

---

# Home ownership

---

Getting in, getting from, getting out

Peter Boelhouwer  
John Doling  
Marja Elsinga (eds.)

---



---

# Home ownership

Getting in, getting from, getting out

---

---

## Housing and Urban Policy Studies 29

---

### Editorial Committee

Prof. dr. ir. R. Dekker (Erasmus Universiteit Rotterdam)

Prof. dr. P. Glasbergen (Utrecht University)

Prof. dr. P. Hooimeijer (Utrecht University)

Prof. ir. W.G. Keeris MRICS (Technische Universiteit Eindhoven)

Prof. dr. T. Kreukels (Utrecht University)

Prof. ir. G.J. Maas (Technische Universiteit Eindhoven)

Prof. dr. N.J.M. Nelissen (University of Nijmegen)

Prof. dr. P. Nijkamp (Vrije Universiteit)

Prof. dr. H.F.L.K. Ottens (Utrecht University)

Prof. dr. ir. J. van der Schaar (Universiteit van Amsterdam)

Prof. dr. J. van Weesep (Utrecht University)

---

---

# Home ownership

Getting in, getting from, getting out

---

**Peter Boelhouwer**  
**John Doling**  
**Marja Elsinga (eds.)**

**DUP Science**

---

---

**Housing and Urban Policy Studies**  
are published by DUP Science

DUP Science is an imprint of  
Delft University Press  
Postbus 98  
2600 MG Delft  
The Netherlands  
Phone +31 15 2785678  
Fax +31 15 2785706  
<http://www.library.tudelft.nl/dup/>

---

Housing and Urban Policy Studies are edited by  
OTB Research Institute for Housing, Urban and Mobility Studies  
Delft University of Technology  
Jaffalaan 9  
2628 BX Delft  
The Netherlands  
Phone +31 15 2783005  
Fax +31 15 2784422  
E-mail [mailbox@otb.tudelft.nl](mailto:mailbox@otb.tudelft.nl)  
<http://www.otb.tudelft.nl>

This publication is the result of the Research programme  
Sustainable Urban Areas by Delft University of Technology.

---

Design: Cyril Strijdonk Ontwerpburo, Gaanderen  
Printing: Haveka, Alblasserdam

---

ISSN 0926-6240; 29  
ISBN 90-407-2594-2  
NUGI 755  
Subject headings: home ownership, housing, Europe.

© Copyright 2005 by Onderzoeksinstituut OTB  
No part of this book may be reproduced in any form by print, photoprint,  
microfilm or any other means, without written permission from the  
copyrightholder.

---

---

# Acknowledgements

The immediate background to this volume is the Conference on Housing Growth and Regeneration held in July 2004 in Cambridge, UK. Hosted by the Cambridge Centre for Housing and Planning Research, Department of Land Economy, University of Cambridge, it was held under the auspices of the European Network of Housing Researchers. We are grateful to the conference organisers for allowing us to lead a number of sessions on the topic of 'Home ownership and risk', at which the papers, subsequently rewritten as chapters here, were presented.

We also wish to acknowledge the support of the European Union for its funding of the OSIS project in which the three editors are involved. OSIS - Origins of Security and Insecurity: the interplay of housing systems with jobs, household structures, finance and social security - is a pan-European study with research partners drawn from nine member states and is funded under the framework six programme (CIT2-CT-2003-506007). Further details of OSIS can be obtained from [www.osis.bham.ac.uk](http://www.osis.bham.ac.uk).

---





---

# Contents

<b>1 Gains and losses for European home owners</b> . . . . .	<b>1</b>
<i>Peter Boelhouwer, John Doling, Marja Elsinga &amp; Janet Ford</i>	
1.1 Introduction . . . . .	1
1.2 Gains . . . . .	2
1.3 Losses . . . . .	9
1.4 Discussion . . . . .	12
1.5 The contribution of the chapters in this book . . . . .	13
<b>2 First time buyers in Finnish housing markets</b> . . . . .	<b>19</b>
<i>Timo Tähtinen</i>	
2.1 Introduction . . . . .	19
2.2 Finnish housing markets and first time buyers . . . . .	20
2.3 First time buyers in 2001 . . . . .	25
2.4 Comparison between first time buyers in 1992 and 2001 . . . . .	27
2.5 Scope for housing policy? . . . . .	28
2.6 Conclusions . . . . .	31
<b>3 ‘The quantified customer’, or how financial institutions value risk</b> . . . . .	<b>33</b>
<i>Manuel B. Aalbers</i>	
3.1 Risk and home ownership . . . . .	33
3.2 Risk selection in the mortgage market . . . . .	37
3.3 The power of quantification . . . . .	38
3.4 Credit risk management . . . . .	40
3.5 Profiling . . . . .	42
3.6 Credit scoring . . . . .	42
3.7 Social-demographic data . . . . .	43
3.8 Acceptance policy and credit limits . . . . .	44
3.9 Difficulties and risk . . . . .	47
3.10 Conclusions . . . . .	51
<b>4 Optimal mortgage choices within different institutional contexts</b> . . . . .	<b>59</b>
<i>Peter Neuteboom</i>	
4.1 Introduction . . . . .	59
4.2 Model and data . . . . .	61
4.2.1 Modelling the spot rate and the appropriate yield curve . . .	61
4.2.2 Estimation procedure . . . . .	64
4.2.3 Data . . . . .	65
4.3 Optimal mortgage choices in a cost-risk framework . . . . .	66
4.3.1 Introduction . . . . .	66
4.3.2 Optimal mortgage choice strategies . . . . .	66

---

4.3.3 Results .....	69
4.4 Discussion .....	70

**Appendix Modelling the costs and risk of mortgages ..... 73**

**5 Affordable and low-risk home ownership ..... 75**

*Marja Elsinga*

5.1 Introduction .....	75
5.2 A search for different forms of affordable and low-risk home ownership in four countries .....	76
5.3 Further analysis of three Dutch tenures .....	85
5.4 Conclusions .....	90

**6 Affordability, need and the intermediate market ..... 95**  
**Responding to the challenge in pressured regions**

*Glen Bramley & Noah Kofi Karley*

6.1 Introduction .....	95
6.2 Concept of affordability .....	96
6.3 Measurement and modelling of affordability and access .....	98
6.4 Affordability over space and time .....	103
6.5 The intermediate market .....	108
6.6 Concluding discussion .....	112

**7 Structural changes in the Danish market for  
owner-occupation ..... 117**

*Jens Lunde*

7.1 Changing conditions and changing structures for owner-occupation .....	117
7.2 Owner-occupation - an economic policy target .....	118
7.3 Owner-occupation - the aspired form of tenure .....	119
7.4 Owner-occupation data and the statistical sources .....	120
7.5 Owner-occupation - the changing numbers and rates ....	122
7.6 Owner-occupation - changes in quantities through structural policy and economic policy .....	124
7.7 Owner-occupation - ups and downs in house prices ....	127
7.8 Owner-occupier families' housing wealth/income ratios .....	129
7.9 Owner-occupier's housing wealth/income ratios, by age .....	132
7.10 Housing wealth/income ratios for young owner- occupies families .....	134

---

7.11	Rates of change in housing wealth/income ratios during a bust and boom period . . . . .	136
7.12	How do people finance the increasingly expensive owner-occupied dwellings? . . . . .	139
7.13	Conclusion . . . . .	140
<b>8</b>	<b>Mortgage equity withdrawal and remortgaging activity . . . . .</b>	<b>145</b>
	<i>Jackie Smith</i>	
8.1	Introduction . . . . .	145
8.2	The Bank of England's measure of MEW . . . . .	146
8.3	The component flows of MEW . . . . .	147
8.4	Survey of English Housing data . . . . .	148
8.5	Average amounts of equity withdrawal over time . . . . .	151
8.6	Remortgagers and equity withdrawal . . . . .	152
8.7	Reasons for remortgage . . . . .	153
8.8	Characteristics of remortgagers . . . . .	153
8.9	Serial remortgaging . . . . .	154
8.10	Are movers also remortgaging and withdrawing equity? . . . . .	156
8.11	Households' equity position . . . . .	157
8.12	Conclusion . . . . .	158
<b>9</b>	<b>Home ownership, poverty and educational achievement . . . . .</b>	<b>161</b>
	<i>Glen Bramley &amp; Noah Kofi Karley</i>	
9.1	Introduction . . . . .	161
9.2	Review of factors affecting educational attainment . . . . .	162
9.3	Methodology . . . . .	169
9.4	Results of modelling . . . . .	174
9.5	Concluding discussion . . . . .	181
<b>10</b>	<b>Payment difficulties of home owners in Germany . . . . .</b>	<b>187</b>
	<i>Melanie Kloth</i>	
10.1	Introduction . . . . .	187
10.2	Context: The owner-occupied sector of the German housing market . . . . .	188
10.3	Number of compulsory auctions involving owner-occupied homes . . . . .	190
10.4	Home owners: financial background and reasons for payment difficulties . . . . .	193
10.5	The basis for many difficulties . . . . .	195
10.6	Perception of arising payment difficulties . . . . .	197

---

---

10.7	Steps towards successfully restoring financial soundness and deficiencies in practice .....	198
10.8	Recommendations .....	200
10.9	Conclusion .....	202
	<b>Contributors .....</b>	<b>205</b>

---

# 1 Gains and losses for European home owners

*Peter Boelhouwer,  
John Doling,  
Marja Elsinga &  
Janet Ford*

## 1.1 Introduction

During recent decades, home ownership sectors in most European countries have grown in size (see Table 1.1). Even by the mid 1990s, taken over the pre-enlarged EU (EU15) as a whole approximately two-thirds of households were home owners (Doling, 1997). In those countries that were formerly under communist rule (some now part of the enlarged EU) as their land and housing sectors have recently been opened up to market forces, home ownership has also generally been expanding (Lowe & Tsenkova, 2003). Although there is considerable variation across Europe, with national rates ranging from about 40 per cent to about 90 per cent, the majority of European Union households now own their own homes. So, whatever assets European households have acquired in recent decades, real estate appears to form a significant element in wealth portfolios.

Frequently, national governments have been active in promoting the shift in tenure balance: extreme cases being that of some of the former communist countries and the UK with the sale of state housing to individual households, whereas in Belgium there is even political support for an end goal of a 100 per cent home ownership rate (Verhofstadt, 2002). In their actions they could expect to meet the aspirations of many of their electorates both directly through housing and indirectly through the reduced need for taxation to sustain programmes of social housing production; the growth of home ownership can be seen to have maximised the political gains while minimising the fiscal costs.

These developments beg many research questions; the general one pursued in this chapter being: what are the gains and losses accruing to individual households by virtue of their position as home owners. In part, this concerns what households gain when they buy into home ownership that they do not get as tenants. The focus, here, is on financial gains and losses, in more or less liquid forms, rather than on, say, psychological dimensions – status, independence, ontological security and so on. It also concerns the losses, in the form of repayment risk, related to difficulties that some households may experience in meeting housing loan repayment schedules.

This chapter has three main sections. The first of these is on gains, the second on losses. In each we review what we know – perhaps more accurately, what we think we know – based on the published literature. In general we rely on sources that themselves are cross country, comparative, rather than

---

**Table 1.1 The post war growth of home ownership, in % share of total stock by year <sup>1)</sup>**

	1945/50	1960	1970	1980	1990	2002
Austria	36	38	41	48	55	56
Belgium	39	50	55	59	67	71
Czech Republic	-	-	-	-	-	47
Denmark	-	43	49	52	51	51
France	-	41	45	51	54	55
Finland	-	57	59	61	67	58
Germany	-	-	-	-	38	42
Greece	-	-	-	70	77	83
Hungary	-	-	-	-	-	92
Ireland	-	-	71	76	81	77
Italy	40	45	50	59	67	80
Lithuania	-	-	-	-	-	84
The Netherlands	28	29	35	42	44	53
Norway	-	-	53	59	59	77
Portugal	-	-	-	57	58	64
Slovenia	-	-	-	-	68	82
Spain	-	-	64	73	76	85
Sweden	38	36	35	41	42	42
UK	29	42	49	56	68	69

1) Dates are approximate.

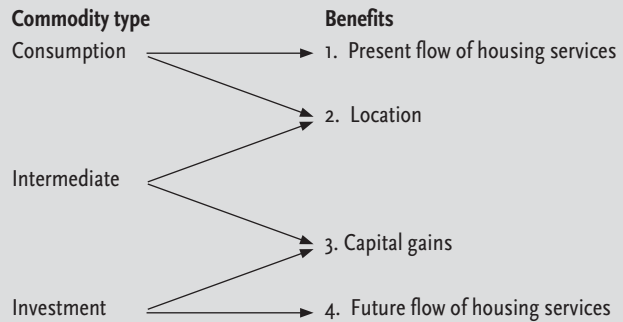
Sources: Catte *et al.*(2004); Scanlon and Whitehead (2004)

single country studies. Even so, the wealth of literature clearly makes this challenging, more so because the literature on each European country is not equally developed. Inevitably there are many generalisations and omissions. The final section of the chapter introduces and sets in context the remaining chapters of the book

## 1.2 Gains

It has long been recognised that the benefits or gains accruing to the users of housing are complex partly because the commodity itself is a complex one (Figure 1.1). Considered as a consumption good, housing delivers, day-by-day, a flow of services in the form of a physical structure of a certain size, with certain condition and certain facilities, which the user is able to enjoy. In addition, each house has a unique location that affords a unique pattern of proximities to goods (clean air, open space) and bads (pollution, noise). As a consumption good, each day's flow of services as well as the location benefits are expended at the end of the day, available the following day only so long as payment schedules are maintained.

But, housing might also be considered as a type of intermediate good, that is one which is used as an input to the achievement of other objectives. Thus,

**Figure 1.1 User benefits of housing**

a house accessible to job opportunities, in the catchment area of a good school, or close to high quality primary health care facilities may better facilitate desirable outcomes for the household: work for all family members

that want it, good schooling for the children and good health care for all. In addition, where users of housing are also owners, any proportion of the equity owned, and which may have increased either because the loan is being repaid and/or the market value of the house has increased, may be used as collateral enabling the purchase of a variety of types of good.

Finally, housing may also be viewed as an investment good. The capital gains achieved constitute an asset that may at some future stage be realised. Where housing is owned outright, depending on taxation arrangements, the user is also in a position to enjoy future consumption of the flow of housing services without further payment. This does not of course mean that households will not spend on housing, for example by expensive renovations, but that, if they wish, they may often be able to incur small housing costs.

In this schema, tenants and owner occupiers alike, receive benefits 1 and 2. The level of the benefits they enjoy – the standard of the building's facilities and the proximity to open space – is determined not by tenure, but rather, in the case of market housing, by the amount the individual is willing and able to pay for housing, and, in the case of social housing, of the rules of the landlord organisation. Benefits 3 and 4, however, in most cases accrue only to owner occupiers.

There will be a distinction between those with considerable equity, on the one hand, and those with little or no equity, on the other, in that the former will generally have more of the potential benefits. Nevertheless, whatever other characteristics of renters and owners, these benefits set owners apart in a position of relative advantage. It is on benefits 3 and 4 that the following is based.

There is however a further dimension to the comparison between owners and renters. The amount of income after housing costs, which will be important in determining the standard of living of each household, will of course be dependent in part on the costs of housing. This will vary from country to country, depending for example on rent regulations, and between individuals within countries, depending for example on regional variations in house prices. What we have identified is an advantage accruing to owners in theory that may in reality be modified or overshadowed by real outcomes.

### **Do owners get capital gains?**

The early recognition of the capital gains accruing to home owners lead in the 1970s and 1980s to a large body of sociological investigation, emanating particularly from the UK and, to a lesser extent, the English speaking countries of Australia, Canada, New Zealand and the US – all of which had published series that tracked house price changes. This literature investigated the implications of rising house prices for class and social stratification.

Seminal influence here can be seen in the work of Rex & Moore who, following a Weberian perspective, developed a theory of housing classes (Rex and Moore, 1967). The work of the main contributors to the debates were brought together by Saunders (Saunders, 1990) for whom one of the first sociologists (at least in the UK) to grasp the significance of the wealth accumulation characteristic of home ownership was Ray Pahl. He argued that, for the large proportion of households that now owned their own homes, the labour market was no longer the sole determinant of life chances; capital gains from housing would blur inequalities arising in the labour market and create a division between owners and renters (Pahl, 1975).

Yet, as Saunders' book was published, even before reviews began to appear in the main housing studies journals, the sociological agenda moved on. As Boelhouwer (2002) was subsequently to write: "When at the end of the 1980s the owner-occupied housing sector in England fell into a deep recession, the discussion suddenly dried up" (p. 170). Whereas the observation was undoubtedly an accurate representation of trends in sociological studies of housing, especially as applied to the UK, it could be said that the capital gains agenda shifted to the international stage and to the discipline of economics.

This shift has been supported by the availability of longer series of house price data covering more countries. Thus using data collated by the Bank of International Settlements the existence of considerable price volatility in European countries is now widely recognised (Kennedy & Andersen, 1994). In general in recent decades European home owners will have experienced year on year fluctuations in the market value of their homes, sometimes up in real terms, sometimes down. But, as longer house price series have become available in more countries, the long run record of capital gains is now more firmly established (Table 1.2). With the exception of Sweden, growth rates have been positive, and in some countries, notably Spain, Austria, Greece and the UK, they have been particularly high. The general picture, then, is that over the long run home owners have indeed experienced capital gains from their housing.

In that sense, at least, owners are in a different material position to tenants. Yet, it is also important to acknowledge that national house prices series record prices, which are averages of national housing stocks. In general we have relatively little systematic knowledge about houses that do not change hands, or the extent to which prices are different in different loca-



**Table 1.2 Annualised growth rate of real house prices, house equity release products**

Country	Growth rate	(%)	House equity release products available and/or permissible
Belgium	1981-2001	1.2	No
Denmark	1980-2001	1.0	Yes
Germany	1980-2001	0.5	Yes
Greece	1994-2001	3.4	Yes, but of very limited use
Spain	1987-2001	4.2	Yes, but unusual
France	1980-2001	1.4	Not used
Ireland	1980-2001	3.7	Yes, but so far limited to certain uses
Italy	1980-2001	1.2	Not used
Luxembourg	1980-2001	2.6	Not used
The Netherlands	1980-2001	2.3	Yes
Austria	1987-2001	3.5	-
Portugal	1988-2001	0.4	Legally permissible, but not marketed
Finland	1981-2001	0.9	Yes
Sweden	1980-2001	-0.2	Yes
UK	1980-2001	3.1	Yes

Source: ECB (2003)

tions, for different housing types, and for different price ranges. On the evidence we have, then, it is rather a sweeping statement to claim that all owners will benefit from long run house price gains.

### **Are the gains realisable?**

One strand in the literature reviewed by Saunders considered the question of whether, if home owners did experience capital gains, in what circumstances – if at all – could they benefit from those gains. One argument was that if all house prices had gone up at about the same rate, there would be little to be gained from selling the home since another, whose market value had also increased, would need to be bought as a replacement. Thus, in general capital gains would be realised only where an owner moved down market, so giving up some of the consumption benefits, or died, in which case the gain would accrue to the owner's heirs.

In fact, there has also been a sociological debate (which has also become rather muted) about the significance of housing equity for the re-distribution of wealth via inheritance (see Forrest & Murie, 1995). A frequent assumption of this debate was that housing constituted an accumulating equity which could be handed on as a 'lump', albeit a 'lump' that might be divided between heirs.

By and large, these debates failed to recognise one aspect of the spreading trend among western governments to de-regulate their financial sectors. Previously closed circuits of housing capital were being relaxed, frequently with new entrants to the housing finance markets, fewer restrictions on lending and less non-price rationing. One consequence has been that home owners

may now find it easier to use their increased asset as collateral. As Boone & Girouard (2002, p. 192) indicate: "In many countries, a number of economic and regulatory changes have taken place over the past decades, which could be at the origin of a structural change in consumer behaviour, especially with respect to wealth effects." Their testing of this possibility revealed a distinction as between the US, Canada and the UK in which liberalisation occurred earliest and to this point has continued furthest and where realising capital gains appears readily possible, and mainland European countries where the extent of change has appeared more variable. This mixed picture, supported also by the data in Table 1.2, indicates some variation in the financial significance of home ownership across Europe. Specifically, the ability to use housing collateral as equity, and thereby the extent to which it can be considered an intermediate good, appears to vary between countries in relation to developments in their financial markets and institutions.

#### **How are the gains used?**

In many western economies in the 1990s there was a growing realisation of the linkages between macro economies and housing markets, for example in the way in which house price developments could be transmitted into consumer expenditure thereby influencing employment, trade balances and overall growth rates. (see Maclennan (1997) for a review of these developments in the UK). For economists located in international organisations, central banks, research institutes and universities some of the questions previously posed by sociologists – do owners actually benefit from price gains, were gains realisable, and so on – were also recognised as being important for macro economies. The possibility that housing wealth was being realised and used for consumption was important. In the words of a recent IMF working paper: "Due to pronounced increases in housing wealth and deregulation of mortgage markets, the impact of housing wealth on consumption in OECD countries has therefore received increased attention among researchers and policymakers" (Ludwig & Slok, 2002, p. 3). The impact of increased house prices on consumption is complex, however. Higher house prices may be perceived by existing home owners as additions to their wealth leading them to spend more either by extracting some of the equity or by saving less out of current income than they would otherwise have done. In other words they do not necessarily need to have equity release facilities in order to increase consumption so long as they have other forms of wealth that they can access or they are able to reduce the flow of income into savings. But, for renters higher house prices may lead them to save more out of current income in order to enter home ownership at some point in the future (OECD 2000).

Overall, the evidence of a body of econometric studies is that changes in housing wealth have impacts on consumption that vary from country to country. The Netherlands Central Bank has also provided evidence that hous-

**Table 1.3 Short-term and long-term impact of financial wealth and housing wealth on consumption**

	Short-term		Long-term	
	Housing wealth	Financial wealth	Housing wealth	Financial wealth
Australia	0.02	-	0.07	0.03
Canada	0.03	0.03	0.06	0.04
France	-	-	-	0.02
Germany	-	0.01	-	0.02
Italy	-	0.01	0.01	0.01
Japan	0.01	-	0.01	0.07
The Netherlands	0.02	-	0.08	0.06
Spain	0.01	-	0.02	0.02
UK	0.08	0.03	0.07	0.04
US	-	0.02	0.05	0.03

- Indicates that the specific form of wealth was not found to be statistically significant.

Source: Catte *et al.*, (2004)

ing wealth is used for other investments as well as consumption (Boelhouwer, 2002). In the US and the UK, for example, increases in housing wealth appear to feed into private consumption, whereas in Italy and Canada the evidence suggests that they do not (OECD, 2000). These findings differ somewhat to those of a more recent OECD study (OECD, 2004). This showed that among the OECD countries for which data were collected there appeared to be two groups: in the first, consisting of Australia, Canada, The Netherlands, the UK and the US, the marginal propensity to consume was higher than for the second group, consisting of France, Germany, Italy, Japan and Spain. Furthermore, for the first group, the marginal propensity to consume out of housing wealth was higher than that out of financial wealth (Table 1.3). The differences between these two groups of countries appear to be based in their mortgage markets. The marginal propensity to consume out of housing wealth is higher in those countries that have high levels of mortgage debt relative to gross domestic products (GDP) and of housing equity withdrawal (HEW).

### **What share is housing equity of total household wealth?**

Given that housing appears to provide owners with capital gains and in that sense makes them richer, how important is housing relative to other forms of investment? One answer to this question is found in data showing the proportions of household wealth held in different assets, which in the case of the G7 countries was variable (Table 1.4). For each country some of the variation over time will be attributable to housing market and stock market cycles, but the general picture is that whereas shares have increased in relative importance over the last two decades, in all except the US housing remains the larger store of wealth. Housing as a store of wealth also is more important in

Table 1.4 Housing assets and shares as percentage of total household wealth

	Housing assets <sup>1)</sup>					Shares <sup>2)</sup>	
	1970	1980	1990	1995	1998	1980	2000
Canada	21	22	23	22	21	13	19
France	34	44	43	42	40	6	27
Germany	-	-	34	34	32	2	13
Italy	36	40	37	35	31	3	27
Japan	10	14	8	10	10	5	5
UK	-	40	44	33	34	6	15
US	22	27	27	23	21	10	25

Sources: 1) OECD (2000); 2) Boone and Girouard (2002)

the advanced economies of Europe than elsewhere in the G7 countries.

### How is housing wealth related to welfare systems?

While economic research has been invaluable in exploring aspects of housing as an investment, it tells us little, if anything, about the use to which households put capital growth, other than contributing to aggregate demand. But neither does it directly address social and political consequences. Important here is the small, but growing, body of work exploring links between housing and welfare systems instigated by Jim Kemeny (Kemeny, 1981) and pursued particularly by Frances Castles (Castles & Ferrera, 1986; Castles, 1988a, 1998b). Their proposition is based on the functional equivalence of housing and pensions in acting as means of redistributing income across the family life cycle, the recognition of which has led to a number of hypotheses about the possibilities and consequences of a trade-off between saving through real estate and saving through state pension systems.

How is this trade-off effected? There have been two main propositions, the first that housing expenditure acts as a constraint, the second that housing assets reduce need.

The constraint induced trade-off comes about because the front loading of house purchase falls heavily on families often when their incomes have not developed to their fullest potential and when they anyway face the additional costs involved in child rearing. The argument is that in these circumstances something has to give: "...house purchase and the social insurance contributions that fund pensions are simultaneously the two biggest items of expenditure that confront families across the life-cycle. Hence the trade-off is not just theoretical, but actual; other things being equal, the more taxes one pays for a high pension in old age, the less one can afford for housing purchase and vice versa" (Castles & Ferrera, 1996, p. 164).

The need induced trade-off occurs, because "income streams available to the old in some countries by virtue of social security entitlements may in other countries be available by virtue of private savings, private insurance or through equivalent benefits stemming from property ownership" (Castles, 1998b: 205). In other words, when people, by virtue of owning their own

home, can live rent free, they can make do with smaller pensions.

Thus part of Castles' argument has been that the study of the distributional characteristics of welfare states have often been too narrowly focussed on distribution through state taxes and expenditures. Once distribution through other institutional arrangements, principally home ownership, is taken into account, the characterisation of the New World welfare regimes as being, in comparison with western European countries, laggards needs to be modified. In fact, they may actually deliver comparable levels of income, with any shortfall in social transfers being offset by private investments, partly in the form of housing assets (Castles, 1998a,1998b). Likewise, a recent comparative study of housing policy and affordability in Australia and the Netherlands has pointed to the role of home ownership in sustaining living standards of older people in Australia (Milligan, 2003). Here, then, lies part of the significance of benefit 4 in Table 1.2.

### 1.3 Losses

Inherent in all investment is risk, which can have both positive and negative outcomes. One aspect of this, relating to house price volatility, has been referred to in the previous section. Here, we focus on negative risks in the form of mortgage arrears and possessions. These risks of course relate to the mode of purchase, specifically the extent to which purchase is made with the assistance of loans and the nature of those loans. They can be considered to be what stands between someone who rents and someone who acquires the full equity and the full imputed rental value (benefits 3 and 4 of Table 1.2) of home ownership.

#### **The incidence of arrears and possessions**

Since the 1980s, data on the incidence of arrears and possessions has been systematically recorded and published for the main lending institutions in Britain, but not for other European countries. There are no definitions agreed across Europe, for example should arrears be measured in terms of a number of months or a specified number of euros. Evidence in most countries is at best partial, in some cases relating to individual lending institutions only, and sometimes being little more than anecdotal. Some evidence is available in the European Household Panel Survey through questions on mortgage payment difficulties, the burden of housing costs faced by the responding household and indeed of arrears in payments. There are, however, limitations affecting the usefulness of the survey itself as well as these particular variables.

The survey does not cover all member states, whereas it was conducted in the 1990s it has now been discontinued, and access to the data is restricted. In addition, all of these are self-reported measures. The first two record sub-

jective views reflecting such things as personal levels of optimism and the general level of housing costs in each country. Certainly, there is no strong basis for assuming that what one person views as a burden, another person in the same objective position would necessarily also think so. With respect to the direct measure of arrears, doubts about reliability are indicated by the discrepancies in the proportion of British households in arrears as between those reported in ECHP and those reported in the Council of Mortgage Lenders' website. The higher numbers reported in the latter perhaps suggest some reluctance of individuals to admit to personal debt.

### **What causes arrears?**

Actually, research on the problems of mortgage arrears and possessions – much emanating from the UK and the US – had begun in the 1980s, focusing particularly on relationships between unemployment and marital breakdown and mortgage repayment difficulties (Doling, Ford & Stafford, 1988). The major shift that occurred at the end of the 1980s was that the conditions precipitating arrears were rapid and large increases in interest rates and unemployment after a period of high loan-income and loan-value ratios. Equally rapid and large increases in the incidence of arrears, possessions, negative equity and forced immobility had enormous reverberations on the material and psychological underpinning of the housing market. For the first time in many decades it was clear that home ownership was not an automatic route to capital accumulation, and that the consequences could be system wide and not just affecting relatively isolated individuals. In these circumstances discussion of class formation (unless it was to be a sort of housing underclass consisting of unemployed house buyers, with large mortgage repayments, but who could not sell their homes and move closer to job opportunities) was not widely pursued.

As earlier with the capital accumulation debates, much of this literature (it, too, heavily biased toward the British experience) was also brought together in a single review (Ford, Burrows & Nettleton, 2001). In addition, there has been a tracking of these aspects of risk attached to home ownership systematically across a number of European countries (Doling & Ford, 2003). Although much of the evidence is not easily comparable across countries, it is now clear that the British experience of arrears and possessions might be distinctive but not unique. Across the eight European countries surveyed – and beyond – arrears and possessions are a feature of home ownership and their incidence can be traced to a number of national level characteristics.

- Home ownership sector size – In countries where they are large they will almost certainly include a wide cross section of the population, defined by such characteristics as income, social position, occupational type and age. In contrast, where sectors are small, they have usually drawn mainly from middle and upper income groups that are likely to have financial assets
-

other than their home so that, all other things being equal, they are less likely to face repayment difficulties. This might be taken to indicate that the trend in European countries – and elsewhere – toward larger home ownership sectors has been associated with increased risk, one consequence of which may be that sustainable home ownership becomes harder to achieve.

- Housing Finance Markets – The way in which individual buyers acquire the funds that enable them to purchase appears critical to the way in which risk is experienced. Thus, in countries where variable rate loans are the norm, the overall risk to the borrower tends to be greater.
- Labour markets – Since loan repayment arrangements are based on the future income of the borrowing household, the frequency and nature of interruptions to flows of income are crucial and consequently developments in labour markets are important to an understanding of home ownership failure. Throughout Europe there have been increases in forms of atypical or precarious jobs: more self-employment, part-time jobs, fixed term and casualised jobs and more frequent periods of unemployment.
- Social insurance – Whereas, typically, governments in western countries provide social insurance for all against loss of income resulting from unemployment and intended to cover all aspects of the individual's budget, this is done with different degrees of generosity. Consequently, the ability of any individual household to sustain housing, or indeed any other debt, repayments will vary not only with personal factors, such as savings, but according to national arrangements. In summary, in countries in which there are large social security programmes, mortgage repayment difficulties tend to occur less frequently.
- Housing policy itself can also take the form of a safety net for home owners in trouble. In a number of countries there are government mortgage guarantees or government provided insurance schemes (Breejen *et al.*, 2004), while some countries have housing allowance systems that can assist those in arrears to avoid possession.

### **What are the consequences of arrears?**

There has been limited systematic study of the consequences of arrears. Beyond the country case studies in Doling and Ford (2003), relatively little is known about the nature of legal frameworks and the operation of national judicial systems and the extent to which they facilitate possession of houses by financial institutions. Likewise, there is limited systematic knowledge of the operation and effectiveness of national social protection systems in circumstances where households are unable to meet repayments. Finally, little is known about how financial institutions and households strategise about the risks.

Notwithstanding these gaps, it can be hypothesised that where loan-in-

**Figure 1.2 User benefits of housing in the presence of arrears and possessions**

Commodity type	Benefits	Arrears	Possession
Consumption	1. Present flow of housing services	no change	reduced
	2. Location	no change	reduced
Intermediate	3. Capital gains	reduced	reduced
	4. Future flow of housing services	no change	reduced

come and loan-value ratios are high the consequence of impacts on the ability to repay loans (such as unemployment) can be expected to be different than when these ratios are low. Broadly, loan repayment risk occurs during the stage of being an occupier but not a full owner, and the closer to the point of being an outright owner the less the potential impact of a specific risk factor.

For some owners arrears will lead to possession. Figure 1.2 presents a generalised categorisation of how this might impact on the benefits of ownership. To the individual owner the impact on the benefits they derive from their owner occupation can be expected to be small, limited to the impact of arrears on the size of the equity held. Assuming that possession of one house leads to households moving to an inferior dwelling (lower level of housing services, lower value), whether rented or owner occupied, however, the household can be expected to receive lower benefits from housing.

### 1.4 Discussion

One of the aims of this review has been to identify the extent to which existing knowledge addresses empirical questions related to aspects – referred to under the headings ‘gains’ and ‘losses’ – of home ownership. It is clear that there are many limitations to this knowledge. Firstly, there is unevenness across European countries, and indeed advanced economies generally. This is apparent in the uneven availability of statistical series in such areas as arrears and possessions, and housing equity. Notwithstanding what appears to be a general move towards the collection and presentation of harmonised data with respect to many social and economic phenomena, partly attributable to international organisations such as the International Labour Organisation (ILO) and Eurostat, there remain great disparities in the statistical information available about housing. Quite simply, different countries often collect different measures of housing, and even when they seem to be the same they sometimes use different definitions.

Secondly, there is unevenness across countries in the number and range of studies carried out about home ownership. However, even for those countries in which there has been the greatest number of research studies carried out,



there are many large gaps in our knowledge. There are numerous examples of this in the review ranging from macro issues such as how housing equity affects savings and consumption to micro issues such as the role of housing in household labour market strategies.

Such empirical knowledge has great significance for a range of theoretical and policy-related issues. As we have indicated in this review, during the last forty years housing, often specifically home ownership, has featured prominently in a number of theoretical developments in the fields of sociology, economics and welfare studies. Some of these are latent – those on housing and class and housing and inheritance, perhaps – others more actively pursued – those relating housing and welfare – but all merit further and contemporary investigation.

Likewise, many of the empirical questions relate to important policy issues. These include housing policy issues, such as the extent of subsidy for home buyers. But, they extend considerably into other areas particularly to labour market, financial market and social security policy.

## 1.5 The contribution of the chapters in this book

The chapters of this book contribute to a number of the theoretical debates considered above. Moreover, each focussing on experiences in an individual European country, they provide empirical evidence of some aspect or aspects of the gains and losses, advantages and disadvantages accruing to home owners. Although the coverage of countries and aspects is by no means systematic and comprehensive, as well as adding empirical substance, they collectively provide a sense of cross country similarities and differences.

The chapters are divided, unequally in terms of numbers, into three groups which may be conveniently, that is succinctly, labelled as ‘getting in’; getting from’; and ‘getting out’.

### Getting in

Each chapter in the first, and largest, group looks at access issues: what does it cost households to get into home ownership, how do financial institutions facilitate (or hinder) their entry, and how does government involvement make access easier? Thus, Timo Tahtinen’s chapter (Chapter 2) actually addresses all of these issues by focussing on the situation of first time buyers in Finland against the background of changing financial markets, changes that included the move toward longer repayment periods, the fall in interest rates and the introduction of government loan guarantees. The analysis of statistical information about the housing market behaviour of individual households reveals that on average households have housing debt of an amount about equal to

the value of their home indicating that there is little pre-saving. This has been made possible both by developments in financial markets in the late 1980s and early 1990s and the introduction of government guarantees. Whereas this has come to mean that households may be carrying a high risk of negative equity, the fact that their debt is low in comparison with their income also means that they have a low risk of repayment default.

The chapters 3 (by Manuel Aalbers) and 4 (by Peter Neuteboom) both focus on a particular aspect of access, namely the risks involved in housing loans, the former on the risk to the lender, the latter on the risk to the borrower. In his chapter Aalbers takes on the challenge of linking financial and sociological approaches to risk. This starts from a sociological analysis of how banks and other financial institutions assess risk in general and with regard to mortgages in particular. He argues that banks assume that members of certain social groups are less able than others to fulfil their financial commitments. Banks use profiling and credit scoring methods in order to minimise default. But these techniques lead to the institutionalisation of stereotypical assessments of risky and unriskey groups in society.

Peter Neuteboom's starting point is that, when taking out a mortgage to buy a home, European households are generally committing a large proportion of their income to making the necessary repayments. One of the key decisions they must make is whether to take a loan with a variable interest – generally lower rates but subject to future interest fluctuations – or a fixed rate – generally higher rates but predictable. This decision thus determines the level of risk that the household is willing to accept, and insofar as households in the UK usually opt for a variable rate loan has been taken to indicate that they take particularly high levels of risk. His study questions this conclusion with the argument that choices made by European households are not made in isolation from the institutional context such as the legislative framework, fiscal arrangements and so on. Using a stochastic model he examines the question of to what extent – given institutional contexts in each country – do households make optimal interest rate choices. His findings indicate that actually there are not apparent differences between countries in the risk taking behaviour of their households.

The final two chapters in the first part of this book examine policy initiatives that address the problem of the high cost of housing and the consequent accessibility problems encountered, especially by first time buyers. One of the policy solutions has been the development of new forms of housing tenure – located somewhere between owning and renting – that make housing more affordable for low income groups.

In the first part of her chapter Marja Elsinga considers developments in the Netherlands in comparative perspective, examining related developments in the UK, the US and Finland (Chapter 5). This continues with a detailed study of the Dutch case and the particular characteristics of the new tenure forms

---

there. Her analysis leads to the conclusion that although, from a policy perspective, they seem to be attractive, they are not easy to introduce into the market. Part of the problem is that they continue to be viewed with some suspicion by lenders, developers and households themselves.

Glen Bramley and Noah Kofi Karley, in Chapter 6, the first of their two contributions to this volume, start from the issue of housing affordability and the associated issues of housing need and affordable housing solutions. Following discussion of the complexities of the measurement of affordability, they go on to report about the development of a model that can be used to compare regional differences in housing affordability pressures. In addition, the model is able to identify and assess the scope for intermediate forms of housing, such as the type of shared ownership initiatives discussed in the previous chapter.

### **Getting from**

The second set of chapters deals with the benefits accruing to households by virtue of their status as home owners, in short what households are 'getting from' being home owners. Actually, Chapter 6 on Denmark by Jens Lunde covers issues of both getting in and getting from, and in that way makes a link back to the first section. His starting point is that whereas home ownership's share of the total housing stock has been more or less stable since about 1980, this may disguise some important structural changes which may have significant longer term impacts, perhaps even decline of the sector. Using detailed statistical information he shows firstly that over the last decade there has been a change in the ages of owners, specifically home ownership rates among older people – aged over 50 years – have increased while those of younger people have declined. Further, Lunde's examination of rising house prices since 1993 and of patterns of housing wealth and housing wealth to income ratios indicates features of both access to home ownership and its financial benefits.

Jackie Smith's chapter 8 is firmly located within the getting from theme, being based on a study of mortgage equity withdrawal – borrowing against the equity of a house – that has become of major significance in the UK market, by 2003 accounting for about a fifth of gross lending. This has become a major focus of debate with particular interest being expressed about the relationships between equity withdrawal, household consumption and the macro economy. The chapter reports on analysis of the government's Survey of English Housing carried out in 2003/4 to provide estimates of the scale and methods of equity withdrawal. Although a high proportion of owners do withdraw equity, they tend not to do it repeatedly. The analysis also shows some of the consequences for individual households in terms of financial vulnerability. This takes two general forms: with respect to the liabilities they face consequent on the building up of debt; and with respect to their assets as their to-

---

tal equity falls. In short the benefits of equity withdrawal are accompanied by increasing levels of risk. First time buyers, many of whom had high loan to value and loan to income ratios to start with, are particularly vulnerable.

Glen Bramley and Noah Kofi Karley's contribution here (Chapter 9) is in a study of the relationship between housing tenure and educational attainment. Their chapter examines the proposition that compared to those living in rented accommodation, home owners enjoy better living standards and their children tend, on average, to do better in school. Whereas they conclude from their analysis that home ownership does appear, directly or indirectly, to influence attainment, they also conclude that the effects operate alongside other important influences including poverty and parental background and values.

### Getting out

The final set – more accurately a single chapter – picks up a theme also dealt with in the second, by Tahtinen, as well as some of the others such as those by Aalbers, Neuteboom and Smith, namely the risk to individual home owners leading to non repayment of loans and to, what is termed differently in different countries, compulsory acquisition and auction foreclosure, or possession. Melanie Kloth reports in Chapter 10 on the German situation where in recent years there has been an increasing number of compulsory auctions, From the results of a survey carried out in five representative regions, she presents evidence of the scale and causes. The main reasons for payment difficulties among house buyers are unemployment and the separation of partners. In addition, however, the miscalculation of the costs associated with owning and limited financial resources were also important.

Not all cases of repayment difficulties become critical, but some do progress through to the compulsory sale though auction. Here, part of the difficulty faced by individual households is that the demand for residential property is depressed often making private sales difficult. The outcome, on average, for those whose property is sold through auction is the achievement of only 60 per cent of the assessed market value, resulting in a high proportion of households continuing after the auction to carry housing debts

### References

Boelhouver, P., 2002, Capital Accumulation via Home Ownership: The Case of the Netherlands, in: **European Journal of Housing Policy**, 2 (2), pp. 167-182.

Boone, L. & N. Girouard, 2002, The Stock Market, The Housing Market and Consumer Behaviour, in: **OECD Economic Studies**, 35 (2), pp. 175-200.

Breejen, F., P. Neuteboom, M. Elsinga & J. Conijn, 2004, **Government Guarantees in the Rental and Owner Occupied Sector: An International Compari-**

---

son, Zoetermeer, The Netherlands (Homeownership Guarantee Fund).

Castles, F. & M. Ferrera, 1996, Home Ownership and Welfare: Is Southern Europe Different?, in: **South European Society and Politics**, 1 (2), pp. 163-185.

Castles, F., 1998a, The Really Big Trade-Off: Home Ownership and the Welfare State in the New World and the Old, in: **Acta Politica**, 33 (1), pp. 5-19.

Castles, F., 1998b, **Comparative Public Policy: Patterns of Post-war Transformation**, Cheltenham (Edward Elgar).

Catte, P., N. Girouard, R. Price & C. Andre, 2004, **Housing Markets, Wealth and the Business Cycle**, Economics Department Working Paper No. 194, Paris (OECD).

Doling, J., 1997, **Comparative Housing Policy, Government and Housing in Advanced Industrialized Countries**, Basingstoke (Macmillan).

Doling, J., J. Ford & B. Stafford, 1988, **The Property Owing Democracy**, Aldershot (Avebury).

Doling, J. & J. Ford, 2003, **Globalisation and Home Ownership: Experiences in Eight Member States of the European Union**, Delft (Delft University Press).

ECB, 2003, **Structural Factors in the EU Housing Markets**, Frankfurt am Main (European Central Bank).

Elsinga M., J. Conijn & A. Marien, 2001, **Woonuitgaven en Woonkosten van Huishoudens** [Housing Costs and Housing Expenses of Households], Delft (Delft University Press).

Ford, J., R. Burrows & S. Nettleton, 2001, **Home Ownership in a Risk Society**, Bristol (The Policy Press).

Forrest, R. & A. Murie, 1995, **Housing and Family Wealth: Comparative International Perspectives**, London (Routledge).

Kemeny, J., 1981, **The Myth of Home Ownership: Public versus Private Choices in Housing Tenure**, London (Routledge & Kegan Paul).

Kennedy, N. & P. Andersen, 1994, **Household Saving and Real House Prices: An International Perspective**, Working Paper, Basle (Bank of International Settlements).

---

Lowe, S. & Tsenkova, 2003, **Housing Changes in East and Central Europe**, Aldershot (Ashgate).

Ludwig, A. & T. Slok, 2002, **The Impact of Changes in Stock Prices and House Prices on Consumption in OECD Countries**, IMF Working Paper WP/02/1.

OECD, 2000, **Economic Outlook**, No 68, Geneva (Economics Department).

Maclennan, D., 1997, The UK Housing Market: Up, Down and Where Now?, in: Williams, P. (ed.) **Directions in Housing Policy: Towards Sustainable Housing Policies in the UK**, London (Paul Chapman).

Milligan, V., 2003, **How Different? Comparing Policy and Housing Affordability Consequences for Low Income Households in Australia and the Netherlands**, NGS 318, Utrecht.

Pahl, R., 1975, **Whose City?**, 2<sup>nd</sup> edition, Rickmansworth (Penguin).

Rex, J. & R. Moore, 1967, **Race, Community and Conflict**, Oxford (Oxford University Press).

Saunders, P., 1990, **A Nation of Home Owners**, London (Unwin Hyman).

Scanlon, K. & C. Whitehead, 2004, **International Trends in Housing Tenure and Mortgage Finance**, London (Council of Mortgage Lenders).

Schmidt, S., 1989, Convergence Theory, Labour Movements and Corporatism: The Case of Housing, **Scandinavian Housing and Planning Research**, 6 (2), pp. 83-101.

Verhofstadt, G., 2002, **De Vierde Golf** [The fourth wave], Antwerpen (Houtekiet).

---

## 2 First time buyers in Finnish housing markets

*Timo Tähtinen*

### 2.1 Introduction

The 1990s saw significant changes take place in Finnish housing finance. The problems of the regulated financial markets of the 1980s, such as short loan maturities and high equity demands, were to disappear by the turn of the millennium. Another significant change was the remarkable downward spiral in interest rates throughout Europe. The Finnish housing market also saw a decade full of turmoil, with a boom in the late 1980s, a crash in the early 1990s, followed by a rapid increase in price levels.

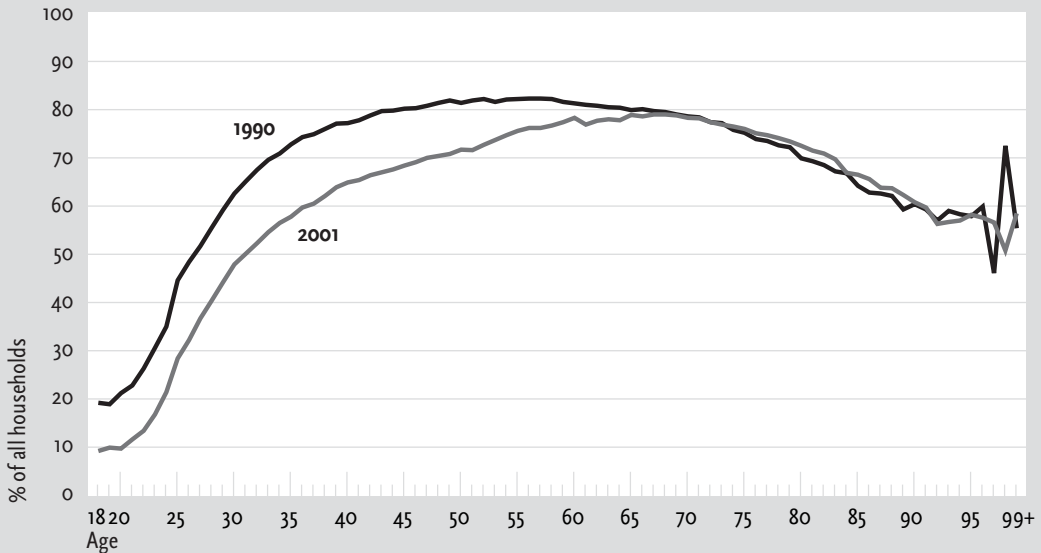
Our interest in this chapter is how all this has affected the situation for first time buyers. As owner occupancy is typically seen as the most desirable form of tenure, the threshold for the acquisition of one's first home can also be seen as a key requirement of well-functioning housing markets.

First time buyers are typically younger and financially in a weaker position than other households in the housing market. They have fewer resources, both in terms of savings and income, although some subsidies are available to first time buyers. In the early 1990s many first time buyers used a state subsidised ASP scheme, which offered some extra return on pre-savings and interest subsidies for the housing loan. The ASP scheme is still available, but has lost much of its appeal and efficiency as a result of the dramatic decrease in interest rates. First time buyers also benefit from exemption from property transfer tax. Mortgage tax relief is available to all households, but the subsidy is slightly higher for first time buyers. Practically all household housing loans are given by general banks.

In this chapter we create a measure for households' debt capacity in order to look at the first time buyers' position in time. In addition, we draw on two statistical analyses, for 1992 (Tahvanainen Markku, 1995) and 2001 (Johnson Marianne, Tarkoma Jari, 2004), on the characteristics of first time buyers and their acquisitions.

The chapter is organised as follows. In Section 2.2, Finnish housing and financial markets and their development from the perspective of first time buyers is analyzed with the help of the debt capacity measure. Section 2.3 presents the characteristics of the first time buyers in 2001. In Section 2.4, the characteristics of the first time buyers in 2001 are compared with the characteristics of their counterparts in 1992. Section 2.5 discusses the scope for housing policy measures in the light of the findings. The chapter ends with conclusions.

---

**Figure 2.1 Share of homeowners of all households according to age in 1990 and 2001**

## 2.2 Finnish housing markets and first time buyers

In a European context, Finland had, in the 1990s, a unique trend of a declining share of home ownership. In 1990 the share of home owners of all households was relatively high at 72%. The share of home owners was also high among young households, as already over half the households with the head of the household<sup>1</sup> aged 27 were owner occupiers. The recession in the early 1990s changed the situation in the housing markets. Not only were many households forced to sell their home and become tenants, but owner occupancy lost its previous popularity among young people. The economic situation, with high unemployment levels, and an increase in temporary job contracts, was the most important reason for this change, along with the uncertainties of housing price development. Other factors favoring renting included high interest rates, a lack of job opportunities, and an increase in the share of part-time jobs. The liberation of the rental market in the 1990s also had an impact by significantly increasing the supply of rental housing.

This resulted in a fairly dramatic fall in the share of home ownership to 64% in 2001. As can be seen in Figure 2.1, the decrease was quite evenly distributed, as the share of owner occupiers in 2001 was more than 10 percentage points smaller than in 1990 in all but two age categories between 18-50 years.

Between 1990 and 2001, the number of households increased in Finland by as much as 14%. Therefore, the tenure choice of these households played an important role in determining the tenure allocation. In the first half of the

---

<sup>1</sup> Head of the household is the person with the highest income.

---



1990s, the annual number of first time buyers was only 30–40% of the increase in the number of households. More recently, this figure has been around 70%.

Another change indicating the difficulties of young households in the owner occupied housing markets in the 1990s was the drop in the value of their homes vis-à-vis other households. In 1988 the value of the homes of young households was almost identical to the general average (Matala Timo, 2000). Ten years later young households had homes that were less than 80% of the average value.

Other developments worked against the rental sector. First, the rapid increase in rents caused by the liberation of the rental markets and strong inner migration, which pushed up demand for rental dwellings particularly in the growth centers. Second, there was a remarkable change in the financial markets, which benefited the owner occupied sector by lowering the costs of debt finance.

The developments in the financial markets and in housing finance in the 1990s were considerable. Most important was the remarkable decrease in the general short term interest rates (from above 10 percentage points to about 2 percentage points), which resulted from restoration of trust in the Finnish currency through steps towards EMU membership and from the low inflation monetary policy within EMU. This decrease in general interest rates was accompanied and reinforced by a significant decrease in the margin of the household housing loans (from around 1.5-2 percentage points to 0.5-1 percentage points), which arose from increased competition and at least partially from the introduction of state guarantees for household mortgages. The introduction of the state mortgage guarantee in 1996, the main effect of which was to increase the availability of mortgages by increasing the LTV ratio from 70% to 85%<sup>2</sup> also had a major impact. Today every fourth household housing loan makes use of a state mortgage guarantee. On top of this came the gradual lengthening of the average loan maturities (from around 10 years to around 20 years).

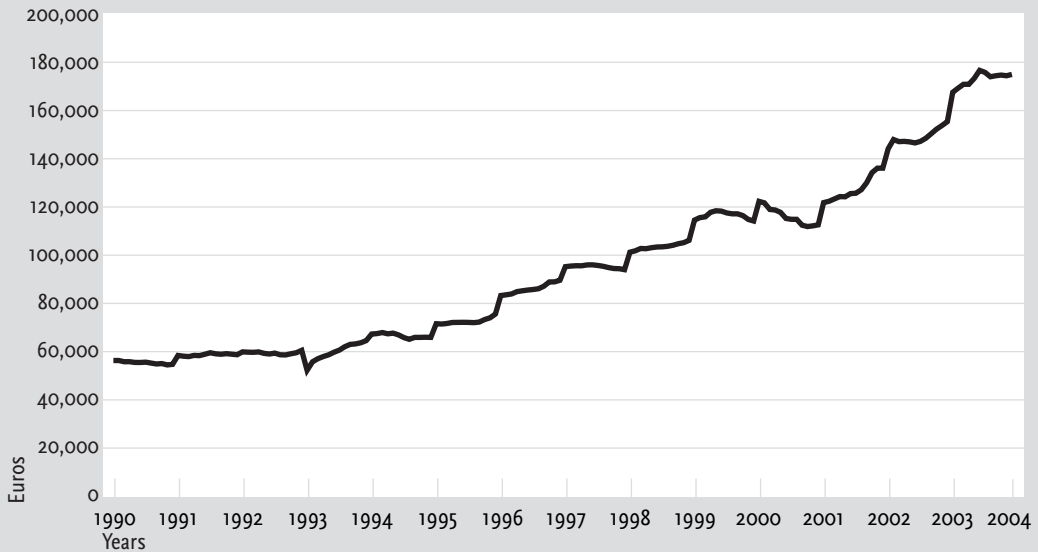
The effect of the development in the financial markets can be seen in the following figure. The figure describes what happened to the opportunities for households to take housing loans in the 1990s. The loan size in the figure is based on the question of how large a loan a household can take out if it has €500 per month for loan service.<sup>3</sup> The calculation is based on the first

---

<sup>2</sup> First time buyer households can have higher total debt to house price ratios than 85%. This is because they have other collateral for the loan (e.g. personal sureties from their parents), and banks in some cases offer special arrangements for good and creditworthy customers. Note that in Sections 2.3 and 2.4 household debts also include loans other than for housing, which leads to debt figures close to 100% in relation to house value.

<sup>3</sup> Tommi Laanti (Ministry of the Environment) assisted me on this point.

---

**Figure 2.2** Loan size with given monthly service burden, 1990-2003

monthly installment i.e. on the interest rate of the first interest period. The figure takes the following changes into account:

- €500 monthly loan payment is increased annually by the general wage index, so that in 2003 the amount available was €768;
- the decrease in mortgage interest rates from a peak of 13.72% in 1992 to 3.33% in 2003;
- the gradual lengthening of the loan maturities from 15 years in 1990 to 25 years<sup>4</sup> in 2003;
- the change in the mortgage tax relief system.

As can be seen in Figure 2.2, the nominal loan size was €56,000 in the early 1990s, and it has increased gradually to almost €175,000, tripling the loan size. In real terms the increase has been almost 150%.

Naturally, this improvement in financial possibilities has been visible also in the housing markets along with the economic and migratory developments mentioned earlier. The house price development is presented in Figure 2.3.

Given the development of the financial market and the development of house prices, we can now look at what has happened to the opportunities for the first time buyer in the housing markets. We do this by combining the Figures 2.2 and 2.3 into Figure 2.4. This gives us Figure 2.4 that answers the question: “How many square meters does a housing loan with a given monthly service burden buy?” This gives us a proxy for the change in the situation of the first time buyer, who typically finances his home almost completely by borrowing.

---

<sup>4</sup> This might be a slight overestimate, but it describes the trend well.

---

Figure 2.3 House prices 1987-2004

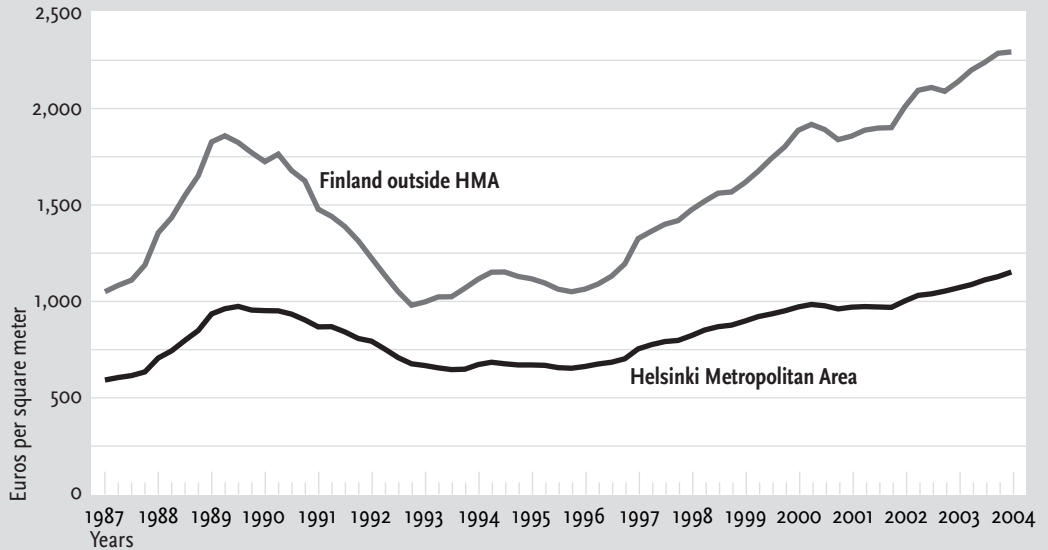
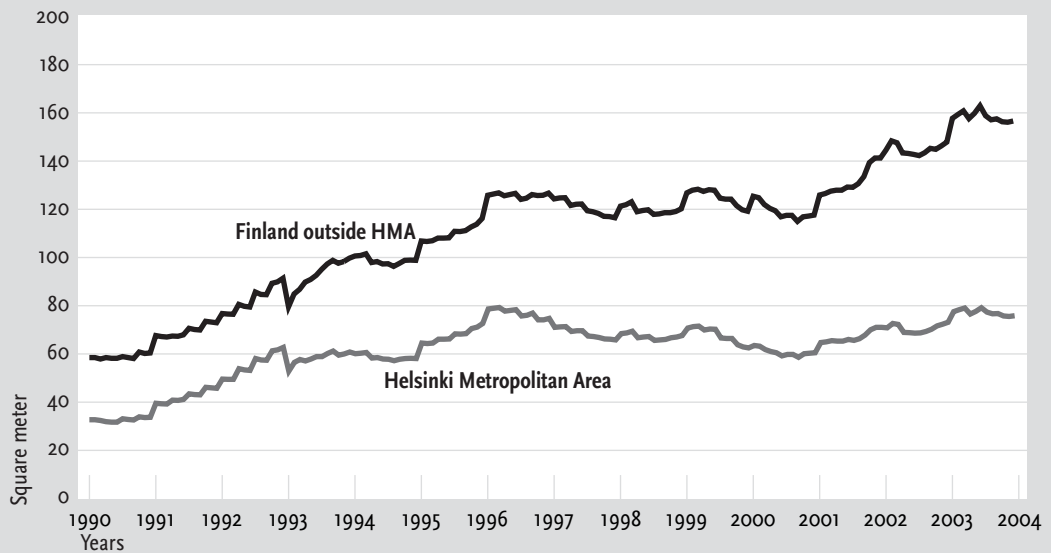


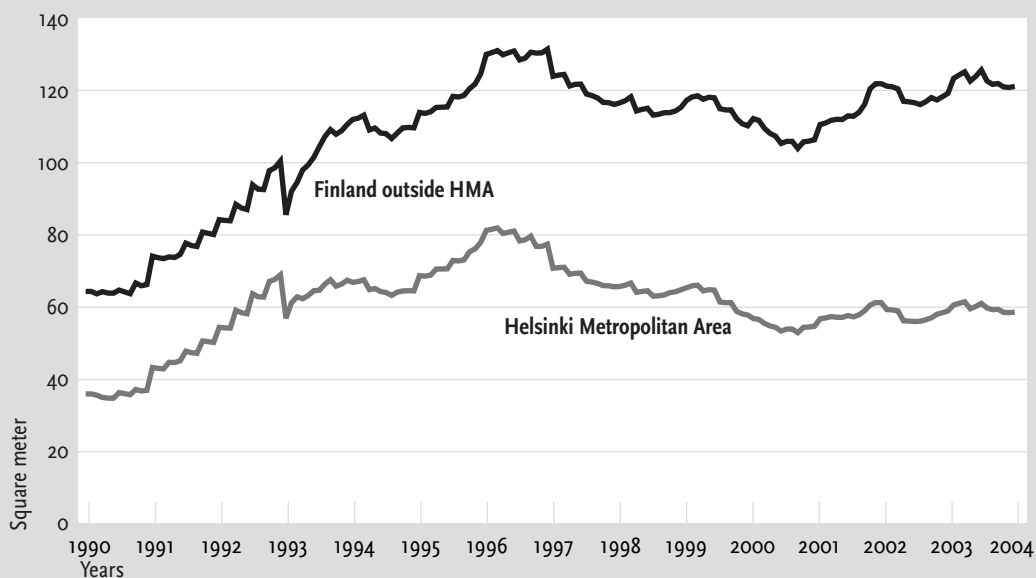
Figure 2.4 Number of square meters that a housing loan with given monthly service burden buys



Finland suffered a recession in the first half of the 1990s, which caused house prices to crash by 50% at the beginning of 1990s. Therefore, the number of square meters one could buy with unchanged loan service increased significantly in the early 1990s throughout Finland.

Since 1996, when house prices began to increase, the development in the number of square meters has varied considerably in various parts in Finland.

**Figure 2.5** Number of square meters that a housing loan with given monthly service burden buys (Loan maturity kept constant at 18 years)



This implies that the situation for first time buyers has evolved very differently with respect to the behavior of the regional housing market.

Within the Helsinki Metropolitan area, first time buyers have been unable to receive more space with the unchanged monthly loan service burden since 1996. This is because the house price increases have been greater than the benefits from financial market development. The Helsinki Metropolitan area has been the destination of much of the migratory movement in Finland, and house building has been unable to keep pace with the increased demand. As a result, the first time buyers' situation has remained the same in terms of square meters available with unchanged monthly loan service burden.

However, it can be argued that the situation for first time buyers in the Helsinki Metropolitan area has actually worsened. This is because the statistic on square meters indicates the development in the capacity of the households to take on debt. One element of this is the maturity of the loan. The maturities have been lengthening in Finland substantially, but a longer maturity means more years of loan service, and therefore adds to the loan burden on the household. Therefore, when we look at the situation for the first time buyers, it is better to look with unchanged loan maturity as well (see Figure 2.5).

Looking at the two figures reveals that the total loan service burden has increased in the Helsinki Metropolitan Area. The picture also changes outside the Helsinki Metropolitan Area. The opportunities for the households have improved since the recession, but there is a price to be paid in the form of an increase in the maturity of the loan.

## 2.3 First time buyers in 2001

First time buyers are typically younger and financially in a weaker position than other households in the housing market. They have fewer resources in terms of both savings and income. Therefore, it is to be expected that they will buy smaller and cheaper dwellings than others, but even then they are likely to stretch their resources and take greater risks than other households. These assumptions match well the facts found in the study on homebuyers in Finland in 2001.<sup>5</sup>

In 2001 first time buyers' position vis-à-vis other buyers was improved by the following elements:

- mortgage tax relief was marginally higher (first time buyers could use 30% of the interest payments as tax credit, as others had 28%);
- first time buyers were exempt from a property transfer tax of 1.6%;
- first time buyers could use a pre-saving system (ASP system) with state interest subsidy (only 11% of the first time buyers did so).

In 2001 the first time buyer in Finland was typically around 26 years old, either a single person or a couple with no children. The household's income was on average €39,500, which is 15% more than the income of all households, but close to 15% less than that of other homebuyers. Only 20% of the first time buyers were in the lower half of income distribution. The price of the dwelling was on average 2.0 times the annual income of the household for the first time buyers. For other buyers the ratio was only slightly higher, at 2.1.

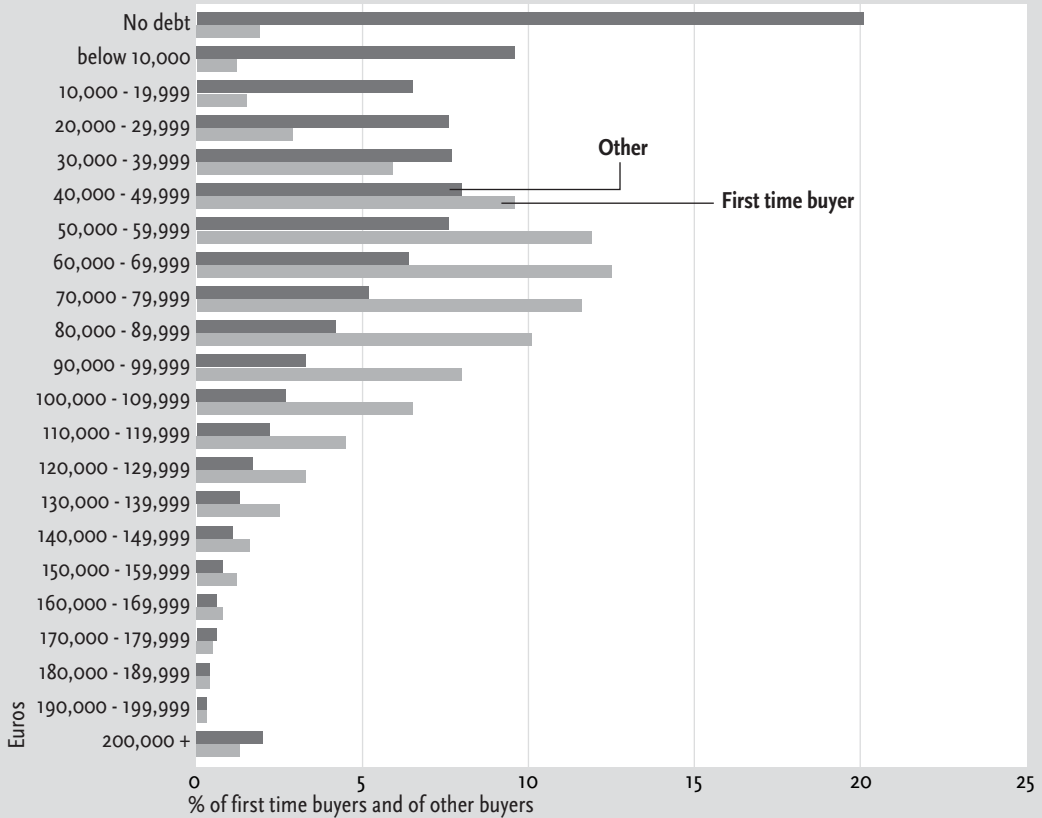
As the first time buyers have less equity, they end up buying smaller and cheaper dwellings and relying more heavily on debt. The average size of the dwelling per person was 33.8 m<sup>2</sup>, as compared to 35.9 m<sup>2</sup> for other homebuy-

---

<sup>5</sup> The information in this section is based largely on a separate study: Johnson, Marianne, Jari Tarkoma (2004). The data for the study consist of the households who bought a dwelling in a housing company (a form of ownership in Finland resembling a condominium), either in a block of flats, row house or single family house, in 2001 and moved into it by the end of the same year. The information on the households is from 31<sup>st</sup> December 2001. The data were gathered from the tax administration, the state treasury and Statistics Finland. Altogether 76,000 housing company dwellings were bought in 2001. Of these, the buyer moved into the dwelling in 46,871 cases by the end of the year. Of these, 17,630 households were first time buyers. The study gives a good picture of homebuying in city areas. Elsewhere, however, the picture is somewhat distorted. This is because concentrating on housing company dwellings means that the majority of acquisitions of single family homes are outside the scope of the study, as they are in the form of real estate. Just over half of owner occupiers live in single family homes in the form of real estate. Their share of acquisitions for owner-occupancy (including building one's own home) is, however, much lower, perhaps only 20-25% of the total. Single family homes in the form of real estate are typically larger, occupied by larger households and have a higher total price than dwellings in housing companies, on average.

---

Figure 2.6 Household debt levels



ers and 35 m<sup>2</sup> in general. The price of the dwelling for first time buyers was on average €80,500, whereas for other buyers it was €96,800. In spite of the lower house price, first time buyers needed to borrow more. Their total borrowing<sup>6</sup> was 97% of the house price, compared with 65% of the house price for other buyers. Two thirds of the first time buyers had a total debt of over 90% of the house price. Figure 2.6 shows the different distribution for first time buyers and other buyers in total debt.

The differences among first time buyers in different housing markets are significant, and are given in Table 2.1. The tightest housing market, in the Helsinki region, also limits the opportunities for first time buyers. The dwellings in the Helsinki region are more expensive than elsewhere, and first time buyers there need to use considerably more money than those elsewhere. They are still much more constrained vis-à-vis other market participants with respect to the price and size of the dwelling than first time buyers elsewhere. First time buyers in the Helsinki region are also less likely to buy row houses. Interestingly, in spite of the high prices and the constraints they

<sup>6</sup> All household debt (housing loans, student loans, consumption loans), except for loans for business purposes, so this is not a typical LTV ratio.

**Tabel 2.1 First time buyers in different regions**

	Helsinki region	Other growth regions	Rest of Finland
Share of row house acquisitions	21%	41%	52%
Average price	€103,000	€74,000	€59,000
Average price in comparison to other buyers' average price	78%	89%	95%
House price to income ratio for first time buyers	2.3	2.0	1.7
Household debt	€92,600	€72,600	€61,700
Household debt in relation to house price	89%	98%	105%

set, first time buyers in the Helsinki region take on far less debt in relation to house price than first time buyers elsewhere. This seems to suggest that debt is taken on with a view to the service burden vis-à-vis the income it creates, and not in relation to house value.<sup>7</sup>

State mortgage guarantees have been available to all who wish to use them since 1996. Typically, the lender accepts a collateral value of 70% for the dwelling. The state mortgage guarantee guarantees the top 20% of the loan and therefore increases the acceptable loan-to-value-ratio to 85%.<sup>8</sup>

Because first time buyers are typically short of equity, they take the bulk, 70%, of the state mortgage guarantees. Some 54% of first time buyers take the state mortgage guarantee. As is to be expected, the households that took state mortgage guarantees have the highest debt to house price ratios. On average, the ratio is 106%, but increases to 114% outside growth regions. Clearly there are risks involved in this. So far, however, the guarantee losses have been very limited, only about 0.2% of the guarantee fees collected (there is a 2.5% fee of the sum of the guarantee). The steady house price increase since 1996 is one reason for this low figure.

## 2.4 Comparison between first time buyers in 1992 and 2001

A similar study (Tahvanainen, Markku, 1995) of the characteristics of the homebuyers for the year 1992 gives us an opportunity to compare their position with that of first time buyers a decade before. The table below shows the available comparisons between the two years.

Between these two years, there have been three major changes regarding first time buyers at national level. First, the average size of the dwelling per person has increased by more than three square meters, which is a positive development from the housing standards perspective. Second, the increase in house prices has been more than matched by the increased borrowing, and

<sup>7</sup> Here it should be noted that household debt includes not only housing loans, but also other loans, such as student and consumption loans.

<sup>8</sup> Lenders can offer arrangements that further increase the LTV ratio.

**Table 2.2 Comparison between first time buyers in 1992 and 2001**

	1992	2001
Size of the household	2.0	2.0
Average size of the dwelling per person	30.2 m <sup>2</sup>	33.8 m <sup>2</sup>
Income as percentage of the income of other buyers	87%	85%
Income of the first time buyers (in 2001 money)	€32,200 (nom. €27,800)	€39,400
Price of the acquired dwelling	€61,100	€€81,500
Price of the acquired dwelling in relation to household income	2.2	2.0
Household debt in relation to the price of the acquired dwelling	92%	97%
Average level of household loans (in 2001 money)	€€65,100 (nom. €56,200)	€78,900
Estimated monthly loan service burden <sup>1)</sup>	€618	€513
Percentage of buyers with debt of over €80,000 (in 2001 money)	14%	41%

1) Estimate of the average monthly loan service burden with the average level of household loans in 1992 and 2001. Loan maturity is held constant at 18 years in both 1992 and 2001. The difference arises from different interest rate and mortgage tax relief levels in 1992 and 2001. Deflated by the general wage index to 2001 money and calculated at the withdrawal of the loan.

the first time buyers' LTV ratio has increased to close to 100%. This partly explains the increase in space, but also increases the risks of the households. Third, monthly loan service burden has decreased for an average earner quite significantly. The explanation here lies in the recession of the early 1990s, which lowered or kept house prices static from 1992 until 1996. The benefits to households accrue from this time period. It is likely that between 1996 and 2001 the first time buyers actually had increasing loan service burdens. As we have seen, the development in the housing market in the 1990s treated regional housing markets differently. Unfortunately, the data available do not allow for comparison at regional level.

## 2.5 Scope for housing policy?<sup>9</sup>

With regard to housing policy, the key findings in this chapter have been as follows:

- The development in the financial markets in the 1990s produced a remarkable and one-off increase in households' opportunities for debt finance. The increase in 'debt affordability' has been of such a magnitude that no demand side housing policy measure can be thought to achieve the same kind of effect.
- The remarkable increase in 'debt affordability' has, however, improved the debt capacity of the first time buyers little, if at all.<sup>10</sup> This is the result of

<sup>9</sup> All suggestions here are from the author and do not reflect the view of the Ministry of the Environment.



‘the debt affordability’ increasing the house prices by its full extent, i.e. 100% or even higher capitalisation into house prices.

The housing policy questions based on these findings are:

- What is the scope for demand-improving housing policy measures as they are likely to be more or less fully capitalised into house prices?
- Should we, in order to improve affordability, turn to demand-decreasing housing policy measures instead?

If we consider the demand side, the policy measures to improve the affordability for first time home buyers are often those that in some way improve their position vis-à-vis existing home owners. These measures come, for example, in the form of tax advantages, grants and interest subsidies. Their common feature is that they improve the demand potential of the first time buyers. The general idea is for first time buyers to be able to ‘compete’ better in the housing markets. This ‘competition’ is likely to increase the price level and therefore undermines the initial goal of improving the affordability. The benefits of these measures are most questionable in pressured areas, where actually the need to improve affordability is the greatest. Subsidies targeted to small groups of households do not lead to capitalisation on the same order of magnitude as general improvements in the financial markets, as in the Finnish case above. First time buyers, however, are not such a small group that these capitalisation effects would be insubstantial.

Let us assume for a moment that demand-improving measures, even targeted ones, are likely to perform badly in achieving the actual goal, such as access to home ownership. Should we then resort to the opposite measures and try to decrease the demand for housing? One way might be an increase in property taxation.<sup>11</sup> This would increase housing expenditure, lower housing consumption, as housing consumption becomes relatively more expensive than non-housing consumption and therefore lower the value of home ownership and value of homes. This would naturally lower the borrowing needed and improve first time buyers’ access to home ownership. Other possible effects on the housing markets are reduced volatility of prices, a tendency to lower rents (as house values are lower), capital losses with possible negative equity problems for existing home owners and payment difficulties for cash-poor - home-rich home owners. On the supply side, lower housing consumption would decrease housing production. Another effect on the sup-

---

**10** With regard to countries that have the ‘debt affordability’ increase ahead of them, there is a great opportunity to improve the affordability and access if the house price increases can be kept moderate.

**11** In the evaluation of Finnish housing policies in 2002, increase in property taxation was one of the suggested measures.

---

ply side would be a potential increase in housing supply for first homes from the existing stock, as increased housing expenditure lowers housing consumption also in the case of second homes in urban areas.

Clearly, the measure as a pure housing policy measure would be highly unpopular, since it would decrease the asset values of rental housing providers, and in many countries of a majority of households. However, there are other aspects to consider:

- The increased tax income could be used to lower income taxes, which makes the policy tax neutral.<sup>12</sup>
- There is already pressure to decrease taxes of the most mobile tax objects, such as companies, other sources of capital income and top wage earners. Consequently, buildings, which are immovable, are likely to get increased attention anyway.
- Home owners typically have most of their wealth in the form of their home. This is naturally risky, but it is also quite an inefficient use of capital from the point of view of the national economy. Especially in an aging Europe, the potential increase in consumption and investments in productive capital would be welcomed.
- It is also questionable whether home owners are entitled to expect capital gains, especially in the pressured areas, arising from factors beyond their control.
- In developed countries, the level of housing consumption is generally at a level where its increase is no longer a central housing policy objective. On the contrary, there are grounds for having less housing consumption, like the world climate policy objective to lower greenhouse gas emissions.

The increase in house prices has been a common phenomenon in many European countries, especially in the pressured areas. Whether this trend will also continue in the future remains to be seen. In any case, the price level in many regions is now at a point where access and affordability constitute a problem. There will be various solutions in different countries to tackle these problems. Whether measures to decrease housing demand, e.g. in the form of increased property taxation, become included in housing policy remains to be seen. Housing research should, however, pay attention to the wide range of effects arising from increased property taxation, as there are signs that increases in property taxation arise from outside the field of housing policy.

---

<sup>12</sup> This was also suggested by the evaluators of Finnish housing policies.

---

---

## 2.6 Conclusions

The 1990s was a decade of turmoil in Finnish housing markets and of fundamental changes in housing finance. In this chapter we looked at how the position of the first time buyer has developed during this period. The main finding is that first time buyers benefited from the recession in the housing market during the first half of the 1990s, as expected. However, after the recession ended in about 1996, the first time buyers' position stopped improving. The terms of housing finance improved dramatically starting in 1996, but have been outpaced by house price increases, leaving first time buyers worse off.

This outcome suggests that general improvements impacting housing demand, such as improvements in housing finance, might fail to benefit first time buyers. From the housing policy point of view, this is a terrible outcome, as it puts into question not only the benefits of general improvements regarding housing demand, but also to some extent the benefits of more targeted subsidies with respect to housing demand. One could in fact argue that improvements in housing finance should offer the most benefit to the households that rely most heavily on borrowing, i.e. first time buyers. Consequently, the natural housing policy question is, should we instead turn to demand-decreasing measures in order to improve the first time buyers' position. The last section discusses this question to some extent.

### References

Johnson, Marianne, Jari Tarkoma, 2004, **Osakeasunnon ostajat ja valtion-takaus. Tilastollinen selvitys vuonna 2001 osakeasunnon ostaneista.**

Matala, Timo, 2000, Nuoret luopumassa asunnon omistusprojektista, **Hyvinvointikatsaus 4.**

Tahvanainen, Markku, 1995, **Asunnonostajat. Tilastollinen selvitys vuonna 1992 asunnon ostaneista.**

---



# 3 ‘The quantified customer’, or how financial institutions value risk

*Manuel B. Aalbers*

*Credit managers must learn that it is better to count than to guess. It is no longer sufficient, when asked a question that permits a numeric answer, to respond with “Lots” or “Most of them”. The required answer is a number, partly because today’s computational and record-keeping equipment makes it possible to keep and extract accurate numerical information, and partly because the competition forces management in the direction. (Lewis, 1992, p. 11)<sup>1</sup>*

*When all actions are mathematically calculated, they also take on a stupid quality. (Adorno, 1974, p. 107)*

*Risks only exist in terms of the (scientific or anti-scientific) knowledge about them. They can be changed, magnified, dramatized, or minimized within knowledge, and to that extent they are particularly open to social definition and construction. (Beck, 1992, p. 23)*

## 3.1 Risk and home ownership

Within the social sciences, there are many conceptions of ‘risk’.<sup>2</sup> Beck (1992, p. 21) defines risk as “a systematic way of dealing with hazards and insecurities induced and introduced by modernization itself”. Taylor-Gooby and colleagues, (1999) argue that the welfare state can be seen as a means of meeting the risks encountered in a typical life-course; in other words, welfare institutions can counter risks. Giddens (1990; 1991), Beck (1992; 1999) and other authors claim that the traditional welfare state is under pressure, primarily as a result of changes in the international political-economic atmosphere that limit the operational possibilities and freedom of national governments and also resulting from changes in ‘risk experiences’ and decreasing faith in governmental representatives and the welfare state. Beck (1999, p. 72) defines the Risk Society as “a phase of development of modern society in which the social, political, ecological and individual risks created by the momentum of innovation increasingly elude the control and protective institutions of industrial society”. According to this argument, insecurity and flexibility are important aspects of modern society. They tend to place social and economic relations under pressure, resulting in negative consequences for both society and the individual. In the Risk Society, life courses become more erratic and un-

<sup>1</sup> Lewis worked for Fair Isaac, the company that was instrumental in the implementation of credit-scoring systems in the US and, later, worldwide.

<sup>2</sup> Part of the title is adapted from Vaivio’s paper titled *Examining “The Quantified Customer”* (Vaivio, 1999). I am indebted to the comments of John Doling, Sako Musterd and Robert Kloosterman.

predictable than they had been in the industrial society. The unpredictability is related to a different set of risks arising from deregulation and liberalisation, as well as from tendencies towards and strategies for privatisation. In the past (i.e., in traditional society) risk was usually associated with natural forces; present-day risk, however, is linked to human intervention through technology and the role of governments. These both play dual roles: they can either reduce risk or make it harder to control.

The notion of the Risk Society can also be applied to the housing and financial markets. For most of the twentieth century, home ownership was generally seen as relatively free of risks and as a good way to acquire wealth. Unsustainable home ownership, negative equity and arrears were seen as temporary problems linked to economic fluctuation. According to Ford and colleagues (2001; see also Forrest *et al.*, 1999), however, this is no longer the case. In the Risk Society, home ownership is also surrounded by increasing insecurity. This is mainly due to processes outside of the housing market, particularly in the labour market and social security provisions. Part-time and flexible forms of work have now become the rule rather than the exception, and life courses have therefore become not only more flexible, but also more unpredictable and insecure. Consequently, people are at higher risk of being unable to meet their financial commitments. Home mortgage loans are of particular importance, not only because housing is a primary necessity of life, but also because buying a house is the largest expenditure that most individuals (or households) will make during their lifetimes. The push for home ownership, combined with the privatisation of social housing in various types of (welfare) states (e.g., Murie *et al.*, 2005) has increased the importance of the home at both the individual and the societal level. Existing institutions were not designed to deal with the fragmentation of the life course that occurred because of deregulation, liberalisation and privatisation tendencies and strategies. Furthermore, more groups have become vulnerable, as home ownership has increased primarily among low-income groups. These groups experience the most insecurity because of changes in the labour market and the welfare state (e.g., deregulation, liberalisation and privatisation). Low-income individuals and families are therefore especially likely to experience a sense of being 'out of control' in the Risk Society (Ford *et al.*, 2001). There are, however, clear distinctions between countries with regard to the nature and structure of risk. This is due to differences in market developments, in welfare states and in (welfare) policies that are intended to reduce risk (Doling & Ford, 2003). In other words, the nature and structure of risk are mediated by such contingent factors as property rights and the level of commodification.

The current academic debate concerning the situation can be summarised briefly as follows: globalisation has a clear influence on the development that can be described as the Risk Society, but governments are not powerless to

---

limit risk experiences. Several studies have documented the exposure to risk and risk experiences, but few studies have explicitly examined the definitions of risk private actors (e.g., financial organisations) use. Although one could simply conclude that financial organisations do not consider risk in these terms, it seems more likely that definitions of risk have major consequences for the risk experiences of individuals. A link is missing between sociological approaches to risk and the approaches that financial practitioners use to consider risk. Although Giddens does not explicitly refer to risk conceptualisation in the financial sector, he does suggest that a significant part of 'expert' thinking is made up of 'risk profiling': "analysing what, in the current state of knowledge and in current conditions, is the distribution of risks in given milieux of action" (Giddens, 1991, p. 119). This paper links sociological approaches to risk to those used by financial practitioners by presenting a sociological analysis of the ways in which banks and other financial institutions value and construct risk in general, particularly within the context of mortgages.

The next section introduces three closely related types of risk selection in the mortgage market: profiling, credit scoring and the use of social demographic data by postcode area. Subsequent sections discuss the various types of risk selection. The point of this argument is not to show how these forms of risk selection differ; it is rather to show how these forms of risk selection progress from one to the other. The use of social demographic data can indeed be used in credit-scoring systems, and both are specific forms of profiling. I argue that banks assume that members of certain social groups are, on the average, less able to fulfil their financial commitments than are other groups. Applications for (mortgage) loans are subject to quantified risk-selection techniques (e.g., credit scoring), which financial institutions apply in order to minimise default and other types of risk. To explain how these systems have developed, I first address the issues of quantification and credit risk management. After discussing various forms of risk selection, I address the issue of banks' acceptance policies and the credit limits they use for reviewing loan applications in more detail. I then address the difficulties associated with credit scoring and related systems, relating them to issues of exclusion and to social scientific conceptualisations of risk. The discussion pays particular attention to Habermas' idea of 'colonisation of the life-world' and Giddens' concept of 'high-consequence risk'.

This chapter shows how credit scoring and related systems operate in the process of bank mortgage lending and discusses the social consequences of these systems, using examples from the Netherlands to illustrate many points. The implementation and consequences of such systems, however, are not limited to the Netherlands. Credit scoring has its roots in the US, but it has also come into common usage in Europe. Although this system was first implemented to monitor the use of credit cards this paper focuses on its

---

application within the mortgage market. As is the case with many American trends, the UK was the first European country to implement credit-scoring systems. The number of credit scoring analysts doubled within four years in the late 1990s while the application of credit scoring was still rising quickly in the UK (Thomas, 2000). France was also one of the first European countries to develop these systems (see e.g., Guyon, 1992). The Nordic/Scandinavian countries followed, partly in reaction to a financial crisis. The next countries to start using credit-scoring systems were Belgium (partly related to developments in France and the Netherlands), the Netherlands (related to the developments in the US, Germany and the UK) and German-speaking countries. Southern European countries began somewhat later, and the development was different from each country, and was based on knowledge from other countries (such as France for Spain) or direct foreign investment (e.g., foreign banks in Italy). Central and Eastern Europe, as well as the Baltic states, are now implementing credit-scoring and related systems. The development of such systems in these countries was partially dependent on knowledge of other countries and foreign banks (e.g., the Dutch bank ING is an important market player in Poland, and German banks are present as well).

The spread of credit scoring apparently depends not only on the presence of links and ties with other countries and foreign banks, but also on the relative volume of consumer credit (as a percentage of GDP), the level of debt and the use of credit cards. Credit-card usage is highest in the US, followed by the UK (Kleimeier and Sander, 2002; Jentzsch, 2003, p. 4). The use of credit cards is especially important, given that credit-scoring systems had their roots in the credit card industry; it is therefore likely that the timing of their implementation in the mortgage market depends, at least in part, on developments within the credit card industry.

In some countries, notably in Sweden, the introduction of credit-scoring systems was also related to a crisis in the housing market and in the wider economy, and to the deregulation of the financial market (e.g. Turner, 1997). In general, the implementation of credit scoring and related systems apparently tends to follow financial deregulation. Financial deregulation was also an issue in the Netherlands in the 1980s and 1990s. For example, the legal separation of banking and insurance services was abolished in 1990. Consequently, financial conglomerates developed through a wave of mergers and acquisitions. Van Leuvensteijn (2003) characterises the Dutch mortgage market as a non-competitive market in which lenders possess some monopolistic market power derived from imperfect information. Perhaps a more accurate description of the market, however, is that of a system of relatively few big players, who have oligopolistic powers and a relatively low degree of market differentiation. In other words, although banking products are heterogeneous, there is little heterogeneity among banks, all of which offer similar levels of heterogeneity in their products.



The European credit market remains highly segmented, despite the fact that financial deregulation in many European countries was intended, at least in part, to de-localise the European credit market, and despite the fact that a slow process of convergence is now taking place within European banking (Jentzsch, 2003). In other words, “banking is still localized” (Kleimeier and Sander, 2002, p. 5), and “the internationalisation of finance has comparatively little impact on mortgage systems” (Stephens, 2003, p. 1018). Deregulation was encouraged by both the EU and many banks. While this situation increased the possibility of national and international competition, it also increased the level of risk for banks, because deregulation tends to fracture pre-existing relationships between savers and borrowers.<sup>3</sup> Although competition for market share may have increased, problems of information asymmetries have also increased in the process of deregulation. Banks currently have only ‘limited insight into the financial prospects and moral rectitude of potential borrowers’ (De Greef & De Haas, 2000, p. 2). The use of profiling and credit-scoring systems (as described in this paper) addresses this problem by calculating ‘group averages’ and excluding ‘bad-risk’ groups. Deregulation thus indirectly stimulates the use of such systems. In effect, such exclusionary measures resemble statistical discrimination, in that they tend to exclude people according to their membership in groups that are defined by place, ethnicity or other variables.

### 3.2 Risk selection in the mortgage market

The mortgage market contains structures and actors for regulating the provision of mortgages. The relationships between mortgage providers and their customers are not as important now as they were in the past. The ‘loss of personal contact’ should not necessarily be seen as a negative consequence of modernisation, as the qualitative approach often involved considerable preferential treatment based on personal contacts. Moreover, quantification through credit scoring offers financial systems a much better way to predict default than do qualitative, judgmental approaches (Thomas, 2004). Many other factors, both individual and non-individual, are vital in current practice. At the individual level, the income and wealth positions of prospective buyers, as well as their current positions in the housing market, are of great importance for mortgage provision. These factors are crucial for determining the size of the mortgage loans to be provided. A buyer’s state of health can also play a role, as mortgages are often linked to life insurance. The decisions of different mortgage providers may therefore differ, depending on the fac-

---

<sup>3</sup> I am indebted to John Doling for sharing his insights on this matter with me.

---

tors that they take into consideration (Aalbers, 2003b).

Providing a loan involves risk for a moneylender, as there is always a chance that the money will not be repaid. Part of the interest that borrowers pay on their loans covers this risk. Moneylenders incur less risk when collateral, in this case a house, is provided to secure the loan. The collateral can be seen as risk insurance, allowing the moneylender to charge a lower interest rate. Guarantee systems (e.g., the National Mortgage Guarantee Fund [*Nationale Hypotheek Garantie*] in the Netherlands) can be seen as risk insurance when the organisation that manages the guarantee system warrants the payment of mortgage loans that are acquired by the owner-occupiers.

At the non-individual level, mortgage providers make distinctions among mortgage applicants according to the risk factors of more or less homogeneous groups (Aalbers, 2003a; 2003b). This differentiation influences the premium. Rodrigues (1997) distinguishes the following three closely related forms of risk selection:

- Due to the increase of transactions, providers look for selection and acceptance criteria that can be obtained quickly and easily. These techniques are known as ‘profiling’. Risk profiles can help providers determine whether potential clients meet the conditions for selection and acceptance, or if they put the company at risk, according to both general and specific characteristics.
- With regard to credit provision, scoring lists are used to test the creditworthiness of individual applicants (i.e., credit scores). Credit scoring is a specific form of profiling.
- By linking the use of risk profiles to social-demographic data by postcode area, lenders can decide whether to accept certain risks in specific neighbourhoods.

This chapter applies these three risk-selection techniques to the mortgage market, after first addressing the tendency of lenders to quantify consumers through such methods as ‘customer profitability analysis’ (CPA) and credit-risk management. The argument is not that quantification tendencies in risk selection in the mortgage market have exclusionary effects, while more qualitative approaches do not. The ‘qualified-customer’ approach and the ‘quantified-customer’ approach both have exclusionary effects; the point argued in this paper is that the effects of these approaches differ in the current mortgage market as a result of the application of quantification techniques.

### 3.3 The power of quantification

Quantification is the process of translating non-quantitative information in quantitative information.<sup>4</sup> According to Porter (1995), quantification is a way

of attaining trust within profession or political environments. Porter argues that quantification produces professional communities. Quantification involves the production of a common language that allows professionals to form communities (i.e., groups of people who know and trust one another). Quantification also serves to 'objectify' issues; in other words, it involves the translation of subjective information into apparently objective information. Although quantified information may appear to be objective, it is actually a social construction; it is an objectified truth. This construction involves not only trust, but also power, the control of political and economic elites and, almost importantly, the ability to reproduce the existing power system (Fligstein, 1998). Quantification reduces complexity and simplifies the reproduction of systems of power relations. The most important components of quantification are standardisation and rationalisation (in the Weberian sense). Although all information systems are arguably social constructions, the aspect that sets quantified information systems apart is the fact that they do not consider individual context. Based on interviews and a quasi-experiment, Stuart (2003) shows how lenders form and apply criteria that they view as 'formal rationality'. He shows how information about potential borrowers can be explained and quantified in different ways, even by mortgage lending professionals within the same organisation. Information that has been gathered must eventually be reduced, however, and the possible options for reduction 'can never cover all situations'. Moreover, as in the days of the 'qualified customer', loan officers are 'still party to the construction of risk in this process' (Stuart, 2003, p. 130-131).

For providers of goods, standardisation offers the advantage of clearly distinguishable groups of consumers. According to Boyce (2000; cf. Vaivio, 1999), the discourse of 'customer focus', 'customer revolution', 'providing value to customers' and 'the customer is king' is mostly rhetorical. He states that "The literature is replete with talking of 'acquiring' customers, as if they were commodities to be bought and disposed of, just like any other 'resource'" (Boyce, 2000, p. 660). In other words, companies differentiate among consumers according to their profit potential. This occurs through such 'customer valuation techniques' as 'customer profitability analysis' (CPA). This chapter focuses primarily on the role of CPA in risk selection and credit risk management in the mortgage market.

Customer profitability analysis "...calculates a customer's contribution to profit as the difference between the revenue earned from a customer and the costs associated with that customer. On the cost side it uses activity-based costing techniques to assign a total cost of acquiring and servicing a cus-

---

<sup>4</sup> Note that there is a difference between 'quantified' and 'quantitative'. Also note that information that is said to be 'quantitative' is often actually 'quantified'.

---

tomers to date” (Boyce, 2000, p. 652). The technique can be applied at the individual and the market-segment level: “Market segmentation valuation is perhaps more attractive due to its potentially easier application and lower costs of data accumulation and calculation” (p. 652). Although some originators of these methods prefer individual classification, the classification of consumers into market segments is inevitable in reality. Subsequent calculations are based on a large number of allocations, estimates and assumptions. Scaling can also be included in such calculations, but they require interpretation, which is not a fully objective process. This information is thus also objectified. Advocates of CPA often see it as a neutral technique that simply represents facts, and its use is therefore seldom seen as problematic. In an uncritical way, it is considered to be a rational instrument; it is not, however, free of problems and valuations. For example, customers are homogenous in effect. Their ‘value’ is determined according to membership in groups (‘presumed market segments’) rather than as individuals. Individuals are turned into abstract customers who represent certain financial value to be exploited or financial burdens to be avoided as risks (Boyce, 2000). The use of CPA and credit scoring can lead to the marginalisation of the disadvantaged.

### 3.4 Credit risk management

Credit risk management can be seen as the application of risk selection and CPA in financial markets. The relationship between wider access to financial markets and the use of CPA and credit risk management is paradoxical. Over time, financial markets have made the use of CPA and credit risk management necessary; in turn, credit risk management has also expanded access to financial markets. As in other financial markets, expanded access to the mortgage market is usually based on extensive calculations, often with the use of credit risk management, rather than on speculation (Aalbers, 2004a). Credit risk consists of costs due to the incorrect repayment of a loan, and it occurs after loss because of forced sale or outstanding instalments. Banks have tried to map and predict these risks. The following factors have been found to be of great importance in the Netherlands (Hendriks, 2003): historic payment and loan behaviour (50%); income aspects, including the level of income, bills and stability<sup>5</sup> (25%); aspects of maintenance (loan in relation to the value of the house)<sup>6</sup> (15%) and other factors, including age and geographic location (10%). These factors can be used to determine an applicant’s personal risk profile. Applicants with high-risk profiles can be denied mortgages,

---

<sup>5</sup> Loan-to-income ratios are commonly used.

<sup>6</sup> Loan-to-value ratios are commonly used.

---

---

thus lowering the risk content of a company's mortgage portfolio. The relative weight of the various factors should be interpreted with care, however, as a single, relatively small factor can be decisive in determining whether an applicant meets the required threshold and is granted or denied a mortgage loan.

Credit risk management has its roots in the US, and is now spreading to other countries. As bank managers and experts have indicated, its use in the Dutch mortgage industry has increased greatly since the early 1990s, and the methods of calculation are becoming increasingly refined. In the near future, this system will be internationally institutionalised. The 'Basel II Accord' specified the 'Internal Rating Based method' as the new system for measuring solvability as of 2007 (Hendriks, 2003). This means that providers who apply credit risk management will attain higher solvability scores from the National or European bank than will providers who do not, and they will therefore require less equity. This will create both internal and external incentives to apply credit risk management (Aalbers, 2004a). In addition, other developments apply risk models to estimate other risks as well, including prepayment risk (the risk of paying off a mortgage in advance) and pipeline risk (the risk that moneylenders incur when providing offers that include interest options).

The adoption of credit-risk management techniques provides an example of the globalisation of financial regulation (not necessarily of money itself), as more and more actors in the credit market are being encouraged to apply similar methods. The aim of this worldwide standardisation is to increase the liquidity of the market, so that financial actors can know the risks and certainties of particular investments, and thus the prices of financial products, irrespective of their location. "For liquidity to emerge, market participants have to, in effect, specify what commodities they will accept as standard and homogeneous." Liquidity is not a natural state of the market that develops automatically; instead, it "depends on specific institutional features and organizational activities", or actors and conditions that have the market power to turn illiquid products into liquid products (Carruthers & Stinchcombe, 1999, p. 354, p. 358). Through the globalisation of finance regulation, dominant market actors strive for a more transparent market (i.e., a market with a higher degree of liquidity) by transforming opaque financial objects or products into (more) transparent financial objects or products, thus yielding financial objects that are increasingly routinised and standardised, and that are decreasingly tied to specific locations (for an explanation of the concepts of transparent and opaque products, see Clark & O'Connor, 1997). This subsequently enables the globalisation of the financial market itself, although it does not necessarily lead to the actual globalisation of financial firms (cf. Drahos & Braithwaite, 2001).

---

### 3.5 Profiling

Risk selection occurs through standardisation, which entails evaluating consumers according to easily accessible characteristics in order to accept or reject them as clients. This means that selection and acceptance are based primarily on objectified characteristics. The profiling techniques are used to retrieve group profiles, determinations of average risk for each group. The use of risk profiles is hard to combine with the right of privacy and can have a stigmatising effect. Furthermore, consumers can be rejected without actually carrying the risk for which they were rejected, since they are not evaluated individually (Rodrigues, 1997; Aalbers, 2003a).

In the Netherlands, almost all consumer loans are registered with the Bureau for Credit Registration (*Bureau Kredietregistratie [BKR]*) in the city of Tiel. Loans that are registered with the BKR include salary credits, personal loans, continuous credits, shopping passes, credit cards, effect leases and payments to digital or paper department stores (with the exception of student loans and private-issue loans). This registration affects the amount of money that one person can borrow. The BKR keeps track of whether individual consumers pay their instalments on time. Those who do not meet their obligations may have arrear codes assigned to their profiles (A-encoding). Although it is difficult for individuals whose reports contain such designations to be approved for mortgages, it is not impossible. When determining the maximum mortgage sum, a certain percentage of the gross income (in the Netherlands, often up to 35%) that can be spent on housing is taken into consideration. Ongoing loans are deducted from the income that can be spent on housing, thus lowering the maximum mortgage amount. Individuals who are behind in repaying loans and who are unable or unwilling to respond to the repeated requests of collection agencies to pay the monthly bonds including the increasing arrears are at great risk of receiving A-encoding from the BKR. This designation remains for five years after the payment of the loan concerned. Most mortgage institutions will not provide mortgages during this period. Although many other countries have institutions whose functions are similar to those of the BKR, as Jentzsch (2003, p. 11) suggests, approximately half of the European countries have no public credit registries that distribute credit-worthiness information to the market.

### 3.6 Credit scoring

The calculation of housing costs and other financial obligations in proportion to income determines the likelihood that an applicant will be able to pay a mortgage, but moneylenders also attempt to assess whether they are willing to pay it back (behavioural risk). Credit scoring uses available information to

make predictions about future payment behaviour. Credit scoring is a form of profiling. Batt and Fowkes (1972, p. 191; cited in Leyshon & Thrift, 1999, p. 444) define credit scoring as 'statistically based management tools for forecasting the outcome of extending credit to individuals'. Credit scores are based on such common variables as "occupation, length of employment, marital status, bank account, gender and geographical address" (Leyshon & Thrift, 1999: p. 444), which are also analysed by computer systems and statistical methods in order to predict credit performance.

Moneylenders and information bureaus analyze the customers of mortgage providers. These analyses identify important indicators and allow the determination of mutual connections. In this way, a 'score card' is made, and a limit can be established to determine whether a client qualifies for acceptance. In order to determine a credit score, statistical methods are used to assess if a potential client possesses certain qualities that increase the credit balance. This process involves the combination of a number of factors and their reduction to numerical values, which are called credit scores. A score that exceeds a fixed upper limit indicates that the risk is too high, and the applicant with such a score will be rejected. Applicants whose scores are lower than the fixed lower limit are accepted. Scores between the upper and lower limits do not lead to definite rejection or acceptance. In this case, the outcome depends on the policies of the specific institution and its employees. In some situations, a score between the upper and lower limits may qualify an applicant for a mortgage with less-favourable conditions, such as price differentiation and the application of additional criteria for acceptance (Aalbers, 2003b).

According to former banker Hilhorst<sup>7</sup>, it is "a sport among all banks to retrieve increasingly better information about the social profile of the client. The fact that this occurs is unknown, but not a secret. Credit scoring is everyday practice. The systems, the content and the criteria that banks put together to provide mortgage loans, however, are confidential" (Damen, 2003). Minor moneylenders usually work with computer programs developed by the American companies Experian and Fair Isaac. Major moneylenders, such as well-known banks, use these companies as consultants, but also have their own computer divisions that constantly improve their systems.

### 3.7 Social-demographic data

Credit scoring always considers both the asset positions and past credit experiences of prospective borrowers. Additional factors, including age, profession, number of children, gender, nationality and marital status, may play a

---

<sup>7</sup> Currently director of the financial advice bureau *Independer*.

---

role as well. Another important factor involves mapping the 'social environment' of the region – or even the neighbourhood or street – in which the applicant lives, or wants to live.

According to the Netherlands' Institute for Banking and Stock companies (*Nederlands Instituut voor het Bank- en Effectenbedrijf [NIBE]*), the purpose of a credit score is to assess large numbers of credit applications objectively, quickly and simply. Credit scores are merely tools, however, and should never be used in place of common sense. The postcode is one example of a factor upon which the score can be based. According to the explanation, "If a postcode is in a 'better' neighbourhood, it receives more points than an address in a reconstruction area" (NIBE, 1995). This means that personal data are linked to the social-demographic data of the postcode area. Bank managers admit that this is the case. In the Netherlands, the Geo-Marktprofiel is an example of a postcode-based database, and other countries have similar institutions and databases.

The credit-scoring process involves three levels of consumer research (Wishaw, 2000). The combination of the results determines whether the advice given regarding a potential client is positive or negative:

- Information can be gathered on at the social-demographic (general statistic) level. Data concerning the residential area (often a postcode area) may include such factors as the relative proportions rental housing and home ownership, the labour division in the area and average income.
- Scores can also be determined according to address. In this case, the database is searched for the precise address of a potential client, in order to identify any negative payment experiences in the past.
- The databases can also be used to search for negative payment experience by individual names and addresses.

A combination of these results determines the final score. If the score exceeds the minimum limit for acceptance, the customer will usually be accepted. If the score is below the limit, the potential client is often rejected. This shows the importance of geographical factors in advanced credit-scoring systems, as compared to the other forms of credit risk management discussed above, in which geographical factors are apparently of only marginal importance.

### 3.8 Acceptance policy and credit limits

The exclusion of groups that are considered too risky, or charging higher prices for these groups, is only one aspect. Because some risk groups are completely excluded from the market, or are admitted only in secondary markets, it is possible to charge lower prices to other clients whose risk pro-



---

files are low. Further, the relationship between credit risk management and access to the market is paradoxical. The rise of credit scoring and similar methods is most prominent when access to the market as a whole is expanded and simplified. The expansion of access to the credit market created the need to apply credit scoring. Improved access introduced more 'risky cases' into the mortgage market, and therefore into the home ownership market. In other words, although financial deregulation increased access to housing financing and allowed higher loan-to-value ratios, it also expanded the financing market to include groups that carry higher risk. The price boom(s) associated with the expansion of credit possibilities created a situation in which home owners with outstanding mortgage debts also began to carry more risk (see also Stephens, 2003). Credit scoring then became a way of controlling the increased risk faced by banks.

The experience of the Dutch mortgage market can illustrate the processes described above. The Dutch mortgage market is not unique, as similar developments have occurred in other countries with highly developed mortgage markets, although the timing and intensity of these developments differed. The Netherlands experienced a period of strong development during the 1990s.

The Netherlands has proportionately fewer home owners than do most other European countries. In recent years, however, there has been a dramatic expansion of home ownership. The current rate of home ownership is approximately 55%, which represents an increase from 42% in 1981 and 28% in 1945. A number of factors have fuelled this trend (Aalbers, 2004b, p. 484). First, the government has actively supported home ownership by offering tax incentives to buyers and encouraging landlords to consider selling their rental stock. Second, structurally low interest rates and bank policies of accepting higher risks for home mortgages have made it easier to purchase a home. Since the early 1990s, the acceptance policies of banks have become increasingly lenient, and credit limits (i.e., the maximum amount that can be borrowed through a mortgage) have expanded (Aalbers, 2003a). In the second half of the 1990s, all banks that provided mortgages widened their average credit limits by similar margins. For example, in the past, a second income within a single household was not taken into consideration when calculating credit limits; today, however, all banks include such income in their calculations. In addition, banks have begun using a higher housing-expense limit (*woonquote*), which is the part of the household income spent on accommodation. The Dutch National Bank (*De Nederlandse Bank [DNB]*) estimates that the average expense limit used by banks increased from 31 to 33% between 1995 and 1999. Until 1990, the use of expense limit over 30% was considered highly unusual. The DNB calculated that credit limits widened by 86% within five years for households with one income of €30,000 and one income of €11,000 (i.e., the average 1.5-income household). This can be largely attributed to an

---

average increase in income of over ten percent and a low rate of interest; the second income and the increase of the expense limit are important factors as well (DNB, 2000).

The percentage of the execution value that is used to calculate the size of a mortgage has also increased. The execution value is the value that a house would have if it had to be sold immediately, and is lower than the market value. When financing a house, moneylenders do not consider the purchase price of a house, but rather at its execution value. The number of new mortgages that exceed 75% of the execution value tripled between 1995 and 1999, which has increased the amount of risk faced by banks. Higher loan-to-value loans were necessary in order to enable people to buy homes, because the average household income was not increasing as quickly as average house prices were. In return, however, larger loans contributed to higher house prices as well. The boom in the housing market provided fuel for the boom in the mortgage market, and vice versa.

Other factors that increased risk during this period included the following (DNB, 2000):

- the quality of the administrative organisation came under pressure;
- few reports were written by mortgage agents (or intermediaries) intermediaries to mortgage providers (i.e., banks);
- many agents failed to abide by certain internal guidelines for acceptance; for example, a test was omitted at the BKR;
- housing mortgages were unlawfully used for purposes of credit repair or the repayment of consumer credit.

Risk was further increased by the fact that providers had developed many alternative forms of mortgages that, while financially beneficial, entailed high levels of risk, in some cases for the applicant as well as the provider. The high-risk 'investment mortgage' overtook the traditional 'annuity mortgage' (in which the monthly payments are constant, with the instalment portion increasing and the interest portion decreasing) as the most popular mortgage at the end of the 1990s. In addition, financial intermediaries and mortgage agents had an incentive to impede the push towards transparency; the lack of transparency constituted their right to exist.

All mortgage providers make use of the expanded acceptance policy, but not to the same extent. The acceptance policies of various providers differ, and not all providers are equally eager to extend high-risk mortgages. Some providers target a share of the market that is left aside by others. The mortgage portfolios of these providers consequently have higher risk profiles (Van Dusseldorp, 2003).

### 3.9 Difficulties and risk

A number of difficulties are associated with credit scoring. For example, moneylenders and information bureaus use personal data that were obtained for other purposes. By linking databases, considerable information is available about individual consumers. In addition, weak or illogical connections among the data that are used can cause problems. For example, a complaint was filed at the Dutch Registration Bureau [*Registratiekamer*] by the founder and director of a company that had gone bankrupt, after he had sold the business and was no longer connected to it. The information bureau had (simply) made the connection between the former owner and the bankruptcy of the company, while determining his credit score in reference to his application for a personal telephone subscription. Whether the information bureau made relevant connections is debatable (Wishaw, 2000).

Claims made at postal order companies can also appear in the information bureau's databank, and it can then be used for score calculations in connection with mortgage applications. Payment histories sometimes even remain linked to an address long after the former resident (whom the information concerns) has moved away; a new resident may thus be confronted with an earlier resident's poor payment history. Furthermore, some databases make no distinctions among different residences at the same address. All inhabitants of a certain house number area (for instance, 13a-13g) may consequently face rejection, if one resident's credit history is less than optimal (Wishaw, 2000). Sometimes, entire postcode areas are excluded from supply (redlining)<sup>8</sup>, with the effect that no potential clients living in such a postcode area (or housing complex or subdivision) will qualify for credit. Some mortgage providers do not reject applicants from certain postcode areas, but charge them a higher rate of interest instead. In the US, this is known as 'color tax' (the difference in price that must be paid in order to remove any discriminatory objections against contracting with opposing parties), a practice that is also known as 'risk-based pricing'.

The relationship between perceived risk and the price of credit is currently closer than it was previously. The cross-subsidisation that used to occur between different groups of consumers is currently becoming increasingly today (French & Leyshon, 2004). This leads to a two-tier system, in which a sub-market for socially disadvantaged groups develops in addition to the mainstream market (sub-prime lending). It is also possible that no sub-market arises, and certain groups are simply ignored and excluded from the market. In both cases, a group of consumers is marginalised. This development

---

<sup>8</sup> For Dutch examples of redlining, see Aalbers (2005a; 2005b). For a review of American evidence, see Aalbers (2005a: section 2) and Ross and Yinger (1999).

---

also has a strong geographical component. Firstly, disadvantaged groups tend to be concentrated in specific areas. Secondly (as discussed above), credit scoring can be based partially on social-demographic data by postcode area. In other words, credit scoring and other forms of credit risk management can reinforce expressions of uneven development and forms of financial exclusion (Leyshon & Thrift, 1997; Leyshon *et al.*, 1998). Vaivio (1999, p. 690) argues that “The Quantified Customer is far from a neutral instrument that avoids the interconnections between power, discipline and certain practices of knowledge.” It is clear that not all customers are treated equally in the way that business rhetoric may have intended (Boyce, 2000). The social consequences of using advanced risk-selection methods are great. It encourages the labelling of entire groups of consumers as ‘bad financial risks’ because of who they are, what they do or where they live. While financial products are become more extensive, varied and adaptable to the individual needs of wealthier consumers, it is also becoming more difficult for those who have been classified as unworthy of credit by the information systems to access beneficial loans, simply because of their social characteristics.

The inherent limitation of credit-scoring models – that they fail to consider contextual information (e.g., individual and local circumstances) – is related to the issue of exclusion: “Thus, an individual who has experienced credit problems for transitory reasons, such as a local economic recession or a personal adverse trigger event such as a medical emergency, typically would be assigned a comparable score to an individual whose credit problems reflect chronic excessive spending or an unwillingness to repay debts. The outlook for future performance on new or existing credit for these two individuals, other factors held constant, may be quite different.” (Avery *et al.*, 2004, p. 836)

The application of credit-scoring models not only implies the reduction of individuals to membership in an assumed group; it paradoxically disregards geographical differences as well. Although social-geographical differences are used as inputs for these models, credit-scoring models simultaneously ignore the local context by applying the same type of models in different contexts. The spread of credit scoring from the US throughout the world, in addition to other developments (e.g., the new Basel accord mentioned above) can thus be seen as the embodiment of the globalisation and standardisation of financial regulation. This process of homogenisation and standardisation excludes the necessary role of local knowledge and expertise (Scott, 1998, p. 6). Standardised ‘facts’ are aggregate ‘facts’, and are either impersonal or simply a collection of facts about individuals (p. 80) that are considered out of local contexts and the particularities of place and time (cf. Scott, 1998, p. 255). This can be interpreted according to Habermas’ critique of processes of homogenisation, standardisation and commodification that together contribute to the colonisation of the life world by expert systems. According to Habermas’ thesis, the global economic system (the domain of formal rationality) increasingly forces

its way into the life world (the domain of substantive rationality), taking over and diminishing the important social relations in the local context (Habermas, 1981). Credit scoring can be seen as an expert system that penetrates into the daily lives of people without being able to put anything in its place. Habermas sees this process of life-world colonisation as negative. As stressed above, however, the 'quantified customer' does not introduce exclusion into the market through expert systems; instead, it restructures existing patterns of exclusion that had also existed for the 'qualified customer' and that were characterised by direct and personal contacts with banks.

Alternatively, the social consequences of credit scoring and associated expert systems can be interpreted according to Giddens' concept of 'high-consequence risk'. According to Giddens, "High-consequence risks form one particular segment of the generalised 'climate of risk' characteristic of late modernity – one characterised by regular shifts in knowledge-claims as mediated by expert systems" (Giddens, 1991, p. 123). Credit scoring, profiling and customer profitability analysis are examples of knowledge-based expert systems that provide abstract guarantees of expectations across time and space (Giddens, 1990). Like traditional systems, these abstract systems<sup>9</sup> depend on trust. Contrary to traditional systems, however, abstract systems do not provide "moral rewards which can be obtained from personalised trust" (Giddens, 1991, p. 136). Instead, they rely on impersonal yet highly specialised and seemingly individual tests, in which trust takes a more calculative form in modernity. Such calculative systems of trust do consider available information. In principle, however, they arise from the lack of full information and connote "reliability in the face of contingency" (Giddens, 1990, p. 34). This is exactly why subjective information must to be objectified: In order to create trust systems in which individuals can apparently be approached as individuals while simultaneously being reduced to 'risks'. These abstract forms of trust are related to both 'good risk' (low risk) and 'bad risk' (high risk). High-consequence risks bear high consequences in the most literal form: inclusion and exclusion from credit. Individuals are ill equipped to confront the high-consequence risks created by the 'penetration of abstract systems into daily life' (Giddens, 1991, p. 136).

Giddens does not suggest that life is any more risky in the contemporary period than it was previously. He argues simply that technological innovations (e.g., computerised risk assessment) have produced an increase in risks that are partly caused by unanticipated consequences. As a direct result, individuals become vulnerable and, because of the interdependence between individual experiences and credit-scoring systems, this affects the systems as

---

<sup>9</sup> Contrary to postmodernists, Giddens (1990, p. 150) does not see daily life as being replaced by abstract systems; he sees 'daily life as a complex of reactions to abstract systems'.

---

a whole. According to Giddens, such a climate of risk is inherent in conditions of high modernity, or in systems that operate through open human control of the natural and social worlds. According to Beck (1999), the side effects created by the implementation of techno-scientific innovation are characteristic of life in the twenty-first century. Consequently, modernisation not only stimulates rationalisation, standardisation and automation, but also ‘confrontation’, especially with regard to a perceived ‘organisational irresponsibility’ (Beck, 1999, p. 6). Risks are not only ‘experienced’, but also ‘managed’. Those who design credit-scoring techniques and those that apply such systems can be seen as ‘risk managers’. They ‘colonise the future’ (Giddens, 1991, p. 117) and therefore expose new institutionally organised settings for risk. This type of external risk management<sup>10</sup> leads to constraints at the individual level.

A more structural problem exists within the system itself. The perceptions of financial organisations become ‘self-supporting social constructs’ (Stuart, 2003, p. 173), because groups that are excluded have no chance to form or become ‘good risks’ and because geographically based risks will increase simply because they have been defined as risks.<sup>11</sup> This is connected to what is referred to in statistics as ‘inference’: the inability to know how rejected applicants would have behaved if they had not been rejected.<sup>12</sup>

The use of social-demographic data in credit-scoring methods can result in unlawful exclusion based on such personal characteristics as race or nationality. Customers are often unaware that credit scores have been calculated for them. When rejected, customers are also frequently unaware of the grounds on which grounds their application was rejected. A debt owed to one company may have consequences for acceptance by another company. The importance of customer privacy is hereby compromised. When processing personal data, the demands of proportionality and subsidiarity play an important role. The interests of the customer and the provider must be weighed against each other. In most cases, the interests of customers require that they have the

---

**10** Giddens (1991, p. 202) speaks of ‘morality substituted by mastery’.

**11** Because potential buyers cannot or are barely able to get mortgage loans for neighbourhoods that are on the black list, current occupiers may find it increasingly difficult to sell their houses. This is a self-fulfilling prophecy: because a situation is defined as high risk, one undertakes action, causing the situation actually to become high risk. By defining the situation as one in which mortgages in certain neighbourhoods involve a high risk of default or a high payment risk (i.e., the sale price is too low to pay off the loan), with the consequence that no mortgage loans are granted for that area, financial organisations have called for a chain of effects that enable the loans to be repaid (Aalbers, 2005b).

**12** ‘Statistical inference concerns the problem of inferring properties of an unknown distribution from data generated by that distribution. The most common type of inference involves approximating the unknown distribution by choosing a distribution from a restricted family of distributions. Generally the restricted family of distributions is specified parametrically’ (Dean & Leach, 1995).

---

---

option to object to the calculation of a credit score before it is performed (i.e., opt-out). The consequences of this option for the contract must be clarified beforehand (Wishaw, 2000).

Obtaining unambiguous consent from the customer to determine a credit score is preferable. Unambiguous consent requires that customers are fully capable of expressing their will. They must also have sufficient information to make a good judgment. The expression of will must also relate to specific, clearly described data processing (Wishaw, 2000).

The fair and just processing of personal data is transparent. The person responsible is obliged to inform the applicant about the process and about whether data will be retrieved from third parties. Neglecting to do this can be seen as illegal processing. The applicant should know the identity of the one responsible, as well as the purpose of the processing. The nature of the data, the circumstances in which data are retrieved and how they are to be used determine whether additional information will be required for credit scoring (Wishaw, 2000).

Consumers should have the right to investigate the background of any data processing that has been conducted concerning them, although such is not yet the case in most countries (including the Netherlands). The one responsible must explain, when necessary, how a decision has been made. When a credit score has been calculated, it must be clear which data were used, which factors were essential in the process and the (decisive) logic that underlies the score. It is insufficient simply to inform a consumer that the system has used general and more specific data to make a calculation, and that the calculation has determined that the consumer does not meet the criteria for acceptance.

### 3.10 Conclusions

A mortgage provider selects and distinguishes mortgage applicants according to risk factors of more or less homogeneous groups (profiling). Credit scores, which are often expressed as numbers, are subsequently calculated. Customers whose scores are below a certain value are either rejected or are accepted only under less favourable conditions. This differentiation influences the premium. If the provider perceives that certain social-demographic groups are more risky than others, these groups may experience unfavourable conditions in or complete exclusion from the mortgage market. Consumers can be denied mortgages based on the location of the houses they wish to buy (redlining), or they may be granted mortgages under less favourable conditions. Examples of the latter include less favourable price-quality ratios (price differentiation) and the use of additional conditions for acceptance (i.e., conditions which are more burdensome). Consumers are

---

therefore limited in their possibilities for social evolvment. “The need to rationalize, simplify and differentiate in the context of inequality leads to the institutionalization of the stereotypical tendencies that permeate society” (Lipsky, 1980, p. 115). Risk perception and the experiences of members of the Risk Society are shaped not only by abstract processes of globalisation and the varying role of the government, but also by the roles of private actors. Financial organisations construct risk by trying to quantify uncertainty (Stuart, 2003). The perception of risk and experiences of financial organisations (e.g., banks) have direct consequences for the mortgage and housing markets. Both risk-based pricing and complete exclusion alter the risk experiences of home owners and those who have been excluded from home ownership. Both home ownership and exclusion from home ownership are subject to increasing insecurity. In the Risk Society, strategies for and tendencies towards deregulation, liberalisation and privatisation have increased the level of insecurity by making individual life courses more erratic and thus more vulnerable. The consequences of these processes influence the risk of being a homeowner, due to the role of home ownership in our society and due to the simple fact that buying a house is the largest expenditure that most individuals (or households) will make during their lifetimes.

Profiling in general, and credit scoring in particular, can be seen as the link that translates the insecurity of financial parties into credit risks, which in turn objectifies the risk, insecurity and exclusion of consumers through processes of quantification. As explained above, quantification reduces individual cases and differing contexts to one standardised situation. This makes the ‘quantified customer’ fundamentally different from the ‘qualified customer’. Although the latter undoubtedly faced the risk of exclusion as well, processes of quantification have effectively depersonalised the ‘quantified customer’ (see Stuart, 2003, especially Chapter 4) in way similar to Habermas’ (1987) colonisation of the life-world. Risks are thus ‘managed’ as well as ‘experienced’. Risk and power are related, as it is economic power that determines “the ability to impose risk on others, shape the public discourse about risks, sponsor and conduct research that presents risks in particular ways, and lobby for particular positions on the acceptability of risk” (Tierney, 1999, p. 236). As Douglas & Wildavsky argued in 1982, “Risk taking and risk aversion (...) are part of the dialogue on how best to organize social relations”(Douglas & Wildavsky, 1982, p. 8). “The Quantified Customer is far from a neutral instrument that avoids the interconnections between power, discipline and certain practices of knowledge” (Vaivio, 1999, p. 690). Credit scoring and other forms of credit risk management rely on impersonal yet highly specialised and seemingly individual tests, in which trust takes a more calculative form in modernity. While such calculative trust systems do consider available information, in principle, they arise from a lack of full information at the individual level, reflecting “reliability in the face of contingency” (Giddens,



1990, p. 34). Subjective information must be objectified in order to create trust systems in which individual can apparently be approached as individuals while simultaneously being reduced to 'risks'. These abstract forms of trust are related to both 'good risk' (low risk) and 'bad risk' (high risk). These systems reinforce forms of financial exclusion, and the perceptions of financial organisations become 'self-supporting social constructs' (Leyshon & Thrift, 1997; Stuart, 2003, p. 173).

Paradoxically, the application of credit-scoring models disregards geographical differences among individual consumers while simultaneously reducing them to members of assumed groups. Although social-geographical differences are used as input for these models, credit-scoring models simultaneously ignore the local context by applying the similar models in different contexts. Place is reduced to the status of an indicator. The spread of credit scoring and other developments (including the new Basel accord described in the beginning of this article) from the US to other parts of the world can be seen to embody the globalisation and standardisation of financial regulation.

## References

- Aalbers, M., 2003a, **Redlining in Nederland. Oorzaken en gevolgen van uitsluiting op de hypotheekmarkt**, Amsterdam (Aksant/Het Spinhuis).
- Aalbers, M., 2003b, Risicoselectie op de hypotheekmarkt, in: **Tijdschrift voor de Volkshuisvesting**, **9 (4)**, pp. 26-29.
- Aalbers, M., 2004a, De hypotheekmarkt voorbij, in: **Rooilijn**, **37 (1)**, pp. 25-31.
- Aalbers, M.B., 2004b, Promoting Home Ownership in a Social-rented City: Policies, Practices and Pitfalls, in: **Housing Studies**, **19 (3)**, pp. 483-495.
- Aalbers, M.B., 2005a, Who's afraid of red, yellow and green?: Redlining in Rotterdam, in: **Geoforum**, **36**, forthcoming.
- Aalbers, M.B., 2005b, Place-based social exclusion: Redlining in the Netherlands, in: **Area**, **37 (1)**, pp. 100-109.
- Adorno, T.W., 1974, **Minima moralia. Reflections from damaged life**, London (NLB).
- Avery, R.B., P.S. Calem & G.B. Canner, 2003, Consumer credit scoring: Do situational circumstances matter?, in: **Journal of Banking & Finance**, **28 (4)**, pp. 835-856.

Batt, C.D. & T.R. Fowkes, 1972, The development and use of credit scoring schemes, in: Eilon, S. & T.R. Fowkes (eds.), **Applications of management science in banking and finance**, London (Gower), pp. 181-204.

Beck, U., 1992, **The risk society: Towards a new modernity**, London (Sage).

Beck, U., 1999, **World risk society**, Cambridge (Polity).

Boyce, G., 2000, Valuing customers and loyalty: The rhetoric of customer focus versus the reality of alienation and exclusion of (devalued) customers, in: **Critical Perspectives on Accounting**, 11 (6), pp. 649-689.

Carruthers, B.G. & A.L. Stinchcombe, 1999, The social structure of liquidity: Flexibility, markets, and states, in: **Theory and Society**, 28 (3), pp. 353-382.

Clark, G. & K. O'Connor, 1997, The informational content of financial products and the spatial structure of the global finance industry, in: Cox, K. (ed.), **Spaces of globalization. Reasserting the power of the local**, pp. 89-114, New York (Guilford).

Damen, T., 2003, Langs de financiële meetlat van de bank, in: **Het Parool**, February 8.

De Greef, I.J.M. & R.T.A. de Haas, 2000, **Housing prices, Bank Lending, and Monetary Policy**, paper presented at the 'Financial structure, bank behaviour and monetary policy in the EMU' conference, October 5-6, Groningen.

Dean, T. & S. Leach, 1998, **Introduction to statistical inference**, Providence, RI (Department of Computer Science, Brown University).

DNB, 2000, **Het bancaire hypotheekbedrijf onder de loep**, Rapport over de ontwikkelingen op de hypotheekmarkt in de periode 1994-1999 gebaseerd op onderzoek naar de hypothecaire kredietverlening bij Nederlandse financiële instellingen, Amsterdam (De Nederlandse Bank).

Doling, J. & J. Ford (eds.), 2003, **Globalisation and home ownership: Experiences in eight member states of the European Union**, Delft (Delft University Press).

Douglas, M. & A. Wildavsky, 1982, **Risk and culture. An essay on the selection of technological and environmental dangers**, Berkeley, CA (University of California Press).

---

Drahos, P. & J. Braithwaite, 2001, The globalisation of regulation, in: **The Journal of Political Philosophy**, 9 (1), pp. 103-128.

Fligstein, N., 1998, The politics of quantification, in: **Accounting, Organizations and Society**, 23 (3), pp. 325-331.

Ford, J., R. Burrows & S. Nettleton, 2001, **Home-ownership in a risk society**, Bristol (Policy Press).

Forrest, R., P. Kennett & P. Leather, 1999, **Home ownership in crisis? The British experience of negative equity**, Aldershot (Ashgate).

French, S. & A. Leyshon, 2004, The new, new financial system? Towards a conceptualisation of financial reintermediation, in: **Review of International Political Economy**, 11 (2), pp. 263-288.

Giddens, A., 1990, **The consequences of modernity**, Cambridge (Polity).

Giddens, A., 1991, **Modernity and self-identity. Self and society in the late modern age**, Cambridge (Polity).

Guyon, C., 1992, Original French experiences in scoring, in: Thomas, L.C., J.N. Crook & D.B. Edelman (eds.), **Credit Scoring and Credit Control**, pp. 33-50, Oxford (Clarendon Press).

Habermas, J., 1987, **Theorie des kommunikativen Handelns**, Frankfurt am Main (Suhrkamp) [English edition by Polity, Cambridge].

Hendriks, J.P., 2003, Kredietrisicomanagement, in: **Het 8<sup>e</sup> Nationale Hypothekencongres**, Soestduinen (Euroforum).

Jentzsch, N., 2003, **The implications of the new Consumer Credit Directive for EU credit market integration**, testimony before the Committee on Legal Affairs and the Internal Market, European Parliament, April 29, Berlin (John F. Kennedy Institute, Freie Universität Berlin).

Kleimeier, S. & H. Sander, 2002, **Consumer Credit Rates in the Eurozone**, ECRI Research Report No. 2, Brussels (European Credit Research Institute).

Leyshon, A. & N. Thrift, 1997, **Money/Space: geographies of monetary transformation**, London (Routledge).

---

Leyshon, A. & N. Thrift, 1999, Lists come alive: electronic systems of knowledge and the rise of credit-scoring in retail banking, in: **Economy and Society**, **28 (3)**, pp. 434-466.

Leyshon, A., N. Thrift & J. Pratt, 1998, Reading financial services: texts, consumers, and financial literacy, in: **Environment and Planning D: Society and Space**, **16 (1)**, pp. 29-55.

Lewis, E.M., 1992, Credit scoring and credit control from four points of view, in: Thomas, L.C., J.N. Crook & D.B. Edelman (eds.), **Credit Scoring and Credit Control**, pp. 3-17, Oxford (Clarendon Press).

Lipsky, M., 1980, **Street-level bureaucracy. Dilemmas of the individual in public services**, New York (Russell Sage Foundation).

Murie, A., I. Tosics, M.B. Aalbers, R. Sendi & B. Černič Mali, 2005, Privatisation and after, in: Van Kempen, R., K. Dekker, S. Hall & I. Tosics (eds.), **Restructuring Large Housing Estates in European Cities**.

NIBE, 1995, Aanvraag, beoordeling en beheer, in: **Consumentenkrediet module 4**, Amsterdam (Nederlands Instituut voor het Bank- en Effectenbedrijf, NIBE).

Porter, T.M., 1995, **Trust in numbers: The pursuit of objectivity in science and public life**, Princeton, NJ (Princeton University Press).

Rodrigues, P.R., 1997, **Anders niets? Discriminatie naar ras en nationaliteit bij consumententransacties**, Lelystad (Koninklijke Vermande).

Ross, S.L. & J. Yinger, 1999, Other evidence of discrimination: recent studies of redlining and of discrimination in loan approval and loan terms, in: Turner, M.A. & F. Skidmore (eds.), **Mortgage lending discrimination: A review of existing evidence**, pp. 85-106, Washington, DC (Urban Institute Press).

Scott, J.C., 1998, **Seeing like a state: How certain schemes to improve the human condition have failed**, New Haven (Yale University Press).

Stephens, M., 2003, Globalisation and housing finance systems in advanced and transition countries, in: **Urban Studies**, **40 (5-6)**, pp. 1011-1026.

Stuart, G., 2003, **Discriminating risk. The U.S. mortgage lending industry in the twentieth century**, Ithaca (Cornell University Press).

---

Taylor-Gooby, P., H. Dean, M. Munro & G. Parker, 1999, Risk and the welfare state, in: **British Journal of Sociology**, **50 (2)**, pp. 177-194.

Thomas, L.C., 2000, A survey of credit and behavioural scoring: forecasting financial risk of lending to consumers, in: **International Journal of Forecasting**, **16 (2)**, pp. 149-172.

Turner, B., 1997, Housing cooperatives in Sweden: The effects of financial deregulation, in: **The Journal of Real Estate Finance and Economics**, **15 (2)**, pp. 193-217.

Vaivio, J., 1999, Examining "The Quantified Customer", in: **Accounting, Organizations and Society**, **24 (8)**, pp. 689-715.

Van Dusseldorp, A.M., 2003, Actuele ontwikkelingen op de hypotheekmarkt, in: **Het 8<sup>e</sup> Nationale Hypotheekcongres**, Soestduinen (Euroforum).

Van Leuvensteijn, M., 2003, **Collateral requirements and market power in the Dutch mortgage market**, CPB report 2003/4, Den Haag (CPB Netherlands Bureau for Economic Policy Analysis).

Wishaw, R.W.A., 2000, **De gewaardeerde klant. Privacyregels voor credit scoring**, Den Haag (College Bescherming Persoonsgegevens, CBP/Registratiekamer).



# 4 Optimal mortgage choices within different institutional contexts

*Peter Neuteboom*

## 4.1 Introduction

For most households, buying a home is by far the most important financial undertaking in their lives. The monthly mortgage repayment consumes an important proportion of disposable income and home-equity forms the largest, and possibly the only, capital component for many households. For many households it appears that choosing the length of the fixed interest period is their severest problem in selecting the 'best' available mortgage. A flexible interest rate is, in general, lower than a fixed interest rate, but flexible interest rate fluctuations and hence monthly mortgage repayments can be substantial over the duration of the mortgage. A fixed interest rate leads to a greater degree of confidence with respect to monthly mortgage payments, but this confidence comes at a price, namely a higher average interest rate.

Traditionally, the choice for a particular fixed interest period is an important instrument for limiting some of the risks involved in taking on a mortgage. In this sense the choice behaviour of households with respect to the fixed interest period possibly exemplifies the 'total' attitude of owner-occupiers with respect to the risks of owner occupation.

In Europe, the fixed-interest period for mortgages varies from roughly 1 month to 30 years (see Table 4.1). Apart from the individual preferences of owner-occupiers, there are a number of remarkable differences. In the UK, for example, in general a relatively short-term fixed interest period (less than 1 year) is opted for, whereas in the Netherlands the average fixed-interest period is about 10 years, and Denmark, the front runner, operates with fixed-interest periods of up to 30 years. For a recent overview of mortgage take-up, see the studies by the ECB (2003) and Neuteboom (2001). Note that the differences within a country can be substantial, either by age or income class; and also that there are no major changes over time. Another point to note is the rather limited supply of mortgages in some countries and in that respect the outcome, for example in terms of the fixed interest period, provides fewer insights into choice behaviour by home owners, but merely reflects the undeveloped state of mortgage markets (mainly in south and east Europe).

It is often suggested that UK households are assumed to take on more risks when financing their own home in terms of outstanding loan amount, duration, and so on (ECB, 2003). Choosing a flexible mortgage instead of a mort-

---

1 Among other things: legal arrangements, rules concerning early repayment, the structure of the mortgage market (supply), mortgage tax relief and non-fiscal subsidies.

---

gage with a longer period of fixed interest is seen as a sort of ‘final proof’ of that assumption (if needed at all). But this kind of output analysis omits important aspects of household behaviour. Choices made by individual households across Europe are not made in isolation. Households make their choice within a specific institutional context<sup>1</sup>, history, political tradition and different ideologies. These factors shape not only the *actual* choices that households make regarding their mortgage, but at the same time the *optimal* choice that households should make.

Since institutional contexts differ across Europe, we could expect different optimal mortgage choices for home owners between countries and hence different outcomes in terms of actual mortgage choice. Therefore, the question that is addressed here is “to what extent - given the institutional context in a country - are the actual choices mortgagees are making concerning the fixed-interest period rational, in the sense of optimal in economic terms?” This, in turn, can form an indication of risk-taking behaviour by home owners; i.e. the analysis can make clear whether the differences can be attributed to factors at the macro level (the divergent institutional context) rather than to strong divergence in the attitudes of owner-occupiers with respect to the risks of home ownership across Europe.

My approach here to answering the main question is to utilize a stochastic model - in which household income, house prices, inflation, interest rates, and so on, are modelled by a set of stochastic differential equations<sup>2</sup>. This model makes it possible to calculate the net costs and associated risks of a mortgage both for individual home owners and on a more aggregate level. Given the institutional context (including mortgage interest deduction) and mortgage choice (e.g. mortgage type) and current interest rates, it is possible to calculate the net costs and risks under different fixed interest period scenarios. It is then easy to define optimal mortgage choice strategies for home owners in a familiar ‘cost-risk’ framework, i.e. which fixed-interest period will minimize cost and risks. This framework can also be applied to different countries, and hence different institutional contexts, allowing the extent to which the institutional context influences the optimal mortgage choice to be analyzed.

The rest of the chapter is split into three sections. The following section develops the model, and specifically the interest model, the estimation procedure and the data used. Next, in Section 4.3, the emphasis lies on the calculation of the costs and risks of a mortgage with different fixed interest periods as a basis for calculating optimal choices. I present the results of both a sensitivity analysis showing the impact of different institutional factors on the optimal fixed interest rate period and a cross-country analysis (viz. France, the Netherlands and the UK, all of which have different institutional contexts

---

<sup>2</sup> See also Kau *et al.* (1990), Yang *et al.* (1998) and Campell and Cocco (2003) for related modelling work.



and different actual choices on the part of home owners). The implications of the findings are discussed in the concluding Section 4.4.

## 4.2 Model and data

This section develops the interest model used. For a brief description of the full model, see the appendix at the end of this chapter. First, we start with the modelling of the spot rate (1 month) followed by the derivation of the interest rate for different maturities (yield curve).

### 4.2.1 Modelling the spot rate and the appropriate yield curve

The basic model<sup>3</sup> we are using here is the following stochastic differential equation:

$$(1) \quad dr_t = \lambda(\mu - r_t)dt + \sigma\sqrt{r_{t-1}}dX$$

where  $\lambda$  is the speed of adjustment of the short-term actual interest rate  $r_t$  to the long term mean  $\mu$  and is the implied volatility. When  $\mu > \sigma/2$  interest rates remain positive. The last term  $dX$  is a random variable drawn from a normal distribution with properties:

$$\begin{aligned} dX &= \varphi\sqrt{dt} \\ E[dX] &= 0 \\ E[dX^2] &= 1 \end{aligned}$$

Note that the model is a mean-reverting process ( $\lambda(\mu - r_t)dt$ ), meaning that if  $r_t > \mu$ , interest rates will move down on average; although the random term  $\sigma\sqrt{r_{t-1}}dX$  can make interest rates rise – on balance – even when interest rates are higher than average (and vice versa). It is possible with this model to simulate different scenarios for the possible future interest rates (paths) for the total duration of the mortgage.

Figure 4.1 shows just three scenarios of possible future interest rates. The scenarios generated, for a period of 30 years, are based on equation (1) with parameters derived from the Dutch setting (see next section).

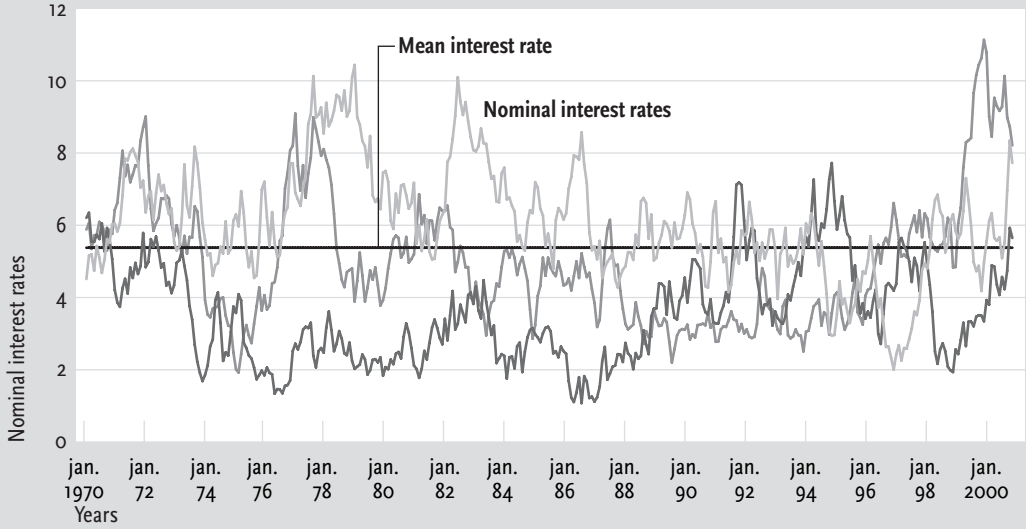
The process has so far yielded the expected interest rate for loans with a duration of one month. From there, we must derive the interest rates for

---

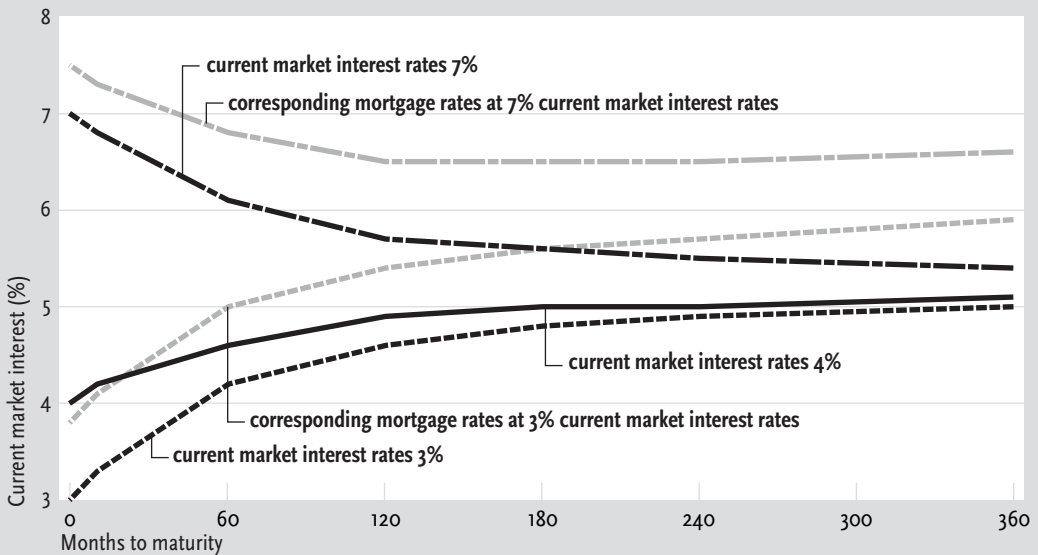
<sup>3</sup> The CIR model, after Cox, Ingersoll and Ross (1985). See also Rebonato (1998) for a more convenient elucidation of the model.

---

**Figure 4.1** Some possible scenarios generated by the model (based on equation 1)



**Figure 4.2** Yield curve and the change slope of the curve by current market interest rates <sup>1)</sup>



1) Grey lines are the corresponding mortgage interest rates.  
The current market interest rates are the short-term (1 month) spot rates.

loans with different maturities and fixed term periods as well as the appropriate interest rates for residential mortgages.

By utilizing a default-free discount bond model  $P(t,T)$  see equation 2, we can derive the – theoretical – equilibrium interest rates for different maturities (Rebonato, 1998; Chen *et al.*, 1995), in short the yield-curve.

$$(2) r_t = \frac{-1 \ln(P(t, T))}{(T-t)}$$

$$P(t, T) = A(t, T) e^{-r_t B(t, T)}$$

and

$$A(t, T) = \left\{ \frac{\phi_1 e^{\phi_2 \tau}}{\phi_2 [e^{\phi_2 \tau} - 1] + \phi_1} \right\}^{\phi_3}, \quad B(t, T) = \frac{e^{\phi_2 \tau} - 1}{\phi_2 [e^{\phi_2 \tau} - 1] + \phi_1}$$

$$\phi_1 = \sqrt{\lambda^2 + 2\sigma^2}, \quad \phi_2 = \frac{\lambda + \phi_1}{2}, \quad \phi_3 = \frac{2\lambda\mu}{\sigma^2}, \quad \tau = T-t$$

where  $r_t$  represents the interest rate in year  $t$  with a fixed interest period of  $T$ . The parameters  $\lambda$ ,  $\sigma$ ,  $\mu$  follow from equation (1). Note that the yield curve is a function of the short-term rate  $r_t$ .

Figure 4.2 depicts different yield curves depending on the level of the current spot rate (i.e. interest payable for a loan with a duration of one month).

An increase in the actual interest rates increases yields for all maturities, but the effect is greater for shorter maturities (see Figure 4.2). Similarly, as  $r_t > \mu$ , all yields increase but the effect is greater for shorter durations. Indeed, it is possible for a downward sloping yield curve to arise, which implies that the 'market' expects lower interest rates (lower inflation) in the near future. A decreasing yield curve is not only a theoretical option, but also a rare – temporal – phenomenon that occurs in practice.<sup>4</sup>

From the actual yield curve, it is easy to derive the interest rates for a mortgage. In the model the interest rate calculated with equations (1) and (2) is supplemented with a spread, i.e. the difference between mortgage interest and the interest on a comparable government bond. This spread itself is a function of both the short-term rate and the fixed interest period  $s(r_t, T) = \alpha_1 e^{-\alpha_2 T} (r_t)^2 + \alpha_3 r_t$ , being relatively low when the short-term rates are below the long term mean and relatively high when fixed periods increase. In terms of Figure 4.2, this means that the yield curve for mortgage rates will shift proportionally when interest rates are low while the slope of the curve decreases with higher interest rates (making the curve flatter, see the grey lines in Figure 4.2). As an illustration: a short-term rate of 3.0% leads to a mortgage interest rate of 5.4% when interest rates are fixed for 10 years (which is fairly common in the Netherlands).

The model also takes into account interest rate conversion after the agreed fixed interest rate period has ended and the possibility of early prepayment

<sup>4</sup> See for instance the period 1991-1992 in the Netherlands and the period 1997-1998 in the UK.

Table 4.1 Some characteristics of mortgage take-up in Europe

	Fixed interest rate period					Share variable interest <sup>2)</sup>	Early prepayment penalty
	Mortgage type	Mortgage tax relief	Type	Term	Trend		
Belgium	Repay	<sup>1)</sup> 39.2%	Ren, Fix	20	↓	75%	n/a
Denmark	Repay	31.0%	Fix, Ref	30	↓	10%	Administrative costs 0.6%
France	Repay	--	Fix, Ref	12	S	20%	Min. 6 months interest or 3%
Germany	Repay/endor	--	Ren, Ref	> 5	S	80%	Fees are ~2%
Ireland	Repay/endor	23.9%	Rev, Fix	1 - 5	S	57%	n/a
Italy	Repay	15.7%	Fix, Ref	10 - 15	↓	40%	Fees are ~2%
Netherlands	Endow	37.1%	Rev, Fix	11	S	75%	Yield maintenance fees
Spain	Repay	19.6%	Ref, Fix	1 - 5	↓	80%	Fees are ~4%
Sweden	Endow	26.0%	Rev	1	S	100%	n/a
UK	Endow/repay	--	Rev, Ren	< 1	S	100%	< 0.3% (Fix: y.m.f)

Repay(ment): annuity/serial mortgage; Endow(ment): savings or investment mortgage. Rev(iewable): the interest rate is changed at the end of the agreed period, the level being fixed by the lender; Ren(egotiable): the interest rate is changed at the end of the agreed period, with the borrower renegotiating the interest rate for the following period; Ref(erenced): the interest rate changes on the basis of an index pre-agreed by the parties, e.g. the interest on a given government bond; Fixed: the interest rate is fixed for the full term of the mortgage. S means no change.

1) Including repayment; for the first 12 years only.

2) All non-fixed outstanding mortgages.

Source: ECB (2003), Mercer Whyman Oliver (2003), Neuteboom (2003)

(checking whether it is profitable to make an early prepayment on the loan, taking into account the different costs/penalties, see Table 4.1).

### 4.2.2 Estimation procedure

This section develops the estimation procedure for equation 1 (and 2). Here I follow the approach suggested by Chen *et al.* (1995).

$$(1) dr_t = \lambda(\mu - r_t)dt + \sigma\sqrt{r_{t-1}}dX$$

Recall that  $\lambda$  is the speed of adjustment of the actual interest  $r_t$  to the long-term mean  $\mu$ , and  $\sigma\sqrt{r_{t-1}}$  is the implied volatility. The values of  $dr_t$  are normally distributed (Cox *et al.*, 1985) with a mean and variance of

$$E[r_t|r_0] = r_0 e^{-\lambda t} + \mu(1 - e^{-\lambda t})$$

$$V[r_t|r_0] = r_0 \left(\frac{\sigma^2}{\lambda}\right)[e^{-\lambda t} - e^{-2\lambda t}] + \mu \left(\frac{\sigma^2}{\lambda}\right)[1 - e^{-2\lambda t}]$$

Note that the variance is a function of the state variable  $r_t$  and is therefore

time dependent. This complication leads to a more complicated estimation procedure for the different variables. A weighted least square regression analysis is necessary (Judge *et al.*, 1982).<sup>5</sup> First, a simple regression model can be estimated

$$r_t = \beta_0 r_{t-1} + \beta_1 + \xi_t$$

$$\beta_0 = e^{-\lambda t} e^{-\lambda t} \wedge \beta_1 = \mu(1 - e^{-\lambda t})$$

Here, the error term  $\xi_t$  is no longer identically and independently distributed (since it depends on time), and therefore ordinary least squares do not apply. With the variance structure specified above, however, we can see this as a regression model with heteroskedasticity. Therefore, since the variance of the error term is equal to

$$E[\xi_t^2] = r_0 \left( \frac{\sigma^2}{\lambda} \right) [e^{-\lambda t} - e^{-2\lambda t}] + \mu \left( \frac{\sigma^2}{\lambda} \right) [1 - e^{-2\lambda t}]$$

a second regression model can be estimated

$$\omega_0 = \left( \frac{\sigma^2}{\lambda} \right) [e^{-\lambda t} - e^{-2\lambda t}] \wedge \omega_1 = \mu \left( \frac{\sigma^2}{\lambda} \right) [1 - e^{-2\lambda t}]$$

The results of the first regression model can be used to solve for  $\lambda$  and  $\mu$ , the second regression model for  $\sigma$ .

### 4.2.3 Data

For the Netherlands, the data used was the '1-month AIBOR/EURIBOR interest rate' (monthly data from 1959:1 to 2004:2), and for the UK the 'End month Sterling interbank lending rate, 1 month, mean LIBID/LIBOR' (monthly data from 1978:1 to 2004:2). Both series are shown in Figure 4.3.

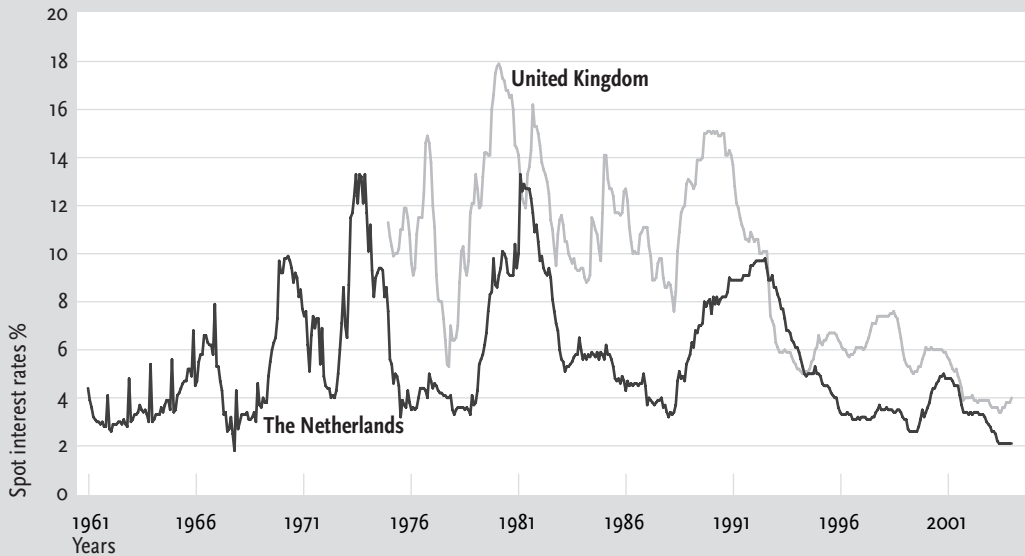
Finally, the result of the estimation procedure as described in Section 2.2 is shown in Table 4.2. Note that while the estimate of the mean reversion speed in the Netherlands is fairly fast (0.3288), mean reversion speed in the UK considerably slower. The volatility parameters are also divergent (between countries), although both are – as expected – greater than the standard deviation. On the whole, UK markets tend to be more volatile and the (nominal) levels are higher.

**Table 4.2 Estimation results for the parameters of equation 1 and 2**

	the Netherlands	United Kingdom
Mean	0.0553	0.0933
Variance	0.0257	0.0365
Mean reversion speed $\lambda$	0.3288	0.1126
Reversion level $\mu$	0.0537	0.0710
Implied volatility $\sigma$	0.0911	0.0676

<sup>5</sup> An alternative is a GMM approach to estimate the parameters directly (Rogers and Stummer, 2000).

Figure 4.3 Development of spot interest rates in Europe (1959–2004)



Source: Dutch Central Bank, Bank of England

## 4.3 Optimal mortgage choices in a cost-risk framework

### 4.3.1 Introduction

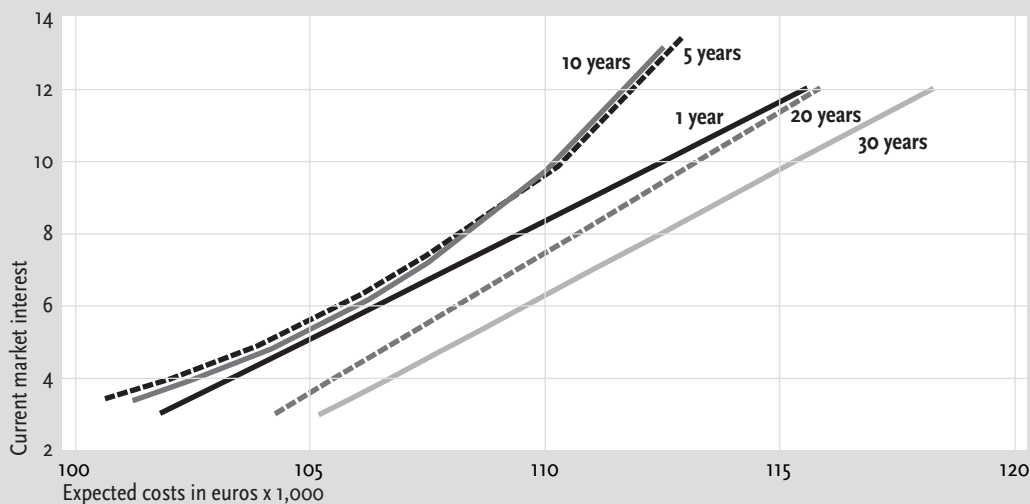
As stated in Section 4.1, the institutional context differs across countries, strongly influencing net mortgage related payments and, in turn, optimal mortgage choices of home owners. The model defined in the last section can be used to calculate the costs and associated risks of different mortgage types (i.e. the fixed interest rate period) in different institutional contexts (countries). Therefore, in this section I apply the model to three different countries - viz. Belgium, France, the Netherlands and the UK - in order to calculate the optimal fixed interest periods and compare them with the actual choices households make in those countries (see Table 4.1).

Optimal choices depend not only on interest-related parameters but also on a broader set of parameters. The main drivers of this process, besides the interest level and volatility, are the mortgage type (including duration) and interest subsidies (either through mortgage tax relief or some other non-fiscal subsidy). Finally, early prepayment options (penalties) are of importance (see Table 4.1). Note that the gross mortgage interest is generated by equation 1, with parameters set as in Table 4.2 and the yield curves derived from equation 2.<sup>6</sup>

### 4.3.2 Optimal mortgage choice strategies

The model as presented in Section 4.2 (see also the appendix at the end of this chapter) produces a probability distribution of the net present values of

**Figure 4.4** The expected cost of a mortgage of €100,000 with different fixed interest periods and current market interest rates <sup>1)</sup>



<sup>1)</sup> All lines depicted are actually slightly non-linear.

the monthly mortgage payments. The average of that distribution can serve as an indication of the expected costs of the mortgage, while the variation can serve as a basis for the determination of risk. Here we used the semi-variance as a risk indicator. We know from the seminal work of Markowitz that costs and risks defined in this way can uniquely be ordered in a 'mean-semi variance' space (Eftekhari, 2000). We can also apply this framework to work out which mortgage choice is optimal given the institutional context.

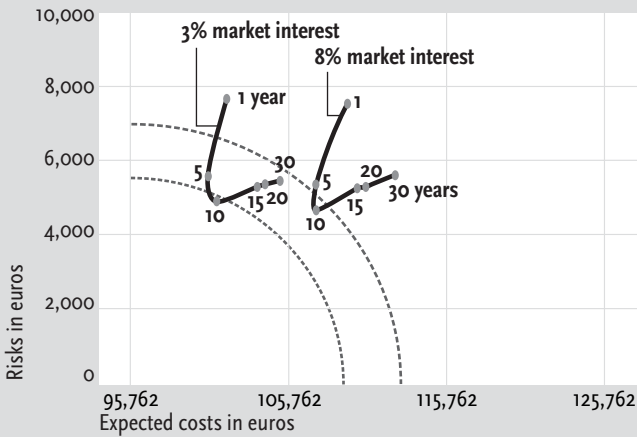
The Figures 4.4 and 4.5 form the basis of the analysis. Each point on the line in Figure 4.4 represents the costs of a mortgage with a certain fixed interest period (ranging from 1 to 30 years). Figure 4.5 extends this analysis by also taking into account the accompanying risks. The model results shown in the Figures 4.4 and 4.5 are both based on the 'Dutch context'.

Figure 4.4 shows the expected costs of a typical mortgage given the (varying) fixed interest period. The expected costs are shown for different current market interest rates, which enables us to check whether or not the optimal mortgage choice depends on the current market interest rate.

Figure 4.4 can be explained as follows: whatever the level of the current interest rates, the expected costs are the lowest for mortgages with a fixed interest rate period of five years; only when current interest rates are above 10%, is a fixed term of ten years more advantageous. Mortgages with a fixed

**6** Although historical patterns of interest rates are somewhat divergent in Belgium and France - compared with the Netherlands - I used the same estimated parameters. Since the introduction of the euro in 2001, interest rates are converged to a common level in all euro countries, where levels and volatility are based more on low level inflation, as existed in the Netherlands and Germany. Since the focus in this chapter is on the optimal choices given current institutional factors, it seems reasonable to use the same parameter, based on historical data of the Netherlands.

**Figure 4.5 Optimal mortgage choice strategies in a cost-risk framework**



interest period of less than five years or more than ten years are never optimal for the average homeowner: the net costs will be higher independent of current market interest rates.

We can also show (not presented here) the corresponding figure presenting the accompanying risks attached to a mortgage with a fixed

interest period. In terms of risks (semi-variance), the best choice would be a mortgage with a fixed interest period of thirty years.

Figure 4.5 shows the costs and risks in one space. The two curves in this figure represent different current market interest rates, with each point on the lines indicating the cost and risks of a mortgage with a specific fixed interest period (ranging from 1 to 30 years). The black line represents the cost and risks when current market interest rates are low (3%), and the grey line when interest rates are above the long-term equilibrium (here 8%). Also shown - the dotted quarter circles - are a set of indifference curves. Where the indifference curve is tangential to the cost and risk curve, an optimum (in terms of lowest cost and risk) is reached. In this case, therefore, independent of current market interest rates, households should opt for a mortgage with a fixed interest rate period of approximately ten years.

The analysis here is based on the assumptions of a risk-neutral homeowner. Conversely, if a homeowner is more risk-averse the indifference curve will be flatter, and the optimum will shift to the right indicating longer fixed interest rates as the best option.

Therefore, the level of the current interest rates does not influence the optimal choice households in the Netherlands should make, contrary to the 'common belief' that when interest rates are low one should opt for long-term fixed interest rate periods (and vice versa). This result stems from the fact that the initial interest rates are relatively unimportant, both for flexible mortgages and for mortgages with long fixed interest periods. Interest rates for flexible mortgages are heavily dependent on future interest rate paths; recall that the model (equation 1) is mean reverting to 5.4%, and so, with a typical duration of thirty years, the initial interest rates make little difference, although in net present value terms there is a slight difference. For mortgages with longer fixed interest periods, the interest rates also depend on the shape of the yield curve (equation 2). Here one sees that interest rates for mortgages with fixed interest rates are less volatile than short-term rates. Therefore, optimal mortgage choices for home owners seem to be non-cyclically sensitive.



### 4.3.3 Results

The results of the analysis are presented in two ways. First, Table 4.3 presents the results of a sensitivity analysis. Here, taking the Dutch context as the starting point, the effects on the optimal fixed interest rate period are calculated while differentiating various aspects of the institutional context. Second, Table 4.4 presents the results of a cross-country analysis.

The difference in optimal fixed interest rate period is only slightly altered when interest rates are below or above the long-term mean (see Section 4.3.2). When annuity mortgages are asked for instead of a savings mortgage, optimal mortgage choice implies shorter fixed interest periods (because an annuity mortgage is more interest dependent than a savings mortgage), although when interest rates are above the long-term mean, households should opt for longer periods. High mortgage tax relief (or other non-fiscal subsidies) lowers the shape of the yield curve (in net terms), making it more profitable to go for longer fixed interest rate periods, thereby lowering the associated risks, while the costs are (partly) paid by lower income taxes. This shifts the optimal choice to longer fixed interest periods. It is obvious when prepayment penalties are non-existent that households should opt for longer fixed interest periods, taking advantage of the security offered by fixed interest rates and prepay and get a new mortgage when interest rates are lower.

We could also redo the analysis in Section 4.3 for different countries or institutional contexts. A comparison is made here for three countries, viz. Belgium, France, the Netherlands and the UK, all of which have different institutional contexts *and* different actual choices on the part of home owners. For each country the optimal mortgage choice, in terms of fixed interest rate period, can be calculated, given the characteristics of the 'average' mortgage in terms of type, duration, etc.; of the homeowner in terms of income, household size etc.; and the various aspects of the institutional context. The results of this comparison are presented in Table 4.4.

In Belgium, the tax-benefits are concentrated in the first twelve years and includes not only interest payments but repayments as well. This situation favours short term mortgages with relatively long fixed interest rates.

**Table 4.3 Optimal mortgage choices: a sensitivity analysis**

	Years
Current mortgage rates equal to long-term mean	10.00
Current mortgage rates lower than long-term mean	~10.50
Current mortgage rates higher than long-term mean	~9.50
Annuity mortgage	~8.00 / 10.00
No mortgage interest relief	~7.00
No prepayment penalty	~13.00

Note: Dutch context; savings mortgage (30 years; average income).

**Table 4.4 Optimal mortgage choices: a cross-country analysis**

	Years
Belgium	~12.00
France	~7.00
the Netherlands	~10.00
UK	~2.00

For France, the choice for a traditional annuity mortgage with a short duration and with no mortgage tax relief all shifts optimal fixed interest rate periods downwards. The average prepayment penalties alter little. For UK households, the more volatile interest rates in combination with the absence of any mortgage tax relief make short fixed interest periods optimal.<sup>7</sup>

## 4.4 Discussion

Choosing the length of the fixed interest period is one of the problems home owners face when taking out a mortgage. A flexible mortgage rate is considered to be more risky than a mortgage with a fixed interest rate. In Europe, the fixed-interest period for mortgages varies from roughly 1 month (UK), to 10 years (the Netherlands) to 30 years (Denmark). So, in general, UK citizens are seen as more risk-taking than others. But then again, the relevant institutional context within which households have to make their decision is fairly diverse across countries. So what constitutes high costs and risks in one country may not necessarily apply in other countries.

The analysis in this chapter focused on the question of to what extent – given the institutional context in a country – the actual choices that mortgagees make concerning the fixed-interest period are rational, in the sense of optimal in economic terms? The results suggest that there are no apparent differences across countries in risk-taking behaviour as far as the choice between flexible and fixed rate mortgages is concerned, i.e. within the context that households have to choose, they do not behave differently (although the outcomes – i.e. fixed interest period – are quite different). On the contrary, the analysis reveals that within the institutional context in which UK households have to choose, they are making the ‘optimal choice’ with a variable mortgage: minimizing both expected costs and risks. Likewise, the ‘Dutch choice’ for a mortgage with a fixed interest period of ten years is optimal within their context, and so on for the other countries in the analysis.

Conversely, for some countries, notably France (mutatis mutandis Belgium and Italy), prevailing choices of fixed interest periods tend to be rather high in comparison with optimal choices. In these countries, however, the proportion of variable interest rates is increasing (see Table 4.1). Therefore, the gap between actual and optimal choices is gradually being bridged. It must be noted, however, that the rate of change at both individual and national levels

---

<sup>7</sup> Note that while French and UK households are paying considerably more on a mortgage than their Dutch counterparts - mainly because the former are lacking any government support, it is not the absolute amount households have to pay that forms an indication of their risk-taking behaviour. Instead, one should look at the actual choice households make, considering the set of possibilities available to them.

---

is slow. This inertia is inherent in the housing market: besides the limited supply due to inefficient markets, transaction costs are high and home owners move relatively infrequently. Equally important is the risk perception of individual home owners and the extent to which households are capable of estimating sufficiently well the risks of home ownership and the consequences for housing costs and income. It can be concluded that: “economic agents do not have unlimited information processing capabilities. It is eminently ‘rational’ for people to adopt rules of thumb as a way to economise on cognitive faculties” (Mullainathan & Thaler, 2000, pp. 4). In short, home owners cannot always make the correct ‘rational’ judgment because they lack information and the capability of fully estimating the consequences of the various alternatives. In addition, home owners’ opportunities to learn with respect to their mortgage choice are relatively restricted, since the number of choice moments is so low. Tradition and reliance on the opinions of experts, who are often intermediaries serving their own interests, is a frequently chosen way out.

So the final conclusion is that, in comparative housing finance research, one easily draws conclusions based on simple descriptions, some examples and a few key figures. However, this approach does not provide for adequate evaluation. A more rigorous approach is needed, i.e. “to quantify features of national systems in a consistent fashion” (Oxley, 2001) to make a more genuine comparison. The partial analysis presented in this chapter - of the risks owner-occupiers are apparently willing to take when deciding to opt for a typical fixed interest period, shows that a thorough analysis can lead to a conclusion that is the complete opposite of ‘common beliefs’.

## References

Boyle, P., M. Broadie & P. Glasserman, 1997, Monte Carlo methods for security pricing, in: **Journal of Economic Dynamics & Control**, pp. 1267 – 1321.

Campell, J.Y. & J. Cocco, **Household risk management and optimal mortgage choice**, NBER working paper series 9759.

Chen, R. & T.L. Tyler Yang, 1995, The relevance of interest rate processes in pricing mortgage-backed securities, in: **Journal of Housing Research**, **60 (2)**, pp. 315-329.

Cox, J.C., J.E. Ingersoll & S.A. Ross, 1985, A theory of the term structure of interest rates, in: **Econometrica**, **53**, pp. 385-407.

John Doling & Janet Ford (eds.), 2003, **Globalisation and Homeownership: Experiences in Eight Member States of the EU**, Delft (Delft University Press).

Eftekhari, B., Ch.S. Pedersen & S.E. Satchell, 2000, On the volatility of measures of financial risk: an investigation using returns from European Markets, in: **European Journal of Finance**, **6 (1)**, pp. 18 – 38.

European Central Bank, 2003, **Structural factors in the EU housing markets**, Frankfurt (ECB).

Judge, G.G., R. Carter Hill, W. Griffiths, H. Lutkepohl & T.S. Lee, 1982, **Introduction to the theory and practice of Econometrics**, Chichester (John Wiley & Sons).

Mercer Oliver Wyman, 2003, **Study on the Financial Integration of European Mortgage Markets**, Brussels (EMF).

Kau, J., D. Keenan & W. Muller, 1990, The valuation and analysis of adjustable rate mortgages, in: **Management Science**, **36**, pp. 1417-1431.

Mullainathan, S. & R.H. Thaler, 2000, **Behavioral Economics**, NBER working paper series no. 7488.

Neuteboom, P., 2002, **Een internationale vergelijking van de kosten en risico's van hypotheek**, no. 19, Utrecht (Nethur).

Oxley, M., 2001, Meaning, science, context and confusion in comparative housing research, in: **Journal of Housing and the Built Environment**, **16**, pp. 89-206.

Rebonato, R., 1998, **Interest rate option models**, Chichester (John Wiley & Sons).

Rogers, L.C.G. & W. Stummer, 2000, Consistent fitting of one-factor models to interest data, in: **Insurance: mathematics and economics**, **27**, pp. 455-63.

Trigeorgis, L., 1996, **Real Options: Managerial Flexibility and Strategy in Resource allocation**, Cambridge Massachusetts (The MIT Press).

Yang, T.T., H. Buist & I.F. Megbolugbe, 1998, An analysis of the ex-ante probabilities of mortgage prepayment and default, in: **Real Estate Economics**, **26 (4)**, pp. 651-676.

---

## Appendix Modelling the costs and risk of mortgages

To determine the costs and risks of the contracted mortgage debt, a model was designed that would allow the net mortgage repayments (i.e. net present value of the annual net mortgage payments over the full term of the mortgage) to be calculated. When determining the net mortgage repayments, numerous characteristics of the mortgage and the institutional context in the country concerned were taken into account.

Apart from being influenced by these factors, the net mortgage repayments are also influenced by the exogenous changes in the interest rates, house prices, inflation, and – most importantly – changes in household income on a micro level. The impact of these changes on net mortgage repayments depends, among other things, on the type of financing chosen and the amount of the mortgage interest tax relief.

While a good predictor of those uncertain exogenous variables is impossible to find, a probability distribution of possible future movements in these variables (based on historical movements) can be constructed. By using a Monte Carlo – or stochastic – simulation, it is possible to simulate a large number of scenarios of the exogenous variables and calculate the net mortgage repayments per scenario.

A Monte Carlo simulation normally comprises a number of steps (Boyle et al., 1997), as follows:

- Setting up a model that with the aid of a number of mathematical equations reflects the change in the exogenous variables over time (including a stochastic term). One of them, the nominal mortgage interest rate, is dealt with in Section 4.2 (see Equations 1 and 2). (The full model also simulates house prices, income, inflation, but an explanation of the equations concerned is outside the scope of this chapter (see Neuteboom, 2003).)
- The model also needs to establish the relationship between the exogenous variable(s) and the outcome (in this case, the annual net mortgage repayments)

$$ME_t = [1 - \tau(Y_t)]rt_t MD_t + A_t^* + D_t^* + K_t(MD_t) - S_t(Y_t)$$

$$MD_t = MD_{t-1} A_t^*$$

In the model, different mortgage types ( $A_t^*$  and  $D_t^*$  for repayment and endowment mortgages, respectively) are taken into account, as are the costs of taking out a mortgage  $K_t(MD_t)$  and additional costs (such as insurance); also any subsidies by the government, either through fiscal subsidies  $\tau(Y_t)$  or non-fiscal subsidies  $S_t(Y_t)$ , is part of the calculation.

- Specifying the distribution of the exogenous variables for determining the stochastic term (here we used normal distributions, see Section 4.2).
- N-simulations of the independent variables over the relevant time horizon (here up to thirty years, depending on the average duration of a typical

mortgage in a country);

- Per simulation, calculating the net present value of the annual mortgage repayments.

The net mortgage repayments are then no longer characterised by only a single most probable result, but by a probability distribution of all possible results. The average of this distribution is an indication of the expected costs of the mortgage, and the variation in the results can then serve as the basis for the determination of risk (Trigeorgis, 1996).<sup>8</sup>

The most obvious and most frequently used criterion is the variance (or the standard deviation). Standard portfolio analysis shows that a unique arrangement of investment alternatives is possible in a so-called mean-variance framework. This applies *mutatis mutandis* to the mirror-image issue of costs and risks of mortgages, which is the subject of this paper. The standard deviation as a criterion also implies, however, that a positive weight is accorded to outcomes below the mean. It can be assumed that an owner-occupier with an aversion to risk will 'fear' potentially higher than average mortgage costs more than lower mortgage costs (which he is more likely to consider to be a bonus). Ideally, the risk criterion should consider this; the semi-variance is in that case a good alternative (Eftekhari *et al.*, 2000). The semi-variance is an asymmetric indicator and is defined as the expectation of the squared mean differences in so far as the mortgage costs are above the mean. This indicator can be calculated as follows:

$$sv = \frac{1}{N} \sum_{i=1}^N (\min[0, c_i - \bar{c}])^2$$

With  $N$  - scenarios ( $N$  is 8.500 in the analysis),  $c_i$  is the net mortgage payment for an individual scenario and  $\bar{c}$  the expected costs, i.e. the mean of the distribution.

---

<sup>8</sup> In this analysis we ignore the risks of being in arrears or having negative equity when repossessed, which are risky outcomes faced by individual home owners. Here we restrict the notion of risks to the uncertainty in the expected costs that home owners have to pay.

---

---

# 5 Affordable and low-risk home ownership

*Marja Elsinga*

## 5.1 Introduction

Broadly speaking, the housing market is comprised of two sectors: owner-occupied and rental. Consumers tend to associate home ownership with the right to self-determination, the accumulation of capital, some degree of risk and high initial expenditure. Rental accommodations represent security, service and mobility, and they are often seen as an alternative for those who cannot afford to purchase their own homes. This is particularly the case in Anglo-Saxon countries, where home ownership is regarded as the most attractive form of tenure and where considerable significance is attached to owning property. In other countries, rental housing is considered a good alternative, which offers both basic security and a favourable price-to-quality ratio.

Relatively high expenses and various types of risk are among the key characteristics that are associated with home ownership. These features create accessibility problems for lower-income groups. The focus of this chapter is on forms of affordable and low-risk home ownership that attempt to overcome these barriers. New tenures can be seen as instrumental in housing policies that are designed to encourage home ownership, to empower tenants, to improve neighbourhood involvement and to attach key workers to cities. Furthermore, new tenures are a more cost-efficient way to provide affordable housing than are social rental programs. For this reason, new tenures were developed that have been the subject of frequent discussion in the Netherlands in recent decades. To date, however, these tenures comprise only a limited share of the housing market.

The aim of this chapter is to place the development of new tenures in the Netherlands within an international framework and to evaluate the developmental process and the products that were developed in that country. We first compare the Dutch situation to that of three countries, each of which has a different housing system and all of which have high rates of home ownership. These countries are as follows: England, an Anglo-Saxon country in Europe; the United States, an Anglo-Saxon country outside Europe, and Finland, a Scandinavian country. We compare the features of various tenures in these countries, examine their background and participants and try to make distinctions among various types of affordable and low-risk home ownership. We then develop a framework for evaluation, referring to the literature on 'bundle of rights' and 'user costs'. In the rest of the chapter, we apply these two approaches to a deeper analysis of three forms of affordable and low-risk home ownership in the Netherlands.

---

## 5.2 A search for different forms of affordable and low-risk home ownership in four countries

### England

The English Low-Cost Homeownership Programme (LCHO) dates from 1964. In addition to subsidised home purchases (on the open market), the programme also provides for various special structures designed to promote affordable and low-risk home ownership. These structures enable those who would not otherwise be able to do so to 'get a foot on the housing ladder'. The programme also represents a way of providing social housing with somewhat less public expenditure on subsidies than systems of social rental housing tend to demand. Moreover, such structures help to promote urban renewal and to address the housing preferences of certain specific groups (Martin, 2001).

The government's Green Paper on Housing (2000) adds two further justifications for the scheme. Firstly, government-assisted home ownership can be used to ensure access to housing for 'key workers' (e.g., police officers, nurses, teachers) in areas that have particularly high house prices. Secondly, it can be used to promote a 'mix' of housing tenures, rather than concentrating lower-income groups in social rental accommodations. During the peak year of 1993, more than 18,000 loans were extended to cover the purchase of LCHO units (Martin, 2001).

Two forms of LCHO deserve closer analysis in the context of this chapter: 'Shared Ownership' and 'Homebuy'. Shared Ownership emerged in the early 1980s. The character of the social rental sector changed dramatically under the Thatcher government. Policy was intended to shift the ownership of social units ('council houses') from local authorities to their tenants under 'Right to Buy' legislation. A 'Do-it-Yourself Shared Ownership' programme offered an option for those who were ineligible for the Right to Buy scheme (usually because they were not existing council house tenants). In this programme, a housing association would build a property (or buy an existing property on the open market) and then sell it to the occupier under a Shared Ownership arrangement (i.e., a combination of loan and rental). Housing associations therefore assumed the role of local authorities with regard to the construction of social dwellings.

Shared Ownership involves an arrangement in which a resident takes a share of between twenty-five and seventy-five percent in the long leasehold. The share can later be gradually increased (a process known as 'staircasing'), eventually allowing the occupier to become the outright owner of the property. Each increase in the ownership share must be purchased at current market value (i.e., a 10% increase costs 10% of the current market value). In effect, however, the term 'shared ownership' is slightly misleading; the occupier is



---

fully responsible for the unit and its maintenance, and only the capital equity it represents is shared. The occupier purchases a 'long lease' on the property. Capital costs that are not paid by the leaseholder/occupier are covered by a Housing Association Grant and a mortgage in the name of the housing association; payments for these costs are covered by the rental payments. In fact, Shared Ownership strongly resembles a subsidised rental arrangement. It also offers some degree of financial protection to lower-income groups, as the rental component of the housing costs can be offset by housing benefits. The Housing Corporation, a non-departmental government agency, is responsible for allocating subsidies for the construction of social units; it is willing to do so for Shared Ownership projects as well.

The English Shared Ownership structure has proven its worth over the past twenty years. In 2001, there were 85,000 Shared Ownership homes in England, representing 0.4% of the total stock. Moreover, a proportion of the current stock of full ownership dwellings began as Shared Ownership units; their owners have gradually acquired full possession, at which point they no longer appear in the statistics. (Martin, 2001). An evaluation conducted by Bramley and Dunmore (1996) reveals two reasons for the failure of Shared Ownership to obtain an even greater market share. First, Shared Ownership is relatively unattractive from a financial point of view, as compared to social rental or traditional purchase. Although the initial costs are lower, the savings are offset by reduced capital accumulation. The second reason is that the government has not yet given Shared Ownership a central place in its housing policy. Were it to do so, the product would enjoy greater confidence on the part of financiers.

The 'Homebuy' scheme was launched nationwide in April of 1999, following smaller-scale local trials. Under Homebuy, occupiers immediately become full owners of their properties. They must finance seventy-five percent of the purchase price by means of standard mortgage loans, with the remaining twenty-five percent covered by interest-free loans. Owners selling their properties at a later date would be required to repay a percentage of the sale price (25%). Purchasers are thus able to buy houses on the open market, and are able to apply for the twenty-five percent interest-free loan from 'registered social landlords'. The loans are subject to certain conditions. They are available only to existing tenants of social rental properties who are unable to purchase property by any other means. In addition, tenants must not have received housing benefits in the preceding calendar year. Because Homebuy is such a straightforward arrangement, it is viewed somewhat more favourably by both financiers and purchasers than is the Shared Ownership scheme. Moreover, an evaluation reveals that 'Homebuyers' are more likely to consider themselves 'real owners' than are those in Shared Ownership properties (Martin, 2001).

Martin's 2001 evaluation examined more than 1,300 Homebuy transactions. The findings indicate that housing satisfaction is higher among the pur-

---

chasers under this scheme, although some of the respondents did not actually need the Homebuy structure; they could have afforded to buy their properties outright. The study revealed two areas for improvement: the Homebuy scheme should also be made applicable to newly built properties, and there should be a greater degree of flexibility in matching the amount of the interest-free component to the region in which the property is located and/or the personal circumstances of individual purchasers. (Martin, 2001).

### **United States**

As in England, American housing policy is geared towards encouraging private home ownership. Various programmes operated by the Federal Department of Housing and Urban Development (HUD) are designed to enable as many people as possible to fulfil the 'American Dream' of home ownership. 'Home ownership is one of the best ways to empower local residents, to give them a stake in the community, and to increase the bonds that tie people together' (HUD, 1996).

This deep-seated belief in the superiority of home ownership forms the background for the emergence of various affordable and low-risk purchase structures. The federal HUD programmes offer some opportunities in this regard, but responsibility for the realisation of low-cost units remains at the local level. Accordingly, there is an enormous variety of local solutions and products. In many cases, the realisation of affordable housing involves a 'patchwork' of federal, state and local financing facilities. In addition to public housing, low-cost units are also offered by private organisations with social objectives. Community Development Corporations (CDCs) and Mutual Housing Associations (MHAs) generally provide rental units to tenants. Low Equity Housing Cooperatives (LEHCs) offer a form of shared ownership, and this will serve as the focus of this discussion.

The first American housing cooperatives emerged in Harlem during the 'Harlem Renaissance' of the 1920s and 1930s. The first self-help cooperatives were set up by unions or ethnic representative groups who regarded group ownership as a solution to the problem of discrimination against Blacks by mortgage lenders. This 'affordable housing cooperative movement' strove to provide low-cost housing for all. By the 1960s and 1970s, cooperatives were receiving federal subsidies; in the 1980s and 1990s, they took on the form of non-profit organisations that could call upon an 'ad hoc patchworks of funds' in order to realize low-cost housing. An umbrella organisation, the National Association of Housing Cooperatives, was formed in 1950 to represent the interests of all cooperatives and to promote the exchange of expertise and experience (Sazama, 2000).

Low Equity Housing Cooperatives offer the possibility of home ownership to lower-income groups, although there is usually little opportunity for making a profit upon re-sale. In contrast, 'market cooperatives' enable properties

---

to be bought and sold at full market value. The United States now has more than 376,000 housing units (0.4% of the total housing stock) that fall under some cooperative arrangement.

Low Equity Housing Cooperatives can provide low-cost housing by removing the units from the speculative market. These cooperatives combine the 'pride of ownership' with the affordability of rental accommodations. LEHC properties are financed with 'blanket loans' that are extended to the cooperative as a legal entity in its own right rather than to its individual members. This loan can be obtained from either the usual commercial sources or the National Cooperative Bank. Not every bank is either familiar or comfortable with the cooperative idea, but cooperative housing loans are available throughout the US. In some cases, additional security (such as a local authority guarantees) can be demanded. Home owners are then able to 'buy into' the cooperative by means of a share loan. This loan is comparable to a regular mortgage, except for the fact that a mortgage is secured by the individual property, whereas the share loan is secured against the borrower's share in the cooperative. Such loans are eligible for government mortgage insurance (FHA) and, for former military personnel, can be guaranteed by the Veterans' Association. They are also subject to income tax relief.

Like other forms of low-cost housing, Low Equity Housing Cooperatives are also eligible for a variety of subsidies, including subsidies for interest paid, object subsidies (on the property) and subject subsidies (linked to the occupier). As stated above, the overall financial arrangement is often a patchwork of programs and sources. In order to guarantee the long-term viability of LEHC, resources for essential maintenance must be available. This is usually accomplished through a combination of member contributions and subsidised ('Section 8') loans to the cooperative as a whole. (See also [www.policylink.org](http://www.policylink.org).)

Members of a LEHC usually pay a very modest sum (often approximately \$250) for their shares. Were members subsequently to sell their shares at full market value, they would clearly realize considerable profit. Full market value is beyond the financial reach of lower-income groups, however. 'Tenant Interim Lease' arrangements therefore require the resale value to be limited for a certain period (usually the duration of the blanket loan). Each cooperative can include this and other resale restrictions in its articles of incorporation. One common arrangement is to restrict the resale value to the original investment, plus an amount to compensate for inflation, plus the market value of individual improvements to the unit (at cost price minus depreciation). In addition to the resale conditions, a cooperative may also impose conditions (e.g., a maximum income restriction) regarding potential purchasers.

### **Finland**

Finland has traditionally been a country of owner-occupiers, although there was a clear shift during the rapid urbanisation of the 1970s, when the sub-

---

sidised construction of low-cost rental units formed a significant part of the building programme. When the housing market collapsed in the late 1980s, pressure on the rental sector increased, as did pressure on the government to cut expenditures on subsidised loans. The idea emerged to discontinue financing rental units with government loans, but to attract funding from the capital market combined with interest subsidies. These policies were intended to realize affordable housing with a minimum call on subsidy resources, thereby ensuring wider accessibility of the social sector to include the middle-income groups, and to ensure an appropriate demographic mix within individual neighbourhoods. A new product was therefore introduced in the early 1990s, one that was particularly suited to the middle-income groups: the 'Right of Occupancy' (Ministry of the Environment, 2002).

Right of Occupancy is a combination of purchase and rental structures introduced in 1990. The occupier of a Right of Occupancy home acquires a fifteen-percent share in the ownership of the property and rents the remaining eighty-five percent (based on the cost price, assuming a subsidised capital market loan or government loan). In real terms, this represents a fifteen-percent decrease in the call for interest subsidies. The units are built and managed by housing associations. Local authorities determine the proportion of new properties that are to be eligible for Right of Occupancy arrangements, and they are responsible for the allocation of these units (Ministry of the Environment, 2002).

The Right of Occupancy scheme has proved very popular, in large part because of the high housing prices that have rendered home ownership impossible for many, and because of the pressure on the rental market, which has led to long waiting lists. During the past ten years, Right of Occupancy has gained a market share of one percent (over 25,000 units).

### **The Netherlands**

In the 1970s, the Dutch government promoted a tenure-neutral policy and tried to develop measure that would make home ownership affordable for those with low incomes. In the late 1970s, this resulted in the introduction of the Protected Home ownership (*Beschut Eigenwoningbezit*) scheme. This arrangement applied to newly built properties that were of comparable quality to those in the social housing sector. Purchasers were able to borrow directly from the government, under favourable conditions. At the same time, some applicants were eligible for lump-sum payments, depending upon income. Properties were subject to an anti-speculation clause, whereby they could not be re-sold for a set number of years. As a result of the economic downturn and a lack of continued political pressure, however, this programme failed to take off on any large scale (Elsinga, 1995). Only a few hundred units were built under this scheme.

A form of housing tenure that has existed since 1980s, and which now

---

exists in various forms, is Community Linked Ownership (*Maatschappelijk Gebonden Eigendom*; MGE). This scheme emerged in response to a combination of circumstances. In 1978, there was a large-scale sell-off of investment property in smaller units in Rotterdam. Dwellings that were in need of substantial maintenance were disposed of on the open market. Unlike pre-war properties, no subsidies were available for these units. The city council member called upon investors to sell the properties to the local housing authority. They were prepared to do so in the interests of maintaining a good image. The city housing authority feared that the sell-off would trigger sudden decline in the population, and justified its move by pointing out the shortage of private sector housing. At the same time, the director of the Patrimonium housing association developed the idea of 'community linked ownership'. The goal was to open the possibility of home ownership to all, even those with lower incomes, who would enjoy more rights as a result.

The MGE concept emerged within this context, and it received a reasonably high level of support. Its implementation, however, was dogged by many problems. For example, although the intent was to impose certain restrictive conditions by means of ground leases, some lawyers considered this an abuse of the leasehold system. In addition, the program experienced the inevitable 'teething problems'. The associations that were managing the MGE units had no experience in either sales or managing property in cooperation with residents' associations (SEV, 1997).

Profit-sharing arrangements in structures such as the MGE have also given rise to considerable debate and disagreement. In 1998/1999, tax authorities began to question the status of such 'sale-subject-to-conditions' structures. Can the properties concerned really be regarded as 'homes in ownership' in the sense intended by the Income Tax Act (*Wet op de Inkomstenbelasting*)? It is interesting to note that, unlike in the early 1980s when the question was previously considered, the focus of this debate was on the 'risk of profit or loss'. Because the MGE structure included guaranteed indexing for inflation, the risk element was considered insufficient. The Ministry of Finance eventually issued a directive (MinFin, CPP2000/3021M) that specified the exact conditions that housing tenures must fulfil in order to be eligible for tax relief. This aspect, among others, resulted in several modifications to the MGE product, with the guaranteed indexing replaced by a profit-and-loss-sharing provision.

The Promotion of Home ownership Act prompted continued discussion concerning this type of housing tenure. Initially, the debate concerned whether these forms of ownership fell under the scope of the Act. If they did, subsidies would be available. The whole concept of sale-subject-to-conditions arrangements then became a subject of criticism. The main argument against such structures was that the MGE owners could never enjoy the full benefit of any increases in the value of their properties. The national consumer federation for home owners (*Vereniging Eigen Huis*) played a prominent role in bring-

---

ing the question of whether MGE owners were getting full value for their money into the public debate.

The question of whether the advantages and disadvantages of such arrangements were in balance, compared to the traditional outright purchase also arose. In 2000, while the discussion on this point continued with no resolution forthcoming, the Ministry of Housing and the institute responsible for issuing government-backed purchase guarantees (*Waarborgfonds Eigen Woningen*) both withheld cooperation from any sale-subject-to-conditions projects. The Ministry of Housing has since issued instructions to local authorities (MG 2002-06), setting out the conditions that a housing tenure must fulfil in order to be approved and to be eligible for a purchase subsidy. The conditions are now clear, and many housing associations have plans to add new tenures to their housing stocks. This is encouraged by the fact that housing associations have an incentive to sell part of their stocks and reinvest the money. Housing prices are so high, however, that most of the tenants are not able to buy full ownership, although they can afford new tenures.

Affordable and risk-free home ownership is an expression of the ambition to bring home ownership within the reach of as many people as possible. At the same time, it is a result of past discussions concerning tenants' rights within the (social) rental sector. It is interesting to note that, during the 1970s, low-cost ownership schemes were often compared to social housing; by the 1990s, however, traditional, owner-occupied dwellings seemed the most logical comparison. Most projects were implemented by the social landlords, with a few being introduced by local authorities.

The results of the most recent survey strongly indicate that, despite the reasonably large number of plans, the number of low-cost units that have actually been sold remains modest (SEV, 2002). Only about three thousand homes (0.05% of the total housing stock) in the Netherlands fall under one of the schemes that were designed to promote affordable and/or low-risk home ownership.

Most of these homes were sold under some variant of the MGE structure described above. These structures generally involve discounts on the full market price of properties, accompanied by provisions obliging owners to sell the units back to the association and some sharing of profits (or losses) arrangements. The purpose of such structures is not only to render the dwellings affordable now, but also to ensure that they remain so in future. With this in mind, the profit-sharing component is crucial. Another essential element is that the requirement that home owners sell the properties back to the associations, rather than on the open market. This represents a restriction on the freedom of disposal. At the same time, it serves to limit risks, as the association guarantees to buy the home back, provided the sale takes place within a certain period. In most cases, these structures also make provisions for future maintenance by means of some guarantee or maintenance contract.

---

In addition to these structures, shared-ownership schemes (e.g., rental-purchase or *Koophuur*), in which an owner owns part of the dwelling and pays rent on the other part. These structures are primarily designed to enhance tenants' rights while maintaining some degree of determination on the part of the landlord. It is also known as 'interior only' ownership. Occupiers are the formal owners of the interiors of their homes; they have full rights regarding design, layout, decoration, maintenance and other aspects, and they can benefit from the investments they make. At resale, however, they receive only the original purchase price plus a pre-determined amount to compensate for inflation, along with any appreciation that is a direct result of their own investments. A loan to finance 'interior only' ownership must generally be obtained from the association concerned.

Finally, there are also ownership arrangements that are characterised by (partially) interest-free or low-interest loans. These financing facilities are designed primarily to enhance the affordability of owner-occupied property. Some loans may be based by endowment policies, which require no repayment of capital. Periodic assessments are made in some cases; if a homeowner's income is found to have increased, the interest-free loan is converted into one that does carry interest. The financing source is usually a local authority or housing association. Upon any increase in the borrower's income, or at the end of the mortgage term, funds once again become available to the lender. Several housing associations have now adopted the system of interest-free or repayment-free loans, but they have also encountered objections from the Ministry of Housing: housing associations are not authorised to act as banks, and they are therefore not allowed to extend home loans. This objection represents the end of this particular structure, at least as far as housing associations are concerned.

One notable development is the introduction of a leasehold arrangement (subject to payment of ground rent) as an alternative to the interest-free loan. Under a leasehold arrangement, a housing association or local authority leases the land upon which a property stands, rather than retaining a share of the property itself. This means that purchasers are required to take out mortgages only on the 'bricks and mortar' of the house, thereby reducing the total cost of ownership. All such structures have initial ground-rent subsidies.

## Conclusions

From this short international comparison, we can identify two main types of alternative tenure (see Table 5.1). The first is a subsidised form of home ownership (*Homebuy* in England and *Starterslening* in the Netherlands). These tenures are intended to be temporary, with the goal that the users will eventually become home owners. The second type of tenure is permanent and forms a different sector in the housing market; this sector contains a bundle of rights and duties with respect to renting and owning. A further distinction

---

**Table 5.1 Types of affordable and low-risk home ownership**

Background	Support for owner occupation	Separate sector	
		Part ownership	Regulated full ownership
Encourage home ownership	Homebuy (England)	Shared ownership (England) <sup>2)</sup>	
Encourage tenant involvement		Koophuur <sup>3)</sup> (Netherlands)	Limited Equity Housing Cooperative (US)
Affordable alternative for subsidised dwellings	Starterslening <sup>1)</sup> (Netherlands)	Right of occupancy (Finland) KoopGoedkoop <sup>4)</sup> (Netherlands)	MGE <sup>5)</sup> (Netherlands)

1) Subsidy for first time buyers.

2) This form of tenure can lead to full ownership.

3) Rental purchase.

4) Occupiers are full owners of the bricks and mortar of their properties, but are tenants of the land upon which they stand.

5) Community Linked Ownership.

can be made between partial ownership arrangements (Right of Occupancy in Finland and *Koophuur* in the Netherlands) and regulated full-ownership arrangements (Limited Equity Cooperative in the United States and MGE in the Netherlands). These forms can be subsidised, but they can also increase affordability and reduce risk without subsidies. Shared ownership in England falls somewhere between these categories. This scheme involves shared ownership and a bundle of rights that differs from the second category. As does the first category, however, it is intended to achieve full ownership.

These differences can be explained by the contexts in which they were developed. In England, the development of the Shared Ownership and Homebuy programmes was prompted by housing policies designed to encourage home ownership. They make affordable properties available to those who cannot afford to buy on the open market. The Finnish Right of Occupancy scheme was developed chiefly as an alternative to subsidised rental units. In effect, Right of Occupancy homes are rental units in which the occupiers have invested part of the capital. The success of the LEHC in the United States has been predominantly in response to the problems of neglected property and is a way for local authorities to divest themselves of responsibility for maintaining run-down housing. In other words, the English purchase structures are designed to encourage home ownership; those in Finland offer a less expensive alternative for rental accommodations, and the LECH system strives to increase individual responsibility on the part of the occupiers of low-cost housing.

Finally, the role of the government in developing new tenures appears to differ. In the United States, the development of new tenures is mainly a bottom-up movement, and there are many local differences in the details of the tenures. In Finland and England, despite local differences, the central government appears to play a stronger role in subsidising a limited number of new tenures.



**Table 5.2 An overview of relevant housing rights**

Perspective		Differences in type of tenure
Legal	Rights/Responsibilities	Right to determine usage Right to sell Right to modify/adapt Right and obligation to undertake maintenance and improvement
Economic	Investment	Right to receive return on investment Right to fiscal arrangements
	Consumption	Right to subsidy Obligation to make payments

Based on Marcuse (1993).

### 5.3 Further analysis of three Dutch tenures

#### A framework for analysis

The choice of housing tenure is usually between home ownership, with all of its associated responsibilities and risks, and the rental of a house or apartment, whereby the resident is nothing more than a ‘consumer’ and is bound by the restrictive terms and conditions of the lease. New tenures, however, offer new bundles of rights. In addition to (or between) the owner-occupied home and the rental dwelling, various other forms of tenure are possible. In developing such alternatives, the main ambitions are to render home ownership more affordable and to reduce the risks that are associated with ownership. Another motive, however, may be to enhance tenants’ rights (i.e., ‘tenant empowerment’).

Sommerville (1998) describes the manner in which certain rights can be transferred to tenants, thereby achieving a degree of empowerment. Somerville regards the property rights of the owner-occupier as a form of empowerment in itself. He states that empowerment need not be restricted to tenants, but can also be extended to marginal owner-occupiers in the form of new rights. He cites equity protection measures and the right to sell the property (e.g., to the local authority). These are ways in which to reduce the risks of home ownership. We thus arrive at the central topic of this chapter: new housing tenures that are intended to render home ownership affordable and low-risk by redistributing rights and duties and by sharing expenses and returns on investment. Table 5.2 is based on Marcuse (1993) and provides an overview of relevant housing rights. This overview will be used as a framework for a closer study the Dutch forms of affordable and low-risk home ownership.

A balance between duties and right is very important, but so is the balance between housing expenses and the accumulation of wealth. The fact that the homeowner is the investor and the tenant is a consumer, however, provides insufficient justification for taking only housing expenses or only wealth accumulation into account. The concept of user cost provides a cost defini-

tion that takes both expenses and revenues on investment into account and enables an adequate financial comparison between home owners and tenants. The concept of user cost is broadly supported in academic literature (for example, see Haffner, 2000).

For the tenants, user cost is equal to housing expenses:

- + rent
- housing allowance

The user cost for home owners includes:

- + costs of capital: interest on the mortgage, opportunity cost of own equity
- + costs of management: maintenance, property tax, brick and mortar insurance, depreciation
- + house price inflation
- income tax reduction for mortgage interest
- + income tax on imputed rent

### **Bundles of rights**

This section explores three new tenures in the Netherlands in more detail, using the bundle-of-rights concept that was explained in Section 5.3. Table 5.3 shows the rights and obligations for three tenures. It demonstrates that financial arrangements, such as the ‘first-time buyer’ mortgage and the *Koop-Goedkoop* leasehold scheme, offer the greatest degree of freedom. These structures provide all of the rights associated with private home ownership.

More conditions are attached to Community Linked Ownership (MGE) structures: the property may not be sublet, and the housing association retains first right of refusal upon sale. Furthermore, the owner (like all apartment owners) is reliant upon the Residents’ Association for the maintenance of all common areas. One difference between conventional apartment leases and Community Linked Ownership arrangements is that the latter generally carry maintenance guarantees and/or obligations. Owners are not permitted to neglect the common areas of the property. If it appears that they are doing so, the association may undertake the necessary maintenance and invoice the owners accordingly.

*Koophuur* is a shared ownership scheme involving a rental component in addition to partial ownership. *Koophuur* occupiers therefore enjoy more rights than they would as tenants. On the other hand, they have fewer rights than do home owners. This form of shared ownership requires financing from the housing association, thus restricting the buyer’s freedom on this point. Moreover, buyers are not free to transfer their dwellings, but must sell them back to the housing association.

The various purchase structures also vary in terms of investment returns and risk, as can be seen in Table 5.4. The special mortgage forms offer returns and risk that are identical to ‘traditional’ forms of ownership. In other words,

**Table 5.3 Rights and financial consequences of various alternative purchase forms**

	<b>Koophuur (Shared ownership)<sup>1)</sup></b>	<b>MGE (variants)<sup>2)</sup></b>	<b>KoopGoedkoop<sup>3)</sup></b>
Usage rights	May not be sublet	May not be sublet	
Right of free transfer	No: must be sold back to association	No: must be sold back to association	Yes
Right to financial gains on appreciation	Yes, interior only	Yes	Yes
Maintenance of any common areas	Association of apartment owners	Association of apartment owners	Owner
Free choice of lender	No	Yes	Yes
Risk of capital depreciation	'Buy-back' guarantee	Shared between owner and association Buy-back guarantee	Owner
Tax relief as 'property in full ownership'	Discontinued in 2001	Yes, since 1999 and the modification of the product	Yes; ground rent on leasehold is also deductible
Subsidy entitlement	Rent rebate, but no purchase subsidy	No	Yes, purchase subsidy

1) Rental purchase.

2) Community Linked Ownership.

3) Occupiers are full owners of the bricks and mortar of their properties, but are tenants of the land upon which they stand.

these products are designed to make house purchase more affordable, but they do not serve to limit the risks in any way. In MGE structures, both returns and risk are shared equally by the owner and the housing association. Accordingly, the resale values of MGE properties are generally than are those of traditional owner-occupied properties. If there is any depreciation in value, however, MGE home owners have an advantage over traditional owner-occupiers, in that any losses are also shared equally. In addition, the 'buy-back' guarantee allows MGE home owners to be certain that the association will take the property off their hands within a certain period.

As discussed in Section 5.3, Dutch tax authorities take a sceptical view of intermediate housing tenures, fearing abuse of the deductions that are associated with home ownership. Accordingly, the MGE product has been modified, while legislation was revised such that the interest component of *Koophuur* arrangements ceased to be tax deductible in 2001. The *KoopGoedkoop* arrangement is a good example of fiscal optimisation. In effect, this arrangement amounts to a form of shared ownership, in which occupiers are full owners of the bricks and mortar of their properties, but are tenants of the land upon which they stand, being bound to leasehold contracts on which they must pay ground rent. The interest on any loans for the property in ownership and the ground rent are both tax deductible.

### **Affordability, risk and user cost**

Table 5.4 shows the ways in which way the three tenures produce affordabili-

**Table 5.4 Main features of alternative housing tenures, costs and context**

	<b>Koophuur<sup>1)</sup></b>	<b>MGE<sup>2)</sup></b>	<b>KoopGoedkoop<sup>3)</sup></b>
Affordability	Shared ownership	Discount on purchase price	Ground rent increases from 0% to 100% over a ten-year period; ground rent is tax deductible
Risk	Fixed-return investment	Shared capital equity risks; maintenance guarantee via apartment owners' association	Normal risks of price fluctuation
Disadvantages to owner	Because the rental component is lower, eligibility for housing allowance will usually lapse; tax-deductibility will be revoked	Capital gains are shared (but so are losses)	None
Cost carrier	Can be cost neutral	Can be cost neutral	Ground rent is subsidised by housing association

1) Rental purchase.

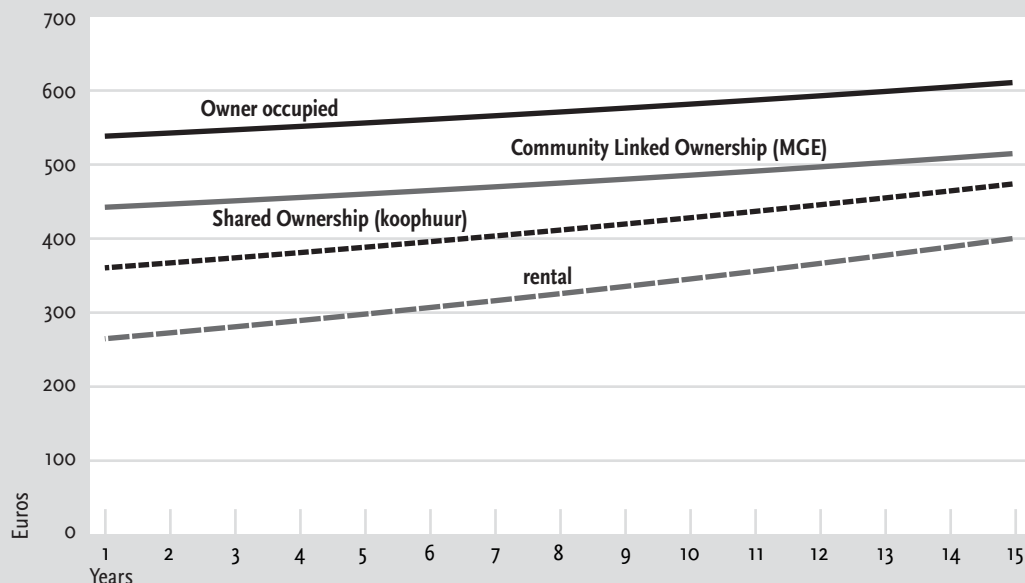
2) Community Linked Ownership.

3) Occupiers are full owners of the bricks and mortar of their properties, but are tenants of the land upon which they stand.

ty and risk reduction. *Koophuur* represents shared ownership and therefore entails lower initial costs and lower risks than would home ownership. This would therefore seem to be a good 'bridge' between the rental sector and the private owner-occupied sector. These structures are highly complex, however, and they involve a number of further disadvantages with regard to fiscal and financial legislation. In the Netherlands, the rental sector and the owner-occupied sector are both subsidised. Although one of the aims of new tenures is to combine the best of both worlds in terms of rights and obligations, they often represent the worst of both worlds in terms of housing policy. *Koophuur* is a good example; this product is likely to lose much of its attractiveness in the wake of a 2001 decision that revoked its tax-deductible status.

MGE involves a discount of between twenty-five and thirty percent on the purchase price of a property and 50-50 shared profit or loss on resale between the homeowner and the housing association. The arrangement is based on the principle that discounts should be proportionate to profit shares, enabling associations able to offer products on a cost-neutral basis.

Finally, we consider an alternative structure, which most closely resembles traditional home purchase on the open market: the *KoopGoedkoop* scheme. This involves the outright purchase of the bricks and mortar of the property, with leasehold on the land upon which it stands. The ground rent for the leasehold is subsidised by the association for the first ten years, with the subsidy amounting to one hundred percent in the first year, falling to ten percent in the tenth year and zero percent thereafter. Although the product offers purchasers a number of advantages over the traditional housing tenure, the leasehold element can be seen as a disadvantage and a restriction of freedom. For the housing association, the obligation to provide the subsidy is clearly a disadvantage.

**Figure 5.1 Monthly expenses (in euros) of four tenure types, years 1 to 15****Assumptions for calculations for a small apartment****Owner-occupied**

House price: €100,000  
 Mortgage: savings loan  
 Interest rate: 5.5%  
 Opportunity cost: 5.5%  
 Management costs (maintenance, property tax, insurance): 1.4%  
 House price increase: 3%  
 Inflation: 2.5%

**Rental**

Rent: €265  
 Rent increase: 3%

**Community Linked Ownership (MGE)**

Reduction on purchase price: 25%  
 Division of gains and losses: 50/50

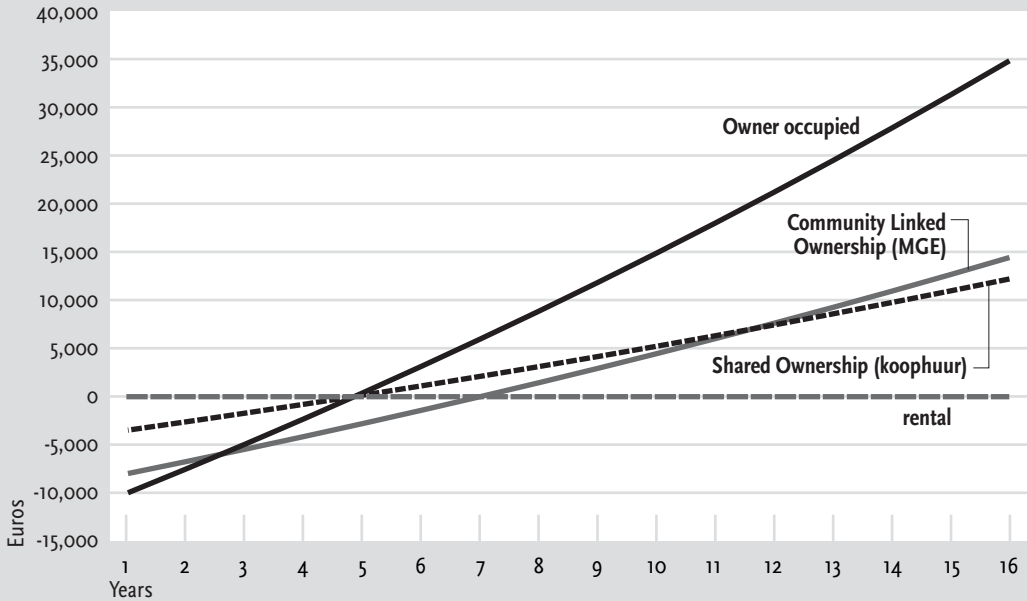
**Shared Ownership (koopuur)**

Ownership part: 35%  
 Rent: 65%

Figures 5.1 and 5.2 provide an impression of the development of the purchaser's expenses and equity position under each of the various types of tenure. As shown in Figure 5.1, a tenant's expenses rise each year, due to annual rent increases. The tenant's net expenses will depend on the amount of rent payable and that of any rent rebate received. The expenses of an owner-occupier are generally higher than are those of a renter, depending on the type of mortgage chosen, but remain more stable over time. While the expenses of MGE and *KoopGoedkoop* owners are markedly lower than are those of other owner-occupiers, due to the discount on the purchase price of the property, they tend to rise or fall at a comparable rate. The expenses of shared-ownership occupiers fall somewhere between those of full owners and tenants.

Finally, Figure 5.3 shows the user costs that are associated with each of the various tenures; these costs obviously depend on the assumptions that are made in the calculations. Under the assumptions described in Appendix 1, our calculations result in almost equal costs for home owners and MGE users. Cost for tenants and shared owners appear to be lower.

Figure 5.2 Wealth accumulation, in euros, of four tenure types, years 1 to 16



Assumptions for calculations for a small apartment

**Owner-occupied**

House price: €100,000  
 Mortgage: savings loan  
 Interest rate: 5.5%  
 Opportunity cost: 5.5%  
 Management costs (maintenance, property tax, insurance): 1.4%  
 House price increase: 3%  
 Inflation: 2.5%

**Rental**

Rent : €265  
 Rent increase: 3%

**Community Linked Ownership (MGE)**

Reduction on purchase price: 25%  
 Division of gains and losses: 50/50

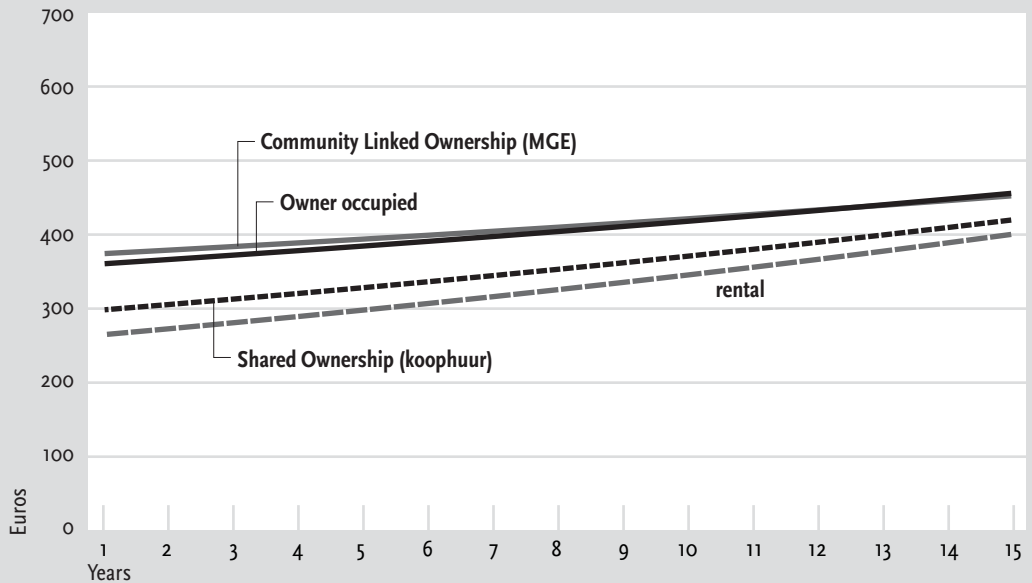
**Shared Ownership (koophuur)**

Ownership part: 35%  
 Rent: 65%

## 5.4 Conclusions

According to the housing policy perspective, alternative housing tenures appear to offer an effective, cost-efficient way to promote home ownership and to realize housing for all, as illustrated by the international comparison. New tenures also enhance consumer choice, allowing buyers to choose an appropriate balance of rights and obligations, at price levels of their own choosing. The new structures can make valid contributions in other areas of policy as well, including the realisation of diverse neighbourhoods and the retention of middle-income groups in larger cities. Finally, they can also provide some relief in periods of recession, when traditional home ownership is seen as either too expensive or too risky. This chapter has examined how various new tenures can be described in terms of housing bundles, why they were developed in different countries and how successful they have appeared to be.

The low-cost and low-risk ownership forms encountered in the four countries discussed in this chapter differ strongly in background and rationale. In

**Figure 5.3** User costs, in euros, of four types, years 1 to 15**Assumptions for calculations for a small apartment****Owner-occupied**

House price: €100,000  
 Mortgage: savings loan  
 Interest rate: 5.5%  
 Opportunity cost: 5.5%  
 Management costs (maintenance, property tax, insurance): 1.4%  
 House price increase: 3%  
 Inflation: 2.5%

**Rental**

Rent: €265  
 Rent increase: 3%

**Community Linked Ownership (MGE)**

Reduction on purchase price: 25%  
 Division of gains and losses: 50/50

**Shared Ownership (koopuur)**

Ownership part: 35%  
 Rent: 65%

the Netherlands, alternative housing tenures were originally intended as an alternative to rental accommodations, seeking simultaneously to increase tenant empowerment and reduce government expenditures on social housing. Since the 1990s, the objective has shifted towards the goal of providing opportunities for low-cost home ownership. In England, the development of the Shared Ownership and Homebuy programmes was prompted by housing policies that were designed to encourage home ownership. These arrangements make affordable properties available to those who cannot afford to buy on the open market. The Finnish Right of Occupancy scheme was developed chiefly as an alternative to subsidised rental units. In effect, a Right of Occupancy home is a rental unit in which the occupier has invested part of the capital. The success of the LEHC in the United States is predominantly in response to problems associated with neglected property, and the program offers a means through which local authorities can divest themselves of responsibility for maintaining run-down housing.

In other words, the English purchase structures are designed to encourage home ownership; those in Finland offer a less expensive alternative to rental

accommodations, while the American system strives to increase individual responsibility on the part of the occupiers of low-cost housing. The different role of the central government in each of the four countries is remarkable. In England and Finland, we see a clear national policy. A limited number of structures have been implemented, each of which is subsidised by the national government. In the US and in the Netherlands, special arrangements are largely dependent upon local initiatives.

In general, terms, we can speak of two main types of new tenures: a 'social ownership sector' and a 'leg-up to full ownership', which is the open market. A common characteristic of both tenures is that owner-occupiers cannot sell their properties for a market price. The manner in which the properties are rendered 'affordable' varies. There may be a fixed discount on the purchase price, an indexed low purchase price or shared ownership. Similarly, the programmes involve various means of limiting risks: by profit (and loss) sharing and indexed resale pricing. These forms imply a rearrangement of rights, duties and risks, and costs are not always subsidised.

The second category has full ownership as its goal, and it can therefore be described as a leg-up onto the first rung of the housing ladder. They share a subsidy component and the absence of risk reduction. Finally, the Shared Ownership programme in England falls somewhere between these two categories. This form of tenure can eventually result in full ownership for occupiers who continue to increase their shares of holding in their properties. Risks are also reduced, as the rental component of the monthly payment is eligible for housing benefits.

Although the introduction of affordable and low-risk home ownership appears to be attractive from a housing policy point of view, this chapter shows that it is by no means easy to introduce into the market a product that is neither a rental property nor an owner-occupied property. If occupiers are unable to claim tax relief or rent rebates, the housing tenure will quickly lose its attractiveness. Moreover, lower-income consumers face a risk of losing their housing allowances. For this reason, attempts to combine the best of both worlds often result in the worst of both worlds. Finally, it appears that new housing tenures are often regarded with suspicion by lenders, developers and other stakeholders in the Netherlands, as well as in other countries. This situation is probably one of the reasons that the market share for such alternative structures has remained relatively modest.

## References

Aalbers, M., 2001, **Volkshuisvesting in New York City: This is not America**, Amsterdam (Stichting De Driehoek).

Bramley, G. & J. Morgan, 1998, Low Cost Home Ownership Initiatives in the UK, in: **Housing Studies**, 13 (4), pp. 567-586.



- 
- Bramley, G. & K. Dunmore, 1996, Shared Ownership: Short-Term Expedient or Long-Term Major Tenure?, in: **Housing Studies**, **11 (1)**, pp. 105-131.
- Elsinga, M., 1996, Relative cost of owner-occupation and renting: a study of six Dutch neighbourhoods, in: **Netherlands Journal of Housing and the Built Environment**, **11**, pp. 131-150.
- Elsinga, M., 1998, The meaning of tenure under different conditions: empirical evidence from the Netherlands, in: **Netherlands Journal of Housing and the built Environment**, **13 (2)**, pp. 137-155.
- Haffner, Marietta E.A., 2000, Cost and fiscal subsidies in owner occupation: method and outcomes, in: **Journal of Housing and the Built Environment**, **15 (1)**, pp. 1-17.
- Jackson, A., 2001, **An evaluation of the 'Homebuy' scheme in England**, York, North Yorkshire (Joseph Rowntree Foundation).
- Kroes, H., F. Ymkers & A. Mulder, 1988, **Between owner-occupation and rented sector. Housing in ten European countries**, De Bilt (The Netherlands Christian Institute for Social Housing NCIV).
- Levison, D., 1990, **Low Cost Home Ownership And Housing Associations**, London (National Federation of Housing Associations).
- Marcuse, Peter, 1994, Property Rights, Tenure and Ownership: towards Clarity in Concept, in Danermark, Berth and Ingemar Elander (eds.), Social rented housing in Europe: Policy, Tenure and Design, in: **Housing and Urban Policy Studies**, **9**, Delft (DUP).
- Martin, G., 2001, **Swamps and Alligators: the future for low cost home ownership alligators**, York (Joseph Rowntree Foundation).
- Ministry of the Environment Finland, 1993, **Act on interest subsidy for right-of-occupancy housing loans**, Helsinki (Ministry of the Environment Finland).
- Ministerie van VROM, 1983, **Nota Eigenwoningbezit**, 's-Gravenhage (Ministerie van VROM).
- Ministerie van VROM, 1989, **Nota Volkshuisvesting in de jaren negentig**, 's-Gravenhage (SDU Uitgeverij).
-

Ministry of the Environment Finland, 1990, **Right-of-occupancy housing act**, Helsinki (Ministry of the Environment Finland).

Ministry of the Environment Finland, 1996, **Finnish housing legislation, Volume 2**, Subsidies and Transactions, Helsinki (Ministry of the Environment Finland Helsinki, The English Centre).

Orlebeke, Charles J., 2000, The Evolution of Low-Income Housing Policy, 1949 to 1999, in: **Housing Policy Debate**, 11 (2), pp. 489-520.

Rohe, W.M., 1995, Converting public-housing to cooperatives – the experience of 3 developments, in: **Housing Policy Debate**, 6 (2).

Ruonavaara, Hannu, 1993, Types and forms of housing tenure: towards solving the comparison/translation problem, in: **Scandinavian housing & Planning Research**, no 10, pp. 3-20.

Sazama, G.W., 2000, Lessons from the history of affordable Housing Cooperatives in the United States: A Case Study in American Affordable Housing Policy, in: **American Journal of Economics and Sociology**, October, 23 p.

SEV, 2002, **Inventarisatie tussenvormen tussen kopen en huren** [inventarisation of new housing tenures], Rotterdam (Stuurgroep Experimenten Volkshuisvesting).

Sommerville, Peter, 1998, Empowerment through residence, in: **Housing Studies**, 13 (2), pp. 233-257.

Stuurgroep Experimenten Volkshuisvesting, 1997, **Een formule met geschiedenis en toekomst voor risico-arm kopen: Maatschappelijk Gebonden Eigendom**, Rotterdam (Stuurgroep Experimenten Volkshuisvesting).

The Housing Corporation, 2002, **Homebuy: capital funding guide**, London (The Housing Corporation).

---

# 6 Affordability, need and the intermediate market

Responding to the challenge in pressured regions<sup>1</sup>

*Glen Bramley &  
Noah Kofi Karley*

## 6.1 Introduction

Booming housing markets in the UK have once again brought into sharper focus the issues of housing affordability and associated issues of housing need and 'affordable housing' solutions. These pressures have impacted on both housing policies and related aspects of urban and regional planning, as seen in the *Sustainable Communities Plan* (ODPM, 2003) and more recently in the reports of the Home Ownership Task Force, the Barker (2004) review of *Housing Supply* and the Government's 'five year plan for housing' (ODPM, 2005). Such concerns are not confined to the UK and affordability issues feature strongly in a number of other countries (Bourassa, 1996; Hulchanski, 1995; Straussman, 2000; Thalmann, 1999).

Concern about affordability is not new, and there have been earlier 'crises' associated with cyclical peaks in the housing market. Bramley (1994) discussed the wave-like character of this policy concern, but suggested there were structural and secular elements to the new emphasis on affordability, and that this wave would leave certain policy legacies. An example of the latter would be planning policies for affordable housing (Monk & Whitehead, 2000). Others have linked the issue to structural changes in the labour market (Ford & Wilcox, 1994, 1998).

There is particular current interest in the measurement of housing affordability, and its relationship with the need for additional subsidised housing. This arises particularly out of the Barker (2004) inquiry into housing supply, which recommended the institution of regional affordability targets as a new basis for the planning of future land release and housing numbers, as well as a general increase in affordable housing provision. Along with other recent government policy initiatives (ODPM 2003, 2005), this focuses attention on the regions which are experiencing chronic housing market pressure, essentially most of southern England. This chapter examines estimates of the scale and incidence of housing affordability problems and the need for affordable housing provision implied, based on a well-established model-based approach. The model provides a method for benchmarking and comparing pressures in different areas, and can produce forward-looking projections on specified assumptions. It is also particularly useful for identifying and assessing the scope for 'intermediate' forms of provision between conventional home ownership and social renting, particularly forms of Low Cost Home Ownership

---

<sup>1</sup> Revised version of paper presented at ENHR housing conference in Cambridge, July 2004.

---

(LCHO) such as shared ownership. These are a significant feature in the British housing policy repertoire and they have attracted renewed interest recently (Bramley & Morgan, 1998; Housing Corporation, 2003; Bramley *et al.* 2002; Martin, 2001).

The chapter proceeds by first reviewing briefly the concept of affordability and related concepts of access. It then sets out and justifies a set of assumptions and procedures underpinning the affordability measures proposed, and briefly outlines the model of local income distributions and local housing needs used to implement these. Affordability and need are compared over time, looking both backwards and forwards. The model is then used to explore the scope for intermediate market solutions such as Low Cost Home Ownership (LCHO). The results are brought together in an assessment of the scope for affordable housing needs to be met in some of the most pressured regions in England.

## 6.2 Concept of affordability

Concepts of affordability have become increasingly important in UK housing policy over the last 15 years (Whitehead, 1991; Bramley, 1994). Most definitions of the meta-goals of UK housing policy come back to a phrase such as: 'A decent home for every family at a price within their means'. This statement neatly encapsulates what housing policy has been concerned with for many years (see Stephens *et al.* 2005 for fuller discussion), and clearly affordability has always been implicit if not explicit.

The exact definition of 'within their means', i.e. the relationship between housing cost and the income and other resources of households, remains an issue. Some of the debate over recent years concerned how this should be operationalised, and in particular whether a housing-cost-to-income ratio approach or a residual income relative to subsistence needs approach should be followed. Whichever framework of measurement is used, you still have to define a standard or threshold ratio in order to classify particular situations as 'unaffordable', and this usually involves a third party or normative judgement (Maclennan & Williams, 1990, p. 9).

The choice between affordability ratios and residual incomes has been well rehearsed (see Hancock, 1991; Bramley, 1994; Freeman *et al.*, 1999; Yip & Lau, 2002). In summary, affordability ratios are appealing to common sense, can be rationalised from behavioural evidence, and tie in with notions of comparability (horizontal equity). They have actually been widely used in practice in rent-setting and housing allowance schemes in different countries. However, the residual income approach seems to represent a more rigorous application of the concept which is fully consistent with the mainstream analysis of poverty. The problems with this approach partly relate to the limitations of Housing

**Table 6.1 Incidence of mortgage payment difficulties by whether high affordability ratio and/or low residual income (percent reporting problem within each category)<sup>1)</sup>**

Any payment problem	Low residual income?		High affordability ratio?	
	No	Yes	No	Yes
No	6.2		29.9	
Yes	12.1		50.4	

Serious Payment Problem	Low residual income?		High affordability ratio?	
	No	Yes	No	Yes
No	0.6		4.9	
Yes	2.1		13.4	

<sup>1)</sup>'Any payment problem' include cases where the mortgage is being paid by the Department of Social Security (DSS) or a third party, cases where there are any arrears, cases where the household finds payments fairly or very difficult to manage, and cases where they have been in arrears on this mortgage in the past. 'Serious payment problem' includes cases more than 6 months in arrears, cases where the household finds it very difficult, and cases where payments are currently falling further behind.

Source: Author's analysis of Survey of English Housing 1998-2001

Benefit/Allowance systems. In addition, it does not connect well with housing practitioner concerns about housing supply and pricing, and does not deal with the points about behaviour and horizontal equity mentioned above.

As a way forward from this debate, we would suggest that both criteria are relevant and should ideally be combined. In simple terms, a household's situation is 'unaffordable' if they both face a ratio of housing cost to income above certain norms and face a ratio of residual income to household requirements which is below certain other norms (a wider definition could substitute either...or for both.....and).

Is it possible to get away from normative judgements, or rather to bolster particular judgements, by appealing to empirical evidence of some kind? Apart from general evidence about consumer behaviour and what people are typically willing to pay for their housing, there is also evidence about the incidence of problems people actually experience in paying their housing costs. It is possible to investigate these relationships using micro data to identify potential threshold indicator values which seem to be associated with heightened risk.

Table 6.1 summarises the incidence of any self-reported mortgage payment problems and more serious payment problems, for all owner occupiers in England (using Survey of English Housing, 1998-2001). Rates are shown for those with a very low residual income after housing cost (less than 110% of the benefit system norm) and for those with a very high ratio of housing cost to net income (above 35%), and for those with both of these characteristics. This table suggests that both low residual income and high affordability ratios are strongly associated with payment problems. More detailed graphing of relationships and logistic regression analysis support the view that

both high ratios and low residual income both contribute to payment difficulties. This provides support for the dual-criteria approach used in our model.

It can, further, be argued that the norms and rules which housing finance and provider agencies employ in regulating access to the market in practice seek to capture these empirical relationships and to reflect past experience of risks encountered. These agencies have an interest in minimising risk and this informs the setting of such norms as 'lending multipliers' linking mortgage debt to income, loan-to-value ratios, or housing cost-to-income ratios. This insight provides a link between affordability and the related concept of 'access to housing'.

Although housing unaffordability may be regarded as a form of deprivation, it is important to note that there are different levels of housing affordability which affect different strata of the population (Linneman & Megbolugbe, 1992; Bramley, 1994). The household which is in poverty because of the burden of its mortgage payments, or the household which is homeless because of an inability to afford available private market rents, are examples of households experiencing the more basic level of affordability problem. Potential new households facing house prices in their locality which are beyond the level which they are likely to be able to afford unassisted are arguably an example of a different level of affordability problem. Theirs is less direct and intense a problem, because (a) these people have not yet formed a separate household, and (b) they face a range of alternatives, such as moving to a cheaper area, living with relatives, sharing, etc which though 'second best' do not in themselves constitute primary poverty. On the other hand, this second group is probably larger in numerical size and quite clearly relevant to significant policy interventions (e.g. provision of new affordable housing, use of planning system, etc.).

Problems of the first type focus primarily on households with very low incomes and limited housing options, who are likely to be dependent upon the basic safety nets of income support and social housing. Problems of the latter type, by contrast, extend the range of concern up the income scale, recognizing that in certain market conditions a wider range of households (including many working households) may experience problems of access or of risk of unaffordability. It is this wider arena, contingent upon house price-income relationships, which constitutes what has come to be termed recently 'the intermediate market'.

### **6.3 Measurement and modelling of affordability and access**

This chapter presents findings from a model-based measure of access to owner occupation and intermediate market housing at local level in England, based on house prices and incomes. We now discuss the specific assump-

tions used, following closely the logic set out recently to underpin the development of such a measure in the context of the Government's Indices of Multiple Deprivation (IMD) (Neighbourhood Renewal Unit 2004).

### **Geographical level**

Housing affordability problems have a very uneven geographical incidence, and the policies responding to these problems should be targeted appropriately. The most appropriate geographical unit should approximate to local housing market areas; although local authorities (LAs) are not ideal units from this viewpoint, they have the advantage of much more comprehensive and consistent data availability and are also the focus for policy responses. LA's are often smaller than the market areas which apply for households moving in the private market, but for lower income households who are less mobile they may be a closer approximation to their effective market area. The model's sensitivity to market area definition is tested below.

### **Threshold prices**

We need robust, consistent measures of the 'threshold price', that is the price at which appropriate housing is available in the market in each locality. For access, we are interested in the lower part of the house price spectrum, which we represent using the lower quartile. This is further broken down by size (bedrooms), using newly available data from the Survey of Mortgage Lending (SML) where sample numbers permit, but otherwise using data on all sales from the Land Registry (LR) but adjusted for stock size mix using the Census. Both sources refer to all sales (new and secondhand) at market value, excluding discounted sales to sitting tenants.

### **Affordability criteria**

We use a lending multiplier expressing maximum mortgage loan as a ratio to gross annual income as our primary criterion. There is a dual rationale for a lending multiplier: (a) it defines access to owner occupation by approximating the normal limits applied by lenders; (b) it represents the mainstream approach to affordability based on ratios. For our purposes, the advantage of this approach is that one indicator can simultaneously represent both access and affordability aspects.

The lending multipliers used for current conditions are 3.5 times a single income and 0.85x3.5 times joint incomes. Data in Table 6.2, showing recent multipliers for first time buyers at various points in the distribution, support the use of a threshold at around this level, corresponding to the upper quartile in regions in the middle of the range. It is clear that lending multipliers have increased somewhat since the mid-1990s. For example, in 1996 the upper quartile single-income multiplier for first time buyers averaged 3.00 across the regions, compared with the 3.41 shown in Table 6.1. We regard

**Table 6.2 Loan to income ratios, first time buyers in 2002 <sup>1)</sup>**

	Median	Upper quartile	Upper decile	95th percentile	Ratio 1 earner vs 2 earners
Mean	2.96	3.41	3.81	4.00	0.86
Minimum	2.60	3.05	3.50	3.74	0.83
Maximum	3.35	3.80	4.14	4.27	0.88

1) Mean, minimum and maximum refer to variation across regions

Source: Survey of Mortgage Lending 2002

these changes as a one-off response to the perceived regime shift to low inflation and low interest rates.

This study also incorporates a secondary affordability test, based on a residual income minimum for each household type. Net income less mortgage outgoings should exceed a threshold set at 20% above the Income Support 'poverty line' (technically, the 'Applicable Amount') for the relevant type and composition of household. This has the effect of reducing affordability in low priced/low income areas. While this may seem to add complexity, there is as we showed above a strong case for it in terms of both affordability principles and evidence of financial risk and hardship.

### Deposits & wealth

It is assumed that income is the main constraint on house purchase, because 100% or high Loan to Value (LTV) ratio lending is widely available. The argument for making this assumption is partly one of simplicity, and partly that we are focussing on limits or boundaries of affordability. Also, where households fund deposits from savings, this incurs an opportunity cost in loss of income from savings, and we are (partly for consistency) using a comprehensive definition of income including income from savings and investments.

Recent lending data suggest that use of wealth, probably from family sources, is becoming relatively more important, among the diminishing number of first time buyers who are still able to get into the market (Bramley & Karley, 2003; Neighbourhood Renewal Unit, 2004; Joseph Rowntree Foundation, 2004). Modelling the availability of such wealth is difficult, given data limitations and the complexity of the intra- and inter-household transfers involved. Nevertheless, this issue of wealth is now so important that it cannot be ignored, and we make an allowance for it, based on plausible assumptions and some evidence, within the needs estimates presented.

Table 6.3 shows the proportion of first time buyers in each region who made a deposit of more than 20%, and who at the same time appear not to have had enough income to buy (without the extra capital). This proportion averages 13.2% for England as a whole but ranges from just over 5% in the North to around 20% in London. Rates are also relatively high the South West (19%) and South East (17%). Given the levels of income-based affordability reported later (averaging around 40% of new younger households), this implies that about 6% of the whole cohort were being enabled to buy thanks



to access to family wealth in 2001. A proxy-based formula is used to predict local variations in this proportion as an adjustment to the income-based affordability calculations used to generate need estimates in this study.

### Target households

Who are the target group whose income is to be assessed: the whole household population? We argue that the relevant target concept is of potential access to home ownership for the cohort of households entering the housing market, and suggest that a suitable proxy for this is all households with head aged up to 35. Data are generally available on the income profile of the stock of all households in this age range, and this approach is broadly inclusive of all households which are likely to form, including both those who have attained owner occupation and those who have not.

### Income sources

What income should be counted: total household income; income excluding certain sources (e.g. means tested benefits); earnings only? Some (e.g. Wilcox, 2003) have concentrated on working households and have looked mainly at earnings information. This makes a traditional assumption that mortgage lenders look primarily at earned incomes and, in addition, ties in with a current focus on key worker affordability.

While this approach has its place, we would argue that a generalised measure of affordability should refer to the whole household population, including those not in work or possible working only part time or in self-employment. This approach is more inclusive, and can be related more directly to the issue of housing needs which arise out of (lack of) affordability. We would also argue that most income should count, not just employee earnings, although there are question marks about means tested benefit incomes (the application of the secondary affordability test has the much same effect as discounting such incomes).

### Modelled or direct income data

There is still a lack of reliable, official data on incomes at local level in the UK. To obtain useful measures at local level it is necessary to 'model' to some extent, either to get down from a higher geographical level, or to get across from partial to more complete coverage, or to obtain distributional information. Housing affordability is essentially about the intersection between distributions of income and house prices, and thus requires ideally a fairly detailed and flexible picture of income distribution.

The main approach exemplified in this chapter is to model income distrib-

**Table 6.3 Percent of first time buyers making 20%+ deposit without enough income to buy, by region, 2001**

Standard' Region	%
North	5.3
Yorkshire & Humberside	6.9
North West	7.1
East Midlands	9.1
West Midlands	11.5
South West	19.0
East Anglia	12.3
South East	16.7
London	20.1
<b>England</b>	<b>13.2</b>

Source: Authors' analysis of Survey of Mortgage Lending linked to local authority level house prices

**Table 6.4 Comparison of modelled incomes with official estimates by region (mean gross household income and % below £200 per week; % differences)**

Region	Model vs SEH	Model vs ONS	Model vs FRS	Model vs Ave 3 ests	% < £200 Mod vs FRS
North East	4.2	1.7	-0.1	1.9	-0.6
North West	-0.1	-3.6	-1.8	-1.8	1.7
Yorkshire & Humberside	-0.6	0.0	-7.7	-2.7	-0.1
East Midlands	-0.4	3.7	6.0	3.1	-1.4
West Midlands	4.1	1.9	-0.6	1.8	0.1
England	-1.5	-1.1	-5.4	-2.7	-0.1
London	-1.3	-1.8	-4.0	-2.4	-2.2
South East	-3.6	-0.1	-3.5	-2.4	0.7
South West	1.6	3.9	3.8	3.1	-0.3
Total	-0.5	0.0	-2.1	-0.9	-0.3
<b>Mean absolute deviation</b>	<b>1.9</b>	<b>2.0</b>	<b>3.7</b>	<b>2.4</b>	<b>0.8</b>

SEH: Survey of English Housing ONS: Office for National Statistics FRS: Family Resources Survey

utions for sub-groups with proxy predictors to capture local variation, as explained in the next section.

### Local income distributions model

The model has been developed over a period of a decade (Bramley, 1991; Bramley & Smart, 1995; Bramley, 1998), and comprises two elements: a model of local income distributions for sub-groups of households; and a housing need model linking affordability/access to numbers of households and supplies of social housing. The incomes model is described elsewhere (Bramley & Smart, 1996; Bramley & Lancaster, 1998; Bramley & Karley, forthcoming). Essentially it divides households up into subgroups whose local incidence is derived from the Census. Income distributions for each subgroup are modelled on the national patterns observed in the Family Resources Survey (FRS), with local variation predicted from a range of factors including occupation, industry, earnings, part-time working, car ownership, and unemployment.

The model can be shown to give a reasonable fit to both FRS and other income estimates. Table 6.4 shows some regional comparisons for mean gross household income and the proportion of households below £200 per week. Modelled mean incomes are typically within 2.5% of the actual means by region. The modelled proportions below £200 per week are closer, typically within less than 1%. These comparisons refer to all households, but the model also generates distributions for under-35 households which are used in the housing affordability and needs work.

### Housing need

The basic needs model used here compares the key gross flows into and out of the social rented or 'affordable' sector. On the 'need' side, the largest ele-

ment is new households forming each year unable to buy, with additional allowances for existing owners needing to move into renting and (in some versions) for migrants and for any backlogs or previously unmet need. On the supply side, the annual number of relets of social rented housing is crucial.

This is a systematic model based on secondary data and reasonable assumptions. It calculates need and supply as annual flows for each LA and aggregates to regions and England as whole. Although it provides snapshot for a point in time (e.g. 2004), it can be repeated for different dates and assumptions. Key numbers in the model are consistent with national totals contained in household projections and national surveys. Our approach is consistent with the Government's guidance to local authorities on methods of estimating local housing needs (DETR 2000).

However, the model deals only with the need for additional units of social or affordable housing and does not address issues of house condition or suitability; in this sense it is only a partial assessment of the totality of needs for housing investment. However, the model is particularly useful for testing the impact of changing market prices on affordability and need, and in addition it can be used to measure the scale of need, or potential demand, for intermediate sector provision such as LCHO.

The model assumes that long term tenure solutions lie in the owner occupier or social rented sectors, and that the private rented sector does not expand (the British private rental sector is smaller than in many other countries). The model does make allowance, though, for owner occupiers moving into social renting, for example because of old age related needs or problems sustaining ownership, based on national rates of movement from the Survey of English Housing.

The model is different from the approach used in the best-known national estimates of housing need in England, those provided by Holmans (1995, 2000; Holmans *et al.*, 1998; Barker, 2004). Holmans' main recent studies may be characterised as using a 'net stock' approach (Whitehead & Kleinman, 1991), whereas our approach is a partial 'gross flows' approach. Holmans' approach uses official household projections but bases the split of households between tenures on actual behaviour (allowing for age and cohort effects) rather than on the application of an affordability norm.

## 6.4 Affordability over space and time

### Regional comparisons

We now present some results from our local affordability model and compare them with various other affordability estimates. Table 6.5 presents figures for the English Regions in 2004. The first column shows the average percent of under-35 households able to buy at threshold entry prices based on lower

**Table 6.5 Affordability rates by region, 2004 (percent of under-35 households able to buy)**

Region	Able to buy (income)	Able to buy (wealth adjusted)	Able to buy (working)	Shared ownership increment	Homebuy increment
North East	45.7	50.2	59.9	10.4	9.9
Yorkshire & Humberside	45.5	50.5	57.4	12.1	11.2
North West	45.5	50.4	58.8	11.3	10.6
East Midlands	40.7	46.7	50.6	14.0	14.1
West Midlands	38.9	43.8	49.8	13.9	13.5
South West	28.5	34.6	35.5	16.9	15.8
East Anglia	29.4	35.3	37.2	20.7	16.1
South East	26.2	31.8	33.7	21.5	16.2
London	15.5	20.4	21.7	23.4	12.2
<b>England</b>	<b>33.4</b>	<b>38.7</b>	<b>42.9</b>	<b>16.8</b>	<b>13.5</b>

quartiles by size, as population-weighted regional averages of local authority level estimates generated by the model. The proportions range from 16% in London and 26-29% in the other southern regions to around 46% in the three northern regions, with an overall average of 33%. These estimates are based on income alone. A more realistic set of figures, adjusted for access to family wealth, are shown in the second column. These are about 5-6% points higher, ranging from 20% to 50%. The figures for working households are higher again, averaging 43% and ranging from 23% to 60%, and being noticeably higher in the northern regions. Our figures for working households are lower than those of Wilcox (2003) because we allow for residual income constraints. We would argue that many lower paid working households in the north cannot afford owner occupation on a sustainable basis, even though on a simple lending multiplier approach it would appear that they can.

The last two columns show the extra proportion of households who could be enabled to buy by two common forms of Low Cost Home Ownership (LCHO). These are discussed further below.

### Local variation

The model indicates that affordability varies markedly within as well as between regions. For example, in the South East region, ability to buy at county level ranges from 29% in East Sussex, Oxfordshire and Surrey to 38% in Buckinghamshire. In the north of England, there are notable 'hotspots' of unaffordability such as in the area around York, against a general backdrop of easier access to buy.

One important implication of local variations in affordability is that, if we relax the assumption that households only seek housing within their district of origin, affordability is greatly enhanced. If we make an alternative assumption, that households are able to move to the contiguous district with the lowest house price level, the threshold house price falls by 22% on average, and the affordability rate rises by 9.9% points to 54% overall.

**Table 6.6 Proportion of new households able to buy, 1986-2002 by region (results from previous studies using similar methodology but some different assumptions)**

Region	1986-91 (1)	1991 (2)	1997 (3)	2001 (4)	2002 (5)
North	56.3	53.4	54.1	50.6	49.6
Yorkshire & Humberside	53.8	55.5	56.1	50.4	44.0
North West	58.4	53.1	54.2	50.3	47.6
East Midlands	64.6	62.9	63.6	48.1	40.2
West Midlands	47.0	55.6	54.0	42.3	35.3
South West	41.5	57.1	52.5	33.2	24.2
East Anglia	53.2	59.7	55.9	38.6	30.8
South East	42.9	59.9	48.3	31.6	26.8
London	17.6	38.1	22.5	22.4	20.2
<b>England</b>	<b>45.8</b>	<b>55.0</b>	<b>49.6</b>	<b>38.8</b>	<b>33.6</b>

Sources: (1) Bramley (1996) *Housing with Hindsight*; (2) Bramley & Smart (1995) *Rural Incomes and Housing Affordability*; (3) Bramley (1998) *Housing Surpluses and Housing Need*; (4) & (5) Housing Corporation (2003) *A Home of My Own* - supporting paper for Home Ownership Task Force

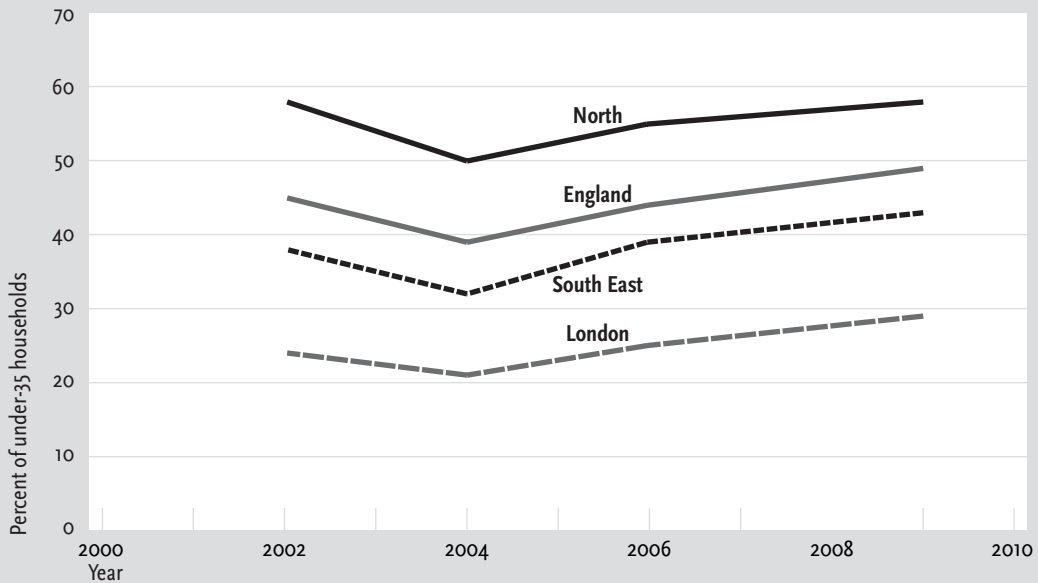
### Change over time

The modelling approach exemplified in this chapter may be used to compare affordability conditions over time, nationally and for particular regions and localities. We illustrate this by reporting first on some backward looks and then on a forward-looking projection.

We may firstly refer to comparisons with earlier studies using a similar methodology at different points in time, as in Table 6.6. These comparisons should be heavily qualified by noting that the detailed modelling assumptions, data sources and calibrations vary somewhat between these exercises, and so comparisons are not precisely like with like. This table derives from the Home Ownership Task Force exercise (Housing Corporation, 2003) and the figures for 2001-02 use an earlier version of the model, with different income calibration, different house price data, slightly different target groups and affordability criteria from those underlying Table 6.4. Nevertheless, the general picture emerging is that affordability improved from the late 1980s (previous boom) into the early and middle 1990s, but then deteriorated in the later 1990s and early 2000s, to a level worse than in the previous boom. While the broad ranking of regions has remained similar, affordability deteriorated markedly more in the South West (see also Wilcox, 2004), while in London conditions at the end of the period were similar to those in the late 1980s.

The model can also be used to project forward over a number of years to illustrate the effect of different scenarios. The key variable here is real house price movement and its relationship with incomes. Barker (2004) argued that prices in the early 2000s were well above their long term trend value. Taking this on board, together with recent evidence of a market downturn, we assume that prices show a downward correction of 15% in the period to 2009, relative to a modest growth trend. Together with continuing real income growth, this

Figure 6.1 Ability to buy for selected regions 2002-2009



leads to a picture of improving affordability such that by 2009 the situation has improved relative to 2002. Figure 6.1 shows the pattern of affordability from 2002 to 2009, for selected regions. After a sharp worsening in up to 2004, the situation improves in all regions. However, the improvement is more marked in the South East, a region which consistently demonstrates a greater sensitivity of affordability.

#### Affordability-based needs

Table 6.7 shows the results of the annual needs calculation by region for 2004 (excluding any allowance for backlogs). With gross household formation totalling 484,000 the number of new households unable to afford to buy would total 300,000. Allowance is also made for owner occupiers moving to social renting (34,000) and unaffordable net migrants (17,000). This gross need confronts a supply of social sector relets of a somewhat smaller order of magnitude (283,000). This gives a national net need of just under 65,000. However, this conceals enormous regional imbalances. Adding up the positive needs at local authority level, there is a total need of nearly 127,000, heavily concentrated in London and the southern regions. At the same time, surpluses of relets over new need are very substantial in the northern and midland regions, and these add up to nearly 63,000 nationally.

These estimates of affordable need are very high, and far above existing or likely feasible levels of new provision. They are sensitive to the assumptions made, and clearly reflect particularly adverse market conditions in 2004. They have been subjected to a number of sensitivity tests. Emerging from this, the most sensitive assumption worth highlighting is the assumption that new households seek housing solutions only within the local authority district

**Table 6.7 Affordability-based needs by region in 2004 (number of units per year)**

Region	Gross household formation	Net relets	Net need	Positive need <sup>1)</sup>	Surplus lettings <sup>2)</sup>
North East	24,099	28,275	-14,401	353	14,754
Yorkshire & Humberside	48,503	41,098	-12,713	2,580	15,293
North West	64,811	51,923	-14,260	3,691	17,951
East Midlands	40,399	26,628	-910	5,598	6,508
West Midlands	50,815	35,094	-1,861	5,336	7,198
South West	45,943	16,779	19,482	19,482	0
East	51,232	23,508	15,501	16,474	972
South East	77,216	27,128	34,694	34,786	92
London	81,428	32,204	39,014	39,014	0
<b>England</b>	<b>484,445</b>	<b>282,636</b>	<b>6,4547</b>	<b>127,314</b>	<b>62,768</b>

1) Positive need sums positive net needs at district level, ignoring surpluses.  
2) Surpluses sum negative net needs at district level.

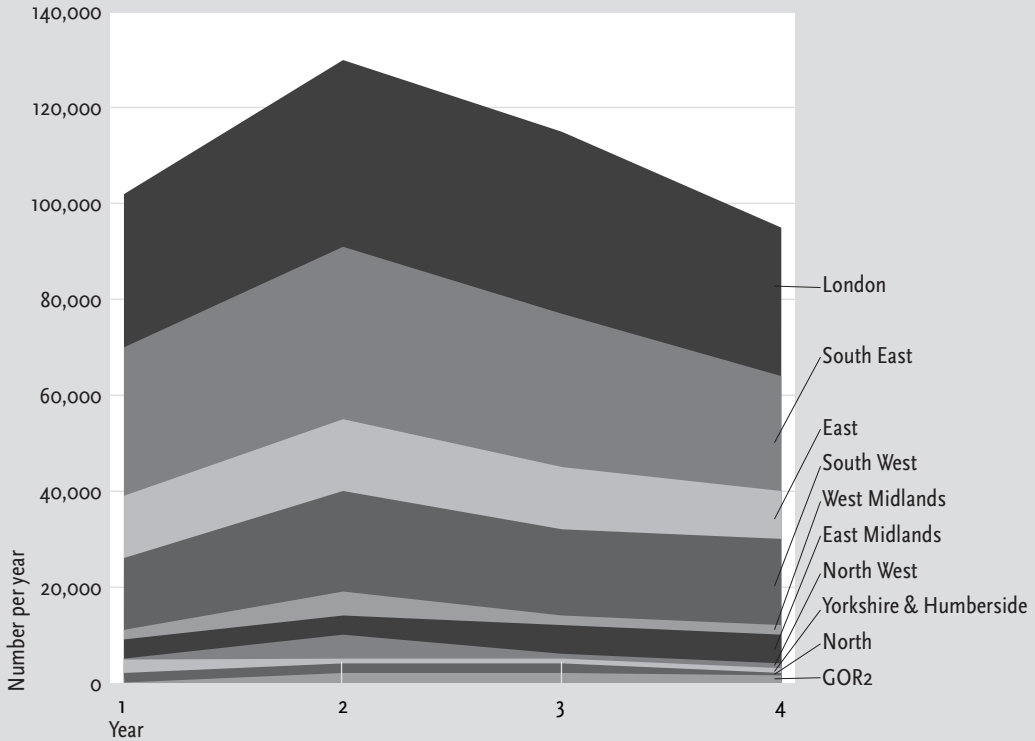
where they originate. If we make an alternative assumption, that they move to the adjacent (contiguous) district with the lowest house prices, the reduction in net need generated by the model is very large, of the order of 31,400 (29%) in 2006.

The Barker (2004, pp. 95-96) report discusses the need for affordable housing and suggests a total of 48,000 units per year compared with current provision of 21,000 new build and 10,000 acquisitions, implying a need for an extra 17,000 units plus an additional allowance for reducing the backlog. However, this is a national estimate which does not address the regional imbalance explicitly. Our model highlights this regional imbalance very clearly. The Barker baseline analysis is effectively netting off surpluses in the north against shortages in the south, yet it is difficult to argue that the excess supply in the north is of any practical use in meeting the shortfalls in the south. However, when considering alternative price scenarios Barker does take account of the additional households 'priced into' the market at the margin, based on our local/regional analysis.

The model reported here is very effective at highlighting supply surpluses in the social housing sector, which are very relevant to the problems of 'low demand' concentrated in the northern urban areas which have come to preoccupy policymakers in the last few years (DETR, 1999; Bramley, 1998; Bramley *et al.*, 2000). Key characteristics of the model – its emphasis on the local level, on affordability, and on gross flows into and out of social housing – enable it to pinpoint low demand more effectively than some other housing needs models, such as the work of Holmans *et al.* (1998), which focus on net change at the national level.

Needs can be projected backwards and forwards in a similar fashion to the affordability rates. In analyses supplied to the Barker team, with trend house price growth needs would grow slowly, then level off and decline slightly after

Figure 6.2 Net affordable housing need by region 2002-2009



2016. Needs would rise in the South West and East while possibly falling in London. A more realistic scenario would be that suggested by the affordability projections in 2006, with a falloff from the recent (2004) peak. This is shown in Figure 6.2, with the different 'strata' representing the regions. Needs rise then fall in all regions, but the larger figures, and the larger absolute changes, are in the southern regions. Figure 6.2 suggests that London needs could fall quite sharply, whilst needs could be more persistent in regions like the South West and the East of England. This finding may be affected by the particular demographic assumptions used in the projection. It should be noted that the projection factors in a feedback effect from market conditions to relet rates, based on a regression analysis of past relet patterns across districts and over time.

We return, in the concluding section, to the implications of these levels of affordable need for housing provision. First, however, it is important to consider the potential role of the intermediate sector.

## 6.5 The intermediate market

The 'intermediate market' may be defined loosely as that sector of demand which is sensitive to price levels. In regions or time periods with lower price



levels, most of these households can afford to buy or rent in the market, but as prices rise progressively more of these households are priced out of the market. In current market conditions, increasing policy attention has been given to this intermediate market.

Of particular relevance here are forms of subsidised provision targeted at this intermediate sector, particularly Low Cost Home Ownership (LCHO) schemes including the recent 'Starter Homes Initiative' targeted at key workers. The main LCHO products currently offered to these groups are:

- Shared Ownership, where the buyer acquires a stake of between 25% and 75% of the market value and rents the remainder of the dwelling from a Registered Social Landlord (RSL) at a subsidised rate; the RSL funds this share from a mixture of grant and private finance; the legal framework in England is leasehold, and the buyer has a right to 'staircase' subsequently to full ownership at future prevailing market price.
- Homebuy, where the buyer acquires a 75% stake and the balance of 25% is funded initially by grant which takes the form of an 'equity loan' from an RSL, interest-free but repayable on subsequent sale at prevailing market values; the legal framework is of conventional freehold ownership with the equity loan treated as a second charge.

These products are available to support either the purchase of new build housing or in so-called 'DIY' form, where the buyer finds a secondhand house on the open market (within value limits). Currently most shared ownership takes the first form and most Homebuy takes the second (DIY) form, but in principle either can take either form. Other LCHO products offered to existing social tenants include 'cash incentives' to move into the private sector and the Right to Buy as sitting tenant at a discount (Right to Acquire for RSL tenants).

The Home Ownership Task Force (Housing Corporation 2003) examined ways of enhancing the role of LCHO in England, drawing in part on the positive evaluation findings of the study by Bramley *et al.* (2002). It can be argued that these schemes are quite good value for money for the public sector as a way of subsidising households whose incomes put them in the 'intermediate sector', so long as provision is appropriately targeted and avoids significant 'deadweight' (i.e. supporting households who could have afforded to buy anyway, or were not in housing need). This value for money arises particularly from the future capital receipts obtained upon staircasing or resale.

It is possible to use the affordability model to assess the potential scope for LCHO provision in different areas and under different assumptions or scenarios. We report here on results for 2004, modelling the two main schemes identified above: shared ownership of a new unit assuming a 25% tranche purchased (the normal minimum), and 75% Homebuy of a secondhand unit at threshold entry price level. Affordability of shared ownership is assessed on

**Table 6.8 Low cost home ownership potential by region 2002 (extra % able to buy; number of new households per year; number of existing renters per year)**

Region	Shared own % extra	Homebuy % extra	Shared own need	Homebuy need	Social renters Low cost home ownership	Private renters Low cost home ownership
North East	10.4	9.9	95	82	1,079	1,204
Yorkshire & Humberside	12.1	11.2	836	656	2,060	4,453
North West	11.3	10.6	1,169	939	3,243	5,788
East Midlands	14.0	14.1	1,856	1,745	2,027	4,167
West Midlands	13.9	13.5	1,389	1,342	2,690	4,435
South West	16.9	15.8	4,981	4,654	3,716	13,963
East	20.7	16.1	5,071	3,975	4,805	11,682
South East	21.5	16.2	10,883	8,129	6,260	20,660
London	23.4	12.2	11,332	5,916	6,655	24,906
<b>England</b>	<b>16.8</b>	<b>13.5</b>	<b>37,613</b>	<b>27,438</b>	<b>32,536</b>	<b>91,258</b>

the basis of a 30% ratio of outgoings to net income, while Homebuy is assessed in the same way as conventional market purchase using lending multipliers; the secondary test of residual income is applied in both cases. In each case, we focus on those households who could afford these options but not full market purchase.

Table 6.8 shows the results of this assessment of the potential need/demand for LCHO by region for 2004. The first two columns show the incremental percentage of new (under 35) households able to afford these two options but not outright purchase. Overall, 16.8% points extra households could afford shared ownership, and 13.5% could afford Homebuy. There is marked regional variation, particularly for shared ownership. In the lower priced northern regions it is less likely that shared ownership of a new dwelling will be much more affordable than buying in the existing secondhand market. However, in the higher priced south the proportions are significantly higher, ranging up to 23.4% in the London. Homebuy shows less variation, but it is still noticeable that the proportion is lower in the northern regions. This reflects the smaller absolute difference in the income thresholds where prices are lower, but also the secondary affordability test based on residual income.

The third and fourth columns translate these figures into net need numbers, allowing for the net need position in each authority (i.e., if there is a surplus of affordable housing, the need is set at zero; if there is a low positive need, the LCHO share is scaled down). This analysis suggests that there is a potential market of 37,600 units a year for LCHO among new households, using either model or a combination of the two. However, this figure falls markedly (to about 24,000) in the projection to 2006 and later years as house prices fall. This need is overwhelmingly concentrated in the southern regions, particularly the South East and London. There is relatively little justification for mainstream LCHO provision in the north, partly because of the surplus

---

supply of social sector relets. The model suggests that there is a sizeable potential intermediate market for LCHO, far above existing levels of provision of these schemes (although these have been expanded recently). RSL providers in London and the South report massive excess demand for these schemes, which is consistent with the model results.

The final two columns in Table 6.8 show rough estimates of the additional potential demand which may exist among the stock of existing social and private renters. This is based on an analysis of the Survey of English Housing, taking percentages in the relevant affordability bands for each of seven broad types of local authority (distinguishing broad regions), and then applying these rates to the numbers of social and private tenants in each local authority. These are converted to annual flows by taking the rates of mobility out of these tenures into owner occupation, divided by the number of such tenant households who could afford to buy in the open market (again using the SEH). These calculations yield a potential market of 32,500 social renters and a very high number of private renters (91,000), reflecting the high mobility of the latter group. Provision targeted on the former group can be justified as a way of releasing social rented units for low income households in housing need (including the homeless), although it can be criticised for further exacerbating the 'residualisation' of social housing estates. Provision for the latter group can be regarded as a short-term catching up with the backlog arising from newly forming households. Nevertheless, these estimates underline that LCHO could play a substantial role in the overall provision of affordable housing. In addition to value for money arguments, LCHO fits well with the greater use of planning agreement powers to encourage mixed tenure developments (Bramley *et al.*, 2002).

Estimates of LCHO potential can be subject to a range of sensitivity tests using the model. Higher interest rates would raise overall needs but reduce the relative role of shared ownership. 10% lower house prices or 10% higher relet rates would reduce potential new need by about 2,375 units pa (about 10%). We also tested the impact of assuming that people could move to adjacent districts where prices were lower. The impact of this on LCHO (intermediate market) potential demand is moderate in scale, at around 25% or 6,000 units per year reduction (this would have a larger impact on overall net affordable need, as noted above).

We do not discuss in detail here the issues entailed in increasing the supply of LCHO or other intermediate forms of housing (but see Housing Corporation 2003, Bramley *et al.*, 2002). Potentially positive routes include greater use of the planning system, re-investment of receipts from existing owners who move or staircase, and possible models entailing private lender-financed equity loans (perhaps aided by tax breaks). Tax efficient vehicles for private investment in rented housing, as encouraged by the Barker report, are also relevant to the intermediate market. The main limitations within the publicly

---

subsidised sector are the general limits on public spending and the competing priorities of homelessness and the Government's commitment to fulfill the 'Decent Homes' target within the social rented sector.

## 6.6 Concluding discussion

Housing affordability has become an increasingly important policy issue in the UK, as elsewhere. Its growth can be seen as having both secular and a cyclical components (Bramley, 1994). The affordability concept necessarily rests on normative judgements, although these may have a behavioural and evidence base. The institutional concept of access is argued to be closely related in practice, so far as owner occupation is concerned, via lending institutions' assessments of risk. Affordability problems can be viewed as operating at different levels, ranging from narrower direct experience of severe problems of poverty and homelessness, through an intermediate level of risk, to a broader problem of access to the market. This chapter focuses on the latter end of the spectrum, because this broader phenomenon encompasses and proxies the narrower problems while relating closely to current policy issues relating to planning, supply, regional imbalance, and the intermediate sector (e.g. those who 'can work, can't buy'; see Wilcox, 2003).

There is value for measurement and comparison purposes in running a standard set of assumptions across different populations, geographical areas and time periods to assess the state of access and affordability. The chapter proposes a set of assumptions for this purpose, defining the local geographical units, price thresholds, affordability criteria, target group and reckonable incomes and wealth. The approach uses a combination of the two main approaches to affordability derived from the literature, a ratios approach supplemented by a residual income test. In a UK context use of modelling procedures is unavoidable in relation to incomes if local level measures are to be derived. The particular model used is shown to give a reasonable fit to income and affordability levels at regional and locality type levels.

Headline affordability rates, expressed as the proportion of younger households able to buy, averaged 39% in 2004, with a range from 20% in London to 50% in the northern regions of England. These estimates make allowance for the significant number of first time buyers enabled to buy through access to family wealth, using evidence from various national surveys. The model reveals considerable local variation within regions, including some clear 'hot spots' in the north and rather more affordable areas within southern England. One important response to affordability pressures is for households to move to nearby districts with lower prices, although this may increase commuting flows and costs.

Over the 1990s, affordability at first improved, but then deteriorated more

---

recently as the housing market boom advanced. In this period some regions, particularly the South West, deteriorated much more. Unaffordability currently appears worse than at the peak of the previous boom in the late 1980s. While 2004 is clearly worse than trend, the longer term trend would involve a progressive worsening of affordability.

The model can also yield estimate of the need for additional affordable housing. These reveal very large regional imbalances, with shortages mainly in the south of 127,000 coexisting with surpluses of 63,000 pa. in the northern and midland regions in 2004. Projections to 2009 suggest need reducing from its current peak to around 90,000, but with more persistence of need in the southern regions away from London (South West, East of England).

In general, affordability is shown to be more sensitive to price variations in the southern regions. A corollary of this is that there is more scope for 'intermediate' sector provision such as LCHO. The model suggests that 13-17% of younger new households could afford current LCHO products but not full market purchase, and this could generate a potential need/demand of up to 37,000 per year, falling somewhat in later years. This number would be even greater if provision targeted existing social renters as well, and is generally robust to a range of variant assumptions. Current provision is constrained by supply, policy and public finance factors but there is clearly a case for boosting intermediate provision.

The model can be used to explore notional programmes of affordable provision, by applying unit costs/subsidies to different types of provision in different areas. Lack of space prevented detailed consideration of this, but the main issues raised are to do with the extent to which limited public spending resources can be stretched by use of LCHO, particularly equity loans which might be partly funded by lenders, and by maximising the use of planning agreement powers. Even using this strategy, not all current needs can be met using available resources, with the greatest shortfall in the southern regions.

To make further inroads into meeting affordable housing needs, the Barker inquiry recommendation of greatly expanding total housing supply should be followed. This would both tend to lower house prices, improving general affordability, while enabling greater planning targets and contributions. To the extent that overall affordable needs remain unmet, which depends in part on the general behaviour of the housing market, then there will be a range of consequences including people moving to cheaper areas (longer commuting), people taking on larger debt burdens and risks, continuing recruitment and retention problems for employers in the south, more pressure on private renting displacement of the poorest households into homelessness.

## References

Bourassa, S.C., 1996, Measuring the affordability of home-ownership, in: **Urban Studies**, **33** (10), pp. 1867-77.

Bramley, G. & S. Lancaster, 1998, Modelling local and small area income distributions in Scotland, in: **Environment & Planning C: Government & Policy**, **16**, pp. 681-706.

Bramley, G. & G. Smart, 1995, **Rural Incomes and Housing Affordability**, London & Salisbury (Rural Development Commission).

Bramley, G. & G. Smart, 1996, Modelling local income distributions in Britain, in: **Regional Studies**, **30 (3)**, pp. 239-255.

Bramley, G., 1989, **Meeting Housing Needs**, London (Association of District Councils).

Bramley, G., 1990, **Access, Affordability and Housing Need**, Paper presented at ESRC Housing Studies Conference, University of Surrey, September 1990, Mimeo, SAUS, University of Bristol.

Bramley, G., 1991a, **Bridging the Affordability Gap in 1991: an update of research on housing access and affordability**, Birmingham (BEC Publications).

Bramley, G., 1992, Homeownership affordability in England, in: **Housing Policy Debate**, **3 (3)**, pp. 143-182.

Bramley, G., 1994, An affordability crisis in British housing: dimensions, causes and policy impact, in: **Housing Studies**, **9 (1)**, pp. 103-24.

Bramley, G., L. Cousins, K. Dunmore & J. Morgan, 2002, **Evaluation of the Low Cost Home Ownership Programme**, ODPM Housing Research Report, London (ODPM).

Bramley, G., H. Pawson & M. Satsangi, 1999, **Local Housing Needs Assessment: an evaluation of current practice and the scope for guidance**, Research Paper, School of Planning & Housing, ECA/Heriot-Watt University.

Bramley, G., S. Lancaster & D. Gordon, 2000, Benefit take-up and the geography of poverty in Scotland, in: **Regional Studies**, **34**.

Chaplin, R. & A. Freeman, 1999, Towards an accurate description of affordability, in: **Urban Studies**, **11**, pp. 1949-57.

Crook, A., J. Curry, A. Jackson, S. Monk, S. Rowley, K. Smith & C. Whitehead, 2002, **Planning Gain and Affordable Housing: Making it Count**, York (Joseph Rowntree Foundation).

---

---

DETR, 2000a, **Local Housing Needs Assessment: a guide to good practice**, London (DETR/ODPM).

DETR, 2000b, **Quality and Choice: A decent home for all**, Housing White Paper.

Ford, J. & S. Wilcox, 1994, **Affordable housing, low incomes and the flexible labour market**, Research Report 22, London (NFHA).

Ford, J., R. Burrows & S. Nettleton, 2001, **Homeownership in a Risk Society: a social analysis of mortgage arrears and possessions**, Bristol (Policy Press).

Gordon, D. & C. Pantazis, 1997, **Breadline Britain in the 1990s**, Aldershot (Ashgate).

Gordon, D. et al., 2000, **Poverty and Social Exclusion Survey of Britain**, York (Joseph Rowntree Foundation).

Green, A., 1994, **The Geography of Poverty and Wealth**, Institute for Employment Research Report. Coventry (University of Warwick).

Hancock, K., 1993, Can Pay? Won't Pay? or Economic Principles of "Affordability", in: **Urban Studies**, 30 (1), pp. 127-45.

Holmans, A., 2000, Estimates of future housing needs and demand, in: S. Monk & C. Whitehead (eds.), **Restructuring Housing Systems: from Social to Affordable Housing**, York (York Publishing Services).

Hulchanski, J.D., 1995, The concept of housing affordability: six contemporary uses of the housing expenditure-to-income ratio, in: **Housing Studies**, 10 (4), pp. 471-91.

Joseph Rowntree Foundation, 2004, **Survey reveals the price parents will pay to put children on the home ownership ladder**, Press Release, 17 June 2004, <http://www.jrf.org.uk/pressroom/releases/170604.asp>.

Linneman, P. & I. Megbolugbe, 1992, Housing Affordability: myth or reality?, in: **Urban Studies**, 29 (3-4), pp. 369-92.

Lydall, H.F., 1968, **The Structure of Earnings**, Oxford (Oxford University Press).

MacLennan, D. & R. Williams (eds.), 1990, **Affordable Housing in Britain and the United States**, York (Joseph Rowntree Foundation).

---

Martin, G., 2001, **Swamps and Alligators: the future for Low Cost Home Ownership**, York (Joseph Rowntree Foundation).

Monk, S. & C. Whitehead, 2000, **Restructuring Housing Systems: from Social to Affordable Housing**, York (York Publishing Services).

ODPM (Office of the Deputy Prime Minister), 2005, **Five Year Housing Plan: 'Homes for All'**, PLP Brief from the Office of the Deputy Prime Minister, 24 January 2005. www.odpm.gov.uk.

ODPM (Office of the Deputy Prime Minister), 2003, Sustainable Communities.

ONS (Office for National Statistics), 2003, **Model-based Estimates of Income for Wards 1998/99**, Technical Report: England and Wales, London (ONS).

Pen, J., 1971, **Income Distribution**, London (Penguin).

Stephens, M., M. Munro & C. Whitehead, 2005, **Evaluation of English Housing Policy Since 1995: Summary Report**, Housing Research Report, London (ODPM).

Straussmann, W.P., 2000, Mobility and affordability in US housing, in: **Urban Studies**, **37 (1)**, pp. 113-26.

Thalman, P., 1999, Identifying households which need housing assistance, in: **Urban Studies**, **36 (11)**, pp. 1933-47.

Whitehead, C., 1991, From Need to Affordability: an analysis of UK housing objectives, in: **Urban Studies**, **28 (6)**, pp. 871-87.

Wilcox, S., 1999, **The Vexed Question of Affordability**, Edinburgh (Scottish Homes).

Wilcox, S., 2003, **Can Work, Can't Buy**, York (Joseph Rowntree Foundation).

Williamson, P., 2002, **Identifying the cash-rich and the cash-poor: lessons from the Census rehearsal**, ESRC Census Development Programme Seminar paper, University of Liverpool.

Yip, N.M. & K.Y. Lau, 2002, Setting rent with reference to tenants affordability: public housing rent policy in Hong Kong, in: **Journal of Housing and the Built Environment**, **17 (4)**, pp. 409-18.

---



---

# 7 Structural changes in the Danish market for owner-occupation

*Jens Lunde*

## 7.1 Changing conditions and changing structures for owner-occupation

No tenure can be expected to rely on a fixed part of the nation's housing stock. Throughout the years the balance between housing tenures may be affected by economic growth and cycles as well as by changes in taxation, subsidisation and other forms of regulation. The 'housing market crisis' from 1987-1993 and the steep rising house and flat prices in subsequent years, combined with fundamental taxation and financial changes may have influenced the demand for owner-occupied dwellings in Denmark and resulted in structural changes for owner-occupation.

Actually, the spectacularly steep rise in house and flat prices in the market economies has partly been a result of the US-led monetary policy with continuing low interest rates. Among families, owner-occupied houses and flats have become a successful and popular form of tenure. The house price rises have also drawn the attention of central banks and international economic organisations, among them European central Bank (ECB), Federal reserve bank (FED), International Monetary Fund (IMF), Bank of International Settlements (BIS) and Organisation for Economic Co-operation and development (OECD). Of course, the question remains as to whether the variability in house and flat prices in a small country like Denmark differs in the long run from the greater variability in prices already experienced in other countries (see Kennedy & Andersen, 1994; ECB, 2003; Terrones, 2004).

In recent decades many countries have liberalised their capital markets and linked exchange rates and interest rates to the international market, or linked their currency to one of the major currencies. On the national scene many countries have adopted tax reforms aimed at broadening the tax base and reducing or even removing the debtors' right to deduct interest expenses from their taxable income. Rent regulation has been removed or reduced in several countries. As has been pointed out, the fall of housing's favoured investment status and especially of home ownership as the most favoured tenure has entered in many countries, (Hendershott & White, 2000). The Danish case fits this description too.

Life cycle analysis is a widely used theory for housing demand and in this context the aging of the populations in Denmark and other Western European countries might have influenced the housing market. The tenures are not represented in the same proportion in the different age groups, and the owner-occupiers' income, housing wealth and debt varies with age. Moreover, changing conditions for owner-occupiers might have influenced tenure choice and the owner-occupiers' house values, debt and debt servicing to

---

varying degrees at different ages.

Structural changes of owner-occupation in the Danish housing market and of the owner-occupier families capital intensity is the theme of this chapter. For this purpose the busts and booms in house prices possible influence on the owner-occupation rates in different age groups as well as on the distribution of owner-occupiers their housing wealth in relation to their income is analysed.

New individual family data for 1987-2002 on owner-occupation rates according to age and the owner-occupiers' housing wealth/income ratios – a variant of capital/income ratios – are presented in the chapter. The statistical content and sources are set up in Section 7.4. First, the stability of the average owner-occupation rates has been split up into the effect of changing ownership rates within the different groups of age and the effect of changing the sizes of the age groups. In the next section, construction and other possible sources of changes in the quantities of owner-occupied dwellings and general economic policy changes are identified.

The changes in Danish house prices seen in Section 7.4 are mirrored in the owner-occupiers' housing wealth/income ratios. Currently, owner-occupiers are enjoying their all-time greatest housing wealth. In the single years the owners are divided according to the size of their housing wealth/income ratio in order to see whether the variance among the owner-occupiers changes over time. In Section 9 the housing wealth/income ratios are divided according to age. Next, the distribution of the ratios among owner-occupiers between 30 and 39 years of age is analysed, and in the following section, the rate of change during the 'housing market failure' from 1987-1993 and in subsequent years is analysed for the different age groups. Finally, the way the Danish owner-occupiers' interest expenditures as part of their incomes have remained stable is described, as well as how this has made the increasing housing wealth/income ratios possible.

## 7.2 Owner-occupation – an economic policy target

Often a high owner-occupation rate is a target for a country's economic and housing policy. As an example, the first two charts in the Miles report present an international comparison of owner-occupation rates for 2000 as well as the last fifty years' strong increase in the home ownership rate in the UK, from 30 to 70% (Miles, 2003). The Danish rate of 52% is among the lowest in Europe, only followed by Germany and Switzerland. Many countries with a relatively low owner-occupation rate have a large social rented sector (Evans *et al.*, 1998; Scanlon & Whitehead, 2004).

Owner-occupation as an economic policy target is mentioned in the IMF's

*World Economic Outlook*: "...housing conditions are often considered a yardstick of economic development and prosperity. Because of this, there is a long tradition of government involvement in the housing markets aimed at improving housing quality and fostering home ownership, for example through subsidized financing and special tax treatment." (Terrones, 2004, p. 72). The target is widely accepted in the Anglo-Saxon countries but not in the Scandinavian countries. In Danish legislation and official reports, no goals for the owner-occupation rate exist.

Instead of official targets, the objective should be to identify the conditions for the single tenures and the effects of the changing conditions through housing policy, taxation and financial regulation. The Danish Economic Council estimated that first year user costs in owner-occupation doubled from end of 1970s to 2000 (DØR, 2001, p. 230). Through a comparison of user costs across the three tenures with some building activity, the influence of different taxation and subsidies was studied and it was shown that owner-occupied dwellings had the highest user costs (Lunde, 2004).

Although a shared ownership of the property instead of an individual in private co-operative dwellings, this form of tenure has some similarities with owner-occupation and has expanded to a current rate of 7%. Private rented dwellings cover 18% and social rented dwellings 19% of the Danish housing market.

### **7.3 Owner-occupation – the aspired form of tenure**

Official political targets and families' aspirations do not always coincide. Most Danes see owner-occupation as the preferred tenure. Even though owner-occupation has the highest user costs among the common tenures and the market for owner-occupied houses and flats remains on an uncomfortable knife edge, where recessions, changes in interest rates and tightened taxation can release a crisis.

The main result of the latest survey of the Danes' preferred tenure was that families wished to retain their tenure. Approximately the same percentage of tenants in rental and in private co-operative dwellings would have preferred to move to an owner-occupied dwelling. The answers to the questions related to preferred tenure in five years' time from the 1,032 households in 1986 and 1,512 in 2001 are seen in Table 7.1.

71% of the Danish families would prefer to be home owners. These preferences are quite similar to the results for the UK of Council of Mortgage Lenders recurrent surveys. In 2001 nearly exactly the same proportion, 72%, chose owner-occupation as their preferred tenure in two years' time (Smith, 2002).

**Table 7.1 Preferred tenure in five years' time, 1986 and 2001, in %**

Preferred tenure in five years time	Dwellings' tenure form in 1986 and 2001							
	Owner-occupied		Rental		Co-operative		Total	
	1986	2001	1986	2001	1986	2001	1986	2001
Owner-occupied	89	88	29	46	10	25	68	71
Rental	1	6	44	43	-	7	12	16
Co-operative	1	2	7	6	61	62	6	8
Other/not known	9	4	20	5	29	6	13	5

Source: SBI &amp; AKF, 2001, p. 74

**Table 7.2 Actual and expected type of dwelling in five years' time for persons who expect to move, 2001, in %**

	Actual type	Preferred type
Flat	51	22
Terrace/semi-detached house	10	7
New single family house, after 1990	1	18
Single family house, from 1960-1990	21	17
Older, traditional house	11	20
Farm, rural house	3	12
Other	3	3
<b>Total</b>	<b>100</b>	<b>100</b>
<b>Number of persons</b>	<b>446</b>	<b>446</b>

Source: SBI &amp; AKF, 2001, p. 78

As only 52% of the stock of dwellings is owner-occupied, this preference structure seems paradoxical. However, it is not entirely clear whether owner-occupation as such is preferred. This is suggested in Table 7.2, where actual and preferred housing types are shown for households who expect to move during the next five years.

Obviously, the movers' desires are based on housing size, type and location. This is especially true of single-family houses, which are nearly exclusively owner-occupied dwellings. It can be seen from the distribution of existing

houses and flats that not all aspirations can be fulfilled. Moreover, the strong increases in house prices since 1993 must have been remarked by the respondents in a normal dual context: as a success indicator for the owners and as a barrier for the buyers.

## 7.4 Owner-occupation data and the statistical sources

In the following sections a new set of data is presented, including the number of owner-occupier families and owner-occupier rates according to age, as well as the owner-occupiers' housing wealth /income ratios, divided according to age and the size of the ratio.

The owner-occupier family's housing wealth includes the total value of properties owned solely for the purpose of meeting the family's own housing

needs. A family's housing wealth can be placed in single family houses, owner-occupied flats, the owner's own flat in a residential multi-storey building, farmhouses and summer cottages and may comprise more than one dwelling, for example, both a house and a summer cottage. The definition of an owner-occupied dwelling relies on the owner's taxation of imputed rent, and, after 2000, on paying property value tax.

Housing wealth figures must necessarily rely on assessed values and most obviously on the publicly assessed property values as of January 1 as estimated by the tax authorities. The publicly assessed property values are used as proxies for the market values of the properties, even though the market values are systematically underestimated, on average by around 10%, which is more or less equal to the transaction costs of selling the house or flat. Also, there is significant variance between assessed prices and market prices. (Lunde, 2005).

The incomes on which the ratios are based are gross incomes and are defined in accordance with the Danish tax rules as the sum of 'personal income' and 'positive net capital income'.

The tax statistics data on Danish owner-occupier families rely on the tax authorities' assessments of these families.<sup>1</sup> The data contain a random sample of approximately 45,000 owner-occupier families within each of the specific years. The results are multiplied by a factor of around 30, which varies a little from year to year. The numbers ensure that the reliability of the results is high.

In 1987-1996, the first part of the period studied, Danes were liable to wealth tax. The taxation registrations were used to form the wealth statistics. The wealth tax was abolished after 1996, and pure wealth statistics are no longer produced. Still, the tax authorities assess the property values as necessary to charge land tax and property value tax. The housing wealth statistics, used since 1997, are based on directly reported publicly assessed property values.

Until 1996, the equity in privately owned firms was included in the family's wealth. Starting in 1997, all privately owned commercial assets and liabilities were included in the self-employed families' wealth, i.e. the statistics were changed from a net to a gross concept. To avoid the influence of the values of commercial properties, the housing wealth/income ratios below are only presented for owner-occupiers, excluding self-employed families.

---

<sup>1</sup> The data in the paper have been made available for this study by 'Lovmodelsekretariatet' of the Danish Ministry of Finance, formerly in the Ministry of Economics. I am very grateful for these data as well as for the important personal support, willingness and enthusiasm I have met with from Martin Ulrik Jensen, who has provided me with the basic statistics. I have also received invaluable support from the head of the secretariat, Peter Bach Mortensen, who contributed with the basic statistics to earlier versions of the paper together with Sune Enevoldsen Pedersen. The views expressed here are those of the author.

---

## 7.5 Owner-occupation – the changing numbers and rates

Overall, most European countries have experienced a continued growth of owner-occupation in the last decade except in Finland and Denmark (Scanlon and Whitehead, 2004). In Denmark, the owner-occupation tenure's share of the stock has remained nearly unchanged since 1980.

Irrespective of the popularity of home ownership, in reality, the number of owner-occupier families has been on a slow, creeping retreat for a number of years. The aging population has meant that a still smaller share of younger families have an owner-occupied house or flat. Inevitably, such a structural change in the housing market must take place over many years because of the long economic life of properties.

As shown in Table 7.3 the total number of owner-occupiers (including the self-employed) has increased by 84,500 families from 1987 to 2002. The owner-occupier families' share of the housing market has dropped from 52.8% in 1987 to 52.2% in 2002, as seen in Table 7.4, but the changes have not been stable. The changes in the number of owner-occupiers in the different age groups have differed greatly. The number of the youngest owners below 30 years of age has dropped through all years and their owner-occupation rate has been nearly halved. The number of owners between 30 and 39 and between 40 and 49 years of age has been declining but has increased again since 1994 for the former group. In contrast, in the age groups above 50 years, 56% more families between 50 and 59 years of age, 17% more families between 60 and 69 years of age and 9% more families above 70 years of age are registered as owner-occupiers. The age groups are defined by the age of the oldest member.

Of course, changes in the number of owner-occupier families in an age group can be attributed to changes in the size of the age group as well as to changes in the ownership rate for the age group. The owner-occupation rates for the age groups are presented in Table 7.4. The line of separation is around 50 years. The owner-occupation rate has dropped in the younger and increased in the older age groups. This drop has been especially marked in the youngest families below 30 years of age, whose rate has been reduced from 27 to 18%, but also among 'younger' families in their thirties and forties the rate has been reduced by 7-8 percentage points. This is in stark contrast to the older age groups and especially to families in their sixties. The noteworthy increase in the number of owner-occupiers between 50 and 59 years of age can nearly be explained by the fact that more families – the 'post-war baby boom' – have reached this age, as their ownership rate has only increased slightly.

Mostly, the changes in the incidence of owner-occupation occurred during the 'housing market failure' in 1987-1993 and nearly stopped in the following years (except among families 60-69 years of age). In contrast, the normalisa-

**Table 7.3** Number of owner-occupier families in the different age groups, 1987-2002, per 1,000 owners

Year	Age, years						total
	<30	30-39	40-49	50-59	60-69	>70	
1987	130.0	263.5	310.1	211.3	197.0	198.6	1310.4
1994	97.9	240.3	303.1	267.3	200.1	223.6	1332.3
2002	73.6	250.7	292.9	330.5	230.5	217.4	1394.9

**Table 7.4** Owner-occupation rate for families in different age groups, 1987-2002, in %

Year	Age, years:						average
	<30	30-39	40-49	50-59	60-69	>70	
1987	27.2	58.6	69.1	66.6	59.3	43.5	52.8
1988	26.1	58.0	69.9	68.1	60.3	44.6	53.1
1989	25.4	57.0	69.2	68.5	60.8	43.9	52.7
1990	23.2	54.8	68.3	68.8	60.5	43.6	51.5
1991	21.6	54.2	66.2	67.7	60.5	43.2	50.8
1992	21.9	54.2	66.3	67.9	62.0	46.7	52.0
1993	21.3	52.5	65.8	68.0	62.6	46.0	51.6
1994	20.8	52.0	63.7	68.5	63.3	45.6	51.1
1995	19.7	51.9	63.5	68.3	62.8	45.8	51.1
1996	19.1	52.0	63.7	68.9	62.9	46.7	51.5
1997	19.6	50.7	64.1	69.6	64.4	46.4	51.8
1998	19.6	52.3	63.5	69.6	65.1	46.2	52.2
1999	20.0	51.0	63.8	69.7	65.5	46.5	52.3
2000	18.9	51.1	63.7	68.8	64.6	46.1	52.0
2001	17.6	51.1	62.5	69.2	66.2	47.1	52.1
2002	17.7	50.8	62.5	68.5	66.6	46.7	52.2

tion of the owner-occupation market parallel to the steep house price rise has not at all resulted in a reversal of the former drops in the owner-occupation rates. To conclude, relatively fewer families move into owner-occupation and do so later, if they choose the tenure. Similar statistics on the family level do not exist for years before 1987. However, the ordinary housing statistics show that the owner-occupied dwellings' share of the housing stock increased through the 1960s and 1970s, but has been stagnating since 1980.

The continued increase in the owner-occupation rate after 1993 for families whose oldest member is in their sixties, indicates the generational effect of families moving up through the life cycle and into this age group families have to a greater extent become owner-occupiers earlier. The origin dates back to the end of the 1960s and the beginning of the 1970s, when a large share of families chose owner-occupied houses when they entered the housing market. At that time, the tenure was economically preferable as the VAT

**Table 7.5 Average rate of owner-occupation, 1987-2002, in % (standard calculation with the age groups' 1987 share of total families as weights)**

Year	1987	1988	1990	1992	1994	1996	1998	2000	2002
Average rate	52.8	53.1	51.6	51.6	50.6	50.4	50.8	50.3	50.2

on newly built properties was refunded, since the nominal interest rates in spite of the inflation were low, and since the deduction of the interest expenses of taxable income at high tax rates had created favourable conditions for building and buying in the owner-occupation market.

To separate the influence of the changes in the different age groups' owner-occupation rates from the changes in the size of the age groups, standardisation calculations of the average owner-occupation rate have been carried out. First, the average owner-occupation rate was calculated using each age group's owner-occupation rate for 1987 as weights. This shows that the changes in the size of the single age groups – the aging of the population – would have resulted in an average owner-occupation rate of 54.5% in 2002, i.e. 2.3 percentage points greater than the actual rate.

Second, each age group's share of the total number of families in 1987 has been used as weights, i.e. disregarding the influence of the aging of the population. The resulting average owner-occupation rates for each year are shown in Table 5. Given the actual changes in each age group's owner-occupation rate from 1987 to 2002, the average owner-occupation rate would have dropped to 50.2% in 2002.

This led to the gradual drop in the owner-occupation rate from 1987 to the end of the 'housing market crisis' in 1993-1995, which indicates that the crisis may to some extent explain the drop. Among several other possible causes, the steep rise in house prices could be part of the explanation of why the ownership rate has not reversed to the original values in the various age groups.

## **7.6 Owner-occupation – changes in quantities through structural policy and economic policy**

The housing stock and the distribution of the different tenures can be changed through building, demolition, break-up and uniting of dwellings. Since the beginning of the 1980s the annual number of newly built houses and flats has remained between 0.5 and 1% of the housing stock. As social housing and private co-operative housing have also been built, this channel has had no great influence on the owner-occupation rate. Private building activity, of which private co-operative housing covers an unknown but notable part, has been rising since 2002. Demolitions and break-ups cannot have had a strong influence on the ownership rate, even though some older, demolished houses – for example, in the countryside – were owner-occupied.

Physically, no dwelling can be restricted to belonging to one specific tenure.



However, a traditional feature as well as consequence of the Danish housing regulation has been the fact that dwellings have to a large extent been immovable among tenures. Private rental dwellings in multi-storey buildings cannot be transformed into owner-occupied dwelling unless they are built after 1966, when owner-occupied flats were introduced. Private co-operative housing properties are not allowed to be parcelled out and sold as owner-occupied flats. The government's 2002 proposal to allow social housing properties to be parcelled out and sold as owner-occupied dwellings had not been realised. Owner-occupied houses and flats can be rented out, but this does not commonly occur. In this case, they are not counted as owner-occupied dwellings.

In conclusion, neither new construction nor the potential for moving dwellings among tenures has changed the quantity of owner-occupied dwellings or the owner-occupation rate to any noticeable extent.

Ordinary life cycle changes occur in the housing market. In Denmark, as is surely the case in many other countries, a family sooner or later chooses to move to a permanent home, which is often an owner-occupied house. The family then lives here for decades<sup>2</sup> unless they are forced to move because of job changes, divorce, loss of income or other serious reasons. Mostly, as many families live in houses they bought many years ago, changing conditions on the market for owner-occupation will not affect the housing choice for these families.

In contrast, young families tend to be more sensitive to the conditions of the housing market when choosing between the tenures. The general economic conditions and specific housing and taxation measures influence and regulate their choice of dwelling and form of tenure. Often a family begins their ownership career in a small, cheap apartment and later changes to a house as their permanent home. However, the buyer and seller of an owner-occupied dwelling incur total transaction costs of about 10% of the sale price (Erhvervsministeriet, 1997), which is why a family only infrequently will choose or indeed be able to choose to move to another owner-occupied house or flat.

Policy measures with a potential influence on owner-occupation are: monetary policy, financial liberalisation, tax policy, housing policy and general economic policy. Some important features and changes are presented in Box 7.1. The information comprises qualitative factors that can explain some of the

---

<sup>2</sup> Some dated statistical information exists on households' living period in their home. In 1985, households between 40 and 49 years of age had stayed in the same dwelling for 10 years and households between 60 and 64 years of age had stayed for 19 years. Also in 1985, the average living period for households in owner-occupied houses was 15 years and in owner-occupied flats, 4 years. The results for the whole period 1974 to 1985 reveal that the living periods are highly stable. (Christensen *et. al.*, 1987).

---

**Box 7.1 Economic policy measures that may influence owner-occupation****Monetary policy regime**

- from the 1970s to 1982 high interest rates, high inflation, front-end loading problems, negative real interest rates after tax at borrowing; successive depreciations of the exchange rate;
- from 1982 a consistent fixed exchange rate policy, designed to keep the Danish krone stable vis-à-vis the euro, formerly DM;
- inflation as well as nominal interest rates dropped significantly after 1982, followed by a considerable increase in real interest rates;
- the spreads between Danish and DM interest rates, since euro interest rates have continued to narrow, even after the Danish referendum in 2000, which resulted in the decision not to join the euro;
- since 1993 interest rates have been 'low' and periodically continue to fall;
- The "objective of monetary and foreign-exchange policy is to keep the krone stable against the euro. Other aspects than the exchange rate – e.g. cyclical developments in Denmark – are not considered in relation to monetary policy." (Danmarks Nationalbank, 2003).

**Financial liberalisation**

- 1980s liberalisation of the Danish capital market and of private households' access to raising loans in other countries;
- 1980s stop-go policy for restrictions on mortgages of owner-occupied dwellings was succeeded in 1992-1993 by deregulation of the most important restrictions on mortgages for owner-occupiers;
- the interest rate drops since 1993 have led to huge prepayments of fixed interest rate mortgages; the liberalisation has given incitements to financial engineering and thereby to further prepayment and refinancing activity.

**Tax policy**

- originally from the 1970s: nominal interest payments on personal loans could be deducted at tax rates between 50 and 73%, (an important cause to restrictions on owner-occupiers' mortgages);
- as a result of three tax reforms that took effect in 1987, 1994 and 1999, the tax rates for the deduction of interest expenses were reduced;
- moreover, the tax rates for imputed rent of owner-occupied dwellings were lowered in 1987 and 1994. Furthermore, in 1994 the imputed rent rate was lowered from 2.5% to 2% of the property value (main rule);
- starting in 1999, the imputed rent was transformed to a property tax, which was only a little higher for a new owner buying later on;
- from 2002 a so-called tax stop maximised the nominal property tax payment.

**The specific regulation of the owner-occupation market**

- new and tighter conditions for professional sale of owner-occupied dwellings to create a level playing field as a consumer protection.

developments in owner-occupation. The changes in the owner-occupation market can by themselves create some spill-over effects to the market itself. It also seems obvious that the 'housing market failure' from 1987-1993 as well as the steep price rise of houses and flats might have contributed to dampening the demand for owner-occupation.

However, a fact that was demonstrated for Denmark above, and as a widespread international phenomenon is that “younger households tend to be entering owner-occupation later. This is in part a reflection of the general trend towards higher house prices and access problems which is a matter of concern in many countries. Increasingly though, changing lifestyles are also playing a role.” (Scanlon & Whitehead 2004, p 38).

It seems difficult to ignore the fundamental shifts in younger persons’ and families’ attitudes and behaviour, which may make it less common to live in an owner-occupied dwelling at all, and which especially may lead to the purchase of owner-occupied dwellings later in life. However, it is difficult to believe that such conditions could have influenced the owner-occupation rates in Denmark in 1987-1993 but not later on. Moreover in Denmark as shown below, the younger households’ rates have not been much reduced through the years with increasing house prices.

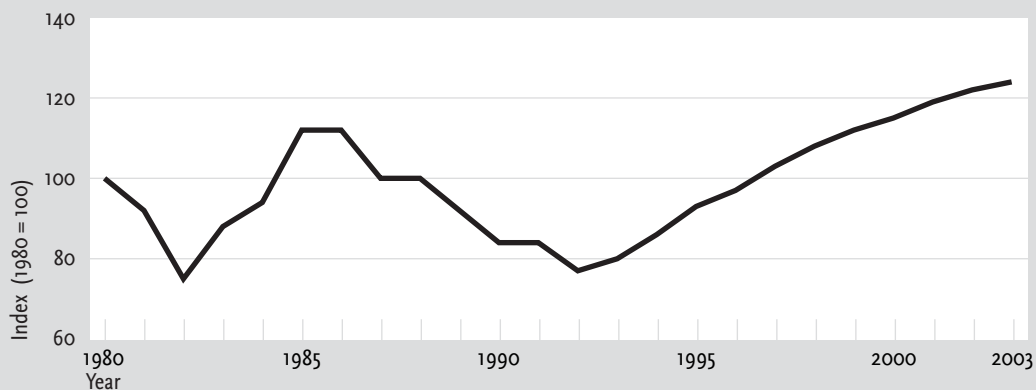
## 7.7 Owner-occupation – ups and downs in house prices

A standard assumption is that changes in economic, institutional and economic policy conditions for owner-occupation will be capitalised in prices for houses and flats, whether the changes are internationally, nationally or locally determined. Similarly, the current ‘high’ house prices are argued to have been determined by economic fundamentals. This assumption can only be applied in the short run and when prices are so low that building new units is unprofitable, as was the case for owner-occupied houses in Denmark between 1980 and 2003.

From 1980 on the real house prices followed two waves with a drop of around one third from top to bottom and then a return to the former level as shown in Figure 7.1. The first wave began in 1979, after the second oil crisis and did not result in large drops in nominal prices. After again having reached a maximum in 1986, real house prices dropped 33% and nominal house prices 20% until 1993. Both crises were accompanied by high numbers of foreclosures, annually corresponding to around one sixth of the turnovers of properties.

In 1993, house prices turned around and began a steep rise during the next years and have been increasing ever since. In the first half of 2004 house prices were 122% higher than in the first half of 1993. The general inflation, measured by the consumer price index, was 26% in the same period, why the real house price rise for the 11 years was 76%. For owner-occupied flats, the real price rise was 128% for the 11 years.

High volatility as well as booms and busts are obviously found in the Danish real house prices, but they are not exceptional viewed in an international

Figure 7.1 Development in real prices for owner-occupied, one-family houses, 1980–2003<sup>1)</sup>

1) The tax authority's price index for sold houses has been used and is based on the increase in the ratio: sale price/publicly assessed property value. The consumer price index has been used to deflate the prices.

Source: Told og Skat (Customs and Tax), here after Pedersen, 2004

Table 7.6 House price index, according to urbanisation 1987-2004, 1993, 1st half year = 100

	1987, 1st half year	1993, 1st half year	2002, 1st half year	2004, 1st half year
1. Copenhagen and Frederiksberg	116	100	261	308
2. Copenhagen county	121	100	237	273
3. Frederiksborg and Roskilde counties	118	100	239	276
4. Other municipalities, above 20.000 inhabitants in largest town	108	100	184	208
5. Other municipalities, 5,000-20,000 inhabitants in largest town	111	100	179	205
6. Other municipalities, below 5,000 inhabitants in largest town	116	100	178	204
<b>Country total</b>	<b>114</b>	<b>100</b>	<b>202</b>	<b>222</b>

Source: Told og Skat, Customs and Tax, 2004

context. Similar or even stronger house price cycles are found in many OECD countries, (Kennedy & Andersen, 1994; ECB, 2003). The superficial impression one also gets from the price indices in Figure 7.1 is one of a strong autocorrelation, as has previously been documented for the first half of the period for Denmark as well as for the other OECD countries by Englund and Ioannides (1997).

Even in a small country like Denmark the booms and busts in house prices have not followed the same paths throughout the country. The differences in house prices increases according to the degree of urbanisation are shown in Table 7.6. The first half of 1993 has been chosen as the base index in order to illustrate the bust period 1987-1993 and the boom period from 1993 on. The capital region has experienced the steepest rise in house prices since 1993

but also experienced a slightly larger drop from 1987 to 1993 than the rest of the country. There was a weak tendency for the areas that experienced the steepest decline in house prices during the housing market failure had the steepest price rise after.

Structurally, prices for houses and flats in Denmark follow well-known paths as prices are highest in the capital region and decrease with declining degrees of urbanisation. In 2004 fourth quarter house prices varied from 18,710 DKK per m<sup>2</sup> for Copenhagen and Frederiksberg to 6,227 DKK per m<sup>2</sup> in municipalities with less than 5.000 inhabitants in the largest town, i.e. the average prices were three times as high in the most expensive area compared with the least expensive area (Realkreditrådet, 2005).

## 7.8 Owner-occupier families' housing wealth/income ratios

The changes in house, flat and cottage prices have a direct influence on the owner-occupiers' housing wealth. As the number of owner-occupiers has increased only slightly from 1987 to 2002 (see Table 7.3) and as the quantity of owner-occupied dwellings has been moderately changed (see Section 7.6), the expectation must be that the changes in the owner-occupiers' housing wealth and in the house prices (as seen above) are quite uniform, both in the aggregate and in the local area.

An owner-occupier family's housing wealth includes the value of all properties owned by the owner-occupier and used for the family's own housing consumption. The housing wealth is measured using the publicly assessed property value as a proxy for the market value.

Below the owner-occupier family's housing wealth is combined with the family's gross income in housing wealth/income ratios. The single ratio is equal to the publicly assessed property value on January 1 for the year as a per cent of the family's gross income for the year. Using these ratios the family's housing wealth is deflated (in real income), expressing the family's total gross wealth and the family's capacity to service raised mortgages and other debt.

Some interpretations of the housing wealth are obvious:

- as a part of the family's total (gross) wealth;
  - as a net present value of the family's (and subsequent owners') future housing services, i.e. when the house price and wealth increases, the owner's value of future housing consumption increases too (see Miles, 1994; Lunde, 1998);
  - as a value measure of the security for mortgages and other debt.
- and the housing wealth/income ratio can further be seen:
- as an income leverage measure, i.e. as a measure of risk at changing property prices;

- as an economic policy success indicator, i.e. an increasing ratio represents wealthier owners;
- as a measure of debt servicing capacity;
- as a measure of risk, in case of the owner has a corresponding high debt/income ratio.

Also, the housing wealth/income ratios for the younger age groups, who must have bought the property a few years before the calculation year, can be seen as a proxy for the individual affordability ratios on entering owner-occupation. Such a measure makes it possible for potential buyers to determine the price the family can afford to pay without having to resort to guessing or to using a rule of thumb to determine the price the family can afford to pay.

In Table 7.7, the housing wealth/income ratios for all owner-occupiers, excluding the self-employed, are presented for 1987-2002. For each year the owner-occupiers are divided into deciles according to the size of their housing wealth/income ratio. The decile values mentioned cover the upper limit for the deciles. For example, for 2002, the value 299 in the 6<sup>th</sup> decile expresses that 60% of all owner-occupiers had a ratio of 299 or below, while the housing wealth of 40% was at a value above 299% of the family's gross income. It should be noted that the median value for 2002 expresses that the owner-occupiers own a house or flat with a value of 2,5 times their gross income. The median value can be assumed to be close to the average value. The maximum values, i.e. the upper limit values in the 10<sup>th</sup> decile, can be incredibly high as some owners may have no income (if someone else pay their bills). These maximum values are not mentioned.

As expected, the changes in real prices for the owner-occupied houses and flats sold are mirrored through the years in the housing wealth/income ratios for all owner-occupiers in Table 7.7. The median value for the housing wealth/income ratios dropped from 212 in 1987 to 160 in 1991 and beginning from a value of 165 in 1994, rose steeply to 258 in 2002. The development over the years, which is further analysed in Section 7.11, seems to be quite similar in all deciles. The 'housing market failure' and the last ten years' price rises are clearly recognisable in the table. However, these ratios for all owner-occupiers are influenced by the changes already shown in the size of the age groups and by the age differences in the ratios (see next section).

As shown in Figure 7.1, real house prices reached a maximum in 1986 and the housing wealth/income ratios must also have been at a maximum. The values for 1987 in Table 7.7 contain the publicly assessed property values of January 1, 1987. As real house prices decreased 11% from the first half of 1986 until January 1, 1987, the median value of the housing wealth/income ratio for 1986 would have been around 238.

In 2002 the housing wealth/income ratios had approached an all-time high.

**Table 7.7 All owner-occupiers (excluding the self-employed) divided into deciles by size of housing wealth as a per cent of gross income, 1987-2002<sup>1)</sup>**

Year	1st decile	2nd decile	3rd decile	4th decile	5th decile	6th decile	7th decile	8th decile	9th decile	10th decile
1987	108	140	163	187	212	245	291	375	565	> 565
1988	98	125	145	165	187	216	259	337	499	> 499
1989	100	128	148	168	191	219	261	333	487	> 487
1990	95	119	138	156	176	202	242	308	444	> 444
1991	86	108	124	141	160	184	221	282	413	> 413
1992	89	111	129	147	166	193	231	298	436	> 436
1993	88	110	128	146	166	191	227	288	418	> 418
1994	87	110	128	146	165	190	224	278	373	> 373
1995	89	113	132	150	170	195	228	280	380	> 380
1996	98	126	147	168	191	218	257	316	426	> 426
1997	103	132	156	178	203	233	275	341	468	> 468
1998	107	139	164	188	214	245	289	360	496	> 496
1999	117	151	178	203	230	264	309	385	531	> 531
2000	127	161	189	216	245	282	333	416	579	> 579
2001	128	164	194	222	252	291	343	428	589	> 589
2002	130	168	197	226	258	299	354	443	622	> 622

1) The housing wealth to income ratio is calculated as the value of all properties owned by the owner-occupier family (and used by the owner) as a per cent of the family's gross income (before tax).

In subsequent years, from the first quarter of 2002 to the fourth quarter of 2004, Danish house prices increased by 23% and owner-occupied flats by 28% (Realkreditrådet, 2005). This increase is far above the consumer price rises and any income increase. Therefore, the 2002 all-time high must have been outmatched by the beginning of 2005.

Within the individual years a remarkable internal disparity is found among the owner-occupiers' housing wealth/income ratios. For example, the value in the 8<sup>th</sup> decile is 2.64 times higher than the value in the 2<sup>nd</sup> decile, as seen in Table 7.7. Obviously, a major part of the differences in the single year's decile values must be explained by age determined differences (see next section). However, the differences in the house price rises by region and degree of urbanisation as well as the aging of the population could foster the expectation that the owner-occupiers' distribution according to their housing wealth/income ratio was widened starting from 1993. A careful inspection of Table 7.7 does not in itself confirm this expectation. A comparison for all years shows, for example, that the value in the 8<sup>th</sup> decile is 2.5-2.7 times higher than the value in the 2<sup>nd</sup> decile, without any systematic variation through the years.

## 7.9 Owner-occupier's housing wealth/income ratios, by age

A strong variation has been found in the owner-occupiers' capital structure, measured as the net liability/housing wealth ratio, when it is studied by age group, while nearly no variation is seen in these ratios within the single age groups according to income (see Lunde, 2005). Therefore, a substantial increase in the owner-occupiers' housing wealth/income ratios with increasing age was expected, but the expectation was not fulfilled, as shown in Table 7.8 for 1987 and Table 7.9 for 2002. A rather similar age structure in the ratios exists for the years between.

Typically, younger families buy their first owner-occupied dwelling without any substantial savings and with a small or even no down payment. The buying is financed through a mortgage at 80% of the house value in a mortgage bank and more or less the rest is borrowed in a commercial bank. Therefore, the income and value of the property will be closely connected for the younger families, as they must be able to pay the debt services out of their income, and as the lenders are expected to analyse the potential debtors' ability to pay the debt services before lending.

Later in the life cycle many owner-occupier families have reduced debt. Often inflation - even minor inflation - will have lightened their real debt service burden. An opposite effect is caused over time through the falling interest payments in the annuity loans' debt service, which is why the nominal debt services after tax are increasing.

The older owner-occupiers - in the age range of around 65 years of age and above - usually receive pension incomes. As pension can differ somewhat depending on previous income and in combination with only a low debt or none, the older owner-occupiers can own an expensive house compared with their income, i.e. have a high housing wealth/income ratio.

Tables 7.8 and 7.9 show that the housing wealth/income ratios do not vary to any substantial degree among the age groups of owner-occupiers below 50 years of age. In 2002 the distribution by housing wealth/income ratio within the age groups was almost identical for owner-occupiers in the three youngest age groups. Only in the age above 50 years do the ratios begin to increase incrementally with age. In 1987 the ratios were higher in the group of owners between 40-49 years of age, but by 1994 this difference had disappeared. For 1987-2002 the levels of the housing wealth/income ratios fluctuate from year to year, while the variation according to age within the single year remains more or less the same (see Section 7.11).

For owner-occupiers above 70 years of age, the housing wealth/income ratio's median value in 2002 was twice as high as in the youngest age group. In 1987 this factor was about 2.75. Only these oldest owners had lower decile values in 2002 than in 1987, as analysed below (in Section 7.11).



**Table 7.8 All owner-occupiers (excluding the self-employed) divided into deciles by the size of housing wealth as a per cent of gross income, by age, 1987**

Age - years	1st decile	2nd decile	3rd decile	4th decile	5th decile	6th decile	7th decile	8th decile	9th decile	10th decile
< 30	98	123	143	160	176	194	215	245	297	> 297
30-39	105	130	147	162	179	195	215	245	294	> 294
40-49	103	130	151	170	187	206	230	263	325	> 325
50-59	99	137	162	185	208	234	265	312	403	> 403
60-69	121	175	214	255	298	346	407	505	702	> 702
> 70	204	292	357	422	487	566	657	784	990	> 990
<b>All</b>	<b>108</b>	<b>140</b>	<b>163</b>	<b>187</b>	<b>212</b>	<b>245</b>	<b>291</b>	<b>375</b>	<b>565</b>	<b>&gt; 565</b>

**Table 7.9 All owner-occupiers (excluding the self-employed) divided into deciles by the size of housing wealth as a per cent of gross income, by age, 2002**

Age - years	1st decile	2nd decile	3rd decile	4th decile	5th decile	6th decile	7th decile	8th decile	9th decile	10th decile
< 30	110	140	164	189	215	242	272	314	402	> 402
30-39	122	153	176	196	218	241	269	308	379	> 379
40-49	118	150	175	197	218	243	271	313	397	> 397
50-59	124	160	187	213	241	274	316	378	508	> 508
60-69	158	205	250	289	335	389	451	547	727	> 727
> 70	207	275	333	390	451	520	609	726	947	> 947
<b>All</b>	<b>130</b>	<b>168</b>	<b>197</b>	<b>226</b>	<b>258</b>	<b>299</b>	<b>354</b>	<b>443</b>	<b>622</b>	<b>&gt; 622</b>

Moreover, Table 7.9 shows that in 2002 the housing wealth/income ratio for owners above 70 years of age was 2.64 times higher in the 8<sup>th</sup> decile than in the 2<sup>nd</sup> decile, while for owners between 30 and 39 years of age the ratio is 2.01 times higher in the 8<sup>th</sup> than in the 2<sup>nd</sup> decile, i.e. the distribution of owners according to the housing wealth/income ratio widens somewhat with age. In general, the variation within each age group is lower than the variation among all owner-occupiers. Another tendency shown in the table is that from 1987 to 2002 the internal variation in the age groups of owner-occupiers below 60 years of age – measured by comparing the 8<sup>th</sup> and 2<sup>nd</sup> deciles – widened, indicating the influence of the differences in house price increases by region and degree of urbanisation and the differences between houses and flats (and summer cottages).

A more complex explanation for the stability as well as the changes in the housing wealth/income ratios may be found in the differences in the generations' housing market careers. Capital gains and losses on the property value as well as debtor gains and losses on the debt value of the fixed interest rate

**Table 7.10 Owner-occupiers (excluding the self-employed) between 30-39 years of age, divided into deciles by size of housing wealth as a per cent of gross income, 1987-2002**

Year	1st decile	2nd decile	3rd decile	4th decile	5th decile	6th decile	7th decile	8th decile	9th decile	10th decile
1987	105	130	147	162	179	195	215	245	294	> 294
1988	93	115	131	144	157	171	188	211	252	> 252
1989	95	117	134	148	161	176	192	215	261	> 261
1990	90	109	122	134	146	159	175	198	242	> 242
1991	79	97	110	120	131	143	156	176	210	> 210
1992	83	100	114	126	138	151	166	188	225	> 225
1993	82	100	114	126	138	150	166	186	228	> 228
1994	81	100	114	128	139	152	167	187	223	> 223
1995	83	103	118	132	146	160	176	198	235	> 235
1996	90	115	134	149	164	181	199	222	267	> 267
1997	98	121	140	157	173	190	212	238	286	> 286
1998	101	127	149	167	185	204	226	253	305	> 305
1999	112	140	162	180	197	216	237	269	325	> 325
2000	119	150	171	190	209	229	252	283	343	> 343
2001	121	150	173	192	212	234	259	293	354	> 354
2002	122	153	176	196	218	241	269	308	379	> 379

loans have had an influence on the owner-occupiers' wealth and ability to 'trade up' and 'trade down' on the market.

## 7.10 Housing wealth/income ratios for young owner-occupier families

The owner-occupiers between 30 and 39 years of age have been divided into deciles according to the size of their housing wealth/income ratios for each of the years 1987-2002 in Table 7.10. The strong similarity between the housing wealth/income ratios for owner-occupiers below 30 years of age and between 30 and 39 years of age was shown in the last section. From 1993 on, the distribution of the ratios in Table 7.10 are nearly the same for owner-occupiers between 40 and 49 years of age.

A large share of the owner-occupiers between 30 and 39 years of age bought their house or flat only a few years prior to the year to which the ratio is related. In only very few cases was the house or flat the owner's second owner-occupied dwelling. Therefore the distribution of the owner-occupiers between 30-39 years of age can be seen as a sort of proxy for the affordability ratios first-time buyers are facing and de facto buying according to.

In 2002 the median value of the housing wealth/income ratio was 218, i.e. new owner-occupiers on average bought their house or a flat at a price a little above 2 times the family's gross income or about 2.5 times their income if the effect of the publicly assessed property value's underestimation of market values is removed.

The ratio for the 8<sup>th</sup> decile in 2002 was 308 or 2.01 times as high as for the 2<sup>nd</sup> decile, which expresses the variation in the income leverage owner-occupiers want to use for housing, and that creditors accept. Even though most young owner-occupiers begin with a loan-to-value of nearly 100% of the house or flat value, the picture is blurred, because some of them have some equity and some have owned the property for a couple of years, and have thus accumulated capital gains (and increases in equity). Moreover, it should be remembered that the ratios are based on the publicly assessed property values, which can only be seen as a proxy for the market values.

In 1991, the value for the 8<sup>th</sup> decile was only 1.81 times higher than for the 2<sup>nd</sup> decile. Since the distribution of young owner-occupiers by size of the housing wealth/income ratio has widened a little, indicating the influence of the strong regional and local variation in the house price rises.

The housing wealth/income ratio contains an answer to the commonly held view among the public that housing is too expensive. In 2002, 90% of all owner-occupiers between 30 and 39 years of age had bought a house or flat a few years earlier at a value below four times the buying family's annual gross income. The ratios for 2002 seem to represent an all-time high ratios.<sup>3</sup> However, as mentioned above, real house prices were 11% higher in the first half of 1986 than in the first half of 1987. When the median value for the housing wealth/income ratio in 1987 of 179 is carried back to the first half of 1986, the estimated ratio is 201 and still lower than in 2002, even though the difference is not great. The 23% rise in house prices between the second quarter in 2002 and the fourth quarter in 2004 must have increased the housing wealth/income ratio for owner-occupiers between 30 and 39 years of age to a new all-time high ratio of around 250-260 at the beginning of 2005.

When considering the magnitude of the changes in the housing wealth/income ratios between 1987 and 2002 it is important to remember that prices for houses and flats and thereby the owner-occupiers' housing wealth/income ratios are not always on the rise. In the five years leading up to 1991 the median value for the ratio dropped by 35% to 131, so that owners could have used their gross income for 1 year and 4 months to buy their house in cash – if they could get the cash. 1991 was a rather hard year for owner-occupiers and lenders and there were many foreclosures. Also in 1991, 90% of the owner-occupiers between 30 and 39 years of age – for the most part, first-time buyers few years ago – had a lower housing wealth/income ratio than the median value for 2002.

---

<sup>3</sup> When the Economic Council published its report on the housing market in 1970, they utilised 'a rule of thumb' in the market and calculated so-called housing expenditures for house prices at 2, 3 and 4 times the family gross income, (DØR, 1970, p. 65). The calculation indicates the risk involved in announcing the new record levels of actual housing wealth/income ratios.

---

**Table 7.11 Increase in the housing wealth/income ratio for owner-occupiers (excluding the self-employed) by age, 1987 to 2002, in %**

Age - years	1st decile	2nd decile	3rd decile	4th decile	5th decile	6th decile	7th decile	8th decile	9th decile
< 30	12	14	15	18	22	25	27	28	35
30-39	14	18	20	21	22	24	25	26	29
40-49	15	15	16	16	17	18	18	19	22
50-59	25	17	15	15	16	17	19	21	26
60-69	31	17	13	13	12	12	11	8	4
> 70	1	-6	-7	-8	-7	-8	-7	-7	-6
<b>All</b>	<b>20</b>	<b>20</b>	<b>21</b>	<b>21</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>18</b>	<b>10</b>

## 7.11 Rates of change in housing wealth/income ratios during a bust and boom period

A housing market failure may be identified when potential owner-occupiers act cautiously, the supply of houses and flats has increased, and – as a consequence – the prices of houses and flats are falling. In such situations, lenders will require that potential buyers (debtors) have more substantial savings for down payments than previously, they will tighten the valuation before lending, and they will demand that the existing house or flat has been sold before a new one is bought. In addition to these tighter credit conditions, risk premiums on the loan interest rate are typically increased.

During a housing market failure it might be expected that first time buyers would only be able to buy smaller and cheaper dwellings as opposed to the owners who had bought earlier. However, prices are lowered under these circumstances for new buyers as well as for existing owners. In contrast, during years with booming house and flat markets and, in reality, lightened credit conditions, new owner-occupiers should be able to afford more expensive dwellings. Again, prices reflect the changing circumstances, as the prices of both the properties sold and the properties already owned increase.

Therefore, it cannot be determined a priori during boom and bust periods whether the demand for owner-occupied dwellings can be expected to be cleared at the same prices for families who are entering the market as at the property values for the already established owners. The changes in the housing wealth/income ratios cannot a priori be expected to be the same in the different age groups.

The question can be analysed on the background of the housing wealth/income ratios for the single age groups for each of the years 1987-2002. A simple comparison can be made by calculating the percentage changes in the decile values for the different age groups. Throughout the years 1987-2002 the increase in the housing wealth/income ratios have increased as shown in Table 7.11. The percentage rise in the ratio decrease with increasing age, being slightly higher for the age groups below 40 years than for those above

**Table 7.12 Increase in the housing wealth/income ratio for owner-occupiers (excluding the self-employed) by age, 1987 to 1994, in %**

Age - years	1st decile	2nd decile	3rd decile	4th decile	5th decile	6th decile	7th decile	8th decile	9th decile
< 30	-22	-22	-22	-22	-22	-21	-20	-20	-20
30-39	-23	-23	-22	-21	-22	-22	-22	-24	-24
40-49	-21	-23	-25	-26	-26	-26	-26	-26	-26
50-59	-15	-22	-23	-24	-25	-25	-25	-25	-26
60-69	-14	-20	-22	-24	-26	-27	-28	-32	-38
> 70	-33	-37	-38	-39	-40	-42	-43	-45	-45
<b>All</b>	<b>-19</b>	<b>-21</b>	<b>-21</b>	<b>-22</b>	<b>-22</b>	<b>-22</b>	<b>-23</b>	<b>-26</b>	<b>-34</b>

and even dropping for owner-occupiers above 70 years of age. Furthermore, a distributional change can be identified, as the distribution of owner-occupiers according to housing wealth/income ratios has widened.

Obviously the changes for 1987-2002 can be decomposed in the housing market failure period, 1987-1993, and in the subsequent years with steep property price rises. Certainly, closer inspection of the year-to-year figures in the different age groups<sup>4</sup> reveal that the lowest ratios were found in 1991. However, the ratios are quite similar for the years 1991-1994. In accordance with all indices, house prices were at their lowest in the year 1993 (which was used as the base year in Table 7.6 above) and the housing wealth/income ratios reached another minimum level in 1993 or 1994. The decomposition has been chosen to show the decrease in the ratios for 1987-1994 in Table 7.12 and for 1994-2002 in Table 7.13. It should also be noted that the housing wealth/income ratios for 1994 contain the publicly assessed property value of January 1, 1994, which was based on the house prices for 1993.

The percentage drops in the housing wealth/income ratios from 1987 to 1994 are nearly identical within the single age groups and are also quite similar between age groups. Surprisingly, the percentage drops are a little lower but nearly identical for the owners in the youngest two age groups with many late buyers. For the age groups between 40 and 70 years, the numbers are a little higher but nearly identical. A possible explanation is that in general these owners were burdened by fixed interest mortgages raised on the basis of the former high property prices and interest rates.

Only the oldest owner-occupiers above 70 years of age have experienced a major decrease in the ratio and even a widening of it, as the values in the highest deciles have dropped most drastically. A simple legal adjustment of incomes may explain this change. One element of the tax reform in 1993 was to ensure that social benefits and pensions were taxable, which is why the benefits were increased so that people would receive the same amount (after

<sup>4</sup> See Table 7.10 for owner-occupiers between 30-39 years of age. The data for the other age groups are not presented here.

**Table 7.13 Increase in the housing wealth/income ratio for owner-occupiers (excluding the self-employed) by age, 1994 to 2002, in %**

Age - years	1st decile	2nd decile	3rd decile	4th decile	5th decile	6th decile	7th decile	8th decile	9th decile
< 30	45	46	48	52	56	58	58	60	68
30-39	51	53	54	53	57	59	61	65	70
40-49	46	50	54	56	58	60	59	61	66
50-59	48	50	50	52	55	57	60	62	69
60-69	52	46	50	49	52	54	53	59	66
> 70	51	49	50	52	55	58	62	66	75
<b>All</b>	<b>49</b>	<b>53</b>	<b>54</b>	<b>55</b>	<b>56</b>	<b>58</b>	<b>58</b>	<b>59</b>	<b>67</b>

tax) as they had before the reform. Moreover, the general public pension was raised, and as owner-occupiers above 70 years of age also receive public pensions, the denominator in the housing wealth/income ratio was raised. The influence is confirmed by the annual data, where the ratios for owner-occupiers above 70 years of age especially decreased from 1993 to 1994, while no similar change was seen in other age groups.

Quite the opposite changes in the housing wealth/income ratios were seen from 1994 to 2002 as shown in Table 7.13 below. The 56% growth rates for the housing wealth/income rates for the median groups suggest that the level of the changes in the ratios does not vary with age. However, within the single age groups the differences between the deciles have widened as the values in the highest deciles have shown the strongest growth rates. Obviously, local and regional differences in the steep rising house and flat prices could have some explanatory power as in general the most expensive properties have experienced the highest price rises, while the less expensive regions have experienced the lowest.

Even though the Danish owner-occupation market has experienced a boom and bust period, with drastic drops and subsequent steep rises in housing wealth/income ratios, the structural differences between the age groups have been predominantly stable. The small additional increases in the housing wealth/income ratio for the two youngest age groups are a result of the fact that these owners could buy and continue to own slightly more expensive dwellings compared to their income during the 'housing market crisis' than the older owners had been able to finance. Through the long period with price increases, new owner-occupiers have been able to buy the same expensive houses and flats that established owners can buy, seen in comparison with their income. But in all ages the differences in the decile values have widened somehow since 1993. Owners above 70 years of age have experienced a special divergence in their housing wealth/income ratio, which is probably fully explained by that pensions and other social benefits became taxable.

## 7.12 How do people finance the increasingly expensive owner-occupied dwellings?

When the prices for houses and flats are 'high', people often ask the question of how anyone is able to pay these prices? Of course, the fundamental question is how buyers finance these prices.

The increase in the housing wealth/income ratios can be interpreted as an indication of owner-occupiers have been wealthier. However, the net present value of future housing services has also increased and a higher risk is assumed, as the family's income is the basis for the owners' ability to pay for the property. Moreover, as mentioned above, the housing wealth/income ratios seem to express an all-time high at the start of 2005.

The owner-occupiers had not financed the increasing housing wealth/income ratios with equity alone, but also with debt. Over time the debt/income ratios must have changed more or less alongside the housing wealth/income ratios. At the time of estimation, the debt was measured by the net liabilities, as the family's debt (financial liabilities) had been reduced by their financial assets.

The view is confirmed by the fact that the housing wealth/income ratio logically is connected with the net liability/income ratio and together form the net liability/housing wealth ratio, as  $(\text{net liability/housing wealth}) = (\text{net liability/income}) \cdot (\text{income/housing wealth})$ .

A convincing result in a paper by Lunde (2005) is that the net liability/housing wealth ratio has been rather stable throughout the years 1987-2002. Combining this knowledge with the changes in the housing wealth/income ratio in this chapter, the conclusion must be that the net liability/income ratios have followed a pattern similar to the one followed by the housing wealth/income ratio. This connection is also confirmed by Lunde (2005). The owner-occupiers have financed the increasing housing wealth with nearly the same combination of equity and debt, as demonstrated by the stable net liability/housing wealth ratios during the years.

Furthermore, the connection leads to the simple conclusion that for 2002 – and quite likely at the beginning of 2005 – the net liability/income ratio must be at an all-time high level. This is the case not only in Denmark but also in many other countries (see Lunde, 2005).

Finally, the issue of the development in debt services remains. Unfortunately no statistical information exists on owner-occupiers' debt services. However, the owner-occupiers' net interest payments are included in the registered data on tax statistics, as interest incomes are taxed and interest expenditures can be deducted. In general, the owner-occupiers' interest payments as a per cent of the owners' incomes were reduced during the housing market failure and combined financial crisis from 1987 to 1993. After 1993 the interest payment/income ratios have remained at a very stable level and for owner-occu-

piers between 30 and 39 years of age the level is 15% (Lunde, 2005).

It must be noted that the stable interest payment percentages should be seen in light of two tax reforms that took effect in 1994 and 1999 respectively. As the tax rates for deducted interest expenses have been reduced from around 52% in 1993 to around 33% starting in 1999, a stable interest expenditure burden before tax means that the interest burden after tax had increased by one-third.

### 7.13 Conclusion

Recent decades' economic cycles and policy in Denmark, the housing market failure 1987-1993 and the steeply rising house and flat prices in subsequent years, may have influenced the demand for owner-occupied dwellings in Denmark and resulted in structural changes for owner-occupation. In 2002, 52.2% of families lived in owner-occupied dwellings, a rate that remained quite stable throughout the years analysed, 1987-2002. In reality, the owner-occupation rate has been on a slow, creeping retreat as owner-occupiers are aging and as younger families establish themselves later and to a lesser extent in owner-occupation. A more obvious influence seems to be the dramatic changes in house and flat prices through the period, also because the changes in owner-occupation rates mostly stopped at the end of the 'housing market crisis'.

Tax statistics have been utilised to estimate original data on families' housing wealth/income ratios, which can be seen as a form of wealth as well as a measure of risk. The sample comprises approximately 45,000 families for each year. The families are divided into deciles according to their housing wealth/income ratios.

In 2002 the median value was 258, i.e. the median owner-occupier family's housing wealth (publicly assessed property value on January 1. 2002 for all properties used and owned by the family) was 258% of the family's gross income for 2002. The changes in real prices for the owner-occupied houses and flats sold during the housing market failure and during the last 10 years' of price rises are mirrored in the housing wealth/income ratios for the owner-occupiers. The continuing steep house price rises must have resulted in all-time high housing wealth/income ratios at the beginning of 2005.

The housing wealth/income ratios vary with age but the decile values are quite similar in the age groups below 50 years of age. For these owners the median ratio was about 218 in 2002. However, in the age groups above 50 years of age the housing wealth/income ratios increase with age.

A remarkable internal disparity in the single years is found in the owner-occupiers' housing wealth/income ratios and this disparity widens somewhat with age. Obviously, this can be partially explained by the variation in the



house price rises according to region and degree of urbanisation, which may have widened the distribution of owner-occupiers according to their housing wealth/income ratios since 1993.

Even though the Danish owner-occupation market has experienced a drastic bust and boom period, the structural differences between the age groups have remained predominantly stable. Only small additional increases in the housing wealth/income ratios of the two youngest age groups have occurred as these owners seem to have bought slightly more expensive dwellings during the housing market crisis than the older owners were able to finance. Throughout the long period with steep price rises, new owner-occupiers have been able to buy the same expensive houses and flats that established owners have been able to afford, seen in comparison with their income.

### References

Christensen, Christoffersen, Madsen-Østerbye & Smitt, 1987, **Boligmarkedet i Danmark**, AKF's forlag [Christensen, Christoffersen, Madsen-Østerbye & Smitt, 1987, **Housing market in Denmark**, AKF's Publication].

Danmarks Nationalbank, 2003, **Monetary policy in Denmark**, June.

Det Økonomiske Råd, formandskabet , 1970, **Boligmarkedet og boligbyggeriet** [The Economic Council, 1970, **Housing market and housing construction**].

Det Økonomiske Råd, 2001, **Dansk Økonomi, Forår 2001** [The Economic Council, 2001, **Danish Economy, Spring 2001**].

Englund, Peter & Yannis M. Ioannides, 1997, House Price Dynamics: An International Empirical Perspective, **Journal of Housing Economics**, 6 (2), pp. 119-136.

Erhvervsministeriet, 1997, **Boligrapport. Nemmere og billigere at handle bolig** [Ministry of Business Affairs, 1997, **Housing report. Easier and less expensive ways to sell properties**].

European Central Bank, 2003, **Structural Factors in the EU Housing Markets**, March.

Evans, Pannell, Stewart & Williams, 1998, **Trends, Attitudes And Issues In British Housing**, Council of Mortgage Lenders, September.

Hendershott, Patric H. & Michael White, 2000, The Rise and Fall of Housing's Favoured Investment Status, **Journal of Housing Research**, 11 (2), pp. 257-275.

IMF, 2004, **World Economic Outlook**, September.

Kennedy, Neale & Palle Andersen, 1994, **Household saving and real house prices: An international perspective**, Bank for International Settlements, Basle, January.

Lunde, Jens, 1998, **Ejerboligprisernes stigning og det private forbrug: Den falske sammenhæng [Owner-occupied property prices and private consumption: The false relation]**, Working Paper WP 98-4, Department of Finance, (Copenhagen Business School).

Lunde, Jens, 2004, **Lack of balance in after-tax returns – lack of tenure neutrality, The Danish case**, Working Paper 2004-3, Department of Finance, Copenhagen (Business School).

Lunde, Jens, 2005, **The owner-occupiers during a house price boom – Does negative equity exist as a permanent feature in the Danish housing market**, Department of Finance, Copenhagen Business School. Working Paper (to be published).

Miles, David, 1994, **Housing, Financial Markets and the Wider Economy**, Wiley.

Miles, David, 2003, **The UK Mortgage Market: Taking a Longer-Term View. Interim Report. Information, Incentives and Pricing**, December.

Pedersen, Erik Haller, 2004, The Development in Cash Prices of Owner-Occupied Housing, **Monetary Review 1<sup>st</sup> Quarter**, Danmarks Nationalbank.

Realkreditrådet, 2005, **Pressemeddelelse om ejendomspriserne i 4. kvartal 2004, 24. januar**. [The Association of Danish Mortgage Banks, 2005, **Press release on property prices in 4<sup>th</sup> quarter 2004, January 24.**] – And former versions.

SBI & AKF, Statens Byggeforskningsinstitut & Amternes og Kommunernes Forskningsinstitut, 2001, **Det danske boligmarked - udvikling i boligforsyning og boligønsker**, Byforum, Hørsholm.

Scanlon, Kathleen & Christine Whitehead, 2004, **International trends in housing tenure and mortgage finance**, Council of Mortgage Lenders Research, November.

Smith, Jackie, 2002, CML Market Research Results 2001, **CML/Housing Finance, No. 53**, Spring, pp. 13-27.

---

Terrones, Marco, 2004, The Global House Price Boom, pp. 71-89 in: IMF, 2004, **World Economic Outlook**, September, 2004.

Told og Skat, 2001, **Salgsstatistik 1. halvår 2001**, October, [Customs and Tax, 2001, **Property sales 1. half year 2001**].

Told og Skat, 2004, **Salgsstatistik 1. halvår 2004**, November, [www.Told-skat.dk](http://www.Told-skat.dk) [Customs and Tax: **Property sales 1. half year 2004**].

---



---

# 8 Mortgage equity withdrawal and remortgaging activity

*Jackie Smith*

## 8.1 Introduction

Mortgage equity withdrawal (MEW) occurs when households borrow against the equity in their property. According to the Bank of England series, MEW totalled nearly £57 billion in 2003 – double the amount in 2001. With such rapid growth rates, MEW now makes up nearly 20% of gross lending, and is becoming an increasingly important part of the mortgage market. In addition, MEW has implications for the wider economy because of its potential impact on consumption and on households' balance sheets.

The impact of increasing house prices and the resulting MEW on consumption has been widely debated and indeed the Bank of England MPC minutes clearly stated in 2001, “the continuing strength in house prices would tend to underpin consumption...” (BOE, 2001). This link was particularly noticed in the UK when financial deregulation meant that home-owners could more easily access capital in housing wealth as transaction costs reduced. Previous work has looked in detail at the interaction between MEW and consumption. Muellbauer & Murphy (1993, 1995, 1997) have argued that when consumers are borrowing constrained, changes in housing values can change the borrowing opportunities of consumers via a collateral effect. Davey (2001) using survey evidence in 2001 also found that MEW helped to fund consumption between 1999-2001 and concluded that, “at least some of this spending would not have occurred if housing market variables had been weak, or if lending restrictions had prevented households from withdrawing equity”. However, more recently the relationship between MEW and consumption has become more complicated. In recent years, the Bank of England's measure of (MEW) has risen sharply without being accompanied by a sharp rise in consumption.

While reference is made in this chapter to the consumption effect its main aim is to use data from the Office of Deputy Prime Minister's (ODPM's) Survey of English Housing (SEH) to provide top-level estimates of the amounts and methods of MEW. We will not explore in detail the component flows of MEW, however, we will investigate how the prevalence of last-time sales is affecting the interaction between MEW and consumption. Our analysis then focuses on the remortgage market, which last year represented 45% of all gross advances. Between a half and three-quarters of all remortgaging involves equity withdrawal and it has become an easy and attractive way to borrow money. With significant churn in the market, it is widely thought that 'serial' remortgaging may be occurring - where households repeatedly refinance the mortgage at the end of each current deal. Although refinancing is not in itself a problem (indeed, transferring to a better rate is a shrewd financial decision) households could be storing up trouble if they are also repeatedly withdraw-

---

ing significant amounts of equity. This chapter explores the extent and significance of serial remortgaging.

Finally, this chapter examines whether the significant amounts of MEW occurring are leaving households vulnerable. Borrowers who engage in MEW may become vulnerable in two ways – on the liabilities side (through the build-up of debt) and on the assets side (as MEW increases, the amount of housing equity falls). Although the impact of MEW on the build-up of household debt is an important issue, we do not cover that here. Instead, we look at the assets side of the equation, examining current levels of household equity.

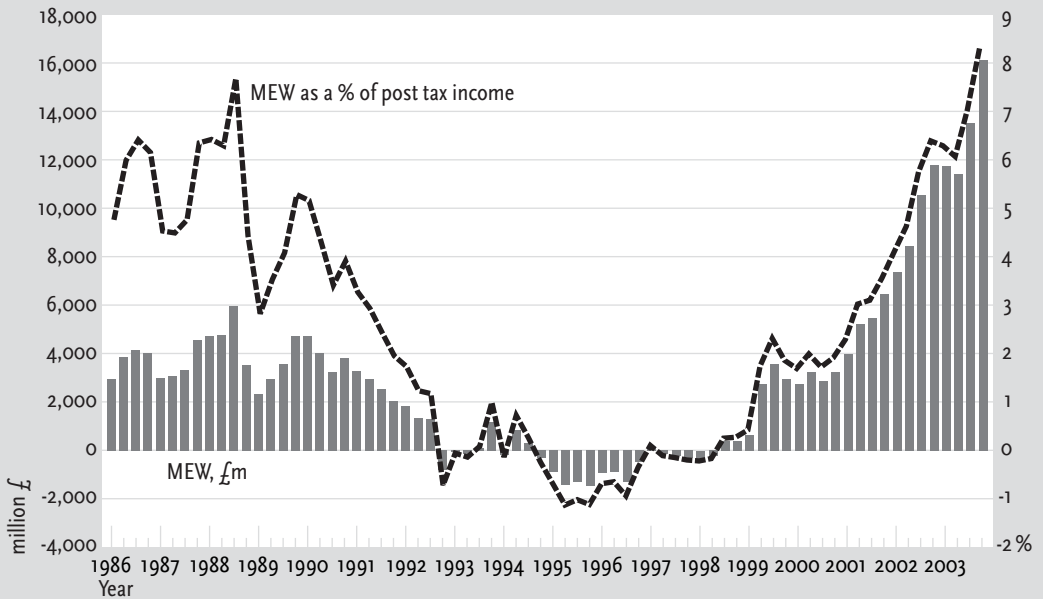
## 8.2 The Bank of England's measure of MEW

The most widely-used measure of MEW is the quarterly series published by the Bank of England. This measure represents net MEW because it excludes any borrowing that is put back into the housing market, typically through home improvements. It is calculated by taking the increase in housing finance (net mortgage lending and capital grants) and subtracts households' investment in housing (repayments of capital, purchases of new houses and houses from other sectors, improvements to property, and the transaction costs of moving house).

As illustrated in Figure 8.1, the Bank's measure shows high rates of equity withdrawal in the 1980s, a sharp fallback in the early-mid 1990s - when there was a period of net injections of equity by households - and a sharp rise in recent years. According to the Bank, MEW totalled nearly £57 billion in 2003 and reached its highest-ever level as a percentage of households' disposable income (8.9%) during the last quarter of 2003. The first quarter data for 2004 does, however, show a decrease from this record high.

The Bank of England has struggled to interpret or to fully explain last year's sharp increase in MEW. At the macro-economic level, MEW simply represents another form of household borrowing (alongside personal loans, overdraft facilities and credit card borrowing). Reflecting the favourable economic backdrop, all forms of household borrowing have risen strongly in recent years. But, as the Bank pointed out in its May 2004 *Inflation Report*, the link between MEW and consumption, in contrast to previous years, appears to be fairly weak (Bank of England, 2004a). The saving ratio remained relatively flat last year and consumption has not grown particularly rapidly relative to disposable income. This is in contrast to the late 1980s, when there appeared to be a strong link. This makes the implications for consumption of last year's rise in MEW far from straightforward. It is possible that this reflects changes in the composition of MEW. Although remortgaging and further advances - the most active forms of equity withdrawal - have increased substantially, there has been little evidence that more of the proceeds are being spent or invested

**Figure 8.1** Bank of England's mortgage equity withdrawal (MEW) estimates, in £ million, 1987-2004



Source: Bank of England

outside the housing sector. One possibility is that much of the equity withdrawn in recent remortgaging is being ploughed back into the housing market through buy-to-let investments or helping children get onto the housing ladder. This may mean that an increasing share of what the Bank is reporting as MEW comes from last-time sales. The proceeds from last-time sales are likely to have increased sharply in line with house prices, but it is not clear that this would fully account for most of the jump in MEW.

### 8.3 The component flows of MEW

There are six main ways that MEW can take place:

- Last-time sales – where someone ceases to be a home-owner as a result of death, emigration or divorce, or sells a second home, and the sale proceeds are released from the housing market.
- Trading down – where a home-owner moves to a cheaper property, and releases unmortgaged equity.
- Over-mortgaging - where a home-owner moves to a more expensive property, but takes out a larger mortgage than needed to buy the new house.
- Remortgaging in such a way that a home-owner increases his outstanding mortgage debt.
- Further advances, draw-down facilities on flexible mortgages, or second mortgages.
- Equity release schemes – where an older home-owner takes out a mortgage of unspecified term and is not required to make any regular capital repayments.

We do not provide a detailed review of the component flows of MEW presented here (see Holmans (2001) or Davey & Earley (2001) for more details). However, last-time sales deserve particular attention. The SEH, used for this analysis, is a survey about the household's main home. It does not pick up information about inherited properties - which account for the largest proportion of total last-time sales. All last-time sales data in the SEH relates to households who move from owning to renting. Previous studies estimate that this group represents around a fifth of overall last-time sales. Subsequently, in this article we have grossed up the last-time sales reported in the SEH by five. Property profiles of inherited sales and sales from moves to renting are likely to be quite different. This data should, therefore, be treated with some caution.

## 8.4 Survey of English Housing data

The SEH is a continuous survey run by the ODPM. In 2003/04 a range of questions were included to enable an estimation of gross MEW (including equity which is spent on housing, unlike the Bank of England's measure) through a number of different methods. The data used in this chapter relates to the period April-December 2003. This provided a sample of 15,000 English households and included both owner-occupiers and renters. Of the 10,500 owner-occupiers, just over 6,000 were mortgage holders. Questions around MEW were restricted to events occurring in the last five years to ensure that borrowers had a good chance of remembering amounts involved.<sup>1</sup> The group of borrowers who have either moved or remortgaged amounted to around 5,000 households, or one third of the overall survey.

The key difference between SEH and Bank of England equity withdrawal data is that the Bank's measure is net of all housing investment: it excludes any spending on housing and home improvements. In contrast, the SEH data gives a gross value including equity withdrawal that ultimately ends up being spent on housing investment. Values of MEW in Figure 8.1 will not, therefore, tie up closely with amounts of equity withdrawn discussed in the rest of this article. We refer throughout the rest of this chapter to the SEH data and, therefore, to gross equity withdrawal.

An additional point to note is that the SEH data set does not distinguish between remortgages and further advances. Therefore, for the purposes of this chapter, all references to remortgaging include further advances unless specifically stated to the contrary.

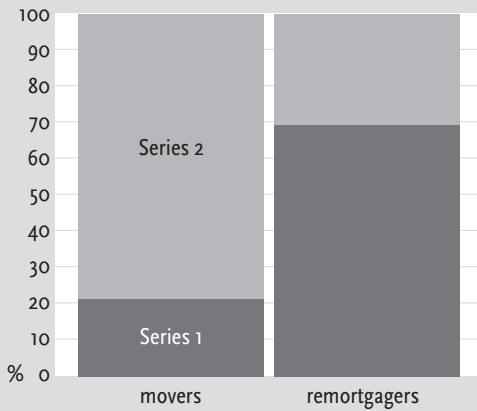
---

<sup>1</sup> Respondents are not asked directly whether they have withdrawn equity. This data is derived from figures respondents provide about their outstanding mortgage amount, previous mortgage amount, new house price, old house price and so on. This methodology is subject to the usual caveats around respondents' recall of these figures.

---



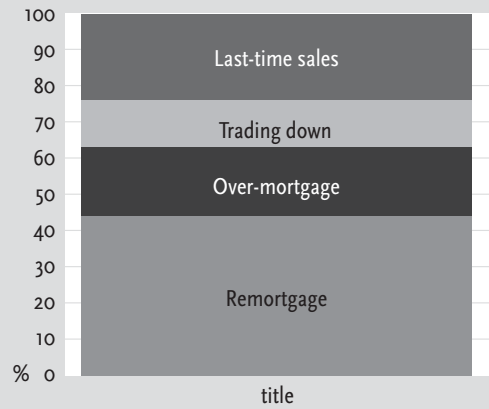
**Figure 8.2 Incidence of equity withdrawal by event, in %<sup>1)</sup>**



<sup>1)</sup> All those moved/mortgaged in last five years, latest events only.

Source: Survey of English Housing (SEH)

**Figure 8.3 All individuals who withdrew equity by method, in %<sup>1)</sup>**



<sup>1)</sup> All equity withdrawers in last five years, last-time sales grossed up by five.

Source: Survey of English Housing (SEH)

### Defining remortgaging

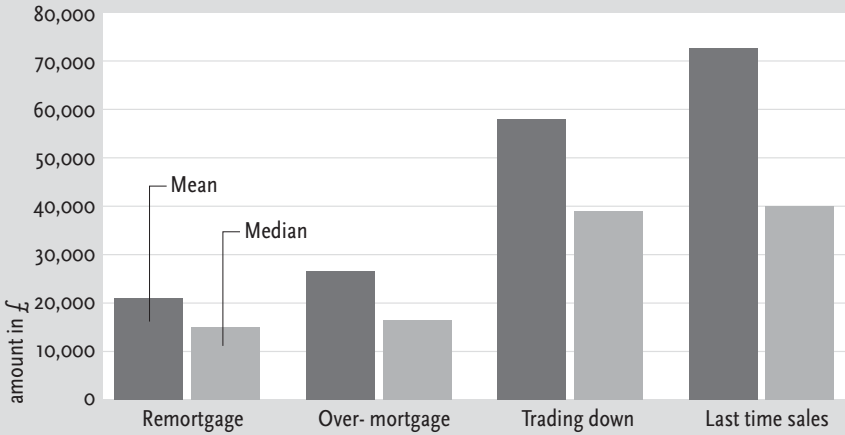
In the SEH individuals are asked whether they have remortgaged or taken a further advance with the same or different lender in the last five years. While remortgaging is a simple activity in principle, borrowers' understanding of the processes and products involved is often less than perfect. Some of the results from our analysis led us to believe that remortgaging in the SEH is being under-reported. Indeed, the SEH seems to be recording remortgaging at around only 60% of the 2003 results from the Survey of Mortgage Lenders. This could be because borrowers may not properly understand the term remortgaging. While the SEH still provides a robust sample for our analysis, it should be remembered that not all remortgagers are being included.

### Incidence and amounts of households' equity withdrawal

Unsurprisingly, when people remortgaged they were more likely to withdraw equity (69%) than when they moved (29%). This is largely because remortgage and further advances are a more natural method of equity withdrawal, as some borrowers remortgage specifically to release equity. In addition, when movers trade up, they are likely to need most of their equity to fund the purchase of their new property leaving less available to withdraw. Figure 8.2 clearly illustrates that a higher proportion of remortgagers withdrew equity over the five-year period.

Despite this, movers account for the largest proportion (56%) of all those who have withdrawn equity, when compared with remortgagers (44%), shown in Figure 8.3. Within the mover group there are three identified methods of equity withdrawal, namely last-time sales, over-mortgaging and trading down. It is clear from Figure 8.3 that last-time sales account for the largest proportion of movers who withdraw equity. However, as discussed earlier, last-time sales data should be treated with some caution.

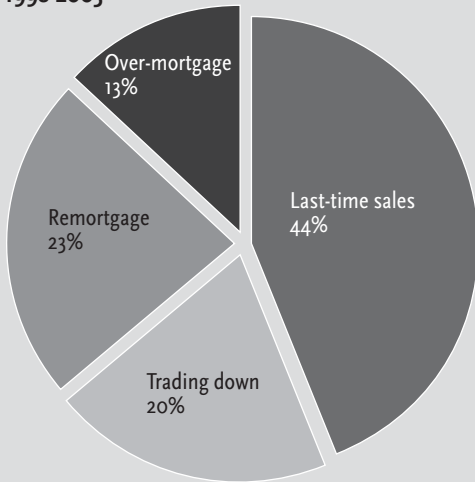
**Figure 8.4 Average amounts of equity withdrawn, 1998-2003<sup>1)</sup>**



<sup>1)</sup> All those moved/mortgaged in last five years, all equity withdrawers, latest event only.

Source: Survey of English Housing (SEH)

**Figure 8.5 Total amount of Mortgage Equity Withdrawal (MEW), by withdrawal method, 1998-2003<sup>1)</sup>**



<sup>1)</sup> All those moved/mortgaged in last five years, all equity withdrawers, latest events only.

Source: Survey of English Housing (SEH)

A limited analysis of flexible mortgage holders in this dataset suggests that these products seem to encourage greater equity withdrawal. Those households with at least one flexible feature in their mortgage are more likely to withdraw equity than all mortgage holders taken together.

**Amount of gross equity withdrawn**

The average amounts of gross equity withdrawn vary according to which withdrawal method is used. The highest average amount withdrawn is by last-time sellers, with an average of £72,700 over the last five years, shown in Figure 8.4. Because this represents the sale of a property, the amount withdrawn will be a significant proportion, or sometimes all, of the value of the property.

With other methods, the borrower will only withdraw part of the equity, and in general would be required by the lender to leave some equity cushion in the property.

According to the SEH, individuals who either remortgaged or took a further advance in the last five years withdrew an average of

£21,000. This is broadly consistent with earlier studies. The CML/Bank of England study in 2001 (Davey and Earley, 2001) found that the average amount withdrawn by remortgagers was £27,000 and by further advance £22,000. There are definitional issues that mean these are not directly comparable. For

**Table 8.1 Average amounts withdrawn, by type, in British pounds**

	Last time seller	Traded down	Remortgager	Overmortgager
1999	*	34,046	16,551	18,143
2000	*	*	17,079	20,463
2001	73,000	42,533	21,312	24,481
2002	77,717	74,478	21,985	24,460
2003	100,011	64,780	21,762	28,646
<b>Average 1998-2003</b>	<b>72,731</b>	<b>56,579</b>	<b>21,041</b>	<b>24,250</b>

\*) Not available due to small sample size. Represents latest event in last 5 years.

Source: SEH

example, the 2001 research covered the period 1998-2000, while the latest data include both remortgage and further advance together and runs from 1998 to 2003. The two surveys were also framed quite differently. It is nevertheless perhaps surprising, given recent house price growth and low interest rates that the amounts withdrawn more recently are not higher. This is discussed more fully later.

While remortgagers are more likely to withdraw equity than movers, they also withdraw the lowest amounts, as Figure 8.4 shows. This means that remortgaging accounts for a smaller overall proportion of the total value of gross equity withdrawal in the study period, represented in Figure 8.5. Conversely, last-time sales are responsible for the highest amounts withdrawn and account for the largest proportions of gross equity withdrawal. While last-time sales data comes with a caveat because the small part reported in the SEH has been grossed up, the proportions do compare reasonably well with previous studies (see Holmans, 2001). Figure 8.5 also shows very clearly that it is those types of equity withdrawal that are perhaps less associated with consumption (last-time sales and trading down), that account for the largest part of total gross equity withdrawal. This is significant when relating this data to the Bank of England MEW series. In particular, it goes some way to dispel the myth, perpetrated by some commentators, that all MEW is new 'consumption-led' borrowing against equity by home-owners.

## 8.5 Average amounts of equity withdrawal over time

Although the incidence (and importance) of remortgaging has increased dramatically, as discussed above, the average amount that remortgagers withdraw has changed little over time, see Table 8.1. This is true for all methods of equity withdrawal, except last-time sales.

The reason for the greater change in average withdrawal through last-time sales is because prevailing house prices will determine the amount of equity withdrawn. When house prices are higher, equity withdrawal by last-time

sales will be higher. Data from the SEH bears this out and suggests that, while the average amount of equity withdrawn via last-time sales was around £73,000 in 2001, this had increased to over £100,000 in 2003. In contrast, the gross amount withdrawn by a remortgager remained relatively constant at just over £20,000.

With equity withdrawal largely depending on, and driven by, increasing house prices, it may seem counter-intuitive for the average equity withdrawn by remortgagers to remain constant during times of strong house price growth. It would, perhaps, be more logical that amounts withdrawn increase with house price growth. However, the SEH suggests that average equity withdrawn remains around £20,000. The median has also remained constant, which implies no change to the distribution. There is no concrete evidence suggesting why the mean and median should have remained constant, but it could be for a number of reasons, such as:

- While households recognise that remortgaging is a cheap source of funds, borrowers may have a psychological ceiling on loan levels.
- While households may have significant amounts of equity, constraints around affordability will affect amounts withdrawn. This is particularly the case given the lower rate of earnings growth in comparison to house price growth.
- Although house prices have grown rapidly, borrowers (and lenders) like to keep an equity cushion in the property.
- Distribution of those remortgaging has shifted down the socio-economic spectrum to those on lower incomes and in lower-valued properties, which has some effect on lowering average amounts withdrawn.
- While the average amount withdrawn has remained constant, it could be that the frequency of remortgage-related equity withdrawal per household has increased. This would mean that instead of taking out one large loan, households are taking more loans but at lower values. This would imply an increase in serial remortgaging, which we discuss later.
- Because inflation has remained low over the last few years, households are less likely to need to borrow larger amounts for similar types of spending.
- Finally, certain products such as flexible mortgages, which encourage MEW, may result in equity being withdrawn but not recorded, if borrowers are making use of their automatic right to a draw-down or are withdrawing relatively small amounts.

## 8.6 Remortgagers and equity withdrawal

Survey evidence shows that remortgagers are individually more likely to withdraw equity than movers. Although they accounted for only around a quarter of the total amount of mortgage equity withdrawal over the last five

years, there a number of reasons for focussing on this group here:

- there is the greater potential for remortgagers to regularly withdraw equity through serial remortgaging and this may be leaving them exposed;
- equity withdrawn by remortgagers might be more likely to flow into consumption, which is a further reason for understanding the behaviour and characteristics of this group;
- finally, remortgaging has direct implications for mortgage lenders, who face a trade-off between the provision of suitable remortgage products and retaining customers.

## 8.7 Reasons for remortgage

As would be expected, the reasons for remortgaging differ depending on whether equity is withdrawn, shown in Table 8.2. For example, while only 20% of remortgagers who withdraw equity are in search of a better rate, this increases to 50% for remortgagers who do not withdraw equity. In addition, 20% of non-withdrawers remortgage for a flexible product, but this falls to eight per cent for withdrawers (who are more likely to already have a flexible mortgage). As would be expected, home improvements and major purchases are cited as popular reasons for remortgaging when equity is withdrawn.

Of all remortgagers, those who withdraw equity are more likely to stay with their existing lender. 55% of remortgagers who withdrew equity stayed with their current lender, but this reduced to 40% for remortgagers not withdrawing equity. This is logical because if the motivation were just to raise funds, there is less reason to change lenders if the current lender is willing to increase the loan. Those taking a further advance (included here in remortgaging) are also more likely to apply with their existing lender in the first instance. In contrast, non-equity withdrawers are more likely to be rate-chasing, and are consequently more likely to change lender.

## 8.8 Characteristics of remortgagers

The majority of remortgagers are aged between 36 and 49, see Table 8.3. In addition, 26% of remortgagers were aged 26 to 35. This largely reflects smaller proportions of transacting mortgage holders in this age group. However, it is also true that younger remortgagers are more likely to withdraw equity: 75% of those remortgagers aged 26 to 35 withdrew equity, compared with 64% in the older age group.

**Table 8.2 Reasons for remortgage, in %**

	Remortgagers with MEW	All remortgagers
Home improvement	62	52
Major purchase	14	12
Better rate	20	29
Flexible mortgage	8	12

Source: SEH

**Table 8.3 Remortgagers by age, income, amount withdrawn, 1998-2003**

	Remortgagers with MEW %	Remortgagers no MEW %	All remortgagers %	Amount withdrawn in £, mean
<b>A g e</b>				
16 to 25	2	1	2	11,300
26 to 35	28	21	26	16,551
36 to 49	51	52	51	24,537
Over 50	19	27	22	19,432
<b>I n c o m e</b>				
Under £10,000	8	17	11	18,439
£10,000 to £19,999	13	9	12	14,085
£20,000 to £39,999	42	37	41	17,340
Over £40,000	37	37	37	28,192

Source: SEH

As would be expected, remortgagers tend to fall into the higher income groups, with nearly 80% of remortgagers earning over £20,000. This is broadly consistent regardless of whether or not equity is withdrawn. Those who withdrew equity with incomes over £40,000 took out a significantly higher average withdrawal than those on lower incomes. But the amount of equity withdrawn is proportionately larger relative to income for lower-income households.

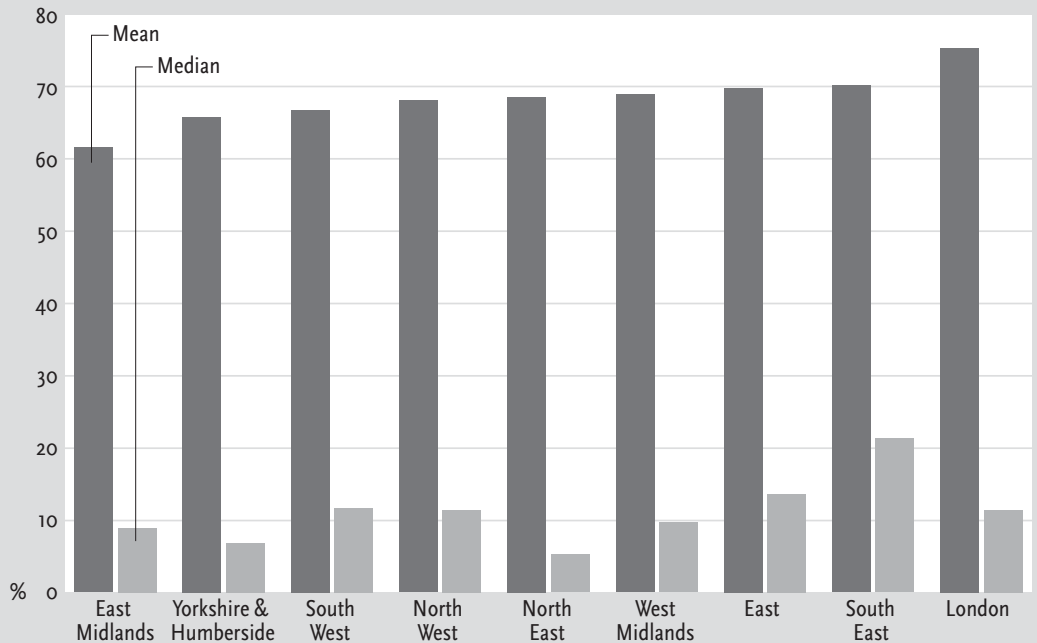
### Regional characteristics

Respondents in the south-east recorded the highest proportion of remortgages over the last five years, equal to around a quarter of mortgage holders. In contrast only five per cent of remortgages in England took place in the north-east. This largely reflects the distribution of mortgage holders across England in the sample. For example, 17% of all English mortgage holders lived in the south-east compared to 6% in the north-east. Figure 8.6 also shows the proportion of remortgagers in each region who withdrew equity. Remortgagers in London had the highest incidence of equity withdrawal across the country at 76%. This compares with 62% of remortgagers from the East Midlands and 66% from Yorkshire and Humberside, and is clearly related to relative house price inflation levels.

## 8.9 Serial remortgaging

Remortgaging has become an accepted part of financial management. According to the Survey of Mortgage Lenders (SML), around 4.4 million households have taken advantage of low interest rates and competition between lenders and remortgaged in the last five years. Clearly there is a marked level of churn in the market place. And with fewer and fewer mortgages having extended tie-ins, a household can remortgage more frequently – usually as soon

Figure 8.6 Mortgaging and propensity to withdraw equity, by region, in %<sup>1)</sup>



1) All those moved/mortgaged in last five years

Source: Survey of English Housing (SEH)

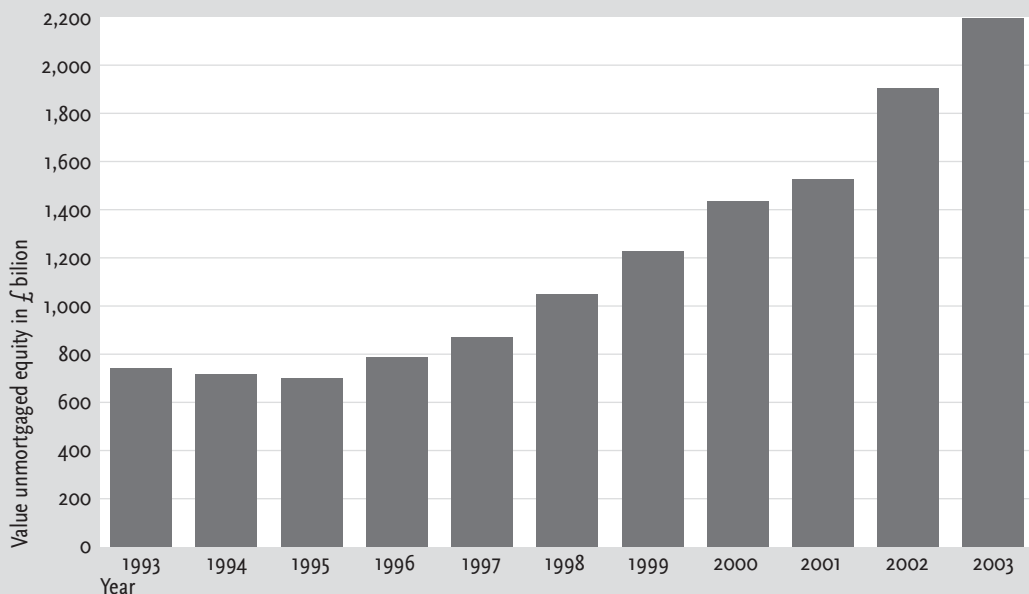
as they come to the end of a deal. Together with the growth in short-term discounted and fixed-rate deals, often lasting as little as six months, we would expect to see an increase in the frequency of households remortgaging. Whether households engage in one-off remortgaging or serial remortgaging has huge implications for the future of the 'back book' and for lenders' retention policies.

The SEH allows us to identify whether a remortgager had remortgaged more than once in the previous five years, and this provides some indication of the extent to which serial remortgaging has been taking place.

The data suggests that 10% of those who have remortgaged in the last five years have done so more than once. The data also suggests that 50% of these withdrew equity at both events. While 16% of London remortgagers have remortgaged more than once, this compares with fewer than 10% of remortgagers from the north-east and north-west, East and West Midlands and the south-west.

At just 10%, the proportion of serial remortgaging found here confounds the notion that the increase in remortgaging over recent years has resulted in many households undertaking this activity. There may be a number of reasons why serial remortgaging appears lower than expected.

Firstly, there may be sample/data issues. As we discussed earlier, remortgagers are under-represented in the SEH sample compared to industry data in the Survey of Mortgage Lenders. This means it is also likely that we will be under-reporting serial remortgaging.

**Figure 8.7 Housing equity in UK owned stock, in £ billion <sup>1)</sup>**

1) Represents unmortgaged equity: total value of owned housing stock minus outstanding mortgages.

Source: Office for National Statistics, CML estimates

This analysis also ignores any remortgaging that occurred earlier than 1998. However, we would expect this to be quite small, as the most significant growth in remortgaging has occurred in the last four to five years (from 24% of gross lending in 1999 to 45% in 2003). It is possible that serial remortgaging has not yet been fully picked up in the data. In this case we might expect to see an increase in serial remortgaging, as those coming off short-term deals remortgage again in the next year.

In consumer surveys there is always the problem of respondent recall. It should be remembered that results represent individuals' perceptions of what they have done, rather than what they have actually done. Discussions with lenders suggest that the 10% serial remortgaging may actually be nearer double this amount. It may be that respondents, for example, are only reporting external remortgaging (ie, with a different lender) and under-reporting internal refinancing, possibly because of lack in understanding.

However, it is clearly possible that, while there has been tremendous growth in remortgaging, it is largely different individuals remortgaging over time rather than the same people. Further monitoring of these groups is necessary to corroborate this conclusion.

## 8.10 Are movers also remortgaging and withdrawing equity?

One area that has not been explored fully in this analysis is the group of remortgagers and serial remortgagers who may also have moved. If there is a



propensity for this group to withdraw equity on each event this could also be a potential stress point going forwards. According to SEH data 15% of recent remortgagers also moved within the last five years. Of this group, 30% have withdrawn equity on both occasions. In addition to this, 9% of remortgagers have remortgaged twice and moved in the last five years. This does indicate a significant minority of people who are very active in the mortgage market. While sample sizes are too small to draw firm conclusions, further work in this area would be beneficial to explore profiles and motivations of these borrowers.

One of the primary reasons for analysing remortgaging and the extent of serial remortgaging was to determine whether this was leaving households vulnerable in the event of a sharper than expected market correction. Although not expected by the CML, any fall in house prices would eat into a household's equity. If this household had engaged in significant levels of equity withdrawal they could be left exposed.

## 8.11 Households' equity position

The rapid increases in house prices have led to significant increase in household equity; however, this will have been offset to some extent by the increased propensity for equity withdrawal. ONS data (Office for National Statistics) suggests that equity in the owned UK housing stock at the end of 2003 was around £2,200 billion (shown in Figure 8.7). This is double the equity position of five years ago. This data suggests that the overall equity position in the UK is very favourable.

However, this aggregate picture will mask the equity positions of certain borrower groups and it is worth analysing the SEH data further to establish this. Table 8.4 presents average amounts of equity by type of borrower at the end of 2003. It shows that while movers have, on average, £102,000 of equity, remortgagers have significantly less equity at £80,000. This may reflect the fact that around 70% of remortgagers withdraw equity or that remortgagers may have lower house value profiles. Remortgagers who have withdrawn equity do have slightly lower amounts of remaining equity, at about £70,000 (not shown in table), but this is still a significant margin. It is unsurprising that first-time buyers who tend to buy cheaper properties, have smaller deposits and have had less time to accumulate equity, have the least amount of equity at just over £60,000.

These findings are broadly encouraging and suggest that overall households (whether remortgaged or not) tend to still have significant equity in their property. Those most likely to be exposed in a downturn are recent first-time buyers who have taken out a loan with less than a five per cent deposit. Recent research by the CML suggests that this potential group amounted to

**Table 8.4 Equity by type of borrower, estimated position at fourth quarter 2003, in British pounds**

	Original price	Value 2003 fourth quarter	Mortgage amount outstanding	Mean equity	Median equity
Remortgage	119,009	161,296	73,748	79,777	55,660
Mover	132,075	191,978	56,540	101,620	75,396
First time buyer	86,470	132,360	49,568	60,294	47,269
<b>Total</b>	<b>124,447</b>	<b>155,454</b>	<b>61,202</b>	<b>76,517</b>	<b>55,719</b>

Note: Current values estimated using Halifax house price index.

Source: SEH, CML analysis

fewer than 100,000 first-time buyers in 2003, and house prices would need to fall by 10% for this group to be vulnerable.

## 8.12 Conclusion

Data from the SEH suggests that of all households who moved or remortgaged in the last five years, around a third withdrew equity. Contrary to the perception that remortgaging and moving house drive MEW, this analysis indicates that the largest slice of gross equity withdrawn over the last five years, at 44%, came from last-time sales. Despite such high levels of MEW, households' general equity position remains strong with an average (median) of £56,000 equity per household (accounting for 36% of their property value) at the end of 2003.

While this analysis has not sought to significantly take forward the debate around the interaction between MEW, consumption and the wider economy it is surprising that the increasing amounts of MEW over the last few years have not been stronger drivers of consumption. As discussed above, this may be in part related to the volume of last-time sales, but it is not clear that this would fully account for most of the jump in MEW. In a recent Quarterly Bulletin the Bank of England conclude that, "In the past, when a strong correlation between equity withdrawal and consumption was observed, this is likely to have reflected house prices and consumption responding to a common shock such as changing income expectations. The lower correlation observed now suggests that such a common shock may have been a less important factor behind the recent upturn in the housing market." (Bank of England, 2004b).

The survey evidence presented here found that although remortgaging is an increasingly important method of equity withdrawal, there is little evidence of high levels of serial remortgaging. Data from the SEH suggests only 10% of remortgagers in the last five years have remortgaged more than once. We know that this under-represents serial remortgaging for a number of reasons, but even lenders' own estimates suggest the true figure may be nearer double this amount.

---

As interest rates have begun to rise, we are expecting borrowers to continue to switch onto the most favourable rate available. However, while we expect the occurrence of serial remortgaging to increase over time, it is likely that equity withdrawal will slow. This will be in response to slowing house price growth and rising interest rates. The CML's latest forecast suggests house price growth will slow significantly over the next two years and following that there will be a period of very modest growth.

### References

- Bank of England, 2001, **MPC minutes April 2001**, London (BOE).
- Bank of England, 2004a, **Inflation Report**, May 2004, London (BOE).
- Bank of England, 2004b, **Quarterly Bulletin**, Autumn 2004, London (BOE).
- Davey, M., 2001, Mortgage equity withdrawal and consumption, in: **Quarterly Bulletin Spring 2001**, London (BOE).
- Davey, M. & F. Earley, 2001, **Mortgage Equity Withdrawal**, Council of Mortgage Lenders, London.
- Holmans, A., 2001, **Housing and Mortgage Equity Withdrawal and their component flows**, Technical Report, London (Council of Mortgage Lenders).
- Muellbauer, J. & A. Murphy, 1993, **Income expectations, wealth and demography in the aggregate UK consumption function**, mimeo, University of Oxford.
- Muellbauer, J. & A. Murphy, 1995, **Explaining regional consumption in the UK**, mimeo, University of Oxford.
- Muellbauer, J. & A. Murphy, 1997, Booms and busts in the UK housing market, **Economic Journal**, Vol. 107, pp. 1701-27.
- SHE, 2003/04, **Survey of English Housing**, London (Office of the Deputy Primeminister).
-



---

# 9 Home ownership, poverty and educational achievement

*Glen Bramley &  
Noah Kofi Karley*

## 9.1 Introduction

The issues facing deprived neighbourhoods are well known, and make sobering reading. Virtually every social problem – crime, joblessness, poor health – is substantially worse in deprived areas. It is clear that this applies to the under-achievement of children at school, and to popular perceptions of school quality and performance. At the same time, concentrations of poor households facing material and other deprivations are clearly bound up with the operation of the housing market and tenure systems. In most countries, such neighbourhoods comprise predominantly rented housing, and in Britain they are increasingly associated with social rented housing.

If the housing system is substantially responsible for socio-economic segregation and polarisation of neighbourhoods, could different housing policies produce more benign effects? If the effects of housing outcomes spill over into other areas of social policy, such as education, and threaten the achievement of societal goals, the case for different approaches may be strengthened.

It is widely believed that housing, as one of humanity's basic needs, is foundation to learning. On one hand, homelessness and other forms of acute housing need could impact seriously on children's education. Households which have a place to live but limited space may not provide an environment conducive to study. At another level, through ownership of housing as an asset, individuals or families can improve their well-being and in other ways help develop the potential of their children. Arising from this, the concept of a home of one's own, however humble, is deeply prized by individuals and families across many cultures (and survey evidence confirms the strengthening of this view over time in Britain). This chapter examines the proposition that, compared to those living in rented accommodation, and for whatever reason, home owners' children tend on average to do better in school; and, further, that schools with more pupils from homeownership backgrounds will help all of their pupils to do better.

These issues are of concern in current social research and policy and pose both intellectual and policy challenges. Better understanding is prerequisite to devising strategies to tackle the problem. We present later on the results of an analysis of school pupil attainment in England designed to test our proposition while shedding broader light on the drivers of school performance. As a prelude to that analysis, we review relevant literature in Section 2 by examining the way school and non-school factors affect educational attainment and the specific role of housing tenure. This review shows how the level of poverty

---

or deprivation, exclusion, aspects of home ownership and neighbourhood characteristics affect educational attainment. We then discuss the methodology adopted for modelling attainment, explaining the rationale of approach and the data sources and case study areas employed (Section 3). Section 4 describes the modelling results, starting with salient features of the 'basic model' inherited from earlier work, and then showing how home ownership and other relevant 'quasi individual' or school-level factors impact when introduced into the model. It goes on to discuss possible interactions with other variables, the impact of school-level ownership on non-owners' children. Section 5 draws conclusions based on both the literature and the analysis.

## 9.2 Review of factors affecting educational attainment

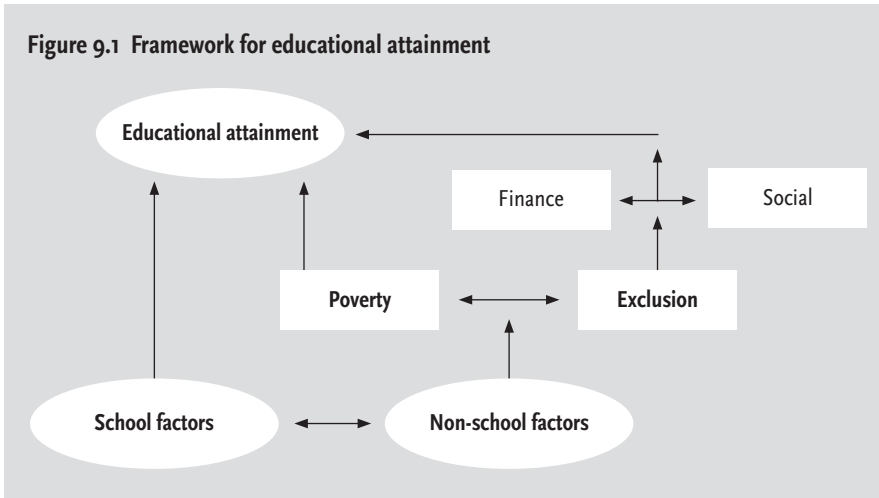
Educational attainment is viewed in the broad sense as being able to successfully complete a course of study and obtain a qualification, which may lead eventually to a job using the skills acquired. Both school and non-school factors influence children's educational attainment. School factors include human, physical and financial resources and non-school factors are those that relate to background of the child such as child's personal character, and the socio-economic and educational background of parents. Figure 9.1 shows a framework of linkages between school and non-school factors and educational attainment. It shows how the key factors interrelate - school factors directly affect educational attainment and non-school factors manifest through variables (poverty and/or exclusion) that are interdependent.

Each of these dimensions represents an input towards educational attainment and is considered important in its own right. But much research (Thomas & Mortimer, 1996; and Reynolds *et al.*, 1996) suggests that non-school factors are a more important source of variation in educational attainment than differences in the quality of education received. A more detailed review of non-school factors is undertaken later. However, we begin with a brief discussion of school factors.

### School factors

In this respect school resources include quality of teaching, facilities, and management. Educational attainment could be improved through employment of good teachers, but this may not come easily, and may be particularly difficult in schools in unfavourable market situations where it is difficult to recruit experienced staff. The debate on effects of school resources on attainment is on-going. In the mid 1980s Hanushek (1986) concluded that there is no strong and consistent relationship between school resources and performance. However, after reanalyses of the same sample, Hedges *et al.* (1994)

Figure 9.1 Framework for educational attainment



shows consistent and positive relationship between resources and educational attainment. A recent study by Bramley *et al.* (2004) also shows positive relationship between educational spending per pupil and attainment level at local educational authority level in England. Bramley *et al.* (2004) presents a picture of where school resources are going and what is being achieved. This study shows that between 1996 and 2001 there was an increase in spending in most deprived wards compared to most prosperous wards and improvement in attainment levels during the same period increased more in the most deprived wards than in the most prosperous wards.

The image conveyed by an area may constitute a 'resource' in terms of contribution to feelings of self-esteem and thence to improved attainment. Gibson & Asthana (1998) observed that the more socially disadvantaged the community served by a school, the very much more likely that the school underachieve. Lupton (2004) reached the same conclusion after comparing attainment levels between institutionally stable and well regarded schools and schools with poor reputation (with similar levels of background deprivation).

The role that school management plays towards overall school progress and educational attainment is deemed very vital. The Office for Standards in Education (OFSTED) (2001) report on Secondary Schools in England suggests that deprived socio-economic context does not in itself determine school failure, and that an important (sometimes dominant) explanation for poor quality of schools in disadvantage areas has been internal problems, mainly accounted for by poor management and professional practice. This naturally reflects the orientation of the an inspectorial service, but also builds on earlier work such as Rutter (1979) which pointed to the importance of leadership, ethos and organisation. However, while poor school management could pose potential constraint to educational attainment, deprivation and lack of finance can make schools harder to manage.

### Non-school factors

Associations between non-school factors and low levels of educational attainment have long been recognised in the sociological and education literature. Howard and Glennerster (2002) provide a list of key non-school factors

that influence educational attainment: pupils' characteristics such as prior attainment and gender; socio-economic position of parents such as employment and housing condition; parents educational attainment; family structure; ethnicity; and other parental interest. Thomas & Smees (1997) established that among non-school factors, prior attainment explains the greatest proportion of variance in educational attainment at pupil level and indicated a high correlation between socio-economic variables and prior attainment. We now assess the particular impact of poverty and exclusion on children's educational attainment and the role of tenure and neighbourhood condition on children's education.

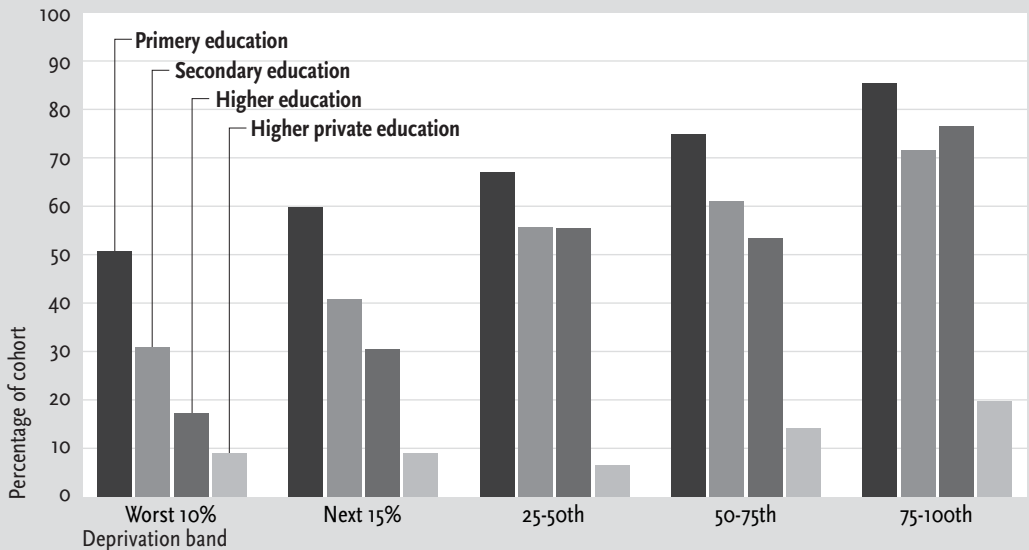
### **Effect of poverty and deprivation**

Poverty is considered in the light of Townsend's (1993) idea of poverty - 'the lack of resources to obtain access to conditions of life that allows people to do as members of society'. The inability to participate in key socio-economic activities arising from constraint rather than choice reflects the extent to which people are disadvantaged by poverty and deprivation. Parsons (1999) has revealed that childhood poverty and educational experiences are very powerful influences on an individual's life course (see also Hobcraft 2000). Poverty is in itself a barrier to equal educational opportunity- a hungry or malnourished child is unlikely to be good at concentrating on work at school; limited finances may affect a child's school attainment since parents may not be able to afford the toys, books, sports equipment, home computers, and other learning resources like reference books that can aid success (Middleton & Asworth, 1997); and children from poor background may not afford to pay to attend major trips and other enrichment activities. Psycho-social effects of poverty may be even more significant (see below).

Much research provide evidence on effect of poverty on education attainment and shows that concentrated poverty tends to aggravate poor performance. Gewirtz (1998), Clark et al. (1999) and OFSTED (2000), have shown that concentrated poverty has an impact on what schools do, as well as directly on what pupils achieve. The Social Exclusion Unit (SEU, 1998) found that five times as many secondary schools in 'worst neighbourhoods' had serious weaknesses than was typically the case, and children drawn from poorer families origin were more likely to have been in the lowest quartile of the educational tests compared to wider counterparts. Evidence from Glennerster (2002) shows from a study in England that, at key stage 3 (age 14), the median for schools with more than 40% Free School Means (FSM) (the most common measure of poverty for school pupils), was that no pupil achieved the expected performance level in English, compared with 83% in schools with less than 5% FSM. New evidence by Bramley et al. (2004 forthcoming) shows that key attainment in 2001/2 increases from most deprived wards through most prosperous wards, as shown in Figure 9.2. The above analyses show a strong and



Figure 9.2 Key attainment by level and deprivation band



consistent correlation between poverty and poor educational attainment, yet scholars have pointed out that these statistical relationships do not necessarily reveal the dynamics of how these factors actually operate in practice (Farrington, 1997) and have suggested that beside the direct effects, poverty interrelates with and/or generates other forms of disadvantage, which have an impact on individuals and families and therefore affect children's educational attainment.

Indirectly poverty affects education performance by diminishing children's capacity to exploit educational opportunities. The links between poverty and the likelihood of school failure may derive from the psychological and emotional outcomes of poverty and its effect on domestic and social lives. The level of a child's emotional well being could affect interest in learning because a charged emotional environment, for example, may cause children to be anxious, traumatised, unhappy, jealous, angry or vulnerable, compared to where parents are materially well off, less stressed themselves and more able to secure a stable and comfortable environment for their children. Beresford *et al.* (1999) explores the way poverty generates psychological pressures and stresses, which affect the quality of relationships, and reveals how financial pressure contributes to the social isolation of families and curtails their participation in community activities. Middleton *et al.* (1994) also gave insights into how social pressures resulting from poverty impact upon children's ability to concentrate upon school. In a recent research, Lupton (2004) describes how pupils from deprived background have severely disturbed behaviour and on many occasions are aggressive towards other pupils and staff; they often find it hard to accept rules, tend to be disruptive in lessons, find it difficult to concentrate and struggle to get through the school day smoothly on a regular basis. This picture is strongly supported by a recent qualitative study of children on the margins of school exclusion by Hilton

(2005). The kind of process described by Lupton (2004) may be potentially damaging in schools with a high proportion of deprived pupil because, as suggested by Bramley *et al.* (2004) and by evidence presented below, concentration of poverty in a school has a bigger negative effect than individual poverty itself.

### **Effect of Exclusion**

Children's development process, ability and motivation may be influenced by access and participation in key daily activities and interaction with people at home and in the community. Financial status and social standing are some of the key aspects that help people to access and participate in many activities. With respect to social standing, it is well known in social theory that characteristics of a social environment in which one lived as a child has lifelong effects on behaviour and ability (Hobcraft, 2000). Hobcraft established that educational failure is strongly associated with the process of social exclusion and asserted that interaction of individuals in community networks is good, because it can create positive behaviour that helps in the process of child development. It could be argued that children participating in key activities such as leisure school trips could lead to greater exposure and interaction with others, which in turn may lead to high self-esteem and confidence in children; but the lack of access can lead to children lacking the vital capabilities that become manifest in cognitive development and educational access.

Some research highlights the point that access to finance to higher educational attainment (Koba & Paxton, 2002). Financial exclusion denies people from participating in many every day life activities. For example, savings is an almost universal aspiration - for the sense of security it gives and because it can reduce dependence on high-cost credit. Borrowing is also a fact of life, but people with no access to institutional finance tend to be exposed to expensive finance. The consequence of financial exclusion includes decreased security and little or no access to mainstream credit. A family experiencing financial difficulties and not able to receive assistance may face a charged emotional environment at home, which could affect children at home. Lupton (2004) describes how such difficulties at home play themselves out at school in concentration problems, attention-seeking behaviour, and difficulties adapting to a consistent rule structure.

Groups that are particularly affected by financial exclusion tend to be those on low income. These people are heavily concentrated in communities with high levels of overall deprivation. For instance, about 80% of financially excluded households live in council or Housing Association accommodation. The very nature of mortgages means that it is rare to be an owner-occupier and be in financial exclusion. This suggests that home ownership could be a potential gateway to financial inclusion (but the converse also applies). Thus,

---

financial and social needs of children resulting from exclusion need to be addressed in order to have impact on educational attainment.

### **Role of housing tenure**

One obvious condition to satisfy to avoid social exclusion is a place to live. For this and other reasons home ownership is deeply prized by many and it is the dominant form of housing tenure in the UK, accounting for over 69% of tenure and a rising proportion of people aspiring to become home owners. Most aspire to be home owners because of perceived benefits, including more choice, better investment opportunities and greater ability to borrow against future income (Whitehead, 1979). Several recent studies particularly in the US (Aaronson, 2000; Boehm & Schlottman, 1999; Green & White, 1997; and Harkness & Newman, 2001), have also found home ownership has positive effects on children's educational attainment and development. These studies have shown that home ownership enables people to achieve a relatively high sense of freedom and enhances financial status because of the underlying distribution of income and wealth associated with it. It also helps build 'social capital' in a neighbourhood of owners. These attributes make home ownership a desirable tenure that can help in many ways to improve children's educational attainment. For instance it is a potential source of wealth that offers financial opportunities to the family and allows parents to invest in children's education. A financially stable parent can devote more time for children by say helping with schoolwork and participating in programmes that affect their children's education. But we must not ignore the downside of risks of negative equity and unaffordable mortgage repayment.

### **Neighbourhood effect**

From the point of view of social capital accumulation, home ownership may impact on children's educational attainment through benefits derived from neighbourhood of home owners. Because home owners normally live in the same dwelling longer than those renting, home owners are likely to be more residentially stable and social networks among homeowners in a neighbourhood is likely to be more stable than that of those renting. Arguably, greater stability would help strengthen the neighbourhood's social network, and a stronger network causes a variety of positive social outcomes such as local parent-teacher organisation etc. that could lead to progress in children's education. Stronger local social networks may also counter negative neighbourhood effects, for example crime, vandalism, drug abuse and other antisocial behaviour, through informal mechanisms of social control, peer group effects and alternative role models. If the rate of home ownership is higher, we would expect that the neighbourhood's social network will be stronger and the outcome would be a positive effect, although that will depend on variety of factors such as length of time in the area, age and so forth

---

(for rather mixed evidence, see Atkinson & Kintrea (2001) but also Bramley & Morgan (2003)). Neighbourhood image can also affect children's educational attainment. Hawarth (2002) demonstrated that living in a stigmatised neighbourhood can engender low esteem. Educational attainment in such areas is often low. For instance, in a study of social exclusion and neighbourhoods in England, Lupton (2002) shows that attainment at school is low in stigmatised areas.

There is of course a strong association between tenure and social economic class. This is confirmed, for example, by analyses of the Scottish Household Survey data for 1999/00, which shows that 85.7% of people in the highest social class in Scotland are home owners compared to only 46.1% in the lowest social class (2001/02 data are similar). It has long been known that social class, and associated factors like parental educational background, are important non-school factors in affecting educational attainment. Over time, the causation runs both ways, as better educational attainment feeds through to improve the occupational outcomes and class position of later generations. If there is a strong association between tenure and socio-economic class, then changing the tenure mix of neighbourhoods and schools is likely to be associated with better attainment outcomes in those schools. Whether this is more than a simple mix effect, and whether there are more virtuous spillover effects in neighbourhoods and schools, to the benefit of children from poorer and lower socio-economic backgrounds, is a more open question. Also very interesting is the question of whether households with relatively poor or middling economic circumstances would benefit from more opportunities to enter owner occupation, and whether their children would thereby achieve more at school. Given that home ownership is a potential source of assets and other financial opportunities, this could help reduce the poverty risk and benefit children's development, particularly their educational performance. This suggests that programmes that help families become home owners might better serve to improve children's educational attainment and other outcomes than certain other programmes.

### **Overview**

The above discussion, informed by a far from exhaustive literature review, shows linkages between factors that affect educational attainment and the dynamics of how these factors may interrelate. Most literature on the subject shows that the main problem pertains to poverty and exclusion, but also that some school factors play a part. Given the attributes of home ownership, it can help education attainment of poorer areas and people, in at least two ways. First, more households could become owner-occupiers, given the right opportunities, and this would (over time) influence their attitudes, behaviour, stability and security so that their children would be more likely to succeed; and secondly, more mixing of tenures, with non-owner-occupiers in previous-

---

ly poor areas, should influence neighbourhood peer group values/behaviour within school ethos, process and expectations so that attainment is improved for both owner-occupiers' children and other children.

## 9.3 Methodology

### **Aim of investigation**

Our aim is to assess the impact of home ownership on children's educational attainment. We recognise from the above review that attainment is subject to a wide range of influences, with home ownership only one factor among many. We suggest that home ownership may influence attainment both directly and indirectly, and may be associated with other neighbourhood effects. Our approach is to examine the effects of home ownership in the context of a more general model explaining educational attainment. This model tests and allows for other factors, including specific characteristics of pupils (e.g. language, special needs, prior attainment), and characteristics of schools, as well as the neighbourhood conditions including the poverty rate, home ownership rate and residential stability. In general, this statistical model is intended to reveal whether a particular variable, such as home ownership, has an effect on attainment once allowance has been made for other determinant factors, some of which may be partly associated with the factor we are interested in. So, for example, poverty or residential instability may be associated with both school attainment and home-ownership.

We obtained data from various sources identified below and used multivariate modelling techniques (linear regression and logistic regression) to try to explain variations in attainment for individual pupils. This takes account where appropriate of the multi-level nature of the data and possible differences in effects at different levels. The analysis is built on the experience of recent analysis of the National Pupil Database (NPD) data for five areas in England reported in Bramley *et al.* (2005, Chapter 3). We are now extending this analysis in modified form to certain areas in Scotland, using relevant but somewhat different data sources there, but in this chapter we report solely on the English results.

### **Data sources**

In order to tease out the statistical relationship underlying school attainment, we utilise data at the level of the individual pupil, which have recently been compiled on a common basis nationally in England as the National Pupil Database (NPD). These record a number of attributes of all individual pupils, including their attainment in Key Stage Tests or examinations, as well as certain key socio-demographic attributes (age, gender, ethnicity, eligibility for free school meals) and educational attributes (whether classified as hav-

---

ing different levels of special education need, language). They also contain attached data for the higher-level units of which that pupil is a part (particularly, the school). Because the NPD contains the pupil's home postcode, it is also possible to attach attributes of the pupil's residential neighbourhood. We do this effectively at two levels, firstly for the broader neighbourhood defined by ward and secondly for the smallest census unit (output area), which may be likened almost to a street block (average population 100 persons, 40 households). At ward level we are able to utilise a range of data derived from censuses and from administrative record systems, particularly where these have been made available through the Government's Neighbourhood Statistics programme. An example is the Indices of Multiple Deprivation (IMD, 2000).

The purpose of the lowest level linkage is to provide a quasi-individual measure of housing tenure and certain other attributes. The NPD does not directly record housing tenure, nor a number of other potentially significant factors such as parental qualifications, but this very small area linkage provides an opportunity to provide a first approximation.

### **Background to modelling attainment**

There has been extensive research which seeks to use statistical modelling to unpick the determinants of school effectiveness and school outcomes, in the UK, US and elsewhere. This body of research is developing rapidly as better data become available and policy interest intensifies. A useful recent review of this literature is provided by Vignoles *et al.* (2000; DFEE research brief 228). They find that much of the research is inadequate in terms of theoretical background, over-aggregation of data, and not using the most appropriate statistical techniques, although some recent studies are better. Many earlier studies reached negative conclusions about the effects of school resources on attainment, but more recent and better-specified studies are tending to find some positive effects from factors like class size, teacher experience and pay, and specific interventions. These authors argue for the commissioning of substantial further research with a longitudinal element linking pupil level records of attainment and background, school/class level resource measurement, and area level background. This study attempts to follow this guidance, within the limits of data and time resources. It builds on previous work by one of the present authors (Bramley, 1989; Bramley & Wyatt, 1998; Bramley & Evans, 2002), while also reflecting some of the other recent UK work (Goldstein 1985, Goldstein & Sammons, 1997; Yang *et al.*, 1997; Bynner & Steedman, 1995; Bynner *et al.*, 1997; Burgess *et al.* 2001).

The conceptual framework adopted, implicitly or explicitly, in most of this work is that of 'educational production functions'. This derives from micro-economic theory, originally developed to analyse firms and industries but subsequently extended into other areas including households and public services, which seeks to explain outputs as a function of the quantities of vari-

---

ous inputs applied. In the education context, the outputs of greatest interest are the attainment levels achieved by pupils, which would more generally be termed 'outcomes'. Schools may be conceived as firms or plants, but this approach has always recognised that the range of inputs is broader than in the industrial context, including critically the 'quasi-inputs' supplied by households in the form of varying degrees and kinds of support to children in the educational process. This level of support has been shown by much previous research to be strongly related to such factors as poverty/affluence, parental educational level, family type and size, housing circumstances and so forth. Children vary in their innate abilities or specific learning difficulties, and may also be affected by cultural differences which may be related to ethnicity, class, or neighbourhood peer group effects.

The production function approach draws attention to issues of the functional form of relationships. In particular, key inputs may be subject to increasing or decreasing returns, implying a need to consider non-linear relationships. Furthermore, the influence of one type of input may be contingent upon the presence of other inputs or the structure of the industry or firm, leading to the case for interactive types of relationship to be modelled. In our work reported here we test for non-linearity in some key relationships of interest, those relating to school-level concentrations of poverty, school resources, and school size.

In the case of schooling, the production process is long-term and cumulative. Attainment at one level will be strongly conditioned by prior experiences and attainment earlier in the school or pre-school career of the pupils involved. This points towards the need, ideally, to track individual pupils longitudinally. Even where this cannot be done directly, such effects may be captured indirectly, for example by relating outcomes at one stage to characteristics or performance of earlier stages of education in the same place, or to more general neighbourhood characteristics. In this study, we use one key longitudinal relationship with prior outcomes (at primary KS2) when modelling secondary attainment (at KS4), but otherwise rely mainly on the indirect approach.

Much earlier research focussed on quite aggregated data on outcomes and determinant factors, for example at the level of local education authorities (LEAs) or schools. However, this is open to the criticism of 'ecological fallacy', whereby an aggregate correlation may not actually represent a direct influence at the individual level. Some of the relationships of interest are clearly individual – e.g. from specified learning difficulties or language background to learning outcomes. However, other relationships apply at a higher level of aggregation – e.g. the influence of concentrations of poverty within schools or neighbourhoods on outcomes. Ideally, we should follow a modelling strategy which enables both types of influence to be separately identified. The general term for such a strategy is 'multi-level modelling' (Goldstein, 1995; Sniders &

---

Bosker, 1999; Hepple & Rees, 1998). In this study we adopt this strategy, although we do not follow its full ramifications to their ultimate limit.

### **Structure of Models**

Specifically, we model individual pupil outcomes at Key Stages 2 (age 11) and 4 (age 16) as a function of the following classes of factor:

- individual pupil attributes, such as gender, ethnicity, language, learning difficulty (SEN) and poverty (proxied by Free School Meals eligibility, FSM for short);
- structural characteristics of schools attended, such as size, occupancy, age range, denominational status, special classes;
- spending resources of schools;
- special policy measure designations of schools (e.g. EiC, EAZ,);
- the concentration of pupils with particular attributes in each school (i.e. aggregated average scores of variables from (a) above);
- socio-demographic attributes of the neighbourhoods (wards) in which pupils live.

The variables derived from 2001 census output area level, such as home ownership, are as suggested above ‘quasi-individual’, a sort of hybrid of (a) and (f).

The models are multi-level in the sense that they combine data from the individual level with data from two distinct but overlapping higher levels, the school and the neighbourhood, and they permit the separate identification of relationships operating at these different levels. This is more clearly so in relation to the school level, where aggregated individual characteristics are included alongside their individual level effects. With regard to the neighbourhood variables, these combine the influence of these factors both at individual and area level (our dataset does not identify these attribute values for individual pupils’ families). In formal terms, our models are hierarchical random-effects models, an appropriate choice given our interest in group-level effects (Sniders & Bosker, 1999, p.43). We considered but rejected the option of including LEA-level dummy variables (fixed effects), but these would have disguised the influence of factors like expenditure which vary significantly between LEAs. There is a case for considering models with varying slopes for particular variables, perhaps between different classes of school (the number of individual schools in the dataset is very large), although we have not pursued this so far.

There is a case in models of this kind for recognising that certain variables are endogenous, that is determined by other variables in the system. Ignoring this can lead to misspecification and biased or misleading results. This argument has been applied, in this context, especially to the treatment of school expenditure/resources, which tend to be determined by funding formulae which reflect pupil and school characteristics which are in the model. A gen-



---

eral solution to this kind of problem is to treat the system as a simultaneous equation system and to estimate it using a technique such as instrumental variables/two-stage least squares. In practice, we do adopt this approach to the expenditure variable, but note that this is a school-level variable modelled at this higher level. Regression models are developed to predict school expenditure per pupil using school and LEA level variables, including interaction terms with LEA to reflect differences in funding formulae. These predicted values are then substituted in the multi-level outcome equations. Consideration was given to modelling certain other key variables as endogenous in a similar way, particularly poverty (FSM) and special educational needs (SEN). However, this was rejected on the grounds that we did not have enough fine-grained individual/household attributes to predict these individual-level variables efficiently within our dataset. The actual individual values on these factors contain much information which would be lost to the model if we only used crudely predicted values (however, a possible compromise might be to model the school level concentrations of these factors as endogenous).

### **Attainment measures**

At both primary and secondary level we model two different measures of attainment: the average score per pupil in the cohort (counting KS2 levels as the score, or average GCSE points), and the binary variable of achieving level 4 in the three main tests at KS2 or achieving 5 or more grades A-C at GCSE. (In all cases the whole cohort is counted, including those not entered for the tests or absent). For the score indicators, which are continuous, we use least squares linear regression. For the binary level indicators, after an initial exploration using linear regression (i.e. a linear probability model) we use logistic regression fitted using a maximum likelihood, an appropriate and widely-used form of regression applicable to binary dependent variables. Logistic regression predicts the log-odds of achieving the target level, and results must be transformed back to proportions when calculating the size of particular impacts.

### **Case study areas**

Our starting point for this study is a set of models developed in a previous project (Bramley et al., 2005), which was mainly concerned with understanding the drivers of school attainment variations in different areas, and in particular the roles of deprivation and education expenditure. The previous study focussed on five areas in England – Bradford, the London Borough of Brent, East Kent, Liverpool and Nottingham. Given its focus on deprivation this selection is somewhat biased towards relatively deprived localities. However, taken as a whole this sample represents a range of regions, urban and rural conditions, deprivation profiles and patterns of educational provision.

Data were obtained from the local authorities on school budgets and

---

spending (for 2000/01), and these were linked to data from the first available set of NPD data which include as noted above school attributes, pupil attributes and individual pupil attainments. Other data were derived from the 1991 Census, Neighbourhood Statistics and Index of Multiple Deprivation (IMD) 2000 sources, chiefly at ward level. In the previous project 2001 Census data were not available, but for this study we have added a set of measures (including housing tenure) for 2001 at the smallest areal unit of 'output areas'. The complete NPD dataset for these areas comprises over 300,000 records, but we focus here on two single-year cohorts of pupils: those taking Key Stage 2 tests at age 10/11 in 2001/02, and those taking Key Stage 4 examinations (alias GCSE) at age 15/16 in 2001/02. For the latter cohort, NPD also included those individual pupils' prior attainment at KS2 five years earlier, in 1996/7. The effective samples for these two cohorts, allowing for missing data, are 20,495 and 16,626 respectively.

## 9.4 Results of modelling

### **Salient features of 'basic model'**

In the previous project models were derived, by a process of experimentation, which appeared to give a reasonable account of the influence of relevant factors on attainment at the two stages considered. We take these models as our starting point for this exercise. Although we are mainly interested in the influence of certain new variables, particularly home ownership, it is useful to start by noting some of the main features of the basic models as previously derived.

The primary attainment (KS2) models explain about 35% of the variance in scores at individual level using about 26 variables drawn from the six groups (a) to (f) identified above. A somewhat lower proportion of variance in binary attainment of 'Level 4' is explained. The secondary attainment models (KS4) explain around 50% of the variance in scores, using a larger number of variables (29), with again a somewhat lower proportion of variance explained for binary attainment at two levels considered (5+ grades A-C, and 5+ grades A-G). The higher level of explanation of secondary attainment is mainly due to the ability to include prior attainment in this model, and this is indeed the most powerful single explanatory factor.

The individual variables are the group which have the strongest effects in the models. It is those relating to special needs (SENSTAGE), poverty (FSMD) and language (NOTENGP) which have the strongest effects. All of these depress attainment, as expected. One ethnic category, Indian and Chinese pupils, do significantly better. Surprisingly, girls appear to do less well at KS2, allowing for all these effects. One aggregated school level measure, the proportion in poverty (SFSM), has a powerful negative effect (although there is

some evidence that this effect may be non-linear). At the mean the impact of a 10% higher incidence of FSM through the school-level effect would be 3-4 times the individual level effect. This finding, replicated in the other models, seems both plausible and important in policy terms.

Even though prior attainment is controlled for in the secondary (KS4) model, most of the other factors like poverty continue to exert a powerful influence on the gain in attainment at secondary level, in a similar fashion to their impact in the primary sector. Poverty is strongly negative at individual and school levels, for example, with the school-level effect being even stronger here. However, there are some noticeable differences in the gender and ethnic effects.

Greater school expenditure per pupil is associated with moderately higher attainment scores in both primary and secondary sectors. Size of school has a negative (but non-linear, diminishing) effect on attainment, while very small secondaries do less well. Some types of denominational schools appear to do better. The presence of special classes is a positive factor at secondary level, which may be of policy significance in developing learning support strategies.

Area (ward level) effects which are negative for primary attainment include low social class, housing mobility and the multiple deprivation score (IMD), although the latter is only marginally significant. Most deprivation effects are probably captured by free meals. Positive effects at this level include the proportion of flats and the estimated participation in private education. Additional ward factors significant in the secondary sector include deprivation measures and a number of housing variables: detached houses increase attainment whilst flats reduce it, as does a lot of vacant housing and a lot of mobility.

Having established these basic models as a starting point, we now proceed to modify these by introducing owner occupation measures and by replacing some older (1991-census-based) ward measures by some more contemporary (2001 Census) data at output area level.

### **Introducing home ownership into the model**

Taking our basic model as a starting point, we first introduce our 'quasi-individual' owner occupation variable based on the percentage of owners within the output area of residence of the pupil. We also include three other output area level variables: the percentages in good health, working, and with no qualifications. While the first column in Table 9.1 shows statistics for the basic model, the second column shows the model with these additions, and also shows the coefficient, t-statistic and significance for the owner occupation variable. Two models are shown for primary, the OLS model for KS2 scores and the logistic regression model for attaining Level 4 at KS2 (for the logistic regression models we show the  $\exp(B)$  transformation of the coefficient instead of the t-statistic). For secondary, we show the OLS model for GCSE

points score and the logistic regression for attaining 5+ grades A-C.

The third column of Table 9.1 shows the models adjusted to exclude 1991 ward level variables, as a basis for comparison with subsequent models. The fourth column includes the school level aggregated owner occupation variable plus another OA-level variable, the breadline poverty indicator for 2001. The final column shows a more parsimonious model including both owner occupation variables but excluding some generally insignificant variables in the earlier models.

The results show that for primary pupils both quasi-individual owner occupation and school level owner occupation improve the performance of the models, with the final parsimonious model the best. The increments in *r*-squared measures are small but worthwhile. The effect of the school-level owner occupation measure is greater in both OLS and logit models than the quasi-individual effect, but both are statistically significant. There is a parallel here with the poverty effects, which are also greater at school level. To give a feel for the magnitude of these effects, a 20% point rise in the owner occupation rate would raise KS2 scores at the mean by 3.5%, with most of this effect from the school level. The effect on the proportion attaining Level 4 would be to increase this by 5.7% points or 9.7% of the mean value.

For secondary pupils, quasi-individual owner occupation improves the models, but school level owner occupation does not really add much. In the case of GCSE points scores, the individual owner occupation variable has a larger coefficient and is more statistically significant than the school level variable, which is positive but marginal. In the case of attaining 5+ grades A-C, the model shows a positive and significant individual effect partially offset by a negative, but not statistically significant, school-level effect. The magnitudes of the secondary effects are smaller than those for primary. On points scores, a 20% point rise in owner occupation would only increase scores by 0.55% at the mean. On attainment of 5+ grades A-C, there would be an increase of 1.3% on the proportion attaining this level at the mean. One possible explanation for the weaker school-level effect is that secondary schools are larger, and perhaps therefore less homogeneous.

Our preliminary conclusion on the basis of these tests using English NPD data is that owner occupation does have a measurable and significant positive impact on school attainment, even allowing for a wide range of other factors known to be influential. The impact appears to be greater at primary level than for secondary pupils. In the case of primary, the effect of having more owner occupier pupils in the school is bigger than the effect of the being an owner occupier pupil directly (or, strictly, coming from a street or block with a high percentage of owner occupiers). This is not the case with secondary pupils, where the effect is mainly a quasi-individual effect, and where school level effects are marginal and may not be significant. The size of the impacts of owner occupation is not very large, particularly in secondary schools, but

**Table 9.1 Summary of impact on models of introduction of owner occupation variables and other model changes**

	Basic	+ OO & other OA level variables	Drop old ward variables	Include School level OO	Drop more variables
<b>O L S Model for K S 2 Score</b>					
Adjusted r-squared	0.354	0.359	0.356	0.357	0.356
F ratio	435	383	419	394	493
Coefficient % owners (OA)		0.0082	0.0077	0.0070	0.0030
t-statistic		6.9	7.0	5.6	2.8
Significance		0.000	0.000	0.000	0.005
Coefficient % owners (School)				0.0180	0.0171
t-statistic				6.9	6.8
Significance			0.000	0.000	0.000
<b>L o g i s t i c R e g r e s s i o n M o d e l f o r K S 2 L e v e l 4</b>					
-2 log likelihood	21531	21248	21286	21255	21289
Cox & Snell r-squared	0.253	0.257	0.256	0.257	0.256
Nagelkerke r-squared	0.354	0.350	0.348	0.359	0.348
% correct predictions	75.3	75.3	75.2	75.2	75.2
Coefficient % owners (OA)		0.0054	0.0051	0.0049	0.0021
Exp(B)		1.005	1.005	1.005	1.002
Significance		0.000	0.000	0.000	0.030
Coefficient % owners (School)				0.0109	0.0099
Exp(B)				1.011	1.010
Significance				0.000	0.000
<b>O L S M o d e l f o r G C S E ( K S 4 ) S c o r e</b>					
Adjusted r-squared	0.504	0.513	0.510	0.510	0.507
F ratio	436	417	510	482	589
Coefficient % owners (OA)		0.063	0.065	0.064	0.064
t-statistic		8.8	10.2	9.1	10.7
Significance		0.000	0.000	0.000	0.000
Coefficient % owners (School)				0.049	0.036
t-statistic				2.0	1.6
Significance				0.042	0.109
<b>L o g i s t i c R e g r e s s i o n M o d e l f o r 5 + G r a d e A - C a t K S 4</b>					
-2 log likelihood	15388	15210	15255	15250	15321
Cox & Snell r-squared	0.367	0.371	0.369	0.370	0.367
Nagelkerke r-squared	0.490	0.496	0.494	0.494	0.490
% correct predictions	79.4	79.5	79.3	79.3	79.3
Coefficient % owners (OA)		0.0077	0.0080	0.0082	0.0084
Exp(B)		1.008	1.008	1.008	1.008
Significance		0.000	0.000	0.000	0.000
Coefficient % owners (School)				-0.0061	-0.0065
Exp(B)				0.994	0.993
Significance				0.191	0.133

OO: owner occupation; OA: output areas.

this ignores the possible indirect effects via other variables which will be related to owner occupation, including poverty. This point is developed further below.

### **Other relevant factors and interactions**

From the discussion in Section 9.2 of this chapter it is clear that there is a number of ways in which owner occupation may affect educational attainment. Some of these effects may work indirectly via other variables, some of which may already be included in our attainment models. For example, owner occupation is likely to be inversely related to poverty and wider deprivation measures, to lack of qualifications, and to some aspects of special educational needs. This may mean that, when we introduce owner occupation into the models, while the owner occupation variables may show up as significant, they may also displace some of the explanation previously provided by other variables in the model. There is some general evidence that this may be going on from the fact that the overall fit of the models does not increase markedly when we include owner occupation. We have attempted to check for this by looking to see whether, in the successive models referred to in Table 9.1, the coefficients and significance levels for other variables change. On the whole, the conclusion from this inspection is that, for most of the key variables we are interested in, there are not large changes and the basic model is relatively stable.

There are one or two cases, however, where we can detect some interaction. School level poverty (SF5M) tends to have a smaller impact when school-level owner occupation is included. The ward-based IMD variable is also affected. Primary expenditure has a stronger effect when owner occupation is included, but at secondary level the effect of this variable is weakened in the logistic regression model. School level special needs effects are more strongly negative when owner occupation is included, in the case of secondary schools.

Looking more broadly at the impact of owner occupation, it must be recognised that if we were to try to simulate the impact of a change in owner occupation in certain types of areas, particularly deprived areas, this would be likely to be associated with corresponding changes in poverty and other factors which are significant in our models. This would mean that the overall impact of such tenure changes would be substantially larger than those direct effects quoted above, given the general pattern of the effects associated with such variables as poverty and qualifications. This point is illustrated by Table 9.2, which looks at the values of a number of key variables across the sample banded by proportions of owner occupation at school level. This table shows that there is a strong relationship between the owner occupation share of schools and their shares of poor pupils (free meals), their shares of special needs, and their IMD scores. There is also a noticeable relationship with adults with no qualifications in their catchment areas. All of these fac-

---

Table 9.2 Selected need characteristics and attainment levels by banded levels of home ownership

Banded Ownership (School)	Average % owners	Free meals school	Special need stage	IMD Score	No qualifications %	Attainment level	Attainment score
<b>Primary</b>						<b>KS2 Lev4</b>	<b>KS2</b>
<25	21.7	.64	.70	66.7	45.3	.59	11.21
25-50	39.2	.45	.72	57.5	43.2	.47	10.57
50-65	57.8	.29	.53	44.9	38.2	.57	11.09
65-80	73.0	.17	.36	36.2	33.9	.61	11.52
>80	84.2	.07	.35	25.6	26.8	.76	12.55
<b>All</b>	<b>61.8</b>	<b>.26</b>	<b>.50</b>	<b>42.4</b>	<b>36.3</b>	<b>.59</b>	<b>11.54</b>
<b>Secondary</b>						<b>KS45AC</b>	<b>KS4</b>
25-50	42.0	.46	.64	57.7	42.4	.25	26.9
50-65	58.4	.31	.37	47.9	38.8	.34	32.1
65-80	73.1	.16	.23	33.5	32.7	.52	40.9
>80	83.7	.05	.20	21.8	24.8	.69	47.7
<b>All</b>	<b>63.8</b>	<b>.25</b>	<b>.34</b>	<b>41.5</b>	<b>35.8</b>	<b>.43</b>	<b>36.6</b>

IMD: Index of Multiple Deprivation

tors, according to our models, help to account for the generally lower attainment levels in schools with lower shares of owner occupation, as shown in the last two columns of the table.

Therefore, it is possible to argue that owner occupation may have more pervasive effects on attainment than those captured simply by the particular coefficients on ownership variables recorded in Table 9.1. This argument is essentially about processes at the area and school level. One can of course still argue that, at individual/household level, the causality may run from poverty or lack of qualifications to both home ownership and attainment. The poorest families will find it difficult to attain or sustain home ownership. A policy of tenure diversification may be seen as an exercise in reshuffling the pack, in terms of mix within schools. It may be expected to raise attainment levels in hitherto disadvantaged schools, but how far this spills over to benefit all pupils is unclear.

### Impact of owner occupation on non-owners at school level

This leads on to the question of whether we can use our data to test whether school-level owner occupation affects the attainment level of non-owner children as well as the children of owners. It is difficult to do this in a very satisfactory way, because we are still only using a quasi-individual measure based on the street or block scale of output areas. It turns out that there are very few pupils in our English sample who come from output areas containing no or virtually no owners. In order to perform a test with a reasonably large sample it is necessary to set the cutoff quite high. We report now the results of applying our model to that subset of pupils who live in OAs containing less

**Table 9.3 Comparison of impact of owner occupation variables in models for all cases and those from low ownership output areas**

	Primary all cases	Primary low ownership	Secondary all	Secondary low ownership
<b>O L S M o d e l f o r S c o r e</b>				
Coefficient % owners (output areas)	0.0070	-0.0057	0.064	0.030
t-statistic	5.6	-1.7	9.1	1.5
Significance	0.000	0.097	0.000	0.139
Coefficient % owners (School)	0.018	0.023	0.049	-0.016
t-statistic	6.9	4.9	2.0	-0.4
Significance	0.000	0.000	0.042	0.718
<b>L o g i s t i c R e g r e s s i o n M o d e l f o r L e v e l</b>				
Coefficient % owners (output areas)	0.0049	-0.0051	0.0082	0.0048
Exp(B)	1.005	0.995	1.008	1.005
Significance	0.000	0.069	0.000	0.211
Coefficient % owners (School)	0.0109	0.0128	-0.0061	-0.0128
Exp(B)	1.011	1.013	0.994	0.987
Significance	0.000	0.001	0.191	0.140

than 50% owner occupation.

Table 9.3 shows the key results in terms of the coefficients for the two ownership variables and their significance in four models, two OLS models for scores at primary and secondary level, and two logistic regression models for attainment of target levels in primary and secondary.

In the primary school case (KS2), the quasi individual (OA level) ownership variable shifts from significant positive to marginally significant negative in its effect. We would expect this effect to weaken, because the range of variation in this variable has been sharply reduced within this sub-sample. We are much more interested in the coefficient on the school level ownership variable. This actually increases slightly in size in both OLS and logit models, and remains significant despite the smaller sample. So this provides positive evidence that having more children of owners in a primary school raises the attainment of pupils who are 'probably not' owners themselves.

The results in the secondary sector are different, but we would perhaps expect this given the pattern of results reported earlier in Table 9.1. The quasi-individual ownership variable drops in size and significance, while the school level ownership variable becomes insignificant negative (in the OLS case) or remains insignificant negative (in the logit case). So the evidence does not support the proposition that having more children of owners in a secondary school raises the attainment of children who are probably not owners. Since these school level ownership effects are weak and ambiguous in the full sample, this negative finding is not that surprising.



---

## 9.5 Concluding discussion

School attainment has attracted increasing policy and research attention, because of a recognition that educational achievement is a key determinant of later life chances in terms of employment, occupational class, income and wider quality of life. Research on school attainment addresses both school-based and non-school factors. Although much of this research is motivated to identify structural policy, resource, organisational and teaching methods of improving school performance, it remains clear that non-school factors tend to be the dominant drivers of attainment. Factors like gender, ethnicity and class attract attention in this context, but arguably the most important non-school factor is poverty, which can impact on children through lack of material resources and support in the home, through stresses leading to behavioural difficulties, and through wider psycho-social processes of expectation, stigma and subculture which operate more at neighbourhood level. These latter factors are important because schools are to varying degrees tied to neighbourhoods.

Some authors have injected into this debate an interest in housing tenure as an independent factor impacting on school attainment, particularly the role of owner occupation as a positive factor. Most of this recent literature has been American. Home-ownership is suggested to be influential because of its association with better housing conditions, more residential and household stability, avoidance of financial exclusion and insecurity, and its effects on wider attitudes and behaviour. Policies to promote home-ownership reflect these and other concerns. For example, in a regeneration context tenure diversification is often promoted as a means to upgrade areas physically and in terms of their human/social capital, as well as their economic profile.

In this chapter we have taken this hypothesis and subjected it to some initial testing in a UK context, focussing on a number of study areas in England. We utilise data from new sources, the National Pupil Database and the 2001 Census, linked to other data on school spending and neighbourhood deprivation derived from other recent research. We put forward a general modelling framework, consistent with the emerging paradigm in school attainment research, which views this as a form of production function with social 'quasi-inputs' alongside school structural and resource inputs. This framework entails working with multi-level data, including a substantial element of individual pupil characteristics nested in a structure of schools and neighbourhoods. Account is taken of possible endogenous factors and non-linearities. In this study we add to this basic framework a number of 'quasi-individual' factors, including home ownership, based on very small residential area characteristics.

Our basic finding is that home-ownership does have an additional, independent and positive impact on school attainment. The effect is stronger in

---

the primary school sector, and in this case it is clear that the concentration of home ownership at school level contributes more than the quasi-individual ownership factor, although both operate. In the secondary sector the impact of home ownership is weaker, particularly the school-level effect. Home ownership does not dramatically increase the amount of variance explained, in models which already contain many variables, some of which are related to home ownership indirectly. However, most of these other effects, including poverty and school spending effects, are robust to the inclusion of home ownership. Nevertheless, there are some interactions and overlaps, and it is certainly clear that changing an area's (and a school's) home ownership profile would be likely to also change its profile in terms of other key variables, including poverty and parental qualifications.

A stronger test of the home ownership hypothesis is to see whether schools with more homeowner children help all their pupils to do better, including children who are probably not from homeowner families. Our attempt to test this is not perfect but it does appear to support the hypothesis in the primary sector, but not in the secondary sector.

It is relatively unsurprising that children from owner occupier homes do better, other things being equal. The school-level effects are more interesting. They suggest that home ownership has effects on factors which operate at school level, such as ethos, expectations, parental involvement, and behaviour. There is a strong analogy with the effects of poverty, which our models show to be also more powerful at school than at individual level. These two home influences may be working in similar but opposite ways. They may also operate similarly at the neighbourhood level, in terms of culture, behaviour, interactions and expectations outside the school gates but in ways which impact on achievement within schools.

It is interesting to speculate as to why owner occupation appears to be more significant in the primary sector. Primary schools are smaller, potentially more homogeneous, and more tied to neighbourhoods. Primary children may be more susceptible to influence, and less set in a particular achievement trajectory. It is certainly apparent (see Figure 9.2) that measures to improve attainment in poorer areas have enjoyed more success so far in the primary sector.

Ultimately, the case for owner occupation rests not just on these collective school or area-level effects, but also on possible causal linkages at the individual household level. Some argue that the act of becoming an owner occupier, which may be facilitated by policies which widen such opportunities, impact over time on household attitudes, behaviour and outcomes in such arenas as the labour market and community involvement. Our data do not permit us to test these hypotheses directly, although one might begin to approach this by looking at tenure changes and their relationship with migration.

---

---

## References

- Aaronson, D., 2000, A Note on the Benefits of Homeownership, in: **Journal of Urban Economics** **47**, pp. 356-69.
- Beresford, P., D. Green, R. Lister & K. Woodward, 1999, **Poverty First Hand: Poor people speak for themselves**, London (Child Poverty Action Group).
- Boehm, T.P. and A.M Schlottman, 1999, Does Homeownership by Parents Have Economic Impact on their Children?, in: **Journal of Housing Economics** **8**, pp. 217-22.
- Bramley, G. & M. Evans, 2002, **Neighbourhood Spending and Outcomes: a study of education and employment outcomes in three English cities**, CRSIS Research Paper, Heriot-Watt University, [www.crsis.hw.ac.uk](http://www.crsis.hw.ac.uk).
- Bramley, G. & G. Wyatt, 1998, **The Use of Non-Expenditure Information in Standard Spending Assessments**, Report of Research to the Department of the Environment, Transport and the Regions (Local Government Research Unit).
- Bramley, G., 1989, A model of educational outcomes at local level with implications for local expenditure needs, in: **Environment & Planning C: Government and Policy**, **7**, pp. 37-58.
- Bramley, G., M. Evans & M. Noble, 2005, **Mainstream Services and their impact on Neighbourhood Deprivation**, Neighbourhood Renewal Unit, London (ODPM).
- Burgess, S., K. Gardiner & C. Propper, 2001, **Growing Up: school, family and area influences on adolescents' later life chances**, CASE Paper 49, London School of Economics.
- Bynner, J. & J. Steedman, 1995, **Difficulties with Basic Skills**, London (Basic Skills Agency).
- Bynner, J., E. Ferri & P. Shepherd (eds.), 1997, **Twenty-something in the 1990s: Getting on, getting by, getting nowhere**, Aldershot (Ashgate).
- Clark, J., A. Dyson, et al., 1999, **Housing and Schooling – A Case Study in Joined Up Problems**, York (Joseph Rowntree Foundation).
-

Farrington, D.P., 1997, Human Development and Criminal Careers, in: M. Maguire, R. Gewirtz, S. (1998) **Can All Schools Be Successful? An Exploration of the Determinants of School 'Success'**, Oxford Review of Education 24 (4), pp. 439-457.

Gibson A. & S. Asthana, 1998, School Performance, School Effectiveness and the 1997 White Paper, in: **Oxford Review of Education 24 (92)**, pp. 195-210.

Glennerster, H., 2002, United Kingdom Education 1997-2001, in: **Oxford Review of Economic Policy 18 (2)**, pp. 120-137.

Goldstein, H. & P. Sammons, 1997, The influence of secondary and junior schools on sixteen year examination performance: a cross-classified multi-level analysis, in: **School Effectiveness and Performance, 8**, pp. 219-230.

Goldstein, H., 1995, **Multilevel Statistical Models**, Kendall's Library of Statistics 3, 2<sup>nd</sup> edition, Edward Arnold.

Green, R. & M. White, 1997, Measuring the benefits of Home owning: Effects on Children, in: **Journal of Urban Economics 41 (3)**, pp. 441-61.

Hackness, J. & S.J. Newman, 2001, **The Differential Effects of Homeownership on Children from Low-income and High Income Families**, John Hopkins University, Institute for Policy Studies.

Hanushek. E., 1986, The Economics of Schooling, Production and Efficiency in Public Schools, in **Journal of Economic Literature, 24**, pp. 114-117.

Hawarth, C., 2002, So you're from Brixton? The struggle for recognition and esteem in a stigmatised community, in: **Ethnicities 2 (2)**, pp. 231-254.

Hedges, L.V., R.D. Laine and R. Greenwald, 1994, Does Money Matter? A Meta-analysis of Studies of the Effects of Differential School Inputs on Student Outcomes, in: **Educational Researcher, 23 (3)**, pp. 5-14.

Hepple, L. & H. Rees, 1998, **Standard Spending Assessments and Multilevel Modelling**, Report to DETR (Local Government Research Unit) by Geo-economics Research.

Koba, C., & W. Paxton (ed.), 2002, **Asset based Welfare and Poverty: Exploring the case for and against asset-based welfare policies**, London (IPPR).

- 
- Lupton, R., 2004, **Schools in Disadvantaged Areas: Recognising context and raising quality**, CASE Paper 76, London (ESRC research Centre Report).
- Middleton, S., 1994, **Family Fortunes: Pressures on parents and children in the 1990s**, London (Child Poverty Action Group).
- Middleton, S. & Asworth, K., 1997, **Small Fortunes: Spending on Children, Poverty and Parental Sacrifice**, York (Joseph Rowntree Foundation).
- OFSTED, 2000, **Improving City Schools**, London (OFSTED).
- OFSTED, 2001, **National Summary Data Report for Secondary Schools 2001 Data**, London (OFSTED) ([www.ofsted.gov.uk](http://www.ofsted.gov.uk)).
- Parsons, C., 1999, **Education, Exclusion and Citizenship**, London (Routledge).
- Reynolds, D., P. Sammons, P. Stoll, M. Barber & J. Hillman, 1996, School Effectiveness and School Improvement in the United Kingdom, in: **School Effectiveness and School Improvement**, 7, pp. 133-58.
- Rutter, M., 1979, **Fifteen Thousand Hours**, Penguin.
- Sniders, T. & R. Bosker, 1999, **Multilevel Analysis: an introduction to basic and advanced multilevel modelling**, London (Sage).
- Social Exclusion Unit (SEU), 1998, **Bringing Britain Together: A National Strategy for Neighbourhood Renewal**, London (SEU).
- Taylor, M., 1998, Combating the Social Exclusion of Housing Estates, in: **Housing Studies**, 13 (6).
- Thomas, S. & P. Mortimer, 1996, Comparison of Value Added Models for Secondary School Effectiveness, in: **Research Papers in Education**, 11 (1), pp. 279-95.
- Thomas, S. & R. Smees, 1997, **Dimensions of school Effectiveness: Comparative Analyses Across Regions**, Paper presented at the 10<sup>th</sup> International Congress for school Effectiveness.
- Townsend, P., 1993, **The International Analysis of Poverty**, Milton Keynes (Harvester Wheatsheaf).
- Whitehead, C.M.E., 1979, Why owner-occupation? In: **CES Review** 5-6, pp. 33-41.
-

Yang, M., H. Goldstein, T. Rath & N. Hill, 1997, **The use of assessment data for school improvement purposes**, Unpublished Research Report, Institute of Education, University of London and Hampshire CC.

# 10 Payment difficulties of home owners in Germany

*Melanie Kloth*

## 10.1 Introduction

Ever since the mid 20<sup>th</sup> century, encouraging home ownership has been a political aim in Germany. However, the share of owner-occupied homes in Germany is still among the lowest in the European Union (Norris and Shiels, 2004, p. 5). Ford has studied the relationship between a 'flexible' labour market (more part-time employment, insecure jobs) and attitudes to home ownership in Great Britain. She found that mortgagors are increasingly aware of the risks from the labour market and tend to be more reluctant regarding home ownership (Ford, 1998). One can assume that this phenomenon is also effective in Germany albeit this development is less advanced here than in other European countries (cf. Doling & Ford, eds., 2003). This aspect and the relatively good safety net for home owners (especially based on social security assistance and housing benefits) might have contributed to the fact that 'home ownership and risk' has not been as widely discussed in Germany as in other European countries (e.g. Ford et al., 2001; Doling, Ford, eds., 2003; Neuteboom, 2003). In recent years, though, recurring reports of a growing number of compulsory auctions have made consumers uncertain about whether owner-occupied homes can still be regarded as a safe investment, especially as private old-age pension. Moreover, a high (and increasing) unemployment rate alienates potential home buyers. In this situation it is important for the government (and the public) to know about the quantitative risk of compulsory auction for home owners and the underlying reasons for payment difficulties, as well as possible preventive strategies and instruments.

This chapter aims to analyse:

- the number of compulsory auctions involving owner-occupied homes in relation to the absolute number of home owners in Germany;
- the causes leading to payment difficulties;
- the activities of households and financial institutes at the starting point of home ownership as well as after payment difficulties have occurred, and
- the strategies to restore financial soundness.

The findings presented here are based on a study of payment difficulties of home owners undertaken by the Institute for Housing, Real Estate, Urban and Regional Development (InWIS) commissioned by the German Federal Ministry of Transport, Building and Housing.<sup>1</sup>

---

<sup>1</sup> The study has been published as Höbel, Regina, Melanie Kloth and Ulrike Berendt, 2004, Zahlungsschwierigkeiten van Wohneigentümern, InWIS-Berichte 32, Bochum (InWIS).

---

### Research Methods

Field research was conducted in addition to an analysis of secondary data. In order to limit costs, the field research was restricted to five German Länder<sup>2</sup>, which were selected on the basis of the number of compulsory auction proceedings related to the number of home owners with financial obligations resulting from ownership financing and the development of the number of proceedings between 1995 and 2000. The findings from these representative regions were extrapolated for the whole republic.

The field research included the following elements:

- 150 standardised face-to-face interviews with (ex)home owners with payment difficulties. In some cases legal proceedings had already been taken against the households, and in other cases proceedings had not yet been taken or suspended in favour of other solutions. The aim was to learn about their financial situation prior to buying the home and the time payment difficulties occurred, their activities to prepare for the purchase and their reaction when the difficulties started.
- A written survey of all the Courts of Justice competent for compulsory auctions. This survey aimed to investigate the proportion of owner-occupied homes in the total proceedings and the reasons for the rising number of proceedings in general.
- 33 interviews with representatives of financial institutions (both public and private), municipal and regional departments in charge of granting housing subsidies and debtors consultation facilities. These interviews were to investigate the criteria for the granting of credits, the models or types of credits granted, the type of advice given to the households prior to the purchase, the reasons for payment difficulties of home owners, the reaction to payment difficulties of customers and the activities to restore financial soundness or the type of advice given by independent advisory services.

## 10.2 Context: The owner-occupied sector of the German housing market

Germany is often described as a nation of renters. This reflects its low share of owner-occupied dwellings, which was 42% in 2002 and is the second lowest in the European Union with an average of 69% (Norris & Shiels, 2004, p. 5). But looking at the proportion of home owners in different age and income groups reveals that this estimate does not present the whole picture. The majority of households with high income (a monthly net income of €3,200 or more) are home owners and 50% of all households in the age group 60 years and older

---

<sup>2</sup> These were Baden-Württemberg, Brandenburg, North-Rhine Westphalia, Rhineland-Palatinate and Thuringia.

---



are home owners. The average age of buyers in Germany is relatively high at 38 (Expertenkommission Wohnungspolitik, 1995, p. 48).

Encouraging home ownership has been a political aim since 1956. Initially it ranked with public support for (social) rented housing, but gradually received more importance. Since the mid 1980s, the Federal State has subsidised only owner occupied dwellings.<sup>3</sup> However, Behring and Helbrecht, who compared the proportion of owner occupation in six European countries, suggest that the tenant orientation of housing policy in Germany following the Second World War is one reason for the low proportion of owner occupation. Today the high quality of rented housing and high tenant protection holds people in the rented sector. According to Behring and Helbrecht, another reason is the high demands attached to one's own dwelling: home owners in Germany tend to stay in their property for a long time (Dietrich *et al.* calculate 28 years; 1993, p. 275). Buying a home is a once in a lifetime event. Related to this, German households are very demanding when it comes to the quality of one's own dwelling. In connection with this, the costs of owner-occupied homes are fairly high and households tend to buy very late (at 38 years of age), if at all, preferring to stay in rented housing than to buy a home with lower standards (Behring & Helbrecht, 2002, pp. 158-169).

Today, several subsidies for home owners are available. Among the most important is the federal home ownership allowance ('Eigenheimzulage'). This subsidy is given to first time builders or buyers. For a period of eight years, owner-occupiers receive 5% of the building cost or 2.5% of the price for used dwellings up to a maximum of €5,000 and €2,500, respectively, with additional amounts for each child. A family with two children can receive up to €8,000 a year. Another well used form of subsidy is building savings agreements ('Bausparverträge'). When building or buying a dwelling, savers are entitled to take out special mortgages with relatively low interest rates. In addition, savers on lower incomes receive 8.8% of the amount saved in one year as a bonus (with a maximum of about €500 a year for a single person). These saving contracts are administered by special credit institutions called 'Bausparkassen'. In addition to these instruments there are also special subsidies for low income households.

In emergencies, the state gives (means-related) housing benefits to home owners ('Lastenzuschuss'), but they are not to be regarded as some kind of

**Table 10.1 Share of home ownership in different age groups and income groups in Germany, 2002**

Households	Share of home owners, in %
Total	42.2
<b>A g e o f h e a d</b>	
under 30 years old	7.2
30 to 59 years old	43.2
60 years and older	50.1
<b>M o n t h l y n e t i n c o m e</b>	
under €500	16.3
€500-€1,300	24.0
€1,300-€3,200	43.4
€3,200 and more	68.1

Source: Federal Statistical Department

<sup>3</sup> The Länder as regional authorities still subsidise social rented housing but could not compensate for the loss of the former national programmes.

insurance. As our study shows, these benefits can only support other measures of restoration of financial soundness in the event of payment difficulties. In 2001 only 0.5% of home owners in the western part of Germany<sup>4</sup> received this kind of housing benefit, and the average amount was 125 a month (Deutscher Bundestag, 2003, p. 38). Insurances for home owners to safeguard regular payment of instalments in case of unemployment or illness are not very common in Germany (Berendt, 1998, pp. 280ff.). There are only a very few sellers and the costs for home owners are very high, so that most home owners buy the dwelling without insurance. Some building organisations offer guarantees to repurchase the dwelling should payment difficulties occur. But these guarantees take effect only when the date of a compulsory auction has been fixed, at which time the arrears will already be high and the capital resources of the home owners lost.

There are several types of lenders active in ownership financing. Due to the system of subsidies, the Bausparkassen have the highest market share, followed by credit institutions under the control of local authorities ('Sparkassen'). Both together have a market share of about 60%. Other financial institutions (such as mortgages banks, credit banks and cooperative banks) account for almost all the remaining share, while life insurances are almost unimportant in this regard. Most buyers take out mortgages from two or three different lenders. No official data on the average loan-to-value in Germany are available. A study commissioned by one group of building societies ('Bausparkassen') suggests for home owners in the western part of Germany who bought their dwelling between 1998 and 2000 an average loan-to-value of 52% and in the eastern part of 62% (LBS, 2000). They had to spend on average 22% (west) and 26% (east) of their income for the ownership financing (ibid.). To minimize their risk, credit institutions today require a minimum 20 to 30% down payment from the buyers. The average duration of repayment is 30 years. Normally the interest rate is fixed for the first 10 years, and then renegotiated.

### 10.3 Number of compulsory auctions involving owner-occupied homes

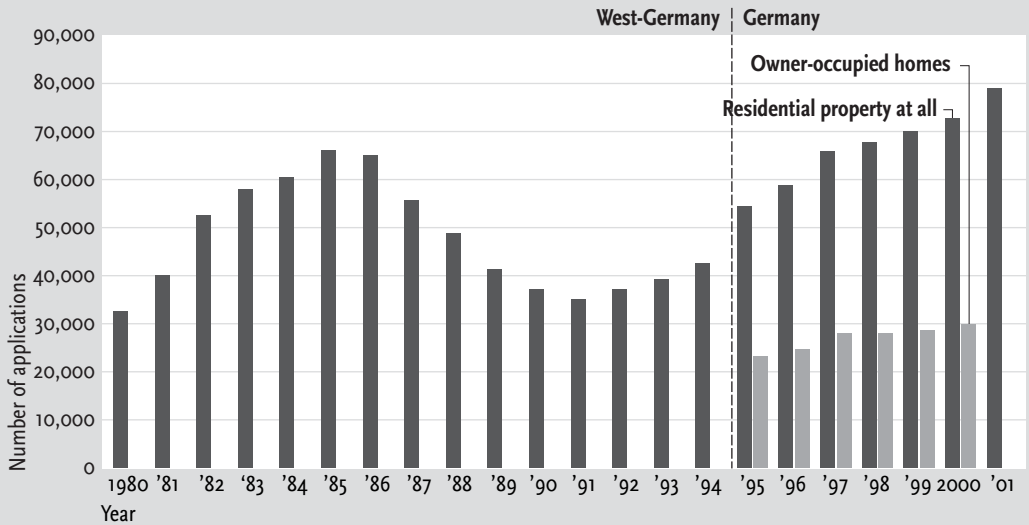
The only available data on compulsory auctions in Germany is the courts' database. Besides proceedings concerning owner-occupied homes these data also include proceedings involving plots of land, commercial property and residential property that was bought as an investment and let to others. The

---

<sup>4</sup> Due to the different developments in West and East Germany before reunification, some data for the whole of Germany are unavailable. Furthermore, because of the different situations in the western and eastern parts of Germany for many subjects it is still reasonable to distinguish between the two parts.

---

**Figure 10.1** Development of the number of applications for compulsory auctions of residential property at all and of owner occupied dwellings



courts' database can therefore be used only as a framework for investigating the number of proceedings against owner-occupied dwellings.

According to this database, the number of applications for compulsory auctions of residential property has risen over the past few years, albeit from a very low level in the early 1990s. The analysis of the data within the study referred to covered the period 1995 to 2000, in which period the number of applications in Germany increased by 34% (from 54,500 to 72,800). Since 2000 the number of applications per year has continued to rise.

Calculating the number of proceedings involving owner-occupied homes depends on estimates from the courts themselves. For this reason, a written survey was conducted that included all the courts competent for compulsory auctions in the five selected regions.<sup>5</sup> The courts were asked to estimate the proportion of owner-occupied dwellings of all proceedings for the years 1995 to 2000.

According to the interviews with the Courts of Justice, most of the applications for compulsory auctions involve commercial property and rented housing. In 2000 on average only 41% of all proceedings involved owner-occupied homes (1995: 42%). Compared with the mid 1980s this is a significant decrease: a similar study from 1986 estimates the share of owner-occupied homes at 54% (Drevermann *et al.*, 1986).

When relating the estimates from the courts to the total number of applications for proceedings the result is that between 1995 and 2000 the number of applications for proceedings against owner-occupied homes rose by 30% (compared with 34% for all residential property).

<sup>5</sup> The response rate of this survey was 45%. The responding courts were largely similar to the universal set in several respects: density of population, economic power of the respective region and the development of the number of proceedings. Therefore the findings can be regarded as representative.

**Reasons for the rise in the number of proceedings**

One essential reason for the increased number of proceedings affecting owner-occupied homes in recent years is the growing number of ownership financing arrangements: with a constant rate of payment difficulties, the absolute number of proceedings rises. Furthermore, increasing unemployment levels in Germany contribute to the rising number of proceedings as well as the diminished demand for residential property in many regions, which makes private sales to avert compulsory auctions more difficult.

**Risk of a compulsory auction for home owners**

The relevant factor in calculating the risk of a compulsory auction for home owners is not the number of proceedings applied for but the number of actually conducted auctions. According to the interviewed courts, 40% of all proceedings involving owner-occupied homes in the year 2000 were discontinued prior to auction. In these cases an agreement between debtor and creditor was reached or the property was sold privately. Only 60% went to auction (whether or not successfully).

Home owners can experience payment difficulties concerning the ownership as long as they have to repay mortgages. To calculate the average risk for a compulsory auction, the number of auctions has to be related to the number of home owners who still have residual debts after purchasing a dwelling. For 2000 the risk can thus be calculated at 0.2%. That means 0.2% of all home owners who still had financial obligations resulting from ownership financing were affected by compulsory auctions. According to the surveys with experts from credit institutions and home owners, the majority of (serious) payment difficulties occur within the first 15 years of ownership. After 15 years instalments are lower and the total amount of the residual debts has been diminished significantly. At that stage any payment difficulties arising are therefore easier to handle and seldom lead to proceedings and compulsory auctions. In relation to this period of time, the average risk of a compulsory auction for an individual homeowner is about 3%. Of course, the risk of experiencing financial difficulties is much greater. However, no data on this risk are available.

**High risk of residual debts after compulsory auction**

The diminished demand for residential property in many regions not only contributes to an increasing number of proceedings for compulsory auction but also diminishes the proceeds because many first-time auctions fail. At the first date for an auction the minimum bid has to be at least 70% of the market value as determined by expert opinion. If no acceptable bid is made at the first date of auction, the court has to arrange a second date. The minimum amount for the property is then lower than at the first date, and is set at 50% of the market value. Because of this lower minimum (and the low demand), the proceeds of compulsory auctions in 2000 on average amounted to

---

only 60% of the market value as determined by expert opinion. The loss in value means that the proceeds are often less than the mortgages raised on the properties. The risk of residual debts for the households even after compulsory auction is high.

## 10.4 Home owners: financial background and reasons for payment difficulties

The following findings are based on interviews with 150 home owners who had experienced payment difficulties. Participants in the survey were contacted by cooperating financial institutions and through public advertisements announcing compulsory auctions. Most of these households were contacted by the financial institutions of the Länder, which are competent to grant public housing subsidies for households on low income. This approach yielded a much higher proportion of households on low income receiving special public subsidies in the sample (56%) than in the universal set. No official data on this difference is available, but it is probably less than 10%. This disproportion of the sample has to be considered when interpreting the results. Representative surveys are commissioned periodically by the Federal Ministry of Housing and the building societies owned by the Länder on households who became home owners within the previous three years (LBS, 1995, LBS, 1998, LBS, 2001). The survey results are used to classify the sample of issue.

### **Personal and financial situation of households at the start of home ownership**

When they bought their dwelling, the home owners interviewed had, on average, a lower household income than the total group of home owners in Germany. Moreover, they were younger and had more children. As a result they had comparatively low capital resources. For 60% of the home owners the proportion of own capital resources in the price of the dwelling was less than 20% while the loan-to-value ratio was more than 80%. The average loan-to-value ratio was 79%. In the German context this has to be regarded as high, despite it being partly explained by the high proportion of households on low income in the sample. The average loan-to-value in the sample is difficult to compare with the universal set because the time of buying to which the prices and proportion of own capital resources refer were between 1968 and 2000, in which period the minimum proportion of own capital resources required by the credit institutions fluctuated considerably. But, to give a rough indication: the average loan-to-value of all home buyers in West-Germany in 1987 was 62% and in 2000 as low as 52%.

Because of their low capital resources, the households in the sample had to

---

**Table 10.2 Dominant reasons for payment difficulties in the perspective of the home owners**

Reason	Reason was regarded as dominant by
Decrease in income	64%
Separation of partners	18%
Expenses for ownership financing too high	12%
Cost of living too high	5%

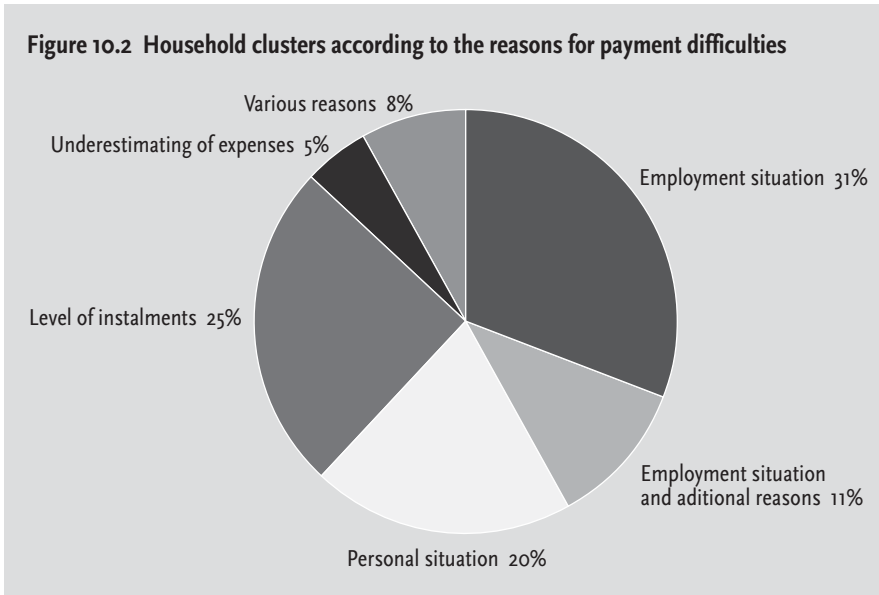
raise relatively high mortgages, and consequently the instalments were also high. For more than half of the households interviewed the proportion of income they had to spend on the property was more than 30%. Every third home owner had to spend more than 40% of his or her income. The average proportion of income in the sample was 37%. This amount is far higher than home owners in Germany have to spend on average: in the western part of Germany the average proportion of income fell from 31% in 1987 to 22% in 2000, and in the eastern parts from 29% in 1994 to 26% in 2000. The remaining income was much less than average for these households, their financial scope was small and they were more likely to experience financial difficulties.

### **Causes of payment difficulties**

According to the findings of the interviews with the home owners as well as with the experts, the principal reasons for the payment difficulties are changes in personal and employment situation. Compared with the 1980s these fields have become much more important. On the other hand, too few capital resources and underestimating the monthly instalments became less relevant factors. These changes in reasons are caused by more stringent criteria for granting mortgages (higher required capital resources) and the increased rate of unemployment.

A cluster analysis related to the reasons for payment difficulties reveals five groups of home owners in the sample:

- Payment difficulties because of changes in the employment situation - households that experienced difficulties because of unemployment, work incapacity, insolvency of their own business and suchlike. This group represents a cross-section of all home owners; no differences exist at the start of ownership. This group comprises 31% of the sample.
- Payment difficulties because of changes in the employment situation - combined with other reasons - households that are in a difficult financial situation from the outset because of the high proportion of their income tied up in ownership financing, unexpected increases in expenses for the house and underestimated follow-up costs. Decreasing income is then the trigger for acute payment difficulties. This group amounts to 11% of the sample.
- Payment difficulties because of changes in personal situation - households that experience payment difficulties as a result of separation or a move or the death of a family member with an income. In these cases the remaining income is too low to pay the monthly instalments for ownership. This group contains various household types independent of income, but with a fairly high proportion of very young couples. This group comprises 20% of the sample.
- Payment difficulties because of the level of instalments - households that

**Figure 10.2 Household clusters according to the reasons for payment difficulties**

have calculated the expenses for the house correctly but who have to pay relatively high instalments because of a low income and modest capital resources. These households lacked the financial capabilities from the outset, so that payment difficulties arise progressively or following sudden extraordinary expenses. This group amounts to 25% of the sample.

- Payment difficulties because of underestimating expenses - households that underestimate the costs related to purchasing a dwelling. Households buying spontaneously without sufficient capital resources and on the basis of too little information are well represented in this group, which amounts to 5% of the sample.

The five groups add up to 92% of the sample. The remaining 8% experience payment difficulties for a number of different reasons and cannot be classified.

For the majority, payment difficulties arise within the first seven years following purchase. If the financial situation is strained from the outset, unforeseen expenses occur or it is impossible to use capital resources as planned, payment difficulties become acute as early as in the first three years.

## 10.5 The basis for many difficulties

In addition to a decrease in household income, relevant reasons for payment difficulties are an unexpected increase in expenses for the dwelling, underestimated follow-up costs, underestimated instalments, or an overestimated financial capacity. These findings show that the basis for many difficulties is already in place before the dwelling is bought.

This is reflected in the perceptions of home owners interviewed: 54% believe that they themselves had made mistakes when preparing the purchase. Half the interviewees say that they had relied too much on the credit institutions, estate agents and builders and that they themselves did not find

out enough about financing alternatives. And one in ten home owners had bought the dwelling without really knowing about the level of monthly instalments and the repayment period for mortgages.

But on reflection, home owners are also critical of the advice they received. 35% of the home owners regard the advice given by the credit institutions, estate agents and builders as bad or very bad. Reasons for the negative assessment are insufficient information on the costs of credits themselves, consequences of the ending of public subsidies after eight years<sup>6</sup> and about the best use of own capital resources, as well as an incorrect assessment of the total amount of expenses for buying, renovating (if necessary) and furnishing the dwelling.

### **Households on low income: receiving special subsidies but at a particularly high risk**

Households on low income in particular are at high risk of payment difficulties because they are less able to compensate unexpected increases in expenses or, even slight, decreases in income. As the state encourages these households to become home owners through special subsidies, the departments in charge should attach great importance to a good advisory service. But at present when using public subsidies no safeguard exists to ensure that households receive advice from the department in charge of granting the subsidies. Home buyers are not obliged to visit the department but can apply for subsidies on the Internet or through the estate agent or builder. Furthermore, some of the staff of the departments in charge are insufficiently qualified.

Better advice is useful, but in order to substantially reduce the risk for those households there must be a safeguard to ensure that their financial scope is not exceeded. Their task to help households on low income into home ownership means that the financial institutions owned by the German Länder, which are competent for granting ownership subsidies, often accept a very low proportion of own capital resources (10-15%, whereas privately-owned financial institutions require 25-30%). This leads to relatively high instalments; the financial scope becomes tight and home owners are particularly prone to payment difficulties.

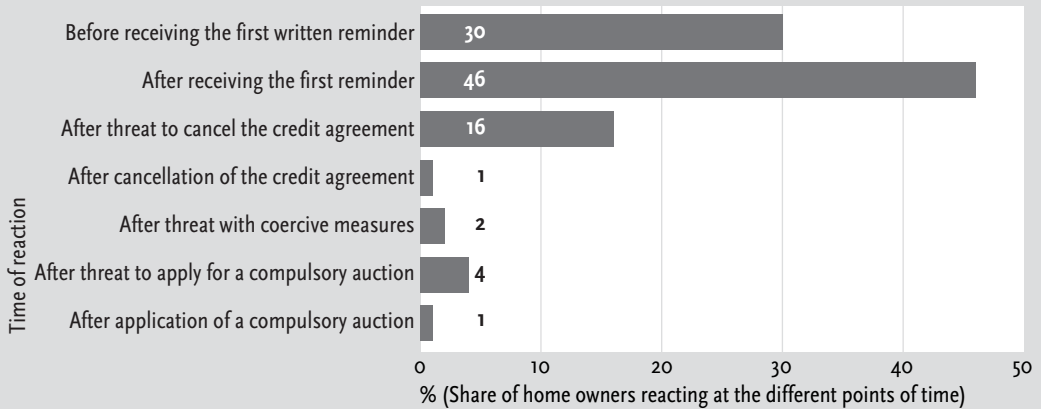
Furthermore, applicants for subsidies are allowed to reduce the minimum amount of capital resources through self-help measures. Households try to reduce expenses for home ownership through self-help in building or renovating the dwelling, but they often overestimate their capabilities. If the mea-

---

<sup>6</sup> Some credit institutions include housing subsidies that are given only for the first eight years in the calculation of the available household income. As a result, they calculate with relatively high instalments. When subsidies end after eight years, the proportion of income home owners have to spend on instalments rises significantly.

---



**Figure 10.3** Timing of reaction to payment difficulties

sure fail, unexpected costs arise that can cause payment difficulties at the very outset.

## 10.6 Perception of arising payment difficulties

When confronted with payment difficulties, awareness is the starting point for strategies for restoring financial soundness. Credit institutions recognize payment difficulties only when their instalments remain unpaid. By that time, debts on other creditors' instalments will probably also have arisen, because home owners tend to meet ownership instalments for as long as possible, preferring to run up debt in other areas.

The households themselves often only react once they receive reminders or final demands. In the sample, only 30% of the home owners interviewed contacted the credit institutions before they received the first written reminder. Credit institutions with monthly payment obligations<sup>7</sup> normally send the first reminder after two or three months. Even after receiving a written reminder, only 46% of home owners responded by contacting the creditors. 24% had already given up and did not contact the credit institutions. This behaviour means that it took on average six months after the occurrence of the first arrears before the first discussion of the problems between households and creditors. In this period, arrears may well grow rapidly. In addition, most home owners had high consumer debts at the time, which will further hamper any strategy for restoring financial soundness.

When resorting to action, most home owners in the sample tried to solve the problems on their own. Only one in three asked others for advice immediately when the difficulties occurred. 40% only did so when their own attempts failed. When asking for advice, the majority of home owners decid-

<sup>7</sup> Many credit institutions owned by the Länder and granting subsidies for households on low income arrange instalments with two payment dates a year. Therefore these institutions often recognize payment difficulties only at a late stage.

ed on independent debtors consultation facilities (39%) or the advisory service of the respective credit institution (27%).

## 10.7 Steps towards successfully restoring financial soundness and deficiencies in practice

On the way to successfully restoring financial soundness several deficiencies can be observed. Besides the obstacles to establishing contact between debtor and creditor these are concerned with the development of overall concepts to handle the problems, the availability of sufficient, independent advice for the debtors and the willingness of home owners to accept a solution that includes the sale of the dwelling.

### **Successful strategies for establishing contact are often expensive**

A sense of resignation or shame on the part of the home owners means that very formal strategies to contact them (by letter) have proven to be relatively unsuccessful. More individual forms such as discussions by phone or home visits are more appropriate. According to the interviews with experts, the willingness of credit institutions to practice these strategies for establishing contact depends on their position as creditors. Creditors in the second or third position are usually more willing to practice individual – and therefore more expensive – strategies, because they stand to lose much more if the attempts to restore financial soundness fail than creditors in the first position.

### **Overall concepts are needed**

If establishing contact between debtors and creditors succeeds, a bundle of different measures to restore financial soundness can be used. The public credit institutions owned by the German Länder use a more comprehensive and more flexible set of instruments than the privately owned credit institutions. This is partly true even for credit institutions with a dense network of branches.

Most privately owned credit institutions have no overall concepts for restoring financial soundness: when confronted with payment defaults they look only at their own demands. They consider no other debts the clients may have. Therefore, their strategies for restoring financial soundness, such as agreements on interrupting of instalments for a few months, are effective only in connection with temporary payment difficulties and usually fail when more comprehensive problems exist.

Compared with this practice, most financial institutions owned by the German Länder (so far considered in this survey) have overall concepts for restoring financial soundness. These aim to sustainably safeguard the liquidity of debtors. These overall concepts include establishing early contact with

---

the debtor, contact and agreements with other creditors, at least mid-term assignment of a qualified financial adviser for the debtor and the cooperation with the municipal departments in charge of public subsidies (such as housing subsidies or social security). Another important element in these concepts is advisory service for debtors. These more comprehensive and complex strategies to restore financial soundness operated by the institutions owned by the Länder result from their public duty of promoting and safeguarding private home ownership.

Some of the financing institutions owned by the Länder have special subsidies for securing home ownership. A good example is the programme in North-Rhine Westphalia ('Wohneigentumssicherungshilfe'). These subsidies can be granted to all home owners in receipt of public funding for ownership for households on low income and are combined with an intensive advisory service. Subsidies are granted independently of the reasons for payment difficulties (other programmes request that the household experiences payment difficulties through no fault of its own, which reduces the availability of support to only a very few cases per year). In North-Rhine Westphalia quite a large number of households can be supported with a comparatively small budget. Expenses for this support are much less than the losses that would arise if credits fail.

### **Lack of independent, qualified advisory services**

Another deficiency is in the availability of qualified independent advice. As the interviews with the home owners have shown (see above), after having experienced difficulties the majority believe that they placed too much trust in the financial institutes at the beginning of ownership financing. Therefore, independent advice is needed when payment difficulties arise. This is not only important to get the best solution for the home owners but also to convince home owners that they need to cooperate with the creditors.

But only half the home owners in the sample who visited debtor consultation facilities were satisfied with the help they received. The reasons given for this negative assessment were insufficient commitment or qualifications of the staff and a lack of capacity in the services relative to the demand. The findings of the interviews with debtor consultation facilities reveal that at least the last two aspects are relevant. Most services are not specialised in residual debts; the staff are social workers who are perfectly capable of supporting households in financial housekeeping issues but are not qualified to analyse structures of ownership financing models, to develop solutions in this field and to support the home owners in negotiations with creditors, which should require economics skills. In recent years a quantitative lack of debtor advisory services in Germany has become increasingly apparent, as a result of the rising number of over-indebted households and the recent innovation of allowing consumers to declare insolvency. In order to obtain this declaration

---

households normally need additional advice from independent services.

### **Tendency to hold on to the dwelling for too long**

Another obstacle in restoring financial soundness is the tendency of home owners to hold on to the dwelling even when there is no hope of long-lasting improvement in their financial situation. In cases of this kind it is often more reasonable to sell the dwelling as soon as possible. Compared with compulsory auctions, private sales are normally faster to realize and yield more.

## **10.8 Recommendations**

To reduce the risk for home owners of experiencing payment difficulties and to minimize the number of compulsory auctions involving owner-occupiers, improvements are needed in the preparatory phase of home ownership and regarding the restoration of financial soundness after difficulties have occurred.

Concerning the first point, the time of preparing home ownership financing, credit institutions have made improvements in recent years. Against the background of the increased number of failed mortgages and the decreased demand for residential property in many regions, criteria for granting mortgages have been tightened (higher capital resources required, calculation of available income more restrictive). But the findings would seem to indicate that further improvements are needed when it comes to advice given to customers, especially to those who may tend to be overwhelmed with the financing of home ownership. Advisory services must be improved:

- in the area of calculating total expenses for the purchase of a home and adhering to this calculation while building or renovating the house;
- regarding the maximum possible instalments and the household's financial scope after the purchase;
- in terms of the availability of information for and more effective contact with households that fail to find out sufficient information on their own, and
- concerning information on future financial risks.

To optimise the ownership financing for households on low income, the minimum of own capital resources should be raised and possibilities for reducing that amount through self-help measures (as provided by public financial institutions in charge of granting subsidies) should be restricted.

Altogether, better prevention of payment difficulties demands that greater importance be attached to more intensively examining the financial burdens that a household can bear, a more customised selection of financing modules, more intensively raising the awareness of potential home buyers con-

cerning the effects of ownership financing on their financial scope and concerning future financing risks, as well as to a more comprehensive household advice before purchasing property.

Concerning the second point, the instruments for restoring financial soundness used in Germany are not effective in safeguarding home ownership. Instruments on a market basis, such as insurance, are fairly uncommon because they are too expensive for home owners. Efforts to restore financial soundness often fail because the financial situation of the debtors is not taken into account in its complexity.

Public instruments such as housing benefits for home owners on low income (comparable with rent allowances) are appropriate to supporting the restoration but present (because of the relatively small amount) only one part of an overall concept. Other instruments are restricted to home owners who at the time of buying were on low income and therefore received subsidies. Home owners whose income at the time of purchase was too high but decreased by the time of payment difficulties are ineligible for subsidies to safeguard ownership. Therefore these instruments do not reach a notable number of households.

The recommendations for improving the present strategies to restore financial soundness include earlier and more individualised ways for establishing contact with the debtor, support for overall concepts of restoration, expansion of independent and qualified advisory services for debtors. Furthermore, the following two alternative strategies for the public authorities to improve the situation for home owners with payment difficulties are feasible.

One possible action is to expand ownership safeguarding instruments among the financial institutions owned by the German Länder following the model of North-Rhine Westphalia. Such concepts for safeguarding ownership should include the following instruments:

- promoting the establishment of contact between creditor and debtor;
- establishing contacts with the other creditors to reach agreements on strategies to restore financial soundness (which can include renunciation of parts of the debts);
- offering further credits with a comparatively low rate of interest to return other credits with higher rates of interest (e.g. consumer credits) and to enlarge the financial scope of the household (if there is a prospect of a long-term stabilisation of its financial situation);
- ensuring that there is a qualified adviser for the households who takes care of regular payments and supports households in financial matters.

These instruments should be expanded to all home owners who meet the criteria for ownership subsidies resulting from income reduction at the time of payment difficulties.

The second possible action involves the further development of safeguarding instruments on a market basis, as exist in other countries. Other Euro-

pean countries and the US in particular have positive experiences in this regard. In this connection, a form of insurance deserves a special mention, in which monthly instalments are taken over if households are unable to pay because of unemployment or illness. In translating these schemes to the German situation, they need to be adapted to the specific conditions of the German housing market. As suggested by Dübel & Pfeiffer (1999), a restoration fund similar to the French model, organised by credit institutions, could be a first step in this direction. To push the development of such instruments, the public authorities should support private enterprises.

## 10.9 Conclusion

Despite the growing number of proceedings, the risk of home owners in Germany becoming affected by a compulsory auction is still low. However, when experiencing payment difficulties the support given to home owners and the available instruments to restore financial soundness are insufficient. Moreover, the strategies and measures for prevention of payment difficulties and restoring of financial soundness presented here include two contradictions.

The first is concerned with the aim of the government to encourage home ownership. The suggested measures of requiring more capital resources on the part of the potential home owners (especially those on low income) restrict the target group for home ownership. More comprehensive advice concerning the financial burdens and the related risks might lead households to put aside their wishes to become home owners.

The second is concerned with the recommendations to the public authorities to expand their own safeguards or to support the development of market-based instruments. The present difficult financial situation means that public authorities are tending to withdraw from voluntary services. No further efforts in this field are likely to be forthcoming. On the contrary, the political parties are negotiating repealing the general ownership subsidies ('Eigenheimzulage').

### References

Behring, Karin & Ilse Helbrecht, 2002, Wohneigentum in Europa, **Ursachen und Rahmenbedingungen unterschiedlicher Wohneigentümerquoten in Europa**, Ludwigsburg.

Berendt, Ulrike, 1998, **Wohneigentumsbildung in Deutschland. Theorie, Empirie und wohnungspolitische Alternativen**, Bochum (Doctoral thesis at Ruhr-Universität Bochum).

---

---

Deutscher Bundestag (ed.), 2003, **Wohngeld- und Mietenbericht 2002, Unter- richtung durch die Bundesregierung**, Bundestagsdrucksache 15/2200, Berlin.

Dietrich, Hartmut, Egbert Dransfeld & Winrich Voss, 1993, **Urban Land and Property Markets in Germany**, London.

Doling, John & Janet Ford (ed.), 2003, **Globalisation and home ownership, Experiences in eight member states of the European Union**, Delft (Delft Uni- versity Press).

Drevermann, Marlis, Volker Nordalm and Sabine Hentzsch, 1986, **Zahlungsschwierigkeiten von Wohnungseigentümern**, Ergebnisbericht des For- schungsprojektes "Ansatzpunkte für die Behebung von Zahlungsschwierig- keiten von Wohneigentümen", Bonn - Bad Godesberg (Bundesministerium für Raumordnung, Bauwesen und Städtebau).

Dübel, Achim & Ulrich Pfeiffer, 1999, **Stützung der Wohneigentumsbildung durch Sicherungsinstrumente – ein internationaler Vergleich**, Gutachten für das Bundesministerium für Raumordnung, Bauwesen und Städtebau. Reihe Bauforschung, Heft T 2835, Stuttgart.

Expertenkommission Wohnungspolitik, 1995, **Wohnungspolitik auf dem Prüfstand**, Tübingen.

Ford, Janet, 1998, **Risks: Home Ownership and Job Insecurity**, London.

Ford, J., R. Burrows & S. Nettleton, 2001, **Home Ownership in a Risk Society**, Bristol.

LBS, 1995, **Eigentumsbildung im Wohnungsbau 1991-1993**, Schriftenreihe LBS Marktforschung 12/1995, Bonn.

LBS, 1998, **Eigentumsbildung im Wohnungsbau 1994-1997**, Schriftenreihe LBS Marktforschung 20/1998, Bonn.

LBS, 2001, **Eigentumsbildung im Wohnungsbau 1998-2000**, Schriftenreihe LBS Marktforschung 26/2001, Bonn.

Neuteboom, Peter, 2003, A European comparison of the costs and risks of mortgages for owner-occupiers, in: **European Journal of Housing Policy, 3 (2)**, August 2003, pp. 155-171.

---

Norris, Michelle & Patrick Shiels, 2004, **Regular National Report on Housing Developments in European Countries**, Synthesis Report, Department of the Environment, Heritage and Local Government Ireland, Internet-Download: <http://www.viron.ie>.

Statistisches Bundesamt, 2000, **Statistisches Jahrbücher für das Ausland 1998, 1999**, Wiesbaden.



---

# Contributors

**Peter Boelhouwer**, Research Institute for Housing, Urban and Mobility Studies, Delft University of Technology, The Netherlands.

**John Doling**, School of Social Sciences, The University of Birmingham, UK.

**Marja Elsinga**, Research Institute for Housing, Urban and Mobility Studies, Delft University of Technology, The Netherlands.

**Janet Ford**, Centre for Housing Policy, University of York, UK.

**Timo Tähtinen**, Ministry of the Environment, Finland.

**Manuel B. Aalbers**, Amsterdam Institute for Metropolitan and International Development Studies (AMIDSt), University of Amsterdam, The Netherlands.

**Peter Neuteboom**, Research Institute for Housing, Urban and Mobility Studies, Delft University of Technology, The Netherlands.

**Glen Bramley**, School of the Built Environment, Heriot-Watt University, Edinburgh, UK.

**Noah Kofi Karley**, School of the Built Environment, Heriot-Watt University, Edinburgh, UK.

**Jens Lunde**, Copenhagen Business School, Denmark.

**Jackie Smith**, Senior Research Analyst, Council of Mortgage Lenders.

**Jennet Vass**, Senior Economist, Council of Mortgage Lenders.

**Melanie Kloth**, Institute for Housing, Real estate, Urban and Regional Development, Germany.

---

---

# Housing and Urban Policy Studies

1. Boelhouwer, P. and H. van der Heijden, **Housing systems in Europe: Part I, a comparative study of housing policy**  
1992/298 pages/ISBN 90-6275-769-3
  2. Papa, O., **Housing systems in Europe: Part II, a comparative study of housing finance**  
1992/210 pages/ISBN 90-6275-770-7
  3. Lundqvist, L.J., **Dislodging the welfare state? Housing and privatization in four European nations**  
1992/144 pages/ISBN 90-6275-771-5
  4. Gilhuis, H. and S. Volbeda, **Collective self-help housing in Brazil**  
1992/176 pages/ISBN 90-6275-672-7
  5. Priemus, H. and G. Metselaar, **Urban renewal policy in a European perspective, an international comparative analysis**  
1992/68 pages/ISBN 90-6275-787-1
  6. Priemus, H., M. Kleinmann, D. MacLennan and B. Turner, **European monetary, economic and political union: consequences for national housing policies**  
1993/57 pages/ISBN 90-6275-840-1
  7. Visscher, H., **Building control in five European countries**  
1993/162 pages/ISBN 90-6275-908-4
  8. Kruythoff, H., **Residential environments and households in the Randstad**  
1993/241 pages/ISBN 90-6275-927-0
  9. Danermark, B. and I. Elander, **Social rented housing in Europe: policy, tenure and design**  
1994/182 pages/ISBN 90-6275-942-4
  10. Anyumba, G., **Kisumu Town: history of the built form, planning and environment: 1890-1990**  
1995/372 pages/ISBN 90-407-1067-8
  11. Boelhouwer, P.J. and A.J. Menkveld, **Housing expenditure in Western Europe: macro and micro quotas**  
1996/58 pages/ISBN 90-407-1327-8
  12. Smith, J.E., **What determines housing investment? An investigation into the social, economic and political determinants of housing investment in four European countries**  
1997/219 pages/ISBN 90-407-1420-7
  13. Boelhouwer, P.J. (ed.), **Financing the social rented sector in Western Europe**  
1997/115 pages/ISBN 90-407-1433-9
-

- 
14. Lambregts, B.W. and M. Spaans, **The development and financing of public real property in urban areas in Belgium, Germany, France and Great Britain**  
1998/126 pages/ISBN 90-407-1692-7
  15. Sheridan, L. (principal autor and editor), **The control and promotion of housing quality in Europe. Part I Country monographs**  
2001/296 pages/ISBN 90-407-2148-3
  16. Sheridan, L., **The control and promotion of housing quality in Europe. Part II Comparative analysis**  
2001/184 pages/ISBN 90-407-2149-1
  17. Krantsz, B. E. Öresjö and H. Priemus, **Large scale housing estates in Northwest Europe: problems, interventions and experiences**  
1999/164 pages/ISBN 90-407-1928-4
  18. Ipenburg, D. and B. Lambregts, **Polynuclear urban regions in North West Europe. A survey of key actor views**  
2001/135 pages/ISBN 90-407-2180-7
  19. Sunikka, M., **Policies and regulations for sustainable building. A comparative study of five European countries**  
2001/133 pages/ISBN 90-407-2266-8
  20. Spaans, M., **The implementation of urban revitalization projects. An international comparison**  
2002/338 pages/ISBN 90-407-2256-0
  21. Doling, J., and J. Ford (ed.), **Globalisation and home ownership. Experiences in eight member states of the European Union**  
2003/231 pages/ISBN 90-407-2425-3
  22. Beerepoot, M., **Energy regulations for new building. In search of harmonisation in the European Union**  
2002/189 pages/ISBN 90-407-2325-7
  23. Meijer, F.M., H.J. Visscher and L. Sheridan, **Building regulations in Europe. Part I A comparison of the systems of building control in eight European countries**  
2002/200 pages/ISBN 90-407-2373-7
  24. Meijer, F.M., H.J. Visscher and L. Sheridan, **Building regulations in Europe. Part II A comparison of technical requirements in eight European countries**  
2003/280 pages/ISBN 90-407-2449-0
  25. Meijers, E.J., A. Romein and E.C. Hoppenbrouwer, **Planning polycentric urban regions in North West Europe. Value, feasibility and design**  
2003/210 pages/ISBN 90-407-2420-2
-

- 
26. Lambregts, Bart, and Wil Zonneveld, **Polynuclear urban regions and the transnational dimension of spatial planning. Proposals for multi-scalar planning in North West Europe**  
2003/109 pages/ISBN 90-407-2462-8
  27. Zonneveld, Wil and Jan Jacob Trip, **Megacorridors in North West Europe. Investigating a new transnational planning concept**  
2003/92 pages/ISBN 90-407-2472-5
  28. Turkington, R., R. van Kempen and F. Wassenberg (eds.), **High-rise housing in Europe. Current trends and future prospects**  
2004/284 pages/ISBN 90-407-2483-0
  29. Peter Boelhouwer, John Doling and Marja Elsinga (eds.) **Home ownership. Getting in, getting from, getting out**  
2005/205 pages/ISBN 90-407-2594-2

Copies can be ordered at [www.library.tudelft.nl/ned/publiceren](http://www.library.tudelft.nl/ned/publiceren). The numbers 1 up to 13 are no longer available.

---



---

Home ownership sectors in most European countries have grown in size. Whatever assets European households have acquired in recent decades, real estate appears to form a significant element in wealth portfolios. Frequently, national governments have been active in promoting the shift in tenure balance. The general question pursued in this book is about the gains and losses accruing to individual households by virtue of their position as home owners. The focus, here, is on financial gains and losses. It also concerns the losses, in the form of repayment risk, related to difficulties that some households may experience in meeting housing loan repayment schedules.

The immediate background to this volume is the Conference on Housing Growth and Regeneration held in July 2004 in Cambridge, UK. Hosted by the Cambridge Centre for Housing and Planning Research, Department of Land Economy, University of Cambridge, it was held under the auspices of the European Network of Housing Researchers.

---

