

**How Housing Killed the Celtic Tiger: Anatomy, Consequences and Lessons of
Ireland's Housing Boom and Bust, 2000-2009**

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Between 1996 and 2006, Ireland's underdeveloped, conservative residential mortgage market was transformed as the number of lenders and mortgage products expanded and the volume of outstanding private mortgage debt has increased fourfold. The expansion in credit drove an unprecedented house price and construction boom, which ended in 2007 in a severe correction. This article outlines the most significant features of the housing boom and explains how it generated and disguised crucial risks in the macro economy, among mortgage finance institutions (MFIs) and in the finances of individual households. This is followed by an outline of the key features of the housing bust which followed the boom and of its implications for the Irish economy, MFIs and households. The conclusions examine the lessons regarding appropriate regulatory and policy responses to a mortgage lending boom which arise from the Irish experience.

Introduction:

During the last decade the Republic of Ireland's underdeveloped, conservative residential mortgage market was radically transformed into a highly developed, flexible sector (Doyle, 1999). It was traditionally characterized by conservative lending criteria, significant government intervention and the dominance of non-profit providers, but since 2000, the numbers of lenders and mortgage products has expanded radically, repayment terms have become more flexible, commercial banks have come to dominate mortgage provision and the volume of outstanding private mortgage debt has increased fourfold (Murphy, 2004; Kelly & Everett, 2004). These developments mirror changes in the mortgage markets of several other European Union member states, particularly the southern countries such as Spain, Greece and

Italy, but they were more extreme in Ireland than the EU norm (European Central Bank, 2009).

The expansion in credit was the key driver of the seemingly perpetual upward trajectory of house prices and new housing output in Ireland from the late 1990s (Kelly, 2009). House prices rose by 292 per cent between 1996 and 2006 and housing output rose by 177 per cent concurrently, which in turn drove rising construction related employment and tax revenues (Permanent TSB/ ESRI various years; Department of the Environment, Heritage and Local Government, various years). Principally for this reason, policy makers failed to make any serious attempts to dampen the housing and mortgage boom, but rather enabled it via 'light touch' regulation of banks and other mortgage finance institutions (MFIs) and *laissez faire* land use planning and actively stoked it via fiscal incentives for new housing development and refurbishment (Norris & Shields, 2007).

However the housing boom drove, but also masked, severe risks at a number of levels in the Irish macro-economy, public finances and banking system and among households. From 2000, the economy became steadily less competitive as wages and other business costs rose, but because employment and public finances were supported by the housing boom it appeared deceptively healthy (O'Leary, 2010). Mortgage indebtedness increased radically, particularly among younger homeowners, but low interest rates kept repayments affordable and ready access to credit enabled further non-mortgage debt accumulation and rising consumption rates (Norris & Winston, 2009). Banks became over exposed to property related lending not only via mortgages but also to the construction industry and grew more reliant on

inter-bank lending to fund these activities, but due to the property boom, their profits remained high (Kearns & Woods, 2006).

Consequently the public finances, banking system and households were over-exposed to external macroeconomic shocks and the post-2008 global economic downturn had a much more severe impact in Ireland than in most other western European countries and inspired a more radical response from the Irish government than elsewhere. House prices fell by 31.2 per cent between 2006 and 2009 and housing output contracted by 65.2 per cent concurrently (Permanent TSB/ ESRI, various years; Department of the Environment, Heritage & Local Government, various years). The latter development in particular had a very negative impact on unemployment (which rose from 4.4 to 12.0 per cent between 2006 and 2009) and on economic growth (GNP declined by 15.2 per cent in 2009 – the largest contraction in any developed economy since the Great Depression). The exchequer balance, which had been positive for most of the 1997-2007 period, fell sharply to -18.8 per cent in 2009, mainly as a result of the decline in housing related taxes (Central Statistics Office, various years). The volume of mortgage lending also contracted radically since 2008, while arrears on existing mortgages expanded. By late 2008 the Irish banks were unable to raise finance on wholesale money markets and, in response, the Irish government guaranteed both all bank deposits and existing senior debt, nationalized or part nationalized all but one of the major Irish headquartered banks and building societies during the following year and established a National Asset Management Agency (NAMA) to take their large property development loans into state ownership (Kelly, 2009). These measures not only failed to re-establish the creditworthiness of the banking system they made the

Irish State responsible for all of the liabilities of her banks. The costs of the bank bail-out coupled with the increasingly negative exchequer balance undermined Ireland's sovereign creditworthiness and a swingeing programme of fiscal austerity proved inadequate to counter this. Thus, in November 2010 an emergency loan was negotiated with the International Monetary Fund (IMF) and the EU to finance both Ireland's public spending and the recapitalization of her banks.

This article sets out the background to this mortgage boom and bust, in terms of the historic trends in mortgage lending, housing policy and tenure patterns in Ireland. It then outlines the most significant features of the housing boom and explains how it generated and disguised crucial risks in the macro economy, among mortgage finance institutions and in the finances of individual households. This is followed by an outline of the key features of the housing bust which followed the boom and of its implications for the Irish economy, MFIs and households. The conclusions examine the lessons regarding appropriate regulatory and policy responses to a mortgage lending boom which arise from the Irish experience.

Background

Compared to many other western European countries the Republic of Ireland is distinguished by historically high rates of home ownership. In 1971, 61 per cent of Irish households were home owners compared to 50 and 35 per cent of their counterparts in Britain and Sweden respectively (Kemeny, 1981). By 1991, 80.2 per cent of households in Ireland were owner occupiers (Norris & Winston, 2004).

In addition to a strong cultural commitment to home ownership, for most of the 20th Century this tenure model was underpinned by extensive government support for home buying, compared to other tenures and a mortgage lending regime dominated by a small number of public and non-profit sector providers, strictly regulated and characterized by conservative lending practices (Murphy, 2004). Until the 1980s lending to lower income home buyers was dominated by the local government sector, (which provided 30 per cent of mortgages by value in the 1970s), while lending to middle to higher income households was dominated by non-profit, state subsidized, building societies (which provided 65 per cent of mortgage loans by value during the 1970s) (Fahey, *et al*, 2004; Murphy, 1994). Maximum local government mortgages were strictly constrained by government order at around three times borrowers' incomes and significantly below average contemporaneous house prices (Baker & O'Brien, 1979). Baker & O'Brien (1979: 41) report that in the 1970s it was 'generally... impossible to get a loan greater than two-and-a-half times income' from the building societies. In the context of these conservative lending criteria and also low real interest rates for several decades (due to high inflation) the rate of mortgage holding was low - only one third of homeowners had mortgages in the 1970s (Fahey, *et al*, 2004; Kelly & Everett, 2004). Direct government support for home ownership, including grants, tax deductibility of mortgage interest and subsidized sales of social housing to tenants and indirect support in the form of lack of property or capital gains taxes on principal private residences, also reduced the need to borrow (O'Connell, 2005). These supports appear particularly generous in view of the poor performance of the Irish economy, which stagnated or declined for much of the 20th Century (Kennedy, *et al*, 1988).

An acute fiscal crisis in the early 1980s, generated by a particularly serious and prolonged economic downturn, led to the abolition or scaling back of most of the universalist, direct public supports for home ownership and their replacement with less expensive, programmes targeting low income home buyers. At the same time the associated public debt crisis forced local government to radically scale back their involvement in mortgage lending and since then this sector has provided less than two per cent of mortgage loans by value (Norris & Winston, 2004).

In order to enable it fill this breach and encourage competition, the commercial mortgage sector was deregulated as part of a wider process of financial liberalization (including: abolition of quantitative restrictions on credit growth; lowering of banks' reserve requirement ratios; dismantling of capital controls and the removal of all restrictions on interest rates) which mirrored, but lagged developments in other English speaking countries (Kelly & Everett, 2004). The Building Societies Act (1989) allowed these agencies to operate in the wholesale money market, gave them freedom to develop a wider range of property and financial services and provided for their conversion to public limited status (Murphy, 1994). During the 1990s three building societies became PLCs and only two remain mutualised currently.

Commercial banks commenced mortgage lending in the mid-1970s, but only became involved on a significant scale in the mid-1980s following the withdrawal of fiscal subsidies for building societies and the decline of the banks' traditional areas of investment. Between 1985 and 1987 banks' percentage of the mortgage market grew from 8.3 to 36.9 per cent, which according to Murphy (1994) radically increased

competition in the sector but failed to promote the liberalisation of lending criteria. A minimum deposit of 10 per cent and evidence of a strong savings record remained the norm in the sector.

The Housing Boom

Macro Economy

From the mid 1990s, Ireland's economic fortunes changed radically following the arrival of the 'celtic tiger' economic boom (Honohan & Walsh, 2002). GDP per capita increased from 14.8 per cent below the EU15 average in 1995, to 48 per cent above in 2006 and concurrently the unemployment rate fell from 10 per cent above the EU15 average to 45 per cent below (Eurostat, various years) (see Table 1). This economic transformation had significant social implications. For instance, between 1996 and 2006 the Irish population rose by 17 per cent and the number of households expanded by 14 per cent (Central Statistics Office, 2007).

The drivers of the celtic tiger boom have inspired lively debate but little consensus. The contributory factors which have been identified include: the devaluation of the Irish currency in 1992; Ireland's comparatively young population structure and high proportion of university graduates; low labour costs and low taxes on corporate profits; the stimulus effects of EU Structural Fund expenditure in the early 1990s and the corporatist Irish wage bargaining and public policy making system (commonly known as social partnership) under the auspices of which employers, trade unions

Table 1 Key Features and Implications of the Irish Housing Market Boom and Bust, 1996-2010

	1996	1998	2000	2002	2004	2006	2008	2010
Housing Market								
Mean national house prices (€)	79,265	121,523	173,857	205,863	254,261	310,831	263,886	198,689 ¹
Housing output (N)	33,725	42,349	49,812	57,695	76,954	93,419	51,724	11,277 ²
Macro Economy								
GNP(€m)	51,906	68,531	89,530	106,768	126,465	154,078	154,672	125,728
Of which is gross value added from construction (€m)	2,875	4,270	7,008	8,966	11,813	15,924	12,297	Nav
Employment (N)	1,328,500	1,505,500	1,684,100	1,768,500	1,852,200	2,034,900	2,112,800	Nav
Of which is in construction (N)	Nav	126,100	166,200	182,200	206,000	241,400	241,400	Nav
Mean annual industrial earnings (€)	18,726	20,153	22,683	26,079	29,160	31,263	33,736	Nav
Mean annual construction earnings (€)	19,729	23,054	28,066	33,523	36,601	39,884	42,718	Nav
Total tax revenue (€m)	18,187	23,381	30,947	34,346	41,805	53,787	50,251	Nav
Of which is from residential property related taxes (%) ⁴	Nav	Nav	Nav	8.0	10.9	15.1	10.7	Nav
Of which is from income taxes (%)	35.0	29.8	28.2	27.5	27.3	24.9	27.7	Nav
Mortgage Finance Institutions								
Mortgage credit outstanding (€m)	Nav	Nav	29,474	43,416	73,120	110,602	114,290	108,282 ³
Mortgage debt to GDP ratio (%)	Nav	Nav	31.1	36.3	55.2	70.1	80.0	Nav
New mortgages (N)	56,000	61,400	74,300	79,300	98,700	111,300	53,600	Nav
Mortgage debt per capita (€)	3,830	5,650	8,620	12,110	19,120	29,290	33,750	Nav
Interest rates on new Mortgages	7.10	6.00	6.17	4.69	3.47	4.57	5.33	Nav
% of MFI's funding generated from:								
Private sector deposits	Nav	Nav	50.2	48.8	38.7	32.1	26.0	Nav
Inter-bank lending and debt securities	Nav	Nav	30.2	32.5	46.0	53.5	56.6	Nav
Real estate related lending as a % of total	Nav	Nav	37.4	43.3	54.4	72.0	58.0	Nav
Households								
% of average income required to service a mortgage on an average priced dwelling ⁵	23	35	36	34	25	31	29	Nav
% of outstanding mortgages which are:								
Fixed rate	Nav	Nav	31.1	23.7	17.2	18.3	20.0	Nav
For principal private residences	Nav	Nav	Nav	Nav	80.0	73.7	71.9	72.8 ⁶
For buy-to-let dwellings	Nav	Nav	Nav	Nav	18.8	25.1	26.9	26.1 ⁶
For holiday/second homes	Nav	Nav	Nav	Nav	1.1	1.2	1.2	1.1 ⁶
% of new mortgages which are:								
>€250,000	Nav	Nav	2.3	5.9	18.0	37.0	41.0	Nav
100% loans	Nav	Nav	Nav	Nav	4.0	14.0	12.0	Nav
>30 year term	Nav	Nav	Nav	Nav	10.0	31.0	39.0	Nav
Interest only	Nav	Nav	2.4	2.7	5.7	12.6	Nav	Nav

Note: all monetary data are at current prices. Nav means not available. ¹: refers to Q3. ²: estimate based on Q1 data. ³: includes first 11 months only. ⁴: calculated using Addison-Smyth & McQuinn's (2009) estimates. ⁵: Data refer to two earner, married households, whose income = average industrial wage + average non-industrial wage. Mortgage payments are on a 20 year mortgage for 90 per cent of the average new house price for that year, repaid at average mortgage rates for that year. ⁶: includes the first 6 months only.

Source: Central Bank (Various Years), Central Statistics Office (various years); Department of the Environment, Heritage and Local Government (various years), Permanent TSB/ ESRI (Various Years).

and government agreed to pay restraint in return for income tax decreases during the 1980s and 1990s (see: Barry (ed) 1999). Depending on the emphasis given to these various factors, the celtic tiger has been interpreted as a delayed convergence with the western European norm and thus as a permanent adjustment (eg. by Honohan & Walsh, 2002) or as a (by implication unsustainable) regional boom (Barry, 2002).

The demand created by the celtic tiger era economic, employment and income growth began to feed into house prices from the mid-1990s (see Table 1). House price inflation jumped from 8 per cent per annum between 1990 and 1993 to 22 per cent per annum between 1996 and 2002, and continued to rise albeit at a lower rate (12.7 per cent per annum) until 2006. The supply response was initially slow – housing output grew from 33,725 new dwellings in 1996 to 49,812 dwellings in 2000, but from the latter year output expanded radically to a high of 93,419 dwellings in 2006 (see Table 1). To place these output rates in context, in 2006 the UK built just over twice the number of dwellings Ireland did (209,000 units) for a population 15 times greater than that of Ireland (60 million, compared to 4 million) (European Mortgage Federation, various years).

The radical increase in house building did moderate house price inflation but not to the extent predicted in market analyses commissioned by the housing ministry (Bacon & Associates, 1998, 1999, 2000). In addition to the expansion in mortgage credit, discussed below, this is because a significant proportion of new dwellings were left vacant (vacancy rates increased by a third between 1996 and 2006) and

were located outside the key economic growth centres (Fitz Gerald, 2005; Norris & Shiels, 2007).

More significantly, the building boom created a number of serious significant macro-economic distortions. First, construction came to account for an increasingly large proportion of national wealth. It accounted for 5.5 per cent of GNP in 1996, but this rose to 10.3 per cent by 2006 (see Table 1). The bulk of construction investment (62.6 per cent between 2002 and 2006) was on residential building (Central Statistics Office, 2008). Second, growing construction activity led to over reliance on construction employment. Construction accounted for 8.4 per cent of total employment in 1998 and 12.4 per cent in 2006 (see Table 1) and is estimated to have indirectly generated a further 3 per cent of total employment in the former year and 5 per cent in the latter (DKM Economic Consultants, various years). In contrast 8 per cent of the EU15 working age population worked in construction in 2006 (Eurostat, various years). Kelly (2009: 13) also argues that due to the rising labour demand generated by the Irish construction boom and rising housing costs due to house price inflation 'wage rates across the economy were driven up out of proportion to productivity growth, leading to a fall in international competitiveness'. This trend is supported by the data presented in Table 1 which reveals that average construction earnings growth outpaced industrial earnings inflation between 1998 and 2002, but wage inflation in these two sectors converged at around 4.4 per cent per annum between 2003 and 2006. The other key macro-economic distortion associated with the housing boom relates to the public finances. Receipts from residential property-market related taxes (i.e.: stamp duties on house purchases, consumption tax (Value Added Tax) on new houses, Capital Gains Tax on the profits

on house sales and property taxes) rose from €2.75 billion in 2002, to a peak of €8.1 billion in 2006 (Addison-Smyth & McQuinn, 2009). During this period this windfall revenue facilitated a marked increase in public spending and also cuts in income taxes, which in turn further increased reliance on construction related taxes. As Table 1 demonstrates, residential property related taxes accounted for 8.0 per cent of total tax revenue in 2002 but this grew to 15.1 per cent by 2006, while income taxes fell from 27.5 to 24.9 per cent of tax revenue concurrently.

Mortgage Finance Institutions

Between 2000 and 2007 mortgage credit outstanding in Ireland rose by over 300 per cent and from 31.1 to 75.3 per cent of GDP (see Table 1). Although mortgage lending and private sector credit more broadly increased across the European Union and most developed countries concurrently, this trend was especially pronounced in Ireland (Doyle, 2009). Between 2000 and 2007 outstanding mortgage credit in Ireland expanded by four times the rate of growth in the 27 current EU members (80.3 per cent). Consequently, in the latter year, the Irish mortgage debt to GDP ratio was over one third higher than the EU27 average of 50.2 per cent (see Table 1) (European Mortgage Federation, various years).

Table 1 reveals that this dramatic growth in mortgage lending was concentrated in the 2002 to 2005 period, when mortgage credit outstanding rose by 117 per cent, and that this development was driven both by a rise in the number of mortgages granted and in the size of loans. The number of mortgages granted per annum rose

from 57,300 in 2000 to a peak of 111,300 in 2006. However, residential mortgage debt per capita rose even faster concurrently - from €8,620 to €29,290.

The decline in mortgage interest rates was key to enabling this radical growth in mortgage lending because it reduced average mortgage servicing costs from 36 per cent to 31 per cent of income between 2000 and 2006, despite marked concurrent house price growth (see Table 1). The mortgage interest rate reduction was significant in nominal terms, but its impact was further magnified by particularly low real interest rates (which averaged -0.9 per cent between 1999 and 2004) and an historic context of high and also volatile interest rates (Honohan & Leddin, 2006).

In common with several other peripheral EU members such as Greece, Italy, Spain and Portugal, this decline in nominal interest rates is related to Ireland's entry to European Monetary Union in 1999, and the resultant transfer of interest rate setting powers from the Irish Central Bank to the European Central Bank (ECB) (European Central Bank, 2009). However unusually intense competition in the Irish mortgage market, particularly after 2003, also played a key role in diving down interest rates and in liberalising lending standards which also contributed to growth in the number and the size of mortgages (European Central Bank, 2009).

Between 2000 and 2010 the number of major MFIs operating in the Irish market (i.e. registered with the Irish Central Bank) increased from 12 to 17 (Central Bank, various years). The development was driven by the entry of some Irish banks into the mortgage market for the first time, the establishment of specialist mortgage lending subsidiaries by existing Irish mortgage lenders and the entry of number of

foreign lenders into the Irish market (such as Bank of Scotland and Danske Bank A/S) which established Irish subsidiaries for this purpose in 2004 and 2008 respectively. In 2007 these foreign lenders accounted for approximately 30 per cent of mortgage loans advanced in Ireland (European Central Bank, 2009). This level of market penetration by foreign MFIs unusual in Europe - traditionally these institutions have been reluctant to lend 'across borders' (Stephens, 2003). In the Irish case, their penetration may reflect the strong similarities between the Irish and British legal systems and also the lack of competition in the Irish mortgage market prior to 2000 and therefore its potential for growth (European Central Bank, 2009).

Although mortgage lending had already grown significantly in Ireland prior to this expansion in the number of lenders, the increased competition reinforced this trend, by driving financial product innovation and an associated decline in lending standards. For instance, the number of interest-only mortgage products on the market increased radically from 2004, 100 per cent mortgages first became available at this time, as did mortgage equity withdrawal products (Hogan & O'Sullivan, 2007; Doyle, 2009). Thus unlike in the United States the Irish housing boom was associated with a decline in lending standards among mainstream lenders rather than with the growth of a specialist sub-prime sector. Although four sub-prime lenders entered the Irish market between 2004 and 2007, they accounted for only 0.5 per cent of mortgage lending by value in the latter year (Coates, 2008).

In addition, increased competition drove down interest rates by forcing Irish MFIs to reduce their margins on mortgages significantly (McElligott, 2007). An initial round of cuts in these margins was sparked by the entry of Bank of Scotland, which charged

significantly lower margins than Irish MFIs at this time. These low margins were copper fastened by the arrival of tracker mortgages, which are generally fixed at a very low margin above ECB refinancing rates and currently account for approximately 60 per cent of outstanding variable rate mortgages in Ireland (Doyle, 2009).

Concurrently the sources employed by MFIs to fund mortgage lending changed, which reinforced the institutional risks associated with the decline in lending standards and profit margins. Traditionally, retail deposits by households and private institutions were the principal funding source for Irish mortgage lenders – they accounted for 50.2 per cent of funding in 2000 (see Table 1). Although total retail deposits in Irish MFIs grew by 76.2 per cent between 2003 and 2007, lending expanded faster, resulting in a funding gap which was filled by borrowing from the wholesale money markets mainly via interbank lending but also from debt securities. Reliance on these two funding sources grew from 30.2 per cent in 2000 to 53.7 per cent in 2006 (see Table 1). The growth in use of these sources was greatly facilitated by Eurozone membership which eliminated the exchange rate risk previously associated with sourcing funding inter-bank markets and by extension the need to cost this risk into the interest rates charged to customers (Conefrey & Fitz Gerald, 2010). A similar funding gap emerged in all Eurozone countries (with the exception of Germany) during this period, but this gap was largest in countries such as Spain, Ireland, the Netherlands and Portugal which experienced the greatest concurrent expansion in mortgage lending (European Central Bank, 2009).

Table 1 demonstrates that the structural risks associated with the funding sources of the Irish banks and other MFIs, were further reinforced by their over-exposure to the real estate sector of the economy, including not only mortgage lending, but also loans for property development and real estate acquisition. In 2000 real estate related lending made up 37.4 per cent of the total lending of Irish MFIs but this increased steadily as the decade progressed to a high of 72 per cent of total lending in 2006. An Irish Central Bank financial stability report published in this year raised concerns about that the 'Share of the banking sector's loan book in property related lending continues to grow and is high by historic standards' (Kearns & Woods, 2006: 133). The fact that in five of the thirteen credit institutions surveyed over 80 per cent of the loan book related to real estate in 2005 was singled out as of particular concern.

Households

Table 1 reveals that the combination of rising house prices between 1996 and 2006, coupled with falling interest rates for most of the second half of that period had a number of significant implications for households' access to mortgages and borrowing decisions.

Despite the increase in affordability associated with interest rate reductions from 2000, the marked rise in the house price to average industrial earnings ratio (from 6.0 to 9.9 between 1998 and 2006) led to a decline in lending to home owners. Home owners held 80.0 per cent of outstanding mortgages in 2004 but only 73.3 per

cent in 2006. As a result, between 2002 and 2006 owner occupation declined (from 79.7 to 77.2 per cent of households) for the first time in the history of the Irish State, (Central Statistics Office, various years). The growth in new mortgages granted during the mid 2000s is the result of a marked rise in lending to buy-to-let landlords. The proportion of outstanding mortgages held by this sector rose by 6.3 per cent between 2004 and 2006.

These data also confirm that the increase in the number of mortgages drawn down post 2000 was accompanied by an increase in their size. Loans of over €250,000 increased from 2.3 per cent of new mortgages in 2000, to 41 per cent in 2006. One hundred per cent mortgages first became available around 2004 and between then and 2008 rose from 4 to 12 per cent of new mortgages granted. Furthermore, mortgages with terms of 30 years plus increased from 10 to 39 per cent of mortgages drawn-down during this period (Department of the Environment, Heritage & Local Government, various years; Doyle 2009). The proportion of interest only mortgages also increased significantly between 2003 and 2007, and according to Duffy (2009) most of these were taken up by buy-to-let investors.

Detailed analysis of the data presented in Table 1 indicates that very large mortgages are overwhelmingly concentrated among recent first-time buyer households based in Dublin. In 2006 74 per cent of this group drew down mortgages of over €250,000, compared to 38 per cent of first time buyers in the country as a whole and in the same year 64 per cent of repeat home buyers and property investors in Dublin also borrowed on this scale. Also in 2006, 32 per cent of first time buyers in Dublin took on 100 per cent mortgages, compared to 35 per cent

of first time buyers in the country at large and just 5 per cent of repeat buyers/ investors in Dublin. In the same year, 70 per cent of the mortgages drawn down by first time buyers in Dublin had terms of over 30 years, compared to 20 per cent of loans granted to repeat buyers/ investors in this city and 61 per cent of those granted to first time buyers in the country as a whole (Department of the Environment, Heritage & Local Government, various years).

Table 1 also highlights a marked decline in the popularity of fixed rate mortgages post 2000. This situation, which contrasts with the norm in several EU15 countries (Belgium France, Germany and the Netherlands) and also in the United States, reflects the declining take up of fixed mortgages as the decade progressed (due to their higher interest rate compared to variable rate and particularly tracker mortgages) and the unusually short fixation period generally available to Irish mortgage holders, (generally two or three years), which means fixed rate loans revert to the variable rate quickly (European Central Bank, 2009; Doyle, 2009; O'Donnell & Keeney, 2009). The international research evidence indicates that the high prevalence of variable rate mortgages and of large borrowings greatly increases the risks to borrowers associated with interest rate fluctuations (eg. Borio, 1995).

The Housing Bust

Macro Economy

Ireland's house price boom started to falter in early 2007 and the most robust house price data available, presented in Table 1, indicates that prices nationally fell by 31.3

per cent between this year and Q3 2010. However, most commentators agree that these data underestimate the true extent of price decline which is closer to 45-50 per cent (see: Duffy, 2009). In addition, new house building declined by 65.2 per cent and GVA from construction declined by 51.6 per cent between 2007 and 2009.

The economic collapse slightly lagged the housing market crash. GNP grew by 5.7 per cent in 2007, but it declined by 5.0 per cent in 2008 and by 15.2 per cent in 2009 (see Table 1). Employment fell by 8.3 per cent between 2007 and 2009 and the exchequer balance, fell sharply to -8.2% per cent of GNP in 2008 and to -18.8 per cent in 2009 (see Table 1) (Central Statistics Office, various years).

The housing market bust made a central contribution to the economic and fiscal bust and, of course, the latter subsequently helped to reinforce the former. The data presented in Table 1 illustrates the direct relationship between the two busts. It reveals that the decline in GVA from construction accounted for 27.3 per cent of the decline in GNP between 2007 and 2009, falling construction employment accounted for 65.3 per cent of the decline in employment concurrently. Falling revenue from residential property market related taxes accounted for 35.2 per cent of the contraction in total tax revenue between 2007 and 2008. However the indirect macro-economic effects of the construction bust were also significant. DKM Economic Consultants' (various years) estimates of spin-off jobs from construction indicate that the housing bust is indirectly responsible for a further 26.1 per cent of the reduction in employment between 2007 and 2009. The radical contraction in construction related employment also made a key contribution to the 26.9 per cent fall in income tax revenue between 2007 and 2009.

The Irish government was one of the first in the EU to initiate an austerity programme in response to the fiscal crisis. Two emergency budgets in 2008 introduced income tax increases and public spending cuts, which were reinforced by similar measures in 2009 and as a result, total government expenditure contracted by 9.0 per cent between 2009 and 2010 (Central Statistics Office, various years). Unsurprisingly, these measures reinforced the radical drop in GNP and consumer demand caused by the economic crisis, but they proved insufficient to arrest the stratospheric growth in Ireland's government debt due to the fiscal crisis and the government recapitalization of the banking sector, described below. Ireland's general government debt grew from 24.8 to 65.6 per cent of GDP between 2009 and 2009 and by late 2010 interest rates on Irish government bonds rose to a level which forced the Irish government to apply for emergency loan from the EU and IMF. A bailout package of €85 billion has been negotiated, including a €17.5 billion contribution from the Irish State's own sovereign wealth fund. 58.8 per cent of this package will finance public spending and its availability is dependent on the implementation of a four year programme of further tax increases and public spending cuts (Government of Ireland, 2010).

Mortgage Finance Institutions

As the Irish housing market began to decline from 2007, the projected loan losses of Irish MFI's also grew and their capital was eroded as provisions exceeded operating incomes and all except one reported large operating losses in 2008/09. Thus, as concerns about their over-exposure to property loans increased, they experienced a flight of customer deposits and following the international credit crunch which

emerged after the collapse of Leman Brothers in 2008, Irish MFI's experienced significant difficulty in accessing the wholesale money markets (International Monetary Fund, 2010).

In response, the Irish government introduced a series of radical measures to stabilise the banking sector. These commenced in September 2008, when it guaranteed the full value of all deposits, covered bonds and senior debt and some categories of subordinated debt in all Irish-headquartered MFIs and their subsidiaries. Ireland was the first EU member to introduce a guarantee of this type and its duration and scope were subsequently extended on a number of occasions (Department of Finance, 2008). In December 2008, the government commenced a recapitalization programme for all except one of the six Irish-headquartered MFIs which was implemented via the purchase of shares (National Treasury Management Agency, 2008). This was expanded incrementally over the following year with the result that two MFIs were fully nationalized and the State took on substantial shareholdings in three others (National Asset Management Agency, 2009). Also in 2009 the government established the National Treasury Management Agency – a 'bad bank' tasked with acquiring most of the property-development related loan books (including all loans of €5m+, which collectively total €81 billion) of the five banks and building societies which required recapitalization (Daly, 2010). These were acquired at a discount (calculated on the current market value of the underlying loans) and in return the MFIs were issued with government bonds which could be used as security to enable them borrow from the ECB and the wholesale money markets. However, despite these and several other support measures Irish MFIs continued to be effectively locked out of wholesale money markets in 2009.

The failure to resolve the banking crisis, coupled with the high exchequer costs of the recapitalization programme and the interlinking of sovereign and banking sector creditworthiness by the bank guarantee played a key role in undermining Ireland's sovereign creditworthiness. The Irish Government's letter of request for emergency IMF/EU loan explained 'At the root of the problem is the domestic banking system... The fragility of... [which] is undermining Ireland's hard won economic credibility and adding a severe burden to acute public finance challenges' (Government of Ireland, 2010: 1). 41.2 per cent of the bailout fund has been earmarked for banking sector recapitalization.

The banking crisis also contributed to a dramatic fall in mortgage lending which further reinforced deflationary trends in the housing market. Table 1 demonstrates that the number of new mortgages granted fell from 111,300 in 2006 to 53,600 in 2008 and real-estate related lending fell from 72.0 to 58.0 per cent of total lending concurrently. This development was driven by the withdrawal of one of the nationalized MFIs (Anglo Irish Bank) and a number of foreign headquartered MFIs from the Irish mortgage market. In addition, both the number of mortgages granted and the number of mortgage products offered by the remaining MFIs declined significantly. Doyle (2009: 81, 88) reports:

By April 2009 the tracker mortgage had effectively disappeared for new borrowers... In addition banks have introduced more fixed rate products and reduced the number of variable rate products.... LTV ratios have been reduced, while interest-only... mortgage products have effectively been withdrawn.

Notably, in a reversal of trends during the first half of the decade, since 2007 Irish MFIs have begun to increase the interest rates charged on existing and new variable rate mortgages in an effort to improve their margins and rebuild their balance sheets.

It is this development, rather than an increase in ECB base rate, which drove the increase in average interest rates on new mortgages between 2006 and 2008 (see Table 1).

Households

Rapidly rising unemployment coupled with falling incomes among those in work due to tax increases and in many cases cuts in pay and/or working hours, coupled with interest rate increases have effected a marked rise in mortgage arrears. 3.3 per cent of mortgages were in arrears of over ninety days in September 2009, this increased to 4.1 per cent in March 2010 and to 5.1 per cent in September 2010 (Central Bank, 2010).

Falling house prices have also had a very severe impact on household wealth – the vast majority of which is made up of housing equity. Using the house price data set out in Table 1 Duffy (2009) estimates that 9 per cent of mortgage holders were in negative equity by end-2008. This rose to 18 per cent by the end of 2009 and 30 per cent by end-2010. This analysis indicates that levels of negative equity in Ireland are similar to those in the US (where 10 per cent of mortgages in single family dwellings were in negative equity at in 2008) and the UK (7 to 11 per cent of owner occupier mortgages in the same year) (Hellebrandt, *et al*, 2009; Ellis, 2008). However, Duffy's (2009) estimates do not include mortgage top ups or interest only mortgages and they are based on conservative estimates of scale of house price decline, which indicates that negative equity is more widespread than he suggests .

Despite the high levels of mortgage arrears and negative equity, rates of repossessions of dwellings by lenders have remained low to date. 110 dwellings were repossessed or voluntarily surrendered by borrowers in Q4 2009 compared to 81 dwellings in Q4 2010 (Central Bank, 2010). This is due principally to government intervention. Take up of mortgage interest supplement – the principal, means tested government support for unemployed home owners - grew from 3,424 households in 2006 to 15,074 in 2009 (Department of Social Protection, various years). Also as part of the banking sector recapitalization programme in 2008, MFIs agreed not to repossess dwellings for twelve months after the first missed mortgage payment. This repossessions moratorium has recently been extended to five years in the case of home owners who can service at least two thirds of their mortgage interest payments (Mortgage Arrears and Personal Debt Expert Group, 2010).

Academics, policy makers and media commentators are currently engaged in a lively debate about the likely scale of future repossessions. Goldman Sachs Global Economics (2010: 5) has estimated that Irish repossession rates would be four times higher in the absence of the moratorium and 'Allowing for further rises in unemployment, and the potential for higher mortgage interest rates, a reasonable (if cautious) cumulative rate of default over a five-year credit cycle might be as high as 3%-4%'. This analysis indicates that Irish default rates will be similar to those seen during the UK housing market bust in the early 1990s. However it is contradicted by Kelly (2009) who argues that the scale of Ireland's housing market crash is similar to that currently underway in the United States, therefore US rates of default (8-9 per cent) are likely in Ireland.

Conclusions

This article has sketched the anatomy of the boom and subsequent bust in mortgage lending in Ireland between 1996 and 2010. The period until 2001 saw significant real gains in national wealth, employment and household disposable incomes but galloping house price inflation due to housing under supply in the face of strong demand side growth. However after 2001 housing output increased radically and came to account for a very large proportion of tax revenue and employment compared to the EU average. Furthermore, because credit continued to expand and new dwellings were left vacant and/or built outside population growth centres, house prices continued to grow and householders took on very large borrowings in order to enter the housing market. Consequently, the Irish government, MFIs and households were over-exposed to the real estate sector and when the international credit crunch commenced in 2008 it had particularly severe repercussions for this country.

The key policy lessons arising from the Irish mortgage boom and bust are threefold.

Firstly they relate to the policy response to the loss of national control over interest rates on accession to the Eurozone. Ireland (and several other Eurozone members with a history of high and volatile interest rates) failed to counter the loss of what was traditionally the central property market stabilization mechanism with alternative interventions (Honohan and Leddin 2006). The Irish government failed to limit credit availability in any serious way, for instance, and notably Ireland lacks the most obvious fiscal instrument for controlling house prices - residential property taxes, which were abolished for the majority of dwellings in 1977 (Conefrey and Fitz Gerald,

2010). Although, in view of the massive one-off adjustment in interest rates and credit availability associated with economic and monetary union and growing domestic demand, it is unlikely that national policy interventions could have entirely eliminated the house price bubble.

Second, they relate to the dangers for good economic governance which are inherent in windfall revenues from a property boom. In the Irish case the short term nature of these revenues was not factored into policy decisions, permanent (or at least difficult to reverse) current expenditure commitments were made on the basis of this revenue and when it dried-up this precipitated a severe fiscal crisis. Furthermore reliance on these windfall revenues encouraged government to introduce pro-cyclical policies such as tax incentives for new housing and commercial property development which were radically expanded in the late 1990s (Goodbody Economic Consultants, 2005). Notably, despite the obvious nature of these dangers (at least in retrospect) the sustainability of tax revenue is not factored into ECB arrangements for the surveillance of Eurozone economies under the Stability and Growth Pact which governs such matters (O'Leary, 2010).

Third they relate to the regulation and governance of the mortgage industry. Ireland's arrangements in this regard were significantly reformed in 2003, when the Central Bank of Ireland was replaced by a new integrated Central Bank and Financial Services Regulatory Authority of Ireland (CBFSRAI). Thus a non-supervising central bank and a new Financial Regulator were combined within a single framework, overseen by one board. In effect, Ireland had adopted a half-way house between the UK model of a non-supervising central bank alongside a

separate unified financial regulator (the Bank of England and the Financial Services Authority) and the US model which retained banking supervision within the ambit of the central bank (the Federal Reserve) (Regling and Watson, 2010). One of the two recent reviews of banking crisis commissioned by the Irish government concluded that this structure was the result of a policy compromise which sought to deliver stronger banking competition and consumer protection but failed to focus sufficiently on macroprudential risk (Regling and Watson, 2010). In tandem with the establishment of the CBFSAI, Ireland, like many other western countries, adopted a 'principles-based' supervisory regime which de-emphasised specific governance rules and emphasized key principles of operation, derived from market risk assessment. However the second government commissioned review of Ireland's banking crisis links regulatory failings not principally to the use of this principles-based approach (although it is criticized) but rather to the manner of its implementation. Thus Honohan (2010: 8) concludes:

The style of supervision adopted did not generate the most relevant or useful information to anything near the extent required. By relying excessively on a regulatory philosophy emphasising process over outcomes, supervisory practice focused on verifying governance and risk management models rather than attempting an independent assessment of risk, whether on a line-by-line or whole-of-institution basis. This approach involved a degree of complacency about the likely performance of well-governed banks that proved unwarranted. It was not just a question of emphasising principles over rules, it was the degree of trust that well-governed banks could be relied upon to remain safe and sound.

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How Housing Killed the Celtic Tiger: Anatomy, Consequences and Lessons of Ireland's Housing Boom and Bust, 2000-2009
Michelle Norris School of Applied Social Science University College Dublin, Belfield, Dublin 4, Ireland: T: +35317168203 E: michelle.norris@ucd.ie Dermot Coates Farrell, Grant Sparks Economic Consultants Molyneux House, Bride Street, Dublin 8, Ireland T: +3531656 4137 E: dermot.coates@gmail.com. 1. How Housing Killed the Celtic Tiger: Anatomy and Consequences of Ireland's Housing Boom and Bust, 2000-2010. Between 1996 and 2006, Ireland's underdeveloped, conservative residential Policy Lessons from Ireland's Latest Depression Karl Whelan, University College Dublin WP09/14 October 2009. Ucd school of economics university college dublin. Belfield dublin 4. Abstract In this paper, I provide a selective review of Ireland's economic performance of the last 20 years, from the early days of the Celtic Tiger, through to the housing boom and the recent slump, and then attempt to draw a few lessons from the period. 2000-2001 when the government had introduced various measures to cool the housing market, after the rst Bacon report: Economic models showed the market to be substantially over-valued at the start of this period, with most of this over-valuation being worked off by a period of at prices. Norris, M and Coates D (2014) 'How housing killed the Celtic tiger: anatomy and consequences of Ireland's housing boom and bust'. Journal of Housing and the Built Environment , 29 (2): 299-315 View Full Document. TERM Fall '15. PROFESSOR MicheleNorris. TAGS 1920, 1924, 1918, 1912, 1926, House Price Developments. Share this link with a friend: Copied!