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The Danish Housing Market: Less Subsidy and more Flexibility

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ABSTRACT/RÉSUMÉ

The Danish housing market: less subsidy and more flexibility

While Denmark has fairly flexible labour and product markets in most respects, the housing market stands out with large direct and indirect subsidies for all types of housing and a highly regulated rental market hindering mobility, probably resulting in a mismatch between housing needs and use. In the current housing policy framework there is quite a contrast between the well-functioning market for transactions of owner-occupied housing (supported by the highly liberalised mortgage market) and the highly regulated rental housing market. This paper assess the recent development in Danish house prices, followed by a discussion of ways of replacing the costly government intervention in the Danish housing market with more market-based mechanisms, thereby achieving policy objectives in a more efficient and targeted way. The paper reviews the main areas for reform, including overall subsidisation of housing, rent regulation, social housing, and how housing supply could be made more responsive.

This paper relates to the *OECD Economic Survey of Denmark 2006* (www.oecd.org/eco/surveys/denmark).

JEL classification: D12, D14, D61, E21, E22, E39, E51, H59, R2, R31

Key words: House prices, mortgage market, home owners, rental housing, housing supply

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Le marché du logement au Danemark : moins de subventions et plus de souplesse

Alors que les marchés du travail et des produits sont dans l'ensemble assez souples au Danemark, le marché du logement se distingue par le nombre important de subventions directes et indirectes pour tout type de logements et un marché de la location très régulé qui est un frein à la mobilité, ceci ayant sans doute pour conséquence une disparité entre les besoins en logements et ce qui est disponible. Dans le cadre de la politique de logement actuelle, il existe une différence flagrante entre le marché des logements occupés par leur propriétaire, qui fonctionne bien (soutenu en cela par un marché hypothécaire très libéralisé), et un marché locatif très contrôlé. Ce document analyse les développements récents dans le domaine des prix des logements au Danemark, puis examine les moyens permettant de remplacer l'intervention coûteuse de l'État sur le marché du logement danois par des mécanismes davantage axés sur le marché, et d'atteindre ainsi les objectifs des pouvoirs publics d'une manière plus efficace et plus ciblée. Ce document traite des réformes à mener, notamment la question des multiples aides publiques au logement, la régulation des loyers, les logements sociaux ainsi que la manière d'accroître l'offre.

Ce Document de travail se rapporte à *l'Étude économique de l'OCDE du Danemark 2006* (www.oecd.org/eco/etudes/danemark).

Classification : D12, D14, D61, E21, E22, E39, E51, H59, R2, R31

Mots clés : coût du logement, marché hypothécaire, logements occupés par leur propriétaires, logements en location, l'offre de logements

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Espen Erlandsen, Jens Lundsgaard and Felix Huefner[1]

As elaborated in the *OECD Economic Survey of Denmark 2006,* the Danish economy is performing very well, reaping the benefits of 25 years of well-managed economic reform that have produced sound macroeconomic policies and much progress in areas of structural policy. GDP is currently growing much faster than its potential rate, partly fuelled by strong growth in house prices, and overheating is a near-term risk facing the economy.

Denmark has a fairly flexible labour market and a competition-friendly regulatory environment, but less progress has been made in the housing area, which is overregulated and absorbs large subsidies and tax expenditures. As Denmark is well endowed with housing and its vast support programmes are not very well targeted, the *Survey* recommended that tax concessions for housing should be given up and used to create room for reducing other, more distorting taxes, and that regulation of rents should be phased out. It also recommended that supply of new housing should be made more flexible.

This paper is organised as follows: The first section assesses the recent development in Danish house prices, and discusses possible policy responses to overheating risks. The second section takes a structural perspective on the Danish housing market and discusses ways of replacing the costly government intervention with more market-based mechanisms, thereby achieving policy objectives in a more efficient and targeted way.

The speed of house price increases raises concerns

Since 1995, Danish house prices have increased substantially with an average yearly growth rate of 8% (6% real).[2] The ratio of house prices to disposable income has risen over the same period by 70%. This has supported consumption growth, not least because the increased flexibility of the mortgage market made it easier to borrow against higher house price values. Over the last year, the speed of price increases has been particularly strong: During 2005, house prices rose at double-digit annual rates, reaching 21% in the

1. This paper was originally prepared for the *OECD Economic Survey of Denmark 2006* published in May 2006 on the responsibility of the Economic and Development Review Committee. The authors are grateful to colleagues in the OECD, especially Andrew Dean, Jorgen Elmeskow, Mike Feiner, Christopher Heady, Joseph Konvitz, Val Koromzay, Dave Rae, Micheal Wise, and Andreas Wörgötter for their helpful comments. Special thanks go to Marie-Christine Bonnefous for her technical assistance. The authors can be contacted at jens.lundsgaard@oecd.org.

2. The following analysis is based on the price index for one-family houses.

fourth quarter – the largest increase in nearly 20 years – and this trend continued at the beginning of 2006. While there are good fundamental reasons to believe that house prices should be higher today than in 1995, recent growth rates look increasingly exaggerated and it seems likely that further price increases would bring valuations significantly out of line with fundamentals.

A common method to asses the valuation of house prices is the "asset-pricing approach" which focuses on the house price-to-rent ratio (OECD, 2005a). The higher this ratio, the less lucrative it is to buy a house and the more attractive it is to rent.[3] However, an increase in the ratio can also be warranted by a decrease in the costs of owning a house ("user costs"). Lower user costs justify higher house prices. A simple measure of these costs is derived from adding (after-tax) nominal mortgage interest rates, property tax rates and holding costs and subtracting expected capital gains.[4]

Figure 1 show that the house price-to-rent ratio fluctuated around its average from 1970 to 2000 and increased significantly since then to its highest value so far. A large part of this recent increase can be related to an improvement in fundamentals, *i.e.* a fall in the cost of owning a house.[5] This mainly reflects the decline in long-term interest rates by about two percentage points since 2000. In addition, the effective financing costs have been reduced beyond the decline in long-term interest rates as a result of the increased use of adjustable rate mortgages since 2000. Furthermore, the tax freeze since 2001-02 has reduced the effective property tax paid by households.[6] However, even taking these factors into account there would seem to remain some overvaluation, which mainly occurred during 2005.[7] While conclusions about the correct level of house prices are surrounded by considerable uncertainty – not least as the expectations of individuals for future capital gains are unknown – the recent double-digit percentage increases are difficult to match with underlying fundamentals.[8]

3. The idea behind this approach is that in equilibrium the expected cost of owning a house should be equal to the cost of renting. Whenever house prices are too high relative to rents, potential buyers would find it more attractive to rent, putting downward pressure on house prices and vice versa. The house price-to-rent ratio is calculated by dividing nominal house prices by the rent component of the Consumer Price Index. In Denmark, the rent component includes rents of both private rentals as well as social housing. Despite rent control, the increases in rents are comparable with other countries that do not have rent control, suggesting that rent control only introduces a level effect and does not affect growth rates.

4. Nominal mortgage interest rates are taken from Abildgren (2005) and Statistics Denmark and relate to 20-30 year callable mortgage credit bonds. Interest rate deductibility is taken into account and after-tax interest rates are computed using marginal tax rates for capital income. The holding costs comprise depreciation, maintenance and a risk premium on residential property and are kept constant at 4%. The 5-year moving average of consumer price inflation is used to approximate expected capital gains on house prices.

5. Wagner (2005) estimates an econometric model of house prices over the period 1984/4-2005/1 and also finds that most of the long-term increase is warranted by fundamentals except for the most recent period.

6. Long- and short-term rates are weighted according to the increasing share of adjustable-rate loans since 2000. The effective real estate tax rate has been lowered linearly from 0.75% in 2001 to 0.55% in 2006 due to constant tax payments (reflecting the tax freeze) despite increasing house prices.

7. One factor frequently mentioned as contributing to house price increases since 2003 is the introduction of deferred-amortisation ("interest-only") loans which might have fostered increased speculation on future house price increases. As these loans temporarily lower the monthly mortgage payments, their increased use might also have prevented forced sales of property in case of divorces, thereby reducing the supply of real estate available for purchase.

8. A further source of uncertainty relates to the issue of quality-improvement and whether this is corrected for in the price measures. Indices measuring house prices are not adjusted for changes in the quality (a price increase may therefore reflect only an improvement in amenities), while the rent component of the CPI is

Going beyond the national average, regional house price developments are quite unequal. The capital stands out with the highest price increases, while developments elsewhere have been less pronounced. This suggests that supply constraints – both natural and man-made constraints – are an important factor in explaining the development, because demand effects such as development of incomes differ much less across the country (see below).

It has to be recognised that house prices can deviate from their fundamental valuations for quite some time. However, the available evidence on house price valuations raises some warning flags. The price increases seen over the last decade *as a whole* seem to a large extent to have been warranted by fundamentals, most importantly including declining interest rates, but the most recent two-digit increases do raise concerns. The assessment in the *OECD Economic Survey of Denmark 2006* was that, going forward, house prices cannot continue increasing at the current speed for years without getting significantly out of line with fundamentals.

A gradual and measured increase in interest rates would be welcome, as it would help to dampen house price developments and thereby reduce the risk of macroeconomic overheating. While the future path of long-term interest rates is difficult to predict, usual valuation methods suggest some upward potential from their exceptional 2005 low. Also, prospects for European short-term interest rates seem to tilt upwards and indeed, short-term rates have already started to increase since the fourth quarter of 2005. This suggests that interest rates will cease to support house price growth; *i.e.* the costs of owning a house are likely to increase. An increase in both long- and short-term interest rates by 1 percentage point from their level at the end of first quarter 2006 would lower the fundamentally justified price by about 10%.[9] An end to house price increases would probably slow down consumption growth as well as residential investment, helping to mitigate the risk of overheating, particularly in the construction sector. A soft-landing of the housing boom is still the central scenario, but if house prices continue going up at the exceptional pace seen lately, then a subsequent downward correction cannot be excluded.

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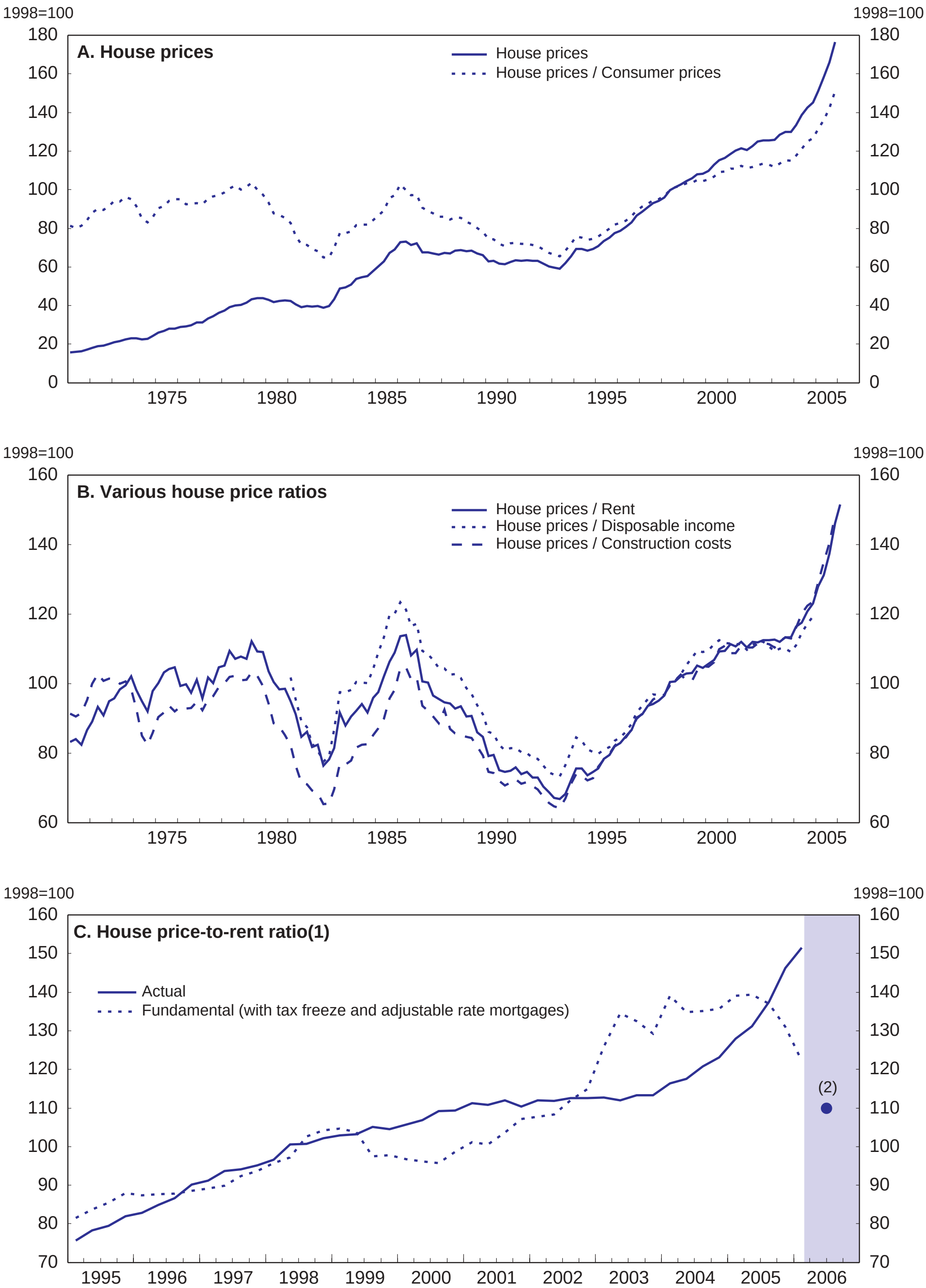
quality adjusted. Thus, the numerator and the denominator of the house price to rent ratio are conceptually different. The ratio thus overstates the true extent of price increases somewhat (McCarthy and Peach, 2004). Data for the US suggest that the difference between the increase of a quality-adjusted and a non-adjusted house price index can amount to roughly 1.3 percentage points per year.

9. From business cycle considerations, significantly higher short-term interest rates would indeed be appropriate, as shown by the Taylor rule interest rate in Figure 1.6 in the *OECD Economic Survey of Denmark 2006*. Nevertheless, it would probably lead to major valuation adjustments in the housing market. As a thought experiment, if Denmark had operated an autonomous monetary policy in the past, short-term interest rates already would have been increased to a higher level – closer to the one prescribed by the Taylor rule – thereby probably preventing the buoyant house prices increases. However, now that house prices have adjusted to the low level of interest rates, they would be affected by interest rate increases.

Figure 1. **House prices**



1. Actual and fundamental house price-to-rent ratios have been set equal to 100 in the most recent year when the actual price-to-rent ratio was close to its 35-year-average. The change in house prices from 2005Q4 to 2006Q1 is based on the Association of Danish Mortgage Banks' statistics.
2. Simulation assuming an interest rate increase by 1 percentage point from the end-of-2006Q1 level.

Source: Statistics Denmark and OECD, Analytical database.

Housing taxation should act as an automatic stabiliser

Within the fixed exchange rate regime, the two main policy levers available to counter overheating are, as pointed on in the *OECD Economic Survey of Denmark 2006*, a tight fiscal policy and measures to boost labour supply. With respect to the former, automatic stabilisers could be strengthened by re-establishing the link between house price movements and real estate taxes that were frozen five years ago. In fact, Denmark has been held up as a role model for housing taxation because of its elaborate system giving annual up-to-date public assessments of each house's value as a basis for real estate taxation (Muellbauer, 2005). Letting real estate taxes move in tandem with each house's value create an automatic stabiliser for house prices, because movements in housing demand are dampened by higher taxes when house prices increase and lower taxes when demand and prices decline. As expectations of future house price increases would also be affected, the extent of speculative housing investments would possibly be reduced. From 2001, however, a tax freeze was introduced holding all tax rates and all nominal excise duties constant, while at the same time capping the real estate tax for each home at the nominal level it had been in 2002 or in 2001 +5%. Now only the smaller land tax somewhat increases in line with values (see below), putting only a weak check on the house price boom. Applying the tax freeze in a more flexible way and keeping the tax rate constant while letting the tax payment vary with house values would help to reduce house price fluctuations. Also raising the real estate tax rate would help even more, as the indirect subsidy associated with the current low tax rate most likely adds to price volatility (Box 1). Implementing such changes now would also have a direct tightening effect on aggregate demand. In contrast to fiscal measures, regulatory measures aimed at cooling the housing market are a mixed blessing.[10] In particular, rolling back the financing flexibility for households achieved through mortgage market liberalisation should be avoided.

10. It would be feasible, for example, to lower the loan-to-value ratio for deferred-amortisation mortgages, in order to cool down house purchases based on speculation that continued price increases would give a capital gain. It might be an effective instrument, but at 80%, the overall loan-to-value ratio for new loans is already well within international practice. Also, it might create other distortions as it complicates the access to deferred amortisation which might cushion a potential housing downturn by making it possible for stretched households to avoid default.

Box 1. **Housing taxation and volatility in house prices**

Cycles in owner-occupied housing markets produce swings in household wealth that in turn amplify economic fluctuations (Boone and Girouard, 2002). House price cycles may typically stem from a relatively inelastic supply of housing which for natural reasons cannot respond quickly enough to offset variations in housing demand due to changes in income or income expectations, real interest rates, demographics, preferences or other factors. This volatility in house prices, however, may be exacerbated by tax incentives stimulating house ownership (Van den Noord, 2005).

By international comparison, Denmark has experienced a bit more volatility in house prices than on average in other countries during the last three decades (Table 1). Most likely, part of this volatility has been caused by the subsidies provided through the tax system, which mainly stem from homeowners' rights to deduct mortgage interest payments in income taxation while paying a low real estate tax compared with taxes on other assets.

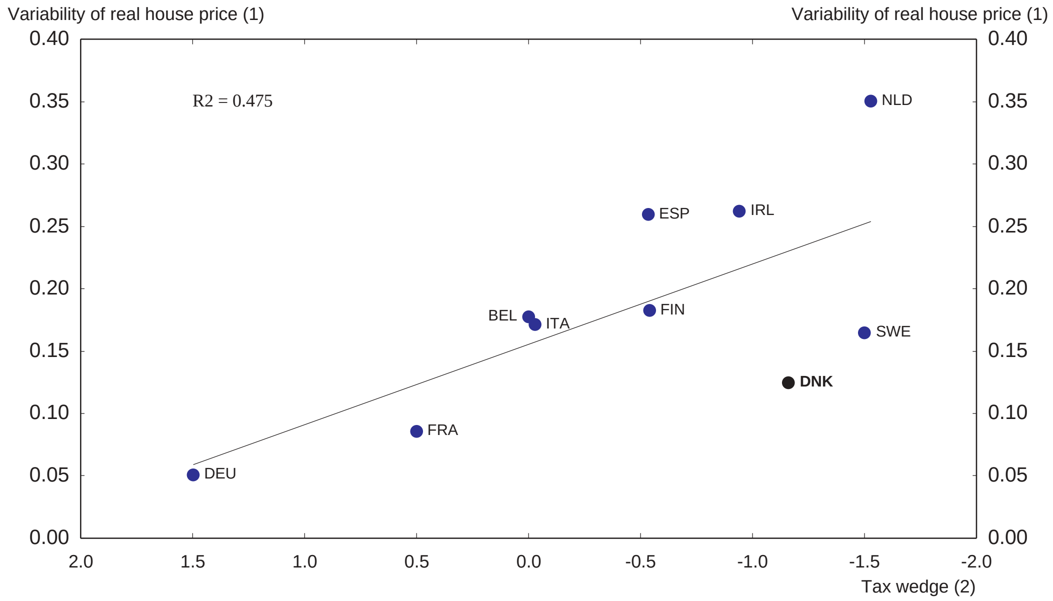
Table 1. **Volatility in real house prices**[1]

	Annual change in house price inflation[1]	Difference between actual and OLS trend house price[2]	Difference between actual and HP trend house price inflation[3]
Netherlands	9.1	24.3	7.3
Spain[4]	10.1	19.2	8.0
Ireland	7.9	23.5	5.4
Finland	9.8	16.8	8.7
United Kingdom[5]	10.1	16.5	8.5
Italy	9.8	14.7	8.3
Denmark	**7.7**	**15.0**	**7.0**
Norway	7.3	15.5	6.0
New Zealand	8.1	12.6	7.0
Sweden	6.8	15.1	5.8
Japan	6.6	14.1	5.6
Switzerland	6.3	13.8	5.5
Australia	6.2	10.8	5.1
Canada	6.4	9.8	5.6
France	4.8	9.0	3.7
United States	3.2	6.3	2.6
Germany	2.7	4.9	2.2
Average	7.2	14.2	6.0

1. Annual data for 1970-2004 if not stated otherwise. Volatility is measured by the standard deviation. The countries are ranked in descending order of volatility based on a simple average of the standard deviations of the three series.
2. Ordinary least squares.
3. Hodrick-Prescott filter (lambda = 100).
4. 1971-2004.
5. 1969-2004.
Source: OECD database.

Price variability of owner-occupied houses is likely to be largest in countries where the tax breaks are largest. In a cross-country analysis, almost half of the variation in house price volatility could be explained by the tax wedge on housing, the most striking example being the Netherlands, which combines the largest tax breaks with the highest price variability (Figure 2).

Figure 2. **Correlation between tax wedge and variability of house prices**



1. Root mean square deviation of real house price from trend, 1970-2001.
2. Difference between after-tax and pre-tax real interest rate on mortgage loans; 1999 tax rules, interest rates and inflation.
Source: OECD calculations.

At a 0.55% average effective rate in 2005, the real estate tax is far too low to ensure neutrality *vis-à-vis* alternative investment, given the current level of interest deductibility. The result is a substantial indirect subsidy inducing increased housing consumption, which concerns owner-occupied housing most directly, but also other segments of the housing market (see below). The tax value of interest deductibility has been reduced in a series of reforms bringing it to 33% for all since 2002 from a peak of 73% in 1986 for those in the top income bracket.[11] At its current level, the tax value of interest deductibility is still larger than in other countries. In Finland and Sweden, the interest on housing debt up to a specified limit can be deducted at 29% and 30%. In Germany, France and the United Kingdom, there is no tax deductibility of

11. Taxation of interest income is based on the *net* of interest receipts and expenditures, and couples are treated as one unit in this respect. If the net interest income is positive, it is added to income from work and taxed on the progressive scale. This is the same today, as in the 1980s. What has been changed is that if net interest income is negative, it is now deductible at 33% irrespective of what marginal tax the person is paying for income from work. To be precise, the tax value of the "first krone" of interest expenditure is still equal to the person's marginal tax rate for income from work, as long as there is interest receipts to deduct against, but for most homeowners, this doesn't matter at the margin, because mortgage interest expenditure is far larger than interest receipts from assets held outside pension schemes. Interest income in pension schemes is not considered when calculating net interest income for the purpose of personal taxation.

interest expenditure, although that is mirrored by no or only limited imputed rent taxation (Baunkjær, 2004; ECB, 2003).

The Danish tax reforms of the 1980s and 1990s took place in a context of macroeconomic savings imbalances and current account deficits. From a low averaging 12% of GDP in the first half of the 1980s, aggregate savings have risen to a 2000-05 average of 21% of GDP, and motivating higher savings is not a concern (Ministry of Finance, 2004a). However, the gap between the 33% interest deductibility and the 15% tax rate for returns on pension savings may invite forms of tax planning that were not easily possible at the time of the 1998 "Whitsun" tax reform. Interest-only mortgage loans were introduced in 2003, but now already account for almost a quarter of all outstanding mortgage debt. Shifting to interest-only loans instead of paying down mortgage debt provides a strong tax subsidy to increase pension savings. With house prices now being far above what anybody had imagined in the 1990s, the net-present value of the tax revenue loss from such an arrangement may easily exceed DKK 100 000 in a typical example, part of which accrues to financial intermediaries.[12] Financial market development and mortgage liberalisation are beneficial, but may require renewed attention to skewed tax incentives.

Another way of responding to overheating risks could be to scale down subsidised housing and possibly postpone approved projects that have not yet started. This would have a very direct and potentially large effect on construction sector capacity shortages, as publicly subsidised housing represents about a third of all new dwellings being constructed.[13] As part of a package to reduce direct and indirect subsidies for housing, the *OECD Economic Survey of Denmark 2006* recommended to end the subsidies for pension fund's investment in new rental housing and to replace the general subsidies for housing associations with

12. Consider a couple aged 45 buying a house or flat worth DKK 2½ million. They use their liquid savings and need mortgage finance for the remaining DKK 1½ million. One option is to take a loan with linear repayment over 30 years, meaning DKK 50 000 annually. Their income is sufficient to pay such a mortgage, and following common practice, the mortgage credit institute is therefore willing to offer them an interest-only loan as an alternative. Using this loan, they can channel the DKK 50 000 into their individual pension schemes. If (for simplicity of illustration) they buy the very same bond in the pension scheme as is issued for their mortgage loans, they will earn the same interest rate as they pay, say 5%. With interest expenditure of 5% * 50 000 = 2 500, their income tax payments will be reduced by 33.3% * 2 500 = 833, whereas the pension savings tax on the interest income is only 15% * 2 500 = 375. The net result is a tax subsidy of DKK 458 in the first year, and with another DKK 50 000 being moved into pension savings every year, the tax subsidy grows above DKK 15 000 in the year they are 65. From thereon it gradually declines when they retire and start repaying the mortgage with the extra pension income. In net-present-value terms, the couple saves tax payments in the order of magnitude DKK 100 000 – 200 000, depending *inter alia* on how they liquidate the pension savings and the mortgage in old age. It is about the equivalent of one year's earnings net of income and consumption taxes for one average production worker. Fees from financial institutions will absorb some but not all of the taxes saved: additional mortgage borrowing costs (the so-called contribution rate) are typically 0.5% of the increase in outstanding debt, which is about half of the taxes saved if nominal interest rates are at 5%; holding the bond in the pension savings plan is not expensive. For simplicity, this calculation abstracts from the fact that pension contributions are deductible from income taxes when made while pension receipts are taxed as income, since this is neutral as long as person faces the same marginal tax rate when working and pension life. In practice many face a lower marginal rate when retired, in which case the reduction in tax payments from the described arrangement is larger.

13. In 2005, initial data releases indicate that construction was commenced for a total of 23 000 dwellings. Subsequent counts typically lead to substantial upward data revisions, so the actual number of dwelling starts may be 30 000 or a bit below. In the same year, 10 500 subsidies dwellings were to be commenced. A bit more that half of this is in housing associations (mainly one-family homes and adapted homes for older persons) and most of the rest is subsidised private rentals. In 2006, the total number of commenced subsidised dwellings is to fall to 7 400, but then grow again to 8 500 in 2007 (Ministry of Finance, 2005).

targeted support for individuals in need. Taking these initiatives and unfreezing the real estate tax would both reduce distortions in the housing market and reduce the risk of overheating.

Danish housing policy and its main instruments

The main objective for Danish housing policy is to ensure that citizens obtain proper housing at affordable and predictable prices through a variety of housing segments (Ministry of Economic and Business Affairs, 2002). Reflecting a policy objective with a broader scope than merely providing housing to those who are really needy, the housing market is heavily regulated and subsidised. While experiences of poor housing in earlier times (creating public health problems) may have been at the origin of government intervention, such arguments are less convincing today. By favouring housing through indirect tax subsidies, subsidised construction, housing allowances and rent regulation, the government risks diminishing the flexibility that is needed for providing housing according to household preferences and is in fact becoming increasingly important to assure the labour mobility needed to sustain economic growth. Although there may be circumstances that still require some public intervention, such as securing an appropriate urban structure and provision of accommodation (at least temporary) for the weakest groups in society, the rationale for extensive public intervention in the housing market is likely to have declined as living standards in Denmark have been among the top handful of OECD countries for several decades and overall housing availability is high. Adopting less costly housing policies under these circumstances is therefore not likely to lead to housing shortages, but would rather contribute significantly to improving the functioning of the housing market and free resources for socially more preferred uses.

Danish housing policy gradually developed up to about 1980. Since then some reform measures have been taken in different areas (see Box 2), but there is still scope for progress regarding recommendations made in previous OECD reports (see Annex). In other countries, not least the other Nordic countries, public authorities have to a larger extent been retreating from their dominating role in the housing market (OECD, 1999; Lind, 2001; Skifter Andersen, 2002; ECB, 2003; Lujanen, 2004):

- Finland abolished rent regulation in the mid 1990s, which led to an increase in the stock of rental housing.
- Norway removed price regulation of shares in co-operatives in the early 1990s implying that this segment is put on a level playing field with owner-occupied housing.
- Sweden drastically reduced housing subsidies during the 1990s, freeing up resources in public budgets.

Denmark could benefit from a more fundamental reform of housing policies, possibly inspired by the developments in its neighbouring countries – not least because they presently constitute a major strain on public finances.

Box 2. **Danish housing policies in a historical perspective**

The instrumental structure of housing policy arrived at its present formulation in the early 1980s. However, the actual thrust of housing policy has oscillated over time, depending on the balance between macroeconomic, fiscal and welfare state considerations (OECD, 1999).

1966-74: an unsuccessful market orientation

- The 1966 housing policy package aimed at removing rent controls in the two rented segments by gradually increasing rent to market levels, by government transfers to cover in full interest payments in social housing above a certain rate, by individual housing benefits, by a doubling of the rate of return assumed for the imputed rent and by the possibility of converting private rented property to condominiums (*i.e.* owner-occupied flats).

1975-82: struggling with high inflation and high interest rates

- The acceleration of inflation and increase in interest rates made the introduction of market-based rents (as aimed for with the 1966 housing policy package) politically unfeasible, so in 1975 a policy package introduced the concept of cost-based rents which was to underlie rent formation both in the private and social rented segments. Tenants' barter rights were also introduced.
- The subsidy to social housing was modified to a four-year period with full elimination of interest rates above 6½ per cent to be followed by a gradual phasing out of the subsidy.
- In addition, there was a lowering of the value of imputed rent with a further fall effected in 1978.
- The possibility of conversion to condominiums was restricted in 1976 to rentals above a certain standard, and the possibility to convert private rental housing into co-operative housing was introduced.
- Construction of social housing fell in the wake of the phasing-out scheme introduced in 1975, and the rule capping the annual increase in the rent in this segment to three-quarters of the annual inflation rate was introduced in 1979. It was followed by individual housing allowances for pensioners in the same year. Indexed bonds were introduced in 1982 to finance construction in all housing segments as well as business investments in structures. Subsidy schemes for social and co-operative housing were modified accordingly.

1985-89: cooling down an overheated housing market

- The imputed rent was further modified in 1985, with a rate of 2.5% (and 7.5% above a certain threshold.) In addition, the 1987 tax reform brought the marginal tax rate for capital expenses down to about 52%, implying as much as a doubling of after-tax interest rates for those previously facing marginal rates above 70%. Central elements in the tightening of economic policy in 1987 (*kartoffelkuren*) were a tax surcharge of 20% on consumer borrowing and extensive use of regulations of the mortgage market.

1990-94: reviving the housing market

- For private rental properties taken in use after 1991 rents can be set freely.
- As a consequence of the prolonged depression in the housing market, the annual commitment quota of the urban renewal programme doubled from the late 1980s, to more than DKK 3 billion in 1993. This was supplemented by a four-year (1991-94) programme of substantial government refunds for maintenance and standard improvements.
- In 1994, the regulations for rent control were modified with an increase in the maintenance charge to offset the accumulated backlog of repairs on old rental property. Also, the former system of central government responsibility for decisions regarding construction of social housing was replaced by the right for municipalities to decide upon the appropriate level of social housing.
- The 1994-98 tax reform continued to lower marginal tax rates for capital income, reducing the tax

value of deductible interest payments to about 46%. The value of imputed rent was accordingly lowered to 2% (and 6% above a certain threshold) to offset the lower tax value of deductible interest payments and capitalisation effects on house prices.

1995-2005: small steps towards less intervention

- Since 1997 landlords in municipalities applying the Housing Regulation Law has been allowed to charge a rent according to the "value of the rented dwelling" (*det lejedes værdi*) in the case of undertaking major improvements. This brings rents closer to market-clearing levels.
- The 1998-2002 tax reform (*Pinsepakken*) reduced the tax value of deductible interest payments further, from a maximum of about 46% in 1998 to 33% in 2002, the aim being to reduce marginal tax rates so as to increase private savings. The highly unpopular imputed rent taxation was abolished from 2000, but was subsequently replaced by a real estate tax. However, in 2002 the government introduced a tax freeze, implying that a nominal ceiling is imposed on the real estate tax so that an increase in the value of property will not lead to higher tax payment for the home owner.
- Since 2002, pension funds and insurance companies have been taxed by 15% of the surplus accruing from investments in private rentals compared to the normal corporate tax rate of 28%, the aim being to strengthen incentives to invest in rented housing.
- In 2004, a reform of the urban renewal scheme was put into place, implying less public regulation, less public subsidies and a higher marginal financing from private landlords and funds.
- Since 2004 landlords have been allowed to charge market rent on new roof-top apartments in rented housing buildings that otherwise are subject to rent control.
- For a trial period of 3 years from June 2004, tenants in social housing have been allowed to buy their dwellings, thereby strengthening property rights in this housing segment.
- As of June 2005 it became possible to use the share in a co-operative as collateral for borrowing.

Main institutional features

The pattern of Danish housing differs a bit from the average of other Nordic and European countries, with a smaller share of owner-occupied housing and a higher share of rented housing, particularly social housing (Table 2). Denmark has a comparatively high number of dwellings relative to the number of households, which among other factors reflects the substantial subsidisation of housing. The housing stock can be divided into the following main segments:

- *Owner-occupied housing* consisting of single-family and multi-family houses and condominiums (owner-occupied flats) has traditionally been seen as the top end of the housing ladder. Reflecting high activity in this segment during earlier decades (Figure 3), the proportion of the housing stock belonging to this segment has increased gradually and currently accounts for 52% of the housing stock. In economic terms, owner-occupied housing constitutes a major share of wealth accumulation.
- *Co-operative housing* is an indirect form of ownership which was institutionalised in 1979. While accounting for 2% of the housing stock in 1980, co-operatives currently account for 7% of the stock, reflecting *inter alia* construction of new co-operative housing and legislation allowing tenants in private rented housing to buy their dwellings in case of rental property sales.
- *Private rental housing* provided by landlords operating on a for-profit basis has historically been the main alternative to owner-occupied housing. However, the transition of many private rental dwellings into condominiums and co-operative housing as well as government interventions which either disfavoured investment in this segment or gave financial

advantages to other segments have meant that the proportion of the housing stock belonging to this segment has gradually fallen and currently accounts for 17%.

– *Social housing* is provided by housing associations operating on a non-profit basis (see Box 3), and was mainly established in the post war period. Reflecting the financial advantages attached to this segment, the proportion of the dwellings belonging to this segment has doubled since 1960 and currently accounts for 20% of the total housing stock.

– Other types of housing and vacancies account for 4% of the housing stock. A small part consists of employer-provided housing, while most are dwellings that are temporarily vacant due to *e.g.* moving.

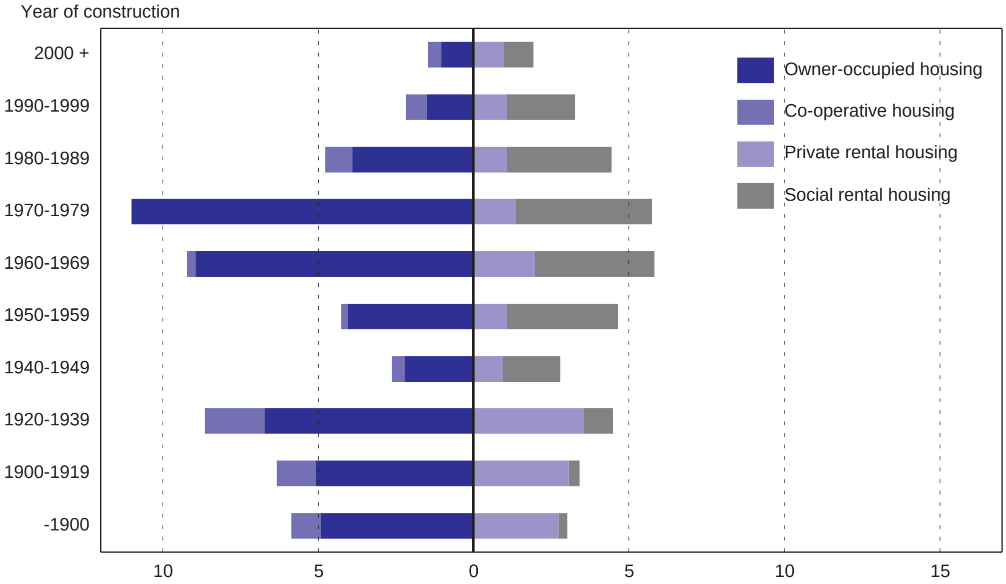
Table 2. **Housing segments and availability of housing**
Per cent of total housing stock

	2004					
	Owner-occupied housing	Social housing	Private rental housing	Other[1]	Dwellings per 1 000 habitants, 2003	Average square metre per dwelling, 2001
Denmark	**52**	**20**	**17**	**11**	**476**	**109**
Other Nordic countries:						
Finland	58	17	15	10	509	77[4]
Iceland[4]	81	4	10	5		
Norway	61	5	18	16	438	122
Sweden[2]	39	24	19	19	486	90[3]
Average	**60**	**13**	**16**	**13**		
Other European countries[5]						
Austria	42	20	19	20	408	85
Belgium	71	5	19	5	456[5]	88[6]
France	56	17	21	6	477[5]	88[7]
Germany	43	6	45	6	474	87[8]
Ireland	78	9	9	4	358[5]	88
Italy[2]	67	6	8	19	459[5]	90[9]
Netherlands	54	34	10	2	421	98[4]
Spain	82	2	9	7	510[5]	
Switzerland[4]	35	14	43	8	504	
United Kingdom	69	21	10	0	433[5]	85[7]
Average	**60**	**13**	**19**	**8**		
Other countries:						
Australia[5]	70	4	21	5		
United States	68	32[10]	0	0	435	

1. Co-operative housing and employer-provided housing.
2. 2003, 3. 1997, 4. 2000, 5. 2001, 6. 1994, 7. 1996, 8. 1998, 9. 1991,
10. Not possible to split rented housing in private rentals and social housing.

Source: Statistics Denmark; Statistics Norway; Statistics Sweden; Statistics Finland (2005); Karlberg and Victorin (2004); RICS (2005); Economic Council (2001); Australia Bureau of Statistics; U.S. Census; Housing statistics in the European Union 2002; OECD (2005b).

Figure 3. **Age structure of the housing stock**[1]
Per cent



1. Total housing stock (number of dwellings) divided into components characterised by both decade of construction and the current form of ownership. Other forms of non-rented dwellings such as employer provided housing is not included.
Source: Ministry of Finance.

Box 3. **The housing associations**

Main organisational features

Denmark has about 760 housing associations (*almene boligorganisationer*) responsible for provision of social housing, under municipal supervision. The actual provision of housing services takes place in the associations' member sections.[1] In total, there is about 7 400 member sections with a total of 492 000 dwellings (mostly family apartments). The dwellings are owned by the member sections.

Decisions regarding the member sections' provision of housing services are mainly taken in the housing association. The *governing assembly* decides upon acquisitions, sales and changes in the physical structures, and also carries into effect construction of new dwellings (on the basis of an agreement with the municipality). The *management board* is responsible for the daily operations, including management of the member sections. The latter responsibility includes budgeting and accounting matters as well as decisions regarding rent determination. The residents in the member sections constitute a majority in both the governing assembly and the management board of the housing association. In addition, each member section has a board of directors which is appointed by the tenants. As the municipalities have a supervisory function, they approve all important decisions in the housing associations.

The housing associations operate on a non-profit basis and the member sections are, in principle, economically independent of each other with respect to ownership and rent determination. Hence, revenues are supposed to match expenditures, implying that a bankruptcy of one section will not affect the housing association or the other sections within it. The rent determination in the member sections is based on a *balance principle* implying that rent is set equal to the section's costs. This is regarded as an important feature of the tenants' influence as they alone decide on investments and operations and personally assume the financial consequences of their decisions. Although the balance principle is set to ensure independency, some redistribution takes place between member sections (*internal* redistribution) and between housing associations (*external* redistribution) (Karlberg and Victorin, 2004).[2]

The arrangement of the cooperative funds

In 1999, a new financing regime for social housing was implemented implying that tenants' rental payments should be independent of the mortgage payments, including after amortisation. Hence, when the mortgage is paid back, rents go into different cooperative funds. Cash-surpluses due to amortisation of mortgages are part of each housing association's *Dispositionsfond*, which may be used for improvements, conversions, rebuilding etc. The new financing regime implemented, imply that 50% of these cash-surpluses should be transferred to the *Landsbyggefonden.* For dwellings built after 1998, two thirds of the cash-surpluses should be transferred to the *Landsbyggefonden* of which 50% should be transferred to the *Nybyggerifonden* with the aim of financing construction of new social housing dwellings. In addition, member sections built before 1970 pay contributions to the Landsbyggefonden. The housing associations have a drawing right on 60% of the contributions to the *Landsbyggefonden*, which may be used for improvement of the buildings in the member sections.

In 2005, total revenues in *Landsbyggefonden* amounted to about DKK 500 million, exclusive of the drawing rights, where revenues as a result of amortisation amounted to DKK 130 million. The expenditures in 2005 amounted to about DKK 800 million, where DKK 200 million was used as contributions to housing associations having financial problems, DKK 300 million was used on different arrangement to support tenants rental payments and DKK 300 million was used to finance improvements and maintenance of the buildings. While the arrangement with supporting rental payments will be phased out, support to housing associations having financial problems is supposed to be continued. Revenues as a result of amortisation are estimated to increase to DKK 1.5 billion in 2010, and further to DKK 3 billion in 2020 (2006-prices).

Reflecting the expected increase in revenues in the years ahead, a political agreement of 4 November 2005 states that the *Landsbyggefonden* should be used to refund 50% of government support to financing of new social housing dwellings in 2005 and 2006, so as to reduce the burden on the state budget (Ministry of Social Affairs, 2005).[3] While the municipal share in the financing of new social housing buildings was supposed to increase to 14% in 2006 (as it was prior to 2001), the agreement states that the share should be hold at the present rate of 7% also in 2006. Furthermore, the agreement states that the investment limits in the *Landsbyggefonden* should be increased by 40%, to DKK 2.1 billion in 2006, to improve the physical conditions of social housing buildings to attract new tenants, particularly in member sections having deteriorated buildings. To cope with segregation, leading to high concentration of socially weak groups, the political agreement proposes several initiatives: use of *Landsbyggefonden* for preventive activities, targeted reduction in the rent in distressed sections, sale of dwellings to achieve a better mix of tenants and financial support to cover moving expenses; enhancing the right for municipalities to request vacant dwellings so as to change the composition of tenants; extending the right to abolish buildings to improve the general environment; improving possibilities for renting to local business companies; and establishing an Internet site for social housing associations to increase availability and transparency to attract new tenants. The political agreement states that an analysis should be conducted of the future governance of social housing associations and use of the funds with the aim of increasing the degree of self financing of the sector. The analysis will be conducted by an inter-ministerial working group, and is due to be completed by 1 July 2006.

1. Social housing apartments for the elderly may also be operated by municipalities, counties or self-owned institutions.
2. Regarding operating revenues, internal redistribution within a housing association may take place through changing the distribution among the member sections of the share of the rent that reflects contribution to cover administrative costs within the housing association. There is however more restrictions on to what extent a member section may change the internal distribution of savings. The scope for this is larger regarding redistribution between different member sections, which may take place through borrowing, use of the *Dispositionsfonden* or by re-allocation of a surplus generated in the housing association. External redistribution may take place through the *Landsbyggefonden*.
3. This political agreement is an extension of the 2002 political agreement about the *Landsbyggefonden* stating that the fund could give contributions to renovation and improvements of deteriorated buildings within a yearly investment limit of DKK 1.5 billion in the period 2003-05.

Housing is generally favoured relative to other forms of consumption in Denmark, mainly due to housing allowances, subsidised construction and indirect tax subsidies. The benefits accruing from housing policies take different forms depending on the specific set of regulations applying to the different segments (Table 3); Home owners benefit from paying a lower real estate tax than the rate that would be neutral *vis-*

à-vis interest deductibility. Those having a share in co-operatives benefit from being exempted from the real estate tax. In addition, there are tax breaks for pension fund investments in rental housing. Those who have managed to get into the regulated parts of rental housing reap an individual insider advantage from paying rents below what other people would be willing to pay if they had the chance of acquiring a similar dwelling. Also, the social housing sector is subsidised through central government co-payment of the mortgages raised to finance construction of new dwellings. Public subsidies are also provided through the urban renewal scheme, which apply mainly for private rentals and to a limited extent for co-operatives and owner-occupied housing. Finally, housing is subsidised through housing allowances, notably to tenants. The large differences in the taxation and subsidisation of the various housing segments lead to a lack of neutrality, which creates significant imbalances in the Danish housing market (Lunde, 2002, 2004).

Table 3. **Overview of regulation and subsidisation of housing in Denmark**

	Housing segments			
Regulatory instruments	Owner occupied	Private renting	Social housing	Co-operatives
Income tax	No	Surplus on landlord's hand is taxed at 28%[3]	Exempted	Exempted
Real estate tax[1]	Yes	Exempted	Exempted	Exempted
Land tax[2]	Yes	Yes	Yes	Yes
Rent regulation		Yes, for older dwellings	Yes	Yes
Character of housing support	Low real estate tax	Insider advantages accruing from rent regulation	Exemption of real estate tax	Exemption of real estate tax and capital gains are tax-exempted[4]
	Subsidies from the urban renewal scheme (as a loan)	Subsidies from the urban renewal scheme	Insider advantages accruing from rent regulation	Price cap on shares imply low second-hand prices on shares in co-operatives
			Subsidised construction	
				Financing of new co-operatives dwellings are subject to a municipal guarantee
				Subsidies from the urban renewal scheme
Housing allowances				
- Housing allowances for low income groups *(boligsikring)*	No	Yes	Yes	No
- Housing supplement in the public pension *(boligydelse)*	Yes, as loan	Yes	Yes	Yes, 40% grant and 60% loan

1. A real estate tax is levied on residential properties amounting to 1% of the assessed property value (3% for property values over DKK 3 040 000, € 407 500). There is currently a tax freeze implying that for each home the real estate tax is set at the nominal level it had in 2002 or in 2001 +5%.
2. Municipalities levy a land tax of between 0.6 and 2.4% of the assessed land value, while counties levy a land tax of 1%.
3. For pension funds, property investments are taxed at 15%.
4. Sale of property is prohibited for 5 years after it has been acquired by a co-operative association.
Source: Ministry of Finance; Economic Council (2001).

Property rights are mainly conferred upon home owners, implying that the dwellings can be traded freely and put up as collateral with capital gains (or losses) accruing fully to the owner. For members of co-operatives, property rights are more weakly defined insofar as share prices are regulated, restricting appropriation of potential capital gains.[14] On the other hand, members of a co-operative have limited liability in case of bankruptcy, as (in practice) only the share will be used to cover outstanding co-operative debt while the tenant is entitled to stay on as a tenant. Some steps have recently been taken to strengthen property rights in co-operatives, as shares now may be used as collateral for borrowing. Social housing does not confer property rights upon the individual tenants, even though they have extensive influence over the apartment in which they live and with respect to the general economic disposition of their housing association through representation in the managing board (see Box 3). A policy was introduced 1 July 2004, for a trial period of 3 years, allowing tenants in social housing to buy their dwellings. As of March 2006, the Ministry of Social Affairs has approved sales in 9 housing sections, equivalent to 820 apartments. Sales have been slower than anticipated, but this policy could strengthen property rights in this housing segment.

The formulation and implementation of housing policies is shared between central and local government. While central government defines the broad objectives and instruments, and in particular sets the portion of its expenditure that will be allocated to housing subsidies, local government is responsible for financing a share of the construction costs for new social housing dwellings and allocation of people to social housing as well as for subsidising housing consumption for the disadvantaged. Local government also plays an important role in the implementation of housing policies by being responsible for supervision of the housing associations. The counties are responsible for providing housing for seriously disabled elderly people.[15]

Freeing resources by reducing subsidies

Although subsidisation of housing is still substantial, there have been large changes in the past in the parameters determining the way that subsidisation takes place (see Box 2). The main changes during the last decade are the lowering of the tax value of interest deductibility, the replacement of the tax on imputed rent by a real estate tax (although the subsequent tax freeze has increased the implicit subsidisation), some steps in the direction of reforming the financial system for social housing including increased degree of self-financing (since 2002 the social housing sector has been obliged to reimburse more than half of total state subsidies to new social housing), introduction of a subsidy to private investors and pension funds investing in the rental market, the reform of the urban renewal scheme and easing rent regulation slightly (see Boxes 2 and 4).

14. Share prices in co-operatives are regulated on the basis of the co-operative associations' wealth. The regulations allow for three different methods to estimate this wealth, but rent regulation imply that the estimated wealth will be lower than on a free market.

15. In 2007, after implementation of the local government reform, the responsibility for providing housing for seriously disabled elderly people will be transferred to the municipalities. Most of the counties' responsibility for physical land planning will also be transferred to the municipalities, although the new regions will be responsible for planning of land zones. Municipalities within the new municipal structure may decide to transfer the task of building and managing social housing for seriously disabled elderly people to the new regions (see Ministry of the Interior and Health, 2005 for further details about changes in responsibilities for non-housing tasks).

Box 4. **The development of the Danish rent regulation framework**

The current rent regulation framework for rented housing has its origin in a re-orientation of housing policy in the mid-1960s, intended to bring rents in private and social rented housing up to market-clearing levels over the period 1967-74. However, the plan did not foresee the strong increase in inflation in the early 1970s and was not adjusted to take this into account. The ensuing rent level in 1974 – in real terms more or less the same as in 1967 – was therefore still far from market-clearing levels and efforts to prolong the adjustment period were not pursued (OECD, 1999).

The basic rent regulation settled in the Tenants Law (*Lejeloven*) is formulated on the basis of market-clearing rents. Rent determination under this law is based on "value of the rented dwelling" (*det lejedes værdi*), implying that rent adjustments is based on comparing similar tenancies with respect to localisation, type, size, quality and standard.[1] This law was supplemented in 1975 by the Housing Regulation Law (*Boligreguleringsloven*) relying on cost-based rents (all costs, property taxes included, and a prescribed charge to cover maintenance costs). The introduction of this supplement led to an increase in rents of somewhat below 30% in real terms in the year immediately after its inception. Currently, about 87% of the housing stock is to be found in municipalities applying the Housing Regulation Law (Table 4).

Table 4. **Number of private rentals under different regulation regimes**
Stock in beginning of 2003

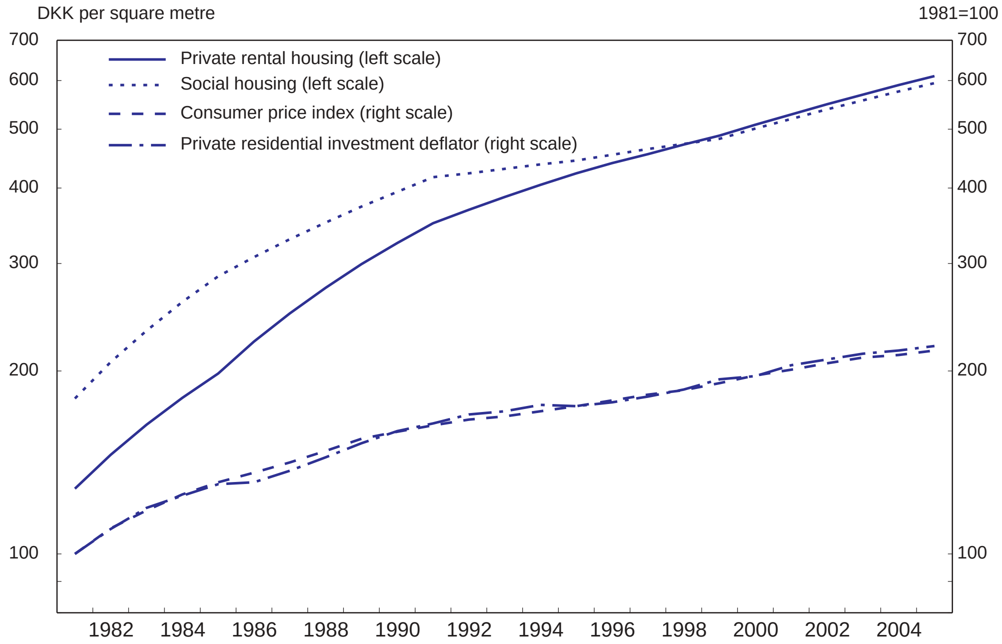
	Housing Regulation Law (*Boligreguleringsloven*)	Tenants Law (*Lejeloven*)
Cost-based rent		
- large properties built before 1964	142 700	
- large properties built 1964-91	48 700	
Value of the rented dwelling[1]		
- small properties with 7 flats or less[2]	142 000	
- properties taken in use pre 1992		52 700
- paragraph 5.2 conversions	12 500	
- 80% properties	3 500	
Market rent		
- properties taken in use after 1991	17 400	2 500
- dwellings arranged as commercials by 31 December 1991	2 000	
Total	368 800	55 200

1. Value of the rented dwelling is based on the average rent paid in the area taking into account localisation, type, size, quality, equipment and maintenance status.
2. Rent is set on the basis of value of the rented dwelling, but comparison is only made with apartments in large buildings in municipalities applying the Housing Regulation Law, implying that the basis for comparison in practise is cost-based rents.

Source: Ministry of Social Affairs.

Landlords under the Housing Regulation Law are allowed to pass on all operating costs as well as a prescribed capital charge to cover maintenance costs and improvements.[2] The capital charge was restricted to 7% of the unadjusted nominal value of the property following from the 1973 tax assessment for buildings constructed before 1964. For buildings constructed from 1974 to 1991 the capital charge is 14% of the construction value, which in practice offsets the effect of the regulation regime. Thus rents in these apartments appear to be at the same level as rents determined on the basis of demand and supply, in line with that applying to property dating from 1992 and later (OECD, 1999). The capital charge in buildings constructed in the period 1964-73 varies from 8 to 12% of the construction value. Insofar as other elements have been included in the cost basis for rents (*inter alia* an increase close to 50% in prescribed charges for future maintenance), rents in the private rented segment have increased substantially in real terms over the past two decades, and also relative to rents in social housing, particularly in the 1980s (Figure 4). The capital charge for improvements is currently about 8% in the case that the apartment cannot pass the paragraph 5.2 regulations.

Figure 4. **The development of housing rents**



Source: Ministry of Social Affairs; OECD database.

While the rent regulation framework applies for properties constructed before 1991, about 95% of the stock of private rentals is still subject to below market-based rent determination. There have been some efforts to adjust the rent level up to market-clearing levels by gradual and indirect measures, such as tax credits admitted to pension funds and private companies when investing in the market for private rental housing and allowing for market determined rent in roof-top dwellings and dwellings in new constructed roof-floors. However, the share of dwellings being subject to market based rents is still relatively low (5%).

In municipalities applying the Housing Regulation Law, landlords are – in the case of undertaking major improvements (paragraph 5.2 conversions) determined by improvement costs above a threshold of DKK 1 834 per square metre or total costs above DKK 209 728 for the single apartment – allowed to charge a rent according to the "value of the rented dwelling" (*det lejedes værdi*) when renting to a new tenant. This rent is supposed to be closer to market-clearing levels. Close to 3% of the stock of private rentals is under this type of rent determination. As this option means increased profits for landlords, the number of dwellings with regulated rents is likely to fall, although gradually.[3]

1. Hence, the "value of the rented dwelling" is an adjustment factor which is not comparable to market rent. In practise one may observe that an agreed rent in a tenancy is reduced even though it is considered to be below the market rent. In some rural areas where the Tenants Law is applied and where demand for rented housing has been falling, it is presumed that market rent is lower than "the value of the rented dwelling". Since rent regulation then is not effective, the actual rent paid has in practise been replaced by market rent.

2. According to a survey from 2002, the statutory cover for maintenance costs amounted to DKK 131 per square metre (DKK 115 for maintenance of the total building and DKK 16 for maintenance of the single apartment). The average amount for payment of improvement costs was DKK 111 per square metre.

3. Rough estimates indicate that about 2 000 dwellings per year will be subject to major improvements. The Ministry of Social Affairs is planning to carry out a new survey of the use of these so-called paragraph 5.2 conversions during spring 2006.

High public budget costs related to housing policies

In terms of policy regimes, Danish housing policies have been in a gradual transition from supporting housing supply to supporting households, meaning more use of housing allowances and less use of subsidies to construction (OECD, 1999). Despite the fact that housing allowances is the largest direct expenditure item, "bricks-and-mortar" subsidies are still substantial, notably through public co-payment of mortgages used to finance new social housing dwellings (Table 5). While measures implemented in 2004 to reduce direct subsidies, such as abolition of subsidies to construction of new co-operative dwellings and the noted reform of the urban renewal scheme, subsidies still affect the expenditure side of the general government budget significantly and direct housing subsidies alone amounted to 1.1% of GDP in 2005 (housing allowances amounted to 0.7% and "bricks-and-mortar" subsidies to 0.4%).

The spending on housing policies through indirect tax subsidies is even larger than through direct expenditures, mainly due to that owner-occupied housing is taxed more mildly than other assets. This subsidy is set to get even larger with the real estate tax frozen in nominal terms as noted above. Tax revenues foregone amounted to 1.6% of GDP in 2005 (including tax advantages given to tenants in co-operatives, but excluding the tax breaks for pension funds investing in the rental market).[16] Adding to the direct expenditures, total public spending on housing policies amounted to 2.7% of GDP in 2005. Relative to the number of persons living in each housing segment, total subsidies are largest for co-operatives and smallest for owner-occupied housing (Table 5).

Total direct and indirect housing subsidies are thereby much larger than in neighbouring Sweden and Norway (Figure 5). Wider international comparisons are difficult due to different methodological approaches, but available studies indicate that Danish housing subsidies are large also compared to other OECD-countries (ECB, 2003). Reducing the extensive subsidisation of housing would free resources in public budgets for other socially preferred uses. This would also create room for tax cuts as discussed in the *OECD Economic Survey of Denmark 2006*.

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16. Tax revenues foregone within the previous system based on a tax on imputed rent amounted to 1.7% of GDP in 1999. If the real estate tax (introduced in 2000) had been in force in 1999, this indirect tax subsidy would have been reduced by ½ percentage point, to 1.2% of GDP (Economic Council, 2001). A temporary regulation, which was introduced in 2000 together with the real estate tax, implies reduced taxation for houses bought before 1 July 1998 and for pensioners. Phasing out of these transition rules would reduce the tax revenues foregone further by 0.2-0.3% of GDP. Hence, the indirect tax subsidy was reduced in 2000 by introduction of the real estate tax. A fall in the average bond rate from about 6% in 1997 to 3-4% in 2005 have contributed to reducing the indirect subsidisation of owner-occupied housing, even though this has to some extent been counteracted by the tax freeze introduced in 2001.

Table 5. **Direct and indirect public subsidies for housing**

	1995	**1999**	**2005**	**2005**			
	Percentage of total housing subsidies			Housing subsidies per habitant [4] DKK			
				Owner-occupied housing	Private rental housing	Social housing	Co-operatives
Expenditures	**37.2**	**40.0**	**40.5**				
Individual housing support	22.1	24.0	25.4		6 200	6 400	
Social and co-operative housing	11.5	12.0	10.2		100	4 000	1 700
Urban renewal [1]	3.6	4.0	4.9		1 900		2 000
Revenue foregone	**62.8**	**60.0**	**59.5**				
Low imputed rent [2]	58.3	60.0					
Special tax rates for pensioners, etc.	4.5						
Low real estate tax [2]			48.8	6 200			
Tax exemption for co-operatives [3]			10.7				14 800
	DKK bill.						
Total	**35.7**	**35.0**	**41.0**	**6 200**	**8 200**	**10 400**	**18 500**
	% of GDP						
Total	**3.5**	**2.9**	**2.7**				
Expenditures	1.3	1.2	1.1				
Revenues foregone	2.2	1.7	1.6				

1. Urban renewal is generally characterised by a substantial time lag from a given grant to the public disbursements to take place. Thus, the numbers contains also urban renewal activities initiated some years ago.
2. Calculated as the difference in taxes accruing from respectively a financial investment and an identical investment in owner-occupied housing, thus taxing nominal capital incomes in full. For 2005, the details of this calculation are as follows: The current effective real estate tax rate is estimated as 0.55% whereas the neutral rate would be slightly more than 1½ per cent (see Table 6).
3. Calculated as the number of co-operative dwellings (174 745 as of 1 January 2005) multiplied by the neutral real estate tax rate multiplied by an estimated average price of a co-operative dwelling in 2005 (DKK 1 527 716).
4. The number of habitants is taken from Statistics Denmark, *Boligopgørelsen 1. January 2005.*

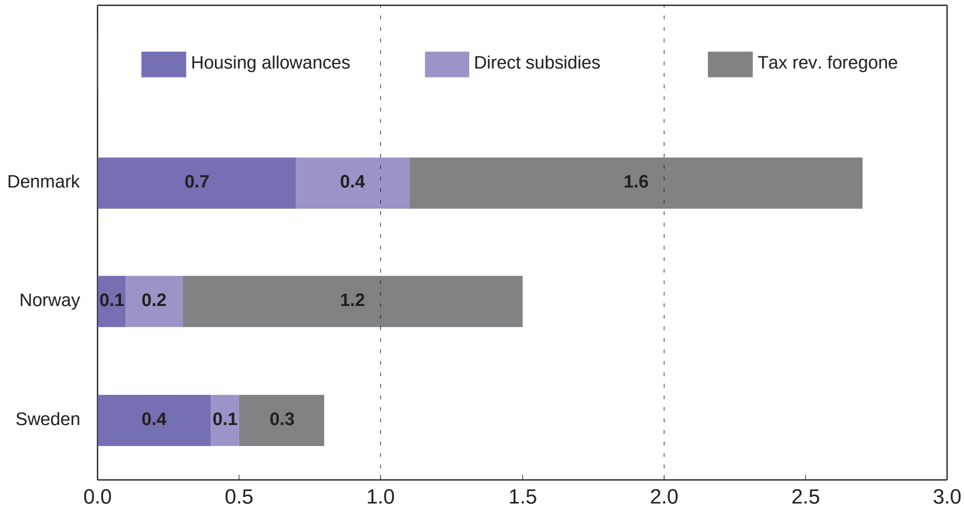
Source: Ministry of Social Affairs; OECD (1999); Economic Council (2001, 2005); OECD calculations.

Owner-occupied housing and co-operatives benefit from substantial indirect tax subsidies

People living in owner-occupied houses and flats enjoy a substantial indirect tax subsidy. The real estate tax (*ejendomsværdiskat*) has a statutory rate of 1% (and 3% above at a certain threshold), but the average effective rate paid in 2006 is merely 0.55% of the assessment value, reflecting special reductions for houses and flats bought before July 1998 and for pensioners, as well as the tax freeze (see Box 5).[17] The latter prevents the nominal real estate tax paid by any individual home owner from increasing above the level it had in 2002, which *de facto* has reduced housing taxation as the tax base is not reflecting the increase in house prices in recent years. However, the local land tax (*grundskyld*) paid at between 1.6% and 3.4% of the land value for all types of housing is still based on up-to-date valuations and the real estate tax freeze is to some extent being capitalised into land prices. The joint revenue from the real estate tax and the land tax has not fallen despite the introduction of the tax freeze in 2002 and corresponded to 1.86% of GDP in 2005 compared to 1.89% in 2002 and 1.7% in 2000 (Ministry of Taxation, 2006).

17. See Ministry of Taxation (2006).

Figure 5. **Total housing subsidies in Nordic countries**
Per cent of GDP, 2005



Source: Ministry of Social Affairs (Denmark); St.meld. nr. 1 (2005-2006) Nasjonalbudsjettet and St.prp. nr. 1 (2005-2006) Kommunal- og regionaldepartementet (Norway); Prop. 2005/06:1 Budgetpropositionen for 2006 (Sweden); and OECD calculations.

The real estate tax should be considerably higher than its present level to be neutral *vis-à-vis* other parts of capital taxation. The exact level of a neutral real estate tax depends on what *type* of financial investment the person would make as an alternative to buying a home, as capital tax rates vary considerably across assets. It also depends on the interest rate prevailing in financial markets. With a benchmark of a 5% nominal interest rate and 2% inflation, the real estate tax rate should be a bit above 1½ per cent to achieve neutrality *vis-à-vis* interest deductibility (Table 6). However, with the interest rate and inflation that prevailed in the late 1990s, it should have been close to 2%, as opposed to a bit below 1½ per cent if based on the low interest rate environment of 2003-04. Although home owners enjoy an indirect tax subsidy, its order has diminished during the last decades as a consequence of lower interest rates and reduced tax value of interest deductibility. In 1980, the indirect tax subsidy for owner-occupied houses amounted to almost 10% of the average house value, coming down to 2.2% in 1995 and below 1% in 2005 (Ministry of Taxation, 2006).

Box 5. **Housing taxation**

The real estate tax

Until the tax year 1999 inclusive, taxation of owner-occupied housing was based on imposition of a tax on imputed rent, based on 2% return of the tax-assessed value (and 6% above DKK 2 150 000, € 288 200). From 2000 onwards, owner-occupied housing is subject to a real estate tax equal to 1% of the yearly tax-assessed value and 3% for values above DKK 3 040 000 (€ 407 500). As the tax rate is lower for properties acquired before 1 July 1998 and for pensioners, the effective property value tax rate is estimated to be merely 0.55% based on end-of-2005 public value assessments (Ministry of Taxation, 2006). The revenues are split between municipalities (2/3) and counties (1/3), and the tax is paid together with tax on ordinary income. From 2007, when the new municipal structure will be in place, all revenues from the real estate tax will accrue to the municipalities.

The tax freeze implemented in 2001 implies that a nominal ceiling is imposed on the real estate tax so that increases in house prices will not lead to higher tax payments for the home owners. On the other hand, a fall in the property value would reduce the tax payment accordingly, but subsequent rises cannot lead to tax payments exceeding the level corresponding to the value of the property on 1 January 2001 plus 5%, or the value on 1 January 2002, whichever is lower. Reflecting this arrangement, revenues from the real estate tax have been more or less unchanged in nominal terms since 2002. In 2005, the revenues amounted to DKK 10.8 billion (about 0.7% of GDP). Revenues are expected to increase slightly in 2006 due to construction of new dwellings and as the share of properties acquired before 1 July 1998 gradually is reduced (Ministry of Taxation, 2005). If the tax freeze had been removed in 2005, rough estimates indicate that tax revenues would have been increased by DKK 4 billion, or almost 0.3% of GDP (Economic Council, 2005).

The land tax

The municipalities levy a land tax on almost all types of property amounting to between 0.6% and 2.4% of the assessed land value. The county council land tax is fixed at 1% for all county councils (and this will accrue to the municipalities following the local government reorganisation). In 2004 the total municipal and county council land tax was on average just less than 2.4% of the land value of the properties, and total revenues amounted to DKK 17.1 billion (1.2% of GDP). The municipalities are obliged to support pensioners and persons on early retirement by providing a loan to pay the land tax.

The tax freeze implies that the average local government land tax rate should be held constant, implying that revenues from the land tax may increase due to higher land valuations. From 2003 onwards there is introduced a ceiling on the assessed land value determined by the previous years' assessment adjusted by a certain factor. This adjustment factor is equal to the increase in the total municipal tax base that is considered appropriate plus a further 3%, but the factor should not exceed 7%. The regulation factor is determined by the Ministry of Finance with approval from the Parliament. For 2006, the regulation factor is set at 5.5%.

Tax breaks for pension funds

A special taxation regime applies to pension funds which pay a proportional tax of 15% on the return of those assets which are held as property for rented housing. There is however some exemptions to this taxation rule:

- Returns from investment in properties acquired before 12 March 1986 are tax-exempt.

- Returns from investment in certain types of properties (investments in new business buildings or new buildings in urban renewal areas as well as improvements of buildings in urban renewal areas) that were acquired in the period 1986-98 were originally tax-exempt within a yearly quota. However, with the aim of increasing activity in the building sector a provision was passed that suspended the limitations in the quota system for tax-exempt property investments, given that the construction of a building had started in 1993-94 and was completed at the latest in 1997. The suspension of the limitations in the quota system meant that pension funds in this period could also undertake tax-exempt investments in rented housing outside urban renewal areas. As of 2 June 1998, the quota system was formally abolished as part of a comprehensive tax reform where the aim was to limit activity in the building sector. At the same time a transitional provision was passed, after which all return from investment in properties acquired before 2 June 1998 would still be tax-exempt for pension funds, if the investment had been tax exempt according to the rules under the quota system. In addition, the tax-exemptions on property investments undertaken before 1986 and in the period 1993-94 were sustained.

To increase the level of construction of new private rented housing a provision was adopted in 2003 that made it possible for private companies and pension funds to deduct the costs of constructing new rental properties on their taxable revenues. The deduction right was subject to an overall limit on investments of DKK 1 billion per year in the period 2003-07. To be able to get a share of the deduction within this total amount the pension fund or the private company had to apply to the Ministry of Economics and Commerce, which in accordance with some objective criteria allocated the deduction rights.

In 2003 two allocation rounds took place, and in both rounds exceeded the number of applications by far the total investment limit. The system has also been exposed to massive criticism because only applications for building projects in the provinces were granted the deductions. In 2004 the tax-deduction system was replaced with a system based on grants, to achieve better targeting with respect to those areas that were in most need of rental housing.

At a first glance, the low real estate tax is a subsidy for housing *investment*, but in fact it is a subsidy for housing *consumption*, as the only way people can benefit from it is by consuming more owner-occupied housing. Such a subsidy favouring housing over other consumption is not warranted, and should be removed. The government should therefore consider increasing the real estate tax rate, possibly to 1½ per cent, although exactly what rate is appropriate depends on any changes that might be carried out to capital taxation in general as discussed in the *OECD Economic Survey of Denmark 2006*. Such proposals are never popular, and in the past a typical argument made for reducing housing taxation has been that "you cannot eat bricks and mortar". For example, for pensioners owning a house that is highly valued a liquidity problem can be created if they are required to pay additional taxes on a continuous basis because the market values of their house have gone up. With mortgage market liberalisation, however, this should be less of a problem as arrangements could be made so that the real estate tax (and the land tax for that matter) could even be paid automatically by the mortgage credit institution based on mortgage equity withdrawal when house prices increase. Regulation may need to be adjusted to allow mortgage institutions to offer taking over the administrative task of automatically paying the home owner's real estate and land tax bill. The Welfare Commission, which recommends an increase in the real estate tax to be phased in over 20 years, has estimated that it would result in a house price reduction of about 10% on average (Welfare Commission, 2006). That is merely about half the average price increase seen during just 2005.

Table 6. **Real estate tax rate that would imply neutrality *vis-à-vis* financial investment**
Per cent

		Interest rate and inflation as 1995-99 average		Benchmark		Interest rate and inflation as 2003-04 average	
		Nominal interest rate	5.94	Nominal interest rate	5.00	Nominal interest rate	4.12
		Inflation	2.15	Inflation	2.00	Inflation	1.63
		Real interest rate	3.71	Real interest rate	2.94	Real interest rate	2.45
Alternative investment	Nominal tax rate, 2006	Real tax rate	Neutral real estate tax rate	Real tax rate	Neutral real estate tax rate	Real tax rate	Neutral real estate tax rate
Bonds - if paying top tax	59.7	94	3.55	100	2.99	99	2.46
Bonds - if paying bottom-	38.8	61	2.30	65	1.94	64	1.60
Repaying debt	33.3	52	**1.98**	56	**1.67**	55	**1.37**
Shares - high rate	43.0	67	2.55	72	2.15	71	1.77
Shares - low rate	28.0	44	1.66	47	1.40	46	1.15
Pension savings	15.0	24	0.89	25	0.75	25	0.62

Note: For income from shares, the low tax rate is paid for annual share income up to DKK 43 300 in 2005, and the high rate is paid for share income above this threshold. The average interest rates are based on a 10-year 5% mortgage bond for the 1995-99 period and a 10-year 4% mortgage bond for the 2003-04 period.

Source: OECD calculations based on Economic Council (2005); Welfare Commission (2006); Ministry of Taxation (2006); Statistics Denmark (www.statbank.dk/MPK22).

Other measures to reduce the subsidisation of owner-occupied housing could include combining increased real estate taxation with a capital gains tax, as proposed by the Economic Council (Economic Council, 2005). Introducing a capital gains tax is estimated to generate significant tax revenues (under the presumption that house prices continue to increase by 1-2% per year in real terms as they have in the last 50 years), which could be used to reduce other distorting taxes. To avoid lock-in effects and to prevent home owners from becoming liquidity squeezed, a specific method (*saldometoden*) is prescribed whereby capital gains are taxed only when they are consumed, or in the case of housing equity withdrawal. While this method could improve housing taxation, since it would be based on actual market values rather than rough estimates (as in the tax assessment) and also solve some of the potential lock-in effects associated with capital gains taxes, it might be costly administratively. In addition, a capital gains tax may contribute to increasing house price volatility (Fuest *et al.*, 2004), even if the proposed method is likely to eliminate some of this risk.[18]

Co-operative housing is another segment which is subject to substantial subsidisation. While the ending in 2004 of subsidies to construction of new co-operative dwellings is welcome, the share owners in co-operatives still receive large benefits by being exempted from the real estate tax. Although the co-operative associations in principle could deduct interest payments, in practice there is no offsetting income to take advantage of this facility. The net result is nevertheless subsidisation as the tenants have interest deductibility without being liable for real estate tax on their share. Furthermore, old co-operative associations that have dissolved themselves so as to reap capital gains have been tax exempted. To limit this loophole, there was introduced legislation in June 2005 saying that sale to another co-operative is prohibited for a period of 5 years after a property has been acquired by a co-operative association.[19] As the preferential tax treatment of co-operatives is difficult to justify, share owners in co-operatives should be liable for the real estate tax, at least for the part of the flat's value that is not matched by borrowing within the co-operative.

Housing allowances constitute a major share of the direct expenditures

Housing allowances amounted to 0.7% of GDP in 2005, which is high compared to other OECD-countries (Figure 5 and OECD, 2004b). This reflects that housing allowances have a broad coverage being granted to more than 530 000 households in social housing and private rental housing, equivalent to more than one fifth of all Danish households. About 58% and 36% of the tenants in these two segments, respectively, receive housing allowances which on average cover 47% and 38% of the actual rents paid.[20]

There are two main housing allowance schemes in Denmark; the scheme for low-income households and persons receiving disability pension (*boligsikring*) and the scheme for old age pensioners (*boligydelse*). The amount of housing allowances granted under these two schemes is in general calculated as a certain share of housing expenditures above an own payment depending on income. Within the former scheme, central government refunds 60% of individual housing expenditures minus 18% of income in excess of a basic amount, which increases proportionally with the number of children (the parameters in the latter scheme is 75% and 22.5%, respectively).[21]

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18. The argument goes as follows: if house prices are above their equilibrium value, a capital gains tax with full loss offset reduces the capital loss of the home owner who has bought a house at the high price if he sells the house later on at a lower price. Accordingly, the home owner who has bought a house at a price below the equilibrium price will sell at some later date and earn a capital gain. The home owner's valuation of the house declines if capital gain taxes are introduced. As a result, capital gains taxes increase the price of a house when the price is high and reduce it if when the price is already low, *i.e.* prices become more volatile.

19. As of September 2005 there were introduced sanctions (*e.g.* jail) for those who sell a share in a private co-operative in conflict with the price cap regulation. Consensus is that this has reduced the magnitude of side payments.

20. Estimates by the Ministry of Social Affairs.

21. For households without children (and disability pensioners, *i.e.* normal *boligsikring*), the granted housing allowances covers at maximum 15% of the housing expenditures. Furthermore, housing allowances will cover a maximum size of 45 + 20 (*number of persons) square metres. This implies that for larger flats, the housing allowance will be reduced proportionally. There is – apart from special cases – an upper limit on housing expenditures in the formula for calculation of housing allowances. Depending on the number of children, the maximum limit varies from DKK 65 400 (€ 8 770) to DKK 78 480 (€ 10 520) per year. The granted housing allowance may at maximum amount to DKK 34 536 (€ 4 630) per year for households without children and a maximum of DKK 43 170 (€ 5 790) for households with four children or more. As a

As the granted housing allowances depend on actual rents paid, households may, within the schemes' limits of a maximum rent and a maximum subsidy, raise the magnitude of the allowance by moving to higher quality housing. Although the system as such promotes housing policy objectives by providing good quality housing, it increases the incentives to move to more expensive flats. This raises the issue of the proper level of the ceilings. But if instead of depending on the actual rent, the housing allowance were a lump sum determined by the average rent in a region, households' income and size, the household would make less distorted choices concerning the quality and price of accommodation. For example, households could choose between paying more than the allowance and living in more expensive accommodation or living in less expensive housing and spending the difference on more urgently needed items. Hence, the housing allowance scheme would under these circumstances imply that tenants have a neutral choice of accommodation, and it could also contribute to reduce the level of subsidisation of housing. Under standard assumptions in-kind subsidies are more costly than cash transfers. A reform along these lines was undertaken in a pilot programme in the United Kingdom in 2004.[22] Housing allowances for low-income households could also be better targeted. More than 50% of the current housing allowance cases are related to households without children (measured as a share of persons receiving *boligsikring*), while the social concern underlying housing allowances is as much to ensure proper housing for families with children. As an illustration, housing allowances could be targeted at households with special needs, in particular those having children, the minimum rent that has to be paid by the households themselves could be increased, the basic amount in the income dependent phase-out could be increased or the own payment rate could be increased (Welfare Commission, 2006).

While housing allowances can form an important source of revenue for low-income households, their income dependent phase-out imply, together with other features of the tax-benefit system, high marginal effective tax rates (METR). This may create unemployment and poverty traps as individuals have little incentive to move from unemployment to full-time work or to increase their hours worked as the increase in net income is relatively small due to the combined effect of increased tax payments and the withdrawal of income-tested social benefits such as housing allowances. The combined effect of the income dependent reduction in unemployment benefits and housing allowances contribute to a METR for some household types of more than 100% (OECD, 2004b). Therefore, the income dependent phase-out in the housing allowance scheme should be better co-ordinated with other income transfer schemes so as to reduce the high METR implied by their withdrawal. A proposal along this line was recently proposed by the Welfare Commission regarding aligning of housing allowances for pensioners with more general pension related transfers (Welfare Commission, 2006).

The social housing sector is also heavily subsidised

Direct subsidies to the social housing sector are substantial, and amounted to 0.3% of GDP in 2005. Responsibility for social housing was decentralised to the municipalities in the 1990s, which decide on construction of all social housing and allocation of at least 25% of social housing dwellings. However, the main financial responsibility rests with central government which has to finance a major share of the construction costs for new dwellings. Currently, the municipalities are obliged to pay 7% (14% from 2007) of these costs up-front (this share has to be paid out of actual revenue and cannot be financed by borrowing) while the tenants pay a notional deposit of 2%. The remaining 91% of the construction costs is financed by a mortgage. The rents paid by the tenants are currently set at 3.4% of the total costs, and are adjusted annually by ¾ of the inflation rate (or the wage inflation rate, whatever is lowest). Subsequently, the excess of mortgage servicing over rents is covered by transfers from the central government.

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minimum, the households that receives *boligsikring* are obliged to cover DKK 19 700 (€ 2 640) of the annual housing expenditures. All numbers are in 2005-prices.

22. See www.dwp.gov.uk/housingbenefit/lha/.

While building up the social housing sector in the post war period, the housing associations received large subsidies from the state and municipalities. However, a longstanding objective has been to make the housing associations self-financed as reflected in legislation from the 1930s stating that cash-surpluses should be reinvested in the sector.[23] In 1999, a new financing regime for social housing was implemented reflecting this objective, implying that tenants' rental payments should be independent of the mortgage payments, including after amortisation. Hence, when the mortgage is paid back, rents go into different cooperative funds (see Box 3). The resulting wealth accumulation that is projected to take place in these funds during the next decades is supposed to replace the central government subsidies to the social housing sector.[24] However, due to the different pace of amortisation of mortgages, there are large differences between current and future revenues in the housing associations at the same time as there is no clear relationship between revenues and investment needed to renovate the buildings.

The arrangement to make social housing self-financed implies that current tenants are contributing to finance construction to the benefit of future tenants. While decisions on construction of social housing are taken by the local authorities, the costs that are not carried by the future tenants' loan repayments will to an increasing extent be carried by the national housing construction fund under current policies.[25] However, by using off-budget funds to finance new construction, there is a risk that the social housing sector becomes exempted from normal state budgeting scrutiny. Unless strict public influence is maintained, spending on social housing may under these circumstances be based on perceived needs within the sector rather on cost-benefit analysis comparing spending on social housing with other socially preferred uses. From an overall fiscal perspective the national housing construction fund should therefore be integrated with the state budget, thereby keeping funding of construction, ghetto alleviation and similar measures subject to normal public budgeting scrutiny.

Furthermore, as the social housing sector is now well established, the general subsidies for the housing associations should be replaced with targeted support for those who are referred by municipal social authorities or in other ways are in need of public housing support. Attention should in this respect be paid to the effect on effective marginal tax rates, as discussed above. Allocation of dwellings through municipalities should also be increased.

Reflecting problems in the past with building too costly social housing dwellings, the government introduced a cap on construction costs in 2004.[26] According to the Ministry of Social Affairs, evidence indicates that introduction of these caps has improved cost consciousness in the sector and that

23. Although stated in legislation in 1933, this principle was incorporated in the laws of governance of the housing associations already in 1918.

24. Due to a political agreement of 4 November 2005, 50% of the mortgage servicing in excess of rents paid by the central government in 2005 and 2006 will be reimbursed by transfers from *Landsbyggefonden*. According to the political agreement, an analysis will also be carried out of the possibilities for having a more self financed social housing sector, which is due to be completed by 1 July 2006.

25. Local authorities grant public subsidies to new social housing projects on behalf of itself as well as on behalf of the central government. Thus, the municipality decides on the number of social dwellings that are going to be built and which housing association that should construct them. The preferred housing association is chosen after a compulsory tender, in which all housing associations are entitled to participate. In connection with granting subsidies the municipality possesses relatively wide possibilities for setting conditions concerning the implementation of a certain housing project. Generally, construction of new dwellings presupposes that a local plan for the site in case is implemented by which the municipality can regulate the use of the land.

26. The cap on construction costs is set at DKK 17 000 (€ 2 280) and DKK 14 500 (€ 1 940) per square metre for dwellings in the Copenhagen area and provincial areas, respectively (2004-figures). For social housing youth dwellings and social housing elderly buildings the cap is DKK 3 000 (€ 400) higher than these limits.

construction of too expensive social housing dwellings has been avoided. While this measure could improve performance, introducing a cap on construction costs introduces the risk that the maximum limit over time becomes the minimum level, leading to an overall increase in construction costs. To improve cost consciousness further, measures should be taken so as to ensure that the price cap reflects the costs of the best performing constructors.

The urban renewal scheme has recently been reformed

The urban renewal programme, introduced in the 1980s to restore buildings which were poorly maintained or were lacking in amenities, increased strongly in scope during the 1990s. Consequently, public spending for urban renewal soared, partly reflecting insufficient cost control (OECD, 1999), although overall public expenditures on urban renewal was controlled by a cap on annual investments. In 2004, the urban renewal scheme was reformed implying less public regulation, smaller public subsidies and a higher marginal financing from landlords. Currently, the scheme applies for building renewals (*bygningsfornyelse*) and for area renewals (*områdefornyelse*).[27] The municipalities are responsible for covering expenditures on planning and providing temporary housing during renovation work, of which they are reimbursed 50% by the central government. In addition, expenditures related to rebuilding and demolition is financed by subsidies from central and local government, by the tenants and the landlords. However, construction of new buildings is not eligible for subsidies under the present urban renewal scheme. As the standard of dwellings typically gets improved due to renewals, rents are normally increased. The municipalities are obliged, in a transitional period of 10 years, to cover initially two thirds of such rent hikes above a certain threshold (DKK 155 or € 20 per square metre in 2004). On the basis of an assessment of the new rent level, the municipalities may furthermore on a voluntarily basis decide to cover also up to two thirds of the rent hikes below the threshold. The municipalities are reimbursed 50% of their expenses from the central government.

The recent reform of the urban renewal scheme introduces measures to improve cost control and raise transparency as well as simplifying administrative procedures. Total public expenditures on urban renewal are, under the present scheme, controlled by an annual governmental expenditure limitation (reflected by a grant in the state budget). Urban renewal is generally characterised by a substantial time lag from a grant is given and to the public disbursements derived from it take place. Thus, Table 5 contains also urban renewal activities initiated in the past, and the budgetary savings from the recent urban renewal reform are therefore not fully reflected in this table. When the effects of the recent reform can be fully evaluated, it should be considered if further tightening is needed, as there is evidence that urban renewal subsidies are not always given to the weakest groups (Welfare Commission, 2006), although it should be acknowledged that public subsidies for area renewals may contribute to break "vicious circles" in socially and physically deprived urban areas.

Pension funds are allowed tax breaks when investing in private rentals

Pension funds pay a proportional tax of 15% on the return of their investments. However, for investments in properties acquired before 12 March 1986 and for specific property investments undertaken under the quota system in the 1980s and 1990s, the returns are tax-exempt. In addition, in 2003 there was introduced a system allowing pension funds and private companies to deduct the costs of building new rental dwellings from their taxable income, within an overall limit on investments (subsequently to be replaced in 2004 by a system based on grants) (see Box 5). While such measures may help to increase the stock of private rented housing so as to improve the overall functioning of the housing market, the same could be achieved by other measures such as making the rental market less regulated. As the pension funds

27. The urban renewal scheme will be subject to an evaluation in 2006.

already benefit from generous tax advantages, it is unwarranted to introduce further tax relief.[28] The government should therefore end the subsidies for pension funds' investments in newly constructed private rental housing, as well as the tax exemption for return on property bought before March 1986 and for the tax-exempted investments undertaken in the quota system during the 1980s and 1990s.

Making the rental market more open and flexible

A well-functioning rental market is important because it allows people to make non-distorted choices both concerning housing and asset structure. Hence, it improves overall mobility by making it easier to find housing according to changing needs. The Danish rental market is however not playing these roles well as both social and a large share of private rented housing are subject to rent regulation (see Box 4). Making the market for rented housing sufficiently flexible should therefore be regarded as an important element of structural policies improving the potential for future growth.

The distributional impact of rent regulation is not well targeted

Rent regulation can be seen as a way to obtain distributional objectives as it implies a transfer of resources from landlords to tenants. This may therefore be viewed in the short term as an alternative way of redistribution through taxation of rental income and subsidisation of rent payers out of the proceeds. In addition, rent regulation may be seen as a protection against a landlord monopolist. Regulation can help mitigate such hold-up problems by controlling the extent to which rent can be increased. While most countries have adopted legislation limiting rent increases for sitting tenants, the practice differs more when it comes to regulation of rent for new tenants (Table 7). In the present rent regulation framework, Danish tenants are protected by the stipulation of open-ended leases as the standard contract, only to be interrupted at the landlords' discretion in a few prescribed cases. The tenants are also given the right to sub-let as well as having the right to barter tenancies. As a consequence, Danish tenants have been allowed to capture an increased economic value of their tenancy arising from generally rising property values (OECD, 1999).[29] Although this effect concerns mainly those rental buildings where rent regulation is cost-based and the flats are built before 1973, more than 80% of the private rental housing stock in Denmark is still under this kind of rent regulation.

The insider advantages accruing from rent regulation should be received by households in the lower end of the income distribution if this were to be an efficient transfer mechanism with respect to redistribution. However, the actual distributional impact of rent regulation appears not to be well targeted as tenants with high income receive the largest insider advantages (Figure 6).[30] This is further underlined by the fact that many of the tenants in the lower end of the income distribution are students, who have

28. An unwarranted side-effect of this tax relief is that it may have contributed to limiting flexibility in the rental market and shut off parts of this segment for outsiders, as the pension funds have tended to reserve apartments for their own members.

29. The government is currently undertaking work to simplify the rent regulation laws, although changing the rules for rent determination is not part of this work.

30. The insider advantage is calculated as the difference between the uncontrolled rent predicted for the specific flat and the actual rent paid. The predicted uncontrolled rent is derived from the Danish Tax Authorities (DTA) 1999 model for owner-occupied housing. The DTA model is a hedonic price function for prices on the free market for owner occupied dwellings, and it is based on actual sales in the years 1996-99 and a long list of housing traits for each unit. The DTA model is applied to all rented housing dwellings to obtain the estimated uncontrolled price. The uncontrolled rent is them derived by multiplying with an estimate of user costs in Denmark (see further details in Munch and Svarer, 2002).

higher than average future incomes.[31] Furthermore, the absolute average insider advantage tends to increase with the level of income, the level of wealth, age and the level of education and is lower for pensioners on early retirement and for the long term unemployed (Table 8 and Jespersen and Munch, 2001a). Although such empirical evidence needs to be interpreted with caution, the finding that advantages accruing from rent regulation are poorly targeted is considered fairly robust across different countries (Ellingsen and Englund, 2003).[32] This implies that rent regulation in general appears to have no consistent redistributive effect. Also, the theoretical justification for rent regulation is regarded to be relatively weak and equity and efficiency objectives are generally considered to be more efficiently achieved through cheaper ways of intervention.[33]

31. The approach of estimating *absolute* insider advantages has been debated among Danish economists (see Sørensen, 2004; Kærgård and Andersen, 2004). Sørensen shows that if insider advantages are calculated as a percentage of disposable income the insider advantages due to rent regulation is falling as income increases.

32. According to Ellingsen and Englund (2003) the insider advantages of a rent controlled dwelling are much smaller than (often less than half of what) a simple comparison of controlled rent and estimated market rents would indicate, when behavioural responses are taken into effect.

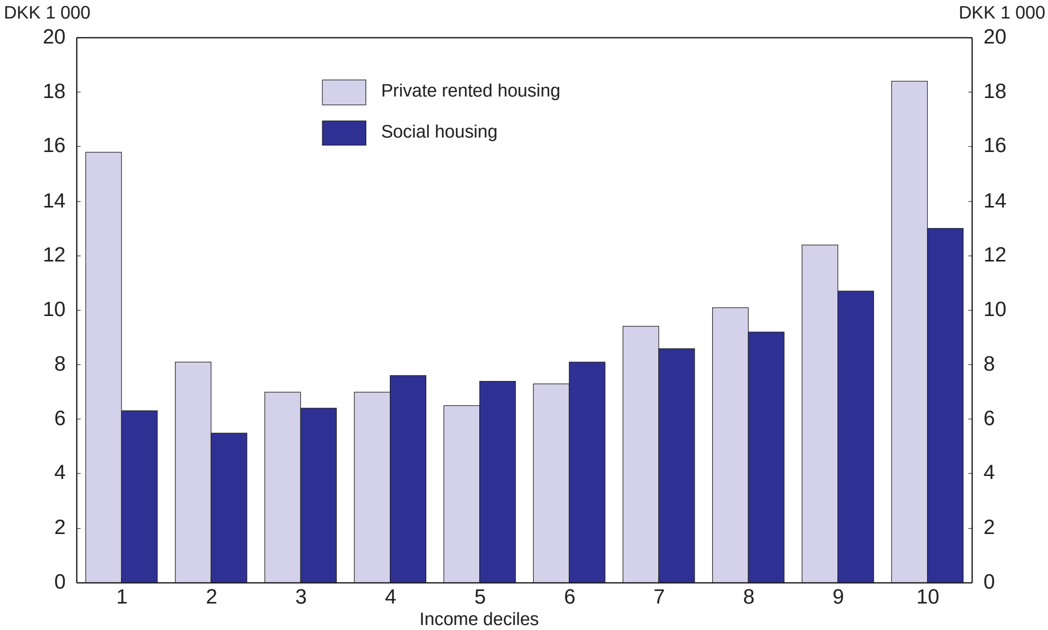
33. Efficiency arguments have been put forward defending regulation of the private rental market, one example being the need to protect tenants from landlords' stronger bargaining position when setting the rent (reflecting imperfect competition). A more recent view (termed "the revisionist view of rent control") argues along the same lines, based on the assumption that housing markets are heterogeneous search markets characterised by imperfect information. In such markets rational landlords may use their market power to charge a rent above marginal costs, inducing new entry. As the likely effect of this is an equilibrium with higher vacancies than optimal, a case could be made which justifies some forms of rent control (Arnott, 1995).

Table 7. **Rent regulation in different countries**

	Rent regulation	Rent adjustment once moved in	Security of tenure
Denmark	New rent contracts are free for dwellings constructed after 1991. Regulation is in place for older rental buildings, especially for buildings constructed before 1973. For these buildings it is however possible to increase rent closer to market clearing levels if the landlord undertakes major improvements of the rental dwelling.	Either based on an agreement about stepwise increases (amount) or according to a general price index (per cent).	For contracts for *unlimited time* the landlord can only serve notice on the contract on special, specific grounds (*i.e*. the owner personally makes use of the property, the building is to be demolished or renovated, it is a company dwelling and employment has ceased or the tenant has considerably misbehaved). For contracts for a *fixed term*, it is normally nullified without notice being served.
Sweden	In principle there is no rent regulation when tenants are taking occupancy. But it is not allowed to charge a higher rent than 5% above the level that applies in similar apartments owned by a municipal housing company where the rent is set according to negotiations with the local tenants' union. The starting point for these negotiations is often the housing companies total costs and the negotiations primarily concerns how these total costs should be distributed between different apartments.	No distinction is made between new tenancies and rent adjustments for sitting tenants.	
Norway	New rent contracts are free.	An agreed rent can only be adjusted according to the general price index during the first three years of the contract. During the third year both the landlord and the tenant can demand an adjustment to reflect market conditions.	For contracts for unlimited time the landlord can only serve notice on the contract on special, specific grounds (see above). For contracts for a fixed term, it is nullified without notice being served.
Finland	Rents are typically free from public control.	Depending on the contract, rent may either follow some index or the contract may say that the landlord could increase the rent, but not by an "excessive" amount (in a legal sense).	For contracts for *unlimited time* the landlord can terminate the contract with 3 months notice if the tenant has lived there for less than 1 year and 6 months notice otherwise. For contracts for a *fixed term*, the contract can only be nullified on specific grounds.
Germany	New rent contracts are free.	Rent cannot increase by more than 20% in a 3-year period for sitting tenants. Rent escalation clauses and rent contracts are linked to a price index permitted.	
France	New rent contracts are free.	Rent adjustments are linked to an index.	

Source: Turner and Malpezzi (2003); Lind (2003); Karlberg and Victorin (2004).

Figure 6. **Distribution of insider advantages in rented housing**
Per tenant, 1999



Note: The insider advantage is calculated as the difference between the uncontrolled rent predicted for the flat and the actual rent paid. The predicted uncontrolled rent is derived from the Danish Tax Authorities 1999 model for owner occupied housing.

Source: Economic Council (2001).

There are potentially significant obstacles to housing and labour market mobility arising out of the rent regulation framework. While the queuing system is likely to contribute to uneconomical mobility for households who strive to get a foothold on the housing ladder, the opposite effect is the case for households at the top of the ladder who have obtained good quality dwellings at rents well below market-clearing levels. At first glance, mobility in private rentals appears to be higher than in other segments, but around half of the movements are internal (moves within the same housing segment), reflecting the mechanism of climbing the housing ladder. In addition, the high mobility is mainly due to the greater use of short term leases among the apartments with the smallest insider advantages, indicating a relationship between the degree of regulation and the length of the tenancy (Economic Council, 2001). When taking into account other factors as well, tenants receiving the largest insider advantages have higher income and a lower probability of moving than other tenants (Munch and Svarer, 2002). For tenants in the most severely regulated apartments, expected tenancy duration is nearly 6 years longer than in the least regulated dwellings (Table 9), which indicates that rent regulation distorts household mobility and is reducing efficiency in the housing market and the economy.[34]

34. Internal movements are not only frequent in private rentals but also in other housing segments as well. In a recent study by the Ministry of Social Affairs it was found that internal movements in 2003 were more frequent in the owner-occupied segment than in the private rental segment. Thus, households seem to prefer sector-internal adjustments of their housing consumption, both in the case of climbing the housing ladder and in the case of adjusting to changes in needs.

Table 8. **Determinants of the insider advantages in rented housing**
DKK

	Social housing	Private rentals
Age 18-34 year	0	0
Age 35-44 year	3 659	1 971
Age 45-54 year	5 230	4 430
Age 55-64 year	7 574	5 409
Age above 65 years	5 176	-1 104
Single man	-2 382	1 799
Single woman	0	1 744
3 or more adults in the household	0	3 548
Number of children below 18 years	368	1 526
Non-OECD citizenship	-4 575	4 039
Student	0	1 003
Unskilled	-2 074	0
Short term higher education	2 997	3 908
Medium term higher education	0	2 234
Long term higher education	3 765	11 288
Early retirement pensioners	-3 005	-7 523
Long term unemployed	-3 719	0
Household income, DKK 100 000	4 037	1 218
Household income, squared	186	265
Household wealth, DKK 100 000	256	196
Copenhagen	-2 293	9 170
Large provincial city	8 554	6 624
Rural municipality	-5 451	-8 965
Constant term	3 317	6 740

Note: Insider advantage is calculated per household on the basis of 1999-data. (See endnote 19 for a description of the method used to calculate insider advantages). Personal characteristics are for the main person in the household, which in households with more than 1 adult is chosen randomly. The reference household has two adult persons and is situated in a medium sized provincial city. The main person is in the age group 25-34 years and is skilled. Definition of income is household total disposable income. A value different from 0 indicates that the factors is significant on the 5% level.

Source: Economic Council (2001).

Table 9. **Expected tenancy durations for private rented housing**
Years

Insider advantage degree deciles	Standard household (SH)	SH, single male without kids
1	12.8	7.1
2	13.6	7.7
3	14.4	8.5
4	15.2	9.2
5	16.0	10.3
6	16.7	10.8
7	17.4	11.6
8	18.1	12.4
9	18.8	13.2
10	19.5	14.0
Average	16.3	10.5

Note: The household consists of a couple with children. They have a yearly disposable income of DKK 200 000 and wealth equal to DKK 40 000. They live in a large provincial town, and occupy 60 square metres per person. The household head is between 35-44 years old and is educated as a skilled worker. The deciles refer to the ranking of insider advantages defined as the insider advantage divided by estimated uncontrolled rent.

Source: Munch and Svarer (2002).

A serious consequence of housing market inefficiency is the potential spill-over to the labour market. Since rent regulation increases the costs of moving and creates a lock-in effect, unemployed workers reaping insider advantages are less likely to search for jobs outside their local market and are more likely to accept a job offer from employers in the local labour market. Analysis on Danish micro data show that the probability of finding a job locally increases with the degree of rent regulation (measured as the relative size of the insider advantage), whereas the probability of finding a job outside the local labour market decreases (Svarer *et al.*, 2005). Hence, rent regulation might make workers less inclined to be geographically mobile, making it more difficult for firms to find the right person for the job and implying a potential matching inefficiency. A high share of home ownership may also contribute to reducing mobility although the empirical evidence in the case of Denmark is mixed.[35]

Rent regulation provides weak incentives for landlords to maintain and improve buildings, insofar as they receive a return on their initial investment below that of alternative capital uses when rent is below market-clearing levels. The result of this is deterioration of the building stock, the long-term effect being a run-down of the housing stock or efforts to convert it to other uses or other segments in the housing market. Danish rent legislation allows a landlord to raise the rent after an improvement of a dwelling, and to include a return of the investment in the permitted rent increase. In case of undertaking major improvements (so-called paragraph 5.2 conversions) rents can be set according to "value of the rented dwelling" (*det lejedes værdi*). Moreover, rent legislation requires that a certain share of the rent is allocated to maintenance of the building, and the amount allocated is being considered as generally sufficient. Nevertheless, the public urban renewal programmes undertaken in the larger cities in the 1980s and 1990s could be seen as an indication that these incentives are weaker than under market determined rents.

Allowing a closer correspondence between rents and quality would contribute to creating a more flexible housing market, increase mobility and make investments in improvement of private rental buildings more profitable. Rents in private rental housing should therefore be set freely on market terms and the current rent regulation should be progressively scaled back. The measure by the Danish authorities to let rent be set according to the "value of the rented dwelling" which corresponds to a level closer to market conditions in the case of undertaking major improvements has to some extent helped to speed up this process. The "value of the rented dwelling" is however a legal concept that often implies a rent below what would equilibrate supply and demand. Lowering the threshold for how much landlords must spend on renovating apartments in order to transfer to this type of less strict rent regulation could advance a more gentle transition. The government should also use the regulatory policy process more rigorously to perform ex-ante and ex-post analysis to ensure that the social objectives are achieved in the most cost-effective way (OECD, 2000b). In recent years, prices of private rental buildings have increased considerably.[36] Although this could indicate that rent regulation has become less strict on average, price increases are probably also

35. According to Oswald (1996), unemployment rates and the share of home owners are positively correlated for a number of countries and regions, reflecting the mechanism that home owners are much less mobile than tenants in rented housing due to the large costs associated with buying and selling a house. Hence, home owners are relatively inflexible in the labour market, meaning that a high share of home ownership result in an immobile work force which therefore is likely to result in a higher level of structural unemployment. According to Oswald's estimates, countries (or regions) with a 10 percentage point higher share of home owners tend to have two percentage point higher unemployment rate. Munch *et al.* (2005) finds some support for this mechanism based on aggregate Danish data, but their findings nevertheless contradicts the Oswald-hypothesis. This relates to the fact that the hampering effect of home ownership on the propensity to move for job reasons is more than counteracted by the effect that it improves the chances of finding local jobs.

36. According to Statistics Denmark (EJEN6-serie in Statistikbanken), prices of private rental buildings have increased by 27% to 105% over the years 2000-04, depending on the number of rental dwellings per building.

to a large extent reflecting the reduction in interest rates as well as expectations and growing preferences for living in the city centre, factors that also drive up prices for comparable owner-occupied flats. Tax relief for pension funds may also play a role.

The functioning of the social housing sector needs to be improved

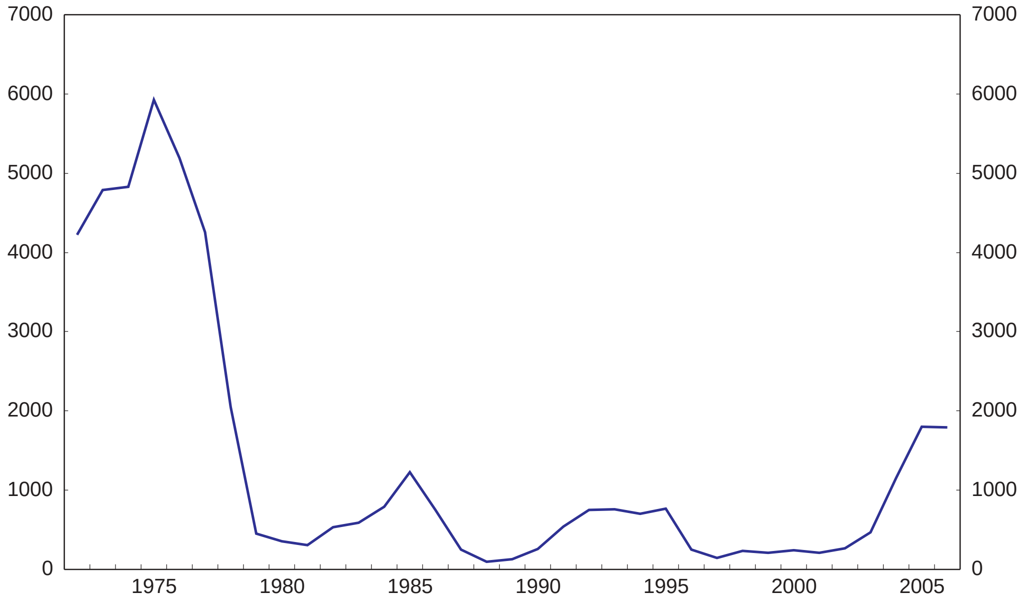
Denmark is among a handful of OECD-countries having a relatively high share of rented housing provided by non-profit housing associations (see Table 2). Although the creation of a large public rental sector could have some beneficial effects such as increasing the scope for avoiding segregation by having a broad composition of tenants, it also entails the risks of creating lock-in effects reducing overall mobility and providing subsidised housing to households that would otherwise obtain adequate housing in other segments.

The distributional impact of social housing illuminates these risks as there appears to be a mismatch between the policy objective and outcomes. According to an analysis carried out by the Economic Council in 2001, the absolute insider advantages tend to increase with the level of income (see Figure 6), and tenants reaping the largest insider advantages typically enjoy favourable socio-economic conditions (see Table 8). Furthermore, tenants from non-OECD countries, the unskilled, tenants on early retirement or long-term unemployed achieve only small insider advantages (although these groups to a larger extent receive housing allowances). As household composition in social housing is somewhat skewed in the first place (tenants typically have low income and socially weak groups are highly represented), the empirical evidence indicates a kind of sorting within the housing associations as these tenants tend to get the least attractive dwellings (Economic Council, 2001).

The rent regulation in force for social housing based on cost-based principles implies that rents may deviate from market-clearing level in both directions, depending on the attractiveness of the locality, quality and other factors. However, since rents include contributions that may lead to redistribution between different housing sections, there will be limits on the span of rents that can occur in relation to new social housing dwellings. On average, the rent level in the housing associations is estimated to be below the market-clearing level,[37] one effect being waiting lists for attractive apartments. There are also some apartments vacant, and the number of vacancies has recently increased sharply to its current level of 1 800 (still less than 0.5% of the total stock), notably due to a high number of vacancies in Jutland (Figure 7).

37. Estimates indicate that rents in social housing on average is 34% (based on 1999-data) below market rent (Jespersen and Munch, 2001b).

Figure 7. **Vacancies in social housing**
Number of dwellings at the beginning of the year



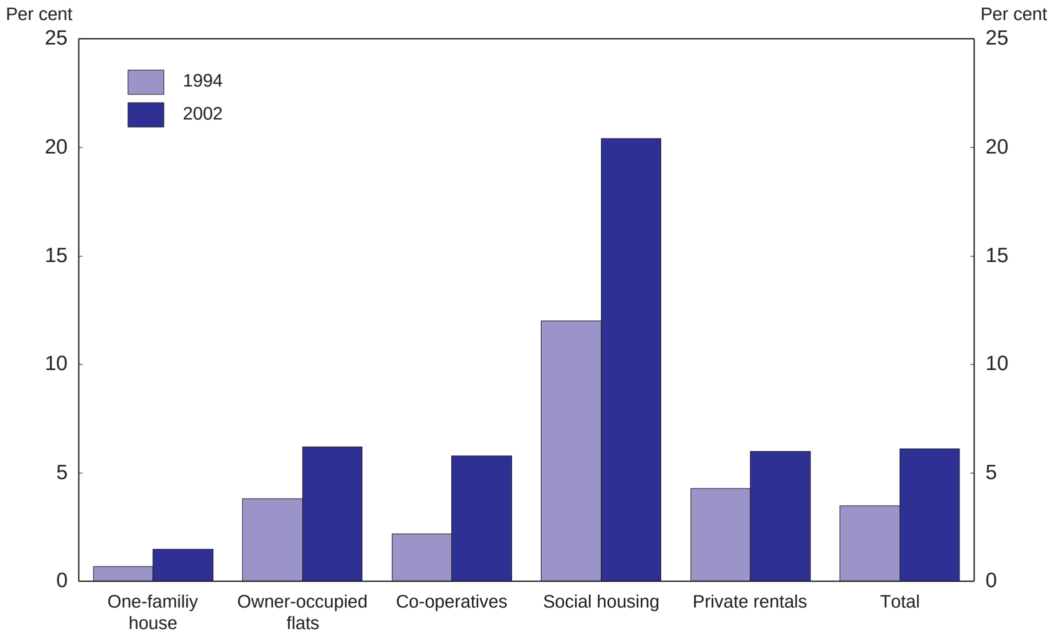
Source: Boligselskabernes Landsforening (The Confederation of Housing Associations) and Ministry of Social Affairs.

Lack of competitiveness *vis-à-vis* other housing segments is considered to be an important factor behind this development (Boligselskabernes Landsforening, 2004). Due to innovations in the mortgage market, monthly financing costs of owner-occupied housing are in some areas below the rents in recently constructed social housing dwellings. To improve competitiveness, proposals have been made to give housing associations increased access to flexible financing, possibly allowing a reduction in rents. However, introducing more flexible financing could induce more variability in the rental payments insofar as these types of mortgages are linked more closely to short-term interest rates and therefore are more volatile.[38] This should be regarded as an undesirable feature as predictable housing expenses is a main policy objective.

Segregation and ghetto problems are other concerns in the social housing sector. To some extent this is reflecting housing policies from the 1960s to the 1980s which aimed at relieving the physical housing shortage through the construction of low-cost high-rise buildings (OECD, 1999). Many of these buildings were constructed in what have now become deprived urban areas. As these buildings typically were placed in the outskirts of the large cities, often with weak infrastructure and poor conditions for local business life, the outcome was in many cases urban and social problems. Segregation has in recent years become pronounced within all the larger cities in Denmark, the problem being exacerbated by municipalities being forced to allocate refugees to social housing that already contained a high share of weak social groups (OECD, 2003a). From 1994 to 2002, the share of ethnic minorities in the social housing sector increased from 12% to slightly more than 20% (Figure 8), reflecting high immigration in these years (Skifter Andersen, 2005). Meanwhile, internal segregation of ethnic minority groups within the social housing sector has fallen from 1998 to 2003, as the share of ethnic minorities' has increased primarily in those sections where it was low in 1998. Internal segregation is least pronounced in Copenhagen and most pronounced in smaller provincial cities (Danish Building Research Institute, 2005).

38. Given that the initial rent paid by tenants (currently 3.4%) is adjusted accordingly.

Figure 8. **Share of tenants with ethnic minority background**[1]



1. First and second generation immigrants from countries outside Western Europe and North America.

Source: Danish Building Research Institute (2005); Skifter Andersen (2005).

Segregation may also to some extent be caused by the financing scheme for the social housing sector. The cost-based rent determination in the housing associations implies that newly constructed dwellings may have very high rents and therefore are likely to be filled with people receiving housing allowances – hence contributing to ghettoisation – whereas older dwellings (which also may be placed in more attractive places) have low rents and therefore little outward mobility. However, in several deprived urban areas the buildings were constructed in the period from the mid 1960s to the end 1970s and financed by mortgages with high interest rates, leading to relatively high rents. Repairing of damages caused by faulty building constructions has also contributed to high rents.

Reflecting to some extent the municipalities' right to fill 25% of the vacancies in the housing associations, allocation of ethnic minority groups in the different housing sections varies significantly. Some municipalities have member sections with only ethnic Danes while other municipalities have sections that are occupied by more than 50% non-ethnic Danes (Table 10), many with a weak integration into Danish society (Programbestyrelsen, 2005), which has contributed to further segregation in the schools. Many of these sections are situated in deprived urban areas where a high share of the tenants is outside the labour market and dependent on income transfers. As the internal segregation in the housing associations is relatively high, an equalisation of the share of ethnic minorities among the housing sections would require that a third of the tenants be re-allocated (Danish Building Research Institute, 2005).

Table 10. **Tenant composition in social housing in deprived urban areas, 2004**

Municipality	Area	Number of tenants	Share of tenants outside labour market[1]	Share of immigrants	Share of children below 15 years	Average income	Share of new tenants[2]	Share of new tenants outside labour market[3]
Copenhagen	Mjølnerparken	2 193	62.3	91.3	46.8	117 239	7.9	39.4
Odense	Vollsmose	9 717	57.9	64.4	34.0	124 752	19.9	55.9
Horsens	Sundparken	1 584	59.5	60.1	34.1	128 448	17.8	52.3
Århus	Gellerupparken mv.	7 777	59.5	82.8	37.8	116 121	21.1	50.4
Svendborg	Byparken/Skovparken	1 615	55.5	52.4	26.3	126 353	22.9	53.3
Copenhagen	Aldersrogade	2 622	54.7	78.6	39.2	130 832	10.8	37.7
Randers	Gl. Jennumpark	1 373	56.7	37.7	34.1	135 715	19.6	53.9
Esbjerg	Stengårdsvej-kvarteret	1 918	54.7	61.1	30.9	132 907	19.9	53.9
Copenhagen	Akacieparken	1 324	52.6	72.3	40.7	139 155	12.7	52.4
Sønderborg	Kærhaven/Nørager	1 337	53.1	58.1	31.9	139 679	16.6	42.1
Århus	Bispehaven	2 455	55.3	72.4	31.6	125 271	22.4	47.6
Slagelse	Ringparken	2 188	50.6	54.3	30.7	139 829	16.0	40.5
Holbæk	Agervang mv.	1 448	49.4	43.9	26.9	139 963	19.6	50.3
Esbjerg	Kvaglund	2 543	48.6	26.4	23.1	141 473	25.7	43.5
Korsør	Motalavej	1 991	47.0	31.4	27.3	144 935	24.3	47.6
Kolding	Skovparken/Skovvejen	2 350	46.2	41.8	24.6	135 600	23.4	42.4
Åbenrå	Høje Kolstrup	1 777	44.0	27.7	22.1	148 192	22.3	40.9
Haderslev	Varbergparken	1 077	49.0	56.8	28.2	130 333	20.1	50.4
Århus	Århus Vest	3 712	43.0	40.4	26.9	140 594	25.4	34.0

1. Share of persons above 17 years on social support, early retirement or unemployed.
2. Number of new tenants as a share of number of tenants.
3. Number of new tenants above 17 years outside labour market in per cent of total new tenants above 17 years.

Source: Programbestyrelsen (2005).

Concerns about the concentration of immigrants were raised already 10-15 years ago, leading to establishment of a committee on Metropolitan Affairs in 1993 to find ways to discourage ethnic enclaves. This group proposed a number of measures to combat social problems in deprived urban areas. In 1996, the committee changed track and focused on a new strategy, through an urban regeneration programme (*kvarterløft*), aimed at making such areas more attractive without trying to directly influence the social composition of tenants (OECD, 2003a). In 2003, a more permanent reform strategy was introduced (*områdebaseret byfornyelse*), aiming at the regeneration of problem-fraught urban areas, which was integrated in the Urban Renewal Act. More recently the current government has recognized that the composition of tenants may have an important impact as well, and has therefore launched new measures to improve integration of immigrants and reduce ghetto problems (Box 6).

The government initiatives to cope with segregation and ghetto problems, such as improvement of the physical structures and measures to change the composition of tenants, should be applauded. However, extra care should be taken to ensure that performance enhancing measures are implemented in a cost-effective way. Possible measures may include a clear guidance from central government or allocation of means according to objective criteria. If properly implemented, the initiatives may contribute to avoiding the self-enforcing mechanisms that typically characterise deprived urban areas (Skifter Andersen, 2005). In addition, addressing social problems and problems related to schooling as proposed by the "*Programbestyrelsen"* could also have a positive impact on the probability to turn developments in distressed areas to the benefit of those growing up in such areas.

Box 6. **Government initiatives to improve integration and reduce ghetto problems**

The government has recently launched several measures to cope with integration and ghetto problems (Regeringen, 2004, 2005):

– Improving the physical conditions by renovating and modernising buildings in the social housing sector. According to a political agreement from 2002 (subsequently extended in 2005), renovation of the buildings that cannot be financed by the tenants or the housing associations' member section may be financed through a subsidy from a cooperative fund (the *Landsbyggefonden*, see Box 3).

– Earmarking of DKK 600 millions of the cooperative fund, *Landsbyggefonden,* in 2006 for social and preventive initiatives, *e.g.* initiatives for employment creation, promotion of integration and crime prevention. The initiatives must be part of a universal plan encompassing a financing programme to secure local coordination of initiatives. DKK 200 millions of the total amount may be used as a subsidy to allow for rent reductions.

– Improving the property rights and strengthening the possibilities to change the composition of tenants, for example by allowing tenants and outsiders to buy dwellings. Municipalities and the housing associations may decide which criteria should be used regarding sales in order to ensure a positive long-term effect on the composition of occupants. The cooperative fund, *Landsbyggefonden*, may approve that revenue from such sales be earmarked for activities and initiatives as part of a universal plan within the member sections. A sale requires that the housing association, the municipal authority and the member section reach an agreement. The law on sale of dwellings in deprived urban areas has only been in place since 1 January 2006 and so far no sales have taken place.

– Introduction of a new legislation for combined renting with the aim of creating a more varied composition of tenants in deprived urban areas. By changing the rules for the municipalities' right to fill vacant apartments, the housing associations may refuse applicants on waiting lists if for a period of 6 consecutive months they have received public income transfers. Instead, applicants will be offered housing in less-distressed areas, based on the municipalities' right to fill 25% of vacancies in the housing associations. This new arrangement also makes it possible to establish a right for request of vacancies in private rentals, as municipalities will receive a higher rate of reimbursement from the government if they make such arrangements with private landlords. Although the reimbursement rate has been increased several times to its present level of DKK 30 000 (€ 4 020) per dwelling, very few agreements with landlords have so far been made.

– Establishing the "*Programbestyrelsen"*, which is a publicly appointed body set to monitor the development in deprived urban areas and give policy advices. The unit consists of representatives from the housing associations, municipalities and the business sector. In their first report published in November 2005, they recommended that tenants in deprived urban areas with a stable labour market connection should be rewarded either by having a reduced rent or an earned income tax credit (*Programbestyrelsen*, 2005). The "*Programbestyrelsen"* has also addressed the need for dealing with social problems and problems related to the schools. Furthermore, it was proposed to improve upon the physical conditions of the housing stock and take measures to change the composition of tenures in the most deprived urban neighbourhoods, as well as improving safety and neighbourhood relations.

– As part of the 2004-Spring package, DKK 100 million was spent on urban renewal in deprived urban areas and a further DKK 27 million as part of the *Satspuljeaftalen* was targeted at initiatives promoting employment and integration of immigrant children.

Recent developments in the social housing sector nevertheless point to the risks associated with having a large public rental sector. The distributional outcome is unfocused, utilisation of the housing stock is falling (although vacancies still constitute a small share of the total stock and they are mostly found in some regions in Jutland) and ghettoisation has become a major concern in several areas. Despite the recent efforts to cope with segregation and ghetto problems, which may induce some positive dynamics in the sector, Denmark would benefit from a more fundamental reform. To resolve the paradox of vacancies in some geographic regions and waiting lists in others (particularly in the Copenhagen area), the tenants in the housing associations should be required to pay a rent that better reflect differences in quality, location and demand. This would imply that tenants who have managed to get into the flats with the largest insider advantages (for example, reflecting that attractive land plots were acquired at an earlier time when land prices were low) should pay a higher rent than those who live in areas with less insider advantages. Hence, this could be seen as equivalent to a tax on the insider advantages accruing to the tenants.

Flexibility is also hampered by the price regulation of shares in co-operatives

Anecdotal evidence indicates problems with illegal subletting and side payments in the co-operatives resulting from unclear property rights and a growing gap between the general price of accommodation and the regulated prices of co-operatives.[39] These problems are likely to be most pronounced in cities like Copenhagen and Aarhus where the co-operatives account for about one third of the housing stock. Making property rights clearer would probably reduce such informal arrangements. The government should consider removing price regulation for shares in housing co-operatives as in Norway. Co-operatives would then be put on a more level playing field competing with owner-occupied housing. Those having shares in a co-operative today would in most cases have substantial capital gains. The part of these capital gains that reflect identifiable public construction subsidies or urban renewal subsidies that the co-operative has received might be returned to the state and municipality.

Supply responsiveness and mortgage developments in owner-occupied housing

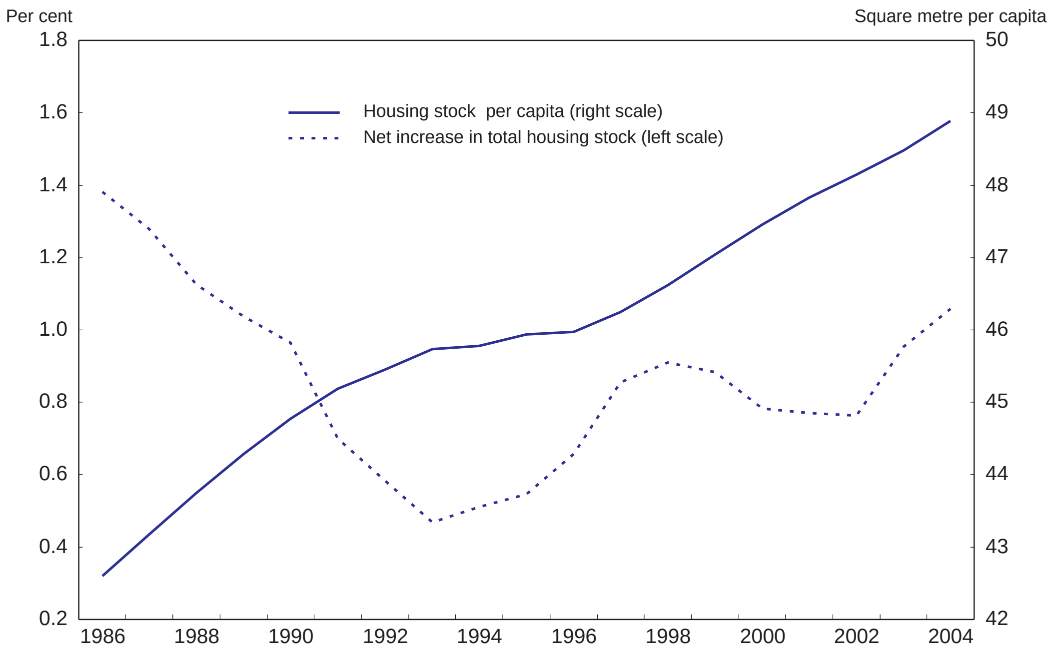
Accounting for 52% of the housing stock, the owner-occupied segment is of great importance for the functioning of the housing market and for labour mobility as well as for overall macroeconomic performance through the spill-over effects from house prices to consumption and residential investments. The system for housing finance is evidently of great importance in this respect, where Denmark in fact has developed one of the most sophisticated mortgage markets in the world. Nevertheless, the supply response of residential investments to changes in demand appears not to be particularly high in international comparison, which is a cause for concern.

Housing supply needs to be more responsive

Danish housing investment overall has gradually picked up since 1993 to the present level of close to 1% of total housing stock, albeit partly reflecting public subsidies to construction of social housing (Figure 9). Reflecting that high income growth typically generates more demand for space, the average square metres of housing per capita has increased by 15% during the last two decades.

39. In a survey where people where asked whether they had used side payments as part of buying a share in a co-operative, about 2% answered “yes” (Erhvervs- og Byggestyrelsen, 2006).

Figure 9. **Housing investment and stock**

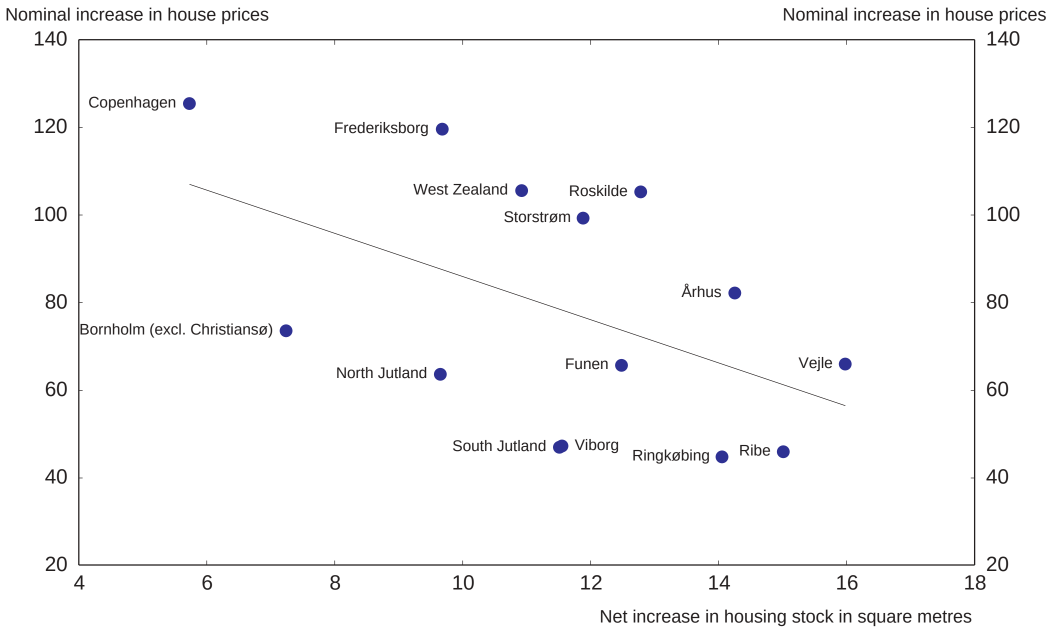


Source: Statistics Denmark

However, empirical evidence indicates that the supply response in the Danish housing market is not particularly strong. Over the recent decade, the response of housing investment to the higher Q-ratio (ratio of house prices to construction costs) has been similar to the average of OECD countries (OECD, 2005a), but other evidence shows that the number of new building permits reacts only moderately to changes in house prices (Swank *et al*., 2002)[40]. Thereby, inelasticity of housing supply has contributed to making the house price increase over the recent decade more pronounced (Box 7). Indeed, house price developments during the last decade show strong regional divergence, which partly reflects differences in the investment response to price increases (Figure 10). In the Greater Copenhagen Area where house prices have risen by far the most, housing investments have at the same time remained more or less constant (Figure 11).

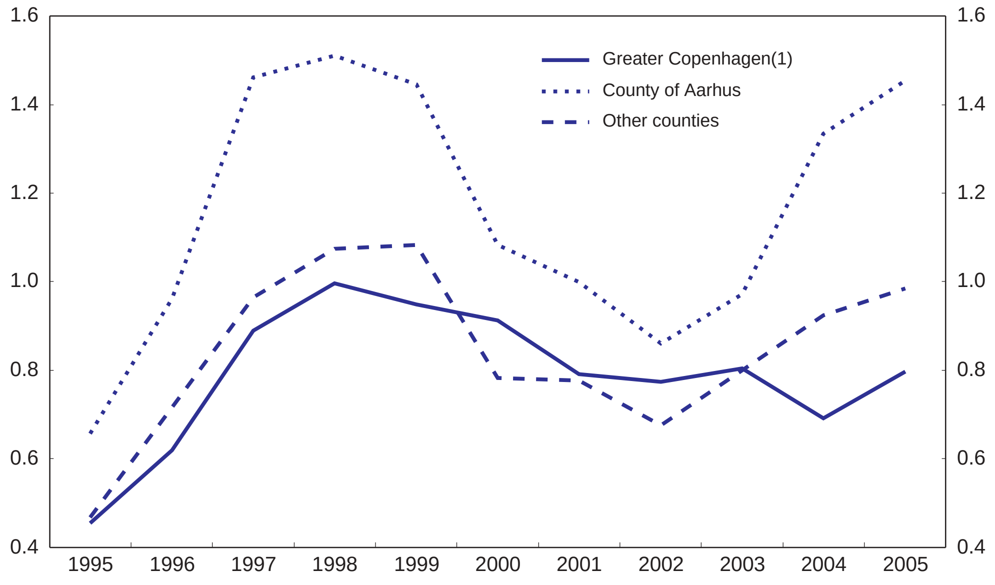
40. The underlying theoretical assumption behind this result is a small structural model of price-taking construction firms aiming at maximising profits. The estimations of this model are based on quarterly data covering the period 1980:2-1999:4, where housing permits issued is regressed on residential house prices, wage costs, capital costs and producer confidence (Swank *et al.*, 2002).

Figure 10. **Regional development in house prices and housing investment – one-family houses**
Per cent increase from 1995 to 2004



Source: Statistics Denmark (EJEN9-series for house prices and BYGB3-series for housing stock measured in square metres).

Figure 11. **Investments in one-family houses**
Net increase in total stock



1. Greater Copenhagen includes the counties of Copenhagen, Fredriksborg and Roskilde.

Source: Statistics Denmark (BYGV1-series for investments measured in square metres and BYGB3-series for housing stock).

Box 7. **Determinants of real house prices**

Following Meen (2002), real house prices (G) are assumed to be positively related to real household disposable income (RY) and negatively related to the real stock of dwellings (H) and the real interest rate (RR).[1] Estimating this relationship as an error correction model, all explanatory variables have the expected signs and are statistically significant. The long-run elasticity of real house prices with respect to real disposable income in Denmark (3.02) is higher than those obtained by Meen (*ibid.*) for the United Kingdom (2.51) and the United States (2.71), and those obtained by OECD (2003b, 2004a) for Luxembourg (2.55) and the Netherlands (1.94).[2] As household disposable income grew slower in the Denmark during the estimations period than in other countries, high growth in real house prices is probably not only attributable to demand forces but also to relatively weak supply responses. The long-run elasticity of real house prices with respect to the housing stock (-9.52) is high compared with those for the United Kingdom (-1.91), Netherlands (-0.52) and Luxembourg (-1.1) and also higher for that found for the United States (-7.64). This implies that an increase in the housing stock would have contributed significantly to dampen the recent increase in Danish house prices. This supports the descriptive evidence of regional house price differences being related to local supply conditions (see Figure 10)

Table 11. **An error correction model of real house prices**

Constant	18.303	(2.5)
$\ln(G)_{-1}$	-0.308	(-2.5)
$\ln(RY)_{-1}$	0.93	(4.6)
$d\ln(RY)_{-1}$	-0.754	(-3.2)
RR_{-1}	-0.037	(-2.2)
Δ RR	-0.041	(-3.8)
$\ln(H)_{-1}$	-2.933	(-4.9)
R^2	0.843	
Standard error of regression	0.033	
DW	1.71	

Note: The dependent variable is $\Delta \ln(G)$. t-values are given in brackets. The estimation period is 1983-2002 (annual data).

Source: OECD.

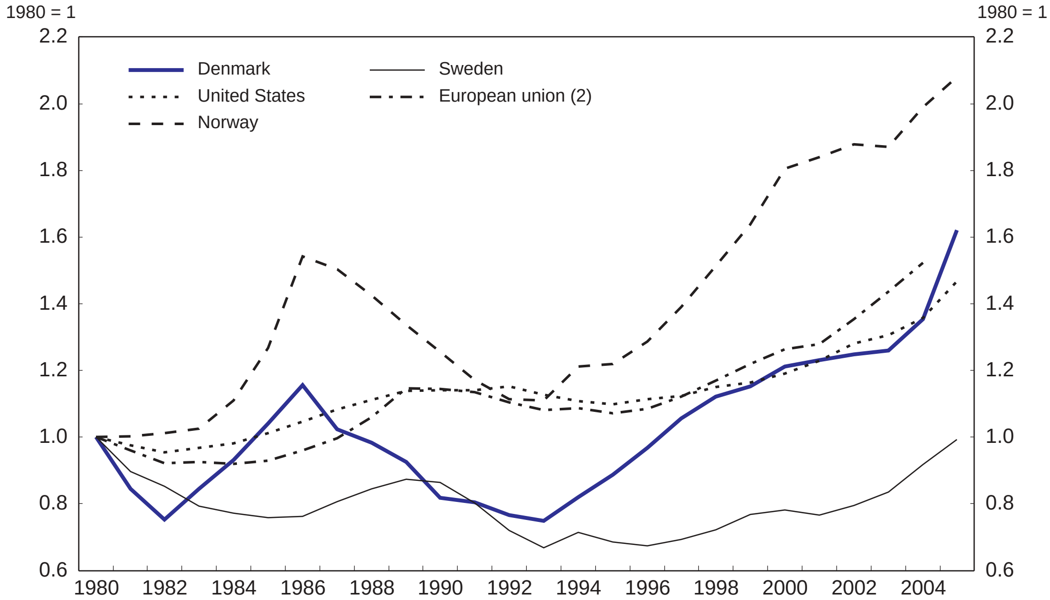
1. Nominal variables other than the housing stock were deflated by the private consumption deflator to obtain real variables. The housing stock is from Statistics Denmark, and is measured in fixed 2000-prices based on chain linking (NAT08-serie). The interest rate series is for mortgage rates.

2. Meen's estimation periods are 1969(3) to 1996(1) for the United Kingdom and 1981(3) to 1998(2) for the United States. OECD's estimation periods are 1970-2002 (annual data).

House prices are currently high relative to construction costs, although not particularly high compared to other countries (Figure 12). It is therefore profitable to build new houses as construction costs are low compared to what new houses could be sold for. While an efficient market for new construction should ensure that this Tobin's Q-ratio would be equal to one in the outskirts of urban areas where land is available, deviations may occur due to the cost of acquiring land or obtaining regulatory approval (Glaeser *et al.*, 2005).

Tough zoning regulations and cumbersome or slow administrative procedures for allowing building permits are factors which may account for sluggish responsiveness of housing supply. Weak local incentives to develop new land areas are also important in this respect. Finally, housing supply may have been hampered by capacity constraints in the construction sector as discussed in the *OECD Economic Survey of Denmark 2006* and pointed out by the Ministry of Finance (2005), and by the low productivity in this sector (OECD, 2005c).

Figure 12. **House prices relative to construction costs**[1]



1. Nominal house price index divided by the deflator of gross fixed residential investment.
2. Average index of Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Spain, Sweden, United Kingdom.
Source: OECD Analytical database.

The land planning system forms an important part of the overall supply conditions. Planning responsibility in Denmark is to a large extent decentralized to regional and local government (Box 8).[41] At the national level, the central government lays out specific guidelines or provisions that are the basis for planning at lower levels. Municipal councils and county councils are within these guidelines responsible for regional, municipal and local planning, including permits for construction and for zoning regulations. Despite the fact that the municipalities have significant influence on the size and composition of housing construction through local planning, the Minister for the Environment may veto local planning decisions to uphold national interests. Local planning proposals may also be appealed by affected parties, such as neighbours, non-governmental organizations, public authorities and people living in the area.

Development of new land areas that require a change in zoning status (*e.g.* from an agricultural to an urban zone) needs to be approved by a regional authority. In several parts of the country where house prices have been increasing, construction has been growing rapidly (Figure 10). But this is happening to a lesser extent in the Copenhagen region. Quite some open farmland can be found within a 30-kilometre perimeter from the city centre. The evidence indicating that housing supply is sluggish, could therefore reflect that higher levels of government have been reluctant to grant such approvals. Furthermore, the arrangement of appeals in the planning process and the typically strong resistance among incumbents to building proposals may also have been contributing to slow the supply response. Finally, the fragmented municipal structure in the capital region might be a hindrance, and mergers of some of these municipalities might encourage a wider perspective on zoning.

41. Although Denmark is considered to have more centralised control over urban development planning than other Nordic countries (Blucher, 2004).

Box 8. **Land planning and zoning regulations**

Land planning responsibility is to a large extent decentralised to the local government, but plans on a regional or local level should be consistent with planning decisions made at higher levels. This implies that if higher-level decisions are changed the planning at lower levels has to be adapted accordingly. The Planning Act is intended to ensure that the overall planning unifies the interests of society with respect to land use. This contributes to protecting the country's nature and environment, so that the sustainable development of society with respect for people's living conditions and for the conservation of wildlife and vegetation is secured (Ministry of the Environment, 2002).

National planning is expressed through reports, binding instructions, guidelines and intervention in local planning for themes and projects of national interest, reflecting national political objectives. The regional planning authorities and municipalities are required to consider this framework in the regional and municipal planning. The Minister of the Environment may veto a regional plan proposal on behalf of all government ministers if the proposal contradicts national interests, and state authorities may veto local plan proposals that are based on the special responsibilities carried out by these authorities. The Planning Act requires that the regional planning authorities veto municipal and local plan proposals if they contradict regional planning or national planning guidelines.

Regional planning concretizes the national objectives for regional development and rural development. The regional plan establishes the overall objectives for development in a regional planning unit, mostly counties, for a period of 12 years. During each 4-year election period, the regional planning authorities typically revise the regional plan. The main function of the regional plan is to plan all infrastructures and the division of land into urbanized areas, areas for summer cottages, agricultural areas and other open space. The regional planning guidelines establish a framework for municipal planning and a basis for the regulation of land use in the countryside. *The finger plan* for Greater Copenhagen adopted in 1947, introduced a principle that still applies saying that urban development should be concentrated in the fingers created by the railway network and that the green wedges between the fingers should remain undeveloped.

The municipalities are responsible for both the *municipal* and the *local plans*. The *municipal plan* comprises the necessary link between the regional plan and the provisions of local plans on land use and settlement in individual districts, and set out the basic features for land-use in the municipality including new areas for development and changes in zoning status. The municipal council is obliged to adopt the plan, and at least once in each electoral period the councils should meet to consider whether the plan needs to be changed. The *local plan* concretizes the political strategy and objectives of the municipal plan. Matters regulated by local plans is zoning status, design and use of land and buildings, size and extent of properties, roads and paths, location of buildings, building density, landscape factors etc. A local plan may ensure that the many diverse interests are weighed and discussed, by regulating factors related to use, size and location of buildings, roads and paths and the architectural features of an area. Local plans are legally binding for the property owners, but give the right to develop and use property in accordance with the provisions of the local plan, even if the regulation does not generally entitle property owners to compensation for any perceived loss of property rights. Property owners are not allowed to build new buildings, change land use or otherwise act in contradiction with a local plan.

Citizens are encouraged to be involved in the planning processes. The Planning Act states that those affected by the plans should be informed, including neighbours, non-governmental organizations, public authorities and people living in an area. Legislation requires newspaper notices and a public exhibition of the proposed detailed plan prior to its adoption. The exhibition must last eight weeks, which is somewhat longer than in other Nordic countries. Many counties and municipalities use the Internet to publish plan proposals and adopted plans. Large development projects that are likely to have significant effects on the environment are subject to environmental impact assessment and a public hearing before being initiated. The rules on environmental impact assessment in the Planning Act comprise Denmark's implementation of a European Union directive. The regional planning authority has usually conducted the assessment and preparation of the supplement to the regional plan with an accompanying environmental impact statement.

The Planning Act divides Denmark into urban zones, summer cottage areas and rural zones, with special rules for development in rural zones. Agriculture is the priority economic activity in rural zones, implying that buildings needed for agricultural purposes could be constructed while new dwellings, urban businesses and institutions requires a rural zone permit, The aim have been to protect recreational and valuable landscapes and ensure that agriculture retains good production opportunities. A rural zone permit from the municipal council is generally required to parcel out land, construct buildings or change the use of existing buildings and undeveloped land. The permit may be granted when the local conditions have been specifically assessed and the municipality concludes that the development applied for is in accordance with the considerations of the provisions on rural zones. Rural zone permits must be publicized, typically in local newspapers. Rural zone permits may be appealed to the Nature Protection Board of Appeal, which considers the municipality's decision.

Housing supply may also be increased through better utilisation of the existing areas and the housing stock by higher density and constructing higher buildings. While conversion of former industrial areas to residential areas could help to improve utilisation, few conversions have so far taken place, not least in Copenhagen (except for in the harbour area where land is being developed for new business properties and in the up coming *Ørestad* area). This is perceived to reflect that mainly property owners are responsible for cleaning up polluted soil before erecting new buildings, which in many cases is considered unprofitable due to the risk of high clean-up costs and the taxes levied on the deposition of the polluted soil. A lack of tradition for high-rise buildings is another factor that is seen as hampering supply. The government has recently taken some steps at reducing and simplifying administrative planning rules which may induce more supply by making it easier to increase utilisation of the existing housing stock (Ministry of Finance, 2004c).[42]

Development of new land areas requires often investments in technical infrastructure (roads, water and sewage system) and social infrastructure (schools, child care facilities). Within the current financing system for local government, a municipality will have net *expenses* in the short run in the case of immigration of a family and this requires investments in social infrastructure (Table 12).[43] Except for technical infrastructure which can be financed by cost-covering user charges, restrictions apply on local government borrowing for investments in social infrastructure.[44] Although such a restriction may be warranted for reasons of fiscal discipline, it also reduces local flexibility and may weaken the incentives to develop new areas as investments have to be financed out of current revenues. Previously, the municipalities received a conversion fee (*frigørelsesafgift*) when a rural area was converted into an urban zone. While this fee induced a positive incentive to develop new areas, the abolishment of this fee from 2004 has reversed this effect. To strengthen incentives to develop new land plots it should be considered to give at least some room for expanding municipalities to borrow to finance social infrastructure like schools and similar facilities.[45]

In the Copenhagen area, the weak supply responses might also be due to too low infrastructure capacity (reflected in daily highway congestion), as this determines the speed at which it makes sense to develop new areas. Increasing the infrastructure capacity would enhance possibilities for developing new areas outside the capital (where land is less scarce) rather than inside the city (where land is scarcer and where stricter zoning rules apply). However, in recent years the capacity constraint on the highways towards Copenhagen seems to have become an increasing problem. This is likely to reflect the fact that the highways in the capital area function as regional roads (people commuting to work). However,

42. Measures include making it easier for landlords and co-operatives to establish roof-top apartments and to expand existing buildings by allowing for extra floors, as well as improving the possibilities for conversions into residential properties. Other measures include improved possibilities for municipalities to change the use of elderly and disabled family dwellings into social housing dwellings for the elderly and simplification and easing of specific regulations applying to the construction sector. The government has also proposed to digitalise the process of municipal treatment of building applications, so as to provide building permits more rapidly and make the decisions more transparent. In addition, a web-site will be established which will provide relevant property data as well as information about building regulations.

43. If a single adult with two children or a student moves into the municipality, the municipality will have a net surplus in the short run (KommuneInformation, 2003).

44. This is likely to reflect the system for financing of Danish municipalities where central government negotiates with local government organisations about their overall budget, within a framework where local government can set local tax rates (subject, currently, to the tax freeze).

45. A second best proposal could be to allow for co-payment from the new citizens when development of new land areas requires investments in social infrastructure.

administratively all highways are under state jurisdiction where allocations are based on servicing national (and international) traffic. Recent initiatives to increase subway capacity inside Copenhagen city and at the same time expanding capacity on one of the highways might help to mitigate some of the congestion problems. Introducing more market mechanisms, such as road pricing, could contribute to ensure that infrastructure investments are more closely linked to where the demand is.

Table 12. **Impact on municipal finances in the case of immigration of a family**
First year effect in DKK

	Social housing	Co-operatives	Owner-occupation
Financing costs	4 800	0	0
Kindergarten excl. user charge	92 300	92 300	92 300
Housing benefits	0	0	0
Total expenses	***97 100***	***92 300***	***92 300***
Municipal income tax	75 400	71 400	60 500
Block grant and equalisation	11 800	13 600	9 900
Property tax	0	0	7 200
Total income	***87 200***	***85 000***	***77 600***
Net expenses	***9 900***	***7 300***	***14 700***

Note: The calculations are based on equal assumptions about housing size (92 square metre), construction costs of DKK 1 077 800 (DKK 11 715 per square metre), a couple with two children (2 and 5 years) and household income (wage earnings) of DKK 494 000 in a municipality outside Copenhagen. The calculations are based on the fiscal equalisation scheme being in place since 1996.

Source: KommuneInformation (2003).

Monitoring developments in the mortgage market

The mortgage market is highly developed with a large volume of household and business credit. Including *all* types of mortgages, outstanding debt equals 104% of GDP (by end of 2004), much higher than in most other OECD countries. Residential mortgage debt equals 80% of GDP (owner-occupied housing 60%, private rentals 8%, and housing associations etc. 12% of GDP) the rest being mortgages for agriculture and other business purposes equalling 12% of GDP each.

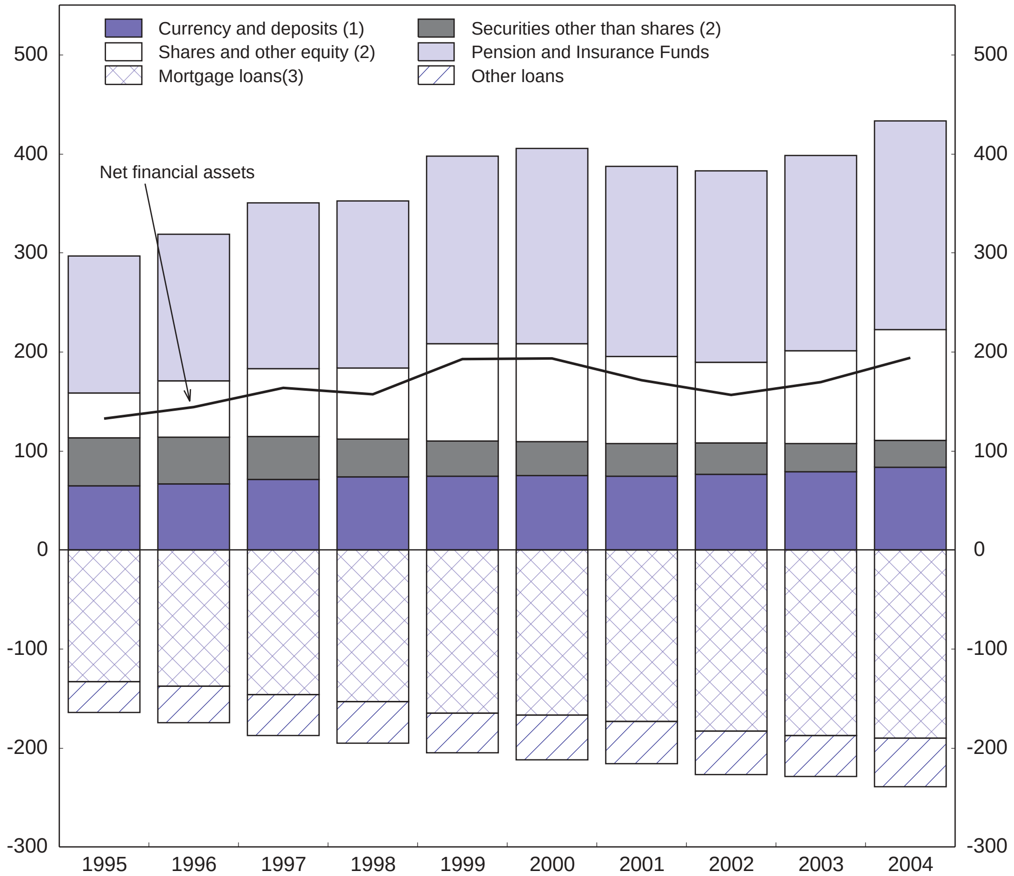
The large market size reflects wide financial inclusion with mortgage credit being easily available also for homeowners with low income. One reason is that mortgage institutions have easy and quick access to the collateral. They have no obligation to provide alternative housing for the persons concerned, a task that is left to social authorities. Interestingly, these features benefit low-income families in particular as income and personal finances play only a limited role in mortgage credit assessment. Using the house as collateral, households with a gross income below 82% of one average production worker manage to borrow three times their annual gross income whereas the average mortgage-debt-to-income ratio for middle and high income groups is only about two (Nationalbanken, 2005).[46] Moreover, as mortgage loans mirror the underlying bonds, borrowers pay the same interest rates regardless of income, giving low-income families cheaper finance for owner-occupied housing than they would have in most OECD countries.

Danish households have taken up much more mortgage debt than a decade ago, but their net financial position (excluding housing wealth) has improved. The total stock of household loans, of which roughly 80% are mortgage loans, increased from 160% of disposable income in 1995 to 240% in 2004. During the

46. These differences in borrowing are fully reflected in housing making up a larger share of consumption, as the loan-to-value ratio is even slightly lower for low-income than for high-income groups in owner-occupied housing.

same period, mortgage equity withdrawal has become more prevalent and is estimated to have been around 2-5% of disposable income per year throughout the past decade (except in 2000). At the same time, however, their pension assets and non-pension security holdings have increased even more (Figure 13), reflecting higher savings and pension contributions, but also rising share prices (about half of the increase reflects valuation changes).

Figure 13. **Households' financial position**
Per cent of disposable income

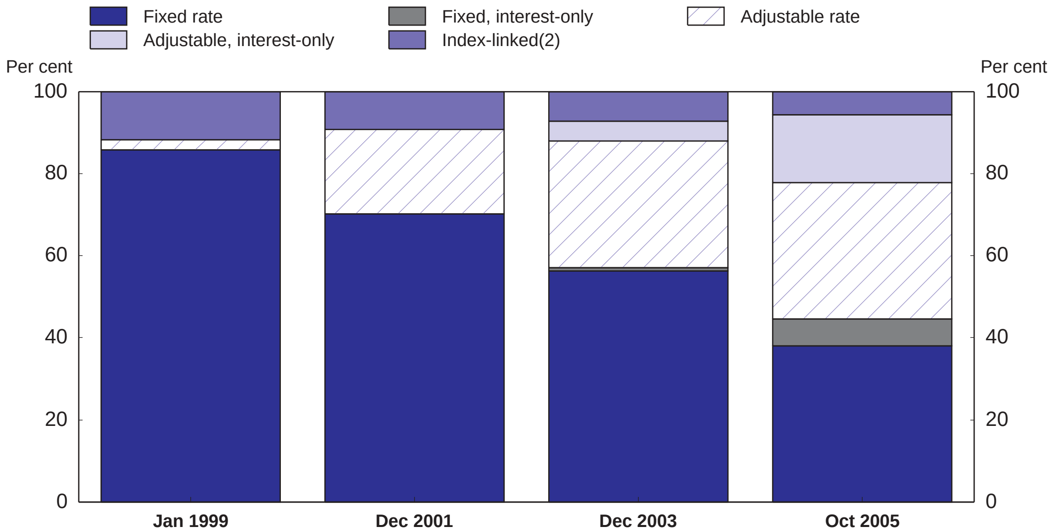


1. Including net other accounts.
2. Outside pension schemes.
3. Sum of mortgage loans for owner-occupied housing, agriculture, housing associations and half of mortgage loans for private rentals.

Source: Statistics Denmark.

Over the recent decade, a number of innovations have appeared expanding the possibilities for households to adapt the risk and repayment profile to their specific situation. These innovations have made the Danish mortgage market more complete than most other European housing finance systems, apart from the Netherlands and the United Kingdom (see Box 9; Frankel *et al.*, 2004). As a consequence, the structure of debt has changed significantly. As late as 1999, virtually all mortgages were fixed-rate loans, but now these account for only about 40% of total outstanding mortgage debt. By contrast, the share of adjustable-rate loans has grown substantially, half of them having deferred amortisation (Figure 14). The new mortgage instruments have increased the financing opportunities for households also by allowing them to use their property as collateral for loans that are not necessarily related to housing investments. That may explain part of the ongoing mortgage equity withdrawal.

Figure 14. **Mortgage debt by loan type**
Distribution of outstanding mortgage debt[1]



1. Interest-only loans were only introduced in 2003. Based on the total mortgage market including lending to homeowners as well as rental housing, farmers and businesses.
2. Index-linked mortgage loans are reserved for housing associations and a few others borrowers, but are not accessible for households.

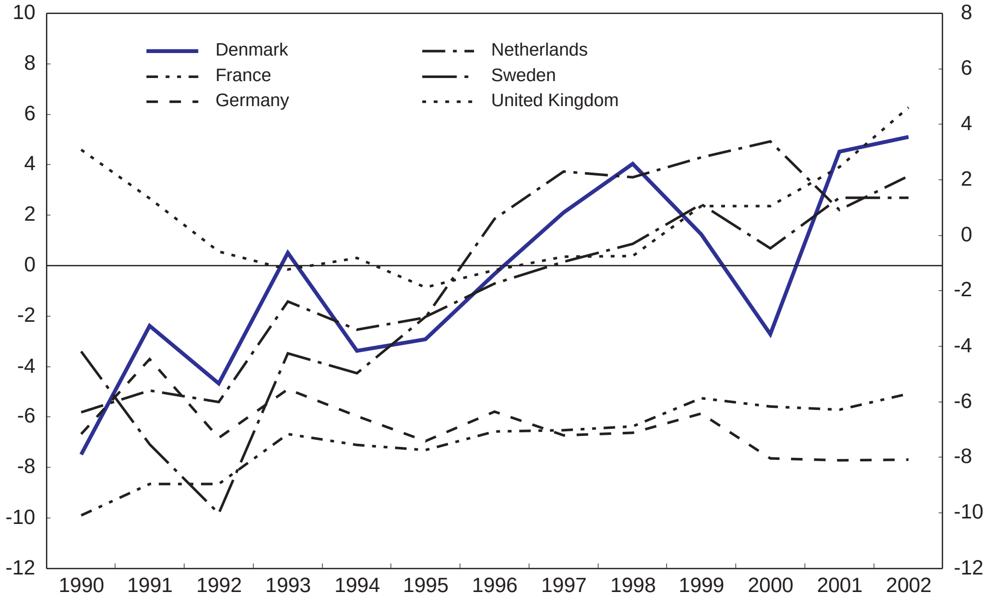
Source: Statistics Denmark.

Box 9. **The mortgage market**

Originally, the mortgage market in Denmark was established as a highly regulated cooperative system with limited competition and only few product choices.[1] In the early 1990s, however, deregulation and consolidation led to a wider range of loan types offered to borrowers as low margins induced mortgage credit institutions to compete mainly by product innovation. In the Danish system, borrowers take up loans against collateral in real property from mortgage credit institutions, which in turn sell bonds in financial markets. The institutes do not bear interest rate or prepayment risk since the payments that they receive from borrowers match the cash flows they pay out to bond holders. The typical mortgage loan in Denmark has a maturity of 30 years and borrowers have the choice between a variety of interest payments besides the traditional fixed rate loan. With adjustable-rate mortgages, for example, interest payments are adjusted to prevailing market interest rates at certain fixed intervals (product variations include interest rate caps for a certain period). Since the introduction of adjustable-rate mortgages in the mid-1990s, the share of these products has increased substantially from 6% of total outstanding loans in 1999 to close to 50% in 2005, supported by the low and decreasing level of short term interest rates. A more recent product innovation introduced in 2003 is interest-only loans, where amortisation of the principal is delayed for up to 10 years, *i.e.* the borrower does not pay down the principal for a certain period but pays interest only. In 2005, nearly a quarter of the outstanding volume of loans included such a deferred amortization mechanism. The majority of these loans (about 75%) have adjustable interest rate payments. Index-linked bonds, which were formerly mainly used for the financing of social housing, only constitute a small and decreasing share of outstanding mortgage bonds (6% in 2005).[2]

Unlike in many other European mortgage markets, early pre-payment and refinancing of loans is easily possible. As the loans and the underlying bonds are closely linked, Danish borrowers have the option (in addition to penalty-fee pre-payment) to purchase the bonds in the market in order to redeem the loan.[3] Consumers can therefore manage their debt actively and conversion (re-mortgaging) of loans frequently occurs when interest rates changes. Danish borrowers can, like bond traders in financial markets, take advantage of fluctuations in interest rates by converting their loan types according to changes in the yield curve, as seen in the spring of 2005 when demand for fixed rate loans increased with increased expectation of rising short term interest rates. Also in contrast to other systems, Danish mortgages do not have to be repaid in the event of a house sale (the new owner can take over the outstanding mortgage loan). Moreover, with the enhanced opportunities to raise supplementary mortgage credit since 1992, supplementary mortgage credit borrowing is more frequently used in Denmark than in the larger euro area countries such as France and Germany (Figure 15). With regard to the average price of mortgage loans, cross-country analysis show that while Danish loans have a wider product variety, their price is also among the cheapest in Europe when adjusted for fees and the cost of pre-payment options (Mercer Oliver Wyman, 2003). Danish mortgage bonds issued by mortgage credit institutions usually trade at a narrow interest rate spread against government bonds due to their low default risk and favourable credit ratings (Moody's, 2002). The security of these bonds is considered to be high, not least because of the strong legal position of mortgages (in case of the borrower's default the time for repossession of the collateral is 6 months and mortgage lenders have a privileged position among creditors) and the requirement that mortgage loans have an upper limit for the loan-to-value ratio of 80% (with lower limits for weekend homes and industrial premises).

Figure 15. **Mortgage equity withdrawal**
Per cent of disposable income



Source: OECD calculations.

1. The Danish mortgage system is one of the oldest in the world and was established in 1797 to provide finance to homeowners after the Great Fire in Copenhagen.

2. In an index-linked bond, the principal is written up by the rate of inflation, while the interest paid is the real interest rate. These instruments are used to hedge against inflation.

3. This holds for traditional fixed rate mortgage loans. Adjustable rate mortgage loans can be redeemed at par at the time of interest rate adjustment (Kjeldsen, 2004).

Along with the benefits of a more complete mortgage market, households have become increasingly exposed to interest rate volatility. Danish short-term interest rates have remained below long-term interest rates since 1994, with an average differential of 2 percentage points. On the surface, adjustable-rate mortgages therefore look very cheap, and they have become a popular way for households to reduce their interest burden. However, short rates are more volatile than long rates and, going back in time, short rates have gone significantly above long rates during times of tensions in the fixed exchange rate regime, such as 1992-93. Coming from exceptionally low interest rates during 2005, increasing mortgage interest payments could have a significant impact for many households, not least young and less consolidated home owners. Some might have to reduce consumption considerably, meaning that interest rate movements will feed through to aggregate economic activity more forcefully than before, as discussed in the *OECD Economic Survey of Denmark 2006*. However, while macroeconomic risks from household indebtedness have increased, they still appear limited. Simulations by the central bank suggest that the interest expense of home owners on *average* increases by 1% of gross income if short-term interest rates rise by 1 percentage point (Nationalbanken, 2005).[47] How strong the impact of rising short-term interest rates would be depends also on how well home owners manage to move into fixed-rate mortgages. Recent developments are encouraging, as the share of new loans taken up at fixed rates has increased in response to the rise in interest rates since mid 2005. And interestingly, mortgage credit institutes now offer adjustable-rate loans with a cap on the interest rate. These "capped floaters", introduced in end-2004, somewhat blur the line between fixed and adjustable-rate loans, as the loan is effectively turned into a fixed rate loan when interest rates rise above a certain threshold. These types of loans have become increasingly popular and anecdotal evidence from the two largest mortgage banks suggests that around one half of the outstanding adjustable-rate loans now have some form of interest rate cap.

It is still too early to fully assess these welcome mortgage innovations, as interest-only and adjustable-rate loans have not yet had the test of sudden interest rate increases, falling house prices or a general economic downturn. The way households use the new mortgage instruments would seem to indicate that most understand what they are doing.[48] It is encouraging that low-income households are the ones choosing the highest share of fixed-rate loans, indicating that they are well aware of the larger financial risk they face because of their higher debt-to-income ratio. On the other hand, the fact that deferred amortisation is used most frequently by homeowners with a high loan-to-value ratio could indicate that some first-time buyers take excessively stretched and risky positions to get into the housing market, while possibly hoping to gain from continued price increases. Deferred amortisation (interest-only loans) can help households cope with changes in life where liquidity shortages arise temporarily such as periods of unemployment or illness. However, if predominantly used for such purposes, it should not be expected that households with high loan-to-value ratios would be those most frequently deferring amortisation as they can less afford to do so. The theoretical case is clear for allowing households more flexibility on their repayment profile and options for tapping into low short-term interest rates. But the evidence on how well these efficiency gains are being reaped in practice is still fragmented.

How consumers use the new mortgage instruments and how well they understand the larger financial risks involved should be monitored better in the coming years. In this respect, the most interesting information concerns household debt patterns that cannot be assessed on the basis of the aggregate numbers currently published by the Association of Danish Mortgage Banks. The 2005 *Financial Stability Report* was able to get a glance into the individual patterns of mortgage borrowing on the basis of one mortgage credit institution (Nationalbanken, 2005). Adding individual data on earnings history and other factors covered by Statistics Denmark's registers and other information on individual asset holding and pension savings might enable much more elaborate analysis. Such linking would be feasible as financial institutions already identify their customers using each individual's Central Personal Register number. It could therefore be considered to give authority to the central bank, the financial supervisory authority or a similar agency to collect detailed individual information from mortgage credit institutions, and to analyse developments in the innovating mortgage market from a financial stability as well as a market efficiency perspective. It would not reveal any sensitive personal information, but could serve as a basis for possibly warning the public in situations where market developments seem to run astray. Establishment of such a dataset could also advance research in financial markets and thereby give a better-informed basis for a future reform of capital taxation as discussed in the *OECD Economic Survey of Denmark 2006.*.

47. This average holds for low-income as well as high-income homeowners, because while the first are more indebted, the latter have a higher share of adjustable-rate loans.

48. The indications described in this paragraph are based on Nationalbanken (2005) where they were collected in the context of financial stability analysis.

Conclusion

While Denmark has fairly flexible labour and product markets in most respects, the housing market stands out with large direct and indirect subsidies for all types of housing and a highly regulated rental market hindering mobility, and probably resulting in a mismatch between housing needs and use. In the current housing policy framework there is quite a contrast between the well-functioning market for transactions of owner-occupied housing (supported by the highly liberalised mortgage market) and the highly regulated rental housing market. Although current housing policies are often cherished by the insiders (both renters and home owners currently seeing large price increases), life for outsiders (those who need to move to get a job or young families entering the housing market for the first time) is made more complicated than necessary by informal arrangements and sometimes even illegal side payments. In addition, housing policies seems to achieve little in the way of income distribution. Denmark would benefit from a fundamental re-shaping of its housing policies.

Box 10. **Summary of recommendations**

Direct and indirect subsidisation

- Increase the real estate tax for owner-occupied housing to make it neutral *vis-à-vis* the tax value of interest deductibility. With interest deductible at 33%, a neutral real estate tax rate would be about 1½ per cent of the property value. Ensure that regulation allows mortgage institutions to offer products whereby the real estate tax and the land tax are paid automatically based on mortgage equity withdrawal. In addition, make those having a share in a co-operative liable for the real estate tax, at least for the part of the flat's value that is not matched by borrowing within the co-operative.

- End the subsidies for pension funds' investments in newly constructed private rental housing, as well as the tax exemption for pension funds' return on property bought before March 1986 and for return on property investments undertaken during the quota system in the 1980s and 1990s that still are tax exempted.

- Replace the general subsidies for the housing associations with targeted support for those who are referred by municipal social authorities or in other ways are in clear need of public housing support. Increase the allocation of dwellings through the municipalities. From an overall fiscal perspective, the national housing construction fund should be integrated with the state budget, thereby keeping funding of construction, ghetto alleviation and similar measures subject to normal public budgeting scrutiny. In addition, the cap on construction costs in social housing should reflect the best performing constructors.

- Reconsider the size and targeting of personal housing allowances to reduce the high marginal effective tax rates implied by their withdrawal. Reform the scheme by linking it to appropriate rents in a region instead of actually paid rents.

Openness and flexibility in rental housing

- Let rents in private rental housing be set freely on market terms by progressively scaling back current rent regulation. Lowering the threshold for how much landlords must spend on renovating apartments in order to transfer to less strict rent regulation could advance a gentle transition.

- Let tenants in social housing pay rents that better reflect differences in quality, location and demand.

- Remove price regulation for shares in housing co-operatives. Such a liberalisation would generate capital gains, and the part that reflects identifiable public construction subsidies or urban renewal subsidies might be returned to the state and municipality.

Supply responsiveness and mortgage developments in owner-occupied housing

- Consider giving municipalities that are expanding more room for borrowing to finance social infrastructure when new land plots are issued. Consider mechanisms like road pricing, to ensure that infrastructure investment is more closely linked to where the demand is. Mergers in the fragmented municipal structure around Copenhagen might also help balance local and wider perspectives on zoning.

- Consider giving authority to the central bank, the financial supervisory authority or a similar agency to collect detailed individual information from mortgage credit institutions and link them with income and other individual data from Statistics Denmark for analytical purposes. This would facilitate more elaborate assessment of financial stability as well as efficiency of the innovative mortgage market.

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Annex

Progress in housing policy reform

Housing policies were last analysed in-depth by the *OECD Economic Survey of Denmark 1998/1999*. The table below lists the recommendation made then along with additions made subsequently, and reviews action taken since 1998.

Past recommendations	Actions taken and current assessment
Dismantle rent controls and extend property rights to improve mobility and maintenance	
Rent controls in the private rental market should be removed, allowing rents to reflect underlying differences in quality and preferences so as to stimulate maintenance and standard improvements.	The rent of new rooftop apartments can be freely set irrespective of rent regulation in the remaining apartments. To stimulate construction of new private rental housing aimed at average income groups, pension funds and private investors can be granted an investment subsidy on a competitive basis. The rent setting in these apartments will be free of regulations.
2002 Survey: Tax away any induced economic rent to landlords resulting from higher property prices.	No action.
2002 Survey: Introduce a property tax on rental housing.	No action.
Rent regulation in social housing should be modified, to eliminate unwarranted rent differentials within and across vintages of buildings.	A new financing regime introduced in 1999 imply that whenever the tenants rental payments exceed the payments on the mortgage, the surplus will be channelled into a fund with the purpose of replacing state subsidies to construction of social housing. In the long term, this may dampen the effect on the rent differentials. Possible modifications of the rent regulation system will be examined as part of a broader analysis of the social housing sector that will be carried out during 2006.
The introduction of extended property rights in social and co-operative housing by making stakes freely tradable would allow these segments to compete on equal terms with the owner-occupied segment for residents across all income brackets.	No action regarding the regulations of the cap on share prices. As of 1 February 2005, it is possible to use the share as collateral for borrowing.
2002 Survey: Allow tenants in social housing to buy their apartments.	For a trial period of 3 years from 1 July 2004, municipalities and social housing organisations can apply for the right of their tenants to buy their apartments. Tenants in deprived urban areas are from 1 January 2006 admitted this as a permanent arrangement.
1999/2000 Survey: Clarify governance structures in the social housing sector. A strategy to deal with the expected wealth accumulation in the sector should be developed in order to avoid lock in effects of capital and over investment in housing.	Funds accumulated in the social housing sector are made available for renovation and improvement of existing dwellings and they will now also cover some parts of the social housing sector's funding that was previously provided by the central government. The funds have been used in financing of several government initiatives within the social housing sector, such as renovation, construction and measures to cope with ghettos. A broader analysis of the possibilities for a more self financed social housing sector will be carried out during 2006.

Progress in housing policy reform (*cont)*

Past recommendations	Actions taken and current assessment
Continue reform of tax and transfer systems to improve resource allocation and improve equity	
Taxes and implicit subsidies for owner-occupied housing should be rebalanced to ensure a neutral tax treatment of such investments compared with financial investment.	No action.
The tax treatment of owner-occupied property and social and co-operative housing should be equalised, implying an extension of the property tax to the latter segments, with an adjustment of direct subsidies to re-establish earlier parities if that is desired.	No action.
''Object'' subsidies would no longer appear warranted and should be phased out. Remaining support should be concentrated upon assistance to individuals.	No action.
The housing benefit should be re-evaluated, in order to increase resistance to rent increases in the private rental market, improve its redistributive effect and reduce labour market and savings disincentives. *2002 Survey:* Benefits to pensioners should be aligned with those for other groups.	A major reform of the housing benefit scheme was implemented from 2000 to 2003. A minor change concerning benefits for children of age 17 to 23 years living at home has been implemented recently.
Cost control processes in urban renewal projects need to be improved*, inter alia* by requiring higher marginal financing from landlords and tenants.	In 2004 a reform of the urban renewal scheme was put into place, implying less public regulation, less public subsidies and a higher marginal financing from private landlords and funds.
2005 Survey: The preferential tax treatment and other subsidies to co-operative housing should be removed.	No action.
2003 Survey: Amend the tax freeze to allow tax assessment values to increase in line with house price developments.	The tax freeze implies that a nominal ceiling is imposed on residential property value tax so that an increase in the value of property will not lead to higher tax payment for the home owner. A fall in the property value will reduce the tax payment accordingly, but subsequent rises cannot lead to tax payments exceeding the level corresponding to the value of the property on 1 January 2001 plus 5%, or the value on 1 January 2002, whichever is lower. The tax freeze does not impose a nominal ceiling on the land tax levied by the municipalities and counties, although the average land value tax rate cannot exceed its 2002-level.
Modify the tax system to reduce the contribution of the housing market to macroeconomic stability	
Placing the taxation of housing income on a par with income from financial investment, on an accrued and nominal basis, would make government take part in both capital gains and losses, thus reducing variations in household wealth.	Income taxes were cut in 2004, reducing marginal taxes for middle-income earners.
2005 Survey: Tax capital gains from dissolving housing co-operatives, and adjust acquisition prices to those applying to new co-operative and owner occupied housing.	The possibilities for dissolving housing co-operatives by selling the building of the co-operative to an outside investor (thus reaping capital gains) has been curbed by new legislation in June 2005, stating that it is prohibited to sell a co-operative property that has been acquired recently within a period of 5 years.
Continue the decentralisation process	
Consideration should be given to a complete decentralisation of housing thereby requiring municipalities to assess housing expenditure against other public priorities.	From 2007, the share of the construction costs of new social housing that municipalities has to pay up-front is supposed to be increased from the current level of 7% to 14%. The municipalities will therefore be more exposed to having to assess housing expenditures against other municipal expenditures.

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