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Andrew Henley

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Changes in the Distribution of Housing Wealth in Great Britain, 1985–91

By Andrew Henley

University of Wales, Aberystwyth

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The second half of the 1980s was a particularly turbulent time for the British housing market, during which time sizeable real capital gains accrued to owner-occupiers, particularly those who were already owner-occupiers at the start of this period. The paper constructs housing wealth estimates disaggregated by household from the 1985 GHS and 1991 BHPS Wave 1 in order to explain the distributional consequences of the housing market experience. The paper finds that there has been a modest increase in housing wealth inequality, but one that is more pronounced for gross housing wealth compared with equity. This growth has been offset by the growth in owner-occupation and the benefits of the council house right-to-buy scheme.

Introduction

The late 1980s and early 1990s witnessed the most pronounced cycle in the level of housing market activity in the modern British experience. At the same time, and perhaps in part responsible for the cycle, housing finance policy was subjected to some rather dramatic changes. In particular, the period reflects the immediate and medium-term effects of extensive liberalization of the housing finance market, with the ending of the protected status of building societies as the sole provider of personal house purchase credit. Also, the 1988 Spring Budget saw the pre-announced abolition of 'double MIRAS', under which two (unmarried) people living at the same address could both claim income tax relief on home loan interest payments. The pre-announcement of this significant policy change generated a boost to housing market turnover in anticipation of its introduction in August 1988, which served to fuel an already overheating housing market. Since 1991 further reform of MIRAS has taken place to gradually eliminate the value of this tax relief to home-buyers, and this process may have contributed to the long period of very depressed housing market activity in the 1990s. Finally, the late 1980s was the most popular time for council house tenants to exercise the right to purchase their homes at discounted prices under the Thatcher government's earlier reform. These households may have enjoyed windfall gains from discounted purchase, although the size of these gains may be highly differentiated (Saunders 1990).

Because the United Kingdom, unlike most other developed economies, has a housing finance market in which most home purchasers see the interest payments on their home loans adjust swiftly to changes in short-term rates, the dramatic tightening of UK monetary policy after 1988 plummeted a vigorous housing market into a dramatic downturn.[1] It achieved this by inducing a sharp (and temporary) upward shift in the current cost of owner-occupation, reducing the attractiveness of home-ownership to prospective first-time purchasers and limiting the ability of existing home-owners to 'trade up'. The dynamic consequences of this shock appear to have been rather persistent,

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since the very quick fall in short-term interest rates after 1991 did not immediately stimulate the level of housing transactions to any significant degree. During the early 1990s most UK home-owners experienced, and continued to experience, historically unprecedented nominal reductions in their level of housing wealth. The early 1990s economic recession, unlike the previous early 1980s recession, resulted in a convergence of regional unemployment rates, and this in turn contributed to regional house price convergence.[2] For some households, particularly in the South-East, this convergence may have substantially eroded 1980s housing wealth gains.

There has been very little disaggregated work on the distribution of housing wealth in the United Kingdom[3] and as yet none on how the late 1980s housing market cycle affected the household distribution of housing wealth. In the 1970s the Royal Commission on the distribution of Income and Wealth (RCDIW) highlighted the importance of housing wealth as the largest asset component of lower and middle-income households (RCDIW 1977, 1979). Recent evidence suggests that for many households, particularly in younger age cohorts, the late 1980s boom generated a permanent upward shift in wealth which in turn induced shifts in consumer confidence and behaviour (Attanasio and Weber 1994; Miles 1992; Bayoumi 1993; Acemoglou and Scott 1994). The high level of anecdotal discussion among home-owners and prospective home-owners during the mid-1980s boom would suggest that housing wealth gains (and losses) were far from evenly distributed and should be the subject of more rigorous scrutiny. If gains were more likely to be experienced by more affluent households in regions with above-average house price inflation, or by older households who already possessed initial housing equity at the start of the boom, then a widening in the distribution may have occurred. On the other hand, the greater proportion of total assets held in the form of housing by lower-income households, associated with growing owner-occupation among such households, suggests that the housing boom may have served to narrow the wealth distribution.

This paper makes use of data for Great Britain from the 1985 General Household Survey (GHS) and from the first wave of the British Household Panel Survey (BHPS), for 1991, to investigate changes in the determinants of household housing wealth and in the movement of the housing wealth distribution. While the size of the BHPS sample of households is smaller, both surveys were undertaken using very similar nationally representative sampling frames.

The remainder of the paper is structured as follows. Section I discusses the construction of gross and net (equity) housing wealth data. Section II presents and discusses summary information on the imputed distributions of housing wealth for 1985 and 1991. It also discusses evidence on the impact of negative equity. Section III explains and performs decomposition analysis to account for the observed shifts in the distribution. It also provides simulation evidence for the effects of regional house price inflation in the late 1980s and early 1990s. Section IV concludes.

I. The Construction of Household Housing Wealth

Both the 1985 GHS (OPCS 1986) and BHPS Wave 1 (Taylor 1992) include schedules of questions concerning home owner-occupation, and provide information about house historic cost, size and type of mortgage and length of

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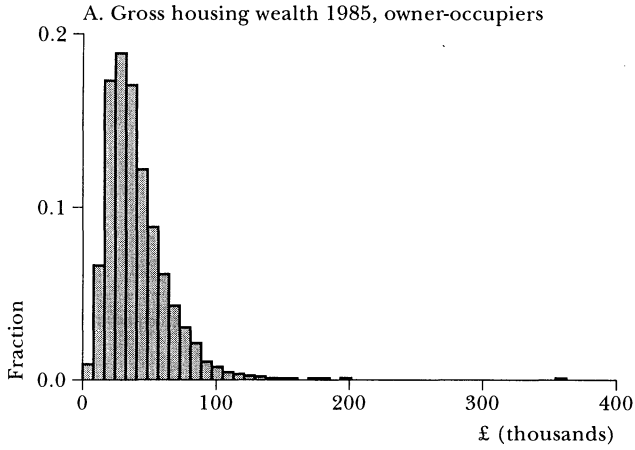
occupation of present property. Gross housing wealth is constructed from information in the two surveys by reflating historic house purchase price data using CSO-published regional house price indices[4] and information about the date of purchase.[5] Net wealth or equity is defined as this gross house value minus the outstanding amount of any mortgages.[6] Outstanding mortgage principal is calculated for capital and interest repayment mortgages using appropriate annuity formulae, and using reported information about the mortgage term and CSO-published information on average mortgage interest rates. Subsequent mortgages are recorded in both surveys and incorported into the outstanding mortgage calculations.[7] For interest-only repayment mortgages the full amount of the principal is assumed outstanding.[8] For 1985, the computed equity values are indexed to 1991 consumer prices using the all-items retail price index.

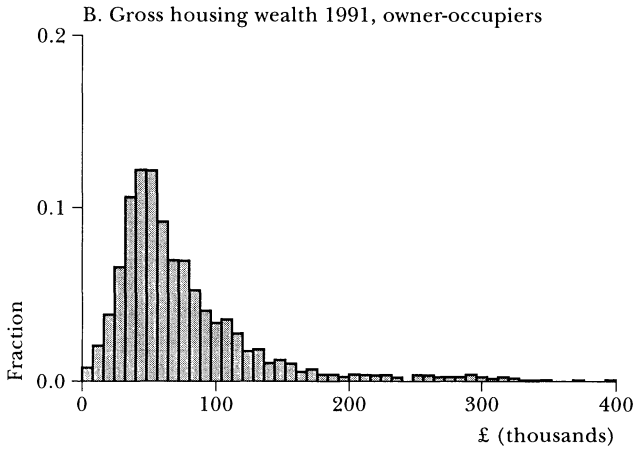
In the case of the 1985 GHS, the schedule of house cost and mortgage questions is asked only of those households that had purchased their current home, whether as first time buyers or as house movers, *since 1 January 1980* (56% of the sample of all owner-occupiers). Investigation of the distribution of housing equity using this sub-sample alone would introduce a serious sample selection bias, since it seems likely that frequency of house purchase falls with the age of the home-owners and yet housing equity is higher for older home-owners as outstanding mortgage debt will be nominally lower. An unbiased sample of observations on housing equity must incorporate predictions for pre-1980 purchasers. In order to provide these, an explanatory model of housing wealth was constructed which incorporated within it a model of the probability of purchasing a house since 1 January 1980. This latter model provided a sample selection term for the housing wealth prediction equation. The skewed nature of the wealth distributions, combined with the possibility of zero or negative values in the case of housing equity, necessitated treating the distributions as censored normal,[9] and using the Tobit estimator with sample selection (see Greene 1992). Further details of this procedure along with econometric results can be found in Henley *et al.* (1994) and Henley (1994).

A further problem arises from former council house purchases under the 'right-to-buy' scheme. In the 1985 sample 7·3% of owner-occupiers own houses that they had formerly tenanted from local authorities; in the 1991 sample this rises to 9·3%. These purchases were generally made at a sizeable discount on market value, and this discount represents an under-measurement error of true house value or equity. In order to control for this, Tobit models for both 1985 and 1991 were estimated including control variables for council house purchase, disaggregated by regional and house type (detached, semi-detached, etc.). These estimated coefficients were then used to apply a correction to reported housing wealth.

Using the sample selectivity correction explained above, the 1985 GHS provides a sample of 4676 owner-occupier households, for which 44% have imputed housing wealth. Non-owner-occupiers are deemed to have zero housing wealth to provide a total sample of households of 7951.[10] The 1991 wave of the BHPS provides a sample of 4872 households, of which 3094 are owner-occupiers. Figures 1 and 2 provide histograms for the distributions of gross and net wealth for 1985 and 1991 as used in the subsequent analysis. The 1991 distributions, and particularly the equity distribution, are much less skewed than those for 1985.

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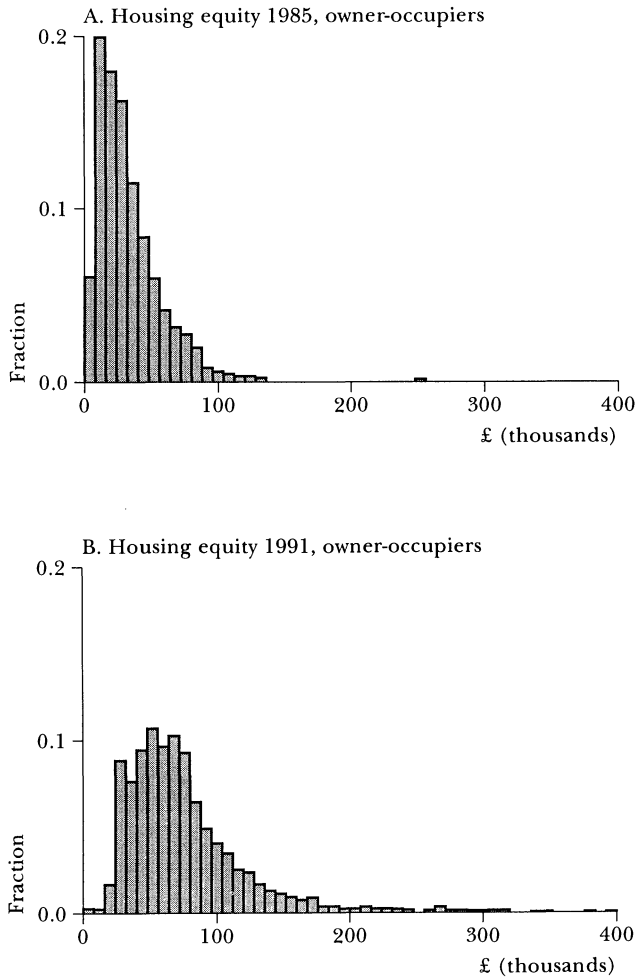


II. Changes in the Distribution of Housing Wealth

Summary inequality measures

Table 1 reports summary inequality statistics for the distributions of housing wealth in both years for the sample of owner-occupiers and for all households.[11] Gini and half coefficient of variation (I_2) statistics are reported. The level of inequality is much higher for all households than for owner-occupiers alone. The table shows that there is some tendency for the distribution to become more unequal between 1985 and 1991, particularly when using I_2. For gross wealth among owner-occupiers, there is a 17% increase in the Gini coefficient and an 82% increase in the coefficient of variation. For equity the increase in smaller: 1% for the Gini and 32% for the coefficient of variation. Taking all households, the rise inequality is less pronounced—in fact, the Gini

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coefficients show slight falls. This reflects the offsetting effect of the increase in owner occupation between 1985 and 1991. Table 1 also reports the concentration curve ordinates and percentiles for the distributions. Among owner-occupiers median gross housing wealth rises from £49,000 to £58,000 and equity by a larger absolute and proportionate amount, from £31,000 to £45,000. Figures 3 and 4 show the concentration curves for each distribution. Part (a) of each figure shows the offsetting effects of increased owner-occupation reducing inequality in the lower half of the distributions and the growth in inequality in the top quarter of the distributions. Part (b) of Figure 3 shows the unequivocal rise in gross wealth inequality, whereas for inequality in equity part (b) of Figure 4 reveals (at least) two crossing points. Here there has been a very slight growth in inequality in the lowest decile, some reduction in the two central

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TABLE 1

HOUSING WEALTH INEQUALITY SUMMARY STATISTICS, 1985 (GHS) AND 1991 (BHPS WAVE 1)

	Gross wealth		Net wealth (equity)	
	1985	1991	1985	1991
Owner-occupiers				
Gini	0·2916	0·3421	0·4445	0·4486
0·5 (Coeff. variation^2)	0·1573	0·2871	0·3561	0·4687
Concentration curve ordinates				
10%	0·0336	0·0279	0·0074	0·0050
50%	0·2973	0·2713	0·1890	0·2000
90%	0·7791	0·7329	0·7118	0·6879
Percentiles (£1991)				
10%	24,780	29,518	5,440	7,828
50%	49,098	58,125	30,782	44,924
90%	97,819	129,063	85,478	111,001
All households				
Gini	0·5834	0·5822	0·6734	0·6508
0·5 (Coeff. variation^2)	0·6177	0·7393	0·9557	1·0253
Concentration curve ordinates				
10%	0	0	0	0
50%	0·0571	0·0807	0·0016	0·0034
90%	0·6673	0·6406	0·5758	0·5845
Percentiles (£1991 prices)				
10%	0	0	0	0
50%	29,511	41,254	8,594	21,318
90%	86,876	116,012	70,220	98,104

Source: Calculations from 1985 GHS and 1991 BHPS.

quartiles and an increase in equity inequality in the top two deciles of the distribution.

The extent of negative equity

In 1991 the number of households with negative equity as a proportion of the total is not large—only 1·8% of the sample. This figure appears consistent with recent estimates from UK building societies (see Goldsmith 1994). Falling nominal house prices may have a significant impact on housing turnover because many more owner-occupiers have very low levels of equity. Goldsmith (1994) reports a Woolwich Building Society estimate that house move transaction costs may be typically around £7500. If homeowners seek to realize these costs through equity release, then the information in Table 1 suggests that in 1991 around 10% of owner-occupiers would have been unable to finance a housing move transaction. Furthermore, the proportion with negative equity may be understated to the extent that the use of regional house price deflators has a smoothing effect, understating both the nominal increase in house value experienced by some households and the nominal fall experienced by others.

In order to investigate the possible order of magnitude of this effect, I conducted a simulation exercise proxying this possible measurement error. A

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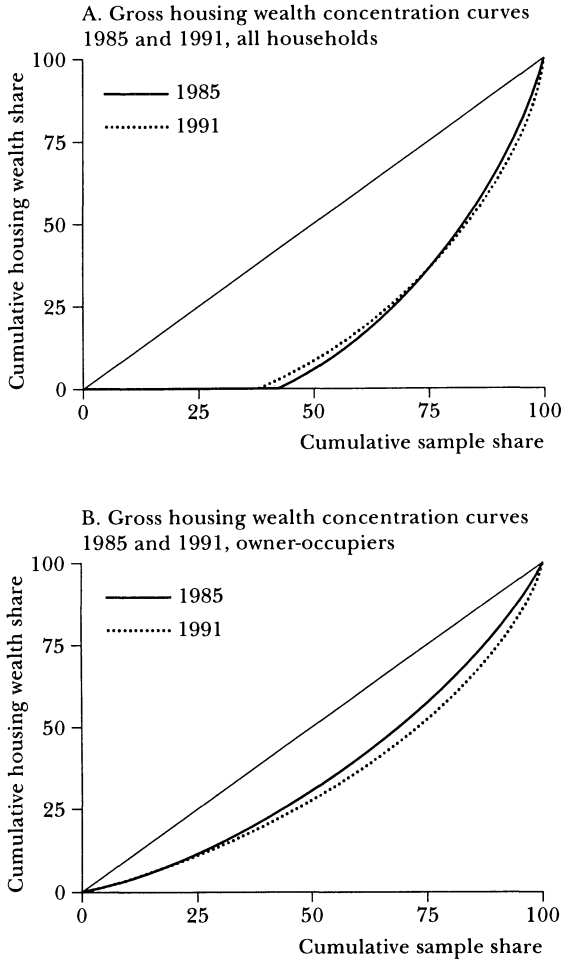


FIGURE 3. Gross housing wealth concentration curves.

normally distributed random weighting was applied to each household observation on house price. Thus, equity was recalculated using the following formula for real house value for household i:

$$H_{i,1991} = H_{it} P_{jt} \mu_i,$$

where $H_{i,1991}$ is the estimated price of the home of household i in 1991, H_{it} is the historic price of the home of household i at time of purchase t, and μ_i is a random weighting factor which has a normal distribution with mean 1 and standard deviation σ. Simulations with different values of σ were performed to generate a distribution of housing equity for 1991 in order to investigate how the proportion of households varies as σ varied. The results of this are reported in Table 2. With $\sigma = 0$, the distribution is the observed distribution and the proportion is 1·78%. The table shows that the extent of measurement error has to be very considerable to generate a large proportion of observations

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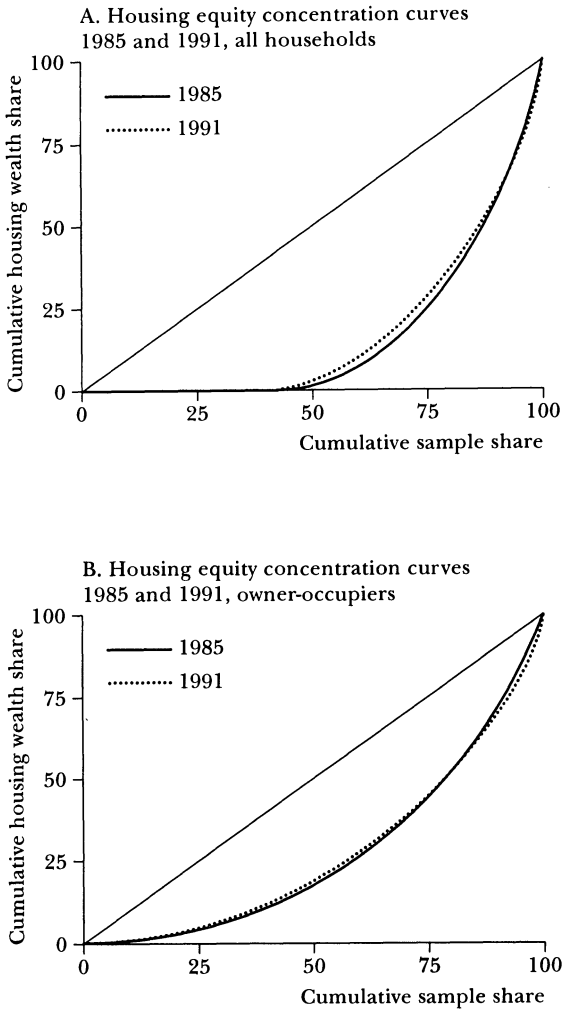


FIGURE 4. Housing equity concentration curves.

TABLE 2

REAL HOUSE VALUE MEASUREMENT ERROR AND NEGATIVE EQUITY IN 1991

σ	% of households with negative equity	1st percentile of equity distribution (£)	5th percentile of equity distribution (£)
0	1·78	−2,272	2,385
0·1	3·75	−5,114	1,796
0·2	4·23	−9,708	1,114
0·3	5·79	−15,606	−1,209
0·4	8·37	−29,990	−6,249
0·5	11·73	−41,374	−12,942

Source: Calculations from 1991 BHPS.

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with negative equity. For the proportion to reach 10% the regional price deflators would have to generate a measurement error of true 1991 house value with a standard deviation of between 40% and 50%. An error of this magnitude I would consider to be implausibly high and so would conclude that the *proportion* of households with negative equity in 1991 was not particularly high. Nevertheless, as already indicated, low positive equity may equally prevent housing turnover.

III. Accounting for Movements in the Distribution

Sub-group inequality decompositions

In order to examine the changing distribution further, I undertake a sub-group decomposition analysis (see Mookherjee and Shorrocks 1982; Shorrocks 1984; Jenkins 1995) by region and by age of the head of household. Both of these characteristics have figured in much casual and formal empiricism on the housing market boom of the late 1980s. For example, it has been suggested that the housing boom, housing policies and the growing size of the middle-aged cohort inheriting housing wealth from a recently deceased first generation of mass owner-occupiers effected a redistribution of housing wealth away from the young towards older cohorts.[12] By region, there has been much discussion of a possible redistribution from North to South-East resulting from the house price boom in the South-East.[13]

Since the Gini coefficient is not exactly additively decomposable, the analysis is undertaken using the half squared coefficient of variation, I_2. The formula for I_2 can be expressed as:

$$(1) \qquad I_2 = 0{\cdot}5n\mu^2 \sum_i (V_i - \mu)^2,$$

where μ is the full sample mean and n is the full sample size. If the full sample can be divided into k mutually exclusive sub-groups, Mookherjee and Shorrocks (1982) provide additively decomposable expressions for I_0, I_1 and I_2. The expression for I_2 is:

$$(2) \qquad I_2 = \sum_k \upsilon_k (\lambda_k)^2 I_2^k + 0{\cdot}5 \sum_k \upsilon_k [(\lambda_k)^2 - 1],$$

where υ_k equals n_k/n, the full sample share of sub-group k, λ_k in this context equals sub-group k's housing wealth relative to the full sample mean wealth, and I_2^k is I_2 for subgroup k. Mookherjee and Shorrocks (1982) proceed to derive an expression for the change I_0 from one year to another, but as already indicated this is ruled out in the present case by the presence of negative equity values. We therefore derive an expression for $I_2(t+1) - I_2(t)$ in the following way. Applying the difference operator, Δ, to both sides of equation (2) gives

$$(3) \qquad \Delta I_2 = \Delta\left(\sum_k \upsilon_k (\lambda_k)^2 I_2^k\right) + 0{\cdot}5\Delta \sum_k \upsilon_k (\lambda_k^2 - 1)$$

$$(4) \qquad \Rightarrow \Delta I_2 = \sum_k \upsilon_k(t)(\lambda_k(t))^2 \Delta I_2^k + \sum_k I_2^k(t+1)\Delta\upsilon_k(\lambda_k)^2 + 0{\cdot}5 \sum_k [(\lambda_k(t+1))^2 - 1]\Delta\upsilon_k + 0{\cdot}5 \sum_k \upsilon_k(t)\Delta[\lambda_k^2 - 1].$$

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As with Mookherjee and Shorrocks's decomposition of I_0, the decomposition contains a mixture of base and final-period weights, and as in their case, we can also replace equation (4) with a form using an average of base and final weights. Undertaking this, we obtain:

$$(5) \qquad \Delta I_2 = \sum_k (\overline{\upsilon_k(\lambda_k)^2})\Delta I_k^2 + \sum_k \overline{I_2^k}\Delta(\upsilon_k(\lambda_k)^2) + 0{\cdot}5\sum_k (\overline{\lambda_k^2 - 1})\Delta\upsilon_k + 0{\cdot}5\sum_k \overline{\upsilon_k}\Delta(\lambda_k^2),$$

where a bar over a variable signifies the simple average of the current (1991) and previous (1985) value of a variable, i.e. $\overline{\upsilon_k} = 0{\cdot}5[\upsilon_k(t) + \upsilon_k(t+1)]$, etc. The first term in (5) can be regarded as the pure inequality change resulting from the change in within sub-group inequality. The second and third terms in (5) capture the effect of changes in the sub-group proportions in the full sample, within and between sub-group effects respectively. The fourth term in (5) captures the effect on the change in inequality from changes in the mean housing wealth of the different sub-groups.

TABLE 3

INEQUALITY DECOMPOSITIONS BY TENURE

ΔI_2 decomposition	Term 1	Term 2	Term 3	Term 4	Sum of terms
Gross wealth					
Total change	0·2125	−0·0279	0·0630	−0·1259	0·1217
% of I_2 (1985)	34·4	−4·5	10·2	−20·4	19·7
Equity					
Total change	0·1844	−0·0519	0·0630	−0·1259	0·0696
% of I_2 (1985)	19·3	−5·4	6·6	−13·2	7·3

Note: Columns and rows may not sum exactly because of rounding errors.
Source: Calculations from 1985 GHS and 1991 BHPS.

Table 3 reports the results of decomposing inequality changes by tenure type (owner-occupied or rented). The table shows that for both gross wealth and equity the growth in inequality among owner-occupiers accounts for much more than the total change in inequality between 1985 and 1991 (term 1). This growth in inequality among owner-occupiers is offset by the reduction in between-group inequality (term 4) arising from increased levels of owner-occupation over the period. For housing equity inequality I_2 increases by 7·2% between 1985 and 1991. The contribution of growing inequality among owner-occupiers is 19·3 percentage points, offset by the effect of the change in proportions of owner-occupiers and tenants and the resulting reduction in between-group inequality of −13·2 percentage points.

Table 4 reports mean housing wealth by region for 1985 and 1991, for gross wealth and equity respectively. Mean housing wealth is reported for each regional sub-group for owner-occupiers and for all households, along with CSO-reported owner-occupation rates. So, for example, although average gross wealth is fairly high in Scotland, this wealth is distributed among a rather low proportion of total households. The table reveals a considerable growth in real average gross wealth for most regions, with the difference between 1985

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TABLE 4

MEAN HOUSING WEALTH BY REGIONAL AVERAGES AND OWNER-OCCUPATION RATES: £1991 CONSUMER PRICES

	All households				Owner-occupiers					
	Gross housing wealth		Equity		Gross housing wealth		Equity		Owner-occupation (%)	
Region	1985	1991	1985	1991	1985	1991	1985	1991	1985	1991
London	43,478	72,030	29,057	53,644	80,228	129,424	54,023	96,388	55	62
South-East	49,292	72,457	32,737	55,128	66,119	92,338	43,613	70,254	70	75
East Anglia	36,226	55,511	25,925	45,269	56,499	76,042	40,563	62,012	66	71
East Midlands	34,617	45,250	24,924	35,514	48,157	65,643	34,938	52,971	66	71
Yorks	25,237	36,455	17,374	28,984	43,250	55,587	30,218	44,196	62	67
North	22,598	23,389	16,230	17,217	41,879	36,198	30,202	26,645	55	61
North-West	27,696	41,959	19,623	32,220	40,899	61,853	28,978	47,497	65	69
West Midlands	32,248	44,321	23,721	34,204	56,061	64,297	41,413	49,619	63	68
South-West	42,670	56,860	30,661	46,136	60,921	76,518	43,641	62,087	69	74
Wales	33,942	44,305	26,872	34,586	52,639	62,075	40,921	48,459	67	72
Scotland	18,651	25,235	11,207	15,885	48,619	45,821	28,892	28,843	41	53
Great Britain	34,757	49,597	24,058	38,002	56,120	73,107	38,845	56,014	62	68
N	7,951	4,872	7,951	4,872	4,676	3,094	4,676	3,094		

Source: Calculations from 1985 GHS and 1991 BHPS; owner-occupation rates from *Regional Trends* (CSO 1995).

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and 1991 most pronounced in London and the South-East and least pronounced in the North. In Scotland average gross wealth in real terms falls. A very similar pattern is observed for equity. These figures reflect the differential regional impact of the house price boom of the late 1980s which had a much greater effect in southern and eastern Britain compared with northern and western Britain.

TABLE 5
INEQUALITY DECOMPOSITIONS BY REGION

ΔI_2 decomposition	Term 1	Term 2	Term 3	Term 4	Sum of terms
All households: gross wealth					
Total change	0·0904	0·0162	−0·0063	0·0219	0·1223
% of I_2 (1985)	14·6	2·6	−1·0	3·5	19·8
All households: equity					
Total change	0·0343	0·0156	−0·0047	0·0245	0·0696
% of I_2 (1985)	3·6	1·6	−0·5	2·6	7·3
Owner-occupiers: gross wealth					
Total change	0·0972	0·0035	−0·0191	0·0485	0·1302
% of I_2 (1985)	61·8	2·3	−12·1	30·9	82·8
Owner-occupiers: equity					
Total change	0·0710	0·0093	−0·0184	0·0511	0·1131
% of I_2 (1985)	20·0	2·6	−5·2	14·3	31·8

Note: Columns and rows may not sum exactly because of rounding errors.
Source: Calculations from 1985 GHS and 1991 BHPS.

Table 5 reports the results of aggregate inequality decomposition in equation (5) by regional sub-group.[14] Despite the disparities in regional house price inflation, for gross housing wealth nearly all of the growth in inequality is explained by the growth of *within-region* inequality (term 1) (15 percentage points of a total change of 20% for all households, 62 percentage points of a total change of 83% for owner-occupiers). The biggest increases in within-region inequality occurred in London and the South-East.

For housing equity, the growth in *within-region* inequality is also the major contributor to the change in aggregate inequality (4 percentage points from a 7% change for all households, 20 percentage points from a 32% change for owner-occupiers). Again, London and the South-East are the main contributor regions. There is also a significant growth in within-region equity inequality in Wales, though in aggregate this is cancelled out by changes in sub-group proportions and the low real increase in average equity (term 4). The low real increase in average equity in the North and in Scotland mean that these regions contribute against the increase in inequality.

An important proviso needs to be made concerning this finding of the importance of within-region inequality. The use of regional house price deflators may lead to an overstatement of the effect of within-region inequality. If larger houses have become disproportionately more expensive over the period, than the use of regional deflators will underestimate the value of larger houses in 1991. Furthermore, the longer such a house has been occupied by its current owners, the greater the extent of the underestimation. Similarly, a recently purchased cheap house will, through the use of *average* regional deflators,

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appear to have a lower value than one that the current occupiers have owned for some time. Without the availability of house price deflators to a finer disaggregation by region and other characteristics, it is not possible to quantify such bias.[15]

Tables 6 and 7 report the same analysis for gross and net housing wealth grouped by the age of the head of household. As with the regional decomposition, it is *within-group* inequality that explains the aggregate change in inequality, with little contribution in total from the other terms. In terms of gross wealth, it is the middle-age groups, and particularly the 45 to 54-year-olds, who contribute most to the overall change in inequality with their within-group inequality growth reinforced by *proportionately* larger changes in mean age-group wealth (term 4). There is increased within-subgroup inequality among the elderly, but this is offset in aggregate by *proportionately* smaller changes in their mean age-group wealth. For equity, in Table 6 the oldest age group is shown to have experienced the smallest proportionate growth in mean equity. As with gross wealth, the age group that has contributed most to the growth in aggregate inequality is the 45 to 54-year-old group which has enjoyed the largest proportionate growth in mean equity and has experienced growth in within-group inequality. For owner-occupiers, almost twice the 32% growth in aggregate inequality is explained by the within-group inequality term (term 1). The overall effect of within-group inequality is made less severe by a redistribution towards the middle-aged and away from the elderly, with the net effect of narrowing the dispersion in average equity between the age-groups.

Regional house price inflation simulations

In order to assess the impact of differences in regional house price inflation on the distribution of housing wealth, I perform various simulation exercises. Figure 5 takes the 1985 distribution of gross housing wealth and applies regional house price indices for the period 1985–91, in order to compare what would have happened to the distribution if households housing wealth holdings had remained the same except for the effects of regional house price inflation. This simulated distribution is rather more equal than the observed 1991 distribution. The Gini for simulated distribution is 0·287 compared with 0·342 for the actual 1991 distribution.[16] This suggests that the rates of return to owning more valuable properties were better than average in different regions. This confirms the econometric results reported in Henley (1994). It is also consistent with greater levels of owner-occupation in 1991 being among those with lower-value houses.

Figure 6 simulates regional house price inflation between 1989 and 1991 on the 1991 distribution. 1989 is taken to be the peak year in the 1980s/1990s housing market cycle, and the simulation suggests that the effect of more rapidly falling house prices in southern regions in Britain after 1989 served to narrow the distribution from what it might have been at the peak of the cycle. The simulated distribution for 1989 has a Gini of 0·370 compared with the actual figure of 0·342 in 1991.

Finally, Figure 7 simulates regional house price inflation from 1991 to 1994 (the latest year available) on the 1991 distribution in order to illustrate the effects of the continued decline in house prices in the early 1990s. It suggests that the effects may have been small, showing a slight narrowing in inequality.

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TABLE 6

GROSS HOUSING WEALTH BY AGE GROUP AVERAGES AND OWNER-OCCUPATION RATES: £1991 CONSUMER PRICES

Age of head of household	All households				Owner-occupiers				Owner-occupation (%)	
	Gross housing wealth		Equity		Gross housing wealth		Equity			
	1985	1991	1985	1991	1985	1991	1985	1991	1985	1991
under 25	13,068	15,528	1,913	4,177	32,166	46,736	4,780	12,571	39	32
25–34	29,846	39,538	9,787	17,102	41,233	56,012	13,737	24,228	69	67
35–44	41,445	59,107	23,424	40,428	53,468	74,072	30,315	50,663	74	75
45–54	39,956	68,823	29,167	57,342	58,980	84,167	42,654	70,126	64	77
55–64	37,331	59,128	32,626	55,287	64,375	80,686	56,436	75,445	55	69
65–74	33,390	43,473	31,558	43,056	70,916	77,518	66,258	76,776	45	53
75 and over	31,822	32,319	31,187	31,969	74,559	78,822	71,812	77,968	41	39
N	7,951	4,872	7,951	4,872	4,676	3,094	4,676	3,094		

Source: Calculations from 1985 GHS and 1991 BHPS.

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TABLE 7

INEQUALITY DECOMPOSITIONS BY AGE GROUP

ΔI_2 decomposition	Term 1	Term 2	Term 3	Term 4	Sum of terms
All households: gross wealth					
Total change	0·1303	−0·0329	0·0008	0·0238	0·1221
% of I_2 (1985)	21·1	−5·3	0·1	3·8	19·8
All households: equity					
Total change	0·1653	−0·1054	−0·0157	0·0258	0·0701
% of I_2 (1985)	17·3	−11·0	−1·6	2·7	7·3
Owner-occupiers: gross wealth					
Total change	0·1468	−0·0066	0·0032	−0·0129	0·1305
% of I_2 (1985)	93·3	−4·2	2·1	−8·2	83·0
Owner-occupiers: equity					
Total change	0·1997	−0·0226	−0·0006	−0·0634	0·1131
% of I_2 (1985)	56·1	−6·4	−0·2	−17·8	31·7

Note: Columns and rows may not sum exactly due to rounding errors.
Source: Calculations from 1985 GHS and 1991 BHPS.

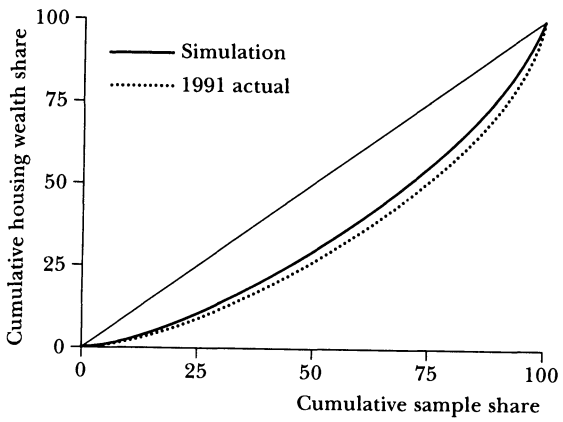


FIGURE 5. Simulation of regional house price inflation, 1985–91, on 1985 distribution. Owner occupiers, gross wealth.

The Gini coefficient for the simulated distribution is 0·331, slightly below the 1991 actual figure.

IV. CONCLUSION

The second half of the 1980s was a particularly turbulent time for the UK housing market, during which sizeable real capital gains accrued to owner-occupiers, particularly those who were already owner-occupiers at the start of this period. This paper has, by constructing household housing wealth estimates from two large cross-sectional surveys, sought to explain the distributional consequences of the UK housing market experience. The construction of these estimates is, in itself, by no means a straightforward exercise.

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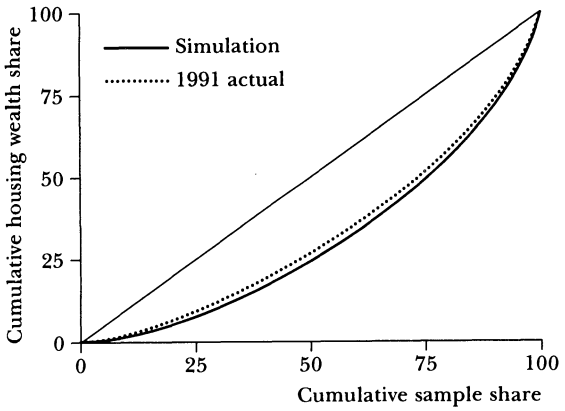


FIGURE 6. Simulation of regional house price inflation, 1989–91, on 1991 distribution. Owner occupiers, gross housing wealth.

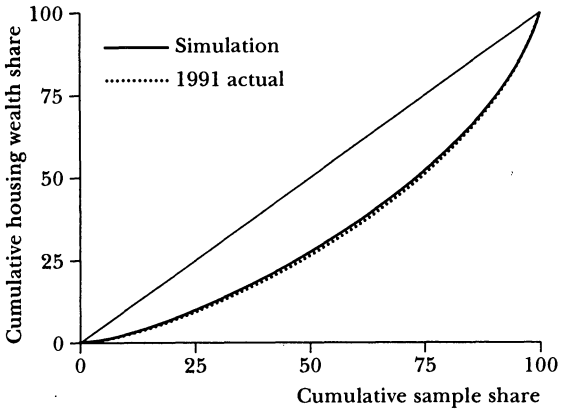


FIGURE 7. Simulation of regional house price inflation, 1991–94, on 1991 distribution. Owner occupiers, gross housing wealth.

The paper has found that there has been a modest increase in housing wealth inequality, one that is more pronounced for gross housing wealth, although this has been offset by the growth of owner-occupation during the period, and by the benefits of the council house right-to-buy scheme. The exercise finds that much of the growth in housing wealth inequality is associated with the growth in within-group inequality, as opposed to growing inter-group inequality. However, the methodology employed is not ideal and may overstate the growth in within-region inequality to an unknown extent. The possibility of growing within-region inequality is an important conclusion in the light of much of the existing evidence on growing regional house price disparities in the 1980s. However, the effects of the 1990s downturn in the housing market has been to restore some of the loss in inequality associated with the 1980s boom.

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The results reported in this paper constitute an important exercise in understanding the consequences of the 1980s UK housing market phenomenon and the distributional consequences of the major housing policy changes of the 1980s and 1990s. Much further research remains to be undertaken at the disaggregated, household level on the linkages between changing housing wealth and other forms of economic behaviour, such as consumer behaviour and labour market decisions.

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NOTES

1. See Hills (1991) and Gibb and Munro (1991) for recent surveys of the UK system of housing finance.
2. See Hamnett *et al.* (1991) for further discussion of UK regional house prices.
3. See Chapter 7 of RCDIW (1977), and Hamnett *et al.* (1991) on the importance of housing wealth inheritance.
4. Regional house price indices are available back to 1969. For the small proportion of tenures above 22 years in length, an aggregate index is used.
5. BHPS 1 asks each head of household for a self-reported estimate of the current value of the home. In preliminary analysis I found that in the vast majority of cases this estimate of gross housing wealth is above that calculated from reflated historic purchase prices. I do not make use of these estimates, as corresponding estimates for GHS 1985 are not available.
6. I do not attempt to estimate housing equity from the imputed rental value of property, as for example attempted by Miles (1993), because by 1991 the local authority rateable values on which such calculations are based had been abolished and replaced by the community charge. Therefore BHPS 1 did not ask for rateable value information.
7. Unfortunately, GHS 1985 does not record the purpose for which second mortgages were taken out. Given the variation in effect on house value from different types of home extension/improvement, I do not attempt to revise house values where possible improvements financed by an additional loan may have taken place. Other households may have made improvements paid in cash for which there is no information in the surveys, other than what may have been incorporated into households' self-reported valuations in BHPS 1.
8. Most mortgages of this type are linked to an investment (endowment) policy designed to generate a cash sum at the end of the mortgage term sufficient to pay off the principal. Strictly speaking, such households accumulate a financial asset alongside any housing equity. However, such policies usually have very low premature redemption values and cannot in any strict sense be identified as housing equity. Furthermore, calculation of their value at any point in time is very difficult since it depends on the performance of the particular investment plan and so we do not make attempt to account for them. Special mortgage arrangements such as low-start schemes are almost always endowment-linked, so any absence of information about whether households have such schemes will not affect the wealth estimates. In fact, neither the GHS nor the BHPS 1 provide adequate information about endowment premiums to attempt to construct measures of endowment asset wealth.
9. The wealth distribution is censored in that those individuals who in a world of perfect capital markets would have an optimal level of housing equity that is negative in fact choose not to be owner-occupiers.
10. The total number of households in the GHS is larger, but we take a random sample of available non-owner-occupiers in order to maintain the population owner-occupation ratio. In the calculated measures of inequality reported, weights are used to reflect the population regional proportions of households by tenure type (*source*: CSO).
11. Because net wealth may be negative, the range of inequality indices that can be calculated is limited to those where the inequality factor in question can take non-positive values. This rules out any index where calculation requires a log transformation such as the mean log deviation (I_0) and Theil coefficient (I_1). It also rules out Atkinson indices where the 'ethical inequality aversion' parameter is below 1, as negative values cannot be raised to powers below 1 (see Cowell 1977).
12. Hamnett *et al.* (1991) report results from a 1988 survey that 67% of housing inheritance beneficiaries were aged 40 or over (see p. 100).

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13. See e.g. Carruth and Henley (1993) for empirical work on this aggregated at the regional level.
14. A full regional breakdown of these results is not reported for reasons of space. It is available from the author on request.
15. Organizations such as the Halifax Building Society do publish house prices at the county level by broad type, but these data are not available over a sufficiently long time period for present purposes.
16. A simulated Gini slightly below that for the actual 1985 distribution (0·292) at first sight appears counter-intuitive. However, 1985–91 represents a period during which house prices in the North and Midlands 'caught up' with the South-East. So regional house price *inflation* during this period, as captured by the Department of Environment mix-adjusted indices, was in fact higher in every region of England and Wales than in London, the South-East and East Anglia.

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