DUBLIN'S REAL ESTATE BOOM – A RATIONAL BUBBLE?

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David Comerford examines the Dublin housing market that has been experiencing significant price increases over the last 10 years. The question he tries to answer is whether this price bubble is rational in nature. He reaches a positive conclusion by examining the market structure and trends in market fundamentals.

The New Palgrave (1987) defines a bubble "as a sharp rise in the price of an asset or a range of assets in a continuous process, with the initial rise generating expectations of further rises and attracting new buyers". This definition seems entirely consistent with Dublin's real increase of 195% in house prices between 1995 and 2002 (TSB/ESRI, 2003) and the continued strong speculative demand thereafter. The question I seek to answer in this project is whether the "expectations of further rises" that are currently fuelling price increases are rational.

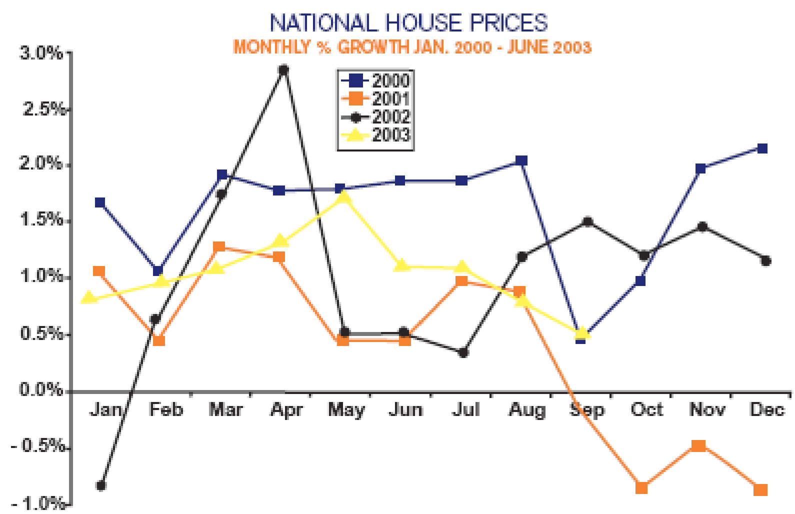
The ubiquitous example of speculative irrationality is Dutch Tulipmania of the mid-17th Century. The New Palgrave (1987) formalises the association by rendering irrationality and Tulipmania synonymous. It defines Tulipmania as "situations in which some prices behave in a way that appears not to be fully explainable by market fundamentals". Indeed its definition eschews any etymological specifics and jumps straight into the general case in which "the price of land rises essentially because it is expected to rise". Again this is redolent of Dublin's property boom.

The core issue then is whether the magnitude of the expected rise in land prices is fully explicable by a rational interpretation of market fundamentals. I shall answer this question by identifying and then analysing the changes in 'market fundamentals'. Garber (2000) defines these as the variables that "are believed to drive asset prices". The answer I arrive at and the thesis of this project is that the property market exhibits symptoms of bubble behaviour not because individuals are behaving irrationally but because it is impossible to quantify many market fundamentals.

Introduction - Dublin's House Price Experience:

There has been an explosion in the value of house prices in Ireland over the course of the past decade. A survey of property, published last June in the Economist, reveals that the nominal value of the average house has increased by 219% since 1995. Though this report was pessimistic about the sustainability of Irish house price inflation, the latest figures from the ESRI (The Economist, 2003) show that prices have continued to rise and have done so at an increasingly rapid rate. The latest TSB/ESRI (2003) national house price index for the third quarter of 2003 shows a rise of 9.4% over the course of the year thus far. This compares with a figure of 9% for 2002. Moreover, a month on month increase has been observed. In September house prices increased by 0.5%, whereas October witnessed a rise of 1.4%.

Figure 1: National house prices monthly growth



Source: TSB / ESRI House Price Index (2003)

As can been seen in the above diagram, house price changes in 2003 have been consistently positive and relatively stable. Using this as a guideline, there is little evidence of confidence erosion in the Irish housing market.

At first glance, such surety in the market belies the bubble thesis propounded in the Economist survey (2003). In *Another Bubble Fit To Burst*, the influential publication calculated that Irish property was overvalued to the tune of

42%. The Economist forecasts a fall in nominal prices of 20% over the course of the next four years.

Inflation in house prices comes despite a steady and unremitting increase in the supply of housing. A record number of houses have been completed in each of the past eight years (UNECE, 2003). Last year there were 57,625 completions and annual increases have been in the region of 9% since 1997. This means that over the past decade approximately 380,000 new housing units have been constructed. Although my crude statistical analysis takes no account of housing stock depletion (for which figures are unattainable), it seems inconceivable that the construction of a new dwelling for one out of every twelve members of the population should do so little to satiate demand. In order to see whether this is consistent with market fundamentals I shall examine the peculiarities of demand and supply in the housing market.

The Nature of Housing:

The first thing to note about the housing market is that it is not a conventional market. Houses tend to be indivisible, relatively illiquid and involve high transactions costs. In calculating these transaction costs, we must add the taxes, legal and administration costs (which the Economist (2003) calculates as being approximately 6% of purchase cost for Ireland), the costs of market research prior to purchase and the high psychic costs of upset caused by relocation. Though the costs of relocation only affect owner-occupiers and may actually confer utility in some cases, researching the market is a considerable cost to all actors. This is aggravated because, as markets go, housing is plagued by information failures.

Another remarkable feature of housing is its status as a necessity. It is not necessary to own a house, however historic and cultural evidence suggests that the Irish find it desirable to do so. Over 80% of Irish householders are homeowners, the highest level of owner occupation in the EU (Drudy, 1999). Public policy has been charged with promoting this goal. For example, mortgage interest relief, the first time buyers grant, the abolition of capital gains tax on the sale of the principle property and the remission of residential rates all serve to incentivise home ownership.

Crude theory would suggest that a house, as a necessity would be relatively income inelastic. According to this logic we would not place great weighting on income as a market fundamental driving house prices. However, this logic neglects the fact that a house has various functions. Along with its perfunctory role of providing shelter, a house also confers luxurious benefits. A home is a stake in a community. Rational people typically wish to live in as nice a community as possible, one with good facilities, low crime, aesthetic appeal etc.

Unlike many other goods a home is invariably perceived as a reflection of its owner. As such it is a source of pride. Conspicuous consumers, lets call them the Jones family, who derive utility from having a nicer house than the Smiths, will rationally invest in home improvements. If the Smiths are also conspicuous consumers they will want to keep up with the Joneses. This pattern means that houses are heterogeneous and that many of them are constantly improving – hence house price indices fail to compare like with like. There is a broad and convincing literature to support the claim that consumers derive utility from relative status (Veblen (1899), Frank (1985), Scitovsky (1976)). Though it is irrational for an atomistic individual to consume a good in greater quantities in the wake of price increase, a socially interdependent individual will rationally exploit culturally projected utility. Though social status is empirically a factor in determining house prices (note the frequency with which terms such as "prestigious" are employed in property advertising copy), it is frequently ignored when examining market fundamentals.

Because of social culture and the policy climate, renting is empirically a stopgap measure. Only 5% of the Irish population lived in privately rented accommodation in 2001, according to a survey conducted by European Community Household Panel (2004). Moreover, the vast majority of these people tended to stay in such accommodation for under three years. This culture inhibited the development of the privately rented sector in Ireland when compared with the rest of Europe. The rental market is a purgatory for those who cannot afford to "climb to the castles in the air". As we shall see, I will show that the number of householders falling into this category is set to increase considerably over the next decade. Policies that sought to promote the privately rented sector have been supply oriented (e.g. Section 23 and Section 27 income tax allowances for construction of rental accommodation). In a market with inelastic demand that demographic trends are constantly augmenting, the economic consequence of this policy is not to reduce the rents paid by tenants, but rather to increase the rents enjoyed by landlords. These factors conspire to make house purchase the most attractive option, not least for investors in the rental sector.

These investors form the third category of actors in the housing market. Whereas owner-occupiers invariably, and renters frequently, have an emotional stake in their actions in the property market, the stake held by investors is purely financial. Keogh and D'Árcy (1993) formalise the exceptional characteristics of housing from an institutional economics perspective. Those purchasing housing as a dwelling will find housing stock heterogeneous, rife with externalities and public goods. This fundamentally alters their market behaviour. Hence, while a rational retiree might prioritise the proximity to established social networks, a speculator has no such concerns. These motivational differences have repercussions for the efficiency of the market. Investors have far more flexibility.

Within the category of investors a qualitative distinction is often made. Some investors purchase property on the firm foundation of price-earnings ratios, looking forward to a reliable income stream. Others purchase on the basis of the 'greater fool theory', buying in the expectation of further rises in property prices and hoping to sell before everyone else does. Market sentiment is a very real market fundamental. Behaving rationally, each investor has to predict the likely behaviour of all other investors. In order to predict the behaviour of other investors, each investor needs to predict their predictions.

A further peculiarity of property facilitates speculation. Because property transactions are so capital intensive, it is usually necessary to borrow in order to enter the market. This gives rise to several distortionary consequences.

The Consequences of Credit Dependence

Firstly, reliance on credit effectively makes the property market an options market and hence subject to intense speculation. For the would-be investor a prosperous property market is very appealing. By way of illustration, I cannot think of a better example than one cited in the Economist:

> "Suppose you had invested $20,000 in shares, which after five years are now worth $40,000, including reinvested dividends, implying an annual return of 15%. Then suppose you had used the $20,000 as a deposit on a $100,000 house that over five years had risen in value by a more modest 7% a year, to $140,000. Assume, for simplicity, that mortgage-interest payments and maintenance costs exactly offset the rental income. The average annual return on your deposit would have been almost 25%" (The Economist, 2003).

Secondly, it makes each transaction on the property market more complex and hence more rigid. In order to transact in the property market one must first transact in the credit market. This gives rise to time lags.

Thirdly, the assumption of rationality asserts very plausibly that lenders are also motivated by profit. They have incentives to lend as much as possible when property prices are rising as the wealth effects of property price increases the collateral that banks hold on existing loans. Moreover, given the fact that both borrower and lender agree that property is an attractive destination for funds, financial institutions give even greater concessions to property speculators. In a bid to overcome the rigidities of indivisibility and illiquidity that deter investment, they have established pooled property investment portfolios in which shares can be bought.

Lastly, and perhaps most importantly for those concerned with rational consumption patterns, it means that the relevant price to the consumer is not the price of a house. Rather it is the price of paying for a house. As we shall see in Dublin's case, this makes mortgage repayments a fundamental source of change in house prices.

What Are The Market Fundamentals?

The very fact that the property market is predominantly made up by a core of inflexible actors yet encourages activity at the margins by flexible speculative investors makes it a prime candidate for bubble behaviour. Moreover, the nature of housing makes it hard for investors to find information, and when it is found it frequently comes from sources with a vested interest in overstatement, for example, Irish house price indices are undertaken by estate agents and mortgage providers. We have already seen that the motivation for positive bias is a rational economic characteristic of these actors. The scope for bias in index construction is also great. In a working paper, the ESRI methodologists Conniffe and Duffy (1999) point out that "the compilation of an adequate measure of house price changes is not at all a trivial task". It should be noted that the ESRI's own index is produced in conjunction with Irish Permanent, a mortgage provider who have an incentive to overstate the attractiveness of property investment.

Such indices, as are currently used, tend to use hedonic pricing techniques, whereby a similar property is taken as a proxy measure. As we have seen properties are heterogeneous and so it is impossible to compare like with like. Other approaches discussed include the use of resale values for the same house but the Irish case reveals a paucity of data that limits its applicability.

Abstract measures of property valuation are divided on the relevant market fundamentals. Garber (2000) tells us that market fundamentals are "a collection of variables that we believe should drive asset prices". He does not tell us who 'we' are, and that makes a large difference in what 'we' consider relevant to our willingness to pay.

For a hardheaded investor, price-earnings ratios based on discounted rents are the standard means of determining future income streams. For the home purchaser high notional returns based on imputed rents are of little practical use. For example, the Bacon Report (1998) shows that the value of single-bedroom apartments in Dublin's city centre rose by 30% in 1998, whereas those for a four-bedroom semi-detached house rose by a relatively slight 18% in the same period. Though the one bedroom apartment was the better investment, the rational purchaser may have trouble explaining that rationality to the two children who are forced to sleep on the floor of their parents' bedroom.

For such a purchaser, a more relevant market fundamental is income. Economists formalise this relationship and use it as a predictive basis for price behaviour through the house-price-to-income ratio. The logic underlying this ratio is that people tacitly decide to spend a certain proportion of the entire income that they envisage earning over the course of their lifetime on housing. The corollary of this logic for bubble watchers is that if house prices go out of line with this proportion, people are behaving irrationally. Average household disposable income is the proxy most commonly used to determine average permanent income. However, as a mean measure of income it is subject to a skewed distribution. This has bearings on the calculation. The Economist (2003) tells us that Ian Morris of HSBC believes median income, which is not subject to the vicissitudes of outliers, is a preferable measure. The difference between the verdicts reached by these two measures is striking. The mean measure sees American property prices as overvalued to the tune of 5%. The median measure revises that figure to 14%.

The point here is that even those who subscribe to the hard rationality criterion of New Classical economics will have to concede that information failures abound. To Keynes, it seemed investors realised this and so most of them "are largely concerned not with making superior long-term forecasts of the probable yield of an investment over its lifetime, but with foreseeing changes in the conventional basis of valuation a short time before the general public" (Malkeil, 1999). In short, investors are concerned with market fundamentals only insofar as the market believes them to be fundamental. Even if all market actors are subject to the same misinformation, its insuperable lack of precision means that actors at some point have to rely on their gut feeling. An economic truth becomes an economic truth not because it is true, but because I believe that you believe that most people believe it is at least plausible enough to be worth considering in evaluation.

So pervasive and costly are information failures in the property market that it may well be rational for investors to herd into a market. According to the soft criterion of perfect information, investors will cease to assimilate information when the costs of research outweigh the likely benefits accruing from it. In such a case, great savings can be made by free riding on the research of ostensibly better-informed investors and following them into the market.

In my discussion thus far I have stressed the personality of the economic actor – whether people who demand housing effectively do so as consumer, hardheaded investor or animal-spirited speculator. It strikes me as anecdotally plausible to consider house buyers to be a composite. This has repercussions for the house-price-to-income ratio.

Firstly, it seems consistent in a nation in which home ownership is held in such esteem for consumers to buy the 'best' house they can afford. Moreover, behavioural theory suggests that as the prestige attributed to housing increases, so too does its importance in consumption priorities. These observations would suggest that people spend a residual income on housing rather than a proportion of income. If the relative prices in a consumption bundle remain constant there is no difference between the two. As we shall see, that has not been the case in Ireland over the last decade.

Secondly, as Ireland's disposable income has risen by an unprecedented magnitude and for an unprecedented length of time, it seems plausible that more people are in a position to invest. Hence actors whose role in the property market was formerly entirely consumption-oriented have become somewhat investment-oriented.

Thirdly, it seems entirely rational to shift investment portfolios in favour of property given its favourable returns relative to those of other assets, especially given the availability of capital for such investment. Moreover, actors who would have saved in the past have no incentive to do since the advent of EMU and its accompanying negative real interest rate regime.

What this means is that more people will rationally spend more of their income on property, just as the house-price-to-income measure suggests. There is good reason to believe the unforeseen permanent income shift caused the ratio to shift and that a higher ratio, though perhaps not the current one, is sustainable.

The interest rate is a key variable in both abstract measures. It is therefore a market fundamental according to Garber's (2000) criterion of something believed to drive asset prices. In the next section I shall show that there has been a fundamental shift in mortgage rates in Ireland over the recent past.

Trends in Market Fundamentals

The Bacon report (2000) performed an econometric analysis of house prices. It concluded that "the structure of the housing market changed significantly after 1996".

Source: Bacon, 2000

Now let us examine if this Ireland has built its house on a foundation of sand or if the fundamentals shifted with structure. The Irish economy, and with it the disposable income of Irish residents, underwent huge growth in the past decade. On average, disposable income has increased by 55% since 1992 (Lang, 2001). Increased money in an economy gives rise to increased effective demand. Ireland's openness meant that increased demand for traded goods could be catered for. The service sector, whose supply is constrained by the availability of a skilled workforce, suffered quite considerable inflation during this period but this was somewhat moderated by net immigration. Housing stock, which is fixed in supply in the short run, is consequently susceptible to inflation and indeed suffered it to greater extent than any other sector. Indeed the in-flux of service sector labour further increased demand for housing. An interdepartmental review group predicted gross immigration of 200,000 between 1998 and 2005.

We have already seen that there are high psychic costs involved in purchasing a house. Not only is it is a large financial commitment, but it is also a lifestyle commitment. Until the early nineties, Irish demography was marked by emigration. People were anxious about the long-term social desirability and economic viability of remaining in Ireland. With the turnaround in employment prospects arising out of the economic boom, Ireland, and especially the East region, became hubs of immigration. There was less uncertainty about future welfare and hence the risks inherent in purchasing a house deceased substantially. Anecdotal evidence suggests that young people who were living at home while considering emigration used their newfound affluence to buy themselves the independence and security of a home. Not only did homebuyers have more money, there were also more of them.

Given the swell of long-term positive sentiment that buoyed the economy in the mid-nineties, credit institutions were far more confident in their borrowers ability to pay. In recognition of this, the typical duration of a mortgage increased from around 25 years in 1993 to around 30 years today (Homeloans, 2004). This lengthier period means that the same weekly repayment buys a more expensive property. All buyers in the market are equally benefited by the windfall. However, it serves only to shift up the total purchase price.

Similarly, developments on a macro level have led to an increase in affordability. In the first quarter of 1993, the variable rate of mortgage repayment was 14%. By the end of that year it had fallen to 8% and it remained at this level until 1998. It has been around 4% for the past four years.

The most obvious reason for this is European Monetary Union. Since Irish interest rates are being determined by the wallowing economies of Europe's flagships, we have enjoyed a pro-cyclical monetary regime. In the short term this appears to be the best of both worlds. In the longer run it is sure to have the usual inflationary costs, such as loss of competitiveness arising out of inflation linked pay agreements. In the long run, however, it has the unimpeachable benefit of promoting a stable macroeconomic framework and moreover, one that is seen to be stable. Since macroeconomic stability reduces risk, this has lowered the costs of investment and hence has shifted market fundamentals. Davy Stockbrokers Equity Research bears this out:

> "For a variety of reasons, including the advent of low single digit inflation globally and EMU, expectations of the long run average interest rate were revised down substantially. Moreover, expectations of the amplitude of future interest rate movements are also likely to have been substantially revised downwards. As a result borrowers would have formed the belief that they could comfortably shoulder the costs of servicing much larger mortgages than in the past with much diminished risk to a sharp increase in interest rates" (Lang, 2000).

Davy's statistics (Lang, 2000) suggest that borrowers are right. In real terms, it costs the same to service a £160,000 mortgage today as it did to service a £100,000 mortgage in 1992.

To borrow a thousand pounds in 1992 cost £11. In 1999, it cost just £6. Despite the vast increase in house prices, and the far more attractive borrowing conditions, evidence suggests that mortgage borrowers are keeping their heads. In 1992 the loan-to-value ratio for all banks and building societies for the mean mortgage was 69%. In 1999 it was 67.7%.

Though the level of indebtedness relative to house values has remained stable, the fact remains that house values, and hence the absolute level of debt, may be at unsustainable levels. The loan-to-value ratio is a useful to lenders as an indicator of risk, but it is only relevant for borrowers in the event of repossession. By another level of affordability, the loan-to-income multiplier, borrowers are far more indebted. In 1994 the average borrower's mortgage was 1.27 times their income. Four years later the multiplier had risen to 1.94 (Bacon, 1998).

This rise can be attributed to the rationality of actors. In aggregate the pre-tax profit of the five major mortgage providers increased 15% in 1998. It is rational for an individual in the zero-sum game of fixed housing supply to take on as high a mortgage as possible since the house goes to the highest bidder. Access to credit confers bargaining power. Traditionally, household mortgages were limited to the sum of the second salary and two and a half times the first salary. Now borrowers are receiving up to triple the household's combined income.

It is unclear if the mortgages being shouldered by debtors are debilitating. As Lang (2000) states: "The usefulness of traditional multipliers as a guide to the ability of households to service debt is predicated on a more or less stable long run relationship between house prices and income. In circumstances where there is a change in the interest rate regime such a relationship (if it ever existed) is likely to break down". We have already seen a very fundamental change in the interest rate regime.

Moreover, increased competitiveness in the credit market has accentuated this change in the interest rate regime. Goodbody Stockbrokers' (2000) research tells us that formerly Irish mortgage lenders enjoyed the most lavish mark ups in the Eurozone, a spread of 2.5% over the wholesale rate. An upset occurred in August of 1999 when the Bank of Scotland entered the fray. The average variable rate at the time was 5.25%. By the tenth of September Bank of Ireland and AIB had cut it to match Bank of Scotland's 3.99% offer. An indication of the very real consequences of this change appeared in The Irish Examiner: "With competition at fever pitch in the mortgage market, some observers feel that many of the institutions, particularly the larger ones, will do their best to absorb the full rate rise" (Keane, 2000).

Conclusion - Are House Prices Sustainable?

The consequence of a bubble is a collapse in asset prices. We have already seen that house prices are rising month on month and show no signs of volatility. This however may not be as promising an omen as it seems. Bacon tells us "the speculative/transitory component of demand has risen in recent years". Indeed, last year 30% of house purchases were made by existing homeowners on second properties (TSB/ESRI, 2003). The conclusion that the Bacon Report (2000) drew is that this structural change in the housing market has given rise to a behavioural change whereby "previous year's house prices became more important after 1996." If this is the case, it could be said that the market is behaving irrationally since previous price changes are in no way indicative of future patterns, and hence they cannot be considered market fundamentals. However Garber's (2000) definition admits analytically irrelevant information as a market fundamental if we believe it to drive asset prices. The unhelpful conclusion that we can draw from this is that so long as actors continue to refer to previous years' prices the bubble will not burst.

I am not convinced by the inference of the Bacon report. There can be no doubt that the property market has been subject to a series of permanent shocks (EMU, demographic changes, income increases) that have shifted market fundamentals. These shifts only become relevant when they are recognised and internalised into decision-making. I would argue that this occurred in 1996. Quite apart from the quantifiable permanent shocks, I have suggested consistently that the property market has been influenced by shocks to unquantifiable market fundamentals such as consumer tastes and the social status attributed to housing.

Even if we admit Bacon's (2000) conclusion that the property market is subject to speculation that cannot be explained by a rational interpretation of market fundamentals, I do not consider it to be any less rational than any other. It merely suffers from worse information. Moreover, since individual actors are unable to change the market independently, the best they can do is to operate rationally within an irrational framework. It is my contention that this is exactly what most actors have been doing. With this in mind, I consider the Irish property boom to be a rational bubble.

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