Analysis of the housing market in the uk

Introduction

For most people in the UK, as in other countries, the purchase of a house is the single largest expenditure they ever make. In contrast with other purchases, a house is not only something that provides highly desirable services – convenient and independent housing – but it is also the single largest element of household wealth. For homeowners, this asset motive for buying a house is becoming increasingly important. As a store of value, houses are increasingly becoming both a critical component in households' long term financial planning as well as a basis for raising consumption. Just like possessing a portfolio of valuable stocks and bonds, owning a house whose market price amounts to greater wealth. It follows, then, that a change in the market value of a house will change the owner's wealth, and, consequently, the owner's consumption expenditure.

While the housing market in the U. K. has experienced several dramatic phases in the past three decades [1] , its behavior in the last decade or so is not only without precedence but it is also a reflection of a fundamental transformation in the economy's financial system. Whether being labeled as the product of ' irrational exuberance' [2] or being described as a ' bubble', housing market developments have spawned a wide body of thinking that is increasingly taking on a nervous tone – especially among economists.

A quick survey of the macroeconomic literature related to the housing market reveals that the period from the late 1990's to around 2004 saw a confluence of several phenomena that seem to be related via a series of strong theoretical linkages. Key among these are historically high levels of home-ownership and housing wealth, an extreme housing-price boom, a generously liberal credit regime, unanticipated levels of borrowing, the lowest interest rates in generations, massive consumption expenditures/dangerously low savings rates, general economic prosperity, and, a rising trend in bankruptcies and house possessions.

The objective of this project is to highlight the linkage between housing wealth and consumption expenditures with special focus on the events of the last decade. Given the nature of macroeconomic linkages, it turns out that in order to study this relationship in the context of UK, it is necessary to tell an economic tale that incorporates all of the phenomena mentioned above. While there are rather straightforward theoretical reasons as to how and why the national housing wealth affects aggregate consumption, the historical and institutional realities of the financial industry, the changing consumer behavior with respect to credit, the evolving demography etc. have played an important role in shaping this relationship in the UK.

Over two-thirds of UK households owned their home and it is typcially their biggest investment they make. At the aggregate level, housing wealth is now greater than the size of their financial holdings [3]) and it is distributed in a considerably more equitable manner across socioeconomic and demographic segments as compared to the latter. Such investments bring reasonable returns over the long term, and in the last five years house price appreciation has more than doubled the value of the stock. It follows, then, that changes in housing wealth have the potential, in theory, to have sizeable effects on consumption, GDP, unemployment etc. The theoretical mechanism by which changes in housing wealth are transmitted into consumer demand, called the ‘ *wealth effect* ’ (discussed in detail later in the paper), is of critical importance to the economy because its impulses also affect an array of other macroeconomic variables and processes.

Clearly, the ability to draw on this major store of purchasing power has serious implications for the financial health and prosperity of homeowners and, hence, the economy. With respect to access to the ‘ frozen’ housing equity, the UK experience has been uniquely successful as compared to those of almost all other OECD countries. A series of policy moves to deregulate and ‘ liberalize’ lending practices resulted in democratizing the credit market such that loan products once provided to the privileged, became common-place. Households that had faced credit barriers could now affordably borrow large amounts thus unleashing the power of the wealth effect. Therefore, the ways in which UK households obtain and dispose off the equity is of particular interest to this study. [4]

This paper is organized as follows: the next section lays out the key issues involved in this study; the third section discusses the theoretical and analytical matters concerning the wealth effect in the context of the recent UK housing boom; the fourth section surveys the empirical research in this area; the fifth section presents the empirical work done for the study, including a description of the findings from regression analysis using Microfit; and the last section offers some conclusions from the work. (There are graphs and figures associated with the text and they are appended at the end.)

A Review of the Peculiar Issues and Macroeconomics of theUKHousing Market

Nature of the boom

With focus on the 1995-2004 period, this section lays out the key issues involved in understanding of the structure and strength of the relationship between housing wealth and consumption. At the outset it is necessary to have an overview of developments in UK's housing market during the pertinent period to highlight the generation of housing wealth, the manner in which it is accessed in the form of equity, and channels of disbursement of the equity.

The UK housing market became truly energized in the mid-to-late 1990's, beginning with a property boom in the London area and then gradually spreading to virtually every region. Homeownership levels reached historic levels and so did the share of ' buy-to-let' residential investments in the country's portfolio. Using data published by Halifax-Bank of Scotland, Graph 1 provides the salient market metrics:

- the price boom accelerated to push the price of the typical house from around £61, 000 in 1995 to over £161, 000 by 2004 – an increase of over 160%;
- not only was the speed and tenacity of housing prices unprecedented, the annualized percentage growth rate seem to rise with the level of prices.

Far from being a localized phenomenon, this housing boom covered the entire UK, as Graph 2 demonstrates. While, the origin of the boom was in Greater London and the Southeast in the mid 1990's, it quickly enveloped East Anglia and the Southwest. However, by 2001 the boom entered its most vigorous phase as it spread to the peripheral regions with prices almost doubling in a five-year period.

Since most of the home purchases are financed through mortgages, the two variables that shape housing demand decisions are the interest rate and property prices. As it turned out, with historically low nominal lending rates (see discussion later), the home prices was the chief determinant behind purchases. The feeding frenzy that was the housing market pumped prices to such a level that placed typical accommodations out of reach of most would-be buyers. The Affordability Index, calculated as the ratio of housing prices to household disposable income, rose from 3. 09 in 1995 to 5. 45 in 2004.

It is useful to note that higher aggregate housing wealth can be a product of a rise in housing prices and/or a growth in the stock of housing. As is displayed in Graph 3, the early 1980's saw housing wealth grow due to a steady rise in prices while in the late 1980's and early 1990's we see stability in it despite declining prices. There was rising home ownership during all three intervals; in the early 1980's it was engendered by the privatization of some public housing [5, p. 12] while the late 1980's and early 1990's it was due to stimulated demand spurred by declining prices and interest rates.

With housing prices rising at around 20% per annum, vast slices of society saw the value of their homes reach unseen levels as the market injected equity. This store of equity was virtually a battery filled with purchasing power that was steadily getting charged by the market and that could be tapped into, if needed, to finance purchases. Halifax (2005) reports on it website that at the end of 2005, UK's housing wealth reached a historic peak at £3, 408 billion which amounts to triple the figure in 1995 with the last five years seeing a 60% increase. As Graph 3 illustrates, since the mid-1990's the unprecedented spurt in housing wealth can be attributed mainly to rising prices. Clearly, an index of housing prices is an excellent proxy for housing wealth. [5]

What generated the price boom?

As compared to the preceding 15 years, the last decade saw the housing market subjected to a variety of macroeconomic and financial forces. Following Her Majesty's Treasury (2003) and Farlow (2004), one can identify demand- and supply-side factors responsible for shaping the current housing market.

On the demand side, the key market forces were:

- According to Her Majesty's Treasury (2003) the early 1980's saw a sustained campaign of liberalization of the credit market that led to increased competition among banks and non-traditional lenders, rampant development of new credit products, and enhanced capacity of banks to create liquidity; all of which made obtaining housing loans easier and a more egalitarian process by lowering transaction costs. [6]
- Low and declining interest rates pushed down the cost of mortgage credit thereby stimulating housing demand;
- Macroeconomic prosperity with higher disposable income and lowered unemployment rates allowed for more purchasing power;

- Expectations of continuous expansion and future employment created an optimism among households
- Despite an ageing population, members of typical home-buying age-cohort (especially baby-boomers) saw their households grow, thus creating a greater demand for family housing;
- And lastly, the explosion in ‘ buy-to-let’ purchases led to a massive speculative demand fueled by expectations of sustained housing price increases.

On the supply side, the major market forces according to Farlow (2004) and Her Majesty’s Treasury (2003)were:

- a low price-elasticity of supply due to a combination of policy regulations, regional scarcity of land, and lags in obtaining licence/local approval;
- Scarcity of existing housing available for purchase i. e. low vacancy rate;
- Rising costs of construction, especially due to labour shortage and rising prices of materials.

When a strong level of demand and a limited and inelastic housing supply are combined, one can see why prices have risen so quickly.

Housing wealth vs. Financial Wealth

To understand the rising significance of the recently acquired housing wealth, it is interesting to compare it with the ownership of financial assets in UK. Housing remains UK’s greatest asset with the total of shares, bonds, and cash amounting to £1. 6 trillion. In the past, financial assets – pensions and holdings of shares, bonds, and bank accounts – accounted for bulk of the nation's wealth. However, recent history has created housing as the asset that is held more widely and equitably – across geographic regions, age cohorts, and income groups – than financial wealth. Pensions were clearly concentrated among the older age groups and the bulk of other financial assets were held largely by a small opulent minority.

Data provided by National Statistics (www. statistics. gov. uk) and Her Majesty's Treasury (2004) describe UK's home ownership as widespread across all income and age categories with older segments having a larger rate. Whereas shares and bonds are owned largely by people in higher income groups – for obvious reasons – the housing boom has proved to be a moderating or equalizing force as all homeowners have benefited from rising property values. [7]

The English Longitudinal Study of Ageing (2002) provides some supporting evidence in this respect. The study finds that because of the relatively even distribution of recent gains, housing wealth has become more important than non-pension financial wealth, especially in the 50+ age group. The following table shows that not only is the typical size of housing wealth ownership greater than net financial wealth (non-pension), but that it is far less concentrated across society as reflected by the lower inter-quartile ratio and lower Gini coefficient.

Table 1.

	Net Housing Wealth – approx.	Net Financial Wealth – approx.
Mean	£73, 000	£44, 000
Median	£52, 000	£12, 000
Inter-quartile ratio	5. 14	69. 3
Gini Coefficient	0. 575	0. 761

Source: English Longitudinal Study of Ageing (2002), IFS.

The data shown in Graph 4 reveals though financial wealth had dominated all through the 1990's, the rapid growth of housing wealth since the mid 1990's coupled with the stock market bust has again placed the two neck and neck. Even with parity in value, the prominence that housing wealth commands in the national balance sheet is the consequence of its relatively equitable distribution and the fact that in spite of recent volatility in housing prices, it is historically far more reliable as an investment than the market value of corporate shares – the dominant component of financial assets.

With growth in house prices outstripping the growth in mortgage debt, mortgage equity has increased from £700 billion in 1995 to £2. 4 trillion at the end of 2005 – a 250% increase. In real terms, the last five years have seen the value of housing stock rise by over 60%. Thanks to housing values rising faster than mortgage debt in each of the last ten years, UK homeowners now have a greater financial buffer for leaner times. Ten years ago, the typical home was worth 2. 8 times as much as the typical mortgage; at the end of 2005, this ratio had increased to 3. 5, underlining the fact that the country has more equity than a decade ago.

Tapping into housing wealth

A survey of related literature from Bridges et al (2004), Davey (2001), Farlow (2004), Nickell (2004), and Salt and Macdonald (2004) reveals a variety of ways in households can access the equity stored in the residences. The manner in which a particular household harvests equity depends on the circumstances under which the action is taken. Table 2 below has categorized the possible scenarios. The table explains that households that continue to occupy their home can draw equity by re-mortgaging, i. e. borrow by treating their property as collateral. Households who move could access equity either by over-mortgaging the new home, or by buying a cheaper house in the new location, or by selling their house move to a rental unit (thereby liquidating their asset and obtaining the entire stock of equity).

The last possibility covers cases where the owner id deceased or leaves the country, leading to the final sale of the house and the release of 100% of the equity.

Table 2.

Category of Homeowners	Method of Extracting Equity
Houseowners retaining possession	Re-mortgaging: by taking out additional mortgage(s), borrowers could access equity up to a maximum percentage of value
Houseowners that move	Down-grading: these households move to a cheaper home,

thereby harvesting the equity that equals the difference between the value of sale and the portion of mortgage that was owed

Over-mortgaging: these households move to a new residence but manage to obtain a mortgage loan that exceeds the value of the new purchase. This typically occurs in regional

	markets where there is strong expectations of continuous property-value appreciation
	Final sale with return to rental: some households sell their houses in order to move to a rental property ostensibly due to either lack of affordability (those with diminished earnings) or convenience (mostly the elderly and the infirm)
Household	Final sale:

s in which the owner(s) are deceased	when the owners dies, the property is sold with the receipts being used for purposes other than purchase of a house

Having harvested the equity, how a given household’s chooses to allocate it across possible uses depends on a range of socio-economic and demographic factors like income level, family size, amount and composition of wealth, age(s) of the members, their geographical location, and even their ethnicity. The following section provides a detailed discussion of the conversion of equity into a specific one use – consumption.

Housing wealth and the consumption function: Theory, Analysis, andUKEvidence

In this section we begin with outlining the macroeconomic theory behind the consumption function with special reference to the wealth effect. The aim is to both explain the causal relationships behind the various ways in changes in the housing market can impact consumption as well as to identify the factors and circumstances under which the wealth effect might be weakened. The issues in this discussion are with explicit reference to the specific case of the UK.

The original Keynesian consumption function was presented as:

$$C = a + bY_d \quad (1)$$

Where C denotes real consumption, ‘ a’ is the autonomous consumption expenditures, ‘ b’ is the parameter symbolizing the marginal propensity to consume (hereafter, mpc) that was postulated as being a constant fraction, and Y_d the real disposable income. Shifts in the consumption function are considered as being caused by ‘ shocks’ or changes in variables other than Y_d. Given the historical period when Keynes first conceived this relationship, it is not surprising that income was the chief driver of consumer spending. Presumably, because wealth was highly concentrated within the aristocracy and credit was a privilege for the few, Keynes decided to lump all non-income influences on consumption into the autonomous term. Over time, with growing sophistication of macroeconomic theory and of market-based economies in general, the consumption function came to be recognized as the following general formulation:

$$C = f(Y_d, \text{Real Interest Rate, Price Level, Wealth, Expectations}) \quad (2)$$

This explicitly recognized the influence of, among other variables, wealth on consumption decisions, i. e. the wealth effect. However, the formulation stuck with the original assumption of the mpc being constant. That, after all, was acceptable because Keynes’s thinking was anchored in short run considerations and the assumption of unchanging consumers’ sensitivity to income changes was consistent with the model.

However, empirical testing of the formulation revealed that not only did the *mpc* vary with the length of time over which the estimation was conducted (it increased with time), but that its value tended to approach one. This certainly cast a cloud over the consumption function's relevance and reliability in terms of explaining behaviour. [8]

With new thinking about consumption expenditures and about the time-horizon over which a household's economic decisions were made, two new theories emerged. The Life Cycle Hypothesis (LCH) [9] and the Permanent Income Hypothesis (PIH) [10] both began from the fundamentally un-Keynesian assumption that households make decisions based on their assessment of not only the present but also the anticipated or likely future circumstances. In addition, both also held that rational spending and hence saving decisions necessarily involved long term planning – plausibly for rainy days, growth in family size, and old age.

According to Miller (1996) and Gordon (2003), the LCH assumes that permanent incomes are determined over the entire lifetime of the consumer, with allowance for a transitory element that depends on the consumer's professional status. While the lifetime-oriented income could rise or fall in response to changes in productivity and unexpected events, consumption is smoothed and maintained at an even keel with dissaving (or borrowing) making up any shortfall in spending power. Similarly, in boom periods households save and accumulate purchasing power as wealth for future use. The long term level of income is assumed to follow a smooth path. Clearly, wealth plays a critical part in this model as the household accumulates savings in periods when smoothed consumption is below income. Similarly, as needed, wealth is accessed or made liquid for spending when planned consumption exceeds earnings. [11]

The theoretical significance of the LCH – which forms the basis of much of the empirical research reviewed – is easy to see because the way it explicitly incorporates the wealth effect into the household's lifetime decision horizon with respect consumption, it makes it convenient to model housing wealth. Like the stylized household in the model that begins income-earning phase of her life with modest income and some debt (incurred because of current consumption expenditures exceeding lifetime income), the typical new homeowner is relatively young with a mortgage debt that is several times her annual income and little in terms of savings. Over time, in the absence of tumultuous booms, population and income growth in the economy lead to a steady rise in property values and mortgage equity accumulates. With growing needs for durables, the homeowner then has the possibility of ' cashing in' some of the stored housing wealth when current income and savings prove inadequate, much in the same way as the theoretical consumer enters a life-phase during which dissaving takes place. The key idea here is that just like the accumulated housing equity is part of purchasing power for the lifetime, the consumption decision also cannot be inconsistent with a long term budgetary process.

This model also suggests that there are periods (or life phases) in the household's lifetime when wealth is accumulated and when it is used up in the form of consumption. This clearly defines when and under what circumstances mortgage equity is spent. For a young family that continues to occupy a house, the prime motivation is to accumulate equity and harvest it for emergencies or for planned increases in spending that are in balance with expected lifetime earnings which presumably are adjusted for the debt service associated with the additional mortgage. This scenario is consistent with, say, a home improvement project that allows for a larger or growing family or with purchase of durables for a similar purpose. For older homeowners who are approaching retirement or are actually retired, withdrawing equity is consistent with their position in the ‘ life-cycle’. Since the income stream is either expected to end or has ended, spending decisions warrant the use of savings and/or mortgage equity withdrawals (MEW).

Critical to this model is how it treats the rapidly accumulated wealth gains due to a market-driven housing price boom like UK just experienced. Analyzing the housing wealth effect in the context of the LCH, Bridges et al (2004) liken the rise in housing wealth to raising the household’s lifetime budget constraint. Assuming easy access to credit, they identify two pertinent theoretical relationships: one between housing price increases and the lifetime incomes of the wealthier households and the other between housing wealth and the newly acquired debt obligations of the re-mortgaging households. In theory, then, higher housing prices generate wealth effects depending on whether or not the price change is interpreted as permanent or temporary. If households perceive the gains to be permanent or unlikely to be reversed by a sudden housing bust (like what the UK witnessed in the 1980’s and early 1990’s), then it amounts a rise in lifetime income and higher consumption expenditures induced by it are ‘ allowed.’ On the other hand if the price (and wealth) increases are due to random market activity and will most likely be followed by a decline, then the realized buildup of mortgage equity ought to be regarded as a temporary development and no serious consumption outlays need be planned to spend it. LCH holds that households that are pleasantly surprised by equity gains and choose to borrow against it for extravagance or pleasure spending are fully aware of the future debt-service implications and have made the necessary budgetary calculations that reveal that these actions related to the wealth-effect are compatible with their lifetime income. Curiously, O'Sullivan and Hogan (2003) report that Ireland also experienced a housing boom (though not as extreme as the one in UK), but that there were no signs of a wealth effect. This was presumably because Irish consumers did not put much faith in the housing market's longevity and construing the recent price gains as transitory, let the accumulated equity stay ' frozen.' However, it is possible that there were indeed impulses related to a housing wealth effect but simultaneously counteracting forces offset it, resulting in generally unchanged aggregate consumption. [12]

The above discussion opens up three related and important issues: (i) the process by which accumulated housing wealth translates into consumption expenditure, i. e. the anatomy of the wealth effect in the housing context, (ii) the implications of multiple possible uses of MEW for the strength of the wealth effect, and (iii) other macroeconomic factors that can offset the wealth effect or perhaps prevent it from materializing.

Anatomy of the Housing Wealth Effect

There are two channels through which homeowners are able to raise their consumption via the wealth effect. As explained above, one way for homeowners to convert their housing wealth is by harvesting mortgage equity – MEW. Table 2 outlined the variety of ways in which households obtain equity. Benito and Power (2004), Bridges et al (2004), and Davey (2001) provide insight into how MEW has become a major source of consumer financing in the UK. Graph 5 clearly shows the close relationship between housing prices and MEW [13] . Throughout the last three decades, except for the 2003-2004 interval, UK's homeowners have reacted to the housing market's wealth rewards. As Davey (2001) explains, MEW was relatively unimportant in the 1970's but rose sharply in the following decade. In the early 1980's despite a recession, MEW climbed because the period coincided with the privatization of public housing. The first half of 1990's, however, saw a steep decline in households use of withdrawn equity. In fact there was a brief period when there was a net injection of equity into the housing stock. It could be argued that this was a reflection of a rational economic behaviour on the part of homeowners' as they assessed a downward trend in housing prices as being detrimental to their long term finances. With a declining value of their housing wealth, UK's homeowners cut back on withdrawals. Since the mid-1990's price boom, that downward trend in MEW was quickly reversed. This period saw MEW grow faster than housing prices hinting at the possibility of a overly optimistic body of borrowers who expected housing prices and equity accumulation to continue rising at an ever increasing rate. Since at least part of the MEW is withdrawn by homeowners re-mortgaging their houses (see Table 2), this translates into loans secured by their properties. Halifax – BOS (2005) offer compelling evidence in this respect. They report that in 2004, total gross lending secured by dwellings was an astronomical £291 billion – 4% more than the previous year. The figure that was a mere £57 billion in 1995, doubled by 1999 and with growth rates sometimes exceeding 35% had risen to five times that level in 2004. This monumental withdrawal can be interpreted as a major windfall for the homeowners who suddenly found themselves swimming in an ocean of purchasing power made available by the housing market.

The other channel through which housing wealth engenders greater purchasing power in the hands of homeowners is comparatively subtle mechanism. Bridges et al (2004) discuss in great detail, how even without using their property s collateral, homeowners have gained access to ever rising amounts of unsecured credit. The rising value of housing wealth was interpreted by banks and other lenders as indicative of greater borrowing ability, i. e. greater creditworthiness. Naturally, this perception of the lenders was shaped, in part, by expectations of continuous a housing boom. A side implication of this phenomenon is that homeownership in the UK had become a screening device or filter for lenders’ decisions about whom to consider for loans. It follows that this would place renters at a disadvantage with respect to access to credit. Several studies, including Bridges at al (2004) have cited evidence of homeowners being supplied credit on terms far more favorable than those offered to non-owners. It can be reasonably expected that a large portion of the unsecured borrowing was directed toward consumption.

Critical to both these channels is the issue of the ease with homeowners are able to obtain credit in lieu of their housing wealth. The mere existence of mortgage equity must be complemented with an efficient system to gain access to it for the wealth effect to take place. Benito (2004), Bridges et al (2004), and Her Majesty's Treasury (2003) all stress that the liberalization of UK's financial system that began in 1979 (see footnote 6 in Sec. 2) has been instrumental in creating a credit market that has facilitated the historic levels of MEW.

With rising competition among banks and building societies and tremendous product innovation, the lending industry has created a series of affordable and accessible ways in which homeowners can obtain credit. All three studies portray the boom in housing prices and MEW in the UK as unique as compared to all other OECD economies. The coincidence of rising housing prices created huge reserves of withdrawable mortgage equity and supply-side changes in the form of lower restrictions on lending practices and other financial reform is responsible for the explosion in MEW sin