10

Affordability and the Rise and Fall of Home Ownership

10.1 Introduction

This chapter shifts the focus towards the national picture with regional and local issues taking second place. Housing markets and affordability certainly exhibit spatial differences, but there are common movements that affect all areas arising from national policies and wider economic developments. Meen (1999) discusses the relationship between regional house prices in England, associated with the so-called 'ripple effect' where, over most housing cycles since the early 1970s, prices have risen first in London and the south east and then gradually spread to the other regions, re-establishing the long-run relativities. In a small country such as England, co-movements are perhaps unsurprising, but an increasing volume of evidence indicates that a lead city or area also occurs internationally and that prices in some cases converge. Examples include: Gupta and Miller (2010, 2012), Holmes et al. (2011) and Barros et al. (2012) all for the US; Berg (2002, Sweden); Stevenson (2004, Ireland); Luo et al. (2007, Australia); Shi (2009, New Zealand); Chen et al. (2011, Taiwan); and Balcilar et al. (2013, South Africa). Over short distances,

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Table 10.1 Tenure in England (%), 1918 to 2013–2014

	Home owners	Social renters	Private renters
1918	23	1	76
1939	32	10	58
1953	32	18	50
1961	43	23	34
1971	51	29	20
1981	57.2	31.7	11.1
1991	67.6	23	9.4
2001	70.4	19.5	10.1
2003	70.9	18.3	10.8
2005	70.7	17.7	11.7
2007	69.6	17.7	12.7
2009/2010	67.4	17	15.6
2011/2012	65.3	17.3	17.4
2013/2014	63.3	17.3	19.4

Sources: 1918: Holmans (2005); 1939–1971: Holmans (1986); 1981–1991: Labour Force Survey, Housing Trailer; 2001–2007: Labour Force Survey; 2009–2010 onwards: English Housing Survey

the population displacement activities described in Chap. 9 are likely to be part of the explanation.

Table 10.1 sets out the long-run trends in tenure in England; it shows the well-known long-run decline in private renting associated with rent controls, in operation in different forms between 1915 and 1998, and rising real incomes. Higher real incomes lead to a disproportionate rise in the demand for housing quality and space if the income elasticity of housing demand is greater than one. Higher demand was less likely to be met in the regulated private rental sector, but the decline in private renting was still reversed from the mid-1990s. The table also shows the rise and fall in social housing, reflecting changes to funding regimes and dwelling transfers. Finally, it highlights the rise in home ownership, arguably one of the success stories of the twentieth century.

At the end of the First World War, Holmans (2005, Table S.15) estimates that around 23 %[1] of households in England and Wales were home

[1] A figure of 10 % has been widely quoted. Swenarton and Taylor (1985) attribute this to Cleary (1965), but suggest that the estimate is flawed.

owners[2] and, given the modest contribution from the social sector, the remaining households lived in private rentals. Rising real incomes and wider availability of mortgage credit contributed to a rise in home ownership in the inter-war period, reaching 32 % by 1939,[3] but quantitatively the major expansion took place after the war; home ownership rose almost continuously between the early 1950s and a peak of 71 % in 2003, before falling back to 63 % in 2013–2014. This was a very large decline in a relatively short period and its beginnings predated the Global Financial Crisis (GFC). As we saw in Chap. 5, affordability was a problem for many working-class households in the nineteenth and early twentieth centuries, but it remained an issue for succeeding generations and worsening affordability for those at an early stage of their housing careers still played a major role in the post-2003 fall in home ownership. Private rentals fell from 76 % in 1918 to under 10 % by 1991 but, since the nadir, the sector has doubled under the influence of buy-to-let borrowing and now exceeds public renting for the first-time since the 1960s. However, given supply shortages, buy-to-lets compete with owner-occupation demand by potential first-time buyers and are a contributory factor to the decline in ownership. Table 10.1 shows, as discussed in Chaps. 5 and 7, the modest contribution played by social housing (including both local authority and housing association homes) in the early twentieth century and its expansion in the inter- and post-war periods peaking in 1980, when it accounted for approximately 30 % of the housing stock. Social renting declined thereafter because of low levels of new building and the right-to-buy scheme, where local authority tenants have the option to purchase their homes at a substantial discount; approximately 2 million homes have been transferred into ownership.

Affordability has been a long-term problem, but all housing is affordable by someone, otherwise prices would fall; rather it involves the inability of significant proportions of the population to obtain adequate housing. Affordability is therefore heavily concerned not only with aggregate income growth, but also with its distribution and the nature of taxation

[2] We define home owners as those who own outright, are buying with the aid of a mortgage and, in later years, shared ownership schemes.

[3] This refers to England only.

or subsidies; it also concerns access to housing finance. Affordability does not have a commonly agreed definition, but the simplest measures take the ratio of house prices to incomes on the principle that this ratio cannot increase without bound. An extension considers the ratio of mortgage repayments to income thus allowing for variations in mortgage interest rates and the length of loans. A third approach adopts a residual income definition, which calculates the amount of income left for other consumption after deducting housing costs. A fourth defines the housing user cost of capital, generally the preferred approach amongst economists because it can be derived consistently from textbook life-cycle models; it can also be developed to allow for mortgage shortages. Whereas house price to income ratios fell during the GFC, the user cost rose because of the inability of households to access credit.

The development of mortgage markets and their impact on affordability and tenure provides one of the themes of this chapter. Movements in mortgage advances and house prices or construction are highly correlated, but this is not sufficient to conclude that variations in credit *cause* changes in housing activity since the causality may be in the opposite direction. As a derived demand, increases in the demand for housing lead to an increase in mortgages; formally, mortgages only have an impact on housing demand and house prices if: (i) households are constrained in their access to funds—this was common in the UK before financial deregulation in the 1980s; (ii) asymmetric information requires households to provide deposits; (iii) increases in the supply of credit open up new markets such as buy-to-let or sub-prime lending. Mortgage lending expanded rapidly during the inter-war period, facilitating an expansion in home ownership, but deregulation of financial markets in the 1980s was arguably the key structural change and its effects were still being felt during the GFC. The 1980s changes in turn reflected the political climate of the time, which emphasised the deregulation of markets more generally.

A second theme is the impact of land-use planning on affordability, linking up with Chap. 7 where the institutional developments were discussed. A part of the standard case against controls rests on a comparison of real house price trends before and after the 1947 Town and Country Planning Act which are striking. The Act is seen as a major structural

change before which owners of land had limited constraints on their activities. A key question is whether the Act really represented a fundamental shift in practice and whether increases in housing supply could have feasibly limited the rise in prices; alternatively, were demand-side changes influential, such as tax advantages, which lowered the user cost of capital facing households and raised the return on housing relative to other assets? Formal models are necessary to distinguish between different explanations; this requires the use of a suitable house price model and we suggest that our own work, conducted over the last 25 years, provides a basis. A key feature of this work is the constancy of the estimated coefficients; it is not the case that house price behaviour in the UK has changed dramatically and, the fundamentals of housing demand have changed rather little. As above, the main structural change was caused by deregulation of mortgage markets in the 1980s which implied that most households no longer faced mortgage rationing.

10.2 Affordability in the Long Run

The construction of long-run house price indices has become a popular research area internationally; studies include, Eichholtz (1997) who constructs an index for the Herengracht area of Amsterdam between 1628 and 1973, Eichholtz et al. (2012) also for Amsterdam (1550–1850), Lunde et al. (2013) for Denmark (1860–2012), Stapledon (2010) for Australia (1880–2010), Shiller (2005) for the US (1890–1952), and Fishback and Kollman (2012) who concentrate on prices in the Great Depression in the US. Much of the international information is brought together in Monnery (2011). In England, a number of indices have been constructed including Clark (2002) for 1550–1909 and Ormrod et al. (2011) for 1580–1914. However, these indices are typically based on small samples, for example, taken from charitable or ecclesiastical property records, but Holmans (2005) provides the most comprehensive analysis of the availability and limitations of UK house price indicators in the more modern era.

Since only approximately 23 % of houses were owner-occupied in 1918, most estimates of house prices prior to the Great War have to be

derived by multiplying market rents by the 'years of purchase'. 'Twenty years purchase, for example, meant a capital value equal to 20 times the current annual rental' (Holmans 2005, p. 272). Holmans derives a capital value index for rented property between 1895 and 1913 and finds that on average capital values rose by only 0.2 % per annum, although rising at a faster rate in the first half of the period. Information on house prices in the inter-war period is scarce,[4] although Samy (2015) constructs a hedonic price index for London between 1895 and 1939. He documents steady inflation between 1895 and 1903, followed by rapid deflation between 1903 and 1914 in the Edwardian era (Fig. 7.1 shows that these correspond to the boom and slump in construction activity) and a surge immediately after the First World War as demand exceeded supply. Prices rose by 35–50 % (according to the chosen index) between 1920 and 1925, then fell by 5–8 % between 1930 and 1935, but a recovery later in the decade meant that nominal house prices in 1938 were only modestly below those at the start of the decade. Housing markets in Britain never suffered to the same extent as the US in the Great Depression (see Fishback and Kollman 2012) partly due to the differences in the mortgage market structure and housing contributed to leading the country out of the Depression. Samy (2012) argues that lengthy loan periods were provided even in the early twentieth century to working-class households and the UK had a tradition of providing long mortgage terms; but, before the Great Depression, mortgages in the US were generally only short term and at low loan to value ratios. The inability to roll over mortgage loans was important in explaining the collapse in US markets and subsequently led to the creation of what became Fannie Mae as a government agency to operate a secondary market in Federal Housing Administration guaranteed mortgages.

'Officially published' house price measures are available from 1930 for the country as a whole. Series expressed in real terms (deflated by the consumers' expenditure deflator) and relative to average earnings[5] are shown in Fig. 10.1, although the data are spliced from different sources and are

[4] Holmans (2005) describes the sources that are available for this period.

[5] Consumer prices and earnings are taken from the Bank of England 'Three Centuries of Data' data bank.

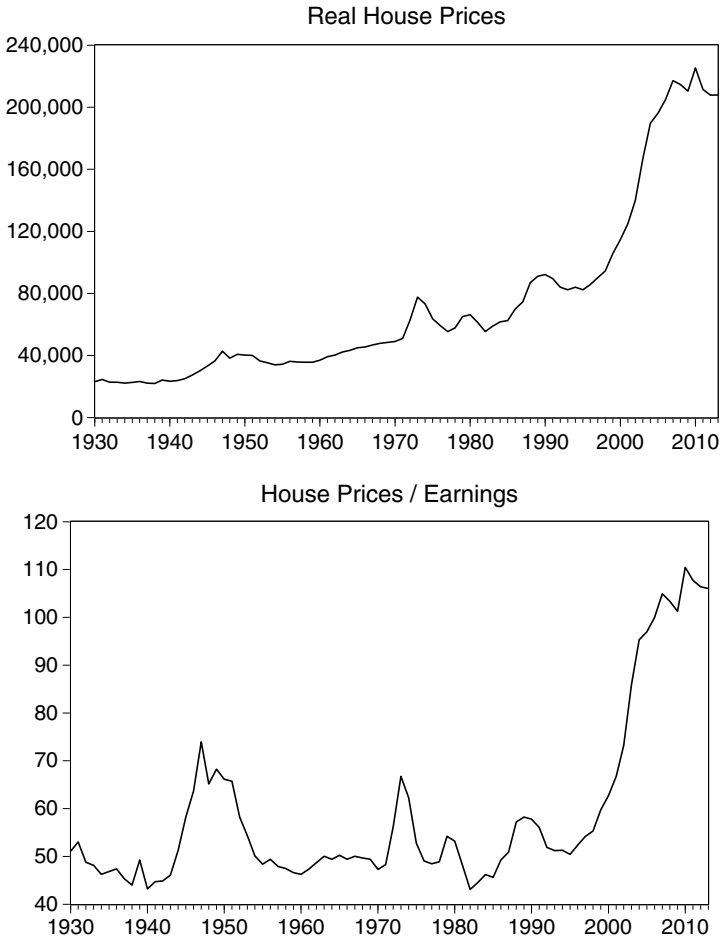

Fig. 10.1 Real house prices (£) and prices/earnings (2006 = 100), UK, 1930–2013 (1939–1945 interpolated)
(*Source*: Bank of England and ONS)

not strictly consistent over time. The graph shows the relative stability of prices in real terms before the Second World War, but the major post-war increase; this provides *prima facie* evidence for the effects of supply constraints introduced by the Town and Country Planning Act, but the rise is unlikely to be mono-causal. Relative to earnings, prices show less

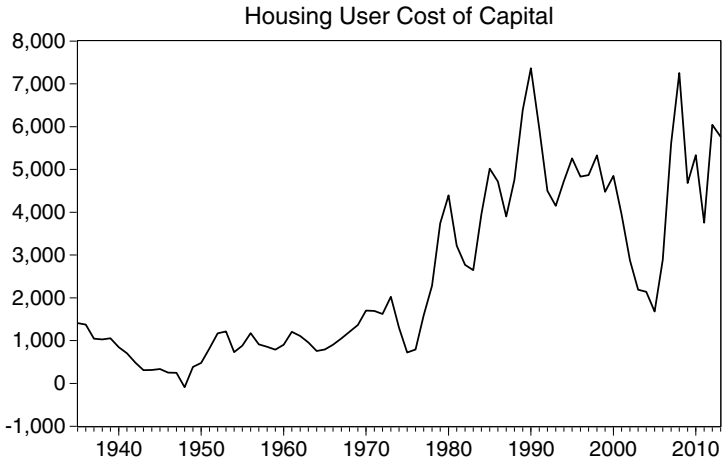

Fig. 10.2 Housing user cost of capital (£ pa), 1935–2013 (1939–1945 interpolated)
(*Source*: Authors' calculations)

of a trend until the boom of the mid-1990s.[6] Although not evident from the graphs, Andrew and Meen (2003) showed that the earnings of young households had declined relative to older households from the 1980s, a trend that is continuing and has implications for the distribution of housing.

Figure 10.2 shows a version of the housing user cost of capital which represents the annual price of a unit of owner-occupier housing services. In addition to measuring real house prices, the user cost takes into account movements in interest rates, mortgage subsidies, maintenance expenditures, depreciation and local taxation, but the key extension to the previous indicators is that it also includes, as a negative cost, the expected capital gain on housing.[7] In practice, most of the volatility in the user cost arises from variations in house prices, mortgage rates or

[6] Between 1930 and 1995 (the start of the boom), an Augmented Dickey-Fuller ADF(1), test on the price to earnings ratio gives a value of –3.01 (5 % critical value –2.9), suggesting borderline stationarity. Over the same period, real prices are non-stationary.

[7] The measure is defined more precisely in Appendix 1.

capital gains.[8] There is no universally-agreed measure of expected capital gains and here it is calculated as the average annual appreciation over the previous three years. Visually, the graph suggests differences between the pre- and post-1980 periods; the user cost showed little trend either side of 1980, but there was a structural change that raised the user cost in the early 1980s, at least on this version of the variable. The average user cost between 1981 and 2013 was approximately four times higher than between 1935 and 1980. Given the centrality of the user cost to housing demand theory, the difference needs explaining; this brings us to the role of credit markets.

10.3 Mortgage Markets and Structural Change

Building societies dominated the provision of mortgage finance for most of the twentieth century; their roots lay in the self-help, building clubs of the eighteenth century which were wound up when each member obtained a home, but they evolved into mutual permanent societies, expanding rapidly in the second half of the nineteenth century. At the turn of the twentieth century, 2208 societies were registered with 578,000 shareholders.[9] The number of societies then steadily fell, but shareholders and borrowers continued to grow strongly, particularly in the inter-war period; shareholders more than trebled between 1919 and 1939, whereas borrowers increased at double-digit rates for most of the 1930s. As noted in Chap. 7, Humphries (1987) stresses the tax advantages enjoyed by societies, under the composite tax rate arrangements, in attracting depositors, which particularly favoured higher-income investors; these tax benefits were heavily marketed in the 1920s. Scott and Newton (2012) also emphasise the role of strong advertising expenditures in promoting business in this era when the close relationships between

[8] Consequently, maintenance expenditures, property taxation and depreciation are excluded from Fig. 10.2, since data are not available for the early part of the period.

[9] Building Societies Association and Council of Mortgage Lenders (1995, Tables G1 and G2). This volume is the source of most of the statistics in this section.

societies and speculative builders aided the inter-war expansion in home ownership.

The strength of building societies continued after the Second World War and, in the mid-1960s, accounted for approximately 70 % of the outstanding mortgage stock and 80 % in 1980. Banks at this stage had only very modest quantities of mortgage loans and most of the remainder was advanced either by local authorities or insurance companies. In terms of balance sheet structures, until the 1980s, mortgage loans accounted for approximately 80 % of building society assets with the rest primarily held in liquid assets; liabilities still overwhelmingly took the form of shares and deposits attracted from households. In summary, the UK mortgage finance model remained at this stage heavily retail funds based. Similarly, building society deposits constituted more than 40 % of total household gross liquid assets in 1980. Crucially, until 1983, the trade body—the Building Societies Association—recommended the interest rates that societies should pay to investors and charge on mortgage loans; in practice most societies followed the recommendations, so that there was a common interest rate structure across the industry. Furthermore, interest rates were changed relatively infrequently and did not necessarily follow market rates, implying that shortages of retail funds could lead to mortgage rationing; Meen (1990a) demonstrates that rationing was common post-war until the early 1980s. Rationing typically took the form of controls on loan to value and loan to income ratios and required savings periods before the society would consider granting a loan. The extent of mortgage rationing in the earlier inter-war period is quantitatively unclear, although Broadberry (1987) suggests that rationing was the norm and Scott (2013, p. 214) points to differences between the north and south of the country in the 1920s. Nevertheless, from the above, mortgages were expanding rapidly in the 1930s, deposit requirements were modest and increasingly working class households were entering into home ownership.

All this was to change in the liberalised and competitive markets that were to characterise the 1980s. A number of key structural developments can be identified; first, the abolition of the 'corset' controls on bank lending in 1980 led to a major increase in loans from this source; bank loans secured on dwellings rose from 5 % of the total in 1979 to 30 % 10 years

later. Second, led by the Abbey National Building Society (the second largest), the recommended interest rate system broke down in 1983, to be replaced by an advised rate system, which was itself removed in 1984. Third, the arrival of banks in the market meant that building societies were at a competitive disadvantage since they relied almost exclusively on retail funds. In principle, they could raise funds from wholesale sources, but the requirement that societies should pay interest net of tax (and was unreclaimable) provided an effective barrier. The 1983 Finance Bill contained provisions, however, that allowed societies to pay interest gross on Certificates of Deposit. The use of wholesale funding expanded and, by the end of 1984, wholesale deposits accounted for 3.7 % of total liabilities; this was the beginning of the widespread use of wholesale funding models in later years throughout the industry. Fourth, from the late 1970s, societies came under increasing pressure, both internally and externally, to increase competition and to maintain interest rates at levels which would meet mortgage demand. Given the new competition from banks, societies argued for a restructuring of the legislation under which they operated—a 1962 Act consolidating legislation dating back to 1874; therefore the legislation had largely been unchanged for more than 100 years. This legislation required societies to lend on the security of freehold or leasehold property and so societies could not, for example, issue credit cards; societies argued that they should be allowed to enter into wider fields. A Green Paper published in 1984 (which was the forerunner of a new Building Societies Act in 1986) stated that the collective interest rate agreement inhibited free market forces and recommended a process of change, beginning with the withdrawal of exemption from the Restrictive Trades Practices Act. More generally, after the 1986 legislative changes, objectives were more closely aligned with profits and moved away from the more socially-orientated focus that had historically characterised the mutual organisations. The 1986 Act (subsequently revised in 1997, 2000 and 2012) provided the new operational framework; in addition to extending the range of operations to allow unsecured loans and other functions of banks on an equal basis, the Act also set out conditions for mergers, demutualisation and take-over on the agreement of members. The Abbey National was the first to demutualise in 1989 becoming a public company, but mergers and take-overs (usually by banks) meant

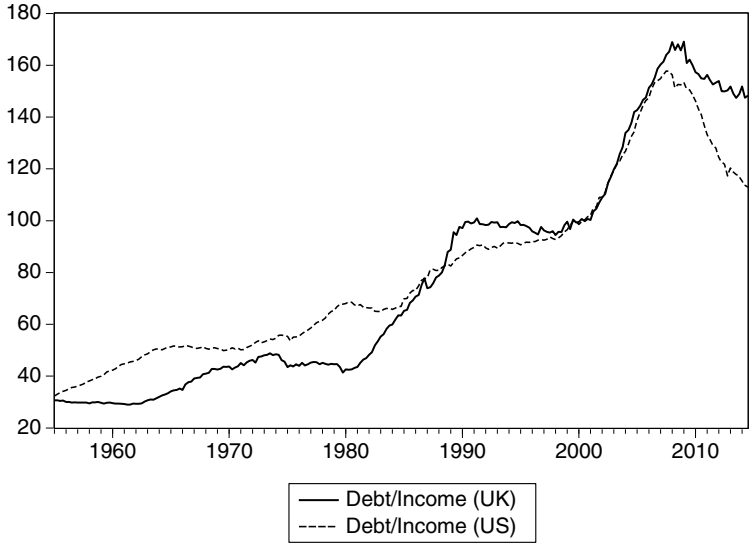

Fig. 10.3 US and UK mortgage debt relative to household disposable income (2000 = 100), 1955–2013
(*Source*: UK: Bank of England and ONS; US: Federal Reserve Board and Bureau of the Census)

that in 2015 only 48 societies remained in existence. At the end of 2012, societies only accounted for 16 % of the outstanding mortgage stock, compared with almost 70 % by banks.

For our purposes, the key change of the 1980s was the ending of rationing arising from the entry of banks on a large scale and the more competitive practices of building societies, highlighted in Fig. 10.3, which shows the aggregate household mortgage debt to income ratio since 1955. The same ratio for the US is also given for comparison. Despite very different mortgage systems, historically based on retail deposits in the UK and securitised debt in the US, the trends have been similar. Neither country, over long time periods, shows any obvious equilibrium debt to income ratio.

Concentrating on the UK, the figure reveals the distinct phases; up to the early 1980s there was little trend, because of the rationing of building society advances. The period until the late 1980s then saw an explosion of credit as controls were relaxed, banks entered the market and households

adjusted their portfolios. The ratio flattened during the first half of the 1990s as a result of the recession, but did not fall since households were locked into long-term debt and the option to reduce debt either by overpayments or by moving were limited during a downturn, particularly for those experiencing negative equity. Credit again expanded rapidly from the mid-1990s to 2007 during the extended boom for the housing market and the economy more generally. But the growth could not be financed by retail deposits alone; rather growth corresponded to the expansion in wholesale markets and in securitisation, which only fell with the Global Financial Crisis from the beginning of 2008. However, although net mortgage advances, the *flow* of credit, fell sharply and has still not fully recovered, Fig. 10.3 indicates that the stock of debt declined more modestly, certainly compared with the US. The expansion in debt since 1996 also coincided with the growth of buy-to-let mortgages, which were largely responsible for a reversal of the long-run decline in the private rental sector by providing an alternative investment vehicle for small landlords, particularly at a time when returns on financial assets were weak. The market was heavily affected by the GFC, but subsequently rebounded and, in 2015, 17 % of gross loans were buy-to-lets, a similar value to loans to first-time buyers with whom, at least partially, there was competition in the demand for the limited housing stock.

First-time buyers also suffered from rising deposit requirements; this was particularly evident from the onset of the GFC, although the rise may have begun earlier[10] and the increase appears greater than might be expected from asymmetric information considerations alone. Default rates on mortgages rose in the GFC, but never approached those experienced in the US, aided by low interest rates; properties taken into possession in the UK in fact reached their maximum in 1991. Instead, the rise in deposits partly reflects a return to the absolute mortgage shortages that characterised the pre-liberalisation period. The inability of first-time buyers to raise the required deposit has shaped much of recent housing policy, notably through the introduction of help to buy and shared ownership initiatives.

[10] Mean and median loan to value ratios provide conflicting evidence. The former suggests that deposits had been rising over the whole of the boom period since the mid-1990s.

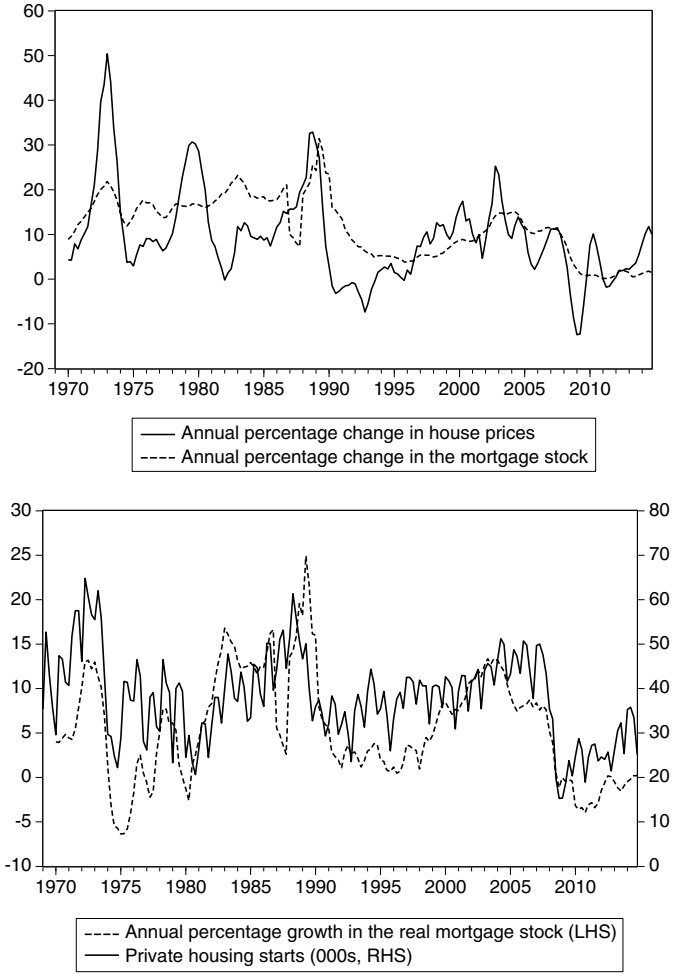

Fig. 10.4 Housing activity and mortgage debt, 1970–2014 (*Source*: ONS and Bank of England)

Empirical and theoretical work on the relationship between housing volatility and debt has a history dating back to at least the 1950s in North America and the UK. Superficially, it is easy to see why this should attract attention since, even on modern data, there remains a strong correlation. From Fig. 10.4, between 1984 (when, as discussed

above, mortgage controls began to be relaxed in the UK) and 2014, the correlation between the annual growth in nominal house prices and the nominal growth in the mortgage stock was 0.57. The correlation between housing starts and the growth in real mortgages was even higher at 0.67.

Of course, causality cannot be inferred; however, theory helps to define the conditions under which it is valid to conclude that credit availability causes changes in activity. From the conventional life-cycle model, Eq. (10.1) can be derived. This simply states that the real house price at time (t), (g_t), is determined by the present value of the stream of (imputed) rental payments (R_t), discounted by the user cost of capital (UCC_t). This is similar to the conventional discounting formula used in financial analysis with two exceptions; first, the numerator is the *imputed* rent and therefore the price depends on the tax provisions for owner occupied properties (see Sect. 10.4); second, the denominator—defined in Eq. (10.2)—is broader than the conventional discount rate.[11]

As (10.1) and (10.2) stand, there is no role for credit in determining either housing demand or house prices, despite the strong observed correlation. In the standard model, increases in mortgage availability only affect house prices if households are rationed; mortgages affected prices before the liberalisation of markets in the 1980s and during the GFC, but not in the intervening years.[12] Formally, rationing constraints can be taken into account by amending the user cost (10.3), where λ_t is related to the difference between mortgage demand and supply (10.4). Credit shortages raise the user cost and therefore have a negative effect on house prices.

$$g_t = R_t / UCC_t \tag{10.1}$$

where:

$$UCC_t = \left[\left(1-\theta_t\right) i_t - \pi_t + \delta_t + pt_t + m_t - \dot{g}_t^e / g_t \right] \tag{10.2}$$

[11] Note that Fig. 10.2 multiplies this by the real house price.

[12] As above, an exception is the need to provide deposits because of asymmetric information, but this version of the model does not allow for risk.

or:

$$UCC_t = \left[(1-\theta_t) i_t - \pi_t + \delta_t + pt_t + m_t - \dot{g}_t^e / g_t + \lambda_t \right] \quad (10.3)$$

$$\lambda_t = \alpha_1 \left(M^d - M^S \right)_t \quad (10.4)$$

g = real purchase price of dwellings (£)
R = imputed rental payment (£)
UCC = user cost of capital (%)
θ = rate of mortgage interest tax relief (%)
i = mortgage interest rate (%)
δ = depreciation rate on housing (%)
π = general inflation rate (%)
pt = property tax rate (%)
m = maintenance expenditures as percentage of the property value (%)
λ = measure of mortgage rationing (%)
M = growth in the mortgage stock, (d, s) are demand and supply respectively (%)
$(\cdot)$ = represents the rate of change
(e) = expected value
t = time subscript

Rationing implies that Fig. 10.2 for the user cost needs to be amended and Fig. 10.5 plots the user cost with and without rationing. In each case, Eqs. (10.2) and (10.3) are multiplied by the real house price, as in Fig. 10.2. The measure of rationing prior to the early 1980s is taken from Meen (1990a) and measures the difference between the growth in estimated mortgage demand and supply. Information is only available from 1963; a similar variable post-2007 is constructed by calculating what mortgage demand would have been in the absence of the constraints imposed by the GFC.[13] Two findings are striking: first, the inclusion of rationing means that there is no longer a structural break from 1980.

[13] This is calculated from the constructed value of mortgage demand, derived from an equation estimated between 1983 and 2007, i.e., the unconstrained period.

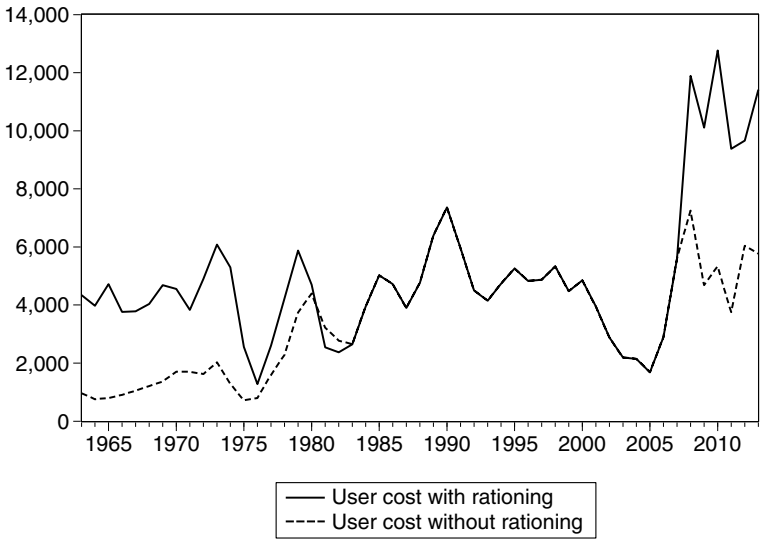

Fig. 10.5 Housing user cost of capital (£ pa) with and without mortgage rationing, 1963–2013
(*Source*: Authors' calculations)

The user cost between 1963 and 2007 shows no trend[14] and is no longer higher post-1980, reflecting the fact that the user cost was underestimated in Fig. 10.2. Second, the user cost rose sharply during the GFC. Since the constraints primarily affected potential first-time buyers, the fall in the owner occupation rate shown in Table 10.1 is unsurprising. Under the extended version of the user cost, renting becomes 'cheaper' than owning. Furthermore, on this definition, home ownership costs were noticeably higher than those faced by any earlier post-war generation.

A final important issue is the sensitivity of house prices to changes in monetary policy, an issue discussed in Meen (1996), where the deregulation of mortgage markets was found to increase significantly the responsiveness of house prices to changes in interest rates. The reason is straightforward: a reduction in mortgage interest rates leads to an increase in housing demand which, for a given housing stock, increases

[14] The ADF(1) test yields a value of −5.32 compared with −2.31 if the rationing measure is excluded (the 5 % critical value is −2.93). Note that $\alpha_1 = 2.0$ and is determined by the data (see Appendix 1).

house prices. But, at times of rationing, the inability to obtain credit acts as a buffer to housing demand and mitigates the price response. Similarly, the reduction in bank base and mortgage interest rates during the GFC did not produce the stimulatory effect on housing that might have been expected because of the offsetting increase in mortgage shortages.

10.4 Demand Subsidies

As discussed in Chap. 7, building subsidies, for both the public and private sectors, were first introduced in Britain after the Great War, but subsidies evolved over the next hundred years. For home owners, subsidies have included tax relief on mortgage interest payments, the absence of taxation on imputed rents (after 1963) or capital gains on principal homes, deposit assistance, mortgage guarantees, and renovation grants. Low-income private tenants have benefited from income support, rent control and security of tenure. Social tenants have gained from direct housing provision at below market rents, housing benefit, and the opportunity to purchase their properties at substantial discounts through the right-to-buy scheme introduced in 1980.

The details of support differ considerably, but most countries recognise housing as a merit good and provide subsidies in some form. Support can be classified, broadly, as demand and supply subsidies or producer and consumer subsidies or, as above, by tenure. Yates (2012) provides a general classification for international subsidy regimes and discusses the motivations for their provision. *Market supplementing* subsidies are designed to improve allocative and productive efficiency by correcting cases of market failure or externalities. *Market supporting* policies include the provision of well-defined property rights, well-developed land-use planning regimes and a supportive mortgage market structure. *Market replacing* subsidies are those that over-ride the market, such as the direct provision of housing by public authorities.

Gibb and Whitehead (2007) highlight four phases of post-Second World War European policy. The first involved large-scale government construction programmes in the 1950s and 1960s to address acute housing shortages; the second emphasised renovation and slum clearance programmes, which were particularly prevalent in the UK between the

1950s and 1970s and were a continuation of stalled pre-war programmes; the third comprised a transition towards a market-orientated approach to finance provision and targeted support, which included a shift from general supply subsidies to means-tested demand subsidies notably housing benefit; the fourth was a period of increased concern with affordability and access, particularly for those on low incomes. They show that, in 1975–1976, 82 % of public spending on housing in England was on supply subsidies and only 18 % on demand subsidies; of the latter, 14 % was spent on mortgage interest tax relief and less than 4 % was allocated to rent rebates or allowances for tenants in the social and private sectors. By 1999–2000, the position had been reversed with 86 % of expenditure going on targeted demand support; since mortgage tax relief was being phased out by this stage (see below) 70 %, or approximately £9 billion, financed rental housing benefits in the social and private sectors. By 2012–2013, benefit payments had risen to £24 billion (Wilcox et al. 2015, Table 122),[15] reflecting the move to market-related rents and rising housing market costs generally as house prices rose—Eq. (10.1) shows the direct theoretical relationship between house prices and rents, although this has not always held in practice.

As noted in Chap. 7, rent controls were first introduced in the 1915 Rent and Mortgage Interest (War Restrictions) Act in response to the severe housing shortages; the measure was originally intended to be temporary, but controls continued in various forms until 1989. The original Act froze rent and mortgage payments on properties with a rateable value above £35 in London and £26 elsewhere in England. Subsequent Acts modified the types of properties covered and the value limits, but Samy (2015) indicates that only one-eighth of working class properties controlled in 1919 had been derestricted by 1930. Further decontrol was introduced in 1933, but war-time restrictions were re-imposed in 1939; once again these were intended to be temporary, but full deregulation was not completed until the 1988 Housing Act. In the interim, the 1957 Rent Act decontrolled more valuable houses and those obtained with vacant possession. The 1965 Rent Act introduced regulated tenancies with fair rents set by new independent rent officers, where rents took into account

[15] For Great Britain.

market levels and the 1988 Housing Act provided that all new lettings would be assured tenancies, whose rents were not regulated. As Wilcox et al. (2015, Table 72) show, deregulation led to significant increases in private rents as a percentage of average earnings, from 17.5 % in 1990 to 26.4 % in 2013. Moves towards market levels for housing association rents over the same period increased the share of earnings from 10.9 % to 13.7 % (8.9 % to 13.1 % for local authority tenants). As noted above, the rises led to major increases in targeted benefit payments.

Mortgage interest tax relief was initially introduced in the 1923 Housing Act (Holmans 1986, p. 86), accompanied by the imposition of Schedule A tax on the associated imputed rental income. This system relied on the regular revaluation of properties, but the last revaluation took place in 1934. The tax yield therefore gradually, declined and was, finally, abolished in 1963. In simplified form, Eqs. (10.1) and (10.2) show the expected effects; if rents are taxed, but relief granted on mortgage payments, then real prices are not distorted, but the maintenance of tax relief alone leads to a capitalisation of the subsidy into house prices or, if the price elasticity of housing supply is high, to a distortion of resources towards housing construction and away from other (capital) goods. The cost of mortgage tax relief was minor until after the Second World War and few working-class owners had sufficiently-high incomes to benefit; the estimated cost in 1945 was £10 million and this had only risen to £45 million by 1958/1959. The cost rose dramatically, however, peaking at £7.7 billion in 1990/1991. The cost of relief depended positively on the level of owner occupation, the outstanding mortgage stock, the mortgage interest rate and the household income tax rate. Until 1990/1991 tax relief was at the borrower's marginal tax rate and was therefore more beneficial to higher-rate payers. From then until 1993/1994, relief was restricted to the basic tax rate and, then, reduced in stages until its final abolition in 2000/2001. The rise in the nominal mortgage rate contributed particularly to the peak in the subsidy, reaching a record 15 % in 1990. The subsequent fall in interest rates, aided by restrictions on eligibility for relief, led to a sharp fall in the cost (£1.6 billion in 1999/2000) and, in fact, the estimated reduction in house prices arising from the final abolition appears to have been minor and attracted remarkably little public criticism. The timing matters; by contrast, Meen (1996) estimates

that, if tax relief had been abolished in 1994, house prices might have been 5–7 % lower than the outturn.

The move to phase out mortgage tax relief reflected its heavy budgetary burden, but it had also been regularly criticised on the grounds that it contributed to the economic distortions that were widespread across housing since the structure of subsidies was far from tenure-neutral. An important strand of the housing literature in the late 1970s and 1980s concentrated on the interaction between high rates of inflation in this era with a tax system that conferred benefits to owner occupation, which other forms of investment did not enjoy. The distortions arose because the user cost of capital is not neutral with respect to the rate of inflation and so, at times of high inflation, the relative return to housing rises. Interest in the issue became less intense with the subsequent fall in general inflation, but the impact of housing on the macroeconomy more generally was beginning to be appreciated, notably through the relationship between house prices and consumers' expenditure (see, for example, Maclennan et al. 1998).

10.5 Decomposing House Price Changes

The consensus amongst economists is that the trend rise in real house prices and worsening affordability after the Second World War can be primarily attributed to the land use regulations introduced by the 1947 Town and Country Planning Act. Some planning controls had already been introduced in the nineteenth century as a means of improving sanitary conditions; building regulations had also been put in place after the Great Fire of London in order to prevent a recurrence and owners of private large estates were able to control the types and speed of development, such as in the residential squares of central London in the eighteenth century. Chapter 6 discussed the nature of development controls imposed by the land rights system in Scotland but, nevertheless, the 1947 Act is seen as a turning point. But other events were taking place at the same time, which also influenced house prices, for example, the demand subsidies discussed in the last section. Understanding the relative contributions requires a formal model. Three factors are crucial: (1) the income

elasticity of housing demand relative to the price elasticity and the growth in real income, (2) the time-series properties of the user cost of capital in Eq. (10.3), (3) the growth in the owner occupier housing stock and the associated elasticity of house prices with respect to housing supply.

Decomposing price changes into these elements requires a model where the underlying elasticities are fairly constant over long periods of time; a series of papers by Meen (1990b, 2013) and Meen and Andrew (1998) provides the basis. Table 10.2 sets out the most important long-run elasticities in each of the three papers with, in the final column, an updated version using more recent data. Further discussion of the derivation is given in Appendix 1, but the elasticities are similar over different generations. Using the equation in the final column, Fig. 10.6 compares the estimated *equilibrium* real house price with the *outturn* since 1963. Although the two series track closely, the graph indicates that, as expected, equilibrium prices lead the outturn, because prices only adjust gradually to the equilibrium. This is particularly clear for the 1996–2007 boom, but was also a feature of earlier upturns.

Importantly, Table 10.2 indicates that the elasticity of house prices with respect to income exceeds two. By inversion, this implies that the

Table 10.2 The long-run determinants of house prices [dependent variable: ln(*g*)]

	Oxford Bulletin of Economics & Statistics, 1990	Scottish Journal of Political Economy, 1998	Urban Studies 2013	Updated version
Estimation period	1964(3)–1987(4)	1969(3)–1996(1)	1969(3)–2007(4)	1969(2)–2012(4)
Equation st. error	0.0155	0.0148	0.0157	0.0159
ln(*RY*/*HH*)	3	2.401*	2.614	2.298*
ln(*RW*)	0.451	0.336	0.321	0.222
UCC	–0.054	–0.037	–0.061	–0.048
ln(*HS*/*HH*)	–1.809	–1.744*	–1.545	–1.630*

*Specification is slightly different because neither variable is divided by HH
g = real house price index (2002 = 100)
RY = real household disposable income (£m)
HH = number of households (000s)
RW = real gross wealth (£m)
UCC = user cost of capital (%)
HS = stock of owner-occupied dwellings (000s)

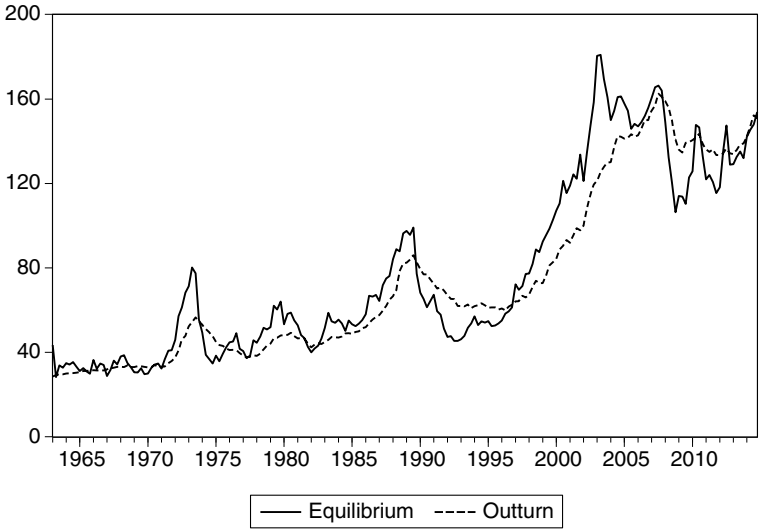

Fig. 10.6 Equilibrium and outturn (2002 Q1 = 100) real house prices, 1963–2013

income elasticity of housing demand is approximately twice the price elasticity, for a given housing stock. There is evidence in the literature that the demand for space is, indeed, income elastic (see Chap. 3); given inelastic supply, this adds to price pressures. Using the coefficients in Table 10.2 and the actual growth rates in income, wealth, the user cost and the housing stock,[16] the trend price increase can be decomposed into its constituent elements between 1963 and 2013. Over this period, real house prices rose by an average 3.5 % per annum: of this increase, real income contributed a rise of 6.5 %, real wealth contributed 1 %, but the increase in the housing stock reduced the price trend by 3.1 %.[17] However, since the user cost had no long-run increase, it had little impact on long-run price growth. Changes in the user cost were particularly important in explaining the short-run volatility in house prices, but did not affect the long-run growth path.

[16] The annual average growth rates between 1963 and 2013 are, respectively, 2.9 %, 4.7 %, 0.0 %, and 1.9 %.

[17] The remaining variables shown in the Appendix produced the difference of approximately 1 %.

The key policy question is the required level of construction necessary to reduce the house price trend. If the policy aim was to reduce real growth to zero then the growth in the housing stock would need to approximately double. This translates to a *permanent* level of private housing starts of more than 300,000 per annum, whereas Chap. 7 showed that these levels had only been achieved historically on a temporary basis. There are significant error margins associated with these estimates, but the general problem is clear. It might reasonably be argued that constant real house prices are neither necessary nor desirable, since increasing real prices are common in Europe. However, even to reduce real house price growth permanently by one percentage point would require an increase in the growth rate of the housing stock of approximately 30 %. There must be some doubt whether the market would have achieved these increases permanently even in the absence of the Town and Country Planning Act.

The fundamental issue is that the income elasticity of demand is high relative to the price elasticity and demand subsidies have their main long-run influence through an income effect. It is important to stress that the price increase does not just reflect new households; it also reflects increasing demands for housing services by existing owners either trading up or purchasing further homes. As Meen (2013) demonstrates, existing home owners take advantage of gearing from increases in the values of their current homes, a benefit that first-time buyers do not enjoy.

10.6 Final Comments on Changes in the Distribution of Home Ownership

We tend to forget that the dominance of owner occupation is a relatively recent event, only exceeding 50 % in the early 1970s and with growth from 1980 fuelled by Right to Buy. There is no divine right for ownership to remain the dominant tenure; but neither is it the case that the post-2003 decline will necessarily continue indefinitely. On the demand side, the key factors historically have been the relative costs of renting versus home-ownership, income growth, access to mortgage credit, competition from investors and, on the supply side, levels and types of construction.

Samy (2012) finds that, even before the Great War, mortgage interest payments for working-class households were often lower than corresponding rents. Even small differences mattered for the low paid since the average percentage of earnings spent on rents was strongly negatively correlated with average earnings. From the records of the Co-operative Permanent Building Society, Samy suggests that mortgage loans favoured members of the working classes able to afford mortgage repayments through the combination of second incomes (particularly those provided by children or through taking in lodgers) and the fairly easy terms on which mortgages were granted, notably low interest rates and long repayment periods. However, different societies adopted different practices and by contrast the London Grosvenor Building Society favoured richer borrowers, who were buying for speculative purposes. Swenarton and Taylor (1985) argue that, subsequently in the 1920s, the growth in owner-occupation was an overwhelmingly middle-class expansion, although Scott (2013) indicates that, in the 1930s, home ownership received a major boost from working-class households. By the early 1930s, affordability had improved to record levels and, as discussed above, the availability of mortgages and the terms on which they were offered favoured home ownership.

The spatial distribution of new construction for home ownership was also changing towards the Midlands and South and away from the traditional heartlands of building societies in the North. Prior to the Great War, Swenarton and Taylor indicate that concentrations were amongst isolated working-class towns and newly-built middle-class suburbs. The former included Lancashire cotton towns, Yorkshire wool districts, mining areas of South Wales and ship-building towns. The security of well-paid employment, relative physical isolation (since well-established rental investment markets were less likely to exist) and the institutional framework provided by building societies to channel savings into ownership opportunities were particularly important. However, by the inter-war period, high-ownership towns had shifted and had distinct characteristics: first, those with a tradition of working class ownership in the nineteenth century, carried over to the twentieth century; second, towns with large middle-class or retired populations; third, boom towns were associated with high ownership since these locations experienced both

Table 10.3 Regional home-ownership (%)

	1971	2001	2011	Change 1971–2001	Change 2001–2011
North East	38.2	63.6	62.2	25.4	–1.4
North West	59.2	69.3	65	10.1	–4.3
Yorks & Humberside	51.5	67.6	64.5	16.1	–3.1
E. Midlands	53.2	72.2	68	19	–4.2
W. Midlands	53.7	69.6	65.6	15.9	–4.0
East of England	53.6	72.7	68.3	19.1	–4.4
Greater London	39.3	56.5	49.5	17.2	–7.0
South East	57.2	74	68.7	16.8	–5.3
South West	55.6	73.1	68.2	17.5	–4.9

Source: Census of Population 1971, 2001, 2011

strong population growth and new building, including the expansion in the outer suburbs of London discussed in Chap. 7.

Scott (2013, Table 6.2) shows that ownership rates in 1937–1938 across the English regions were broadly similar for working-class households, although much lower in Scotland and Northern Ireland, and Table 10.3 shows the spatial distribution for all (not just working-class) households[18] in 1971. Ownership rates were similar with the exception of the north east and London and, in the case of the former, home ownership had caught up by 2001; between 1971 and 2001, all regions experienced large increases, although London still remained out of line. Low levels of ownership in London reflect not only the highest average house prices, but also the fact that the population is younger, mobile and as likely to be renters by choice as by necessity. A different pattern emerges between the inner and outer London districts however: the outer areas behaved in a similar manner to the other regions; home-ownership exceeded 70 % in 2001 in many outer boroughs, but was under 40 % in inner Camden, Hackney, Islington, Lambeth, Southwark, Tower Hamlets and Westminster. The decline in ownership between 2001 and 2011 also exhibited common trends, again with more modest changes in the north east, but London experienced the biggest fall from an already low base.

Finally, although regions have experienced similar changes, different households within the regions have certainly not been equally affected.

[18] Data are standardised to the Government Office Regions.

The decline in ownership has fallen heavily on the young. The English Housing Survey shows that the percentage of household reference persons (broadly heads of households) who are owners aged 25–34 fell from 67 % in 1991 to 40 % in 2012–2013. Even for those aged 35–44, the percentage fell from 78 % to 62 %. Nevertheless, baby-boomers gained; the passage of time meant that the percentage of the 45–64 age group who were owners was approximately unchanged between the two dates at 75 % and for those aged 65–74 the proportion rose from 62 % to 79 %. At the start of 2015, only 19 % of gross residential loans were advanced to first-time buyers (with similar values in the previous three years), whereas buy-to-let loans, primarily taken out by older households had risen to approximately 17 %. Meen (2013) shows that, despite the undoubted benefits of a vibrant private rental market, the ability of buy-to-let borrowers to access accumulated equity from their existing dwellings adds to market volatility.

10.7 Appendix 1: Models of House Prices

This appendix discusses the fundamentals of theoretical and empirical models of house prices, paying particular attention to that used in Meen (1990b, 2013), where more details can be found. The starting point is the life-cycle model of household behaviour, including housing, where households maximise an inter-temporal utility function, with arguments consisting of housing and an aggregate consumption good, subject to a budget constraint. The longevity of the housing stock, which can be sold as an asset as well as being consumed, implies that behaviour is related across periods and expected capital gains become important. Eqs. (10.1) and (10.2) in the main text are derived from the first-order conditions. If households face credit shortages, then (10.3) holds instead. Constraints raise the user cost of capital.

There are, however, issues in operationalising the model for empirical estimation. In the UK, because of the historical controls on rents, there are inadequate data for the numerator to test (10.1) directly. Instead, the expected determinants of rents are substituted into (10.1); these are taken to be real incomes, wealth, the number of households, and the housing

stock. Meen and Andrew (1998) also suggest that changes in the distribution of income became important from the early 1990s. The basic equation, suppressing time subscripts, becomes:

$$\ln(g) = f\left(\ln(RY), \ln(RW), \ln(HH), \ln(HS), \lambda, \ln[UCC]\right) \quad (10.1a)$$

g = real house prices
RY = real personal disposable income
RW = real wealth
HH = number of households
HS = housing stock
λ = measure of mortgage rationing
UCC = user cost of capital

There are further issues: first, the user cost is defined in logarithms, but since the series has occasionally taken negative values, this would imply that housing demand is infinite. The presence of credit constraints suggests that it should in fact never be negative but, the usual approach has been not to take logarithms of the term. Second, *nominal* interest rates may affect housing demand as well as real rates because of front-ending loading. This can be taken into account by allowing a coefficient of less than one on the expected capital gains term in the user cost; our empirical work suggests a value of 0.3. Incorporating these changes gives rise to the long-run or equilibrium specification in Table 10.2. Third, house prices do not adjust immediately to changes in the determinants, because of transactions costs for example. This implies a dynamic specification where prices adjust gradually towards the equilibrium. Error correction approaches are common in the field (Eq. 10.3), where γ_3 is the error correction coefficient determining the speed of adjustment to the long-run equilibrium:

$$\Delta\ln(g) = \gamma_1 \Delta\ln(g)_{-1} + \gamma_2 \Delta\ln(X) + \gamma_3 \left[\ln(g) - \gamma_4 \ln(X)\right]_{-1} + \mu \quad (10.2a)$$

$X' = [RY, RW, HH, HS, \lambda, UCC]$ and μ is an error term.

Table 10.4 Modelling house prices (dependent variable: $\Delta\ln(g)$)

Estimation period	1969(2)–2012(4)
constant	–1.476 (5.5)
$\ln(g)_{-1}$	–0.110 (7.0)
$\ln(RW)_{-1}$	0.024 (2.7)
$\ln(HS)_{-1}$	–0.179 (4.1)
$\ln(RY)_{-1}$	0.252 (5.0)
UCC_{-1}	–0.005 (12.9)
WSH_{-1}	0.402 (2.8)
$\Delta\ln(RY)$	0.258 (3.1)
$\Delta(UCC)$	–0.006 (5.5)
R^2 (adj.)	0.73
Equation standard error	0.0159

Equation includes seasonal dummies and dummies to reflect the abolition of double mortgage tax relief in 1988. *t*-values in brackets

This provides the basis of the model used to decompose the long-run trends in house prices. The full estimation result is shown in Table 10.4, which is solved to give the long-run solution in Table 10.2. In Table 10.4, λ is included as part of the user cost, where α_1 is estimated at 2.0 [see Eq. (10.3) in the main text]. *WSH* is an additional variable measuring the share of wages and salaries in household income and, as above, attempts to capture changes in the income distribution. Figures 10.2 and 10.5 use a slightly simplified version of the user cost from that employed in estimation, excluding property taxes and maintenance expenditures for which there are no data back to the 1930s. The volatility in these elements is small compared with the included terms and the omissions are unlikely to affect the conclusions.

References

Andrew, M., and G. Meen. 2003. "Housing Transactions and the Changing Decisions of Young Households in Britain: The Microeconomic Evidence". *Real Estate Economics* 31(1): 117–37.

Balcilar, M., A. Beyene, R. Gupta, and M. Seleteng. 2013. "Ripple' Effects in South African House Prices". *Urban Studies* 50(5): 876–94.

Barros, C.P., L.A. Gil-Alana, and J.E. Payne. 2012. "Comovements among U.S. State Housing Prices: Evidence from Fractional Cointegration". *Economic Modelling* 29(3): 936–42.

Berg, L. 2002. "Prices on the Second-hand Market for Swedish Family Houses: Correlation, Causation and Determinants". *International Journal of Housing Policy* 2(1): 1–24.

Broadberry, S. 1987. "Cheap Money and the Housing Boom in Interwar Britain". *Manchester School* 55(4): 378–91.

Building Societies Association and Council of Mortgage Lenders. 1995. *Compendium of Housing Finance Statistics*. London: Building Societies Association and Council of Mortgage Lenders.

Chen, P.-F., M.-S. Chien, and C.-C. Lee. 2011. "Dynamic Modeling of Regional House Price Diffusion in Taiwan". *Journal of Housing Economics* 20(4): 315–32.

Clark, G. 2002. "Shelter from the Storm: Housing and the Industrial Revolution, 1550–1909". *Journal of Economic History* 62(2): 489–511.

Cleary, E.J. 1965. *The Building Society Movement*. London: Elek Books.

Eichholtz, P. 1997. "A Long Run House Price Index: The Herengracht Index, 1628–1973". *Real Estate Economics* 25(2): 175–92.

Eichholtz, P., S. Straetmans, and M. Theebe. 2012. "The Amsterdam Rent Index: The Housing Market and the Economy, 1550–1850". *Journal of Housing Economics* 21(4): 269–82.

Fishback, P.V. and T.M. Kollman. 2012. "New Multi-City Estimates of the Changes in Home Values, 1920–1940". NBER Working Paper No. 18272.

Gibb, K., and C. Whitehead. 2007. "Towards the More Effective Use of Housing Finance and Subsidy". *Housing Studies* 22(2): 183–200.

Gupta, R., and S.M. Miller. 2010. "Ripple Effects' and Forecasting Home Prices in Los Angeles, Las Vegas, and Phoenix". *The Annals of Regional Science* 48(3): 763–82.

Gupta, R., and S.M. Miller. 2012. "The Time-Series Properties of House Prices: A Case Study of the Southern California Market". *Journal of Real Estate Finance and Economics* 44(3): 339–61.

Holmans, A.E. 1986. *Housing Policy in Britain : A History*. London: Croom Helm.

Holmans, A.E. 2005. *Historical Statistics of Housing in Britain*. Department of Land Economy, University of Cambridge.

Holmes, M., J. Otero, and T. Panagiotidis. 2011. "Investigating Regional House Price Convergence in the United States: Evidence from a Pair-wise Approach". *Economic Modelling* 28(6): 2369–76.

Humphries, J. 1987. "Inter-War House Building, Cheap Money and Building Societies: The Housing Boom Revisited". *Business History* 29: 325–45.

Lunde, J., A.H. Madsen, and M. Lundboek Laursen. 2013. "A Countrywide House Price Index for 152 Years". Paper presented at the European Real Estate Society 20th Annual Conference, Vienna.

Luo, Z.Q., C. Liu, and D. Picken. 2007. "Housing Price Diffusion Pattern of Australia's State Capital Cities". *International Journal of Strategic Property Management* 11(4): 227–42.

Maclennan, D., J. Muellbauer, and M. Stephens. 1998. "Asymmetries in Housing and Financial Market Institutions and EMU". *Oxford Review of Economic Policy* 14(3): 54–80.

Meen, G. 1990a. "The Measurement of Rationing and the Treatment of Structural Change in the UK Mortgage Market". *Journal of Applied Econometrics* 5(2): 167–88.

Meen, G. 1990b. "The Removal of Mortgage Market Constraints and the Implications for Econometric Modelling of UK House Prices". *Oxford Bulletin of Economics and Statistics* 52(1): 1–24.

Meen, G. 1996. "Ten Propositions in UK Housing Macroeconomics: An Overview of the Eighties and Early Nineties". *Urban Studies* 33(3): 425–44.

Meen, G. 1999. "Regional House Prices and the Ripple Effect: A New Interpretation". *Housing Studies* 14(6): 733–53.

Meen, G. 2013. "Home-Ownership for Future Generations". *Urban Studies* 50(4): 637–56.

Meen, G., and M. Andrew. 1998. "On the Aggregate Housing Market Implications of Labour Market Change". *Scottish Journal of Political Economy* 45(4): 393–419.

Meen, G., and M. Andrew. 2008. "Planning for Housing in the Post-Barker Era: Affordability, Household Formation and Tenure Choice". *Oxford Review of Economic Policy* 24(1): 79–98.

Monnery, N. 2011. *Safe as Houses: A Historical Analysis of Property Prices*. London: London Publishing Partnership.

Ormrod, D., J. Gibson, and O. Lyne. 2011. "City and Countryside Revisited. Comparative Rent Movements in London and the South East, 1580–1914". University of Kent Discussion Paper KDPE 1117.

Samy, L. 2012. "Extending Home Ownership before the First World War: The Case of the Co-operative Permanent Building Society, 1884–1913". *Economic History Review* 65(1): 168–93.

Samy, L. 2015. "Indices of House Prices and Rent Prices of Residential Property in London, 1895–1939". University of Oxford Discussion Papers in Economic and Social History Number 134.

Scott, P. 2013. *The Making of the Modern British Home: The Suburban Semi & Family Life between the Wars*. Oxford: Oxford University Press.

Scott, P., and L. Newton. 2012. "Advertising, Promotion, and the Rise of a National Building Society Movement in Interwar Britain". *Business History* 54(3): 399–423.

Shi, S. 2009. "The Ripple Effect of Local House Price Movements in New Zealand". *Journal of Property Research* 26(1): 1–24.

Shiller, R. 2005. *Irrational Exuberance*. Princeton, NJ: Princeton University Press.

Stapledon, N. 2010. "A History of Housing Prices in Australia 1880–2010". University of New South Wales, School of Economics Discussion Paper: 2010/18.

Stevenson, S. 2004. "House Price Diffusion and Inter-regional and Cross-border House Price Dynamics". *Journal of Property Research* 21(4): 301–20.

Swenarton, M., and S. Taylor. 1985. "The Scale and Nature of the Growth of Owner-Occupation in Britain between the Wars". *Economic History Review* 38(3): 373–92.

Wilcox, S., J. Perry, and P. Williams. 2015. *UK Housing Review*. Coventry: Chartered Institute of Housing.

Yates, J. 2012. "Housing Subsidies". In *The Sage Handbook of Housing Studies*, ed. D.F. Clapham, W.A.V. Clark, and K. Gibb. London: Sage Publications.