland to 19% in Australia. The average decline in new loans was 41.5%. This figure gives equal weight to economies of very different sizes, but the average decline for large economies only (the USA, UK and Spain) was almost exactly the same at 42.2%.

In some markets declines in the number of mortgage lenders contributed to falls in overall lending. Some lenders made strategic decisions to leave the residential mortgage market; some merged; and some failed. These structural changes in the banking sector were more evident in some countries than in others. In Finland some Icelandic banks left the market, while in Iceland itself the banking sector went through major upheaval, as major banks were nationalised. The Russian banking sector also changed radically: according to some estimates only 15-20 banks were issuing mortgages in mid-2009, down from more than 500 in mid-2007. This fall was attributed to the difficulty in securing long-term funding. In Australia there were declines in wholesale lending and lending from non-bank lenders (some of which left the market), as well as mergers among banks; even so, bank lending remained more or less stable. In the UK some banks and building societies were merged, while others withdrew from the market reducing the available funds very significantly. In Denmark, on the other hand, the failure of some commercial banks had only a minor influence on owner-occupiers' access to mortgage finance.

Table 2 here

Table 3 shows developments in net new residential mortgage lending in eleven countries. Net new mortgage lending is defined as gross lending minus repayments and redemptions. This is a more important indicator than gross lending, since gross lending fluctuates more than net lending because of remortgaging. Like gross mortgage lending, net lending fell in all countries from late 2007 to late 2008 but remained in positive territory except in the USA, where repayments and redemptions exceeded new lending by \$248bn in 4Q08.

Table 3 here

In those countries for which we have data about both gross and net lending, net lending fell about twice as sharply as gross lending from late 2007 to late 2008. New borrowing declined, despite very low interest rates that made it cheap to service many mortgages (particularly those on adjustable or tracker rates).

### *Mortgage characteristics tougher*

The variety of mortgage products increased in the years up to 2007, with particular growth in features such as long term, interest-only and 100% LTV loans (Scanlon et al, 2008). Post-2007

we expect to find fewer of these low-payment products, as they were perceived to expose the lender to more risk than standard loan types. We compared the availability of interest-only and 100% mortgages in late 2007 and late 2008, and looked at whether lenders had tightened loan-to-value, loan-to-income or affordability criteria, increased required down payments or shortened maximum mortgage terms. We also asked whether new loan types had been introduced to deal with the crisis. The findings for 15 countries are summarised in Tables 4 and 5.

Table 4 here

In most of these countries mortgage lenders became more reluctant to lend (columns 2-4 of Table 4). In view of continued expectations of property-price falls, they required higher down payments or equity and cut back or withdrew entirely the supply of very high LTV mortgages (100% or more). Such loans had been common in some markets; in Norway in 2007, 25% of new mortgages had LTVs over 100%. In Spain loans at over 100% LTV, once available, have disappeared. In Russia 100% LTVs were common but by mid-2009 the maximum was 80%.

Loan-to-value ratios also fell in countries where maximum LTVs had not reached 100%. In Sweden, LTVs of 95% and, by negotiation, more, were commonly available pre-crash; in mid-2009 the maximum was 85 to 90%, with less scope for negotiation. In the UK in November 2007 the average LTV on new mortgage loans was 80%; in November 2008 it was 75%, but the best rates were available to borrowers with LTVs below 75% or even 60%, depending on the lender. One-hundred percent mortgages had almost disappeared and were perceived to be one of the causes of the crisis.<sup>3</sup> Very high LTV mortgage loans were prohibited in some countries. In Denmark the legal maximum in the specialized mortgage system is 80%, but buyers were often able to get around this by taking out supplementary (secured) loans from commercial banks.

Loan-to-income or affordability criteria were tightened. An increase in the value of the collateral could not be relied on to mitigate the effect of a negative income shock for the borrower, and the economic situation made such income shocks more likely than they were before. Surveys of bankers provide the evidence: in the Netherlands, according to the Dutch National Bank, 80% of banks tightened their criteria for mortgage lending in some way in the final quarter of 2008 (De Nederlandsche Bank 2009, Table 5.5). This percentage was 17 in the third quarter of 2008, and zero in the four previous quarters. In Portugal the central bank's quarterly survey of the five main banks showed that lending criteria tightened from the third quarter of 2007. In the USA, according to April 2009 Senior Loan Officer Opinion Survey, 'about 50% of domestic respondents indicated that they had tightened their lending standards on prime mortgages over the previous three months, and about 65% of the 25 banks that originated non-traditional residential mortgage loans over the survey period reported having tightened their lending standards on such loans' (Federal Reserve 2009).

In some countries lenders cut the maximum mortgage term (column 5). In Iceland, however, the government's rescue package for troubled mortgage borrowers included a provision that would increase the term of the mortgage to up to 70 years in order to reduce monthly repayments (see below).

New loan types (column 6) were not common; rather, mortgage lenders seemed to fall back on traditional lending patterns and products. In Ireland and Portugal there were some innovations: In Ireland, a new product targeted consumers fearful of further price drops. The borrower was offered at loan at up to 95% LTV. If after five years the value of the property had fallen, the

developer would reimburse the borrower for up to 15% of the drop. In Portugal, one bank introduced a new Euribor tracker mortgage with a minimum interest rate (floor); the initial repayments were lower than for other products. Also, in the second half of 2008, some property developers began to offer loans designed for potential purchasers without a down payment. The developer funded up to 30% of the purchase price, repayable in bullet format after a number of years. The amount repayable would be linked to the market value of the property at the time.

Table 5 here

The picture as regards interest-only mortgages is somewhat less clear-cut (Table 5). These products were anyway not available in all countries (although in many they were taking an increasing market share up to 2005 and beyond—see Scanlon et al, 2008). Where they were available, however, by 2009 they accounted for a decreasing percentage of new mortgages. In the UK, for example, some 24% of new loans in 2007 were interest-only with no repayment vehicle specified; by the second quarter of 2009 this had fallen to 11% (CML, 2009). Both supply- and demand-side pressures were involved: the riskier nature of such mortgages as compared to standard annuity products meant that lenders were less inclined to offer them and borrowers were more wary of taking them on.

In Denmark, on the other hand, the proportion of interest-only mortgages has increased steadily since such loans, with a maximum interest-only period of ten years, were legalised in 2003 and this proportion continued to increase even after house prices turned down (see Figure 1). But the Danish case was an exception. In most countries, loans with such ‘exotic’ features were curtailed. This included foreign currency loans, which were very important in some small economies. Other exotics included long-term loans and self-certification or ‘no official income verification’ loans. Availability of even relatively common loan products was curtailed; for example, some Danish *garantilån* (variable-rate mortgages with a 5 or 6% interest-rate cap) disappeared from the market for a period because the investors in the bonds that financed them deemed them so risky that their internal rate of return became higher than on ordinary fixed-interest mortgages.

Availability of bridging finance was unaffected in some countries, but in others it dried up. In Denmark, commercial banks issue bridging loans when housing markets are operating ‘normally’—that is, when housing prices are increasing—but in general stopped doing so. In France LTVs for bridging loans fell; they were previously available for up to 80% but by 2009 this had fallen to 60%.

### *Arrears and foreclosures*

In all countries studied, borrowers are considered to be seriously in arrears after three months of missed payments. Table 6 shows the change in levels of serious arrears from late 2007 to late 2008 in 11 countries. Of the eleven countries for which comparative data were available, nine experienced an increase in the percentage of serious arrears. The average increase for all eleven countries (including those where no increase was seen) was 89% over the period; for the large economies only (the USA, UK and Spain) the average was 183%.

The consequences for the borrower of falling into serious arrears are not the same everywhere, since the legal requirements for foreclosure (in the UK formally known as possession and action for sale) and the speed of the court system vary by country. Many governments announced new policies to help avert foreclosure on borrowers facing payment problems (see below); such

policies were clearly more relevant in countries where foreclosure proceedings were relatively swift and certain.

Table 6 here

### *Negative equity*

Negative equity can be defined in different ways. The narrow definition is when the market value of a house is less than the outstanding mortgage secured on it. More broadly, an owner-occupier household is in negative equity when the value of its assets (including the dwelling) is lower than the value of all its liabilities (including the mortgage debt).

Negative equity does not necessarily lead to arrears or foreclosures—as long as the borrower can maintain their repayments. It is when borrowers need to sell or remortgage that negative equity becomes a problem. Sellers will owe the lender more than the proceeds of their sale, and remortgaging for the same amount might be impossible, so households may be trapped in mortgages with high interest rates.

There are few reliable statistics on the extent of negative equity. While it is possible to determine the amount of debt secured on individual properties (although this information may not be publicly available), it is only when a property transaction occurs that the ‘true’ price of the collateral is established. Detailed calculations of negative equity thus rely on imputed property valuations, which may differ from the values that would be achieved on the open market. (See Hellebrandt and Kwar, (2009) for an exploration of the different methods of calculating negative equity, and its consequences for the wider economy.)

Despite the problems of measurement, it is clear that as house prices fell, the proportion of borrowers in negative equity rose across countries. In Denmark, the frequency of negative equity in a broad sense (i.e., all liabilities minus financial assets compared with housing wealth) was fairly stable between 1987 and 2005, when 15% of Danish owner-occupier households were estimated to be in negative equity. This rose to 40% for households headed by people aged between 30 and 39, as young households are most likely to be affected by negative equity (Lunde, 2007). In Iceland, 5% of owner-occupier households were estimated to be in negative equity in November 2008, up from none a year previously. In Norway, according to calculations by the Norwegian Institute for Urban and Regional Research, about 5% of homeowners were in negative equity in 2008; the estimate for 2007 was 2%. In the UK, Bank of England research suggested that 7-11% of UK owner-occupier mortgagors were in negative equity in spring 2009, although in most cases the amounts involved were small – less than £10,000 (Hellebrandt and Kwar, 2009). In Ireland the figure is expected to rise from 15% at the end of 2009 to 25% at the end of 2010 (Duffy, 2010). In the USA 20% of mortgaged properties were in negative equity as of December 2008, according to a firm that holds a large repository of data on US mortgages (First American CoreLogic, 2009).

The evidence thus suggests that there were three distinct types of institutional response:

1. reduced lending across the board as a result of the credit crunch and the closure of wholesale markets;
2. a reassessment of the risks associated with both types of mortgagor and types of instrument, which resulted in the withdrawal of certain products and differential treatment of certain kinds of household – notably first-time purchasers and those with limited deposits. This appeared to have been based more on assumptions than on detailed

evidence of differential outcomes, but perhaps was a rational way to deal with the decline in the availability of funds;

3. a more thoughtful response to arrears and negative equity based on an assessment of the costs and benefits of foreclosure, which suggested that there was often a case for maintaining households in their own homes.

## **Policy responses**

Governments and central banks put in place a range of policies to try to encourage mortgage lenders to increase the volume of new lending, and to enable creditworthy new borrowers to take out loans, but the main focus of policy turned in early 2009 to assisting those borrowers in payment difficulties to avoid foreclosure.

Policies directed at increasing new lending included general macroeconomic policies such as increasing the money supply and reducing interest rates: the US Federal Funds rate fell from 5.26% in March 2007 to 0.18% in May 2009; the Bank of England's official bank rate fell from 5.75% in July 2007 to 0.5% in May 2009; and the European Central Bank's refinancing rate was reduced six times from 3.75% in October 2008 to 1.0% in May 2009.<sup>4</sup> In Australia, the Reserve Bank reduced official interest rates four times between September and December 2008, and put significant pressure on banks to pass the rate cuts on to borrowers (about 75 per cent of whom were on variable rate loans); Australian housing interest rates fell by 3-4 percentage points over the same period. As well as reducing interest rates, many central banks carried out market operations, purchasing mortgage loans, bonds, mortgage-backed securities, etc., and aggressively expanded the monetary base. Governments increased expenditures, particularly to assist 'troubled' financial institutions, and thereby strongly increased public-sector deficits.

Reductions in interest rates are a faster and more direct way to help most borrowers than targeted benefit programmes for the highly indebted, and by mid-2009 these interest-rate policies had slowed the rates of house price falls and foreclosures. Low interest rates meant low mortgage repayments, so buyers could afford the monthly payments on more expensive houses. These low interest rates appeared to have fed through to rising house prices in many countries (as of February 2010); however, there remained a risk of a reversal in this trend when rates rose again.

Some governments that took control of or shored up failing banks insisted that in return they increase lending. The UK government nationalised major mortgage lender Northern Rock in February 2008 and initially stopped it issuing new loans, but in February 2009 Northern Rock announced that it would resume new lending. In Ireland, as part of the recapitalisation scheme for Allied Irish Bank and Bank of Ireland, the banks were required to provide an additional 30% capacity for lending to first-time buyers in 2009 (Department of Finance 2009).

### *Government programmes to assist those facing mortgage repayment difficulties*

After 2007 several governments instituted programmes to help households who encountered difficulties in paying their mortgages. Such interventions could be justified on several grounds. First, owner-occupation is said to generate positive externalities, particularly in borderline neighbourhoods, and therefore may be worth preserving with public funds. Second, by preventing possessions the programmes may slow the flow of dwellings coming onto the market, a flow which increases supply and further depresses prices. Third, the cost to the state of retaining households in owner-occupation may be lower than that of rehousing them; one

study showed that 18-25% of households whose homes were placed in possession in England were rehoused by local authorities (Stephens 2009). Fourth, there is the question of fairness: Governments spent vast sums on assisting ailing financial institutions; many consumers might think it fair for a fraction of this money to go to borrowers themselves.

There are two main arguments against helping owner-occupiers in this way. First, such schemes can lead to moral hazard—that is, by stepping in to avert losses to households, governments make it more likely that market actors will (continue to) engage in risky behaviour in anticipation of future bail-outs. Second, intervention may delay or distort desirable adjustments in consumer behaviour and house prices.

This section describes a selection of policy responses to mortgage-payment problems. In 2008 and 2009, many countries introduced new programmes, or modified existing policies, to try to help households with difficulties paying their mortgages. A summary of programmes in various countries appears in Annex 1. The table is not comprehensive but aims to illustrate the variety of approaches taken in seven countries. Almost all the ‘mortgage rescue’ programmes had limited budgets—no country could afford to offer unlimited grants and benefit payments to owner-occupiers. Not all of the countries studied had found it necessary, as of early June 2009, to put such programmes in place; the Netherlands, Denmark and Finland, for example, had none.

The goal of most of these programmes was to help borrowers remain in owner-occupation and in their homes. Most of the schemes temporarily reduced borrowers’ mortgage payments. The most common approach, adopted in five of the countries surveyed, enabled borrowers to defer a proportion (often 50%) of their payments during the hardship period; the deferred amount was normally added to the loan’s principal. This was effectively equivalent to a teaser loan and would have the undesirable effect of increasing the financial burden on borrowers when they could resume repayments. And there was a clear repayment risk with such ‘rescue mortgages.’ Such programmes can be attractive to policy-makers because they require less government outlay than direct assistance with mortgage payments, and do not require lenders to write off the loans.

Another approach was to offer temporary government assistance with mortgage payments to those who became unemployed. For example, in the UK the rules were changed to allow a shorter waiting period before borrowers could claim Support for Mortgage Interest. This was withdrawn when the borrower found another job and could again make payments. The assistance was an outright grant, not a loan. There was thus no overhanging financial burden on the borrower, but such programmes were costly to the public purse.

In Iceland, a borrower from the Housing Financing Fund who encountered payment difficulties could ask to freeze payments for up to three years. Other financial institutions had different rules, but the government controlled the three largest banks and was expected to standardise the rules on possessions. In Portugal, a scheme to help unemployed people meet their mortgage payments was established in May 2009. Those unemployed for three months or more could have their mortgage repayment reduced by 50% (maximum reduction 500 Euro) for up to 24 months. This reduction had to be repaid during over the remaining period of the loan, at an interest rate of Euribor minus 0.5%. These special conditions were financed by the State.

Another set of programmes enabled borrowers to remortgage or change the terms of their loan to reduce payments, even in cases where lenders would not normally permit this. In the USA under the Home Affordable Refinance programme households could refinance even if they no

longer met lenders' 80% loan-to-value requirements because of house price falls. In Iceland, borrowers from the state-owned Housing Financing Fund could turn their overdue debt into a new five- to 30-year loan, or extend the term of their existing loan to up to 70 years.

These programmes simply enshrined in policy what many lenders were already doing in practice. This continues a trend for removing control of lending practices from the mortgage industry and making it part of official regulations. In the UK the voluntary industry code was superseded by the Financial Services Authority's Mortgage Conduct of Business Sourcebook in 2004, but even after that the regulator found 'weaknesses in responsible lending practices and in firms' assessments of a consumer's ability to afford a mortgage' (FSA 2010, p.5). In Ireland, the Code of Conduct on Mortgage Arrears, previously a voluntary industry initiative, was made statutory in February 2009 and some of its terms changed. The Code applies to all mortgage lenders and prohibits lenders from initiating court proceedings until the borrower has been in arrears for six months.

Another approach was simply to forbid banks from initiating foreclosure proceedings. In Iceland, banks were not permitted to take action on loans in arrears until August 2009. In Ireland, the two banks recapitalized by the government had to agree to hold off starting court proceedings for possession until after 12 months after arrears initially appeared as opposed to 6 months under the official code; this was extended in 2010 to all lenders.

Some analyses have identified the growth in owner-occupation rates over the last decade as one cause of the crisis. In implicit recognition that some households could not continue to own their homes, schemes in the UK and Portugal allowed a third party (a housing association in the UK; a specially designed investment fund in Portugal) to purchase the dwelling and rent it back to the former owner. Both programmes included provisions whereby the borrower could re-purchase the dwelling if their financial circumstances improved, although in the UK this was at the discretion of the purchasing landlord.

Not all mortgage rescue schemes were government programmes; many lenders had their own initiatives to help troubled borrowers, though they may have been encouraged or even forced by governments to create them. Governments and lenders sometimes split the financial and administrative burdens of these schemes. For example, under the USA's Homeowner Stability Initiative, the mortgage payments of troubled borrowers were brought down to 38% of gross income by lenders reducing interest rates. Government and lenders split the cost of further rate reductions to bring payments down to 31% of gross income. There were financial incentives to lenders to modify the loan and to borrowers to keep up payments.<sup>5</sup> But generally if troubled borrowers were permitted to refinance or renegotiate their loan terms, the lender bore the cost, not government.

These first versions of mortgage rescue programmes generally did not attempt to address payment problems by reducing the principal (value) of the loan<sup>6</sup>. Some studies suggest that this is the best way to deal with debt problems more generally (Quercia et al, 2009). There seem to be three reasons why reduction of principal was not widely used. First, loan forgiveness would affect lenders' balance sheets. These were already weakened by the financial crisis, and further deterioration would affect their ability to carry out new lending—which governments wanted to encourage. Second, there was an issue of fairness. It could well be regarded as unfair that households that managed to maintain a good payment record, perhaps by making significant financial sacrifices, should continue to make full mortgage payments while those who fell into financial difficulties were 'rewarded' by having their debt reduced. Third, both debt-reduction and payment-reduction policies involve moral hazard: there would be a strong

incentive for debtors to understate their income or wealth to try to fulfill the conditions for such programmes.

The limited evidence available as of early 2010 suggested that the programmes had not worked as well or as quickly as expected. In the USA, the \$75bn Home Affordable Modification Program (HAMP) started in February 2009 with the goal of facilitating three to four million permanent modifications of mortgage loan contracts by 2012. Homeowners had to demonstrate over a three-month trial period that they could keep up repayments on the modified loan before the changes were made permanent. As of end-January 2010 there were about 1 million 'trial' modifications, but only 116,000 permanent ones (US Treasury Department, 2010). Income-verification procedures were simplified, as the paperwork originally required was viewed as too onerous.

In England, the Mortgage Rescue Scheme started in January 2009 with a budget of £285 million; it was based on a Scottish scheme in existence since 2003 (Bramley et al, 2009). Its goal was to help 6000 households remain in their homes, which would be purchased (in whole or in part) by housing associations. As of December 2009, more than 15,000 borrowers had approached local authorities for assistance but only about a quarter could proceed, as eligibility was limited to households that included someone in 'priority need'—essentially small children or elderly or disabled people. Childless adults were not eligible. Only 182 households had accepted an offer under the scheme, while 1294 applications were being processed.

The relatively low levels of take-up reflected several factors: a failure to communicate with all eligible households, a complex application process, tight eligibility requirements and the fact that many lenders were exercising forbearance. In general, however, mortgage payments had declined because interest rates were lower, meaning demand for these programmes was less than their designers might have anticipated. But interest rates will rise, and so will the burden exerted by mortgage payments on household finances.

In the period since the data for this paper were collected, regulators have made clear that they intend in future to supervise mortgage markets much more stringently and pro-actively than they did before the crisis. While they acknowledge that mortgage providers have become dramatically more conservative in their lending since 2007, regulators want to ensure that the next period of economic growth does not lead to a repetition of risky lending behaviour. This new approach to regulation takes different forms. In the EU and the USA, the focus is on providing more and better information to consumers and on ensuring that bankers and brokers are not rewarded for selling risky mortgages. The implicit assumption is that consumers are rational and will make correct assessments of risk, given enough information. In July 2010, the European Commission published a working paper on mortgage lending which set out the case for new EU regulations covering information provision and creditworthiness assessment of mortgage borrowers, but it specifically excluded 'the manner in which mortgage products should be designed' (EC 2010 p. 3).

In the UK, however, the current approach is explicitly paternalistic. According to the UK's Financial Services Authority, 'Our policy approach to date has been underpinned by a view that mortgage consumers will act rationally to protect their own interests. We believe that we need to change that approach, recognize the behavioural biases of consumers and be more interventionist to help protect consumers from themselves' (FSA 2009). July 2010 it announced its intention to require lenders to ensure that borrowers who apply for interest-only mortgages, or loans with a term of more than 25 years, could afford to make payments on a 25-year annuity mortgage for the same amount. Lenders may also be required to check that the borrowers have

a realistic method of paying off the principal at the end of the loan's term (FSA 2010). In addition, self-certification mortgages, where the borrower does not produce independent evidence of income, will be banned. According to the FSA's modeling, these changes would lead to a reduction in mortgage lending and a consequent fall in house prices.

## **Conclusions**

The dramatic changes in mortgage markets since 2007 stemmed not just from housing market developments but also from wider financial and economic events. The proliferation of new types of mortgage product was halted, and in some cases reversed, by financial and housing-market shocks. In financial markets such reversals are not unknown. The literature on financial product innovation shows that movement towards greater 'market completeness' is far from constant; change is cyclical and related to economic conditions. 'Surely, innovation ebbs and flows, with some periods exhibiting bursts of activity and others witnessing a slackening or even backlash...There have been numerous periods throughout the past centuries in which innovation flourished, failures took place, and public and regulatory sentiment led to temporary anti-innovation feelings' (Tufano 2003 p 299). Most research into financial product innovation focuses on securities markets, but the developments in mortgage markets through the long housing price upturn, and since its end in 2007, seem on the partial evidence presented here to be consistent with the literature in this regard.

Did the mortgage product innovation of the 1990s/early 2000s (interest-only mortgages, high LTVs, high loan-to-income, flexible features, self-certification) make things worse than they otherwise would have been? Some of the more general criticisms of financial innovation look prescient in light of recent developments in mortgage and housing markets: 'There are arguments that innovation leads to complexity that in turn leads to bad business decisions and social costs. One sustained attack on financial innovation is that specific innovations contribute to high levels of market volatility, and in particular, to outcomes like market crashes' (Tufano, 2003 p. 328). But the evidence assembled in this paper does not permit us to attribute responsibility for the problems in housing and mortgage markets to the product innovations that preceded them. These problems seem to be associated more with how credit worthiness was assessed than with particular products. The very low interest rates prevailing since 2007 have clearly benefitted many existing mortgagors. Moreover, lenders have been more prepared to use forbearance measures because of the extent of the crisis. As a result there were fewer possessions than predicted and some government responses seemed redundant.

In an effort to stem an expected tide of possessions, many governments devised programmes to help borrowers facing payment problems. Most focused on reducing monthly payments through lower interest rates, longer mortgage terms and deferred payments; some allowed borrowers to sell the home to a social or other institutional landlord but continue to live in it. The practical effect of these programmes appears to date to have been limited, partly because demand was lower than expected because of low interest rates and bank forbearance, but also because budgets were small, take-up was limited by tight eligibility requirements (introduced in an effort to address moral hazard concerns), application procedures were cumbersome and there was a lack of public awareness. But interest rates will inevitably rise at some point, and there may be more call on mortgage rescue schemes.

A fundamental question about mortgage markets—and markets in general—is whether the classic economic assumptions of rationality hold. If consumers are capable of making rational assessments of financial risk, then providing them with more information about the terms of their mortgage contract and what might happen under various scenarios will lead them to make to

better decisions. But the recent body of behavioural economics literature suggests that in fact consumers are often not rational. Should regulators therefore intervene to protect them from themselves by limiting or banning very risky products, as the FSA has proposed? By doing so, regulators would force consumers to accept the 'official' assessment of risk, even though this official assessment was not notably accurate in the run-up to the crisis. The FSA also wants to ensure that lenders remain innovative. In the previous market cycle, innovation produced riskier products; the challenge now will be to innovate to reduce risk.

Finally, it is not clear that lenders now have access to enough funds to meet the demand for mortgages. On the one hand, lower interest rates can be expected to increase that demand but on the other, both confidence and consumer and institutional assessment of risk in the current uncertain housing market have clearly reduced the capacity for indebtedness.

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<sup>1</sup> They were:

- Australia: Judy Yates, University of Sydney.
- Finland: Tommi Laanti, Finland's environmental administration
- France: Bernard Vorms, Agence Nationale pour l'Information sur le Logement
- Hungary: Jozsef Hegedus, Metropolitan Research Institute
- Iceland: Magnus Arni Skulasson, Reykjavik Economics
- Ireland: Tom O'Connor, Irish Banking Federation
- Netherlands: Jan Rouwendal, VU University
- New Zealand: Blair Badcock, New Zealand Corporation
- Norway: Rolf Barlindhaug, Norwegian Institute for Urban and Regional Research
- Portugal: Paulo Conceição, University of Porto
- Russia: Andrej Tumanov, Institute for Urban Economics
- Spain: Baralides Alberdi
- Sweden: Peter Englund, Stockholm School of Economics

Information about the UK, USA and Denmark was collected by the authors.

<sup>2</sup> The countries covered in this paper are:

1. Australia	2. Denmark	3. Finland	4. France
5. Hungary	6. Iceland	7. Ireland	8. the Netherlands
9. New Zealand	10. Norway	11. Portugal	12. Russia
13. Spain	14. Sweden	15. UK	16. USA

Several of the data sources used did not contain information about all 16 countries, so many of the tables cover only a subset.

<sup>3</sup> The former UK Prime Minister Gordon Brown wrote on 22 February 2009 that he wanted to 'control' new mortgages for over 100% of the value of the property (Brown 2009).

<sup>4</sup> For comparative European mortgage interest rates, see European Mortgage Federation's *Quarterly Review of European Mortgage Markets*.

<sup>5</sup> Implementation was complicated because many securitisation agreements for mortgages contained clauses that limited the ability to change the mortgage terms. A 2009 Congressional bill to enable courts to change mortgage terms over the objections of debt holders (known as 'cramdown') failed to pass.

<sup>6</sup> This was an option under the USA's Homeowner Stability Initiative but was not employed; under the Home Affordable Modification program, 27.4% of contract modifications included 'principal forbearance' (reduction of principal) (US Treasury 2010).