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## Highlights in this issue:

- House prices have overshot their fundamental values
- Property taxation system adds to and is exposed to volatility in house prices
- Correction in the housing market has an adverse impact on growth and public finances

## Ireland's housing market: bubble trouble

By Jānis Malzubris\*

### Summary

*Between 1992 and 2006, new house prices rose by a cumulative 300% in real terms and 340% in nominal terms. At the same time, the stock of housing grew by 150%. Much of the increase in real house prices may be explained by particularly strong housing demand fuelled by a relatively young and growing population, rapid growth in real disposable income, low (and at times negative) real interest rates, favourable tax treatment of residential property and house purchase for investment purposes. Estimates of the degree of overvaluation of real new house prices around the peak in 2006 vary between 20% and 40%. Real house prices have already fallen by 18% since 2006. Given the weight of the residential construction sector in output (10%) and employment (13%), the correction in this sector is acting as a drag on overall economic growth as well as on public finances, at a time when the external sector is being hit by deteriorating competitiveness and a slowdown in two major trading partners (US and UK). It remains to be seen whether past structural reforms can help bring about a rapid return to the medium term growth or whether the recovery will be more drawn out, similar to the experience of many industrialised countries that have undergone housing market busts in the past 30 years.*

### The housing market cycle

After recording an average annual GDP growth rate of 6.5% between 1991 and 2007, Ireland's pace of growth is now decelerating rapidly. This country focus reviews developments in Ireland's housing market and considers its role in the country's economic fortunes. Following the predominantly export-led growth of the first half of the 1990s, which allowed Ireland's income per capita to reach the euro area average by 1998, domestic demand took over as the main driver of the strong growth rates in the current decade. In particular, economic momentum was increasingly sustained by a buoyant construction sector. This sector represented 10% of GDP in 2006 compared to just 5% a decade earlier, while its share in total employment almost doubled between 1993 and 2007 (to 13.3%). The increase in the residential component, which was boosted by rapidly rising property prices, accounted for over 80% of the total growth in the value of construction investment between 2000 and 2005 and new residential housing added an annual average of 1.1 pp to overall growth in this period. The Irish housing boom has been particularly dynamic: house price inflation – both real and nominal – was the highest among OECD countries between the mid-1990s and 2006, with the United Kingdom and Spain in second and third places, respectively (Rae and van den Noord, 2006).

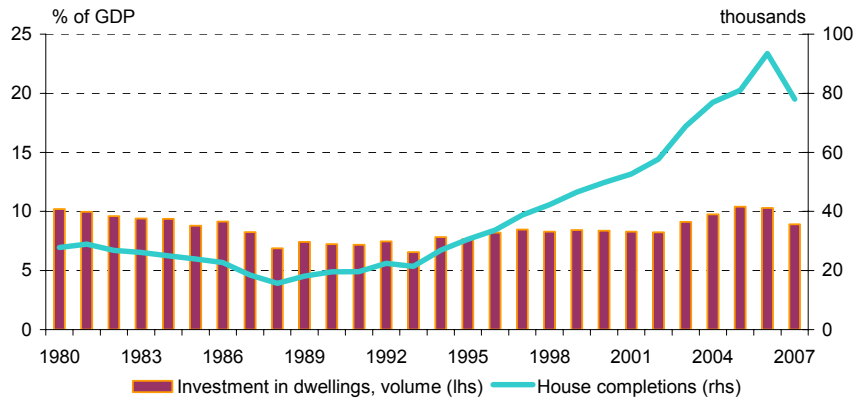
*The housing boom helped to sustain growth momentum early in this decade...*

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...but it is having adverse consequences in the downturn

Housing market indicators suggest that the turnaround in the housing market cycle began in 2006. Investment in dwellings as a share of GDP peaked at 10.4% in 2005 (rising from a low of 6.6% in 1993), while the growth contribution of the sector shrank to 0.4 pp and moved into negative territory in 2007. House prices began to fall in March 2007 and have been declining in year-on-year terms since July 2007. In the first quarter of the current year, the housing sector contraction inflicted a drag of -4 pp on growth leading to an implied annual GDP growth rate of -1.5% per year. The most recent data for July 2008 show house prices falling by 9.4% in nominal terms and 13% in real terms over July 2007.

**Chart 1: Residential property investment and house completions**

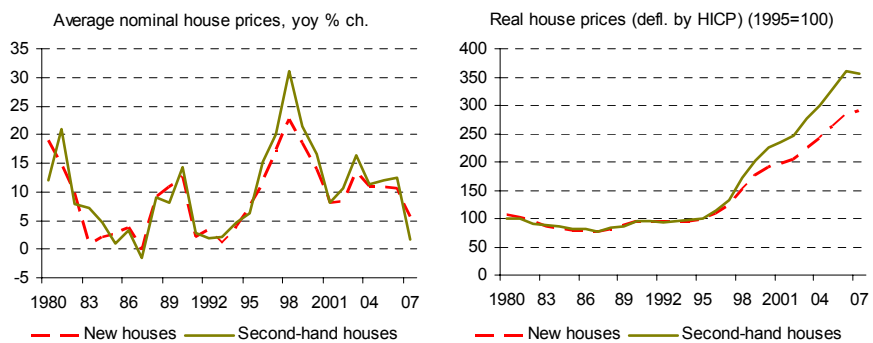


Source: Commission services (AMECO data base), Department of the Environment, Heritage & Local Government

Adjustment brings contraction in the pace of housing construction and erosion of high price levels

Housing starts and housing completions provide indicators of activity in the housing sector. From 1980 until the mid-1990s, when GDP growth reached double-digit figures, house completions averaged around 23,000 houses per year (see chart 1). Thereafter, the pace of yearly house completions grew steadily peaking at 93,000 in 2006. The pace of house completions declined in 2007 and this trend has continued into 2008 with completions in the year to June implying an annualised rate of 55,000 units. This is likely to overestimate the outcome for the year as a whole since the leading indicator of housing starts was over 50% lower during the first half of this year compared to the same period last year.

**Chart 2: House price developments**



Source: Department of the Environment, Heritage & Local Government, Commission services

The boom and recent turnaround is also evident in second-hand houses. While the real price of new houses rose by an annual average rate exceeding 12% between 1995 and 2006, the real house price of second-hand houses tripled (see chart 2). After tracking each other closely for many years, the pace of growth of second-hand house prices began to outstrip that of new houses in the mid-1990s. Such different trajectories are not surprising as the two types of housing are not perfect substitutes (for example, the average new house is smaller and further from the employment centre) and the supply of new houses can expand more rapidly than existing dwellings, the supply of which is less elastic (Rae and van den Noord, 2006). The turnaround in second-hand house prices also appears to have been sharper: in July 2007 existing house prices had fallen by 13% from their peak compared to 11% for new houses.



## Factors behind the housing boom

The sustained price rises in many housing markets across the world in recent years has generated a plethora of empirical studies, which have attempted to explain such developments and to investigate whether housing market bubbles exist. Ireland is no exception to this trend (see, for example, ECB (2006), Fitz Gerald (2003), IMF (2004), Kelly (2007), McQuinn & O'Reilly (2006, 2007), Rae & Van den Noord (2006)). Most of these studies apply a supply-demand framework to explain house prices developments and use the residuals from the fitted equation to determine whether the price of residential property is overvalued on the basis of the fundamentals. Below, we consider various demand and supply factors considered to be important in explaining house prices.

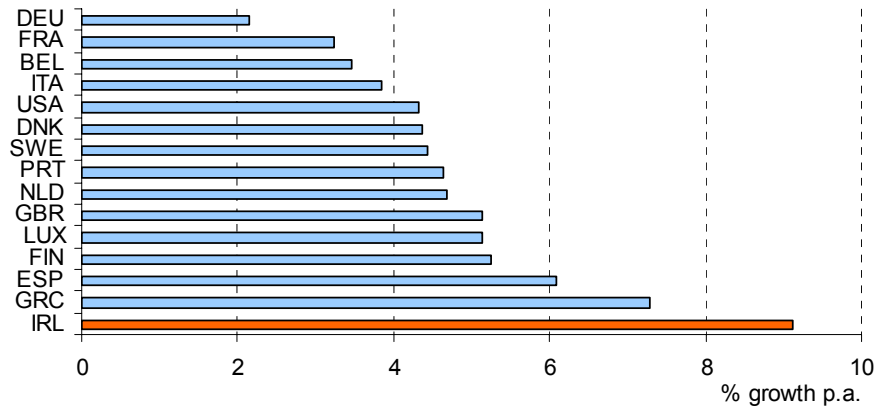
*Demand for housing depends on income, demographics, tax system, and credit conditions*

Given inertia on the supply side, demand-side factors are expected to be more important in the short run. Over longer horizons, demand factors include growth in household disposable income, gradual shifts in demographics, permanent features of the tax system that encourage home ownership, and financial determinants such as lending rates and/or credit conditions. The supply of residential housing is influenced by the availability and cost of land, the cost of construction and investments in the improvement of the quality of the existing housing stock.

*Disposable income growth out-paced other EU countries*

In the case of Ireland, more favourable demand factors in comparison with developments elsewhere are likely to have played a role in shaping the buoyant price developments in this country. Since the middle of the 1990s, growth in **real disposable income** per head has been stronger than in any other industrial country (see chart 3). Between 1996 and 2006, the average annual growth rate of real disposable income per capita in Ireland was 9.1% compared to 4% in EU-15. The ratio of nominal disposable income per head to the average house price – commonly used as an index of affordability – peaked in 1996 and is now back to levels observed in the early 1980s. Empirical research (e.g. Fitz Gerald et al, 2003; IMF, 2004; Rae & Van den Noord, 2006) generally finds per capita real income to be a significant determinant of house prices with an elasticity greater than one.

**Chart 3: Average growth of disposable income per capita 1996-2006,**



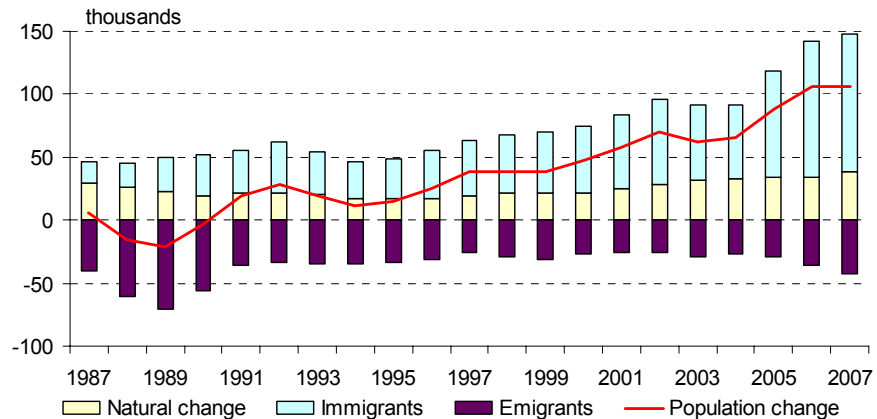
Source: Commission services (AMECO data base)

*A young and growing population*

**Demographic trends**, which were conducive to housing demand from the 1990s onwards, include strong population growth, a sharp fall in household size (although Ireland still has one of the highest average household size among OECD countries), rapid acceleration in the growth of population in the household formation cohort and sizeable net immigration. The rate of growth of the population aged 25-34 (the first-time buyer group), which had been rising since the 1990s, accelerated after 2004 due to strong migration inflows from the new EU Member States. Net migration turned positive in 1996 in response to buoyant labour demand in Ireland and has been rising until recently (see chart 4). In the period 1997-2007, net immigration accounted for more than a half of the population increase. These trends should be evaluated against a background of a high rate of home ownership: 75% of all households live in owner-occupied housing. Other housing demand-enhancing demographic developments include an increase in the number of double-income households and rising divorce rates. An additional important factor is the number of

baby boomers investing in the buy-to-let market because of increasing worries about inadequate pension provisions for retirement (Rae and van den Noord, 2006).

**Chart 4: Components of population growth**



Source: Central Statistics Office of Ireland

The convergence process in the run-up to the creation of the euro area saw a sharp fall in nominal and real short-term **interest rates**. Indeed, ex post short-term real interest rates were negative in the early years of euro area membership and rose gradually to 1.4% in 2007 due to higher rates of inflation (HICP) than in the rest of the euro area. Most mortgage loans (almost 80%) are variable interest rate "Tracker" mortgages. The nominal rates on such mortgages broadly follow trends in the ECB's main refinancing rate, which has been edging upwards since the middle of 2003.

*Low interest rates and loose credit conditions contributed to residential mortgage expansion...*

Stimulated by financial market liberalisation, e.g. mortgage market deregulation and the demutualisation of building societies, and an easing of credit standards (loan-to-value ratios of 100% were widespread), **residential mortgage lending** grew annually by 25% on average in the period 2000-2006, and its ratio to GDP increased from about 40% in 2003 to 65% in 2007. Household indebtedness in Ireland, at 81% of GDP, is among the highest in the euro area and about 80% of personal credit is secured on property. The annual rate of growth of residential mortgage lending has been decelerating since March 2006. In July 2008, residential mortgage lending growth fell to 9.6% - the lowest level in 20 years. Access to mortgage finance has been tightened with loan-to-value ratios falling to 90%. McQuinn and O'Reilly (2006) find evidence of a significant long run relationship between house prices and the amount an individual can borrow based on disposable income and interest rates.

*...but credit conditions have been tightened recently*

The **tax treatment of housing** in Ireland has been quite favourable for home ownership compared to most other EU countries. Households are allowed a tax deduction on mortgage interest payments, while there is no tax on property values or imputed rent and only limited taxation of capital gains on residential property. This is reflected in a low user cost of capital, while mortgage interest rate deductibility has not kept pace with the increase in house prices. Generous tax provisions may have encouraged the spiral in house prices (IMF, 2004; Rae and van den Noord, 2006). More recently, in an attempt to boost the flagging housing market, the 2008 Budget reduced stamp duty on houses and increased mortgage interest relief.

*The tax system promotes ownership of housing*

The author of this focus estimated equations for new and second-hand house prices deflated by the consumer price index using quarterly data from 1980 to 2007 and real disposable income per capita, real mortgage interest rate, stock of second-hand housing and share of population aged 25 to 44 years in total population as explanatory variables.<sup>1</sup> These estimates find support for a positive long-run income elasticity exceeding unity, a positive elasticity for the demographic variable and significant negative effects of real interest rates and housing stock per capita.



## Are house prices overvalued?

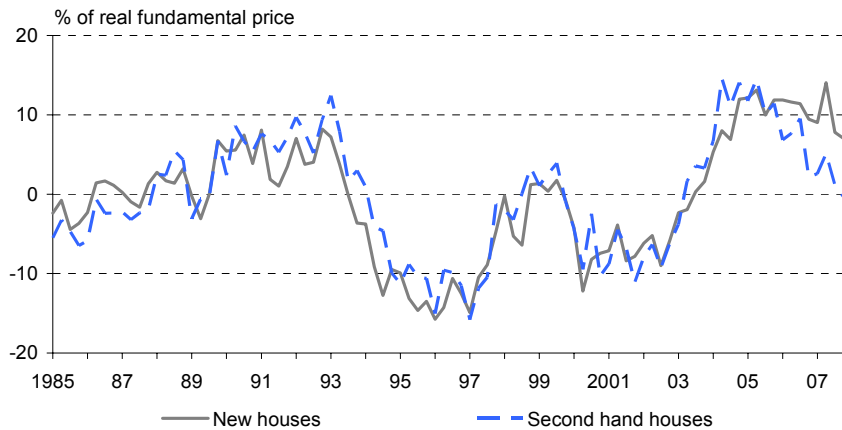
*Speculative behaviour may have added to the housing boom*

Developments in the buy-to-let market have been used to provide an indication of the presence of speculative factors in explaining house price behaviour in recent years (IMF, 2004). The proportion of buy-to-let mortgages in total residential mortgages has been increasing over time, reaching 26% in 2007 and accounting for almost half of all new homes bought in the last two years. The rental market has expanded from 16% of total housing units in 2000 to 21% in 2006. The growth in the number of second or vacant dwellings has added to the boom in the housing sector. The share of vacant dwellings in total housing increased from 10.5% in 1996 to 16.7% in 2006. The biggest class of vacant habitable dwellings in the "other" category are dwellings held for investment purposes (Fitz Gerald, 2005).

Various methods are used to assess whether house prices are overvalued. One approach is to estimate house prices as a function of supply and demand factors and measure overvaluation as the excess of actual house prices over predicted long-term equilibrium values. Another approach is to consider the relationship between house prices and the flow of services generated by ownership of this asset i.e. an asset that reflects the discounted present value of its future earnings. In this case, actual or imputed rent may be used to represent the flow of services and to construct a P/E ratio for housing. Over or under valuation is then usually measured by deviations of the current rental price ratio from its long run average.

Both approaches have their drawbacks. A major shortcoming of the first approach is its backward looking nature: it assumes that the past behavioural relationship will hold in the future. This assumption may be particularly unsuitable for a catching-up economy, where structural changes are taking place and expectations about future economic prospects are an important determinant of behaviour. Another limitation of the approach is that the results tend to be quite sensitive to the length of the series used in the estimation. The financed-based approach suffers from a measurement problem in that rent does not capture all of the potential returns from property and the small size of the rental market may not provide a good indicator of imputed rent on owner-occupied property. In addition large and prolonged deviations of the ratio from its average are not sufficient to indicate mispricing.

**Chart 5: Difference between actual and fundamental price**



Source: author's calculations

*Fundamentals cannot explain all of the recent house price increases*

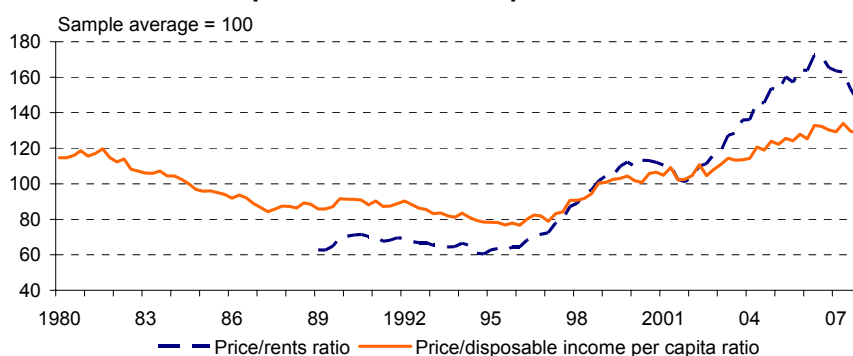
The still high share of residential investment in GDP – 9% in 2007 compared to an average of 6.5% in other industrial countries – suggests that the contraction of the sector has some way to go, although the high share of the house-buying age cohort in the total population and a higher average household size could sustain higher investment than in other countries. Empirical analyses focusing on fundamental factors generally find that house prices in Ireland are overvalued, but the degree of overvaluation (measured at the peak in house prices in 2006) varies considerably. Rae and van den Noord (2006) found that real house prices were overvalued by 20%. The OECD Economic Survey of Ireland (2008) confirmed this result for the real price of new houses, arguing that there had been little adjustment of overvaluation by the end of 2007. For second hand houses, on the other hand,

the Survey reported that the fall in house prices appeared to have eliminated the overvaluation. The IMF (2008) estimated the degree of overvaluation at 32%. Kelly (2007), using a model that mimics the historical behaviour of house prices in other OECD countries, predicts a fall in real house prices of around 40-60% over a period of 8 or 9 years, which might involve some undershooting of the equilibrium level.

Empirical estimates by the author of this Focus suggest that, at the end of 2007, the real prices of second-hand houses had returned to levels that may be explained by the fundamentals, while those of new houses were still overpriced by about 7% in real terms, but were gradually closing the gap with the fundamental level. House prices were below their long-term sustainable level in the mid-1990s and the beginning of this decade, but subsequently overshoot (see chart 5).

Chart 6 shows the evolution of ratios of house prices to rent (component of the HICP) and per capita disposable income in Ireland. Both ratios rose from the mid-1990s until recently. The ratio of house price to income has returned to levels similar to the early 1980s and seems to have stabilised in 2006. The peak in the ratio of house price to rent coincided with the peak in house price inflation in 2006, as the rate of increase of rents took longer to ease. The sustained demand for rental accommodation may be explained by migration and preference of renting over purchasing (OECD, 2008). Indicators suggest that rents started to fall in the second half of last year, which is not surprising given that the stock of properties available for rent appears to have doubled between June 2007 and June 2008. Overall, the indicators suggest a rebalancing of the housing market is in progress, which might bring back the ratios to their long-run averages.

**Chart 6: House prices relative to disposable income and rent**



Source: author's calculations

Own estimates using price-to-rent ratio (bearing in mind the data caveats) suggest an overvaluation of nominal house prices by 47% at the end of 2007, while the OECD (2008) figure is somewhat lower at 35%. McQuinn and O'Reilly (2006), using a model that combines the model-based and financial approaches, found that the degree of overvaluation of nominal house prices was 15% at the end of 2005.



### Looking forward to a soft or hard landing?

*Structural reforms could speed up the recovery...*

The housing sector was a significant driver of the overall growth performance during the last decade, reflecting strong country-specific fundamentals. While supply and demand factors can explain much of the developments of prices during last 27 years, there is evidence of overshooting in the later part of the period. The housing sector is now undergoing an adjustment that is warranted by an apparent overvaluation of house prices and needed reallocation of resources to more productive sectors. However, the effect of the downturn in the housing market cycle is aggravated by adverse developments in the external sector – appreciation of the real effective exchange rate, soaring energy prices, economic slowdown in major trading partners and tighter credit conditions resulting from the international financial crisis – thus delivering a double blow to the Irish economy. It remains to be seen whether past structural reforms can help bring about a rapid return to the medium term growth or whether the recovery will be more drawn out, similar to the experience of many industrialised countries that have undergone housing market busts in the past 30 years.



...but further  
measures are  
needed to meet  
fiscal targets

The contraction of the residential construction sector affects tax revenues both directly, through falling revenues from VAT, stamp duty and capital gains tax, and indirectly through possible wealth effects on consumption. The exposure of government finances to the property market rose during the boom period. Property-related tax revenue (capital gains tax and stamp duty) as a share of total tax revenue tripled between 2002 and 2006 to 15% (3.8% of GDP). In the first eight months of this year, the share fell to 8%, leading to a deteriorating fiscal balance. Even if the property market were to stabilize at current levels, losses of tax revenue would require additional policy measures to correct the budgetary stance. Extrapolating current trends, a budget deficit approaching 3% of GDP looks more likely than the deficit of 0.9% envisaged in the 2008 Budget.

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