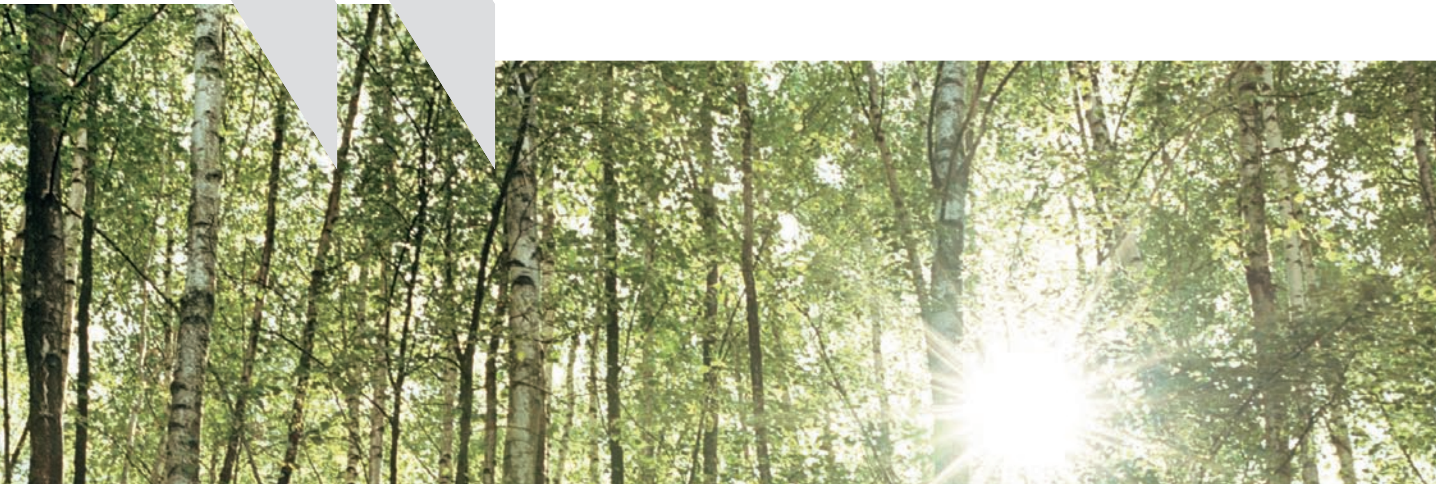
OECD Economic Surveys

Denmark



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This survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

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BASIC STATISTICS OF DENMARK

THE LAND

Area (sq. km.)	43 098	Population of major urban areas, 2003, thousands	
Agricultural area (sq. km.)	28 898	Copenhagen	1 086
		Århus	223
		Odense	145
		Ålborg	121

THE PEOPLE

Population, 2003, thousands	5 384	Total employment, 2003, thousands	2 741
Number of inhabitants per sq. km	124	By sector:	
Population, annual net natural increase		Agriculture	100
(average 1999-2003, thousands)	10.3	Manufacturing	439
Natural increase rate per 1 000 inhabitants, 2003	1.3	Construction	168
		Market services	1 069
		Community, social and personal services	965

THE PRODUCTION

Gross domestic product, 2003		Gross fixed capital formation, 2003	
Kr billion	1 398.3	Kr billion	279.6
Per capita (US$)	39 544	Per cent of GDP	20.0
		Per capita (US$)	7 907

THE GOVERNMENT

		Composition of Parliament (Preliminary results as of 10 February 2005)	Number of seats
Public consumption, 2003		Liberals	52
Per cent of GDP	26.6	Social Democrats	47
General government current revenue		Danish People's Party	24
Per cent of GDP	56.8	Conservatives	18
Public gross fixed capital investment		Social Liberals	17
Per cent of GDP	1.7	Socialist Peoples's Party	11
		Left Alliance	6
		North Atlantic	4
		Total	179
Last general elections: 8 February 2005		Next general elections: 8 February 2009 (at the latest)	

THE FOREIGN TRADE

Exports, 2003		Imports, 2003	
Exports of goods and services		Imports of goods and services	
Per cent of GDP	42.6	Per cent of GDP	36.4
Main merchandise exports (per cent of total)		Main merchandise imports (per cent of total)	
Agricultural products	9.9	Intermediate goods for agriculture	2.6
of which: Products of animal origin	8.0	Intermediate goods for other sectors	40.8
Manufactured products	76.1	Fuels and lubricants	4.7
of which: Machinery and instruments	26.4	Capital goods	13.0
Other manufactured products	49.7	Transport equipment	5.7
Other products	14.0	Consumer goods	29.7

THE CURRENCY

Monetary unit: Krone		Currency units per US$	
		Year 2004	5.988
		January 2005	5.675

Note: An international comparison of certain basic statistics is given in an annex table.

Executive summary

Denmark has been near the top of the OECD's income rankings for many years. It has the most equal income distribution among member countries, partly because of its comprehensive welfare state. Given an ageing population, the key economic challenge is to maintain growth in living standards while preserving the welfare system. To achieve this, Denmark will need to raise labour supply and productivity growth. If they do not improve from here, the growth rate of per capita GDP will be dragged down to just ½ per cent per annum within a couple of decades.

The government's approach, laid out in its 2010 *Plan, is to target fiscal sustainability by boosting employment, restraining public spending growth (by freezing taxes) and paying down debt. Progress to date has fallen short of target, partly because of a cyclical downturn but also because new reforms are needed. Even if the Plan were achieved, however, it might not be enough. The Welfare Commission's analysis suggests the fiscal challenge is much greater. A debate may therefore be necessary about what are the core parts of the welfare system that should be retained in their current form. Otherwise, they may be crowded out by less important services that, by tradition rather than necessity, are publicly funded today.*

New reforms are needed to achieve the government's labour supply target

The government's employment objectives are ambitious, but too little has been done about the three major labour supply holes: working hours, older workers and young people. Annual working hours are among the lowest in the OECD, and high income tax rates are a contributing factor. Eliminating the top marginal rate, or raising the threshold from which it applies, would lift work incentives and could – as part of a revenue-neutral package – help improve fiscal sustainability. An outright tax cut would, on the other hand, be likely to worsen fiscal sustainability. More generally, the social partners should recognise the tradeoff between more leisure and reduced finance for future public services whenever they try to bargain for fewer working hours. They should also help work towards reducing sickness absences, which are high by OECD standards. Second, the average retirement age could be increased by reforming the voluntary early retirement pension (efterløn) *– for example, increasing contribution payments and the bonus for later retirement. The pension system as a whole could be made more robust if retirement ages were tied to expected lifespans. At the other end of the age spectrum, students should complete their studies more rapidly. To achieve this, tuition fees could be increased (backed by an income-contingent loan scheme) and the profile of income support changed (more earlier, less later), and the one-year "paid holiday" for students should be abolished.*

Productivity could be boosted through greater competition, especially in the public sector

The extent of efficiency improvements in the public sector will influence how much pruning of the welfare state may need to be done in the future. The government has been trying to open up the public sector to greater competition as a way of delivering these productivity gains, but progress has

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been slow. Various regulatory defects mean that municipalities (which deliver most public services) sometimes have too little incentive to contract out, and the private sector cannot compete on equal terms. Options include imposing an obligation to tender on local governments and tying some of their funding to progress on contracting out. The amalgamation of municipal governments (more than halving their number to around 100) should improve the quality of public services and make competition more feasible.

Productivity improvements are also needed in the business sector, as productivity growth over the past decade has been low. The priorities should be to continue deregulating network industries, boosting connections to international markets for electricity, and removing unnecessary restrictions in the construction, housing, distribution and professional services sectors. Competition law could be improved through a better leniency programme and a reduction of the domestic merger thresholds.

Education and innovation are part of the solution

Maintaining growth in living standards will require a more skilled workforce. The school system, however, is not performing as well as it could given the resources that it has. A stronger culture of evaluation would help; teachers' skills would be better used if they specialised more; gaps in their training should be plugged; and work practices should become more flexible.

Getting better results from the research budget would also be useful. One way is to shift further towards a contestable performance-based funding mechanism and to tie funding to quality. The venture capital market would be boosted if tax rules were simplified and corporate restructuring procedures were eased.

This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

The economic situation and policies of Denmark were reviewed by the Committee on 29 November 2004. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 16 December 2004.

The Secretariat's draft report was prepared for the Committee by David Rae and Martin Jørgensen under the supervision of Peter Jarrett.

The previous Survey of Denmark was issued in July 2003.

This Economic Survey may not include an examination of certain policies that are relevant to the country but fall within the competence of the European Community. While some of these policies may be examined in the Survey of the Euro Area, other policies may not be examined by the EDRC, as the European Commission currently maintains that the Economic Surveys should be limited in their coverage. No limits apply to the policies that can be covered in the Economic Surveys of other OECD countries.

The Commission and the Member States of the European Union are working actively on ways of reviewing EC and EU wide policies within the context of the EDRC.

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Assessment and recommendations

The key challenge is to maintain growth in living standards while preserving the welfare state

Measured by per capita incomes, Danish living standards have been in the top handful of OECD countries for several decades. Moreover, Denmark has paid great attention to its social goals such as income equality and environmental sustainability. Twenty years of comprehensive reforms have put the economy on a robust footing without any short-term macroeconomic imbalances. Hence, policymakers – and this *Survey* – have been able to focus mainly on the long-term issues rather than day-to-day cyclical pressures. Denmark's performance has been built on the foundation of a well-functioning job market, openness to trade and a comprehensive welfare system based on the principle of equal access to social services at minimal cost to the user. Retaining this social model is not impossible, but it will become harder as the population gets older. Some tough choices may have to be made. By 2040, a third of the adult population is expected to be older than 62, the age at which the typical Dane retires today. This will have two major impacts. First, a shrinking workforce will make it more difficult to keep output growing at the pace that has been the norm until now. All else equal, demographic effects will drag the growth rate of per capita GDP to around ½ per cent per annum within a couple of decades, although the decline in consumption growth should be cushioned to some extent as people draw down their savings. Second, an increase in the number of elderly people will raise the demand for health and welfare services, putting public finances under considerable strain. Faced with these pressures, the key challenge will be to maintain growth in living standards while preserving the welfare state. There are two main ways to go about this:

- *Lift labour supply*. More labour supply (per capita) obviously helps raise average incomes. But it also makes the welfare system more affordable by expanding the tax base and reducing income transfers.
- *Boost productivity growth*. Productivity is the key determinant of living standards in the long term. Moreover, the quantity of public services that Danes will be able to enjoy will very much depend on efficiency improvements in the public sector.

With an ageing population, the welfare system will not be affordable without further policy reforms

Numerous studies have tried to estimate how large the impact of ageing on public finances will be. While they differ in the details, they all arrive at the same conclusion: the current welfare system will not be affordable unless further policy reforms are made. In all scenarios, including the government's, the required increase in the budget surplus – through some combination of lower spending, higher taxes and greater labour supply – is large: estimates range from 1.5 to 4 percentage points of GDP. The country therefore faces

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some difficult choices. First, raising income taxes would be costly, since higher marginal taxes would reduce average working hours from their already low level: indeed, high taxes have already driven down working hours by making work unattractive relative to leisure. Second, it would be hard to boost labour supply without cutting back on parts of the system itself. However, removing elements of the welfare state is difficult since it has broad public support. Third, there is a tradeoff between welfare services now and in the future. For example, there is sure to be demand for upgrading health care as new medicines and technologies are developed, and it is unrealistic to assume that patients will be asked to pay the full cost of these services. Today's workers therefore have the option to spend less on welfare now so as to leave more room for service improvements later on.

Fairness between generations needs to be considered

Paying down debt today is a prudent way of dealing with these pressures, partly because demographics are now favourable and partly because some degree of pre-funding is appropriate. However, fairness across generations needs to be considered when choosing the optimal pace of debt reduction. In health care for example, the impossibility of refusing care or relying on large out-of-pocket payments implies it would be equitable for today's workers to pre-save to cover the extra services they are sure to receive later in their lives. In contrast, it may not be fair to ask the present generation to save so that future generations, who will live longer, can spend a larger part of their lives receiving a public pension. In such cases, the pre-saving strategy should be supplemented with measures that reduce the cost pressures themselves.

The core parts of the welfare state should be defined

It would therefore be useful to have a public debate about what are the core welfare services that should be provided with public funding and equal access. Currently the state delivers a variety of income transfers to the needy (such as the disabled) and the not-so-needy (tertiary students and healthy older workers, for example). It also funds a plethora of welfare services, ranging from the essential (such as emergency medical care) to the more peripheral (such as sport and leisure facilities). In the long term it may be hard to avoid shifting towards more market-based funding instruments, such as user charges and private insurance, for some of the lower-priority services.

Progress towards fiscal sustainability has been slow

The government's approach to sustainability has emphasised pre-funding as much as possible of the future rise in ageing-related spending. It has thus focussed on paying down debt and encouraging a greater supply of labour before the ageing problems begin to bite. Its *2010 Plan* aims to secure fiscal sustainability by keeping the structural budget balance between 1½ and 2½ per cent of GDP on average until 2010. To achieve this, ambitious targets for employment and public consumption have been set (lifting the employment rate to the highest level in history and restraining real public consumption growth to 0.5%

per year until the end of the decade). While there has been some progress towards these goals, the so-called "window of opportunity" is shrinking fast and reaching the targets is becoming increasingly difficult. In structural terms, the surplus in 2004 is expected to be around 1¼ per cent of GDP, slightly below the target range, and it is likely to fall further unless public spending remains very restrained and future reforms succeed in substantially boosting labour supply.

The tax freeze has been helpful but should be made more flexible

There has been some success in reining in expenditure growth. This has been partly thanks to the tax freeze, applying to all levels of government, that was introduced in 2002. However, meeting the labour supply objective might be easier if the tax freeze were more flexible. Its main drawback is that it locks in certain inefficiencies in the tax structure. It would be better to allow revenue-neutral tax reform packages, which would create the opportunity to reduce marginal income taxes and shift towards other tax bases, thereby improving work incentives. The downside, however, is that a more flexible tax freeze would be less transparent.

Denmark will not be able to afford one of the world's most generous welfare systems unless it also has one of the highest labour supplies

Spending restraint will not be sufficient unless labour supply can be raised as well. While the employment rate is already impressive, annual working hours are among the lowest in the OECD. Total labour supply is therefore a little below average, and measures to raise working hours are needed. But there are also pockets where employment could be lifted at the margins, especially older workers, students and – to a lesser extent – immigrants. Many useful steps were taken in 2002's *More People in Work* package, but there is still more to be done.

Working hours are low, with high income taxes being an important explanation

The relatively low number of working hours per year has several facets: the normal workweek is short, vacation allowances are generous, and absences due to sickness and parental leave are extensive. Boosting average working hours by just 1½ hours a week would be enough to meet the sustainability objectives of the *2010 Plan*.

- High marginal tax rates are a contributing factor. The highest statutory rate of 63% applies from around the average wage, so nearly 40% of fulltime employed people are in this bracket. Tax cuts in 2004 reduced *average* rates a little, but their main impact was to shift people from the middle to the lowest bracket, thereby reducing marginal tax rates for this group. However, flattening the tax scale by cutting the top tax rate or raising the threshold at which it applies would strengthen work incentives more, *krone*-for-*krone*, than tax cuts at the lower end of the scale. It would be best to do this as part of a revenue-neutral package (*e.g.* reducing progressive income taxes and raising proportional taxes such as indirect or property taxes) so that the long-term fiscal outlook is not worsened and the income distribution remains broadly in line with society's preferences. Tax cuts could also be paid for by lower expenditure.

- Sickness absence rates are low by Scandinavian standards but are above the European average. Changes were made in 2003 in order to reduce long-term absences. For example, municipalities now pay more of the cost of sickness benefits. But it would also help if medical assessments were obligatory for the receipt of public benefits (*i.e.* after the first two weeks), and short-term absences might be reduced if the first couple of days were unpaid or paid at a lower rate.
- The parental-leave scheme is one of the world's most generous, and became more so in 2002. Average leave duration is now 40 weeks. The government should consider whether it has reached the point where the costs outweigh the benefits and should avoid any changes that increase the use of the system.

The average retirement age needs to rise

The voluntary early retirement pension (VERP) is an expensive programme that gives people a strong incentive to leave the workforce in their early sixties. The scheme was tweaked in 1999 to encourage people to delay retirement until 62, but the implicit tax on staying at work beyond age 60 remains substantial nonetheless. The best solution would be to abolish the VERP altogether, since people with genuine disabilities or reduced work capacity can be looked after under other programmes. This would bring the government a long way towards achieving fiscal sustainability and may even create room for tax cuts. However, if the first-best solution is not acceptable, then some second-best alternatives should be considered:

- Changing the VERP's rules so that workers must contribute for 40 years before becoming eligible for the full benefit. This would exclude most people with a university education, going some way towards returning the system to the group of blue-collar workers for whom it was originally intended (while recognising that keeping the scheme for people who leave education early reduces incentives to invest in human capital, especially for the elderly).
- Increasing the bonus for late retirement as the actuarial adjustment to the VERP is low by international standards. However, the impact on public finances of such a reform is uncertain. Since May 2004 there has been an actuarially fair adjustment if people postpone receiving their old-age pension beyond the age of 65. In principle this is a step in the right direction but will surely have a very limited impact when a clear incentive to retire before 65 is maintained.
- Progressively raising the contribution rate so it moves towards a fully-funded defined-contribution scheme. Going all the way would entail a quadrupling of the contribution rate over time.

In addition, the entry age for all parts of the pension system could be tied to life expectancy. This would make the system less costly in future, but more importantly it would make it more robust. In particular, it would help insulate the system from demographic surprises. Danish lifespans have been well below those in other Nordic countries, but they began to catch up remarkably quickly in the 1990s. If they rise by more than is currently projected, the long-term fiscal situation could be much worse.

Tertiary students would enter the workforce earlier if they contributed more to the cost of their education

There is also room to increase labour supply among young people and improve equity in the process. A large proportion of youths are still studying in their late twenties because they start late (the median entry age is 23) and take a long time to finish. The entry age could be lowered by restricting the 10th form to only those who need it and by reducing social support for young people during the gap between high school and university. Study paths are drawn out because tuition is virtually free and income support is generous. The introduction of tuition fees, backed by an income-contingent loan scheme, would encourage students to finish faster, choose courses more relevant to their future careers and improve equity because the wealthier are more likely to go to university. However, Denmark cannot go too far down this road because the compressed wage distribution already reduces the private rate of return to higher education. Nonetheless, it does have *some* room to move, especially if it led to earlier entry into the professional workforce (as that would increase the payoff from getting a degree). Other options include cutting or changing the profile of student grants (more earlier, less later), offering loans rather than grants to people taking too long to finish and eliminating the option to take what amounts to a one-year paid holiday during their course.

The employment rate of immigrants is low, but raising it by much will be difficult

The employment rate of immigrants falls well short of that of native Danes, largely because many migrants are low-skilled. Apart from the obvious language problems, these migrants face several barriers to integration. First, they find it hard to price themselves into a job because the minimum wage is high. To reduce this problem, the social partners should use their option to lower minimum wages for the unskilled. Second, they are crowded out of home-service jobs by skilled Danes who, because of high tax rates, prefer to do their own work at home. This is another reason why it would be useful to continue cutting income taxes so that highly educated workers do jobs commensurate with their skills. Third, generous income support lessens the incentive to find work. Since 2003, new immigrants and returning Danes have faced a seven-year qualifying period before receiving full benefits. This increases their work incentives, but a similar approach could be taken with all those who are eligible only for social assistance (cash benefits).

Productivity growth has been below average

The second way to deal with the challenge of maintaining growth in living standards is to boost productivity growth and innovation. Although the level of productivity is near the top of the OECD rankings, Denmark's lead has been eroded to some extent. Growth in output per hour since the mid-1990s has been below the average of OECD countries, and a large part of the labour productivity growth that has occurred seems to have been driven by capital deepening. Maintaining its leading position requires boosting competition, improving the education system and removing barriers to entrepreneurship and innovation.

More competition in public services should be introduced

The extent of efficiency improvements in the public sector will influence how much pruning of the welfare state may need to be done in the future. Opening up to competition can be a powerful way of delivering these productivity gains. The government has been trying to encourage competition and free choice in many public-sector activities, but municipalities (who provide most public services) have been slow to adapt. There are several ways to encourage all levels of government to make greater use of markets and for private companies to get involved:

- *Remove unnecessary restrictions*. Contracting out is either banned or restricted to non-profit operators in some sectors or there are overly strict rules on staff qualifications and the way services should be delivered.
- *Level the playing field*. Inadequate accounting systems sometimes lead local governments to set prices below costs (*e.g.* because depreciation is ignored). Guidelines on measuring costs should be clarified and full-cost accounting implemented more quickly. VAT rules also need to be harmonised between the public and private sectors, and there are ongoing efforts to do so. Moreover, municipalities have easier access to subsidised labour on activation schemes, giving them an unfair advantage over private firms.
- *Boost obligations*. Under the government's "challenge right", private firms can bid for the right to produce certain public services. This policy has not proved successful, with few offers having been received. It should be supplemented with an obligation to tender (for certain services, above a reasonable threshold) and by a more widespread use of vouchers. Outsourcing might be encouraged if some portion of central government funding were used to reward municipalities that manage to lower their unit costs. It would also help if the "free choice" policy was expanded into new areas; the government has recently proposed to do so for childcare.
- *Continue the privatisation programme*. Central government has few stakes in commercial enterprises, and its ownership will soon halve with the sale of its natural gas and television companies. Local governments, however, retain major investments in utilities, partly because receipts from asset sales are partially taxed away by central government (although the rules were eased and clarified in 2003).

The proposed reform of local government structure should help bring about more competition

Local government structures will be reformed in 2007. The number of municipalities will be more than halved to around 100, while the health-care sector will be run by five regional authorities (down from 14). This may deliver some efficiency gains due to economies of scale. But the biggest benefit will probably come from better quality and management that is more professional. That in turn should boost the chances of competition and market mechanisms becoming more common in the public sector, since many municipalities are so small that private firms are not interested in servicing them, and the transaction costs of tendering can outweigh any cost savings.

The competition framework is sound, but it could be implemented better

Greater competition would also be useful in the business sector. Competition law has recently been modernised, fixing most of the problems highlighted in the OECD's *Regulatory Reform Review* that was published in 2000. It is now broadly in line with EU practices, and a clear "competition culture" is emerging. The main gap in the toolbox is the lack of an effective leniency programme, making it harder to bust cartels. A second problem is that merger control rules are too narrow. The dominance test was changed this year to be consistent with the EU's new rules, but the merger thresholds are much higher than in other similar-sized economies and should be reduced. The implementation of the law, however, is hampered by too many agencies being involved in the process. In particular, there is probably no need for two decision makers sitting between the *Competition Authority* and the courts. But if they are both to be kept, they should be reformed. The first of these bodies, the *Competition Council*, is too big and is not well suited to deal with merger decisions. The second, the *Appeals Tribunal*, should be strengthened, and it needs to explain its decisions better in order to add to the body of case law.

Continued reform of network industries would help

The state of competition in network industries varies across sectors. Progress has been good in telecommunications and to some extent in the electricity sector. But deregulation is in its infancy in gas markets and is almost nonexistent for the other networks.

- A reform package in 2004 addressed most of the remaining problems in *electricity*, but further steps would enhance competition even more. These include expanding capacity on the often congested links with neighbouring countries and making taxes *ad valorem* rather than a fixed amount so that competition has greater scope to drive down retail prices. A notable feature of the reform was an attempt to restructure "green" taxes so that environmental objectives might be achieved in less costly and more market-friendly ways. An equally rational approach to sustainable development should be taken in other areas, including water sanitation and waste management, where this goal is pursued in overly expensive ways.
- Prospects for competition in the *gas* sector look brighter now that the transmission network has been separated from the main producer (DONG). The government should go ahead with its plans to privatise DONG and should ensure there are no barriers to foreign suppliers entering the market.
- *Telecommunications* deregulation started early and has gone far. The main weakness is high broadband prices, possibly because users with a shared telephone and broadband connection pay twice at the margin to rent the raw copper. A change in price regulations would avoid this. The telecoms regulator is currently looking into the reasons for high broadband prices and possible solutions.

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Some unnecessary regulations are holding back competition in other sectors

Turning to other sectors, competition is inadequate in the *construction* industry due to restrictions on who can do what work and because standards for building materials are not harmonised within EU countries. Prices are very high as a result. The markets for rental and co-operative *housing* are malfunctioning, and rent controls should be removed (with appropriate safeguards and a sensible phase-out period). There are better ways than rent controls to deal with the government's social concerns, such as accommodation benefits. Various restrictions in *professional and financial services*, including pension funds, could be loosened. Liberalisation of the *taxi market* is called for, as there is virtually no price or quality competition. The liberalisation of *shop opening hours* should also be completed. Finally, the "needs test" in the Planning Act should be abolished as it is particularly harmful to competition, and its main purpose, balancing environmental and competition goals, can be pursued in less damaging ways.

The school system needs more focus on outcomes

Boosting productivity also involves lifting the skills of the workforce. The public school system, however, is not performing well. It is delivering mediocre results at great expense. It is also failing, by Nordic standards at least, in its goal of delivering equitable outcomes. Solutions are to: create more of a culture of evaluation of both students and schools, and push pupils harder to excel; identify students with special reading difficulties earlier; increase teaching hours; allow teachers to specialise more and plug the gaps in their training; shift resources from non-teaching to teaching staff; and make work practices more flexible.

Denmark does not make the most of its innovation activity

After lagging for many years, most indicators point to a pickup in innovation (both discovery and diffusion). The weak spots, however, are insufficient commercialisation of research and minimal co-operation between the business and public sectors. Turning research into commercial products has been hampered in the past by meagre incentives and too much red tape. A reform in 2000 improved technology transfer, but research funding is still largely institution-based with little explicit link to quality. It would help if public financing moved further towards a contestable, performance-based allocation model. Private finance can also be difficult to find. The venture capital market is tiny, with banks providing the lion's share of business capital. Pension and insurance funds are reluctant to get involved because of complicated tax rules, although the government is trying to simplify them. Bankruptcy and corporate restructuring rules may also be holding back entrepreneurship and venture activity, as they make it harder to restructure or exit from a failing firm. Finding the optimum in this area is difficult, but Denmark's debt discharge rules in particular are much stricter than in most countries and have probably reached the point where they are hurting rather than helping entrepreneurship.

Summing up

Denmark has made solid progress in the policy reforms needed to maintain its high income level and to safeguard its inclusive, egalitarian society. But more has to be done in the areas of improving public finances, boosting labour supply and making the economy more dynamic, competitive and innovative. Perhaps the most important task overall will be to change public expectations about the importance of work *versus* leisure in providing the increases in national output required to maintain a comprehensive welfare state.

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Chapter 1

Key challenges

This chapter discusses the long-term challenges facing the Danish economy. It reviews recent performance regarding per-capita incomes, productivity growth and income inequality. The fundamental challenge is to maintain growth in living standards while preserving the welfare system. The chapter compares the government's and the Welfare Commission's estimates of fiscal sustainability in the face of an ageing population. The first way to meet this challenge is to increase labour supply. The areas where employment can be increased are identified (in particular, reducing early retirement and getting students into the workforce more quickly). Denmark's low average hours of work are also discussed. The second way is to lift productivity growth and build a more modern knowledge-based economy. Some problems with the education and innovation systems are highlighted, and areas where greater competition could boost productivity – especially in public services – are examined.

Denmark has been a high-income country for several decades. In 1970, for example, per capita GDP was not far short of the level in the United States, and even though the gap with the United States has widened, Denmark has consistently remained in the top few countries in the OECD "league table". Moreover, it has combined this impressive average level of income with a high degree of income equality. Sustained poverty is almost nonexistent. This performance is built on a combination of liberal labour markets, in which few people are shut out of the job market by restrictive "employment protection" legislation, a *relatively* small number of people who fail badly at school and a generous welfare system. Its welfare model is based on the principles of providing comprehensive income support and equal access to a wide range of social services at minimal cost to the user.

Maintaining this social model will become increasingly difficult as the population ages. Demographic forces will make it harder to maintain growth in living standards because the workforce will be shrinking and more people will be employed by the government to provide services that have inherently low productivity growth. Ageing will also squeeze public finances, reducing the number of people funding the welfare system but increasing the demands placed upon it. The key long-term challenge is to ensure that incomes continue to rise for all Danes despite ageing, while ensuring that the welfare state can be sustained. This means improving public finances in the immediate future and finding ways to make the welfare system more robust to demographic surprises. It also means rethinking what are the core welfare services that should be provided with public funding and equal access. There are two highly-interdependent ways of dealing with this challenge:

- *Lift labour supply*. Total labour supply is a little below average. If significant increases in taxation are to be avoided, Denmark will not be able to afford one of the world's most generous welfare systems unless it also has one of the highest labour supplies. A strong labour market performance is needed in order to provide the tax base to support high public expenditure, especially in a world where corporate and capital taxation are increasingly constrained by global competition.
- *Boost productivity growth*. Denmark's *level* of productivity is near the top of the OECD rankings, but its lead is being eroded because productivity growth has been lower than in many other countries. In addition, the industrial structure has changed less than in some other economies. There are several aspects to this goal: building a more competitive business environment, improving the education system, and encouraging entrepreneurship and innovation.

Policymakers have been focusing on these challenges for many years. The improvement in public finances in the 1990s was primarily aimed at getting the country ready for the pressures it will face as the "baby boomers" retire. It has been publishing long-term fiscal projections on a regular basis since the late 1990s in an attempt to lay out clearly what needs to be achieved before these population pressures begin to be felt. A series of reforms to pensions, labour markets and taxation have mostly been consistent with the aims of improving fiscal sustainability and boosting labour supply. There has also been a steady stream of productivity-enhancing reforms. A critical assessment might be that, although these measures have improved the performance of the economy, they have not gone far enough. There are some obvious reform options that governments have not been willing to take up. To their credit, however, there have also been very few reforms over the past decade that have moved in the wrong direction.

The rest of this chapter reviews Denmark's economic performance, then expands on the nature of these long-term challenges before giving an overview of the strengths and weaknesses in each of these areas. The remaining chapters of the *Survey* try to develop specific recommendations for achieving them.

Economic performance over the past decade

For many years, Denmark has been near the top of the OECD ladder…

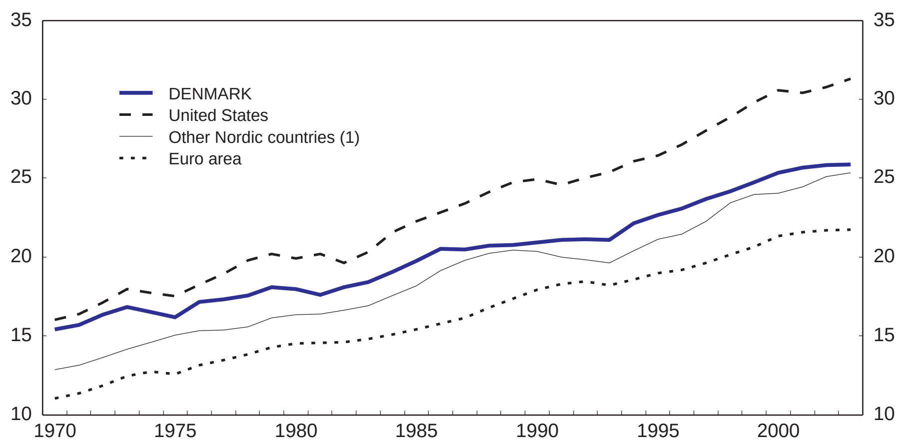
GDP per person has been above the OECD average for several decades (Figure 1.1). By 2004, it was estimated to be 11 per cent higher than the OECD average (excluding the new member countries from Eastern Europe). This income gap is comprised of a high level of hourly productivity and a slightly-below-average level of labour utilisation. While the employment rate is high, hours worked per employee are low, so the total number of hours worked per capita each year is about 5% below the OECD average.

… and has maintained an even income distribution…

Denmark is one of the few countries that combines high average incomes with an even income distribution. Annual incomes are distributed more equally than in any other OECD nation, partly because wage dispersion is low, but mainly because of income redistribution through the tax and benefit systems (Figure 1.2). The income distribution is even more equal when measured over a lifetime: the average person in the top fifth of the distribution earns about 80% more over their lifetime than someone in the bottom fifth. Persistent

Figure 1.1. **Real GDP per person**

Thousand euros, 2003 prices and PPPs

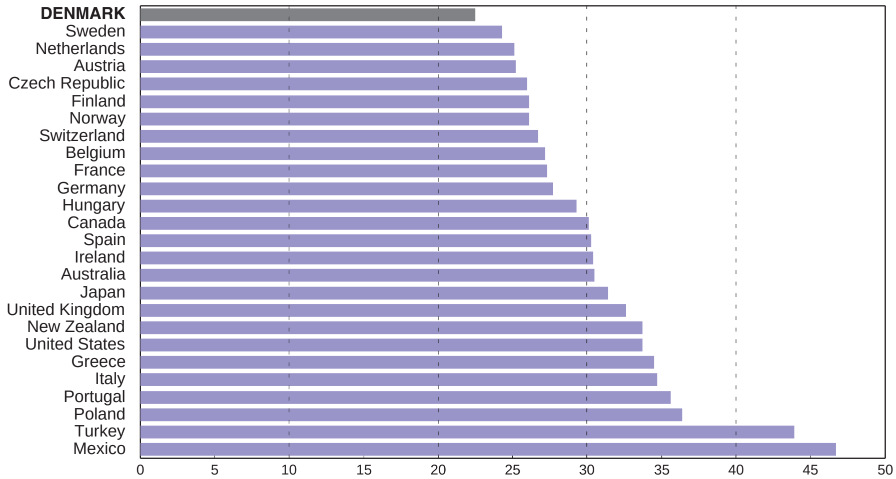


1. Weighted average of Finland, Iceland, mainland Norway and Sweden.

Source: OECD Productivity Database (*www.oecd.org/statistics/productivity*).

Figure 1.2. **The income distribution is relatively equal**

Gini coefficient, 2000



Source: Förster and Mira d'Ercole (2004), "Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s", OECD, Paris.

poverty over a full lifespan is almost nonexistent (Table 1.1). There has however been a small increase in income inequality since the mid-1990s, with high-income earners gaining and middle-income earners losing in relative terms (the income share of people in the bottom quintile has not changed). In contrast, shifts in the distribution of wealth have been more dramatic. Since the mid-1990s, Denmark has had one of the largest pro-rich shifts in the distribution of capital income (a rough proxy for financial wealth).[1] Capital income is now spread about as equally as in the "average" OECD country, although it remains substantially more evenly distributed than in Sweden and Norway (Förster and Mira d'Ercole, 2004).

... but its lead is being eroded because productivity has been growing more slowly than elsewhere...

In cumulative terms, output per person has grown around 6% less than the OECD average since 1995. Relative *incomes*, on the other hand, have fallen by less as the terms of trade have been favourable over that period. But if this trend in output growth were to continue, Denmark would slip five places in the OECD rankings over the next decade. Part of the reason for the below-average growth in GDP per capita is that labour input (hours worked per person) has picked up by less than in the average OECD economy since the mid-1990s (Table 1.2). More worryingly, both labour and multifactor productivity growth appear to have slowed. Since 1995, growth in output per hour is estimated to have been

Table 1.1. **There is virtually no poverty when considered over a full lifetime**

Percentage of median lifetime income	Percentage of people with a lifetime income less than that level
50	0.1
60	0.6
70	3.6

Source: Ministry of Finance, *Lavindkomstgruppen – mobilitet of sammensætning*, 2004.

Table 1.2. **Output and productivity growth**

Annual average percentage change

	Denmark	OECD[1] average	Euro area average	Average of other Nordics	Australia	Canada	Finland	France	Germany	Ireland	Italy	Japan	Nether-lands	New Zealand	Norway	Spain	Sweden	United Kingdom	United States
GDP per capita...																			
1970s	**1.5**	2.7	3.0	3.5	1.3	2.7	3.2	2.7	2.6	3.2	3.0	3.2	2.1	0.6	4.2	2.5	1.6	1.8	2.2
1980s	**1.5**	2.4	2.3	2.1	1.5	1.5	2.6	1.9	2.0	3.3	2.0	3.3	1.7	1.2	2.2	2.5	1.9	2.4	2.2
1990-1995	**1.6**	1.4	1.5	0.3	2.0	0.6	–1.4	0.7	. .	4.0	1.3	1.2	1.4	1.8	3.2	1.2	0.1	1.4	1.2
1995-2003	**1.7**	2.3	2.4	2.7	2.5	2.5	3.3	1.7	1.1	6.6	1.3	1.0	1.8	1.9	2.2	2.5	2.4	2.6	2.2
... *equals* labour productivity (GDP per hour worked)...																			
1970s	**2.8**	2.9	3.7	3.8	1.7	1.7	3.4	3.6	3.6	4.6	4.0	4.2	4.0	0.4	4.6	4.5	2.3	2.7	1.6
1980s	**2.0**	2.1	2.4	1.9	1.2	1.0	2.8	2.9	2.3	3.7	2.1	3.4	2.3	0.6	2.6	3.1	1.2	1.9	1.4
1990-1995	**1.9**	2.2	2.7	1.9	1.9	1.3	2.5	1.9	2.6	3.6	3.1	2.3	2.1	0.4	3.5	2.3	2.1	2.7	1.2
1995-2003	**1.4**	2.0	1.8	2.5	2.4	1.7	2.6	2.0	1.5	5.1	0.6	2.1	0.4	1.3	2.4	–0.2	2.3	2.2	2.2
... *plus* hours worked per capita																			
1970s	**–1.3**	–0.7	–1.1	–0.1	–0.3	0.9	–0.2	–0.9	–1.0	–1.5	–0.9	–0.9	–2.0	0.3	–0.4	–2.0	–0.7	–0.9	0.6
1980s	**–0.4**	0.1	–0.4	0.3	0.2	0.5	–0.2	–1.0	–0.3	–0.4	0.0	–0.1	–0.6	0.6	–0.4	–0.5	0.7	0.5	0.8
1990-1995	**–0.3**	–0.7	–1.2	–1.3	0.2	–0.8	–3.9	–1.2	–0.6	0.5	–1.9	–1.1	–0.7	1.3	–0.2	–1.1	–2.0	–1.3	–0.1
1995-2003	**0.3**	0.3	0.6	0.4	0.0	0.8	0.7	–0.3	–0.5	1.5	0.7	–1.1	1.4	0.4	–0.2	2.7	0.0	0.5	–0.1
Contribution to growth from investment in capital[2]																			
1985-1990	**1.2**	1.1	1.1	. .	0.9	1.5	0.9	0.9	. .	0.5	1.1	1.3	1.0	. .	. .	1.9	1.3	1.0	0.9
1990-1995	**0.9**	1.0	0.9	. .	0.7	1.1	0.4	0.9	1.2	0.5	0.8	1.3	0.9	. .	. .	1.6	1.0	1.0	0.7
1995-2002	**1.5**	1.1	1.1	. .	0.7	1.2	0.7	0.8	0.8	1.4	1.0	1.1	1.2	. .	. .	1.3	1.5	1.3	1.1
... *of which*: ICT capital[2, 3]																			
1985-1990	**0.6**	0.4	0.3	. .	0.3	0.4	0.9	0.2	. .	0.2	0.3	0.3	0.3	. .	. .	0.5	0.5	0.4	0.5
1990-1995	**0.4**	0.3	0.2	. .	0.3	0.3	0.2	0.1	0.3	0.1	0.1	0.3	0.3	. .	. .	0.3	0.4	0.3	0.5
1995-2002	***0.8***	0.5	0.5	. .	0.6	0.6	0.5	0.3	0.3	0.6	0.4	0.5	0.6	. .	. .	0.4	0.9	0.7	0.8
Multifactor productivity[4]																			
1985-1990	**0.0**	1.2	1.6	. .	0.5	–0.5	2.1	1.8	. .	3.2	1.2	3.0	0.7	. .	. .	0.7	0.2	0.7	0.9
1990-1995	**1.0**	1.1	1.3	. .	1.8	0.4	1.3	0.8	. .	3.3	2.0	0.8	0.7	. .	. .	0.6	0.5	1.3	0.8
1995-2002	***0.1***	1.2	1.3	. .	2.1	1.0	*2.6*	1.4	0.8	*4.4*	*0.1*	0.6	*0.9*	. .	. .	*–0.8*	*0.7*	*1.0*	1.2

1. Average of 20 countries (excludes Austria, Czech Republic, Greece, Hungary, Luxembourg, Mexico, Poland, Slovak Republic, Turkey). The OECD, Euro and Nordic averages are unweighted (simple) averages.
2. Capital stock measured by flow of capital services.
3. ICT capital services are based on harmonised deflators.
4. Figures in italics are 1995-2001.

Source: OECD Productivity database (*www.oecd.org/statistics/productivity*).

well below the OECD average and a full percentage point below the other Nordic countries (although international comparisons can be distorted by different treatment and sizes of the hard-to-measure public sector[2]). Part of the gap may be explained by different business cycles over the period (especially as the other Nordics bounced back from a much deeper recession), but even cyclically-adjusted figures show no signs of the productivity pick-up that many OECD countries have enjoyed.

The bulk of labour productivity growth since 1995 has been generated by capital deepening. Over that period, investment in physical capital has made a bigger contribution to GDP growth than in any other country for which there are comparable data (Table 1.2). Indeed, for many years the Danish economy has been unusually capital intensive (*i.e.* the capital-output ratio is high), implying that investment needs to be high in order to maintain the capital stock. This high capital intensity appears to be an economy-wide phenomenon, rather than simply reflecting the fact that Denmark specialises in capital-intensive industries. While cross-country comparisons are not particularly reliable, the limited available information suggests the capital-output ratio is high in a wide range of sectors. It is especially elevated in utilities and in the industries that in most countries employ low-wage, low-skilled workers (such as textiles, retail trade and financial services).[3] This suggests that relatively generous wages for such workers may have led firms to substitute capital for labour.

Almost all the aggregate multifactor productivity growth over recent years (*i.e.* 1997-2002) appears to have been generated by efficiency improvements within firms that existed over the whole of that period (Table 1.3). This differs from some other countries, in which around half of aggregate productivity growth reflects dynamic interactions *across* firms: either varying market shares (more productive firms gaining market share), or by business

Table 1.3. **Decomposition of productivity growth**

Annual average growth in multifactor productivity, per cent[1]

	Total	Contribution from: Productivity growth within firms	Changing market shares among existing firms	Entry of new firms	Exit of old firms
Total	**5.3**	**5.3**	**–0.8**	**1.1**	**–0.3**
Agriculture	**5.3**	**4.4**	**–0.2**	**1.3**	**0.0**
Manufacturing	**2.3**	**1.6**	**0.4**	**1.2**	**–0.9**
Food and beverages	–3.1	–0.3	0.8	0.4	–4.0
Chemicals	0.5	1.6	–0.4	–0.8	0.1
Metal industries	6.7	6.1	–1.0	2.0	–0.5
Machinery and equipment	5.0	2.6	0.3	2.0	0.1
Services	**7.5**	**7.9**	**–1.7**	**1.1**	**0.2**
Construction	3.1	1.3	1.5	0.0	0.3
Wholesale trade	5.4	4.4	–0.1	1.5	–0.4
Retail trade and repairs	7.1	8.1	–0.9	–0.1	0.0
Transport	0.0	–1.7	2.4	–0.5	–0.3
Financial services and research	24.2	22.8	–6.2	6.8	0.8

1. Multifactor productivity estimates are based on gross output from a firm-level database over the period 1997-2002. They are not comparable to national accounts estimates.

Source: Jensen, Claus Birn and Mette Bach Treppendahl (2004), "Dynamik, iværksættere og produktivitet", Økonomi- og Erhvervsministeriets arbejdspapir 1/2004, Copenhagen.

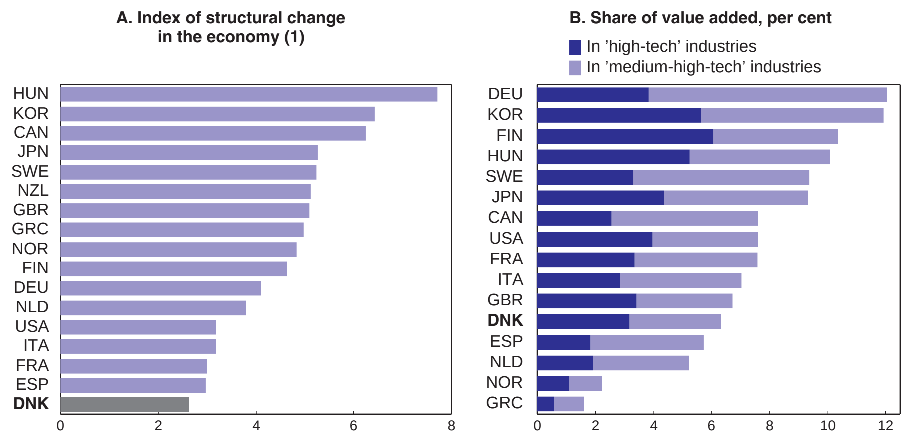
births and deaths (productive firms entering the market, unproductive ones leaving it; see Bartelsman *et al.*, 2003). Curiously, the process of firm exits seems to have *reduced* productivity growth, implying that enterprises that left the market were, on average, more productive than those that stayed. The reallocation of market shares has also had a perversely negative impact – firms with the fastest productivity growth have tended to lose market share. One explanation is that there has been too much capital deepening, so while labour productivity has gone up, total factor productivity has fallen. However, an alternative explanation is that the normal forces of competition in the business environment are not working as well as they should be (however, it should be noted that these conclusions are only tentative since they are based on a sample of firm-level data where some of the variables may not be measured accurately).

... partly because it remains a relatively "low tech" economy

The transition to the "new economy" appears to have been slower than in many other small countries. Despite widespread policy reforms, Denmark's industrial structure is broadly similar to what it was in 1992 in the sense that the share of value added generated by each industry has not changed by much (Figure 1.3, Panel A). In particular, there has been relatively little shift towards the "high tech" sectors (Figure 1.3, Panel B).

Having a small ICT-producing industry may not be a bad thing, since the benefits of ICT are increasingly accruing to *users* rather than producers of the technology. But performance in this area appears mixed. Danish firms are leaders in their use of the Internet and have been heavy investors in ICT equipment (Table 1.2). Nonetheless, there are no clear signs at the macro level of a pick-up in labour productivity in the service sectors that are commonly thought to benefit most from new technologies (Figure 1.4).

Figure 1.3. **The pace of structural change has been slow**



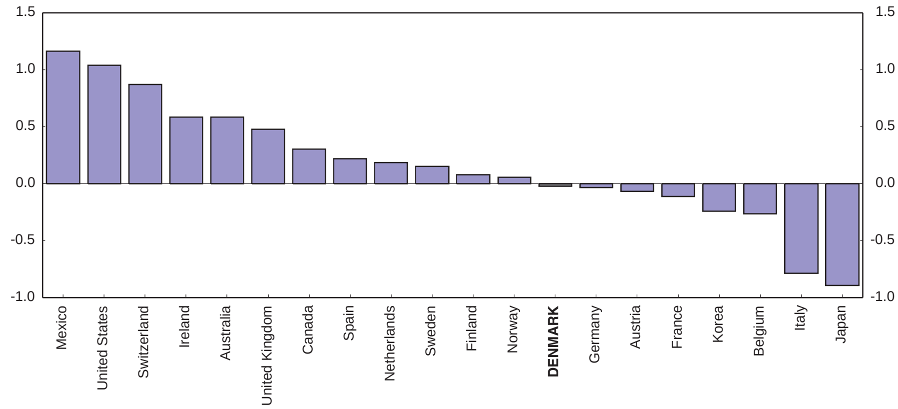
1. The structural change index measures the average rate of change of the share of value added generated by each sector between 1992 and 2002 (or the closest possible years), *i.e.* if Δs_i is the change in the value added in sector *i* between 1992 and 2002, then the index is

$$\frac{1}{45}\sum_{i=1}^{45}\left|\Delta s_i\right| \;/\; (2002-1992)\times 100$$

Source: OECD, STAN database.

Figure 1.4. **Pick-up in labour productivity in ICT-using service sectors**

1990-95 to 1996-2001, per cent



Note: The vertical axis measures productivity growth in ICT-using service sectors in 1996-2001 minus productivity growth in the same sectors in 1990-95.

Source: *OECD Science, Technology and Industry Scoreboard*, 2003.

The ageing challenge: to maintain growth in living standards while preserving the welfare state

The starting point: the current cyclical situation and the medium-term outlook

The economy was nicely in balance in 2002, with output at its potential level, an unemployment rate of 4½ per cent, a budget surplus of 1.6% of GDP and a current account surplus of 2% of GDP, and core inflation around 2½ per cent per annum. In 2003, however, economic activity was dragged down by the sluggish global economy. Merchandise export volumes actually fell that year, for the first time since 1975. This decline was largely due to lower purchases by Germany and the United Kingdom, with the latter being due to the appreciation of the *krone* against the pound. Consequently, GDP growth in 2003 was just ½ per cent, while the unemployment rate jumped to nearly 6%. By the middle of 2003, output was nearly 2% below its potential level, which in turn helped bring the annual inflation rate back down below 2%.

Household consumption had started to rebound by the end of 2003 in anticipation of the tax cuts that were due on 1 January 2004. Indeed, fiscal stimulus has played a part in the rebound that the economy is currently experiencing and will continue to be a driving force over the next couple of years. As well as the tax cuts that people were already expecting, the government added some extra stimulus in March 2004 – even though it was likely that the bounce back was well under way. Specifically, they brought forward some tax reductions that were due for 2005 and beyond, and temporarily suspended contributions to the Special Pension. Export markets were also recovering throughout 2004. Looking forward, the combined impact of foreign trade, fiscal policy and low interest rates should see Denmark's output gap shift back into positive territory, well before that of the Euro area as a whole. This means that by 2006 at the latest, ECB monetary policy might be a little too loose for Danish conditions (Table 1.4), which may have to be followed by tighter fiscal policy. Even so, the difference in the cyclical position between Denmark and the Euro area seems modest and the fixed exchange rate policy works to contain inflationary developments by anchoring inflationary expectations.

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Table 1.4. **Summary of medium-term projections**

Per cent

	2002	2003	2004	2005	2006	Average 2007-10
Real GDP growth	1.0	0.5	2.4	2.7	2.6	1.7
Real private consumption growth	0.6	0.8	3.6	3.3	2.4	1.8
Output gap	0.0	–1.5	–1.0	–0.2	0.4	0.1
Employment rate (per cent of working-age population)	76.6	75.7	75.8	76.2	76.5	76.2
Core CPI inflation rate	2.5	2.4	1.5	1.7	2.1	1.8
General government surplus (per cent of GDP)	1.6	1.2	0.9	1.4	1.5	1.0
General government structural surplus (per cent of GDP)	1.6	2.4	1.3	1.3	1.3	0.9

Source: OECD Economic Outlook 76 Database.

In the long term, ageing will make it harder to maintain growth in living standards

From the starting point just described, the long-term outlook will be shaped by demographic forces. In almost all OECD countries, the retirement of the "baby boom" generation and a fall in fertility rates will lead to an increase in the old-age dependency ratio. The demographic outlook for Denmark was analysed in detail in the previous *Survey*. Since then, migration inflows have fallen because of policy changes that were designed to cut the influx of low-skilled migrants. Taking the new stance on migration into account, the ageing of the population is predicted to have the following effects:

- The working-age population is almost at its peak. It will begin to fall by 2008 and will be 10% below its current level by 2040.
- By 2040, the number of people aged 65 and over will have risen by half. Whether the old-age dependency ratio continues to rise after that depends on what is assumed about longevity (see the discussion below).
- The demographic shifts are not as extreme as in many other countries. The old-age dependency ratio is currently close to the OECD average and is expected to rise by a little less than average. All other Nordic countries will be in a more difficult position by the middle of the century.
- The overall effect of demographic forces on *labour supply* is uncertain but almost surely negative. There are several conflicting influences at play. First, participation rates drop sharply around age 60, so a substantial drain from the labour force can be expected due to the rising share of the population above that age. Second, immigrants (and to a lesser extent their descendents) have lower participation rates than native Danes. Their share of the working-age population is expected to rise, which will put downward pressure on the average employment rate. Third, average hours of work have drifted down for men, although this has been offset by more women moving from part-time to full-time employment. Fourth, the proportion of young people in tertiary education may continue to increase, removing them from the labour force for a considerable time. However, people with higher education levels tend to retire later, providing an offsetting boost to the labour force in the future.

These forces will create a considerable drag on the growth rate in the future. To estimate how large it might be, the rate of growth of GDP per person can be split into various components, including productivity, labour input and a changing age structure of the population. The age structure alone will reduce per capita GDP growth by around 0.1 to

Table 1.5. **The impact of ageing on per capita GDP growth**

Per cent per annum

	1990s	2000s	2010s	2020s	2030s
Growth rate of GDP per capita	**1.7**	**1.2**	**1.0**	**0.6**	**0.7**
Contribution from:					
Hourly productivity growth	1.6	1.4	1.3	1.1	1.0
Age structure	–0.1	–0.1	–0.2	–0.4	–0.3
Employment rate	0.1	–0.1	–0.1	–0.1	0.0
Hours worked per person	0.1	0.0	0.0	0.1	0.0

Source: OECD calculations based on DREAM population projections and STAN database.

0.2% per year in the next decade, but will have a much stronger effect in the 2020s and 2030s, when it is expected to shave 0.3 to 0.4 percentage points off the annual growth rate (Table 1.5). In addition, aggregate productivity growth will fall, all else equal, as the greying population leads to a shift in demand towards public services such as health and elderly care. This transition in economic activity will have both growth rate and levels effects. First, productivity growth in the public sector has consistently been lower than in the private sector. This partly reflects measurement problems (since it is harder to measure the output of public services), but it is partly genuine as well since there is less scope to find efficiency improvements in labour-intensive services such as elderly care. Even if it is assumed that productivity growth in each sector remains unchanged in the future, the shift towards the low-productivity-growth public sector will reduce the economy-wide productivity growth rate. A similar effect arises because the public sector (probably) has a lower *level* of productivity, so the increasing share of relatively low productivity services will also act as a drag on the aggregate growth rate.[4] All things considered, these effects could reduce the growth rate of per capita GDP to just over ½ per cent per annum within a couple of decades. This has obvious negative implications for the tax base used to fund public services, but there are at least two reasons why any decline in consumption growth may be less severe than the reduction in output growth. The first is that Denmark's terms of trade have been steadily improving since the early 1980s, and if this trend were to continue then income growth would remain a little higher than output growth. The second reason is that most households are saving while working and will have built up substantial financial assets that they can draw on in their retirement, and this should cushion the decline in incomes to some extent.

Ageing will squeeze public finances

Because of ageing, the welfare state in its current form will not be sustainable without further policy reforms. Under the government's "no policy" projections, public consumption and transfers are expected to rise by 6.2 percentage points of GDP between now and 2040 and together will account for around half of GDP (in net terms, however, the increase is about 2 percentage points less because tax revenues from tax-deferred pension schemes will increase as people draw down their private pensions). The old-age pension is responsible for 3½ percentage points of this increase, while spending on health and elderly care are also expected to rise strongly. Under this scenario, the fiscal gap amounts to 1.5% of GDP. Hence, the general government structural surplus would need to rise immediately into the range of 2½ to 3% of GDP if public finances were to be put on a sustainable track (Figure 1.5; see Chapter 2 for a detailed description of this and other scenarios). From the current situation, this could be brought about by a 3% cut in total expenditure or an

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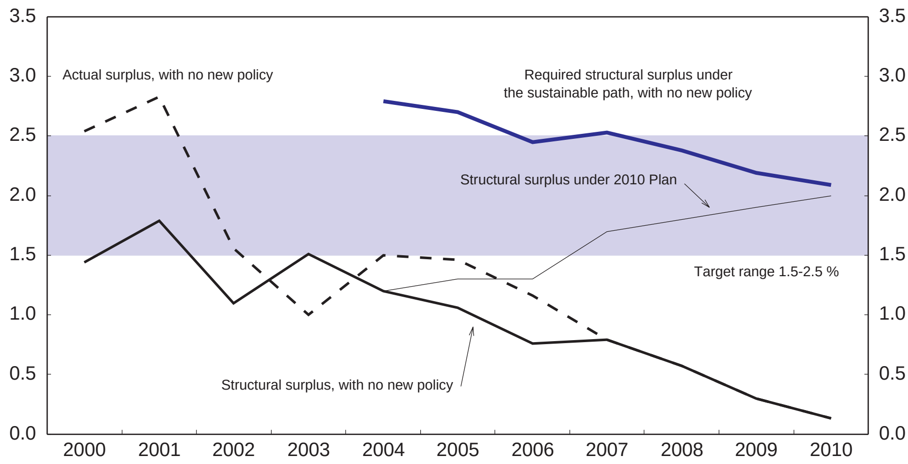
Figure 1.5. **General government net lending until 2010**

Per cent of GDP



Source: Ministry of Finance; OECD calculations based on government fiscal estimates published in December 2004.

increase in the basic income tax rate of 3.3 percentage points. But rather than raising taxes or cutting spending, the fiscal gap could alternatively be closed by boosting labour supply. The government estimates that a 1.7 percentage point rise in the employment rate (equivalent to a 2¼ per cent increase in employment) would suffice. If the required employment increase and tight expenditure control were achieved, the surplus would end up close to 2% of GDP by 2010, net debt would be paid off by 2020, and the government would retain a small net asset position thereafter.

The government's scenario is probably too optimistic, however. In particular, it is based on conservative assumptions about future life spans. Over the past generation, life expectancy has increased by less than in most OECD countries, and life spans are now several years shorter than for other Nordic people. This relative decline is largely unexplained – although it may be related to less healthy lifestyles – but, in any case, it now seems to have gone into reverse. Life spans in Denmark have begun to catch up quickly. An alternative set of projections produced by the Welfare Commission[5] builds in a bigger and probably more realistic increase in longevity, which implies that by 2050 Danes will live as long as people in the best performing countries do today. The *Commission* also assumes a lower rate of return on assets, implying that more pre-saving needs to be done for a given level of spending. Under the *Commission's* assumptions about longevity and interest rates, the fiscal situation will be much worse. They estimate the fiscal gap to be 3¾ per cent of GDP, requiring, for example, an increase in the basic income tax rate of more than 8 percentage points.

There is uncertainty not just about how long people will live, but about how much it will cost to support them if they live longer. There is a vigorous debate in the health economics profession over whether health costs are concentrated in the last few years of life – in which case longer life spans simply postpone rather than increase health care costs – or whether increased longevity implies that people will suffer from expensive chronic conditions for longer. The jury is still out on this question. The same issue arises in the area of long-term care, since per-person costs rise even more dramatically with age. Nursing care for a 90 year-old, for example, costs five times as much as for a 75 year-old. The Welfare Commission makes the conservative assumption that longer lives mean higher overall costs.

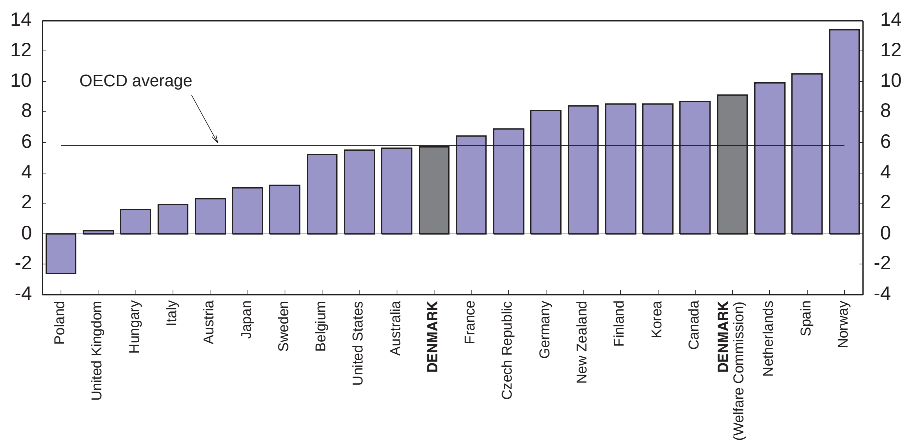
In the *Commission*'s scenario, making the current welfare system sustainable requires lifting the employment rate by 10 percentage points – to a level higher than any OECD country has achieved in the post-war period. But taking all assumptions into account, theirs may be an overly gloomy prognosis. A balanced guess is that the most likely outcome lies somewhere between the government's and the *Commission*'s outlooks. Even if that is true, the size of the problem means that the strategy of saving in advance and trying to boost employment at the margins is unlikely to be enough. The basic role of the welfare state would therefore need to be rethought. If tax increases or widespread reductions in service standards are to be avoided, there needs to be a public debate about what are the core welfare services that the state should continue to fund with equal access for all.

Denmark has fewer options than most countries

Is the situation worse than in other countries? The projected increase in age-related public spending until 2050 is not alarming, being close to the OECD average. However, if the Welfare Commission's projections turn out to be more accurate then Denmark will face a higher-than-average increase in spending over coming decades (Figure 1.6). Yet in many respects the country appears well positioned to cope with these pressures. It is starting with relatively low debt and a comfortable structural surplus, and it has an advantage over most other countries in that it can expect a large flow of tax revenues when private pensions begin to be paid out. However, many of the economies that appear to be in a worse position than Denmark also have more room to move. Relative to Denmark, they either have a little more scope to raise taxes or greater untapped labour resources, although government spending on some services might rise a little if those countries manage to increase labour force participation. Compared with some countries, therefore, Denmark is relatively "boxed in".

Figure 1.6. **The increase in government spending could be above average**

Projected change in age-related government spending, 2000-50, per cent of GDP



Source: Casey, Bernard *et al.* (2003), "Policies for an Ageing Society: Recent Measures and Areas for Further Reform", *OECD Economics Department Working Paper* No. 369; Welfare Commission (*www.velfaerd.dk*).

Debt has fallen and surpluses have been maintained

Policymakers have been focussing on long-term fiscal issues for some time. The government's strategy has centred on saving in advance by running surpluses and paying down debt. In that respect, Denmark's fiscal track record has been good. In structural terms, the general government surplus has averaged 2% of GDP since 1998, and public debt has fallen sharply (Figure 1.7). The improvement in the fiscal position over the past decade or so has been brought about through a structural improvement in the labour market and by halting the trend increase in public consumption as a share of GDP. The fiscal consolidation has made room for a small reduction in the tax burden. In addition, the government has tried to reinforce the long-term fiscal position through a variety of reforms to the pension system. The most important of these occurred in the late 1980s and early 1990s when, with the co-operation of the social partners, labour market pensions became widespread. Over time, these defined-contribution savings schemes will take a good deal of the burden off the public purse. Other steps include tightening up the voluntary early retirement pension in the late 1990s and abolishing the transitional early retirement scheme for people in their fifties, which had been introduced in 1992 but which created a dramatic drain in labour supply.

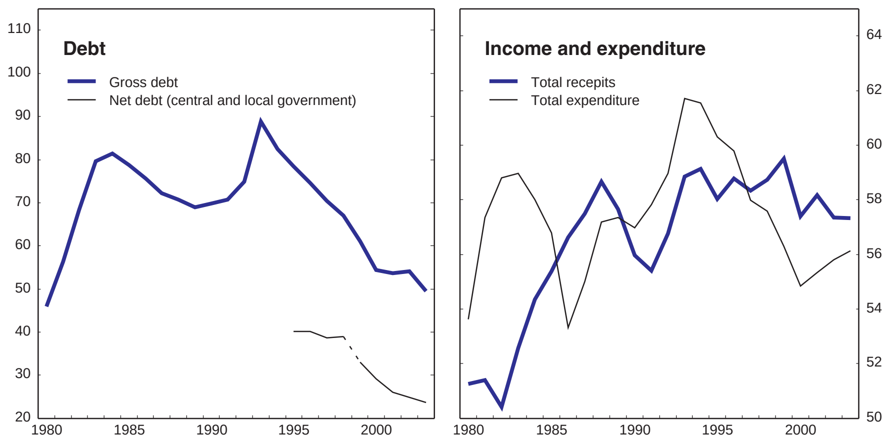
The 2010 Plan and progress so far

In January 2001, the (previous) government launched its *2010 Plan* for fiscal sustainability. The plan laid out what is needed to ensure that public finances are placed on a sustainable footing by 2010. The goal was to reduce the net debt of central and local government to 15% of GDP by running budget surpluses averaging 1½ to 2½ per cent of GDP. This in turn was to be achieved through expenditure restraint (real public consumption growth averaging 0.5% per annum) and an increase in structural employment (by 2¼ per cent). The *2010 Plan* has successfully focussed policy attention on the need to boost employment and to take advantage of the ten-year window of opportunity by resisting the temptation to spend the fiscal windfall coming from temporarily favourable demographics.

Figure 1.7. **The fiscal situation has improved**

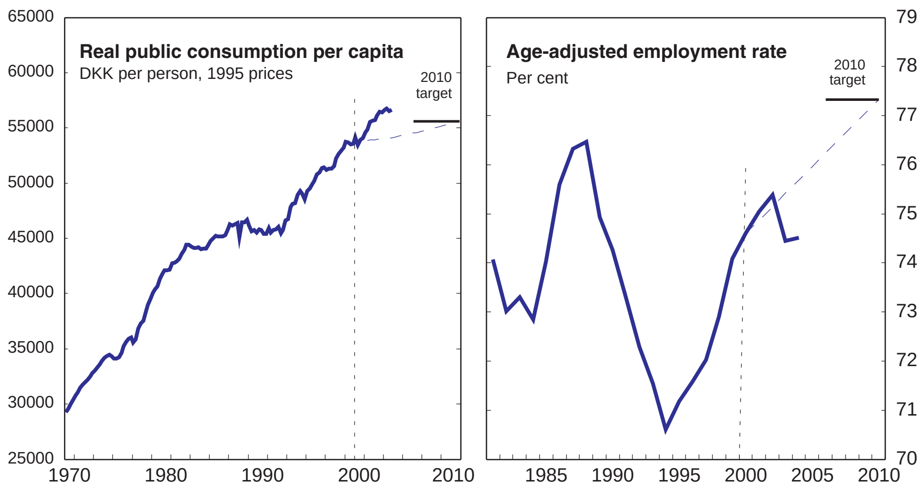
General government debt, income and expenditure

Per cent of GDP



Source: Ministry of Finance; OECD, *National Accounts*.

Figure 1.8. **There has been little progress towards the *2010 Plan***



Source: Ministry of Finance; OECD calculations, based on the original *2010 Plan*.

Concrete progress towards the targets has been less impressive, with employment moving in the wrong direction, consumption growing faster than planned and the surplus falling short of its target (Figure 1.8). A cyclical slowdown can take some of the blame, but even in structural terms the surplus is a little shy of the 1½-2½ per cent target range. In addition, most of the employment gains required by the *2010 Plan* are to come from policy measures that have not yet been announced. Except for a reduction in income taxes on middle-income earners that may have less of an impact on labour supply than a reduction in the top tax rate would have done, little of substance has been done since 2002's *More People in Work* package. The government is running out of time to deliver on its employment goals. It is waiting for recommendations from the Welfare Commission, which will present its final report by the end of 2005. A public discussion will follow, and there will be a delay before policies can be implemented, so it is unlikely that substantial welfare or labour market reforms could be in place before 2007.

Labour supply needs to rise

The *2010 Plan* and the Welfare Commission's projections lead to the same conclusion, even if the numbers differ: the only way to avoid a sharp cut in spending or a large increase in taxes is to lift labour supply. This would expand the tax base and ease spending pressures by making people self sufficient rather than reliant on income support. It needs to be achieved through a combination of a greater share of the working-age population in work and people working longer hours. Neither will be possible without further reforms to the tax and benefit systems.

The greatest room for improvement is at both ends of the age spectrum

Few countries can boast of a better employment record than Denmark. Since the 1960s, the overall employment rate has been among the top few countries in the OECD. The main explanations of this good performance are that the labour market is flexible, there are relatively few unskilled workers, the unemployed are prodded or assisted back to work through active labour market policies, and there are no cultural barriers to women having jobs. There are several pockets of the labour market, however, where outcomes are average or even below par:

- The employment rate of women aged 60 and older is only average. This is in marked contrast to the female employment rates for most other age groups, where Danish women are usually in the top quartile of OECD countries.
- For men also, the employment rate of those aged 60 and over is just average, even though it is high for those aged 50 to 59. The dip in labour-market participation comes a few years later than in most European countries, probably because the paths to subsidised early retirement of people in their fifties have been restricted, while the voluntary early retirement benefit remains available – albeit in less generous form than before – to those aged 60 to 64 (see Chapter 3).
- Excluding students who work a few hours a week while studying, the employment rate of people in their twenties is below average. This is primarily because a third of 25-29 year-olds are still studying, a proportion second only to Iceland. Many have part-time jobs, but these are seldom related to their field of study.
- Comparing across skill levels, the employment rate of males without an upper-secondary education is below the international average, while outcomes for tertiary graduates are around the middle of the pack. This drags down the good performance of men with upper-secondary qualifications, so that the overall male employment rate is only marginally better than in the typical OECD country.

The employment rate of immigrants is low, but raising it will be difficult

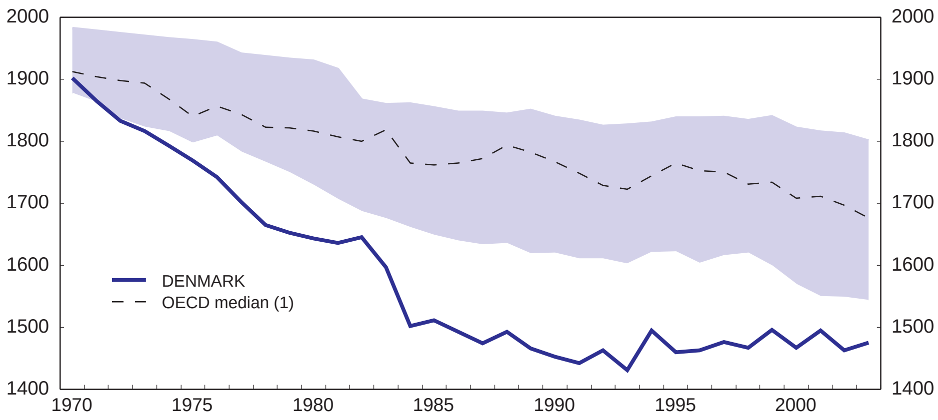
As in most countries, immigrants are less likely than the native population to be employed. This employment gap is especially large in Denmark. Improving migrant integration prospects has therefore been a major policy focus. However, the potential to boost employment through better integration should not be exaggerated. Job outcomes for migrants from developed countries are relatively good and the employment rate of second-generation immigrants is only a little below the local average, regardless of whether their parents came from developed or less-developed regions. The weak spot is non-western newcomers, many of whom are low skilled and half of whom have arrived in the past decade and therefore cannot be expected to have fully integrated yet. At least half of the employment gap can be explained by the fact that Denmark accepts a larger-than-average share of low-skilled refugees from poor countries (see Chapter 3). After adjusting for this, the employment experience of immigrants is not out of line with other OECD countries.

Hours of work are low

Annual hours of work are among the lowest in the OECD (Figure 1.9).[6] This turns what would otherwise be an excellent labour supply performance (in terms of overall employment rates) into one that is just average. While a high incidence of part-time employment is one explanation for the low number of hours, the primary reason is that the normal full-time working week is short. The average workweek on the main job is 35 hours, and relatively few Danes work long hours: only a quarter of people work 40 hours or more, compared with half in the EU and two-thirds in the OECD as a whole.[7] This is compounded by a low average number of weeks worked each year. That is because the annual vacation

Figure 1.9. **Hours of work are low**

Average hours worked per employee per year



1. Excluding Austria, Czech Republic, Slovak Republic, Poland and Turkey. The shaded area shows the middle two quartiles (*i.e.* half the countries fall in this range).

Source: OECD Economic Outlook 76 Database.

allowance is at the generous end of the spectrum, and work absences for other reasons (sickness and parental leave in particular) are high.

Denmark's relative hours-of-work have not always been so low. In 1970, the average number of hours worked each year was close to the OECD average, but since then the decline has been one of the steepest. An increased penchant for leisure as incomes have risen has no doubt contributed to this decline. High taxes on earned income, however, are likely to have been another factor (see Chapter 3). It is interesting that the decline in annual working hours stopped in the early 1990s, around the same time that income tax rates reached their peak. Since then, average hours have increased fractionally because more women are working full time rather than part time. While hours at the workplace have fallen since the early 1970s, there has been a shift towards unpaid work at home, such as DIY home maintenance. The link between hours and taxes is evident here as well, since the highly educated, who face higher marginal tax rates, tend to do more work at home (Smith, 2003). The desire to work fewer market-based hours is widespread but is more noticeable for those on high incomes: in a recent survey, only a third of people paying the middle or top tax rates indicated they would prefer to take an increase in labour compensation in the form of cash; most would choose more holidays, while the rest would opt for greater tax-deferred pension contributions (Ugebrevet A4, 2003).

When it comes to improving fiscal sustainability, raising working hours of people who are already at work is not as effective as getting non-workers into jobs. This is because boosting employment has two effects: it increases the tax take (in the same way that an increase in hours does), but it also reduces welfare spending since virtually everyone without a job receives some form of public income support. Even so, boosting average hours by 6% would be enough to meet the government's *2010 Plan* (*i.e.* its effect on public finances would be the same as the government's target of a 2¼ per cent increase in jobs). This amounts to an extra two hours a week, and would merely bring the Danish workweek up to the OECD average.

Productivity growth is lagging behind other countries

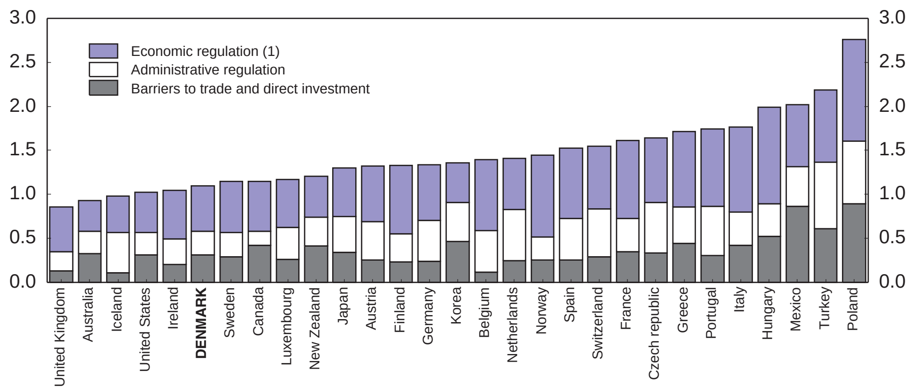
An additional challenge is to boost productivity growth and accelerate the transition to a modern knowledge-based economy. As noted above, both labour and multifactor productivity growth have been lagging behind those in other countries. One way to boost productivity and innovation is to increase competition, especially in the public sector. In addition, there are aspects of the education and innovation environments that need to be improved.

Competition can be a powerful spur to productivity growth and innovation

The Danish regulatory environment is one of the more business-friendly in the OECD. Red tape and other barriers to entrepreneurship are limited (Figure 1.10), and the economy is highly exposed to competition from abroad. Consequently, the business environment is relatively dynamic. Attitudes to entrepreneurship are liberal, the rate of firm start-ups is lofty (although less so if sole proprietorships are excluded), and the labour market is fluid, with low barriers to hiring and firing leading to high mobility of people between jobs.

The business sector may be dynamic, but it is small. The large public sector shields an extensive part of the economy from effective competition (Figure 1.11). There has been insufficient willingness, incentive and ability to open up the delivery of public services to competition, particularly by local governments. In those areas where the private sector has tried to gain a foothold, the playing field has sometimes been tilted in favour of public providers by regulatory barriers or anti-competitive practices. Consequently, Denmark's record on competitive tendering and outsourcing is only average, despite having more scope than most countries to do so: many of the activities that the Danish public sector is involved in are delivered satisfactorily by private enterprises in other countries. Moreover, government ownership of commercial enterprises, in spite of having fallen over the past decade, remains high in some sectors.

Figure 1.10. **Economy-wide regulation, 2003**



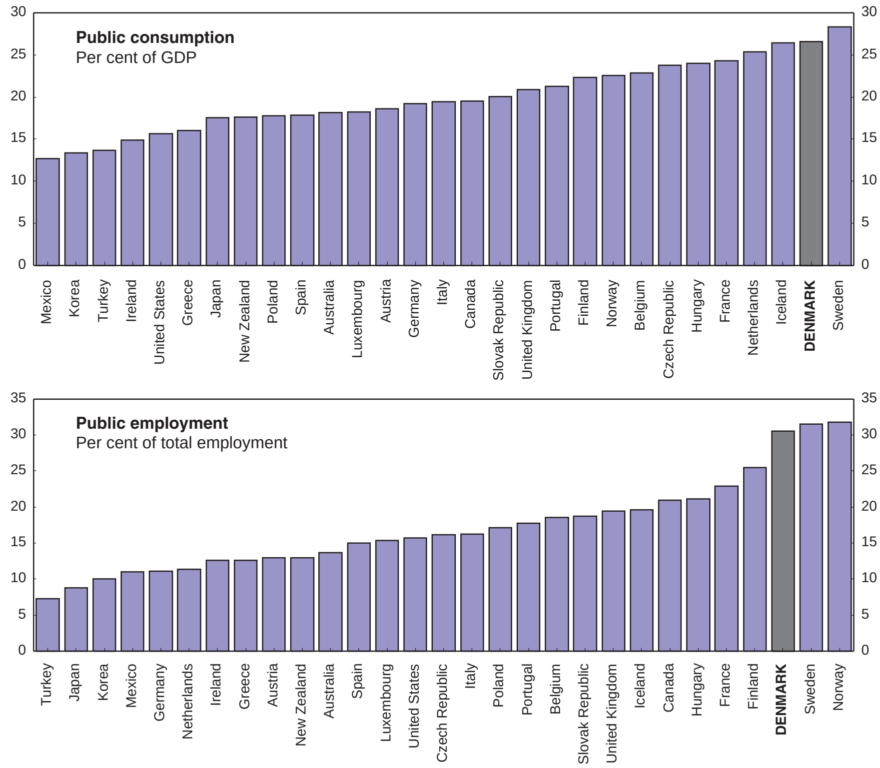
Note: The regulatory stance is measured by a synthetic indicator ranging between 0 (least restrictive) and 6 (most restrictive) for each year and sector. It covers public ownership, barriers to entry, market structure, vertical integration and price controls. See Conway *et al.* (2005) for details.

1. Includes barriers to competition and state control.

Source: Conway *et al.* (2005), forthcoming *Economics Department Working Paper*.

Figure 1.11. **The public sector is large**

General government consumption and employment, 2003



Source: OECD Economic Outlook 76 Database.

Lack of competition is not confined to the public sector, however; for example, the price level is higher than might be expected considering Denmark's income, indirect taxes and wage distribution. Relative prices are especially elevated in sectors that show other symptoms of competition problems. One example is the construction industry, which has also had excessively wide profit margins and has shown much lower productivity growth than in other countries over a long period of time (MEBA, 2002). Other warning signs of weak competition include unexpectedly high relative wages, which signify rent sharing between firms and unions (*e.g.* in printing and professional services), and heavy concentration (food and beverages, building materials). The business environment is probably still feeling the effects of what was a very relaxed competition framework up until the late 1990s. Merger control, for example, did not exist until 1998, while fines and other punishments have been light. Sector specific competition problems often derive from long entrenched traditions of cartels and co-operative agreements, consistent with a society where cohesion and consensus are important social values. Policy has only recently had the willingness and tools to tackle them.

A better-educated workforce is needed

Denmark may struggle to maintain its high income ranking unless it puts more effort into boosting education levels. There are both quantity and quality aspects to this

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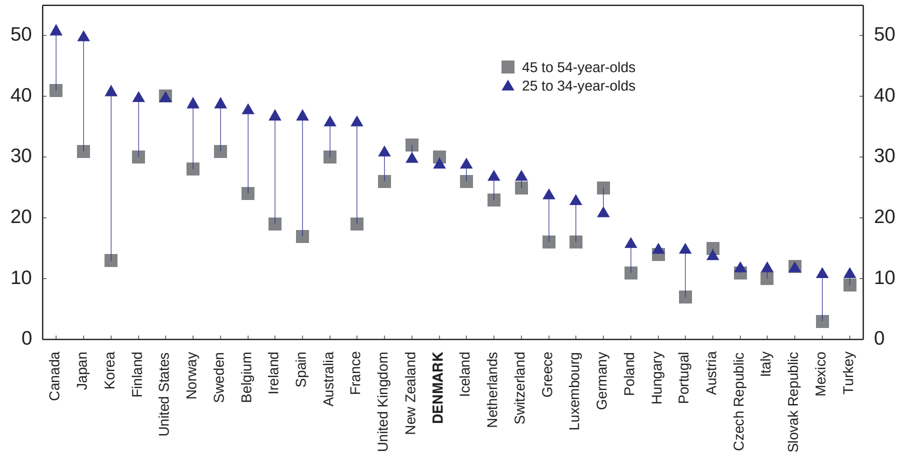
Figure 1.12. **Population that has attained a tertiary education**

Percentage, by age group, 2000



Source: OECD (2004), *Education at a Glance*, Table A3.3.

challenge. Denmark used to be a leader in terms of the proportion of people who had at least a post-secondary qualifications, but it has not kept pace with the surge in higher education in other countries. The proportion of young people with a tertiary qualification is now around the OECD average, well below the levels seen in similar high-income countries (Figure 1.12). The problem is unlikely to improve in the short term since enrolment rates at university are low. Participation is particularly low in the "hard sciences", including computing and engineering, although recent reforms will hopefully improve the situation over the next few years. It is notoriously hard to forecast which subjects will be in high demand in the future, but Denmark's current output of graduates does not put it in a strong position to compete in today's fast-growing, high-technology spheres. This is the case for both normal and advanced (PhD) degree programmes. Moreover, the country cannot rely on attracting many skilled immigrants, as the language barrier, relatively low pay and heavy taxation result in very small annual inflows (OECD, 2004b), despite short-term tax breaks (a rate of 25% for up to three years) for some highly educated immigrants.

Productivity growth would also benefit from an improvement in the compulsory education system. The performance of Danish students in international comparisons is just average. In the PISA (2001) study, for example, Danish 15 year-olds were around the OECD average in reading, slightly above average in mathematics but below average in science. This middling performance is especially disappointing given that Denmark spends more per pupil on primary and secondary education than almost any other OECD country. There is also some evidence that student performance has worsened over the 1990s.[8] The school system is also failing, by Scandinavian standards at least, in its goal of delivering equitable outcomes: the impact of family background and socio-economic status on student performance in Denmark is similar to the OECD average, whereas outcomes are significantly more equitable in other Scandinavian countries.[9]

Denmark does not make the most of the innovation that it generates

The second aspect of the productivity challenge is to improve the innovation environment. A range of indicators suggests that innovation activity was relatively slow to pick up, but tougher competition, greater integration with the European market and a variety of policy reforms have helped the country catch up. Most of these indicators now place Denmark in the top half of OECD countries. In particular, business-sector R&D has grown strongly since the mid-1990s, especially in the service sectors and the pharmaceuticals industry. Performance in manufacturing has been less impressive, partly because the types of manufacturing industries that Denmark specialises in are inherently less research intensive, and partly because Danish manufacturers are small. A surprising feature of business innovation activity is that "invention" is more prevalent than "diffusion" (Figure 1.13); the opposite is usually true of small countries because there are more extensive economies of scale in invention than in imitation.

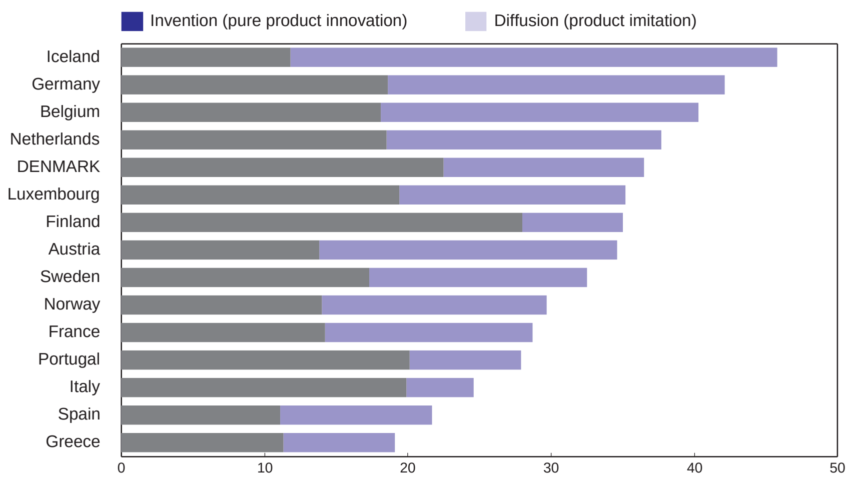
The main weaknesses in the innovation framework relate to government-funded research. Funding tends to be institution-based, rather than project-related, and has little explicit link to quality. It therefore does not help generate effective competition between institutions. In addition, commercialisation of public-sector science has been weak. Universities especially have not been good at turning knowledge into commercial gain. Moreover, both universities and government laboratories have not succeeded in building formal links with the business sector – there is very little corporate co-financing of research carried out by public institutions. Encouraging greater research collaboration between industry and the public players is a key challenge, as it is one of the more effective ways of diffusing knowledge through the economy.

Combining economic growth with environmental objectives

A good balance between economic, environmental and social outcomes is an important part of the sustainable development of the economy. Denmark has clear

Figure 1.13. **Product innovation is more prevalent than diffusion**

Per cent of firms in survey who reported invention or diffusion of a new product, 1998-2000



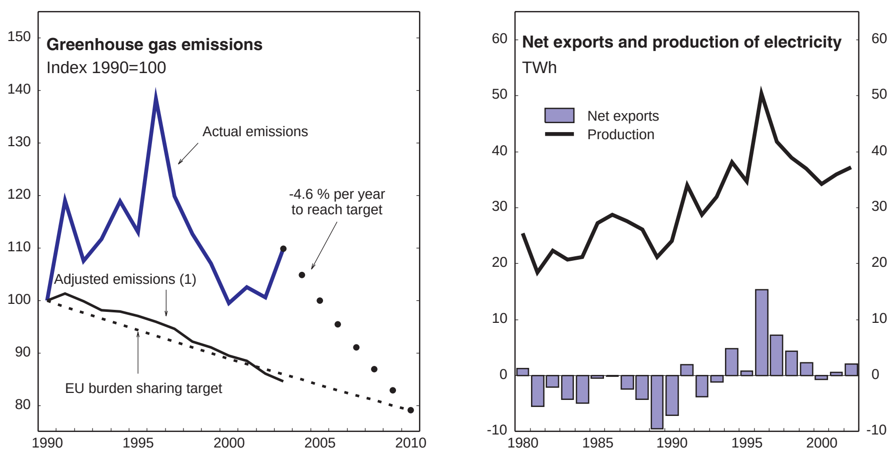
Source: Eurostat, Third Community Innovation Survey.

environmental ambitions, and more focus has been devoted in recent years on how to pursue them in a cost-effective way. Still, in a number of areas the current system is affected by policies that may be unnecessarily expensive (see last *Survey*).

Energy is one such area that is clearly affected by environmental priorities (reducing greenhouse gases), and greenhouse gas emissions have fallen in recent years (after adjusting for net exports of electricity; see Figure 1.14). Fostering renewable energy and combined heat and power (CHP) production through large subsidies to windmills and small CHP plants using bio fuels has been an expensive and ineffective way of reducing CO_2 emissions, with the bill being paid by end-users through the obligation to buy energy from these sources.[10] It has also left Denmark with significant spare capacity, so it is a large net exporter to neighbouring markets. A new reform in 2004 redesigned subsidies to windmills and CHP plants, reducing the positive discrimination in favour of this type of generation. However, the reform also included new sea-based windmill parks that will generate further over-capacity. The establishment of a European trading system for CO_2 emission quotas should ensure a more cost-efficient CO_2 reduction, although granting allowances in ways that observe the burden-sharing agreement and making sure that all of society benefits from the value of allowances will be important to balance the effects.

In the areas of water and waste management, no significant progress has been made in realigning economic instruments, such as tax rates, on the basis of cost-benefit analysis and in correspondence with environmental externalities, as recommended in the last *Survey*. However, finding ways of improving efficiency in waste disposal is on the agenda, with the government's Environmental Assessment Institute (IMV) recently assessing the social benefits of giving energy-intensive industrial companies a larger role in incineration of waste (IMV, 2004). It found positive net benefits in general, although conclusions depend heavily on the price of electricity, which positively affects the return from expanding CHP plants. Currently, the dual role of municipalities, who are responsible for allocating waste

Figure 1.14. **Greenhouse gas emissions are falling, except in the electricity industry**



1. Adjusted emissions exclude changes in exports of electricity since 1990.

Source: Statistics Denmark, *www.danskenergi.dk*; Danish Energy Authority, *www.ens.dk*; Dansk Energi, *www.danskenergi.dk*.

and operating plants that burn it, may make it difficult for energy-intensive production companies to acquire enough waste to burn, and so the Environmental Protection Agency has looked at ways of separating the two roles.

Conclusions

Denmark has made impressive progress in the policy reforms needed to maintain its high income level and to safeguard its inclusive welfare society. But more needs to be done in the areas of improving public finances, boosting labour supply and building a more dynamic and innovative economy. Policy options for achieving these goals are described in the remaining chapters of the *Survey*. The next chapter analyses the fiscal challenge in more detail and reviews progress to date. Chapter 3 looks at ways to increase labour supply, while Chapter 4 looks at ways of boosting productivity growth by increasing competition in the public and business sectors. Finally, Chapter 5 turns to the role of human capital and innovation as additional ways of increasing productivity growth.

Notes

1. Capital income measures gross financial capital income, typically rents, dividends and interest. In Denmark's case, it also includes imputed rents of homeowners, which may partly explain the shift relative to other countries (although the increase in house prices has been relatively modest).
2. Productivity comparisons across countries should be treated with some caution for several reasons. First, the labour input and capital stock estimates are not always perfectly harmonised. Second, comparisons can depend on the period in question, although the basic conclusion – that Danish labour productivity growth up until 2003 has been below the unweighted OECD average – appears to hold true for any starting point from 1994 to 1998. Third, the treatment of the public sector can have an influence.
3. These conclusions are based on industry-level ratios of gross capital stock to gross output (both measured in volume terms) calculated from the OECD's STAN database for Denmark, Germany, France, Italy, Belgium and Finland. The conclusion that Denmark has a relatively high capital-to-output ratio is consistent with the findings in MEBA (2002, section 7.2).
4. Estimates of the level and growth rate of productivity are based on the STAN industry database. Productivity is measured as value added per hour worked in the year 2002. The public sector is defined as community, social and personal services (ISIC industries 75-99), while the private sector (strictly speaking, the business sector since it includes government-owned enterprises such as electricity generators) is the rest of the economy. For the projections in Table 1.5, hourly productivity growth is assumed to be 1.5% per year in the private sector and 0.3% per year in the public sector (which are the average rates observed from 1990 to 2002). The level of productivity in the business sector is assumed to be 33.6% higher than in the public sector (reflecting the estimate in 2002). However, this levels effect does not contribute much: if productivity levels were assumed equal in the two sectors, then per capita GDP growth would be higher by around 0.1% per annum. Employment projections assume that, in the public sector, the ratio of employees to dependents will be constant, implying no change in the number of nurses per elderly person, for example. Total employment is as per the DREAM projection, while the business sector employs whoever is left.
5. The Welfare Commission is a panel of experts appointed by the government in September 2003. Its job is to analyse the projected demand for welfare services and the possibilities of financing this demand without raising taxes. It is charged with making recommendations on how to increase labour supply and ensure socially balanced and targeted efforts to help those with the greatest needs. It issued its first report in May 2004 (see *www.velfaerd.dk*) and will present its final policy recommendations by the end of 2005.
6. International comparisons of working hours are imprecise because the data has not been fully harmonised. However, OECD (2004a) concludes that the data are sufficiently accurate that the user can be confident about which countries are at the top and bottom ends of the distribution (which includes Denmark). Small differences in hours worked between countries are as likely to be due to differences in measurement as to genuine differences in their labour markets. MEBA (2002)

presents several alternative measures of working hours for Denmark and comparator countries, all of which are consistent with the conclusion that Danish working hours are low.

7. See the OECD Labour Force Database for further details. The European data is based on the European Labour Force Survey.

8. In Denmark and several other countries, one of the booklets used to test reading ability in PISA 2000 was the same as in the 1991 IEA study of 14 year-olds. Comparing the two results shows a significant decline in reading ability. The average reading level of Danish 15 year-old students in PISA 2000 fell below the average level of the 1991 14 year-old students. This conclusion is confirmed by the national "F-2000" study, which also demonstrated a significant decrease in reading levels form 1991 to 2000 for 14 year-old students (Allerup *et al.*, 2001).

9. Outcomes for second-generation immigrant children were alarmingly bad in the PISA study, but no strong conclusions should be drawn from this since the sample was small. But it is worth noting that the non-native recent immigrants perform much better than those whose parents came to Denmark before they were born. This is in marked contrast to the data of all the reference countries where the first generation students outperform the recent arrivals.

10. For instance, see Nordic Competition Authorities (2003). While the 1999 reform of the electricity market in principle included a rearrangement of subsidies for renewable energy production to a market based system through awarding of tradable renewable energy certificates, the introduction of this system was virtually abandoned as investment in capacity of renewable energy production shot up in reaction to the favourable subsidies, thus allowing government objectives to be met much faster.

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Chapter 2

Ensuring fiscal sustainability

This chapter discusses the outlook for public finances given the pressures that are due to come from an ageing population. It compares the expenditure projections made by the government and the Welfare Commission (Velfærdskommissionen), and their varying assumptions on longevity and age-related health-care costs. Despite differences, the studies suggest that the current welfare system is not sustainable. Also discussed are the appropriateness of the government's medium-term fiscal framework (the 2010 Plan) and the need for extra efforts to boost labour supply and make the pension system more robust in the face of uncertainties about what the future may bring. The chapter then looks at the restructuring and amalgamation of local governments. Municipalities and regions will be in the frontline in dealing with the demographic pressures on public finances. Making sure that they are the right size to handle the extra workload they will gain over time will be essential for improving the quality of public services and maintaining the welfare state.

The challenges of putting public finances onto a sustainable path were outlined in Chapter 1. While estimates vary concerning how much public finances need to improve by, there is a consensus that new measures are necessary. The government is relying on its medium-term fiscal framework (the *2010 Plan*), which involves tight public spending control and structural reforms to increase employment before 2010 in order to meet the key objective of fiscal sustainability. However: *i)* no significant reforms are in the pipeline; *ii)* public consumption growth is above target, although it has been reduced; and *iii)* the government has used up on tax cuts all the safety margins in the plan. As a consequence the structural budget surplus is drifting below the government's target interval, and the likelihood of meeting the objectives by 2010 is becoming ever smaller. But even if they were met, some alternative projections imply that the goals need to be set higher still to make the welfare system sustainable. Hence, the medium-term strategy should be supplemented with additional measures to reduce the foreseeable future expenditure pressures and to insulate the pension system and public finances in general from demographic surprises.

Progress towards sustainability has been hampered by the cyclical downturn in 2002 and 2003, which caused the focus to partially shift from the long-term challenges to short-term fluctuations. Denmark has strong automatic stabilisers, and its budget surplus gives plenty of scope for the stabilisers to work in full. Along with the stimulatory effect of low interest rates in this period, the automatic stabilisers ought to have been adequate in dealing with a temporary slowdown. The government nevertheless attempted to boost the recovery in March 2004 by bringing forward planned tax cuts and investments at a time when indicators suggested that a consumption-driven rebound was already taking place. While they had a negligible impact on fiscal sustainability, these measures were probably unnecessary, and the focus should now return to the long-term issues.

The planned reform of local government arrangements will also influence how much pruning of the welfare system may need to be done in the future. This restructuring, to be implemented in 2007, should make local governments better placed to deal with changing demands arising from the demographic developments, although it is likely to entail transition costs in the short term and to challenge budgetary control (on both the spending and revenue side) during the implementation phase. Amalgamations of municipalities and counties should provide some efficiency gains through economies of scale, but their greatest impact may be in raising over time the scope for quality improvements in public services, such as health and elderly care.

Reforms are needed to make the welfare state sustainable

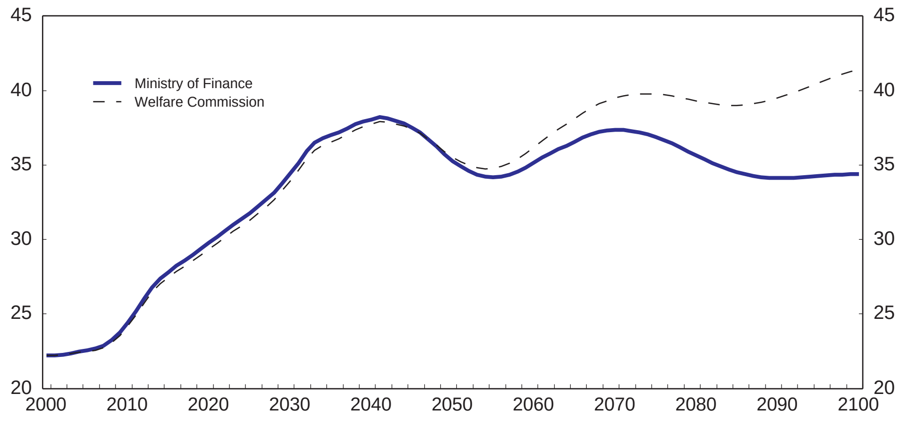
Future demographic changes are bound to have substantial effects on public finances in a welfare state like Denmark, where most public services and income transfers are provided for free and financed on a pay-as-you-go basis, thus disconnecting the services received from the individual's contributions through taxes and charges paid. It is almost certain that public finances will get worse as a result of ageing, although the precise impact is obviously hard to know. Several institutions are regularly making projections of the fiscal situation over the very long term (over the next century or so), and all point to a substantial increase in public expenditure as a share of GDP. This is largely due to a sharp increase in the old-age dependency ratio, which is projected to move to and stay at a higher level (Figure 2.1). In other words, the pressure on public finances is likely to be permanent, and not just a temporary "baby boomer" phenomenon that will eventually go away. This has implications for what would be the optimal and the equitable response to the shift in the population structure.

There are at least four sets of long-term projections produced by Danish institutions, plus some from the OECD, the IMF and the EU. Looking at the Danish modelling, which tends to be more detailed, the Ministry of Finance's "no policy" scenario[1] has an increase in public primary expenditure of almost 8 percentage points of GDP between now and 2075. Estimates by the Economic Council and the DREAM Research Group are both in the same ballpark as the Ministry, partly because they use similar demographic assumptions. An alternative projection, produced by the government's Welfare Commission, is significantly more pessimistic. In its outlook, the increase in primary expenditure is more than a third larger. As discussed in more detail below, the key differences between these projections concern assumptions about longevity, the rate of return on net assets and the impact of ageing on health care costs.

In both the Ministry's and the Commission's projections, the majority of the increase in consumption and transfer expenditures happens before 2040 (Figure 2.2). Expenditure on health and elderly care and on public old-age pensions are the main drivers; in the Ministry's scenario, for example, they rise by 1.4, 1.6 and 3.2 percentage points of GDP respectively. Fortunately, there is an offsetting factor, as extra government revenue will come from the large deferred tax payments on private pension contributions. However, this will not be enough to prevent a substantial deterioration of primary net lending, and

Figure 2.1. **The old-age dependency ratio moves to a permanently higher level**

Ratio of 65+ year olds to 15-64 year olds, per cent

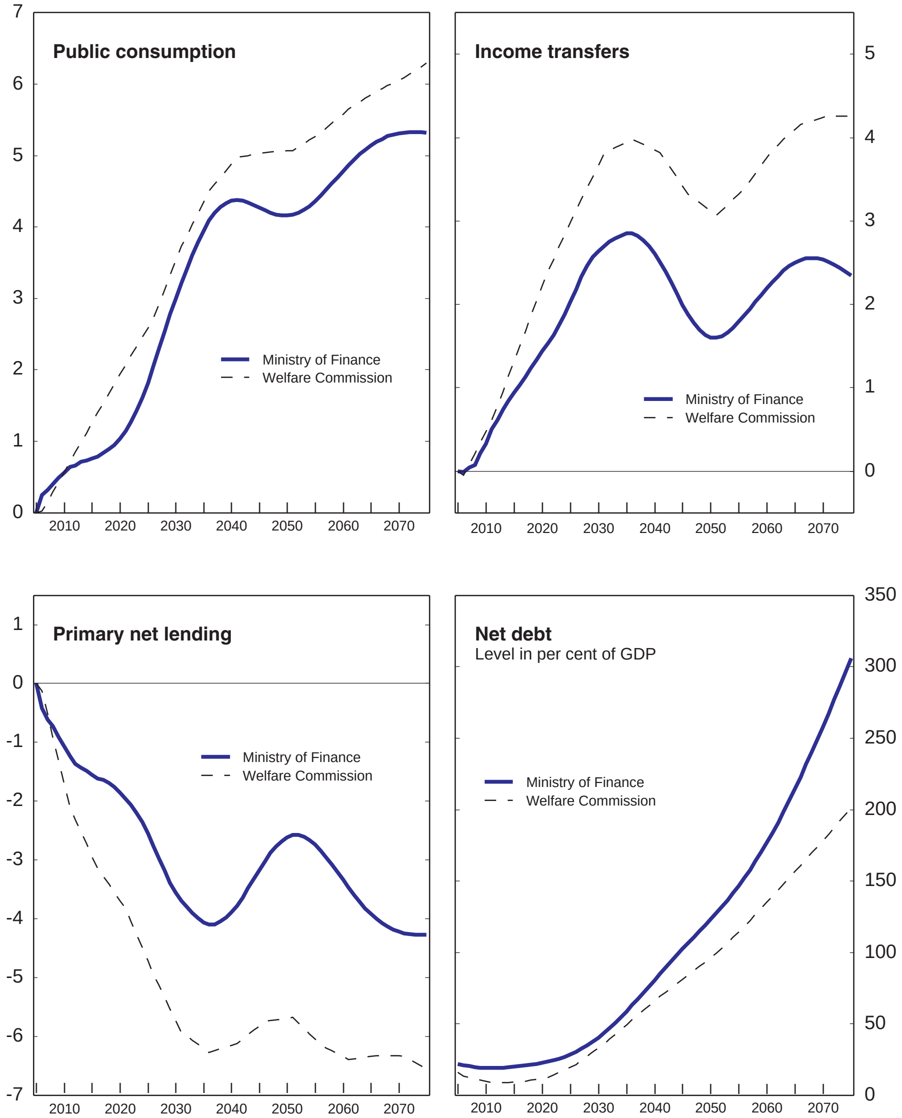


Note: The Ministry of Finance uses the official population projection from DREAM, an independent research group. DREAM also made the projection used by the Welfare Commission, applying different assumptions on fertility and mortality at the request of the Commission.

Source: The DREAM group, *www.dreammodel.dk*.

Figure 2.2. **Central and local government finances are likely to deteriorate in the long term in the absence of policy changes**

Change from 2005, percentage points of GDP



Source: Ministry of Finance (2004), *Finansredegørelse 2004*, June; Welfare Commission (2004), *Fremtidens velfærd kommer ikke af sig selv*, Analyserapport, May.

there is expected to be a sustained deficit in the period beyond 2015 or so. Along with the associated interest payments, this will generate a rapid rise in net debt.

While calculations differ on the quantitative impact on the fiscal situation, reflecting different methodology and assumptions, there is a consensus on the overall conclusion: public finances are unsustainable in the light of ageing without further policy reforms (Box 2.1). Estimates of the fiscal gap, *i.e.* the required improvement of public finances to make the welfare system sustainable as the population is greying, range from 1½ per cent of GDP according to the Ministry of Finance to 3¾ per cent of GDP in the scenario presented

Box 2.1. **How is fiscal sustainability defined?**

Fiscal sustainability can be viewed in different ways. Ensuring that the level of debt as a share of GDP does not explode can be one criterion, as can various explicit ceilings on the debt ratio. The assessment of fiscal sustainability in this chapter is based on the government's ability to satisfy its inter-temporal budget constraint, which states that current net debt should not exceed the present value of future primary surpluses, using the interest rate on debt as the discounting factor. If it does, a structural improvement of the budget position is required. This method is also applied in the studies referred to in this chapter.

This type of calculation will of course depend heavily on the assumptions regarding the mechanisms shaping the development in expenditure and revenue. The key assumption is that present rules and standards in the welfare system are roughly maintained. Age, gender, and origin-specific participation and employment rates are generally kept constant, although some adjustment is made for the initial cyclical position and the likely – as yet unseen – effects of past reforms of transfer schemes, active labour market policies, the tax system, etc. This way, developments are largely driven by the demographic changes.

Estimates of the future development of public finances will differ to the extent that assumptions vary as to demographic developments, effects of past reforms, nominal interest rates, economic growth, inflation rates, government investment and collective consumption, terms of trade, etc. Also, calculations made using general equilibrium models (as the Welfare Commission does) will include endogenous behavioural effects, contrary to simpler methods (such as those used by the Ministry of Finance).

by the Welfare Commission (Table 2.1). The difference is of more than academic interest. If the Ministry is right, then sustainability might *just* be able to be brought about through some very tight expenditure restraint combined with an increase in employment that, while very ambitious, is not entirely out of the question. But if the Commission is right, then a more fundamental rethink will be needed. The required increases in employment or in taxation would bring them to a level that is certainly unprecedented and probably unrealistic given the economic incentives built in to the current welfare system.

Table 2.1. **The size of the fiscal gap is significant according to various studies**[1]

	Per cent of GDP
Ministry of Finance, policy scenario (June 2004)	0.0
Less marginal effect from government employment objectives in *2010 Plan*	–1.0
Less marginal effect from tight government consumption as stipulated in the *2010 Plan*	–0.5
Ministry of Finance, "no policy" scenario (June 2004)	–1.5
The Economic Council (May 2004)	–1.9
DREAM (April 2004)	–1.9
Welfare Commission (May 2004)	–3.7

1. The fiscal gap indicates to what extent government finances deviates from fiscal sustainability. A negative number in the table means that a permanent improvement of government finances is required. In the Ministry of Finance's scenarios, the required permanent improvement is measured as from 2003, whereas the Economic Council and DREAM assume that the fiscal tightening takes place from 2007. The Welfare Commission assumes that fiscal policy is gradually tightened between 2011 and 2021. This later and gradual tightening implies that the required improvement of government finances is 0.2 percentage point of GDP higher than if it took place in 2007.

Source: Ministry of Finance (2004), *Finansredegørelse 2004*, June; Welfare Commission (2004), *Velfærdskommissionens beregningsforudsætninger*, June; Det Økonomiske Råd (2004), *Dansk Økonomi – forår 2004*, May.

Long-term projections of public finances depend heavily on basic assumptions

The different results of these studies illustrate the substantial uncertainty surrounding this type of calculation. Altering basic assumptions on demographics, labour-market behaviour and interest rates can significantly change estimates of the necessary improvement of public finances. One of the key differences between the Ministry and the Welfare Commission is their longevity assumptions. Danish lifespans fall well short of those in the other Nordic countries, and the debate is therefore largely about how much catch-up there will be in the future. While the two institutions agree on a four-year increase in longevity for men, the Ministry (along with the DREAM group and the Economic Council) is more cautious on the change in average lifetime for women, and assumes an increase of only 1¾ years until 2050. That will not even bring longevity to the level that other Nordic women enjoy today. The Welfare Commission's assumption of a 4½ year increase seems more reasonable. For both genders, longevity in the two projections is below that of the United Nations' projections for Denmark, which assume an increase for both genders of around 5½ years (similar to that assumed for other EU countries). This suggests that the uncertainty related to life expectancy is mostly on the upside (implying that the fiscal situation would be worse), especially as there has been a remarkable degree of catch-up over the past decade. But lower life expectancy is to some extent related to less healthy lifestyles, especially because of cancers due to smoking (Welfare Commission, 2004). To the extent that this continues, Denmark could see longevity rise by less than in other EU countries.

The second key difference between the Ministry and the Commission concerns the interest rate, and this interacts strongly with the longevity assumption. If the Welfare Commission's assumptions about lifespans were used in the Ministry's scenario, the estimated fiscal gap would not increase much because only a little more debt repayment is required to cover the extra future spending, given the Ministry's assumption of a nominal interest rate of 6.5% (equal to the average interest rate on state bonds in the period 1990-2003). In contrast, the Commission's interest rate is almost 2 percentage points lower, so more debt repayment – and therefore a bigger improvement of primary net lending today – is needed for the reduction in net interest payments to cover the extra spending arising from the larger increase in longevity in its scenario.[2]

The effect on public finances arising from longer lives also depends on the extent to which this reflects *healthier* lives, as extensive use of elderly and health care services may just be shifted to later ages. The Welfare Commission has chosen to maintain a fixed distribution of public services for the individual across ages throughout its projection. It argues that the increase in expected remaining lifetime for 65 year-olds does not seem to change the age at which public services are demanded, pointing to the experience in Sweden where the distribution of public services for the individual across ages is quite similar to that in Denmark, even though lifespans there are significantly higher. The Ministry of Finance, on the other hand, assumes that half of the age-related expenditures depend on remaining lifetime rather than on actual age, thereby reducing the fiscal gap by ¼ percentage point of GDP in its scenario. While the impact may not seem large, it depends crucially on the other key assumptions. Using the Commission's longevity and interest rate assumptions, the assumption of better health in old age reduces the fiscal gap by 1 percentage point of GDP (according to Ministry of Finance estimates). It is thus the combined effect of divergences in these three central assumptions that generates a substantial part of the difference in the estimated fiscal gap.

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Continuation of past trends in service improvements will worsen the situation

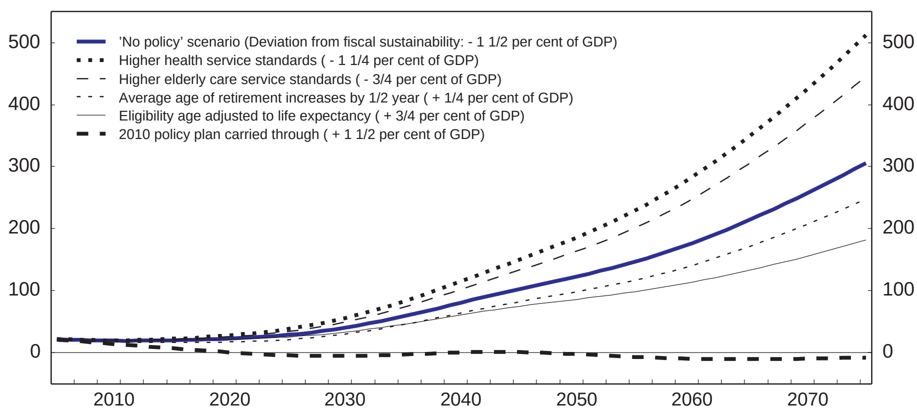
A factor not taken into account in any of the projections described so far is the likelihood that medical advances lead to greater quality and new – and possibly more expensive – treatment methods. The usual assumption in these fiscal projections is that nominal health spending per person in each age group follows wage increases, implying that real spending per user will increase only minimally (to the extent that the price of government purchases rises less than wages). Unless extra health spending can be financed via lower expenditure growth in other areas, additional increases in health services will therefore mostly have to come from efficiency improvements. Such productivity gains are unlikely to be sufficient to meet the trend increase in service standards that has been seen in the past, especially in the areas of elderly and health care. If real service standards instead grew ½ per cent per year faster than in the Ministry of Finance's "no policy" scenario, which would be more in line with historical experience, total health expenditure would be raised by 1¾ percentage points of GDP in 2050, leading to an acceleration of net debt well above the stable debt ratio that the *2010 Plan* is designed to deliver (Figure 2.3); this scenario adds 1¼ per cent to the fiscal gap. The same assumption applied to elderly care (an extra ½ per cent per year) would boost spending as well, but by a lesser amount overall.

Higher immigration will not improve public finances…

Since the pressure on public finances arises because a diminishing share of the population will finance the welfare state through its tax payments, it has from time to time been suggested that Denmark should admit more immigrants. However, more immigration will not help to alleviate the pressures on public finances unless a higher proportion of immigrants come from more developed countries (MDCs), as these tend to have higher employment rates, or unless new immigrants from less developed countries (LDCs) have the same economic behaviour as immigrants from MDCs (see previous *Survey*). Higher fertility would not help either, because public finances are unsustainable at the outset; in

Figure 2.3. **Central and local government net debt in various scenarios**

Per cent of GDP



Note: Numbers in brackets show the effect on fiscal sustainability. A positive contribution means that the required improvement of primary net lending to make public finance sustainable is reduced.

Source: Ministry of Finance calculations.

fact, higher fertility will make the situation worse because on current parameters the average newborn Dane will make a negative net contribution (in present value terms) to public finances over his/her lifetime.

… while measures to make the welfare state more robust could deliver significant contributions…

Adjusting basic parameters in the welfare system may on the other hand be powerful measures. For instance, if the eligibility age for voluntary early retirement pension (VERP) and the public old-age pension were indexed to longevity, the required improvement in primary net lending would be halved in the Ministry's scenario. The current fixed eligibility ages in public retirement systems imply that welfare generosity is automatically expanded when average lifetimes increase. If the statutory age for receiving old-age pensions remains at 65 years (reduced from 67 years in 2004) and the VERP is maintained, future generations will be able to enjoy more years receiving public retirement income than those currently alive. While indexing to longevity would seem an obvious way of avoiding this implicit expansion of welfare provisions, it is, however, not without significant practical obstacles.

… but the government is focusing mainly on improving employment rates for the current population

Recognising these long-term prospects, successive governments have pursued a strategy of saving before the pressures from the demographic changes begin to emerge and reducing the fiscal pressures up front by boosting employment. In the government's medium-term fiscal framework (the *2010 Plan*), fiscal sustainability is supposed to be achieved by keeping growth in real government consumption at a historically low rate (½ per cent per year in the remainder of the period until 2010) and by a structural increase in employment rates that will shift almost 100 000 people (2¾ per cent of the working-age population) from income transfers to self-support between 2003 and 2010, of which 40 000 is expected to come from previous reforms. This would deliver an average structural budget surplus within the targeted range of 1½-2½ per cent of GDP in the period until 2010, with the improvement in employment rates offsetting the negative effect from the underlying demographic changes. Maintaining surpluses within the target range would provide a substantial reduction in government debt and net interest payments. In fact, in this scenario the government would become a net asset holder by 2020, allowing it to finance projected subsequent primary deficits with net interest earnings. Thus, under the assumption that the 2010 objectives are achieved, there would be no need for further tightening of fiscal policy in order to achieve fiscal sustainability, *i.e.* there is no fiscal gap (the fiscal gap is zero in the Ministry of Finance's policy scenario in Table 2.1).

With neither new labour market reforms nor restrained real public consumption, the structural surplus would gradually deteriorate, moving further below its target range in the period until 2010. Such a "no policy" scenario would be consistent with fiscal sustainability only if the actual surplus in 2003 had been around 2¾ per cent of GDP instead of the recorded 1¼ per cent. In other words, an improvement of public finances of 1½ per cent of GDP would be needed, if the assumed reforms and tight spending restraint in the *2010 Plan* were not carried out (the fiscal gap is –1.5% of GDP in the Ministry of Finance's "no policy" scenario in Table 2.1).

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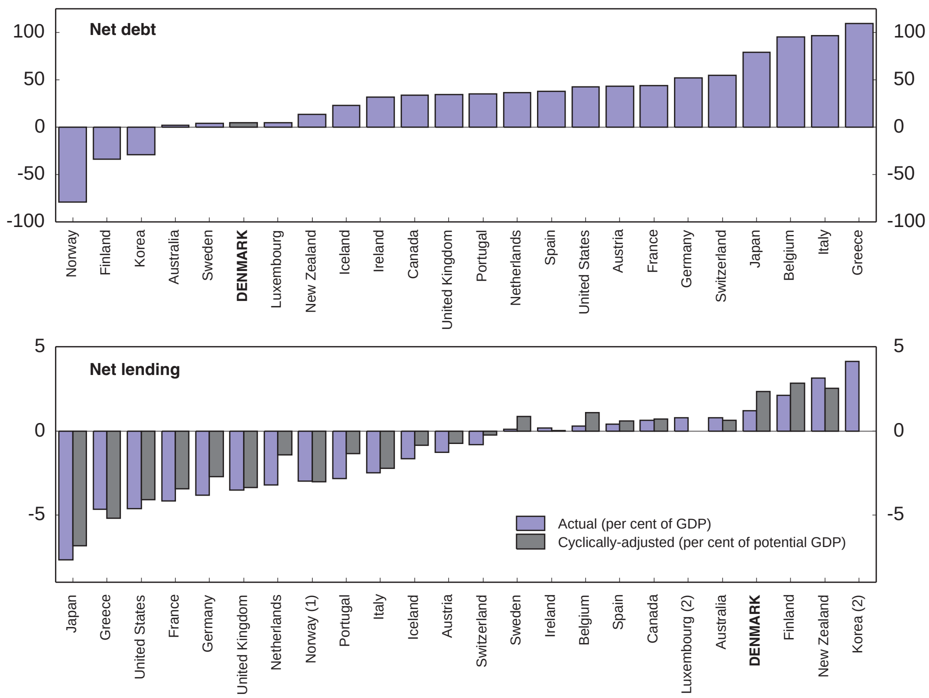
The fiscal surplus is drifting below the government's target

Denmark's medium-term fiscal framework has undoubtedly been instrumental in placing the country as one of the best performing in the OECD in terms of government net debt and net lending (Figure 2.4). However, the general government surplus looks set to fall below 1% of GDP in 2004, partly because of the cyclical downturn in 2002-03, but also as a result of fiscal slippage and tax reductions. Therefore, even the estimated cyclically-adjusted surplus is drifting outside the target interval in 2004 after taking account of the temporary suspension of Special Pension contributions (Table 2.2).

Both the current and the previous governments have focused on restraining real government consumption growth as a way of making public finances sustainable in the long term. As a means to halt the upward drift in expenditures and tax rates, the current government has introduced a tax freeze, which applies both to central government tax rates and to the average tax rate of local governments (allowing one local government to raise taxes provided that another lowers them – see previous *Survey*). Overall, the tax freeze has been a success. Public consumption growth has been reduced compared to previous years, and there was a sharp decline in the number of municipalities raising taxes in 2003 and 2004 (Figure 2.5). More recently, however, many raised them again for the 2005 fiscal year, leading to a very small breach of the tax freeze that will be offset by a reduction in the basic state tax rate. While real public consumption growth has been reined in, it has still

Figure 2.4. **The public finance position is among the best in the OECD**

General government, per cent of GDP, 2003



1. Mainland only (*i.e.* excluding oil production).
2. No cyclically-adjusted figures are available.

Source: OECD Economic Outlook 76 Database.

Table 2.2. **General government net lending has deteriorated**

Per cent of GDP

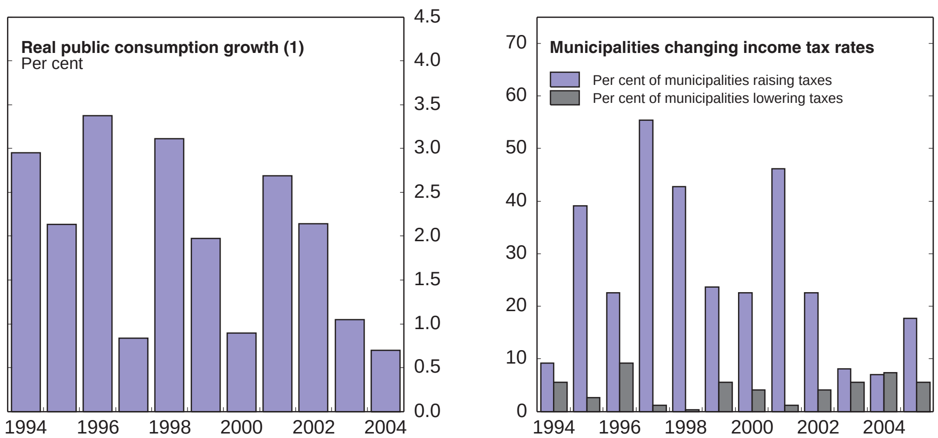
	2000	2001	2002	2003	2004[1]
Total revenue	57.4	58.2	57.4	57.2	56.5
Total expenditure	54.9	55.3	55.8	56.0	55.6
Net lending	2.5	2.8	1.6	1.2	0.9
Cyclically-adjusted net lending including correction for suspension of Special Pension contributions[2]	1.5	1.8	1.6	2.4	1.3

Note: The suspension of Special Pension contributions in 2004 and 2005 boosts net lending and conventional measures of cyclically-adjusted net lending by 0.3 percentage point of GDP in those two years.

1. OECD estimates.
2. Per cent of potential GDP.

Source: OECD Economic Outlook 76 Database.

Figure 2.5. **The tax freeze has helped to reduce municipal tax hikes and public consumption growth**



1. The 2004 figure is an OECD projection.

Source: Ministry of the Interior and Health, *www.im.dk*; OECD Economic Outlook 76 Database.

overshot the government's target in 2002 and 2003. The slippage was by local governments, and overspending has not been countered by the central government in subsequent negotiations on the size of grants to local governments. A stronger enforcement mechanism may therefore be needed unless the central government is ready to make deeper cuts in its own consumption. It is already being forced to do so because high priority is given to core public welfare services, which are practically all provided by local governments. At the same time, the consumption target implies more restraint than seen in a decade. As the debt-reduction strategy is coming under pressure, the government should – consistent with the focus on fiscal sustainability in its framework rather than on the size of measured government debt – resist resorting to technical measures, such as changes in asset management, that may make the situation look better but have no fundamental implication for the long-term sustainability of public finances.

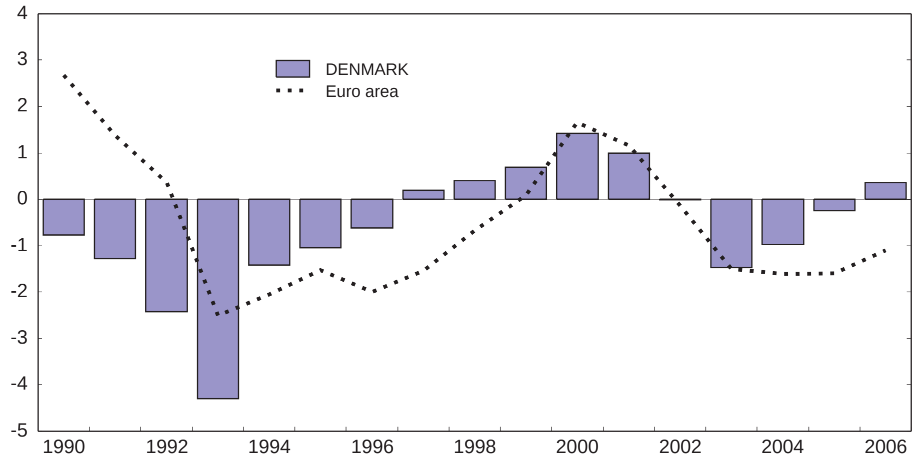
Another reason for the decline in the fiscal surplus is the erosion of general government revenue by income tax cuts for low and middle income earners and because the tax freeze does not allow nominally-set tax rates to be adjusted in line with inflation. The tax cuts were introduced to increase labour supply and were initially to be phased in from 2004-07. However, following the international slowdown, the Danish economy experienced a period of subdued growth in 2002-03 and, as unemployment started creeping upwards, the policy focus began shifting from the long-term issues of labour supply to short-term unemployment concerns. For a long period the government maintained that further stimulus of the economy in 2004 would not be required. Nevertheless, in March 2004 it proposed a range of measures to stimulate growth (Annex 2.A1). On top of the already implemented tax cuts (from 1 January 2004) and the introduction of principal-free (interest-only) housing loans for households in 2003 (following a modernization of the mortgage credit legislation), the planned tax cuts in 2005-07 were brought forward to 2004 and Special Pension contributions were suspended in 2004 and 2005, with the intention of boosting household disposable income and thereby private consumption. Activity was to be further stimulated by more public investments and higher subsidies to private housing investments. In effect, 2004 has seen the largest fiscal stimulus since 1996, contributing an estimated ¾ percentage point to GDP growth. The Ministry of Finance also estimates that lagged effects of the previous cuts in short and long-term interest rates would generate an additional ¾ percentage point of GDP growth, so that the combination of fiscal policy and low interest rates have raised GDP growth by 1½ percentage points in 2004.

The timing of the spring package can be questioned. The first tranche of the tax cuts were already going to provide quite a contribution to household disposable income in 2004, and – possibly in anticipation of that – private consumption had already jumped in the fourth quarter of 2003. Also, unemployment had started to fall again, although only one month's drop was known when the package was tabled. The need for further stimulus was therefore not obvious. The effect of the new measures is likely to coincide with otherwise accelerating activity (see Chapter 1), thus increasing overheating risks in 2005, even though there is spare capacity in the economy at the moment. Households' reaction to the extra money in hand is highly uncertain, but the marginal propensity to consume could turn out higher on the back of more job security following improvements on the labour market. As the Danish output gap closes more rapidly, the country may also find itself less in phase with the euro area once again (Figure 2.6). Although the discrepancy is not large, this would make the ECB's monetary policy less suitable for managing the domestic economy.

The 2004 tax cuts illustrate one of the weaknesses of a "pre-saving" strategy: it requires a great deal of fiscal discipline to maintain large budget surpluses for a substantial period. In the original *2010 Plan*, a margin was set aside for lower tax revenues (either from reductions in tax rates or from pressure on tax bases). This margin has been more than used up by the government's tax freeze and the new earned income tax credit along with a higher threshold for paying the intermediate state tax. Although lower tax on earned income is a long-standing OECD recommendation, these recent measures are not aimed where they will strengthen work incentives the most (*i.e.* at the top end of the distribution). Hence they have higher fiscal costs in the sense that they will deliver less labour supply increase per *krone* spent. This was a deliberate choice by the government, whose key priority is raising participation rates rather than working hours for those already employed. While government consumption growth has been reduced from previous years' outcomes, and a number of implemented reforms of the tax system and the labour market

Figure 2.6. **The output gap may diverge from that in the euro area**

Per cent of potential GDP



Source: OECD Economic Outlook 76 Database.

are likely to contribute to higher employment rates, the government has yet to pay a significant part of the bill in terms of even lower real government consumption growth and additional structural measures to raise employment rates, as presumed in its *2010 Plan*. But for now, structural reforms have been put on hold until the Welfare Commission presents its recommendations, which it will do in 2005. That leaves little time for new policy to be implemented and have effect within the medium-term fiscal framework, and the structural budget balance is therefore likely to remain below the target interval in the rest of the period until 2010 as well.

Inter-generational equity is also an issue

Setting up the *2010 Plan* and explicitly expressing the quantitative requirements for achieving fiscal sustainability have been useful in drawing attention to the challenges posed by demographic changes, and it is important to uphold a consistent medium-term fiscal framework, so that progress towards sustainability can be monitored on a continuous basis. The emphasis on fiscal sustainability in this strategy implies that pre-saving in the form of debt-reduction, as expressed in the target range for government surpluses, can be traded off against reforms that raise employment or otherwise reduce expenditure pressures in the longer run. This allows a great deal of flexibility when choosing the policies to achieve sustainability. But convincing reforms need to be implemented before the surplus target can be relaxed. Reform progress until now has been inadequate to ensure that either *i)* employment rates will increase and generate budget surpluses within the target range in the *2010 Plan*, or *ii)* expenditure pressures will be lowered in the future so that sustainability can be achieved with lower surpluses in the medium term (*i.e.* less debt reduction) than envisaged in the *2010 Plan*. Hence, new reforms need to be put in place with the minimum of delay in order to boost the credibility of the fiscal framework. Moreover, the calculations by the Welfare Commission indicate that succeeding with the *2010 Plan* may not even be enough to make public finances sustainable, reinforcing the need for further measures.

When the government decides – after the Commission has presented its recommendations – on reforms to make the welfare system sustainable, it should aim to strike an appropriate balance between pre-saving and measures that improve the robustness of the economy, taking into account intergenerational equity considerations (see, for instance, Welfare Commission, 2004 and Andersen *et al.*, 2004):

- While it may be sensible to save for temporary demographic-driven pressures on public finances, the permanent nature of the demographic developments in Denmark suggests that ways of permanently reducing these pressures ought to be sought.
- A pre-saving strategy is very sensitive to the specific assumptions underlying the estimate of the necessary tightening of public finance, in particular demographic projections and future returns on government assets. The current generations may therefore end up saving more than what they rightfully should. Ways should be sought to making the system more robust in the face of these uncertainties.
- While saving for their own old age is appropriate, it is not obvious that current generations, who live relative shorter and less affluent lives, should also save for the financing of future generations so that these may spend a larger part of their lives receiving public retirement transfers. Neither should current generations help save for future generations to draw more on public welfare services, just because these new generations live longer. According to estimates by the Welfare Commission, there would be almost no need to adjust public finances now if longevity did not increase (or alternatively, if it was decided that current generations should not provide financing for an increase in life expectancy of future generations).
- On the other hand, there is an inter-generational equity argument in favour of pre-saving for *some* age-related expenditures. In practice, it will be impossible to refuse people health care or make them pay more than a symbolic user charge. Hence, it would be fair to ask them to pay in advance while they are working, rather than expecting future workers to pick up the bill. The same applies if service standards in health care are expanded – as they have been in the past. Working generations should then pre-save to finance their own higher demand on public services at a later stage of their lives. They should also pre-save if they decide to reduce working hours or retire earlier, thereby reducing their tax contributions. Both average working hours and the average retirement age have tended to fall in the past (see previous *Survey*), as households take out part of the increase in real income in the form of leisure – a practise that is reinforced by Denmark's high income tax rates, which distort the labour/leisure choice.[3]
- The risks associated with a pure reform strategy should not be underestimated either. Such an approach invites an increase in spending in the short term while running the risk that the necessary reforms will not be implemented and that the promised future cutbacks will not materialize. This is in a sense what a pre-saving strategy intends to avoid.

The shortcomings of a pure pre-saving strategy and the experience with the *2010 Plan* suggest that the government should not just delay its medium-term fiscal goals to 2015, if it finds that it is struggling to achieve them, but look for complementary ways to make public finances sustainable by focussing more on reducing the foreseeable future expenditure pressures and by better linking the contributions made by generations and individuals over their lifetimes with the benefits they receive from the welfare system. As the demand for public services in the future is likely to expand well beyond what is possible or might be considered essential today, it would be useful to have a public debate about what are the core welfare services that should be provided with public funding and equal access and to look at ways of expanding the possibilities for meeting any extra demand through private financing.

Inspiration can be found also from experience in other OECD countries (Joumard *et al.*, 2004): elsewhere, efforts have centred mainly on improving the long-term sustainability of public pension systems in various ways, including raising the retirement age (Austria, Germany, Italy and Poland) and reducing benefit rates by changing pension indexation – if not permanently then for a defined period – from wages to prices (Finland, France, Hungary, Italy, Japan and Korea) or from pre-tax to after-tax wages (Germany). In Italy and Sweden, pension benefits are automatically adjusted to changes in average life expectancy. In Denmark, the introduction of fully-funded labour market pensions is likely to reduce the pressure on public (pay-as-you-go) old-age pensions in the future (Annex 2.A2), but that is already taken into account in the various fiscal sustainability calculations. Further measures are therefore needed to curb the future pressure on public finances, and various options, for instance for reducing the number of people receiving retirement income from the government, are discussed in Chapter 3.

Reform of government structures should improve public services

Future demographic changes will have the largest impact on expenditure for core public services, such as elderly and health care, which are mainly provided by local governments. That is likely to require reallocation of resources away from activities that are lower on the priority list or where efficiency gains are more easily reaped, as it will be increasingly difficult to raise additional revenue by putting up local government tax rates, which have risen steadily in the last 25 years (see previous *Survey*). If core public services are not clearly identified, there is a risk that they will be crowded out by increasing demand for less important services that – by tradition rather than by necessity – are funded by the public sector today. It is of course also essential that services be provided as efficiently as possible in order to minimise fiscal costs and thereby the risk that service standards will have to be cut in the future.

All this requires that the structure of local governments be well designed and that the division of tasks is appropriate. Denmark stands out in international comparison as having a highly decentralised government structure, even though the size of municipalities (in terms of inhabitants) is not particularly small (Table 2.3). The difference is that the number and complexity of tasks and responsibilities delegated to municipalities is substantial, as is the case in the other Nordic countries, with local governments accounting for around three-quarters of total public consumption (see the special chapter in the 2002 *Economic Survey*).

The government's Structural Commission, which published its report earlier this year (Annex 2.A3), concluded that a reform of local governments and the division of tasks was called for, as the current municipalities and counties are in many cases too small for dealing effectively with the increasing number of tasks that are assigned to them. On the basis of this report, the government has decided on a reform of the structure and tasks of local governments to be implemented from 2007. This will include larger units at both levels of local governments (amalgamation of municipalities and transformation of counties into regions) and reallocation of authority and tasks in a number of key public areas (Annex 2.A4). The details of the reform are still under discussion, and there may be

Table 2.3. **Size of municipalities**

2002

	Percentage share of municipalities by number of inhabitants						Number of municipalities	Average size
	Less than 1 000	1 000-5 000	5 001-10 000	10 001-50 000	50 000-100 000	More than 100 000		
Denmark	0	5.9	42.1	45.7	4.8	1.5	271	19 200
Finland	4.8	44.4	26.3	21.5	1.5	1.3	455	11 600
France[1]	77.1	18.1	2.5	2.0	0.2	0.1	36 551	1 600
Italy[1]	23.9	49.0	14.2	0	12.2	1.7	8 101	7 200
Netherlands[2]	0	5.4	22.7	61.9	5.8	4.3	572	29 200
Norway	4.1	52.4	21.2	20.2	0	2.1	435	10 300
Spain[3]	60.3	25.5	6.5	6.2	0.8	0.6	8 097	4 800
Sweden	0	3.1	19.1	63.2	10.8	3.8	288	30 800

1. Data from 1990. Numbers for France do not include overseas territories.
2. Data from 1997.
3. Data from 1996.

Source: Structural Commission (2004), *Strukturkommissionens betænkning*, January, *www.im.dk*.

changes in some areas during the process of drafting the new legislation. But in most cases, municipalities with fewer than 20 000 inhabitants are required to merge with their neighbours. They have until the end of 2004 to amalgamate on a voluntary basis, and most have already done so. If they do not amalgamate voluntarily and refuse to enter binding co-operation with other municipalities, amalgamations will be decided by the central government. Currently, it looks as though there will be around 100 municipalities (down from 271) in the future.

Amalgamations of sub-national governments have been taking place or are on the agenda in several OECD countries (including other Nordics) as a way of exploiting economies of scale, internalising spillovers, and improving quality in services and management professionalism. This process has often been prompted by national governments through financial contributions on the hypothesis that restructuring would also yield national benefits because lower local government costs would reduce the need for state grants (Joumard and Kongsrud, 2003). This is, for instance, the case in Finland, where experience, however, suggests that mergers do not necessarily ensure a decline in local spending. While they have led to savings on administrative functions, total spending has typically increased more than in comparable municipalities, as extra spending growth notably in education and health care has more than offset other savings. Whether this extra spending growth is a result of higher service standards or inefficiencies is unclear (OECD, 2004). Although it provided rather little evidence, the Structural Commission suggested that gains from larger local government units could be substantial. However, it may be that the benefits would rather lie in better quality in the provision of services and management and administration that is more professional.

Curbing health expenditure pressures

One of the key issues in the reform is the organisation and financing of health care. The new regions will be responsible for hospitals, including psychiatric treatment, and primary care (general practitioners), while municipalities are delegated all rehabilitation services outside hospitals and a stronger role in health services related to prevention and training. The central government will collect an 8% health contribution – replacing the current county income tax – levied on the same base as municipalities' income tax and distribute the revenue to both levels of local government. Thus, regions' expenditure on health will be financed by a state block grant (covering around 75% of total costs), an activity-dependent state subsidy (5% of costs) and municipal contribution payments (the rest).

By not giving the regions any taxing powers, the government has ensured that it will be able to control expenditures and tax burdens in accordance with its macro-economic objectives. In principle, it will also be easier to trade off health spending with other demands on public services, as this would have been impossible for regions themselves with their small portfolio of tasks outside the health care area.

However, it is not obvious that the central government will be more prudent in allocating resources to health care activities. Regions may *de facto* face a softer budget constraint, despite a strict budget balance requirement in principle, because the central government will find it hard to refuse extra finance in the face of waiting lists or cost overruns. This creates a problem of inadequate incentives to seek productivity increases at the micro level, and it also opens up the possibility of a continuous game, with local governments trying to get more money from the state. It is also still unclear whether the activity-contingent financing from the central government will be subject to a ceiling or not. If so, some budget control will persist; if not, the result may be a significant expansion of activity. Furthermore, political focus on single cases and battles between members of parliament from different parts of the country entail risks of weak expenditure control and a lack of prioritisation between various treatments and between health care and other public services. Experience from Norway, where the major part of funding was moved to activity-based systems when the central government took over full responsibility of hospitals from the five regions in 2002 (because of concerns of increasing costs and a lack of progress in reducing waiting times), suggests that these are indeed important risks. Activity there has been systematically greater than expected and caused budget overruns, and little consolidation of hospitals has been carried through because of resistance by the general public.

Budget overruns are common in activity-based payment systems that do not have a cap. It is hard to know whether to interpret this in a positive or a negative light. It may be because activity-based funding allows clinicians to over-service patients ("supplier-induced demand"), but while there is some evidence of such behaviour at the margin in some countries, it does not appear to be a particularly large problem. In any case, it is less likely to occur in the hospital sector than in primary care. The more positive interpretation, however, is that budget overruns may result from the fact that the true capacity of the current health system is revealed only once its incentives are improved, leading to an increase in output *via* higher productivity. If so, the government's objective of reducing waiting lists may be achieved faster, as experienced in Norway. If the government balked at budget overruns from higher output, it would implicitly be saying that it is simply unwilling to pay for the quantity of services that a well-run medical system is capable of delivering once its incentives are improved.

As part of the reform, municipalities will be sharing some of the costs for regions' health services. The rationale for this is not obvious, however. Municipalities will have no influence on referrals to hospital treatment (except to a small extent *via* their rehabilitation efforts). Besides a fixed annual contribution of up to DKK 1 500 (€ 200) per inhabitant, municipalities will pay an activity-dependent contribution for all sorts of hospital

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treatments that they have no means of managing. Thus, these payments to regions will end up as an uncontrollable lump in municipalities' budgets, which will inevitably be a central part of the battlefield in the future negotiations on municipalities' block grants from the central government. There seems to be more rationale for the new obligation for regions to charge municipalities for patients ready for discharge but who cannot be moved out of hospital because of a lack of capacity in municipal nursing homes (counties have been able to charge municipalities, but some have chosen not to do so). This should reduce such problems in the future, although it is important that charges adequately reflect hospitals' full costs and are not just symbolic amounts.

Improving active labour market policies

Another key aspect of the reform is the placement of responsibility for active labour market policies (ALMPs). At present, those with unemployment insurance are treated by the Public Employment Service (PES) run by the central government from 40 offices around the country, while those without insurance are the responsibility of municipalities. Financial responsibilities are also split, with the central government providing most of the funding for unemployment benefits for the insured and insurance funds paying the rest, while municipalities pay cash benefits to people without insurance. Co-operation among different municipalities and between municipalities and the PES is limited (although uninsured people who are judged "job ready" can be referred to the PES to help them find work), and the exchange of experiences is quite small. The two separate systems will continue after the reform, but collaboration is supposed to be intensified as they are put under the same roof in new local job centres that will house all labour-market-related contacts. In addition, ten pilot projects are to be set up where municipalities will deal also with insured unemployed (on contract for the central government). Whether these measures will actually improve ALMPs remains to be seen.

The Structural Commission recommended going one step further by unifying the two systems and allocating all responsibilities to municipalities. Greater horizontal equity (treating similar people in a similar way) and an employment service with a better local knowledge would be the potential advantages of forming one single point of contact for the insured and uninsured jobless, recipients of sickness and other cash benefits, older workers with "flex jobs", etc. However, the state-run PES seems to do a better – and certainly more consistent – job than the municipalities when it comes to finding work for "job ready" individuals (although not too much should be read into these findings as the evidence is far from clear, and it is difficult to compare the two systems[4]). Prerequisites for transferring all responsibilities for ALMPs to municipalities at a later time would therefore be: *i)* that the pilot projects demonstrate better performance than the PES; *ii)* that effective structures for collaboration are implemented, as labour markets may otherwise become balkanised and un-co-ordinated, resulting in fragmented activation measures and reduced labour mobility; *iii)* that central control over ALMPs is maintained through mechanisms that allow government priorities to be implemented as quickly and easily as in the PES; and *iv)* that the marginal costs of benefits to those with unemployment insurance are borne by municipalities so that they do not have financial incentives to concentrate efforts on people without unemployment insurance. Anyway, continuing to expand the involvement of private actors may hold more potential for improving job services, as has been seen in Australia.

Performance benchmarking would help get the most from the reforms

Despite some concerns, the reform of government structures has a number of advantages. Larger government units should make it easier to implement more e-government, and harmonisation of IT systems could improve productivity in administration. Fewer local government authorities should also make for improvement of control and prioritisation of public funds and help focus spending increases on core public services. The reform should also provide for enhanced possibilities of opening up the public sector to competition. First, it is a good occasion to reassess existing contracts and whether other services could be put to tender, where Denmark has been less progressive than many other OECD countries. Second, amalgamations of local governments will increase the size of contracts, thereby making the market more attractive to private providers. Third, larger local governments would have greater resources to enter into negotiations and set up contracts and quality-control procedures. Both market size and monitoring costs have previously been identified as important impediments to contracting out (see Chapter 4), coupled with scepticism and/or disagreement at the political level. In the end it will be a matter of political will to take advantage of these new opportunities.

The planned establishment of an Evaluation Institute as part of the reform is likely to improve benchmarking tools, in line with efforts in Sweden and Norway. These countries have developed comprehensive data sets, available on the Internet, that provide indicators on the coverage and costs of public services for each municipality. Uncovering best practice and "naming and shaming" the poor performers have led to pressures on local administrations to raise quality and cost effectiveness in those countries. Some datasets are already available in Denmark (from the website of the Ministry of the Interior and Health), but quality and coverage could be improved. A more systematic utilisation of comparisons, for instance for peer pressure, could improve dissemination of best practices. There are currently large differences between local governments when it comes to using competitive markets as a way of improving efficiency in the provision of public services, and similar large differences can be found in municipalities' performance in, for instance, active labour market policies and in combating sickness absenteeism.

One risk of increased transparency is that local interest groups may push for more spending in "their" particular demand areas if the quality of services is below that in other municipalities. This would suggest that benchmarking exercises be linked to fiscal procedures so that quality shortfalls would first be met by efficiency improvements – reducing unit costs to the national average – before further expansion could be financed by tax hikes. Given the right of self-government of municipalities, such a system would have to be an element in the annual negotiations on block grants from the central government, with enforcement being ensured *via* adjustment of individualised grants.

When implementing the reform, the government should consider how changes in funding allocation mechanisms could strengthen incentives for government units to be more efficient. For instance, more activity-based funding could be implemented for specific services. This would provide a direct reward and sanction system and has found increasing use in OECD countries. An important weakness of such systems is that sanctions of non-compliance in terms of lower funding may not be appropriate if the service in question is deemed essential and no alternative supplier is available (Joumard *et al.*, 2004). In terms of ensuring a more stable financing source for municipalities, giving them better access to property taxes (which are well suited for local government activities – see Joumard and Kongsrud, 2003) could also be considered.

Notes

1. "No policy" means no additional labour market or welfare reforms beyond what has already been implemented, and public consumption growing in line with demographic developments (*i.e.* without the expenditure constraint built in to the *2010 Plan*).
2. One of the most important differences between the calculations made by the Ministry of Finance and the Welfare Commission is the assumed interest rate on government assets. Because assumptions on nominal GDP growth are practically the same, this makes for a similar difference in the growth-corrected real interest rate, which is the relevant discounting factor in the government's inter-temporal budget constraint. Despite a larger deterioration of primary net lending, net debt rises less in the Welfare Commission's scenario, because it uses a lower interest rate than the Ministry of Finance. The interest burden is therefore smaller, for a given debt level, and that more than offsets a relatively worse development in central and local government primary net lending. Nevertheless, the required improvement of primary net lending is larger than in the Ministry of Finance's scenario. This may seem counter-intuitive, given the lower debt trajectory. However, for a given tightening of public finances the resulting improvement of the net debt position makes for a smaller reduction of net interest payments in the Welfare Commission's scenario because of the lower interest rate.
3. Another trend has been a higher intake to tertiary education. While increases in the average educational level may result in later entry into the labour market on average, people with higher education tend to retire later. Including the immediate effect from lower participation rates among the young while failing to account for a likely later retirement may overestimate the challenges to public finances. The Ministry of Finance included the effect from higher education on the average retirement age in its latest projections, which reduced the estimate of the required improvement in public finances by around ¼ percentage point of GDP.
4. In the Structural Commission's report (Structural Commission, 2004), a study by the Employment Ministry looking at the probability of finding a job following an activation course is presented. It was based on 2001 data and controlled for individual and local conditions, including the local unemployment rate, the proportion of immigrants, the age and educational composition of the population and average firm size.

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ANNEX 2.A1

Attempting to boost the recovery

In March 2004, the government announced a number of measures to boost the economic recovery (Regeringen, 2004):

- The tax cuts that were to be phased-in in the period 2004-07 were brought forward in full to 2004. This would increase household disposable income by DKK 4 billion in 2004 and additional DKK 2.5 billion in 2005.
- Contributions to the Special Pension fund (SP) were suspended in 2004 and 2005. This would increase household disposable income by additional DKK 4 billion in 2004 and 2005. The contribution is 1% of total wages, around DKK 8 billion per year. But since contributions are tax-deductible while the subsequent pension payments are taxed, suspending this contribution meant that tax payments on the DKK 8 billion were brought forward to 2004 and 2005. The net effect on disposable income would therefore be around DKK 4 billion per year. Because contributions and payments to/from the SP are kept within the private sector in the National Accounts, the only effect on public finances is higher tax payments in 2004 and 2005 and lower tax payments sometime in the future when pension withdrawal would otherwise have been made.
- DKK 0.6 billion from a funding pool for social and health projects was brought forward to 2004.
- Planned and new public investments and subsidies for private housing investments were brought forward to 2004 (amounting to DKK 0.8 billion in 2004 and DKK 0.4 billion in 2005).
- Measures to (re-)educate the labour force (activation) were intensified (at a cost of around DKK 0.2 billion in 2004 and DKK 0.1 billion in 2005). Also, local governments were authorised to temporarily suspend social assistance payments to those less than 25 years of age who are not pursuing educational studies.

On Ministry of Finance estimates, the extra tax revenue from suspending the SP contributions and the extra revenue generated from the effects on activity (higher employment and consumption) would be approximately equal to the extra government spending and the tax revenue lost from frontloading the tax cuts in 2004. In 2005 there would be a favourable effect on government finances of around DKK 5 billion. Thus, the package would lead only to an infinitesimal deterioration of fiscal sustainability.

It should be noted that SP contributions were introduced in 1998 as a means of dampening economic growth at a time when signs of overheating started to emerge.

ANNEX 2.A2

Private labour market pensions will ease public finance pressure

The introduction in 1993 and gradual increase of contributions to fully funded pension schemes as an integral part of collective agreements in the labour market is likely to ease the burden on public finances arising from the ageing population. On a political note, the labour market pensions may reduce the pressure for increasing replacement rates of the public old-age pension. In addition, key mechanisms in the welfare system are affected, with several factors – working in opposite directions – at play.

First, the favourable treatment of pension saving in the tax system may be a net liability for public finances; contributions are deductible from the income tax base, while withdrawals are taxed at a rate that is likely to be lower because of the progressive nature of the income tax system. Furthermore, the return on accumulated pension savings is taxed at a favourable rate compared to returns from other saving vehicles. Thus, a net tax loss is realised during the build-up of these pension schemes; this loss will eventually decline and reverse as the schemes mature and as withdrawals increase with the ageing of the population. However, the additional accumulation of government debt because of net tax losses in past years is likely to exceed the present value of the implicit fiscal asset from deferred tax on pension withdrawals less foregone tax revenue from future pension contributions. The tax treatment of pension savings may therefore make public finances less sustainable, although the extent would depend on whether the introduction of private labour market pensions has led to additional savings, thereby reducing the negative impact of lower tax rates on pension fund returns (Antolin *et al*., 2004). Because of their mandatory nature, labour market pension savings are likely to have led to some extra saving, which would also be consistent with the overall increase in households' financial savings in the last 10 years.

The negative effect on government revenue is likely to be countered by two other effects that will reduce the ageing-driven increases in public expenditure. *First*, public income transfer rates and thresholds in the tax system are indexed to private wages excluding pension contributions according to present legislation. Thus, the gradual rise in the pension contribution rate from 0 to around 9% between 1993 and 2004 has reduced transfer rates by 9% in 2004 compared to a situation where workers had received all their compensation as take-home pay. *Second*, a significant part of the public old-age (pay-as-you-go) pension is made up of an income-tested pension supplement. As individual labour market pension payments gradually rise, fewer people will be eligible for this supplement and other means-tested benefits.

On balance, the implementation of labour market pension schemes in practically all parts of the labour market over the last decade or so would seem to have improved fiscal sustainability. On Ministry of Finance and Welfare Commission estimates, the new increases in pension contributions by around 1.8 percentage points over the period 2004-06 that were included in the recent private sector wage agreements will reduce the necessary improvement of public finances by 0.2-0.3 percentage point of GDP. Based on this, the total gain to fiscal sustainability from the build-up of private labour market pensions can be estimated to be around 1¼-1¾ percentage points of GDP. In addition, it may be argued that shifting tax revenue to a period in the future where the fiscal pressures from ageing are peaking has helped to resist pressures to spend revenues now, rather than reduce net debt in preparation for these future challenges.

ANNEX 2.A3

Main conclusions of the Structural Commission

The government established the Structural Commission in October 2002, and in January 2004 the Commission delivered its report. The main conclusions were:

- There are a number of weaknesses in the current structure of the public sector, and these are expected to be amplified by future pressure from the ageing population. The analyses show that many of the current administrations are unsuitably small in relation to the tasks they are given. Small municipalities have problems ensuring adequate professional viability in certain tasks, have higher expenditures per inhabitant, have inadequate capacity to handle contracting out and have difficulties in ensuring a broader range of choice for the citizens and in reaping the benefits of digitalization. Likewise, most of the counties are too small to ensure optimal planning in the health sector, and there are co-ordination problems in the areas of health, transport and zoning between too small counties. Shared responsibilities in a number of service areas give rise to "grey zones" where it is unclear for citizens and authorities who has the responsibility, for instance in social services, special education and certain health services. This may also weaken expenditure control and prioritisation between service areas. There are parallel functions located in different levels of administration, for instance in active labour market policies, where the central government and municipalities have parallel functions, and in youth education, which is split between the central government and counties. The normal assumption that there is a trade-off between viability – and thereby municipalities' ability and autonomy in executing political decisions – and democracy was not found to be valid.
- The problems associated with professional viability, lack of coordination in services and inadequate economies of scale cannot be solved by a rearrangement of financing and equalization schemes or by voluntary co-operation between local governments. A reform involving both changes to the size of local governments and the division of responsibilities and tasks is required. Such a reform will have several benefits: *a)* further decentralisation is possible; *b)* tasks and responsibilities can be gathered at one level of government; *c)* access to the public sector can be simplified, for instance by establishing service centres; *d)* the quality of services and the range of available options can be more easily increased; *e)* implementation of national policies will be easier; and *f)* efficiency gains can be reaped, thereby providing a better basis for meeting future expenditure pressures.
- The 14 counties should be transformed into between 3 and 8 regions. In terms of planning of specialised hospital treatment, a small number of regions would be

preferable. On the other hand, considerations of local knowledge, the ability of central government to control developments and operation in other service areas argue for regions that are not too large. For municipalities, a minimum number of 20 000 inhabitants would provide for satisfactory professional viability in most of the important tasks, while 30 000 inhabitants would give better possibilities of gathering responsibility for social services and social psychiatric services together in municipalities. The Commission's studies suggest (although with a substantial element of uncertainty) that average operating costs are lowest in municipalities with 34 000 inhabitants (increased from 28 000 inhabitants in 1993), while indication of some diseconomies of scale are found in municipalities with more than 50 000 inhabitants.

- The Commission studied advantages and drawbacks of various models for the structure of the public sector with differences in both the number of levels of government, the size of administrations at each level and allocations of responsibilities and tasks. While decision competence relating to a specific task and responsibility for budgets and prioritisation among tasks were integrated in all models, not all involved a direct connection between decision competence and financing responsibility, although the Commission recognised that a direct connection would generate the strongest relation between the two. The Commission did not recommend a specific model, as this was believed to be very much a political decision. However, recommendations were made that active labour market policies be gathered in a unified system anchored with the municipalities and that tax assessment and collection be transferred to the central government.

While stating that a prerequisite for reform should be that benefits (at least) offset costs, no such estimates were provided by the Commission for any of the analysed models. In general, the report suffered from a lack of data on results or effects of different activities. Analysis of efficiency was based on expenditure per inhabitant corrected for municipalities' structural expenditure needs and economic resources. On a very uncertain estimate, the potential for efficiency increases for municipalities with less than 18 000 inhabitants was reported to be 1½ per cent of total net operating costs in all municipalities. However, this was not believed to form an appropriate basis for an assessment of economies of scale from amalgamation of the small municipalities. At the county level, an analysis of productivity in the hospital sector was made. It was, however, also limited by poor data, and no clear conclusions were drawn on the connection between county size and productivity performance.

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ANNEX 2.A4

Reforming local governments

Following the work of the Structural Commission concluded in January 2004 the government entered into negotiations with the parties in parliament on a reform of local governments and reached an agreement on the principles of a reform with its supporting party in June 2004. Actual changes to legislation are then to be prepared and passed by parliament. The main elements of the agreement are:

Size:

- Municipalities are requested to amalgamate on a voluntary basis to achieve a size of 30 000 inhabitants or more. This should bring down the number of municipalities to around one-third of the current 271. Municipalities with less than 20 000 inhabitants that do not want to amalgamate are obliged to enter binding co-operation with one or more neighbouring municipalities, so that the number of citizens served by the co-operating municipalities is at least 30 000. Co-operation should at least cover employment services, referral functions in social services, special education and environment tasks that are to be transferred from counties. Amalgamations will be decided by the central government if municipalities with less than 20 000 inhabitants do not amalgamate voluntarily or refuse to enter binding co-operation with other municipalities.
- The 14 counties and the two special institutions governing development strategies and hospitals in the capital are to be replaced by five new regions.

Tasks:

- Municipalities are delegated the following tasks: all rehabilitation services outside hospitals and a stronger role in health services related to prevention and training; authority and financing responsibility for all social services and for extensive and adult special education, including all special schools that do not operate nation-wide; institutions for children and youths with social or behavioural problems; business development services; a larger part of public transport and most of the previous county roads; most of counties' nature and environmental tasks; greater competence in physical planning; and more responsibility for local cultural services.
- The new regions will be responsible for: hospitals, including psychiatric treatment, primary care (general practitioners); preparation of regional development plans concerning the environment, business, tourism, employment, education, cultural services and land zones; a number of institutions for vulnerable groups or groups with special

needs; establishment of public transport companies that will be in charge of public bus transport; and those county railroads that are not transferred to the central government.

- The central government will take over responsibility for: upper secondary and other youth education as well as adult education centres, education of nurses and social and health assistants, and other special education; previous county knowledge centres and counselling services (a new national knowledge and special-counselling organisation is to be formed); the main road network and certain previous county railroads; all tax assessment and collection; administration and payment of EU structural funds; and some of the environmental and cultural tasks previously placed in the counties.

Financing:

- Municipalities will in addition to their current income taxes and land taxes receive financing from: the part of the county income tax that is not replaced by the new health contribution (see below); county land taxes and counties' part of the property value tax; and the county contribution duty on public real estate. The block grant to municipalities and the intra-municipal equalisation scheme will also be adjusted.
- Regions' expenditure on health will be financed by: a state block grant (covering around 75% of expenditures), which will be distributed on the basis of criteria that reflect expenditure needs (*e.g.* the number of elderly); an activity-dependent state subsidy (5% of expenditures); municipal contribution payments (basic contribution of max DKK 1 500 per inhabitant and an activity-dependent contribution, each covering around 10% of expenditures). Regions' other tasks are financed by: state block grants; a "development contribution" from municipalities of a maximum of DKK 200 per inhabitant; charges paid by municipalities for services produced by institutions for vulnerable groups and groups with special needs.
- The central government is to collect an 8% health contribution levied on the same base as municipalities' income tax. The revenue will be distributed to regions and municipalities.
- In order to avoid upward drifting tax or expenditure levels in connection with the reform, an upper limit on municipal taxes will be in effect in the transition year 2006. Special loan arrangements will be offered to local governments to cover one-off transition costs. These should be repaid within a short period. Extraordinary subsidies are made available to municipalities with exceptional economic problems.

Implementation:

- Most changes will take effect on 1 January 2007. The main exception is that tax assessment and collection will be transferred to the central government in 2005.

Other:

- An Evaluation Institute is established to ensure that the full efficiency-improving potential of the reform is reaped. It will monitor the performance of local governments and develop better comparisons thereof in order to improve openness and transparency of the public sector.
- Municipal service centres are to be established. These will serve as a common entry point to all levels of government.

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Chapter 3

Boosting labour supply

This chapter discusses how to increase labour supply, in terms of both hours of work and employment. The impact of high income taxes on working hours is discussed, and it is recommended that the top marginal tax rate be cut (as part of a revenue-neutral package). The parental leave scheme is one of the world's most generous, and also contributes to low average working hours. Sickness absences can also be reduced as they are high by European standards. Turning to employment, the chapter looks at the impact of the Voluntary Early Retirement Pension (efterløn) on incentives to retire early. It also considers how much room there may be to improve the integration of immigrants, how to get university students through the education system faster, and how to make active labour market policies more effective.

Boosting labour supply will be necessary if Denmark is to avoid having to raise taxes or cut back on public spending in the future. Successive governments have made valuable and comprehensive improvements to labour market policy, culminating in the *More People in Work* package in 2002. While those reforms were by no means easy, the ones that are left are likely to be even more difficult. In terms of raw numbers, the largest remaining pockets of unused employment potential are found at the two ends of the age spectrum: students and early retirees. But the benefits these groups enjoy (the early retirement pension for older people, and generous and unhurried income support for students) are popular parts of the country's social contract. As Danes are reluctant to give them up, the chapter starts with an area where there may be more opportunity for improvement – namely, raising the number of hours worked by people who are already in employment.

Hours of work are low

As pointed out in Chapter 1, the Danish labour market is characterised by high rates of participation but low average hours of work. This shortfall in working hours is apparent across all age groups and reflects a short normal working week (Table 3.1) and relatively generous vacations. Absences due to sickness and maternity leave are also long by OECD standards, adding to the problem. Reforms in all three areas will be needed in order to help lift labour supply towards a level that will ensure the welfare system can remain affordable.

High marginal taxes discourage labour supply

While an increased preference for leisure is undoubtedly one reason for the decline in hours worked over the past few decades, the tax system is also likely to have been a factor. There is mounting international evidence that high taxes reduce labour supply and that countries with the largest trend declines in working hours have tended to be those with the highest income taxes. This evidence ranges from simple cross-country correlations (*e.g.* Figure 3.1, left panel) to more rigorous econometric studies, even if the size of the effect is still open to debate.[1] It is particularly revealing that in Denmark (as well as Sweden), the trend decline in hours worked halted at around the time income tax rates stopped rising (Figure 3.1, right panel), although there were clearly other factors at play (the most important of which is that people prefer to consume more leisure as their income rises).

The tax and benefit system significantly reduces work incentives for most family types over most income ranges (Figure 3.2). For families on low incomes, the amount of take-home pay that remains after taxes and social assistance payments have been taken into account is in line with other countries and in fact is relatively generous for a single-earner couple with children (although single-earner couples are not common in Denmark). But beyond that income level, take-home pay relative to gross income is the lowest of the countries in the sample for all family types over virtually the whole income range above three-quarters of the average wage. More importantly, from the point of view of incentives to boost working hours a family's take-home pay will often not increase significantly if it

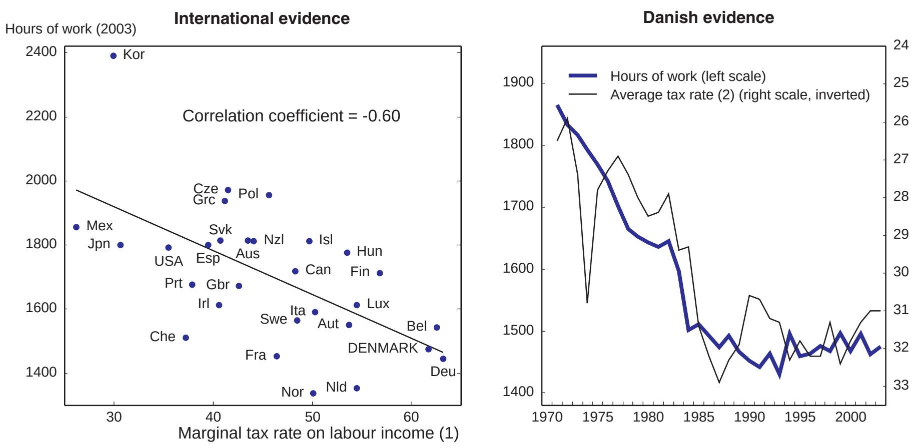
Table 3.1. **Anatomy of a typical work year**

Decomposition of average annual hours worked by full-year equivalent workers (dependent employees, 2002)

	Annual hours of work	Average weekly hours on all jobs	Usual weekly hours of work on the main job	Extra hours on main job (overtime, flexitime, etc.)	Hours on additional jobs	Annual weeks worked	Holidays	Absences for other reasons
	(a) = (b) * (f)	(b) = (c) + (d) + (e)	(c)	(d)	(e)	(f) = 52 – [(g) + (h)]	(g)	(h)
	Hours	Hours worked per week				Weeks worked/not worked		
Poland	1 817	41.8	40.2	0.3	1.3	43.4	6.2	2.4
Greece	1 816	40.7	40.2	0.1	0.4	44.6	6.7	0.6
Hungary	1 798	40.9	40.3	0.4	0.2	43.9	6.3	1.8
Slovak Republic	1 761	41.8	41.4	0.3	0.1	42.2	6.9	2.9
Iceland	1 714	43.2	39.9	1.7	1.7	39.6	6.1	6.3
Czech Republic	1 692	41.3	40.4	0.7	0.3	41.0	6.2	4.8
Portugal	1 688	40.4	39.3	0.3	0.8	41.8	7.3	2.9
Spain	1 639	38.8	38.6	0.1	0.2	42.2	7.0	2.9
Switzerland	1 586	37.5	34.3	2.7	0.5	42.3	6.0	3.7
Ireland	1 585	36.3	35.8	0.2	0.3	43.7	5.7	2.6
Luxembourg	1 582	37.9	37.3	0.5	0.1	41.7	7.5	2.8
United Kingdom	1 546	38.2	37.2	0.7	0.4	40.5	6.5	5.0
Italy	1 533	37.4	37.2	0.1	0.1	41.0	7.9	3.1
Austria	1 497	38.4	36.6	1.4	0.4	39.0	7.2	5.9
Finland	1 491	38.8	36.9	1.4	0.4	38.5	7.0	6.5
Germany	1 480	36.5	35.2	1.1	0.2	40.6	7.8	3.6
France	1 467	36.2	35.2	0.8	0.3	40.5	7.0	4.6
Belgium	1 451	36.3	35.7	0.3	0.3	40.0	7.1	5.0
Denmark	**1 410**	**36.3**	**34.8**	**0.8**	**0.7**	**38.9**	**7.4**	**5.7**
Sweden	1 349	38.1	36.0	1.4	0.7	35.4	6.8	9.8
Norway	1 339	37.3	34.8	1.8	0.7	36.0	6.5	9.5
Netherlands	1 223	31.8	30.1	1.3	0.4	38.4	7.5	6.1
Unweighted average	1 567	38.5	37.2	0.8	0.5	40.7	6.8	4.5

Source: OECD estimates based on European Labour Force Survey and EIRO (2002). See *OECD Employment Outlook* (2004) for further details.

Figure 3.1. **Hours of work are low because taxes are high**

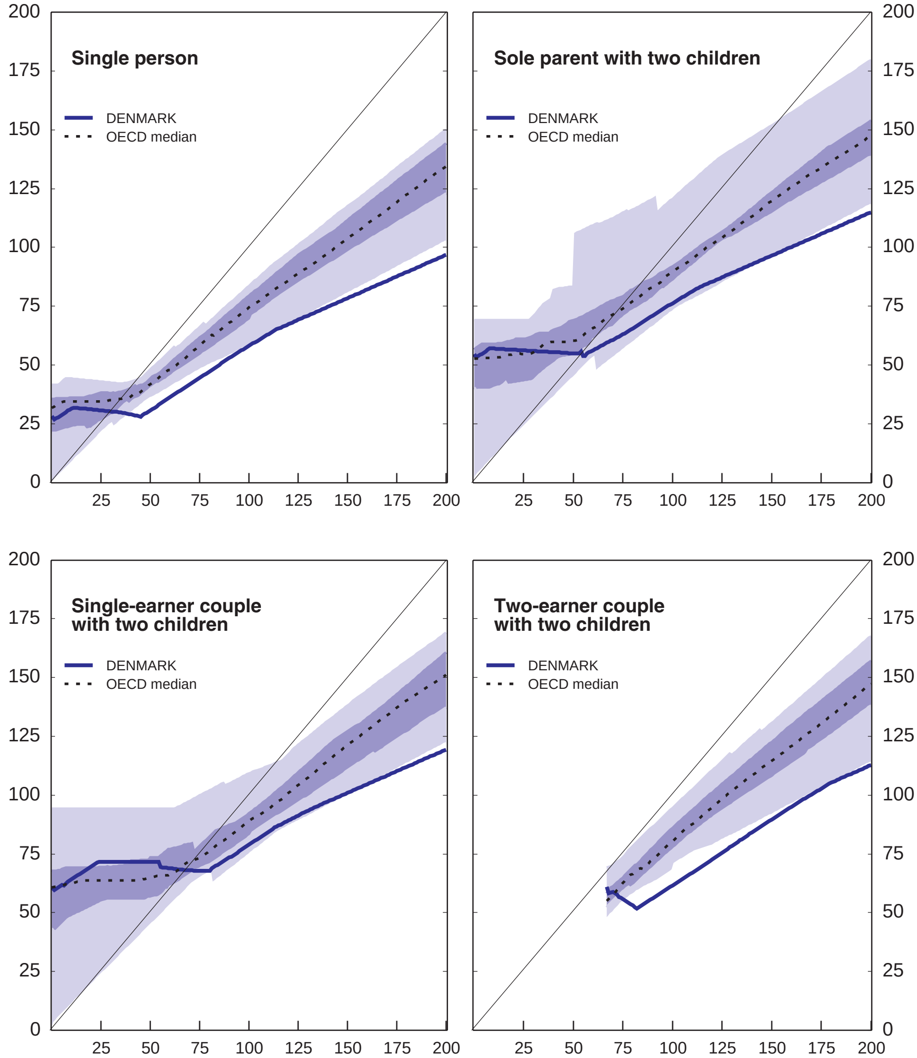


1. Marginal income tax rate plus employee contributions and indirect taxes, single person with no children, earning the average wage.
2. Average implicit income tax rate on households.

Source: OECD, *Taxing Wages 2002*; Estimates based on European Labour Force Survey. See *OECD Employment Outlook 2004*.

Figure 3.2. **Take-home pay relative to pre-tax earnings is low**

Per cent of average economy-wide pre-tax earnings



Note: The horizontal axis shows pre-tax income as a percentage of economy-wide average earnings. The vertical axis shows take-home pay after taxes and social assistance entitlements have been taken into account (assuming the family is not entitled to unemployment insurance). The dark shaded area shows the OECD inter-quartile range (half the countries lie in this range); the light area shows the full range of the 22 OECD countries in addition to Denmark for which data are available. The figures for Denmark incorporate the tax cuts that took effect from the start of 2004, although they do not include the measures in the Spring Package. All other countries are based on their 2001 tax-benefit systems.

Source: Caron *et al.* (2004), "Indicators of Unemployment and Low-Wage Traps"; OECD, *Social, Employment and Migration Working Paper* No. 8.

works more. The budget line faced by most taxpayers is relatively flat up to 100-125% of the average wage. A two-child family, for example, in which the spouse went from working 24 to 37 hours per week would see only an 11% increase in its after-tax income.

Although statutory tax rates have fallen over the past decade, there has been a sharp increase in the number of people who pay the highest marginal rate (Table 3.2).

Table 3.2. **Tax rates have fallen over the past decade**

Statutory and effective marginal tax rates, per cent

	1983	1986	1993	1998	2003	2004	Change, 1993-2004
Statutory marginal tax rates							
Lowest rate	46.7	48.0	50.6	45.2	43.7	42.9	–7.7
Intermediate rate	61.1	62.4	58.2	50.7	49.2	49.2	–9.0
Top rate	71.9	73.2	68.7	62.0	62.9	62.9	–5.8
Average marginal tax rate							
Persons aged 25-59	51.4	53.0	53.6	51.7	51.0	49.4	–4.2
of which: full-time employed	55.6	57.7	59.3	54.3	54.1	52.5	–6.8
	Distribution of taxpayers aged 25-59, per cent						
All employed persons							
Lowest tax bracket[1]	56.3	51.0	42.8	26.0	29.4	50.0	7.2
Intermediate tax bracket	36.1	39.2	37.5	49.9	41.6	22.4	–15.1
Highest tax bracket	7.6	9.8	19.7	24.1	29.0	27.6	7.9
Full-time employed persons							
Lowest tax bracket[1]	40.3	35.4	22.8	9.1	10.5	33.6	10.8
Intermediate tax bracket	48.5	51.0	46.9	54.2	49.6	27.5	–19.4
Highest tax bracket	11.2	13.6	30.3	36.7	39.9	38.9	8.6

1. Includes people paying no tax.

Source: Ministry of Finance.

Consequently, average marginal rates have fallen by less than statutory rates. The proportion of individuals in the top tax bracket dropped slightly in 2004 following the tax changes that took effect at the start of the year, but their main effect was to shift nearly a quarter of prime-age full-time workers from the middle to the lowest tax bracket.

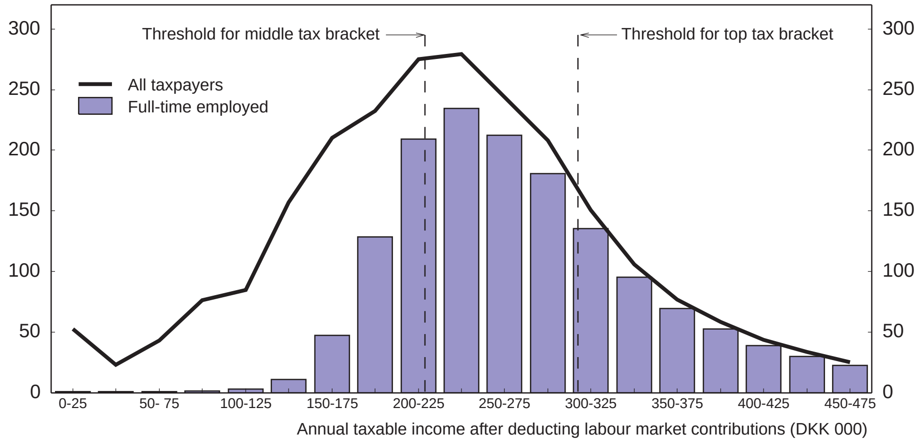
An unusual feature of the tax system is that the top rate cuts in early. The threshold for the highest marginal rate of 63% is close to the average full-time wage and so nearly 40% of prime-age full-time workers are in this bracket. However, the compressed wage distribution means that the majority have incomes that are only slightly above the threshold.[2] Put another way, most of them pay the top rate on only a small amount of income (Figure 3.3). Therefore, while the top tax rate discourages additional hours of work for a large proportion of the workforce, it raises relatively little revenue. Adjusting this rate could significantly boost work incentives at a fairly small cost.

One option is to raise the threshold at which the top rate is levied. The Ministry of Finance has estimated that raising the threshold by around 20% would have a direct fiscal cost[3] of around DKK 5 billion, or 0.4% of GDP. Doing so would reduce the marginal tax rate by 15 percentage points for the roughly 330 000 workers (13% of taxpayers) who are in the relevant income range and would also reduce the effective marginal rate for those who currently organise their affairs by cutting their hours of work to ensure they keep their income just below this highest-rate threshold. Taking these additional people into account, raising the threshold could encourage longer working hours by perhaps a fifth of the workforce.

A second option is to cut the top rate itself. If this is to have the same (direct) fiscal cost as a 20% rise in the threshold, then the marginal tax rate for everyone in the highest income bracket could be cut by 5 percentage points. The choice therefore is between a

Figure 3.3. **Many taxpayers pay the top tax rate**

Distribution of taxpayers aged 25-59, thousand persons, 2004



Source: Ministry of Finance.

5 percentage point reduction for everyone in the top bracket and a 15 percentage point cut for those close to the current threshold. It is hard to know which of these alternatives would deliver the biggest increase in labour supply. The Ministry of Finance estimates that the two options would have roughly the same impact on aggregate participation and hours, but the uncertainty around the econometric labour supply functions is such that it is difficult to recommend one option over the other based purely on labour input criteria. However, cutting the rate would probably have a bigger impact on the incentive to undertake higher education because it increases net pay over the whole upper income distribution, not just a small part of it, and there is considerable uncertainty about where in the income distribution a person will eventually end up.

The long-term effect of these two reform options is also difficult to estimate. The direct cost (the lost income tax) will be partly offset by higher tax revenues that flow from extra consumption and from any expansion of labour supply. Most analysis suggests that neither of the two options would be fully self-financing in the long term, although that conclusion clearly depends on how large are the assumed behavioural responses.[4] An outright tax cut is therefore a risky strategy. Long-term fiscal sustainability will be compromised if a tax reduction is intended to be financed by structural labour market improvements that fail to appear. A safer approach would be to design a fully-financed tax reform (financed either through spending cuts or compensating tax increases in other areas) whose primary aim is to boost incentives to work.

Cutting taxes on high-income earners is politically difficult because maintaining a relatively equal income distribution is a long-standing objective of Danish policy. One way to reduce this problem is to include it as part of a package that includes an increase in tax on owner-occupied housing (since property taxes are low by international standards). Increasing the property tax would have consequences for the income distribution that partly offset those of income tax reductions because people on high incomes are more likely to own rather than rent their home.[5] However, this offset would not be perfect, so there would still be distributional consequences from a reform package of this nature. But the advantage of offsetting lower income taxes with higher property taxes is that any widening of the income distribution would probably be smaller than most other options, such as raising indirect or excise taxes. But a package that involved property or land taxes would need to be carefully timed because it is likely to lead to lower house prices than would otherwise be the case, which may have destabilising macroeconomic consequences. Thus, the best time to implement such a reform is when house prices are rising.

Sickness absences can be reduced further

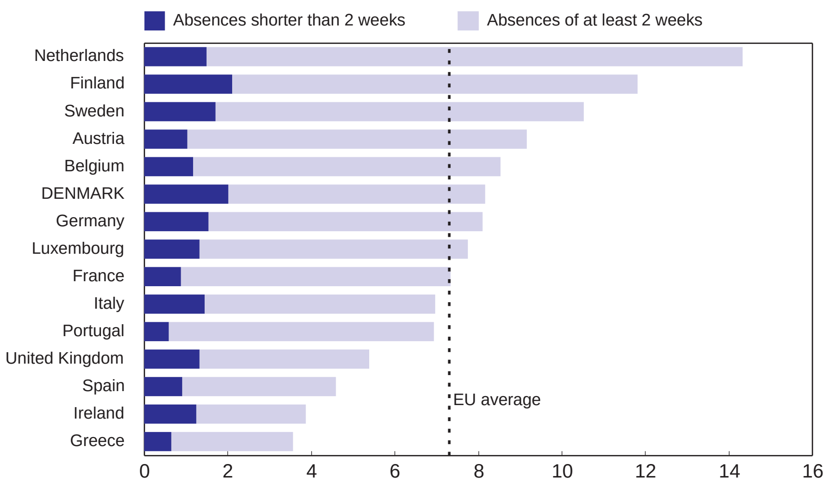
The problem of sickness absence is about as large as that of unemployment, amounting to the equivalent of 4-5% of the labour force away from work on a given day (Ministry of Employment, 2003). Although this is lower than in other Nordic countries, it is still above the EU15 average (Figure 3.4) and is well above the rates seen in countries such as the United Kingdom and Canada (Barmby *et al.*, 2002). The majority of time off work is for entirely legitimate reasons, but differences in absence rates between sectors, municipalities and individuals suggest there is at least some scope for boosting aggregate hours by cutting sickness absences.[6]

The government presented an action plan in December 2003 with exactly that aim. Its focus is to cut the number of industrial accidents and to promote a better working environment. The key proposals include:

- From 2005, municipalities will have to pay a greater share of income support for months 6-12 of a sickness spell (currently they pay half over that period, with the central government paying the rest; from 2005, they will pay 65%).
- Firms will be able electronically to report an absence and file a claim for a refund. Currently, a person claiming public sickness benefits must get a medical assessment after eight weeks off work. This paperwork hurdle has been found to be an effective way of reducing long-term sickness absences. However, the public employment service often does not know about a sickness spell until a company requests a refund, by which time

Figure 3.4. **Sickness absence rates are high**

Days lost per person per year



Source: OECD calculations based on Third European Survey of Working Conditions conducted in 2000 (*www.eurofound.eu.int*).

a problem may have become well entrenched. The government's desire is to bring forward this health assessment and to catch problems earlier through simpler notification procedures.

- Doctors' certificates will focus more on what work a person can do rather than what he or she cannot do, including whether part-time work would be feasible. This is similar to recent reforms in Sweden.

While these steps may help reduce long-term absences, more attention needs to be given to short spells – which is where Denmark, along with Finland, stands out in comparison with other EU countries (Figure 3.4). Firms cover the first two weeks of each sickness spell, usually at full pay, after which the government pays the unemployment benefit rate (although this too is often topped up to full pay by employers). It is uncommon to provide a doctor's certificate after an absence from work, even for spells of up to a month (Megafon, 2002). It would be useful for a medical assessment to become common practice and to make it obligatory for the receipt of public benefits (*i.e.* after the first two weeks). The use of independent medical assessors in certain cases would help to reduce the risk of moral hazard. It may also help if the first couple of days were unpaid (or at least to be paid at a lower rate); experience in Sweden shows that this can have a large effect (Johansson, 2004).

The generous parental leave scheme has an ambiguous impact on labour supply

Denmark has one of the world's most generous parental leave schemes. Its provisions were made more favourable and flexible in a reform package that took effect in 2002. Parents are entitled to 12 months of paid leave, most of which can now be shared between the mother and father and can be taken part-time until the child is eight years old. The government benefit is usually topped up by employers, so most parents receive full salary for a total of 20 weeks (in the private sector) or 34 weeks (for public employees), after which they receive the unemployment benefit rate.[7] At the end of 2003, around 5% of employed women were off work looking after their children.

The key question is whether the system has become so generous that the costs outweigh the benefits. There are certainly some hard-to-quantify benefits in terms of child development and gender equity. There is also reasonably clear evidence that women are more likely to enter and stay in the labour force if they have rights to short-duration maternity leave. However, there is no consistent pattern among long-duration schemes – in some cases they appear to lower employment rates or to harm a mother's long-term earnings potential (OECD, 2001). In any case, female employment rates in Denmark were already high prior to the reform of the maternity leave scheme, so it is unlikely to have a positive effect on employment in the long term. The immediate impact on labour supply has in fact been negative. The number of people on leave in an average quarter has increased by around 10%, and the average leave duration for mothers has lengthened from 23 to 40 weeks (NDL, 2004).[8] In general, Danish mothers tend to want to get back to the workforce and tend to return to their jobs as soon as a childcare place becomes available (OECD, 2002). However, there is a shortage of places for babies under one year old, especially in Copenhagen, and there is anecdotal evidence that municipalities are reluctant to offer spots for very young children because they know the parents can fall back on the state-funded maternity leave scheme. If so, scarce public funds would be better spent by expanding childcare opportunities rather than encouraging mothers to leave the workplace for longer than many of them would prefer. In August 2004, the government announced DKK 100 million (€ 13.5 million) of extra funding to municipalities for childcare places.

The incentives to retire early need to be reduced

The chapter now turns from working hours to ways of raising the number of people at work. From an economic point of view, the greatest scope would be by reforming the pension system in order to reduce the implicit tax on people working beyond their early sixties.

The Voluntary Early Retirement Pension needs further reforms

The Voluntary Early Retirement Pension (VERP, or *efterløn*), introduced in 1979, provides a route to early retirement without having to fulfil any health criteria. It was originally intended for unskilled workers with many years of hard physical labour behind them, but it became more popular than expected. By 2003, half of 60-66 year-olds were receiving the benefit. Part of the rationale was a hope that the retirement of older workers would "make room" for young labour market entrants, although the poor economics behind that goal has now been recognised. The direct fiscal cost of the scheme amounts to around 1½ per cent of GDP, not including the foregone income tax; the indirect cost is a reduction in potential output due to the early retirement that it encourages. The VERP is "a major obstacle to the realisation of the country's employment objectives", in the words of the European Commission, and has clearly outlived its usefulness (EC, 2004, page 2).

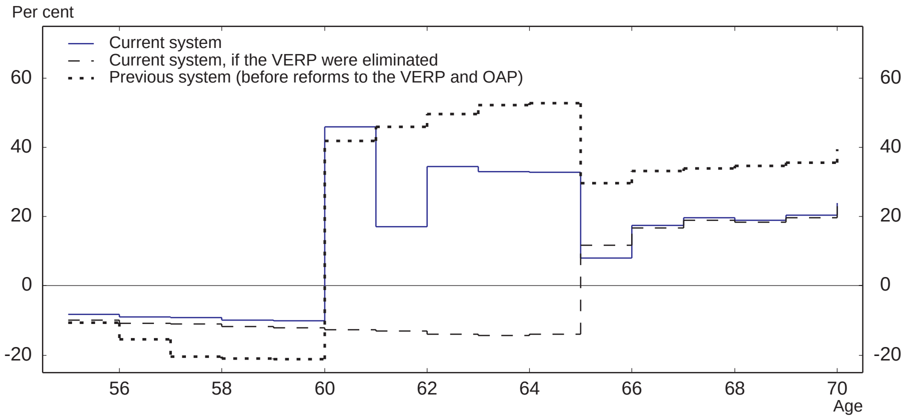
A reform to the VERP which took effect in 1999 slightly reduced the implicit tax on continued work. There has been a reluctance to raise the entitlement age beyond 60, so the reform consisted of a mixture of carrot and stick measures designed to postpone entry until age 62 or later. The main measure was the introduction of a tax-free cash bonus for people who stay in the workforce beyond 62 years of age. This supplement rises gradually the longer someone remains working, up to a maximum of DKK 120 000 (€ 16 100), and is paid as a lump sum at age 65 (when the person becomes eligible for the old-age pension). (A similar but smaller bonus is also paid to people who work part time while receiving the VERP). A second measure was to tighten the income abatement rules: benefits are reduced by more than before for those who retire younger than 62 and who receive income from a private pension scheme. In addition, the age of eligibility for the old-age pension has been reduced from 67 to 65 so that 65 and 66 year-olds receive the less generous old-age pension. A VERP contribution was also introduced, covering about a quarter of the costs.

From May 2004, people have been able to postpone receiving their old age pension any time until age 75. Their pension rate will be increased by a relatively generous amount for each year that the pension is deferred. Delaying one year until age 66, for example, boosts the annual pension for a man by 6.8%.[9] However, this option is conditional on continuing to work at least 1 500 hours a year, which is a fairly tough requirement (recall that the nationwide average is just 1 410 hours a year). This reform has reduced the implicit tax beyond age 65 by around 15 percentage points for someone earning the average wage (Figure 3.5).

Even after these reforms to the early retirement scheme, the implicit tax on continued work between the ages of 60 and 65 remains high (Figure 3.6). This is especially so for low-income earners since the Danish system, unlike most others, pays a flat rate that does not depend on previous earnings. For someone who had been earning two-thirds of the average wage, for example, the VERP provides an after-tax replacement rate of around 80%. The overall effect of the reform is a reduction of the implicit tax by 3.7 percentage points on average from ages from 55 to 64.[10]

Figure 3.5. **The implicit tax on continued work has fallen**

Implicit tax on continuing to work, per cent[1]



1. The implicit tax is equal to the negative of the change in net pension wealth from working an extra year. The figures are for someone with pre-retirement earnings equal to the average wage.

Source: OECD calculations.

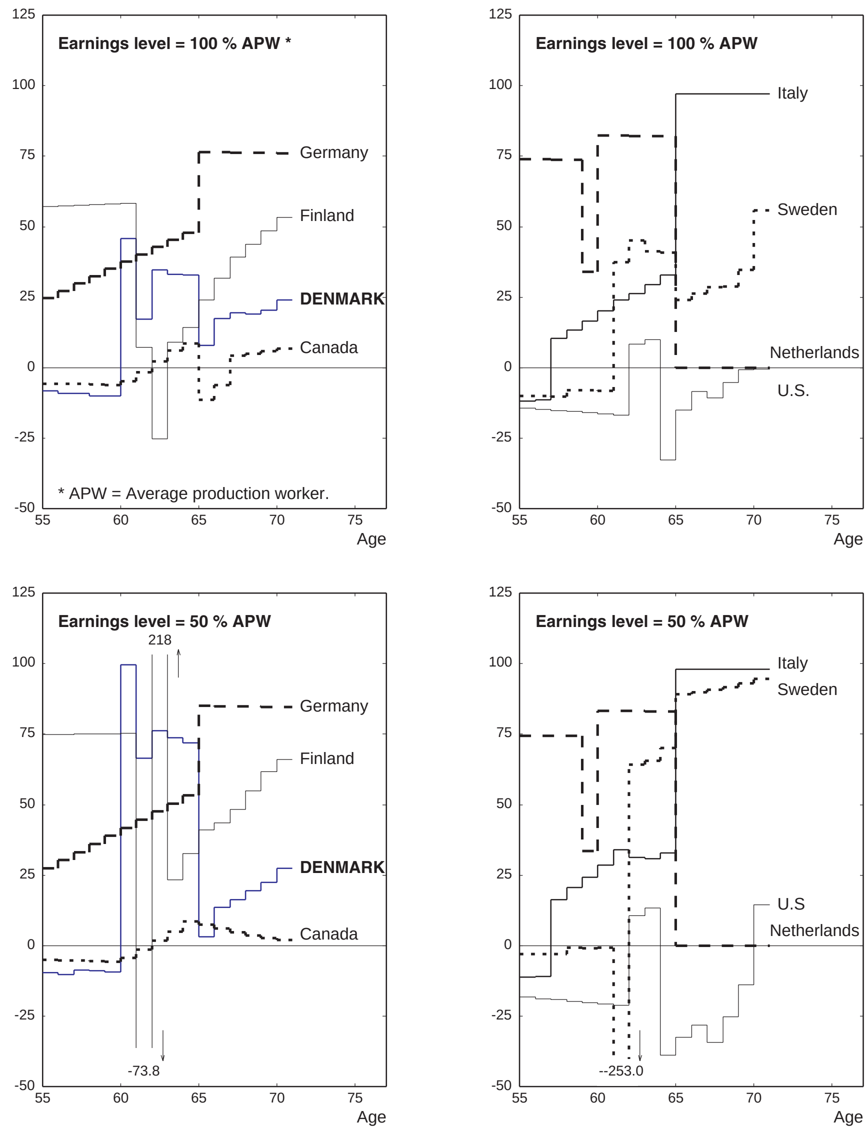
Further efforts towards encouraging people to remain in the workforce are therefore needed. The VERP is the prime candidate for improvement, but changes could also be made to the pension system more broadly. Some options are described below:

- The cleanest solution would be to abandon the VERP scheme and pay back contributions, as has been proposed by the Economic Council. People with genuine health problems could then rely on the disability pension (*førtidspension*), while healthy people who wanted to retire early could obviously do so but would no longer receive a state subsidy. The impact on retirement incentives would be enormous (Figure 3.5).
- Abolishing the scheme is politically difficult because early retirement is popular. A second option, therefore, is to keep open the route out of the labour force but progressively raise the contribution rate until it becomes actuarially fair. However, that would mean quadrupling the levy. It would also mean the system would be just a government-run alternative to existing private pensions and so would be redundant.
- A more feasible option is to tie the eligibility age to life expectancy, as Sweden, Italy and Poland have done. This could be done for both the VERP and for the other parts of the pension system. By keeping the expected length of retirement constant in this way, the effective retirement age would gradually rise as life spans increase. Chapter 2 demonstrated that this could lead to a large improvement in the long-term sustainability of the welfare system. More importantly, it would make public finances more robust by insulating them from uncertainty about the long-term impact of ageing. This may be especially important in Denmark because of the recent – and unexplained – surge in life expectancy: in the past decade, the life expectancy of men has risen by nearly three years and of women by 1½ years.
- The bonus for later retirement could be increased. Between the ages of 62 and 65, the current system (which increases the benefit rate and pays a lump sum bonus at age 65) is equivalent to an actuarial adjustment of around 2% to the pension rate. This adjustment factor is low by OECD standards – adjustments of the order of 5 – 10% per

Figure 3.6. **Implicit tax on continued work for older workers**

Reduction in net pension wealth from working an extra year

Per cent of pre-retirement earnings



Source: OECD calculations.

year are more common (Casey *et al.*, 2003). While this would increase work incentives, its impact on fiscal sustainability is less clear because there are deadweight losses involved: many people who would have continued to work anyway would receive the bonus. Nevertheless, changing the VERP's adjustment factor has become more pressing now that the post-65 pension has been reformed; only very modest effects can be expected from improving incentives from the age of 65 onwards while still leaving a large incentive to retire before 65.

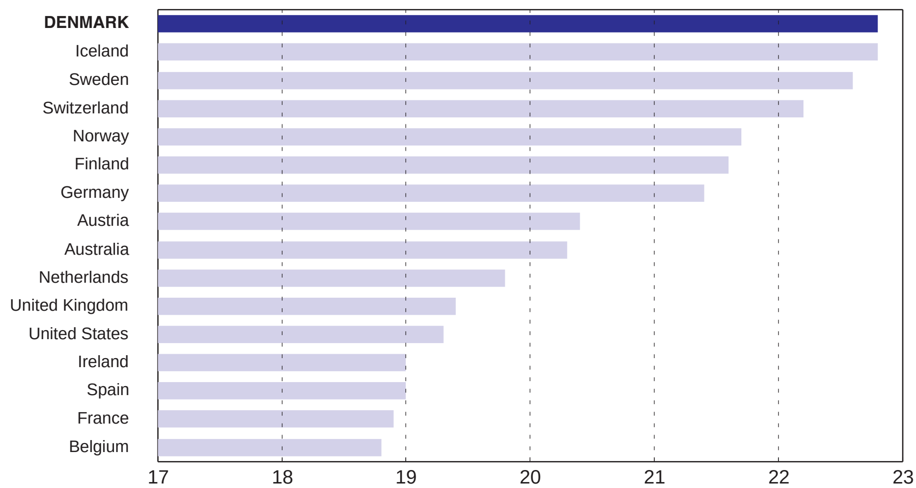
- The eligibility rules for the VERP could be changed so that workers must pay contributions for 35-40 years, rather than 25 at present. This is a clever way of shutting out people who have been to university, thereby handing back the VERP largely to the group of people it was originally intended for: blue-collar workers who are worn out after a lifetime of hard work.
- Changes could also be made to the way pensions are indexed for inflation. Benefits are currently tied to wages; an alternative is to have the *entry level* indexed to wages – so that the replacement rate does not fall over time – but to have each person's pension indexed to prices thereafter. This is primarily a way to improve fiscal sustainability, but it would also lead to a small improvement in work incentives because a person's lifetime pension would be slightly higher if he or she delayed retirement by a year or two.

Students take too long to complete their studies

Students form another group where there is potential to boost employment. Currently they face weak incentives to complete their studies quickly and move into the workforce. Overall participation at the tertiary level is not high (enrolment rates are below the OECD average, significantly so for men), and those who do go are relatively late starters. It is common to take a break of one or two years after leaving school and to begin tertiary studies when aged 23 (Figure 3.7). While work and life experience can be valuable before embarking on further study, evidence suggests that those who have a longer gap between school and university are more likely to drop out later on (OECD, 2003a). It would also help if the voluntary 10th form at the end of compulsory education were refocused. This is currently attended by most children, but it might be better if it provided more intensive remedial assistance to the small share of pupils that has fallen behind, with the others passing directly into upper-secondary education. Not only do students start late, they take a long time to finish – typically six or seven years from when they start university to the time they achieve a master's degree. Although the average study duration has shortened a little over the past decade, this has been offset by a rise in the waiting time before studies

Figure 3.7. **Students start their tertiary education late**

Median age of starting tertiary education



Source: OECD (2003), *Education at a Glance.*

Table 3.3. **Many students do not finish the course they started**

Completion rates for selected bachelor's degrees, per cent, 2001

80% of tertiary students complete a bachelor's degree. Of that 80%, the proportions completing in their initially chosen fields are shown below:	
Medicine	74.9
Law	68.2
Agriculture	64.5
Social sciences	64.1
Business administration	63.7
Psychology	59.0
Humanities (excluding languages)	56.9
LSP	55.9
Arts	45.2
Natural sciences	44.7
Languages	39.2

Source: Statistics Denmark, the Ministry of Education and the Ministry of Science, Technology and Innovation.

commence. Consequently, the age when people earn their master's degree has remained roughly the same, at 29 years of age. A large proportion of students also change course mid-stream, adding to the length of their education, and only half complete the bachelor's degree they started (Table 3.3).

Financial incentives to undertake tertiary education are weak for several reasons. First, Denmark's compressed wage distribution means that the wage premium from further schooling is low when compared with other OECD countries, lower even than in Sweden and Finland.[11] High marginal taxes reduce the payoff even further. The government estimates that eliminating the top tax bracket would boost the rate of return to a long-duration course by around 14% (Table 3.4). Moreover, a lack of higher education does not increase the risk of being unemployed by as much as in most countries; in fact, in 2002 the unemployment rate among those with upper-secondary qualifications was lower than for those with a tertiary education. To offset these disincentives, Denmark offers generous financial support to students. Tuition is free, and study grants and cheap loans[12] are available for the duration of a course plus an accepted delay of twelve months (up to a maximum of 70 monthly grants). Students can change course or institution and can use their 70 "vouchers" at any time. Those who use all their vouchers are entitled to a generous time-limited loan to enable them to complete their studies. The average after-tax income of students receiving support and working 10 hours a week is about 65% of that of typical industrial worker's, so

Table 3.4. **Taxes have a large impact on the incentive to study**

Private internal rate of return to post-secondary education, per cent per annum

	Short duration or vocational courses	Longer courses (*e.g.* university degrees)
Estimated rate of return	9.0	11.1
	Percentage change in rate of return (percentage point change in brackets)	
Alternative scenarios		
Removing the lowest tax bracket	0.1 (0.0)	0.4 (0.4)
Removing the middle tax bracket	4.6 (0.4)	6.6 (0.7)
Removing the upper tax bracket	6.4 (0.6)	14.3 (1.6)
Removing study grants during the last two years of study	0.0 (0.0)	–15.5 (–1.7)
As above, but assuming students start work a year earlier	0.0 (0.0)	0.0 (0.0)

Source: Ministry of Economic and Business Affairs.

there is no hurry to get a fulltime job. The overall effect of this system is that the private rate of return to higher education, after taking account of the current costs and future benefits of study, is around average (compared with those OECD countries for which information is available).[13] Of course, the payoff would be higher if students started work earlier since they would then have higher lifetime earnings.

There are several options for encouraging students to enter the workforce earlier and improve equity at the same time. The first possibility is to further shorten the length of time for which financial support is available by, for example, eliminating the study grant during the last two years of study. In principle, this has the disadvantage of reducing the rate of return to education because it makes study more costly. However, if it also encouraged students to start their careers a year earlier, the overall impact on the incentives to study would be negligible (Table 3.4). A second option is to introduce tuition fees in combination with an income-contingent loan scheme, as several countries have successfully done in recent years. This would not only persuade students to finish faster, it would also encourage them to choose courses more relevant to their future careers and would improve equity because the wealthier are more likely to go to university. A softer version of this approach would be to offer loans rather than grants to students taking more than the minimum time to finish their degrees, with income-contingent repayments (several countries have successfully implemented income-contingent loan schemes). This would boost incentives for all students but would have no financial impact on those who finished in good time. Fourth, the rules on income support could be tightened to encourage students to choose their courses more carefully and to reduce the scope for taking what in effect is a year's paid holiday in the middle of their studies. Finally, the gap between school and further education could be reduced, or at least the time could be used more constructively, if courses included a year of relevant work experience along the lines of some programmes at the University of Aarhus.

The employment rate of migrants falls well short of that of native Danes

The third pocket where there may be some room to boost employment rates is among immigrants. On the surface, it looks as though there is considerable untapped potential in this area. The gap between the employment rates of foreigners and the native-born is higher than in any other OECD country (OECD, 2003b). However, this may reveal more about Danes than about immigrants. For women especially, there are cultural reasons why employment rates are well below Danish levels for immigrants from certain countries and religious backgrounds. Compared with other OECD members, Denmark welcomes far more refugees from poor countries (as a proportion of all immigrants). Three-quarters of immigrants (including their descendents) come from less developed countries, and half of these have arrived in the past decade. This group tends to have few skills and correspondingly meagre employment rates. In contrast, immigrants from western countries have labour market outcomes that are not much different to those of the native population, while children of migrants from all sources have relatively good employment outcomes once differences in age have been taken into account. Some rough calculations suggest that at least half of the employment gap can be explained by fact that Denmark accepts a larger-than-normal share of low-skilled foreigners from less developed countries. For men and women combined, the employment rate of immigrants is around 24 percentage points below that of native Danes; if instead Denmark took a mix of immigrant nationalities that was more typical of other OECD countries, then the migrant employment rate might be

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11 percentage points higher.[14] While the remainder amounts to about 1.1% of the labour force, such a shortfall is not out of line with other OECD countries. Thus, the potential to boost employment through better integration should not be exaggerated.

Migrants from less developed countries face several obstacles to getting a job (see the previous *Survey* for a more thorough discussion). Foremost among them are low education levels and poor Danish language skills. The government has recognised this in its 2001 *Integration Strategy*, pointing out that too few young foreigners enrol in vocational education courses, too many drop out and traineeships are too hard to find. To improve language skills and to speed up the integration process more generally, the government has introduced a programme in which language training is provided on-site in the workplace. This programme is new and has not been evaluated. The government is also examining whether language stimulation courses should be compulsory for young children whose mother tongue is not Danish and is trying to improve the recognition of foreign qualifications.

A second obstacle is that migrants are unable to price themselves into the market due to a combination of a highly compressed wage distribution (the bottom quarter of wage earners are paid up to 80% of the median wage) and high minimum wages. Labour market agreements already have the scope to set lower minimum wages for disadvantaged groups (such as those with low skills), but this potential is not being used. This is made worse by a lack of low-skill jobs in the first place. The tax system is partly to blame. In many countries, migrants initially get a foothold in the job market by working in the service sector, especially in hotels, restaurants and household services. In Denmark, however, high marginal tax rates mean that households have an incentive to cut back hours of work and do more domestic chores and household maintenance themselves, rather than hiring someone else to do it. This partly explains why Danes do a significant proportion of their own house repairs; in fact, the highly educated, who suffer from higher marginal tax rates, do relatively more work in the home compared with people who have low education levels and low marginal tax rates (Smith, 2003). Not only is this a waste of human capital, as people are not fully using their comparative advantages, but it works to block some migrants from fully integrating into Danish society. That is another reason why it would be useful to cut marginal tax rates for high-income earners (as discussed earlier).

A third obstacle to finding a job is that the financial incentives to do so are weak because social assistance benefit rates are high for people with low earnings potential. The problem is worst for couples. If one spouse gets a job then social assistance to the partner is withdrawn; in this situation, the family would be only slightly better off unless that person could earn an above-average wage. As part of the *More People In Work* package, the spouse can now earn more without a reduction in social assistance paid to the partner. This benefit trap also exists for native Danes but is likely to affect immigrants disproportionately because they are more likely than Danes to be married with children, are more likely to be in a household where nobody has a job and are likely to have lower earnings potential. In order to improve financial incentives, the government has introduced a qualifying period for social assistance such that unemployed migrants who arrived after 2002 will receive a substantially lower benefit for the first seven years.[15] Over that period, incentives to work part time have also been boosted since part time workers can now keep a larger portion of their earnings before benefit payments are reduced.[16] These changes have substantially improved incentives to find work. How successful they will be partly depends on how the new policy is implemented by municipalities. There is anecdotal evidence that some employment offices are reluctant to cut benefit levels so drastically and are topping them up with other payments, even though the lower benefit levels are in line with replacement rates in other OECD countries. However, it is not known how widespread this practice has become. In addition, this reform does not alter the incentives faced by foreigners who arrived under earlier entry regimes; the policy could usefully be extended to them as well, although the reduction in benefits could be less so as to make sure that those who arrived under the old rules do not face unfair adjustment costs.

Dispersal policy may also be hurting migrants' prospects. Current policy is to try to avoid enclaves and migrant ghettoes by dispersing refugee immigrants throughout the country. Enclaves, it is believed, lower the chances that migrants will pick up the language and slow their social and economic integration. However, some evidence suggests that refugee immigrants find jobs quicker if they have more of their countrymen around them, possibly due to network effects, although their employment prospects are worse when there are more migrants from different countries in the same district.[17] In addition, restrictions on relocation by migrants do hamper their integration. Some migrants who are placed outside the main urban areas do not start seriously trying to integrate or find work until after their third year, when they are free to move to one of the bigger cities.

Labour supply could be boosted if active labour market policies were better focussed

Compulsory activation – requiring people to take part in ALMPs in order to receive an unemployment benefit – has been a feature of the Danish system since the mid 1990s. It has been seen as a way to make sure that the unemployed make good use of their time, as well as being a motivation tool to encourage them to find work. In this sense, activation measures and the requirement to look for work help overcome the weak financial incentives that are inherent in the system. However, this "mutual obligations" approach is expensive. In 2000 for example, Denmark (along with the Netherlands) spent more than any other OECD country on ALMPs – around 1.6% of GDP.[18]

A key question is whether it spends too much. The government seems to think so, as it is shifting towards a "jobs first" strategy. There is a clear political intention to move the focus from activation and to concentrate on more intensive job-search activities on the part of the unemployed. Large changes were made to ALMP policy as part of its *More People in Work* package. The key reforms included:[19]

- Rules on job search, on being available for work and on sanctions for non-compliance have been made stricter. Client contacts should also become more frequent.
- An individual action plan must be prepared within a year of becoming unemployed.
- After their first year, the unemployed are now required to participate in some activation programme every time they have been "out of touch" with the labour market for six months. Previously, they were required after their first year to participate in an activation measure for 75% of their time.
- The rules for those with and without unemployment insurance (UI) are progressively being aligned. Members of a UI scheme are dealt with by the central Public Employment Service, while others are taken care of by the municipalities' social assistance schemes. The result was that similar individuals were treated in different ways in the two systems. It also meant that UI recipients who had problems other than being unemployed (for

example, drug or alcohol habits) were not having those issues dealt with. In principle, they should have been handed over to municipalities, who handle such difficulties, but that would mean they received a lower benefit. Hence, many of them stayed on UI and pretended the additional issues did not exist.

These changes are in line with international best practice. However, the sharper focus on job search will need to be well enforced if it is to be effective. Otherwise, less activation – which implies less of a push back into the workforce – may not be counter-balanced by more energetic job hunting. It will also require case workers to lift their emphasis on job search. In a survey of the long-term unemployed in 2002, one third said they had received no guidance or advice regarding job seeking or employment and training opportunities, and 40% thought their activation plan was unusable (Eskelinen *et al.*, 2002).

These reforms took effect in 2003. By the middle of 2004, the number of people in activation had fallen by 14% relative to the pre-reform level, despite a cyclical rise in the unemployment rate. The entire decline can be accounted for by a reduction in training measures, with some offset from an increase in individual-specific measures (Table 3.5).

It would also be worth rethinking the type of ALMPs on offer. The evidence from both Denmark and elsewhere is not favourable to the majority of activation programmes. Three main effects need to be considered when evaluating such policies:

- *A motivation effect*. Most Danish studies find clear evidence that people are more likely to find work if their activation period is looming. This effect is especially strong for young people but is relatively weak for individuals with problems besides unemployment, such as health or social issues. One Danish study estimated that the size of the motivation effect is comparable to the response found in systems where individuals are at risk of losing their benefits entirely (Geerdsen, 2003).
- *A lock-in effect*, where people cut back their job-search efforts while taking part in a training or employment programme.

Table 3.5. **Participation in active labour market measures has fallen sharply**

Number of participants

	1995	1997	1999	2001	2003	2004	Change, 2001-04
Training measures	72 700	66 800	76 500	76 300	61 400	55 300	–21 000
of which:							
Education with training allowance	6 800	16 100	31 600	27 500	18 600	14 200	–13 300
General job training, UI recipients	19 700	13 200	13 400	13 600	12 800	15 500	1 900
Individual job training, SA recipients	9 700	12 800	15 300	15 100	12 500	8 400	–6 700
General job training, SA recipients	5 400	3 300	3 200	3 400	3 200	3 200	– 200
Other measures	11 300	21 700	14 400	10 700	16 900	19 300	8 600
of which:							
Individual-specific activation	2 600	3 700	5 100	7 600	10 500	11 900	4 300
Advisory and introductory activation			700	1 000	2 700	4 500	3 500
Public service jobs for older workers				1 700	3 400	3 000	1 300
Total	**84 000**	**88 500**	**90 900**	**87 000**	**78 300**	**74 600**	**–12 400**
Activation rate[1]	22.6	28.8	36.6	37.6	31.5	29.5	–8.1
Activation as per cent of labour force	3.0	3.1	3.2	3.1	2.7	2.6	–0.5

1. ALMP participants divided by the sum of participants and unemployed.

Source: Statistics Denmark.

- *A post-programme effect*, in which the chances of finding a job are altered after an activation programme has been completed. The Danish evidence suggests that ALMPs either *reduce* employment prospects, perhaps because people become choosier about which jobs to accept after having been through a training course, or take several years before positive impacts become apparent. Classroom training is by far the most widely used intervention in Denmark, but it is expensive and seems to work for only some groups of people: women, skilled workers and the older unemployed.[20] On-the-job training in the private sector seems to be effective, possibly because people keep closer links with the labour market. However, it may partly reflect a selection bias. Only the most able individuals will find their way into job training, and the strongest amongst them tend to receive training in the private sector, while the weaker ones are trained in the public sector (Kvist, 2003).

The issue is whether the positive programme effects eventually outweigh the negative lock-in effect. The answer is usually No. For example, Bolvig *et al.* (2003) find that the net effect is always negative for training programmes. Conversely, they find a positive effect from employment programmes, provided they start early enough. Similar international evidence is surveyed in Martin (2000) and Calmfors *et al.* (2001).

Box 3.1. **Summary of recommendations**

The main recommendations from this chapter are summarised below. Other recommendations made in previous Surveys are listed in an Annex 3.A1.

Raising hours of work

Income tax: Reduce the disincentive effects of the top marginal tax rate by either raising the threshold or reducing the rate.

Sickness benefits: Make a doctor's certificate compulsory for receipt of public benefits (*i.e.* after two weeks). Introduce a waiting period of a few days for the sickness benefit scheme.

Parental leave: Consider whether the system is so generous that it is now hurting employment prospects of women. Rebalance funding by putting more emphasis on childcare relative to maternity leave.

Increasing employment

Delaying the average retirement age: Reform the VERP (the best option is to abolish it, but if that is not feasible then other options include increasing the contribution rate, raising the bonus for later retirement and lengthening the contribution period).

Earlier labour force entry: Introduce tuition fees, backed by an income-contingent loan scheme. Change the time profile of student income support (more earlier, less later). Introduce income-contingent loans for those who take too long to finish. Tighten rules so that students cannot take a paid year off in the middle of their course.

Integration of immigrants: Encourage the social partners to lower the minimum wage for target groups such as the low-skilled. Extend to all immigrants the policy of a qualifying period for full unemployment benefits. Consider introducing a temporary in-work benefit targeted on immigrant groups facing the weakest economic incentives to seek work. Rethink the dispersal policy for refugees.

Active labour market policies: Introduce activation programmes earlier, but make them shorter. Limit classroom training to the groups for which it has been shown to be effective.

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On balance, the evidence builds a case for earlier, shorter-duration employment courses. Earlier activation is better for those involved because it ensures that the motivation effect occurs earlier and leaves more time for the benefits of an ALMP to be reaped afterwards (although it can't be too early otherwise the deadweight losses would exceed any benefits). Shorter-duration courses, meanwhile, will reduce the lock-in effect. Long-duration training courses should be restricted to the at-risk groups who have some chance of benefiting from them. These recommendations are consistent with international best practice and are broadly in line with the direction that Danish government policy is moving.

It is hard to know how early in the unemployment spell activation should be offered, but it should probably be before a year. Looking just at the impact on ALMP participants themselves, Bolvig *et al.* (2003) find that, to achieve their maximum effect, employment programmes should begin almost straight away for men and after around six months for women. However, there is a deadweight cost of introducing activation too early if expensive programmes are offered to people who do not need it. This is especially the case in Denmark since unemployment is such a common experience: about one in four of the labour force will be unemployed at some stage during the year, but most find new work relatively quickly.

Notes

1. See Prescott (2004) and Blanchard (2004), for example.
2. Half of the people paying the top tax rate have an income within 20% of the threshold.
3. The direct fiscal cost excludes any effects from behavioural and dynamic responses, such as a change in labour supply.
4. Finansministeriet (2002) estimates that a 5 percentage point cut in the top marginal tax rate, or a rise in the threshold of 20%, would boost labour supply by 0.3-0.4%, almost all of which comes from an increase in hours worked per employee. That implies that around half of the tax reduction would be clawed back through an improvement in labour market performance. Frederiksen and Hansen (2002) estimate that the claw-back would be greater, but the policies are still not quite fully self-financing.
5. Of those in the top third of the income distribution (measured by family disposable income adjusted for family composition), nearly five times as many people own their own home as rent it (while there is a fairly equal split between owners and renters in the rest of the population). However, such a policy would also have implications that differ across age groups, especially considering asset-rich but income-poor elderly people. In that case, strengthening financial instruments such as mortgage equity withdrawal would also be necessary.
6. Sick leave is higher in the public sector than in the private sector, after adjusting for demographic characteristics such as gender and age (DA, 2002). There are also large differences in long-term sick leave across municipalities, again after adjusting for demographic differences.
7. Leave is paid at 100% of the maximum daily cash benefit rate for up to 32 weeks. If 48 weeks' leave is taken, for example, the payment rate is reduced accordingly (32/48 × 100%).
8. The government estimates the long-term effect to be equivalent to a 0.2% fall in full-time equivalent employment.
9. The pension is increased by the ratio of the number of years the pension is postponed to the expected number of years of life remaining at retirement. For example, a man retiring at age 70 (who has delayed receipt of his pension by 5 years) can expect to live another 12 years. His annual pension will therefore increase by 5/12, or 42%.
10. These estimates apply to someone thinking about retiring now. The implicit tax from ages 55-64 will fall over time as the pension system matures because people will tend to retire with bigger labour market pensions, and these schemes will affect the amount received from the various public pensions. However, the reduction in implicit taxes for early retirees is not expected to be

large because the presence of a labour market pension affects the VERP only for people who retire aged 60 or 61 (assuming people delay receipt of their labour market pension until the VERP is no longer available at age 65).

11. An average tertiary graduate earns just 40% more than someone with a below-upper-secondary education. This is the smallest wage premium in the OECD, and compares with 50-60% in Sweden, Norway and Finland, around 75-85% in France and Germany, and 130% or more in the United Kingdom and the United States. See Table A11.2 of OECD (2004a) for further details.
12. Students can obtain state loans of up to DKK 2 313 (€ 310) per month. Repayments begin one year after finishing their studies and can take no longer than 15 years. Loans carry a 4% interest rate while studying, and the central bank discount rate (plus a margin of around 1%) thereafter. More than half of students take out a loan; collectively, they account for around a fifth of student support.
13. Blöndal *et al.* (2002) estimated the internal rate of return to further education in ten countries (the G7 countries plus Denmark, Sweden and the Netherlands). The comprehensive rate of return, which adjusts for the current costs of study net of income support plus future post-tax incomes and the risk of unemployment, was 11.5% per annum for Danish men, virtually the same as the average of the ten countries (11.6%). The rate of return for women was slightly lower (11.3%, compared with the ten-country average of 11.8%).
14. These calculations are based on estimated employment rates of foreigners in Denmark in 2002, broken down into 50 countries of origin. The "average" migrant mix refers to a simple average of the share of these nationalities in the 21 OECD countries for which there is reasonably detailed information on the stocks of immigrants. The adjusted employment rate is calculated by supposing that each nationality keeps its existing employment rate in Denmark, but that its weight is equal to the average share across the 21 OECD countries rather than their share of the Danish immigrant stock. (For example, the employment rate of Iraqi men is the level currently experienced in Denmark – 28.4% – but their share of the migrant stock falls from around 7% to around 1.2%). The data are from the OECD's International Migration database, the European Labour Force Survey, the Danish Population Register and Statistics Denmark.
15. More precisely, a person must be resident for seven of the previous eight years in order to receive the full benefit. The benefit level for the seven-year qualifying period has been approximately halved for couples with children and by 35% for single people with no children. An additional but minor change is that benefits are cut by 5% after six months for couples in a household where nobody works. The new rules also apply to Danish citizens.
16. During this seven-year qualifying period, a person will be able to keep the first DKK 28 per hour (€ 3.78), rather than the first DKK 11.50 (€ 1.55).
17. See Damm and Rosholm (2003), which points to the importance of dispersal in big clusters of refugees with the same ethnic origin into regions with low unemployment and good access to educational institutions.
18. See Annex Table H of OECD (2004b) for details.
19. See Annex 5 of the 2003 *Survey* for a more complete description of the changes.
20. For example, see Jespersen *et al.* (2004) and Bolvig *et al.* (2003). The first paper shows positive results for all types of training for a sample who were activated in 1995, but negative results for a 1998 sample, perhaps because the unemployment rate was lower in 1998 and so the cases were harder to deal with.

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ANNEX 3.A1

Taking stock of structural reforms

This table reviews action taken on recommendations from previous *Surveys*. Recommendations that are new in this *Survey* are listed in the relevant chapter

Recommendations	Action taken since the previous *Survey* (May 2003)
INCREASING LABOUR SUPPLY	
Reduce structural unemployment	
Reduce benefit generosity. Lower the highest replacement rate and have benefits decline with the length of the unemployment spell.	No action.
Extend the waiting period for benefits.	No action.
Reduce UI benefit duration and abolish benefits for non-core purposes such as holidays.	No action.
Increase labour supply	
Reduce scope for early withdrawal from the labour force. Take further steps to strengthen incentives to postpone retirement if the effects of the 1999 reform fall short of expectations or if labour market pressures intensify more than expected.	The old-age pension (for those aged 65 and over) can be postponed until age 75, with an actuarial adjustment. No new changes have been made to the early retirement pension for 60-64 year-olds.
Promote a more inclusive labour market: strengthen efforts to remove barriers for establishing jobs on special terms for those with reduced working capacity, while ensuring that eligibility assessments for the flexi jobs scheme remain stringent.	No action.
Introduce a waiting period for the sickness benefit scheme and enforce the current 12 month time limit.	An increase in municipalities' incentives to reduce sickness expenditures was proposed in 2003's Sickness Action Plan.
Reduce excessive time spent in the education system: consider introducing tuition fees for tertiary education; reduce the period for which students can receive educational grants; set stricter time limits for completion of higher education; consider abolishing the voluntary tenth grade of lower secondary education.	From 2004 a so-called bachelor bonus has been implemented, which gives universities a bonus each time one of their students receives a bachelor's degree.
Improve the efficiency of active labour market programmes	
Ensure that greater flexibility following the *More People in Work* package does not reduce the "push" back into the workforce.	No action.
Introduce competition to the public employment service for placement services and for educational activation programmes.	There has been a significant increase in the delivery by external providers of placement activities and the PES has increasingly outsourced the responsibility for the regular contacts with the unemployed. External providers are partly paid according to employment outcomes. Up to ten municipalities will be able to take over PES functions from the unemployment funds on a trial basis.

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Recommendations	Action taken since the previous *Survey* (May 2003)
TAX AND DISTRIBUTION POLICIES	
Reduce marginal income tax rates, especially the highest rate. Increase the threshold for paying the top tax rate. Broaden the tax base to allow rate cuts (*e.g.* the interest deduction is high by international standards).	Income taxes were cut in 2004, reducing marginal taxes for middle-income earners.
Align the tax treatment of positive net capital income with that of interest outlays. Simplify the taxation of share income and unify the dividend and capital gains tax schemes.	No action.
Stop the erosion of the property tax base. Increase tax assessment values in line with house price developments. Introduce a property tax on rental housing.	No action.
Clarify equity objectives. Welfare gains from structural reforms should be allowed, more often, to take precedence over keeping static measures of inequality low (especially where reforms have little effect on low-income groups, even if they benefit high-income groups).	The tax cuts in 2004 indicate that equity concerns have prevented rate cuts to high-income groups where the labour supply impact would have been greatest.
THE PUBLIC SECTOR	
The budget process	
Introduce a politically binding expenditure ceiling. Getting political agreement on the overall spending level before budget negotiations with local governments would strengthen top down control.	No action.
Improve multi-year budgeting, for example by producing better forecasts of future spending and revenue, and integrating it with the medium-term projections.	No action.
Improve evaluation of spending programmes, and tie funding to the results. Give an independent body, such as the National Audit Office, more responsibility for evaluating the quality of spending programmes. Make more use of sunset clauses.	No action.
Local governments	
Give counties and municipalities more power to set property tax rates, the basic tax allowance and user charges.	No action. The tax freeze prevents any extension of user charges.
Encouraging greater co-operation and mergers between municipalities.	A major restructuring of local government is taking place. The number of municipalities will be cut from 271 to around 100, and the health system will be run by five regions (which replace the 14 counties).
Clarify responsibilities between different levels of government and match responsibility with taxing power.	The current reform of federal structure clarifies many responsibilities. However, the bodies responsible for the health sector will not have their own taxing powers.
Market mechanisms	
Encourage competition in the provision of publicly financed services. Make more use of market mechanisms. Enforce central government's contracting-out provisions. Improve incentives and remove barriers to outsourcing by local governments.	No action.
Develop a coherent approach to user charges. Increase or improve the structure of user charges in home help, childcare and adult and tertiary education. Give local governments more discretion in setting charges.	No action.
Strengthen consumer choice.	No action.
Administrative efficiency	
Make more use of performance-improving instruments such as activity-based funding and performance-related pay, especially at lower levels of government.	No action.
Continue developing the strategy for e-government and ensure that savings are collected for centrally determined reallocation.	Ongoing.

Recommendations	Action taken since the previous *Survey* (May 2003)
COMPETITION IN NETWORK INDUSTRIES	
Strengthen competition in electricity generation. Remove the Public Service Obligation (PSO) and allow consumers to purchase electricity from the cheapest supplier. Convert the fixed tariff commitments given to wind turbine owners into a diminishing fixed-term government subsidy.	Free choice of supplier took effect from 2004 for all consumers. The PSO has been restructured so that a greater share of power will be sold on the market.
Increase vertical separation in the energy distribution sector. Remove the financial disincentives for divestment by local governments.	The financial disincentives have been reduced but not eliminated entirely. High-voltage transmission has been separated from other parts of the system, but the low-voltage grid remains vertically integrated.
Liberalise the market for all gas consumers and expose DONG to further competition. Go further than the EU minimum requirements.	From 2004, households have had free choice of supplier. The gas transmission network has been separated from the dominant producer and distributor, DONG. The government intends to privatise DONG.
Utilise competition to improve resource use in road and rail transport more consistently. Develop a comprehensive strategy for increasing competition between different modes of transport that allows effective competition on all routes and involves converting current protection granted to rail into subsidies paid for the provision of social services.	A national Rail Authority was established in 2003 to manage rail tenders.
Verify whether competition in the telecommunications sector has strengthened and whether access to the network has become cheaper. Ensure that full number portability takes place.	The regulator is continually reviewing the state of competition in telecommunications. It is currently investigating why broadband prices are so high. Full number portability was to have been achieved by April 2002 but has been postponed to the end of 2005.
HOUSING	
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.
Remove rent controls on private housing, and tax away any induced economic rent to landlords resulting from higher property prices.	No action.
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.	No action.
Adjust perverse incentives in the urban renewal scheme to avoid "gold plating".	In 2004 a reform of the urban renewal scheme was put into place, meaning less public regulation and subsides and a more effective use of public expenditures on urban renewal.
Reconsider the housing benefit scheme. Benefits to pensioners should be aligned with those for other groups.	No action.
THE COMPULSORY EDUCATION SYSTEM	
Consider making compulsory the introductory year prior to primary school (*børnehaveklasse*) and strengthen its educational content.	No action.
Increase teachers' classroom hours. Shift resources from pre-school childcare to primary and lower secondary education in step with the entry into school age of the big cohorts born in the first half of the 1990s.	No action.
Strengthen quality and cost effectiveness in adult education. Introduce sizeable user charges on adult education and training for the employed and cut back on public funding of courses with firm-specific content.	No action.
IMMIGRATION	
Monitor municipalities' implementation of integration policies.	Anecdotes suggest some municipalities are still not fully implementing government policy. An ICT-based benchmarking system that makes differences in results across municipalities and PES more visible is scheduled for 2004.
Reassess the role that compressed wage distribution and high taxes play in making it harder to attract highly skilled immigrants.	Ongoing.
Ensure integration policies such as wage subsidies and stricter activation are time-limited and deliver results, and abolish them if they are not working.	The wage subsidy programme has not been evaluated yet.
Reduce minimum wages for the unskilled.	No action.
Improve "catch up" education programmes for immigrants who are falling behind at school.	A working group is currently looking at this in the context of wider reforms to the compulsory school system.

Recommendations	Action taken since the previous *Survey* (May 2003)
THE ENVIRONMENT	
Revise water charges to treat users equally. Remove the major rebates given to industrial users. Shift to a tax on net nitrogen discharges from farms or establish a tradable permits scheme.	No action.
Extend the cap and trade system to cover all carbon emissions with the aim of encouraging reductions to be made where abatement costs are lowest across all sectors.	No action.
Make transport policies more consistent in encouraging emissions reductions. Re-examine the taxation of car transport in conjunction with road pricing.	No action.
Allow economic instruments to function in waste management. Abolish national targets, and instead allow economic incentives to achieve the optimal mix of recycling, incineration and landfill.	No action.

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Chapter 4

Boosting growth through greater competition

This chapter discusses ways of strengthening the competitive environment in order to help boost productivity performance in various sectors of the economy. It looks at a number of indicators of the strength of competition – including price levels, industrial concentration and product market regulation – and it discusses the appropriateness of the competition legislation framework. The chapter then focuses on the large public sector, which has been slow to open up to competition, partly because of regulatory restrictions but also because some local governments are too small to handle tenders and provide an attractive market for private providers. The amalgamations of municipalities are likely to help overcome such problems. The chapter also looks at the process of liberalising network industries and at various regulations that still impede effective competition in a number of other sectors, including construction, housing, distribution and professional services.

There is mounting evidence that competition can be an effective way to boost productivity and encourage innovation. There are also signs that a more competitive environment can improve harder-to-measure factors, such as quality, service standards and consumer choice. Spillovers on the labour market have been detected also, with greater product market competition tending to boost employment (Nicoletti *et al.*, 2001), although the effects depend on the type of bargaining system. It is not always clear whether improved competition brings about a one-off improvement in the *level* of productivity, or whether it has ongoing dynamic effects that permanently lift an economy's growth rate (OECD, 2002a). But either way, the impact on national income is large enough that policymakers should be wary of introducing measures that reduce competition and should reconsider whether existing regulations are harming the competitive environment too much.

While Denmark has been a leader when it comes to reforming its labour market, its performance in product markets has been mixed. It was an early and aggressive deregulator in telecommunications, for example, but environmental goals hampered reform of the electricity industry. Compared with other countries, it does not have a great deal of "red tape" holding back the business sector in general, but it does have some significant anti-competitive restrictions in particular sectors. This chapter reviews the overall state of competition in Denmark and looks into certain sectors in more detail. Competition in the public sector is a particular focus of the chapter, as central and local governments deliver a large number of services that are provided privately in other countries, and there is considerable scope to get better quality and value for money in this area.

An increasing part of overall demand in the future will be for services for the individual that are typically provided by the government, such as elderly care, which is likely to involve a relative shift in employment towards the public sector. That could restrain productivity and GDP increases for two reasons: first, it is generally more difficult to raise productivity in these types of labour-intensive services; second, sheltered public-sector producers lack an incentive to improve efficiency because of little or no pressure from competition. These prospects emphasise the importance of continued reform in product markets and other areas of the economy with little competition.

Indicators of the state of competition

Successive Danish governments have undertaken a strategy of liberalisation and deregulation over the past 10-15 years. That includes strengthening of competition legislation and enforcement, reduction of state ownership, opening-up for competition in network industries, deregulation of a number of markets and reducing "red tape". These efforts can not, however, be clearly detected in output growth. While Denmark remains one of the OECD countries with the highest GDP per capita, its growth performance has fallen short of the OECD average, especially from the second half of the 1990s (see Chapter 1). This is mainly attributable to a lower growth in labour productivity that is fairly broad-based across industries (Table 4.1). However, it is noteworthy that industries with

Table 4.1. **Labour productivity growth in selected industries**

Average annual percentage change

	Denmark	Norway	Sweden	Finland	Belgium	France	Germany	Italy	Netherlands	United Kingdom	United States
1990 to 2002[1]											
Agriculture and forestry[2]	4.8	5.4	3.4	4.9	3.8	4.1	. .	4.4	2.6	3.7	2.4
Total manufacturing	2.3	1.0	5.9	4.8	2.9	3.7	. .	1.6	2.2	2.7	3.9
Food products and beverages[3]	2.0	1.3	2.6	4.1	1.7	–1.0	0.8	1.5	3.2	. .	–1.6
Printing and publishing[3]	–0.1	–0.9	3.3	2.5	. .	0.8	1.7	. .	2.4	. .	–1.5
Electricity, gas and water	2.7	3.9	1.8	5.9	4.3	2.0	. .	4.1	3.0	7.8	1.0
Construction	0.3	0.8	0.6	0.1	0.3	–0.4	. .	–0.1	–1.0	2.2	0.2
Total services	1.3	2.0	1.5	1.3	0.9	0.3	. .	0.5	0.4	1.6	1.6
Wholesale, retail trade	2.3	5.4	3.2	1.4	1.4	1.0	. .	1.3	0.8	. .	3.9
Post and telecommunication[3]	6.4	11.4	7.3	9.6	. .	4.5	13.0	9.2	6.9	. .	4.3
Financial services	0.0	–0.1	–0.5	0.9	0.1	–1.1	. .	–1.4	–0.6	0.9	0.7
Community, social and personal services	0.8	0.4	0.5	0.0	0.4	0.4	. .	0.0	–0.2	0.9	–0.3
1997 to 2002[4]											
Agriculture and forestry[2]	2.6	2.1	4.4	6.0	3.8	1.7	2.0	2.2	1.8	5.8	4.7
Total manufacturing	3.1	1.0	5.8	4.5	3.2	3.8	1.8	1.0	1.4	2.5	3.5
Food products and beverages[5]	2.5	3.1	2.6	2.8	2.2	–1.4	–0.7	0.7	0.8	. .	–4.7
Printing and publishing[5]	0.1	–1.2	3.3	1.5	. .	1.5	1.2	0.9	2.0	. .	–0.9
Electricity, gas and water	–0.0	8.3	1.6	4.1	3.8	2.6	4.6	6.4	2.8	4.7	–0.9
Construction	1.0	–2.4	–1.3	–1.5	1.6	–1.3	1.0	–0.8	–0.1	1.0	–0.3
Total services	1.1	2.0	0.9	0.9	0.1	0.5	1.0	0.3	0.7	1.7	2.4
Wholesale, retail trade	1.5	5.5	2.6	2.2	1.1	1.4	0.2	0.5	1.7	. .	5.4
Post and telecommunication[5]	5.1	14.0	7.3	12.4	. .	7.5	17.3	10.1	9.7	. .	4.5
Financial services	–0.1	–0.6	–1.7	–1.1	–1.3	–2.2	–1.0	–2.2	–0.4	1.4	1.7
Community, social and personal services	–0.2	0.3	0.3	–0.2	0.8	0.8	0.0	0.5	–0.1	0.5	–0.0

1. 1992 to 2001 for the United States and Germany.
2. Including hunting and fishing.
3. 1994 to 2002 for Sweden.
4. 1997-2001 for United States.
5. 1997-2001 for Germany.

Source: OECD, STAN Structural Analysis Database, 2004 Edition, June 2004.

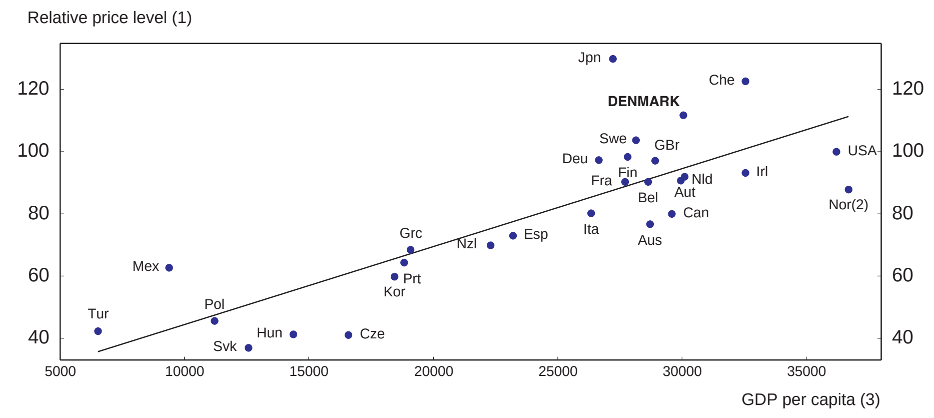
the least impressive productivity growth relative to other countries or with the biggest declines in performance are those that are associated with competition (*e.g.* monopoly) issues, pointing to the need for further reforms. These include utilities, wholesale and retail trade, post and telecommunication and public services. In particular, productivity growth in utilities and post and telecommunication is below that in other Nordic countries, which opened up these sectors to competition earlier.

The strength of competition can be evaluated using several indicators, although these will often be imperfect measures. The Danish Competition Authority has taken a very pro-active approach, trying to gauge competition at detailed industry level; based on a weighting of judgement and 10 "hard" indicators[1], it has identified 56 industries where competition is considered to be inadequate. These industries are mainly found in food, beverages and tobacco, printing and publishing, chemicals, building materials, utilities, transport and financial and non-financial services. The government has a target to almost halve this number by 2010. However, with a high turnover from one year to the next (16 industries were newcomers in 2004), the guidance provided by the list is not substantial. For instance, the construction sector is not represented at all in 2004, even though it has continuously been associated with competition problems, and five parts of the sector were included in 2003.

A second "hard" objective of the government is that the price level be no higher than in other European countries. Static inefficiency resulting from weak market forces will generally drive up prices, so the relative price level can give an indication of the state of competition. However, it is also affected by a country's level of income and by indirect taxes, consumption patterns and the size of the public sector. Keeping these *caveats* in mind, the Danish price level (measured by purchasing power parities) appears to be on the high side, even after correcting for GDP per capita (Figure 4.1). The same conclusion was reached in the 1993 *Survey*, indicating that this is a long-standing feature of the economy. After correcting for differences in VAT and excise duties, the Competition Authority has found that prices in Denmark are around 5% higher than in comparable countries (Konkurrencestyrelsen, 2004a).

Figure 4.1. **The overall price level is high**

Relative price level, average, 1998-2002



1. Purchasing power parities divided by the exchange rate, USA = 100.
2. 1998-2001.
3. In USD, converted with PPPs.

Source: OECD, *Annual National Accounts Database.*

Price levels (excluding indirect taxes) tend to be high in sectors where there are other indicators of weak competition (Table 4.2). These include construction, financial services and certain non-financial services, books, newspapers and magazines and in the market for various beverages. In contrast, prices net of taxes are relatively low in telecommunication. Electricity prices are also low when compared with other countries, although prices for industrial customers are higher than in the other countries participating in the Nordic electricity market. The relatively low net price of motor vehicles is explained by an extraordinarily high level of taxation (see OECD, 2002b), which forces producers to cut wholesale prices in order to have Danes buy any new cars at all. This is counterbalanced by high prices on spare parts as producers try to recoup some of their lost margins. However, with new EU regulation allowing Danish retailers to establish sales offices in other countries (and *vice versa*) and to engage in parallel importing of original spare parts, some harmonisation of prices is likely to be seen in the coming years.

Industries with weak competition may also have above-average *wage premia*.[2] While the magnitude of these premia in Denmark does not stand out in general, they do seem relatively high in oil and gas extraction, paper production, printing and publishing, chemicals, financial and professional services and in air transport (Jean and Nicoletti, 2002; Konkurrencestyrelsen, 2004a).

Some of these industries are also characterised by *high concentration*.[3] Concentration will tend to be high in a small country, but competition from abroad would normally reduce potential market power in sectors with low barriers to trade. This is the case in manufacturing of pharmaceuticals, for example, and in parts of the food, beverages and tobacco sector where four-firm concentration ratios (CR4s) are above 80% but import-corrected ratios fall below 50% (import-corrected CR4s are obtained by multiplying ordinary CR4s by one minus the share of imports). However, concentration remains high in

Table 4.2. **Price differences (net of tax) vary between expenditure groups**[1]

Index, EU9 = 100, 2000-02[2]

Group	Price level	Group	Price level
High price items		Hotels, etc.	113
Auto spare parts	121	Auto diesel fuel	112
Education, child care	119	**Low price items**	
Personal services	119	Coffee and cocoa	89
Soft drinks	119	Communications	86
Insurance	119	Electricity[3]	84
Books, newspapers, magazines	119	Motor vehicles[4]	82
Oil for heating	116	Flowers, etc.	80
Public transport	116	**High price investment items**	
Alcoholic beverages	115	Housing construction	135
Vegetables	115	Equipment for transport	134
Financial services	115	Other construction works	113
Travel agencies	114	Business construction	112

1. The comparison is based on Eurostat's purchasing power parities divided by exchange rates. Net prices are obtained by subtracting VAT and excise duties from Eurostat's price indices. The other eight countries are: Belgium, Finland, France, Germany, Netherlands, Italy, Sweden and the United Kingdom.
2. See source for precise time periods for various items.
3. Denmark compared to EU9 except Sweden.
4. Denmark compared to EU15.

Source: Konkurrencestyrelsen (2004a), *Konkurrenceredegørelse* 2004, June.

breweries and soft drink production, suggesting that the high product prices reflect market power, and in the dairy sector where one co-operative has a near-monopoly position. Overall, concentration corrected for imports seems to have fallen during the period 1992-2002 (Konkurrencestyrelsen, 2004a).

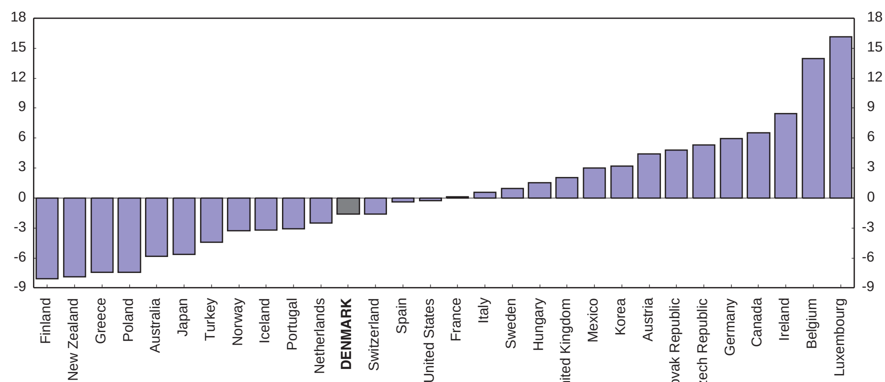
As indicated above, competition from external trade is important to counter high concentration ratios among domestic producers. *Import penetration* (corrected for structural factors such as country size (population), GDP per capita levels and natural barriers to trade associated with transportation costs) and the flow of *foreign direct investment* (FDI) suggest that Denmark is close to the average given its characteristics (Figure 4.2).[4]

Entry and exit of businesses, which can be viewed as an indicator of dynamic competitive pressure, are relatively high in business services but just average in manufacturing (with the business sector appearing less dynamic when zero-employee firms are disregarded; see Chapter 5). Entry rates are found to be particularly low in food, beverages and tobacco, building materials, pharmaceuticals (retail), air and sea transport, professional services and other services (Konkurrencestyrelsen, 2004a). In some of these sectors, low entry is probably caused by *regulatory barriers*, especially in network utilities, transport and most professional services.

In general, Denmark is one of the OECD countries with the least product market regulation (PMR), and the pro-competition efforts in the past decade show up as a significant reduction in the OECD PMR-indicator between 1998 and 2003 (Figure 4.3). Progress has mostly been due to a reduction in state control, with little further abatement of the already relatively low barriers to entrepreneurship. A government working group has identified several areas where regulations could be adjusted or abolished in order to increase competition. They include, for instance, the Planning Act, which regulates the size and placement of commercial premises, restrictions on ownership of law firms and advertising of legal services, and a specific Danish approval requirement for building materials.

Figure 4.2. **Import penetration is slightly below average after controlling for country characteristics**[1]

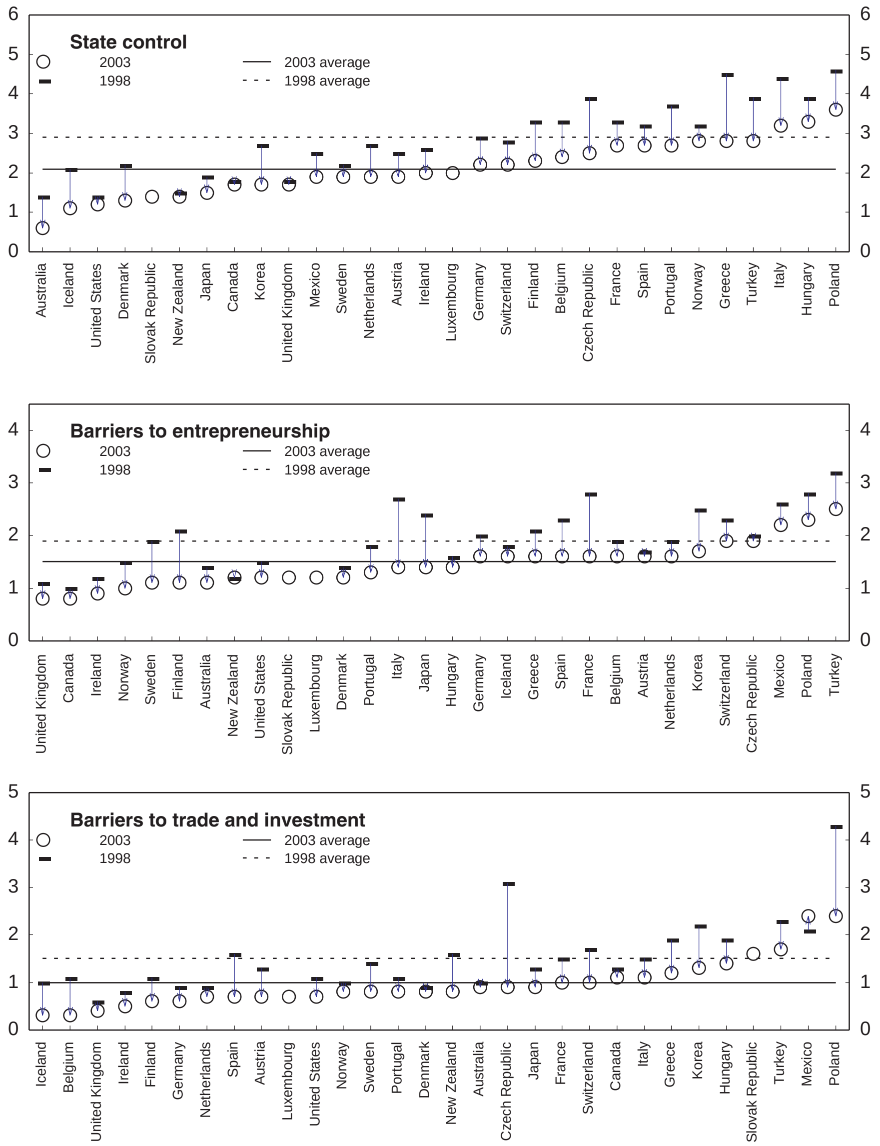
Percentage points, 1997-2002[2]



1. Country residuals after controlling for effects of country size, GDP per capita and transportation costs.
2. Or latest year available.

Source: OECD calculations.

Figure 4.3. **Product market regulation has been reduced**



Note: Indicators can range from 0 to 6 with higher values representing stricter regulation.
Source: OECD, Product Market Regulation Database.

Competition legislation and enforcement

The Danish government has belatedly modernised its competition law, fixing most of the major problems that were identified in the OECD's *Regulatory Reform Review*, published in 2000. Only since 2001, therefore, has competition law been harmonized with EU rules, but a stronger "competition culture" is emerging. The Danish toolbox now includes merger control, not just prohibition of restrictive agreements and abuse of dominance. The fining level has been increased and can now be based on turnover, although the courts have not yet had occasion to impose the higher fines.

While merger control now exists, it is relatively light-handed. Although the government has proposed that Denmark follow the EU in changing the dominance test used in merger control (namely, to "a significant impediment to effective competition"), thus allowing it to target mergers that do not create a dominant position but have anti-competitive effects nonetheless, the thresholds that determine whether the Competition Council has jurisdiction are much higher than in similar-sized economies. These thresholds should be reduced. The credibility of merger control also suffers because no merger has yet been rejected by the Council. The pro-competitive effects of proposed remedies and their relationship to the antitrust issues involved in the merger must be clear. To examine how well this has been done, the Competition Authority recently published an assessment of the remedies applied in merger decisions to date.

The implementation of the framework is hampered by there being too many agencies involved in the process (Box 4.1). Moreover, there are problems with both the Competition Council and the Appeals Tribunal:

Box 4.1. **The main players in the competition framework**

The *Competition Authority* is the central institution, with a staff of around 125, of whom about 70 concentrate on antitrust while others deal with issues such as energy, public procurement and state aid. It decides a large number of cases and works to improve competition culture in Denmark. It decides routine cases for itself but refers more complicated cases to the Competition Council and criminal cases to the Special Prosecutor when it thinks that a fine would be appropriate. It also pursues policies to increase competition in network industries, to reduce or eliminate anti-competitive effects of regulation, to improve the behaviour of the public sector in the market place and to increase the openness of Danish markets, *e.g.* through more standardisation.

The *Competition Council* is a 19-member body comprising a mixture of competition experts and representatives of the social partners. All members work part-time on the cases, meeting on average once every month for around five hours. It can issue "cease and desist" orders, grant and revoke individual exemptions, review mergers and certify that conduct is not anti-competitive. It has no power to impose fines.

The *Competition Appeals Tribunal* is a three (soon-to-be five) person agency that acts as a check on Council (and Authority) decisions before they get appealed to the formal court system.

The *Special Prosecutor for Serious Economic Crime* takes criminal cases directly to the court system. It investigates cases brought to it by the Authority and can decide whether to send a case to trial. The Authority decides whether to pursue a case through the Special Prosecutor or the Council. A key consideration in the Authority's decision is whether the evidence is strong enough to support a conviction. The Special Prosecutor may have a different perspective, though, about the choice of cases to pursue.

The *Courts*. Competition cases, like all business cases, go through the everyday court system. There is a specialised commercial court, but it does not decide cases involving competition law enforcement.

Customers. So far, very few private lawsuits for damages relating to competition offences have been concluded in the Danish courts. This may have to do with a practice of not publishing the names of the offenders if they agree to fines out of court. Another reason may be that class actions are not used in Denmark at present.

- The Competition Council, a panel of 19 part-timers comprising competition experts and the social partners, is too big and involves too many special interest groups. It adds little value to competition policy enforcement, except in providing a sense of consultation and ownership of decisions by the social partners. Its problems as an unwieldy decision-maker are most apparent in the area of merger control. Merger cases are subject to strict deadlines and large amounts of confidential or commercially sensitive information are typically involved. Negotiations with the Authority typically continue until one to two weeks before the Council meeting. During this process, the Authority keeps in contact with the Council chair and vice chair. The members of the Council, who in principle make the final decision, typically receive the documentation only a few days before the meeting and are therefore presented with a virtual *fait accompli*. Although the Council did reject one negotiated agreement about a merger, and in some cases has tried to set out general directions about future negotiations, it is not well suited to deal with merger decisions.
- Some of the Appeals Tribunal's rulings have been short and poorly rationalised, adding little to the understanding of the emerging jurisprudence. In a series of appeal cases involving agricultural co-operatives the Tribunal seemed less concerned with competition law than with "co-operative principles" and contract rights between industry players, even though the latter are not part of a formal set of rules. Those in favour of the Tribunal see it as a low-cost, fast decision maker that prevents long, drawn-out court cases. Those against it see it as a black box for poorly explained decisions that the Competition Council cannot get reviewed in the court system.

This raises the question of whether Denmark needs two bodies between the Authority and the courts, neither of which can impose fines. To have one separate, independent, collegial body that reviews economic and legal issues and imposes administrative fines is sensible. But the system could be improved either by streamlining the Council while disbanding the Tribunal, or by expanding the Tribunal to include more economic expertise while eliminating the Council. A specialist commercial court could also replace the Tribunal, mirroring the EU system under which Commission decisions may be appealed to the Court of First Instance. This might improve the decisions of the Authority and of the Council, both because these would understand that a higher standard of proof would be needed, and because better argued appeal decisions would add positively to the emerging practice. A second-best solution would entail retaining a (preferably slimmed down) Competition Council and strengthening the Tribunal by giving it more economic expertise. In addition, the Tribunal could benefit from rotating membership.

The major gap in the framework is that leniency instruments are not an effective part of the competition toolbox. Leniency tools are accordingly blunt. The Competition Authority, which is the principal investigating body and the first point of contact for a would-be whistle-blower, does not have the power to make a commitment about lenient treatment. (After a matter is referred for prosecution, the Special Prosecutor can negotiate a deal with a "whistle-blowing" firm and recommend a reduction of fines by the courts. The judge may ignore this advice, but so far the courts have followed the Special Prosecutor's recommendations and have not reduced the "rebates".) Moreover, the typical reduction of the fine by only 10-20% is very low. International experience indicates that cartels can be busted by using leniency programmes, but certainty and very substantial reductions in the fine, to create a strong asymmetry between the "whistle-blowing" firm and the others in the cartel, are needed for this to have a significant effect.[5]

The coverage of the Competition Act has been extended to public regulation and state aid that distorts competition. This is a positive step, but, since it is the relevant minister who decides what is legitimate, the Competition Council's scope of action against anti-competitive ministerial decisions is limited. The Council can point out how an official decision or regulation harms competition and propose a solution, invoking a statutory process that requires the responsible ministry or other body to respond publicly within 3 months. A clash between competition policy and the other objectives of a particular regulation might be dealt with more effectively if an independent arbitrator rather than the minister were to decide the extent to which restrictions on competition are necessary to achieve the purpose of a regulation. The prospect that parliament could change the law to overrule the competition authority is something that applies to all OECD countries, of course.

More competition is needed in the public sector

The Danish public sector is one of the largest in the OECD relative to the size of the economy. This reflects the Danish model of providing equal access to a wide range of public services. But in many cases, a decision to *fund* a public service does not mean that a government body also has to *provide* it. Denmark, however, has been slower than some other countries to separate funding from provision, and local governments especially prefer to produce the services themselves. This section reviews competition in public services focussing on outsourcing, free choice, government operations in competitive markets, privatisation and state aid.

The variation across the OECD in the size and organisation of the public sector indicates that there are few limits to which publicly funded services can be produced in competitive markets. Practice is often rooted in tradition; while privately run tertiary education institutions are well accepted in the United States, they are almost non-existent in Denmark. The opposite may be true for private fire fighting companies. Thus, experience and political will are likely to be important impediments to exposing traditional public-sector activities to competition. Different services require different institutional arrangements, however. Where well-functioning private markets exist or can be expected to emerge quickly, competitive tendering may be preferred. Alternatively, users could be given a choice of supplier, thereby creating competition over quality between public institutions or between public and private suppliers using voucher systems. Benchmarking of public-sector units (for instance, local police departments) can give insight into the cost structure in production when there is no well-functioning market or when concerns for discretion or legally binding decisions for individual citizens make private involvement practically impossible. In such cases, an element of competition can be created by rewarding producers in proportion to their relative effectiveness. In any case, support functions can almost always be exposed to competition through competitive tendering and contracting.

While Denmark has been fairly quick to implement EU procurement regulations, performance is mediocre on indicators like procurement rates and the extent of free-choice arrangements. This may be linked to the existence of formal and informal barriers to competition in specific activities, such as restrictions on which services can be put to tender and specific requirements on how to organise production of such services. Furthermore, implementing a framework for contracts below EU thresholds has been slow.

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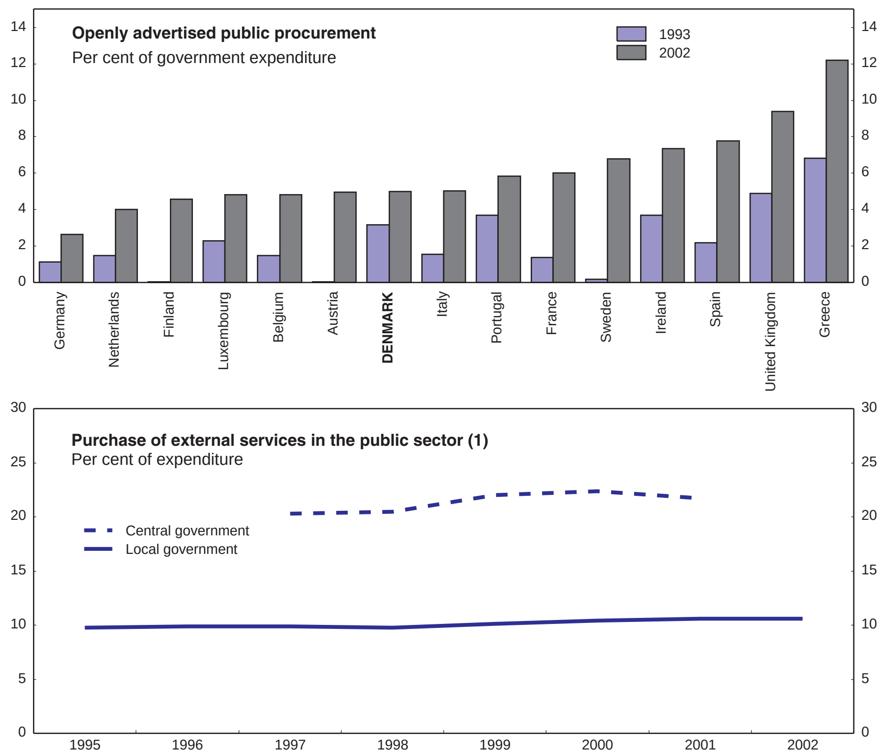
There is substantial potential for further competitive tendering and outsourcing

Denmark is placed in the low end of the mid-segment of EU countries when it comes to openly advertised public procurement, and it is well behind countries like Sweden and the United Kingdom. Furthermore, there has been virtually no improvement over the past decade, especially by local governments (Figure 4.4).[6] The technical area, including city planning, housing, environmental arrangements, traffic and infrastructure, has the highest average share of external purchases in total expenditure, which is likely attributable to the fact that the existence of competitive private markets – and thus the highest potential gain – is found mostly in technical services (Table 4.3). Still, there seems to be surprisingly little outsourcing in areas where well-developed markets do exist, such as operation of canteens and maintenance of property, parks and gardens. This may illustrate a general reluctance to involve private providers in municipal activities, although there are large differences between municipalities in terms of the extent and nature of marketed purchases: for instance, within the technical area external purchases' share varies between 13 and 88% (Økonomi- og Erhvervsministeriet, 2003c).

There are several reasons for the low average and large variation in external purchases among municipalities. *First*, sectoral regulations impede opening up of public markets. For instance, operation of primary and lower-secondary schools cannot be put to tender; profit-earning companies are not allowed to operate child care centres; and requirements

Figure 4.4. **Progress in public procurement is slow**



1. Services exempted from VAT are not included.

Source: Eurostat, *Structural Indicators*; Konkurrencestyrelsen (2004a), *Konkurrenceredegørelse 2004*, June.

Table 4.3. **Local governments' external purchases vary between service areas**

Per cent of operating costs

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
City planning, housing and environment	43.9	44.5	47.6	47.8	47.3	47.5	47.7	49.0	50.5 |	35.2[1]	35.7
Utilities	13.0	16.2	16.7	17.2	17.2	17.6	16.3	16.9	19.8 |	35.8[1]	33.8
Traffic and infrastructure	38.6	40.8	41.6	42.8	41.9	38.6	39.3	38.7	38.6	32.7	31.7
Education and cultural area	5.3	5.4	5.2	5.4	5.7	5.7	5.8	5.9	6.0	5.9	5.9
Hospitals and health insurance	3.9	4.1	4.1	3.8	3.9	4.1	4.4	4.9	5.0	5.3	5.4
Social and health care	3.4	3.3	3.6	3.8	4.0	4.1	4.2	4.4	4.7	5.0	5.5
Administration	16.6	17.0	16.9	17.4	17.7	17.8	17.7	18.6	19.5	20.0	19.9
Total	8.9	9.3	9.6	9.8	9.9	9.9	9.8	10.1	10.4	10.6	10.6

Note: Includes only purchases from VAT registered providers. In areas with VAT exemption (hospital treatment, education and child and elderly care) the numbers in the table may therefore understate the real amount. Purchases from the municipalities' own production companies are included.

1. The large shifts between 2000 and 2001 are due to changes in utilities' accounting methods.

Source: Økonomi- og Erhvervsministeriet (2003c), *Vækstredegørelse 03 – Analyser*, December.

on the number and educational background of staff as well as the organisation of activities can in some cases be unnecessarily tight.

Second, private companies often face an uneven playing field when in-house teams participate in competitive tendering and contracting, because not all costs of the public production unit are fully factored in when offers are compared. VAT and other tax exemptions, depreciation charges and capital costs may not be fully corrected for, and private companies can also have less access to cheap labour from unemployed people in activation schemes.[7] While the Outsourcing Directive (*udbudscirkulæret*) provides a framework for public procurement below EU thresholds at the central government level and stipulates precise rules on how to calculate in-house production costs in order to prevent cross-subsidisation, a similar directive does not apply to local governments. Also, local government accounts often do not provide the necessary information to separate costs of different units, which is essential to avoid cross-subsidisation, and rules on costing to ensure a credible competitive tendering process are inadequate (full-cost accounting is planned only for 2007).

Third, many municipalities believe that transactions costs associated with the procurement process itself are a big barrier to tendering (Økonomi- og Erhvervsministeriet, 2003c). Writing contracts, monitoring compliance and changing supplier may be too expensive for small municipalities, especially when public managers have little experience. Similarly, private firms may also be reluctant to bid if the process is deemed too costly relative to the value of the tender or if the market is too small.

Fourth, while ideological differences are practically unrelated to the variation in municipalities' market orientation, the presence of a strong "welfare-coalition" (public employees and people receiving public income support) may impede outsourcing (Christoffersen and Paldam, 2000). Thus, unless they are facing severe budget problems, local politicians and civil servants may have little incentive to engage in outsourcing, as this could eventually jeopardise their own positions. While this argument does not lend itself to much hard evidence, it is consistent with public scepticism towards competition in public services, even though local and international experience in general has been good (Lundsgaard, 2003) (Box 4.2).[8]

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Box 4.2. **Experience with outsourcing**

Few Danish studies have examined the results of tendering in the public sector. An analysis from the association of local governments finds that cost savings were achieved in half of tenders (with the largest savings in cleaning and garbage disposal), while costs were the same or higher in the other half and that service levels were mostly unchanged; when changing, it was primarily to a higher level of service (Kommunernes Landsforening, 2001). Furthermore, tenders seem to have positive effects in other areas in terms of increased focus on work planning and resource control. The Economic Council has also found that outsourcing in municipalities on average has led to cost savings (Det Økonomiske Råd, 2004). While employees may find that pace of work has increased, this is often countered by more influence for the individual employee on work organisation (Økonomi- og Erhvervsministeriet, 2003c). The findings in Denmark generally mirror those in Sweden, the Scandinavian country with the most experience in putting publicly funded services to tender (OECD, 2004a).

Cost savings are often biggest in first-time tendering and in non-welfare areas (*i.e.* technical areas where a competitive private market often exists). Estimations in Det Økonomiske Råd (2004) suggest that smaller municipalities and municipalities with a low rate of external purchases gain the most from outsourcing. This is likely to be the result of some economies of scale in in-house production in larger municipalities and of a natural tendency for municipalities to initially focus on outsourcing in the areas with the highest potential (leading to diminishing returns from outsourcing). The estimations also suggest a cost-saving potential of around DKK 2 billion per annum if municipalities with below-average outsourcing raised it to the average level.

The government has launched several initiatives to speed up competitive tendering and outsourcing, including compulsory outsourcing strategies at all levels of government and setting up the *Outsourcing Board*, which advises public-sector actors on competition exposure and provides analyses and recommendations to raise efficiency and quality in the public sector. The government has also opened up for private operators in job mediation and activation and introduced a so-called "challenge right", allowing private firms to bid on production of publicly funded services at their own initiative. However, municipalities' service strategies are of varying quality and difficult to compare, which impedes benchmarking. Also, few firms have used the challenge right, perhaps because they fear that future co-operation may be hampered if municipal units feel intimidated or because municipalities are not obliged to accept such an offer, however favourable it may be. The Outsourcing Board has spent much time defining which activities cannot be put to tender but has recently presented a number of recommendations for strengthening competition in the provision of public welfare services.

Competitive tendering and outsourcing should receive a boost from the structural reform of local governments, which will create fewer but larger municipalities and regions that have better resources to engage in the process (see Chapter 2). Even so, the problems listed above suggest that additional efforts are indeed required. Lifting some unnecessary regulations would be a first step, for instance the ban on profit-earning companies in child care (as proposed by the government). Furthermore, it remains a problem that large parts of the public sector do not have precise knowledge of the cost of production. That calls for accounting reforms and stronger programmes for cost and quality evaluation, where

Denmark seems to lag behind its Scandinavian neighbours and other OECD countries. The accounting and budget reform to be implemented in full in 2007 should help in that respect (by introducing, for instance, accrual accounting). Further reforms should aim to provide the basis for a level playing field, including making sure that VAT and other tax rules do not favour public providers. An obligation to tender in local government activities could be introduced in the annual agreements on local government finances. Alternatively, the state outsourcing directive could be turned into legislation and extended to local governments. The rules on the challenge right could also be improved by removing the possibility of refusing a challenge that makes cost savings probable (as assessed by an independent body, for instance the Outsourcing Board, thereby reducing the possibility of strategic behaviour by firms); such a challenge should either be accepted or lead to an open tender. The government is currently looking into ways of expanding public-private partnerships in areas where competitive tendering may be less appropriate; however, experience with such arrangements in OECD countries is mixed, and the long-run nature of contracts may distort competition (Box 4.3).

Free-choice arrangements could be expanded

Freedom of choice is another way to introduce competition in public services, although the emphasis is on competition in the quality dimension rather than on prices; real competition will exist only if funds to the public producers depend on the activity level

Box 4.3. **Distortion of competition must be avoided if public-private partnerships are introduced**

Competitive tendering requires that competition exists in the market and that quality can be specified and measured. It may therefore be less suitable if effective markets are unlikely to emerge or if demand in terms of quality and extent is often changed. Interactive models, such as public-private partnerships (PPPs), can be effective ways of co-operation for a number of complex tasks, for instance infrastructure, health and defence, where large-scale investments are often required and where emphasis may rather be on higher quality through innovation than on price competition. PPPs include models with more private involvement in development and management of public facilities and services, for instance by letting private investors design, build, own and operate facilities under contracts that are typically longer than under normal tenders. By transferring investment risks to the private investors (arising from, for instance, delays in construction projects) and ensuring a life-cycle perspective on costs, better cost-containment and greater efficiency may be achieved.

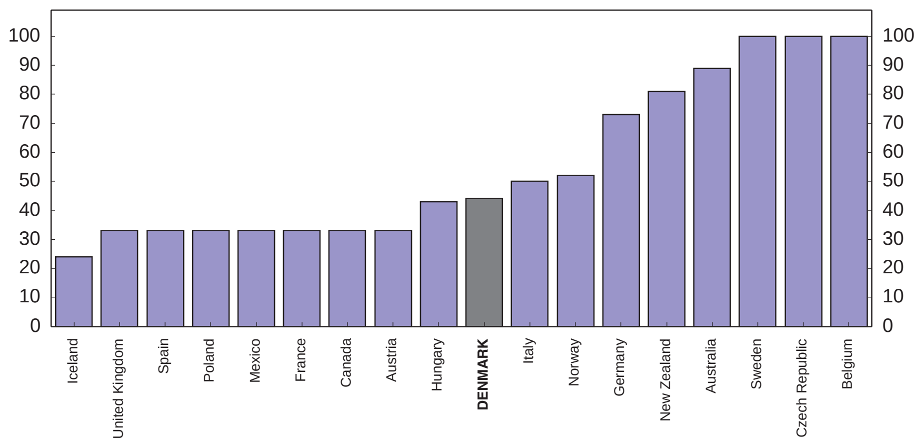
The Danish government has drawn up an action plan for introducing PPPs, as virtually no such arrangements have yet been carried through. However, international experience with PPP models has been mixed so far, suggesting that the government needs to proceed carefully (Joumard *et al.*, 2004). While some projects have turned out to be cost-effective ways of delivering public services, others have failed because of cost overruns – and subsequent bail-outs by the government – and discussions over the interpretation of contracts. Thus, the government may ultimately be held responsible for outcomes, thereby making the supposed transfer of risks to private contractors an illusion. Furthermore, the inherent long-term character and complexity of PPP contracts risk distorting competition, as the private partner will have revenue from the co-operation without being exposed to competition for a long period.

(*e.g.* by letting money follow the user). More freedom of choice is likely to increase individual welfare, but it also makes public control and prioritisation of funds more difficult. Strict public management systems with clear procedures for individual need assessments are therefore required if the possible efficiency gains from these arrangements are to be reaped.

The extent of free choice in Denmark seems to be average (Figure 4.5). However, the government has been keen to expand it, thus allowing more free choice in elderly care and hospital treatment and planning to introduce it in child care as well. In the case of home help for the elderly, which is free of charge to citizens who are entitled to these services, municipalities can introduce free choice in two ways: either the service is put out to tender in order to choose one or more suppliers (with price being an important element) or the municipality can approve all private companies complying with its quality requirements (thus resembling a voucher system with competition in quality only). So far, few municipalities have chosen the first option, probably because of cumbersome rules concerning the minimum number of private suppliers and the extent of services put to tender. These rules have recently been lifted.

When choosing the second model, municipalities pay private suppliers a price equal to the municipality's own costs of delivering that service. However, some municipalities have – either deliberately or by negligence – favoured their own service units by setting the price lower than their actual long-term costs. It is unclear whether such practices constitute significant impediments to fair competition. However, municipalities are obliged to report their price of one hour of personal and practical help to the Ministry of Social Affairs, and these prices vary substantially, with the most expensive municipality paying 50% more than the least. This is unlikely to reflect real cost differences. Thus, there seems to be a need for better rules on how to calculate costs and – as mentioned earlier – for reforms of accounting and management information systems.

Figure 4.5. **The extent of free choice of government financed services is around average**



Note: The index shows a relative scale, where the countries with most freedom of choice have index = 100; that does not mean they have free choice for all services. The index reflects the extent of free choice in hospitals, dentists, general practitioners, nursing homes, kindergartens and home help, as reported in questionnaires by consumer authorities in the various countries.

Source: Konkurrencestyrelsen (2002), *Velfungerende Markeder – til fremme af vækst og velfærd*, *www.ks.dk*.

Government operation in competitive markets is limited but has potential damaging effects

Government production of goods and services for competitive markets is not widespread in Denmark, but when it does take place there is a significant risk that competition is distorted. One example is when municipalities set up production companies as part of their active labour market policies, thus using labour from unemployed people in activation schemes who are paid a wage well below the market rate (Box 4.4). In these cases, competition legislation is subordinate to other regulations, and the Competition Authority can do nothing but recommend that guidelines for non-competition-distorting behaviour be followed. Thus, there seems to be a need for making the provisions clearer in order to ensure that private firms are not pushed out of the market through unfair competition. In general, legislation should state that government institutions should get involved in activities only where there is a clear public role (*e.g.* when market failures have been identified).

Privatisation of government enterprises lacks momentum

International evidence indicates that firms almost always become more efficient, more profitable, increase capital investment and become financially healthier following privatisation (Megginson and Netter, 2001). There are, therefore, good reasons to consider what government holdings could appropriately be sold off, even though public ownership outside the traditional public-sector areas and natural monopolies in network industries is fairly limited (Christoffersen and Paldam, 2004). While several privatisations took place in the 1990s, most notably the telecommunications monopoly, recent years have seen fairly little activity, although preparations for privatisation of the post office (Post Danmark), the television company TV2, the gas firm DONG and the state's car-inspection service are now at the final stages (Annex 4.A1). A recent report from the Ministry of Finance indicated that the government in many cases had waited too long for companies to mature before the sell-off of central government holdings, thereby harming the development of effective markets (Finansministeriet *et al.*, 2004a). Thus, the government ought to regain momentum in its privatisation efforts, focusing on the functioning of competitive markets, rather than

Box 4.4. **The coffee pot case**

A private firm had set up a business assembling coffee pots on contract for the Bodum group. After two years in business the firm went bankrupt in 2000 as the Bodum group switched its contract to the local municipality's factory, which used unemployed people in an activation project, paying them DKK 35 per hour – DKK 59 below the minimum wage. Finding himself out of work, one of the owners of the private firm turned to the municipality for social assistance (cash benefits), which he was awarded – on the condition that he would enter an activation scheme assembling coffee pots for Bodum at the municipal activation factory. Three regional labour-market councils (referring to activities in five other municipalities) and the Competition Authority have stated that activation factories distort competition by underbidding private companies in assembling coffee pots, and the owner of the private firm has now filed a lawsuit against eight municipalities, claiming that they have used the labour of activated people in an unlawful manner.

on maximising the proceeds of sales. This also applies to local governments, who own a large part of utilities. The incentives for local governments to sell off their holdings were strengthened in 2003 with the clarification of rules on how revenue from sales is split between local governments and the central government.[9] However, incentives could be improved even further as receipts from asset sales are still partly "taxed away" by the central government.

Subsidies and state aid seem high but are distributed fairly neutrally

State aid appears to be relatively high in Denmark, although data are not strictly comparable across countries. However, the government has reduced distortionary state aid in the last couple of annual budgets. Furthermore, Danish state aid is all distributed horizontally, *i.e.* on equal terms between all companies that fulfil objective criteria such as environmental efforts or research and development (Table 4.4). Around half of such aid is devoted to environmental initiatives and one-third to employment subsidies and other employment-related efforts.

Despite state aid being mostly horizontal in nature, there have been several cases where competition has been distorted. As mentioned earlier, wage subsidies have been used as part of active labour market policy in a manner that gave municipal companies an advantage in competition with private firms. State aid to the now liquidated bus company, Combus, helped it drive out private competitors in the mid-1990s when bus lines in the cities were put to tender. Recently, the European Commission has concluded that the television station TV2 was overcompensated for its public service obligations through various means of direct and indirect state funding in the period 1995-2002, and that an amount DKK 600 million plus interests should be repaid, a decision that the Danish government has appealed.

Table 4.4. **State aid in EU countries in 2002**[1]

	Total aid, per cent of GDP[2]	Horizontal aid, per cent of total aid
Denmark	**0.72**	**100**
Germany	0.56	66
Spain	0.55	67
Portugal	0.55	39
Ireland	0.45	49
France	0.42	60
EU15	0.39	73
Italy	0.38	96
Belgium	0.37	97
Greece	0.31	100
Luxembourg	0.26	92
Austria	0.21	96
Netherlands	0.19	98
Finland	0.17	98
United Kingdom	0.17	70
Sweden	0.16	84

1. Data is flawed by differences in reporting criteria among countries and therefore not perfectly comparable.
2. Total aid less agriculture, fisheries and transport.

Source: European Commission Scoreboard 2004.

Network industries are gradually being deregulated

The introduction of competition in network industries, which have traditionally been government-owned, has focused on opening up the parts of each industry that are not natural monopolies. The most common approach has been to unbundle the network, through either physical or notional separation, and to regulate the monopoly parts. The telecommunications network, for example, was retained by the incumbent, whereas subsequent liberalisations of other network industries have emphasised complete independence of infrastructure from competitive activities, mostly by setting up state-owned companies to control the networks. Overall, progress has been good in telecommunications and to some extent in electricity, while competition is insufficient or totally absent in other network industries.

The new energy reform should improve competition in electricity, but some problems remain

Denmark was relatively late to open up the electricity sector compared to its Nordic neighbours. While the inter-Nordic electricity spot market (Nord Pool) was set up in 1996, the western part of Denmark was not connected to the grid until 1999, with the eastern part following a year later. Today, Denmark is connected to Nord Pool *via* transmission links to Norway and Sweden and to the German market *via* long-term contracts. The 1999 Energy Supply Act introduced competition in generation and retail trade, while system operation and the high- and low-voltage transmission networks remained monopolies subject to government regulations, including third-party access to the high- and low-voltage grids and revenue caps to control network access prices. Corporate separation of previous monopolies operating in all these fields was implemented to reduce the risk of cross-subsidisation, resulting in the establishment of holding companies with various subsidiaries operating in different parts of the market.[10] The reform also opened up the market for competition from the demand side by introducing free choice of supplier for customers.

Despite the 1999 reform, effective competition in the Danish electricity market has not been established, primarily due to widespread cross-ownership in all parts of the market (partly required by legislation), obligations to buy environmentally friendly energy before turning to the competitive market, and high concentration in generation (Box 4.5). Disincentives to consolidate the large number of low-voltage distribution companies have also impeded efficiency-improving restructuring in this part of the electricity sector. This is likely to be an explanatory factor of the comparatively high price for some consumer groups relative to other liberalised markets (Table 4.5). However, a new reform from 2004 (Annex 4.A2) aims to resolve the remaining obstacles, including most of those identified in the OECD's *Regulatory Reform Review* from 2000.

First, there will be full ownership separation of transmission and system operation from generation and sales, as a new state-owned company will take over the high-voltage grid and system operation from the previous owners (municipalities and consumer co-operatives *via* their ownership of distribution companies). Along with other measures to reduce vertical integration, this should enhance efficiency in the operation and expansion of the energy infrastructure and effectively ensure open and equal access for all users of the network.

Box 4.5. **Effective competition was not achieved with the 1999 electricity reform**

While constituting a first step towards liberalisation, several impediments to competition and efficiency-improving restructuring remained after the energy reform in 1999:

- Competition in generation for the competitive market has been hampered by the dominance of two big producers: Elsam and Energi E2, operating in the western and eastern part of Denmark, respectively. The two companies also own a large number of decentralised combined heat and power (CHP) plants and windmills. These produce non-marketed, so-called "prioritised" (because of environmental advantages) electricity, which purchasers are obliged to buy before turning to the competitive market. Because East and West Denmark are not inter-connected, the two companies' shares in the competitive market are practically 100% in their *local* markets. They therefore have ample potential to exercise market power and push up prices when inter-connectors are (almost) congested, which has happened quite often on some connectors (see Annex 4.A3). The companies also heavily dominate the markets for peak-load electricity (balancing power) and reserve capacity (stand-by capacity in case of supply breakdown), as many other generators cannot, for technical reasons, vary output. In 2003, they were the only ones to supply reserve capacity, and prices for that service were substantially higher than in Sweden and Norway (Konkurrencestyrelsen, 2004b). The dominance of the two companies has been facilitated by the lack of a credible threat of entry into generation, as this requires approval by the regulatory authority and allotment of a suitable location, both of which constitute significant barriers to entry because of environmental priorities.
- Competition in the retail market for households (through free choice of supplier) is practically absent because of limited possibilities to vary price and quality. The share of the total electricity bill that households can affect through their choice of supplier only amounts to around 10% because of the large component of taxes and fixed payments for non-marketed, "prioritised" electricity. Thus, a typical household could hope for a cut in electricity expenditures by around DKK 100 (EUR 13.50) per annum by changing supplier (Konkurrencestyrelsen 2004b). With such a small potential gain, it is not surprising that only a small fraction of households (2% in 2003) has actually switched suppliers. Companies, on the other hand, have been far keener to change suppliers as a larger part of their electricity bill is made up of marketed electricity. Entry into the retail market has been limited for the same reasons. Companies with public service obligations (PSOs), established as part of the 1999 reform to service customers that did not want to use the market, hold a near monopoly on the retail market because of ownership relations to distribution companies and large, inherited customer bases. While competitors in principle have free access to customer bases, actual transfer of information has been unduly troublesome. Another barrier to entry of foreign companies has been the requirement that consumers be able to affect decision-making, which effectively means that foreign actors would need to have holdings in a Danish distribution company (which would be owned either by municipalities or consumer groups). Other explanations for the lack of competition in the retail market could be that some PSO companies have sent out letters to their customers saying that no money could be saved by changing supplier (Konkurrencestyrelsen, 2004b) and that the prospect of receiving two bills – one for market electricity and a second for "prioritised" electricity, network tariffs and taxes – could deter some households from changing supplier.
- Efficiency-improving restructuring of the 130-odd distribution companies through sales and mergers has been restrained because of an unsettled dispute between owners of distribution companies and central authorities over ownership of tied capital. The tied capital is capital accumulated because operating surpluses and capital gains could not be distributed to owners after introduction of the "no-profit" principle in 1977 and revenue caps in 2000, but had to benefit consumers by either remaining as operating capital in the company or through a reduction of network tariffs.

Table 4.5. **Pre-tax electricity prices are around average in Europe**

1 July 2003, in euro cents per kWh

	Industry			Households		
	Small consumer	Medium consumer	Large consumer	Small consumer	Medium consumer	Large consumer
Denmark	**6.5**	**6.9**	. .	**17.0**	**8.7**	**7.2**
Belgium	12.2	7.3	5.0	14.8	11.2	7.1
Germany	13.7	7.4	6.4	20.4	12.5	6.6
Spain	9.5	5.3	4.7	11.2	8.7	5.7
France	8.3	5.3	. .	12.6	8.9	7.1
Ireland	12.8	7.6	6.1	19.1	10.1	6.4
Italy	10.4	8.4	7.3	7.8	14.7	. .
Austria	8.9	5.0	3.8	12.4	9.2	7.1
Luxembourg	12.7	6.8	4.3	21.7	11.9	7.2
Portugal	10.6	7.4	5.2	12.9	12.6	8.1
Greece	9.0	6.1	4.8	7.6	6.1	5.2
Finland	6.8	5.3	4.2	15.2	8.0	4.9
Sweden	4.6	4.1	3.7	21.8	8.6	6.9
Norway	6.9	5.1	3.4	33.2	9.6	5.6
United Kingdom	7.3	4.7	3.9	16.0	9.2	5.5
Average Europe	9.5	6.2	4.9	16.3	10.1	6.6
Average liberalised markets[1]	6.4	4.8	3.8	21.6	8.9	5.7

1. Average of the other Nordic countries and the United Kingdom. The very high price for small consumers in Sweden and Norway is mostly explained by temporary low water reservoirs that reduced supply from hydro-electric plants.

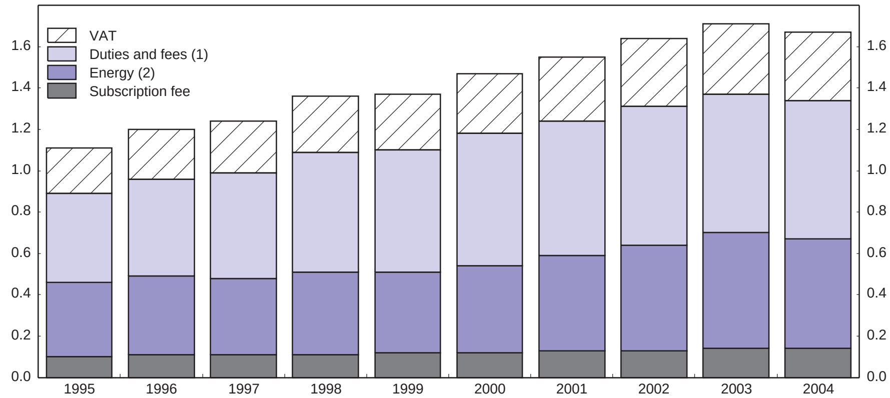
Source: Eurostat, Structural Indicators Database.

Second, distribution companies will get access to the tied capital in companies (accumulated capital that could not be distributed to owners, see Box 4.5) in return for handing over the high-voltage grid and system operation to the state. This solution ended a dispute over ownership of tied capital and was preferred to a drawn-out court case over the issue. In conjunction with new rules in 2003 on the distribution of revenue from local government sell-offs of assets, this should speed up the process of restructuring distribution companies through sales and mergers. The large cost differences that exist between distribution companies indicate significant gains from scale effects and dispersion of best practice (Danish Energy Authority, 2003).

Third, environmentally friendly ("prioritised") electricity, which is produced on decentralised combined heat and power (CHP) plants and windmills, will be brought into the competitive market from 1 January 2005. Previously, producers received administratively fixed prices for their production, and purchasers were obliged to buy all "prioritised" electricity before turning to the competitive market. But in line with previous OECD recommendations, end-users' obligations to buy energy from these sources will be abolished, while subsidies are restructured to raise incentives for producers to adjust production to price signals. Bringing "prioritised" energy to the competitive market should improve retail competition by doubling the part of the electricity bill for households that is affected by the price of electricity (to one-fifth of a typical household's bill). However, the impact may not be large, as much of a household's electricity bill will still consist of fixed taxes and charges (Figure 4.6). Truly effective competition will not be established in the retail market until the price structure is redesigned so that a bigger share of the bill depends on the market price of electricity. This could be achieved, for instance, by making all taxes *ad valorem*. Competition in generation is also unlikely to be much affected by the

Figure 4.6. **Household electricity prices consist mostly of VAT and duties**

DKK per kWh



1. Includes electricity fees, distribution fees, electricity-saving contributions, and CO_2 and SO_2 duties.
2. Includes market electricity, "prioritised" (non-marketed) electricity, PSO payments and grid charges.

Source: Dansk Energi (2003), *Dansk Elforsyning Statistik 2002*, *www.danskenergi.dk*.

reform. Only a minority of producers of "prioritised" energy are able to adjust production to price signals (windmills will run whenever the wind blows as marginal costs are very low), and the two dominant producers own a large part of these plants anyway. Their ability to exercise market power is therefore unlikely to diminish noticeably.

A recently approved merger between Elsam and NESA – the dominant electricity conglomerate in the eastern part of Denmark holding around 36% of the shares in Energi E2 – is likely to worsen the situation. The merger was approved by the Competition Council contingent on a number of remedies, including auctioning of virtual capacity. The intention of this auction is to get the same effect as physically selling some generation capacity, but without the transaction costs. This remedy has also been used by the EU Commission and the Dutch and Belgian competition authorities. The Competition Authority has further improved the remedy by not setting a minimum price on the virtual capacity to be sold on the market, thereby ensuring that the capacity is available for competitors in all circumstances. In order to significantly reduce the market power of the merged company, the new system operator should push for establishing more capacity on the connectors out of the country, in co-operation with its Nordic colleagues and German authorities. Directly connecting the local markets in the east and west and making Denmark one price area in Nord Pool would reduce price differences between the two parts of the country. However, cost-benefit analyses of establishing a connection across the Great Belt have seldom been favourable (in part because these engineering studies have not incorporated the economic impact of the changes in competition), and the merged company's ability to exercise market power will in the end depend more on competition from abroad and thus capacity on international inter-connectors.

Still a long way to effective competition in the gas sector

The process towards competition in the gas sector is still at an early phase. The sector remains highly vertically integrated, with the 100% state-owned company DONG dominant in all activities in the sector except production. DONG's position has been weakened in the last couple of years, however, starting with the requirement of corporate separation of monopoly and competitive activities and the introduction of regulated third-party-access to the networks from 2003. Furthermore, DONG's near-monopoly on purchasing gas produced by the privately owned DUC (the main producer in the Danish part of the North Sea) was broken in 2003 when the two companies reached a settlement with Danish and European competition authorities involving the sale of 17% of DUC's gas to other companies. Finally, on 1 January 2004 operation and ownership of the transmission net was transferred to a new state-owned company, which is fully independent of DONG.

The government intends to privatise DONG, and the company is pursuing a strategy of diversification into the electricity market – urged by the government – in order to position itself as an important player in the entire energy market. However, publicly owned companies are subject to a range of corporate control problems (see for instance OECD, 2004b), which point to the prudence of privatising DONG before allowing it to seek further acquisitions and mergers. That would also prevent a mixing of state ownership and regulatory responsibilities. DONG's diversification activities may also raise problems of cross-subsidisation between competitive and non-competitive activities, so unless significant synergy gains are demonstrated, mergers in the energy sector should be allowed only when there is effective competition in both the gas and electricity markets. Given the dominance of DONG, the government should also ensure there are no barriers to entry for foreign suppliers.

As in the electricity sector, liberalisation on the demand side has been implemented in several steps, with households getting free choice of supplier from the beginning of 2004. The process has led to less price discrimination between consumer groups, as the large bulk-purchase discounts have been dismantled. But households are still disadvantaged by the tax system. Net of taxes, household and company prices are among the lowest in Europe, but high taxes on household consumption make the total price one of the highest in Europe (Munksgaard *et al.*, 2003). Nevertheless, the part of the price made up by non-marketed items is smaller than for electricity, indicating better prospects for effective competition in the retail gas market.

Other utilities remain to be opened up for competition

No attempts have been made yet to introduce competition into district heating and water. Significant gains are unlikely in district heating, as companies tend to be local natural monopolies for technological reasons. The market for water supply and purification of waste water is hugely decentralised, with almost 2 800 water supply plants and 1 400 waste water treatment plants, and water prices show substantial variation between municipalities, with the top price for consumption and drainage almost four times higher than the lowest. The Competition Authority has estimated a potential gain from more efficient production of around 15% after natural reasons for cost differences are taken into account, and it recommends introducing more competition in the sector, along the lines of the process in the electricity and gas sectors (Konkurrencestyrelsen, 2003).[11]

Liberalisation of telecommunication markets has come far, but improvements can be made

Denmark was among the first countries to liberalise the market for telecommunications, and the current regulatory framework is in line with EU rules. The incumbent monopoly

Table 4.6. **Relative prices for telecommunication have dropped substantially**

EUR, deflated by the consumer price index, 2004 prices

	1998	1999	2000	2001	2002	2003	2004	Per cent change[1]
Fixed-line telephony (900 minutes quarterly)	97.3	95.6	80.4	78.5	77.3	75.3	74.8	–23
Mobile telephony (450 minutes quarterly)	98.5	84.7	77.6	72.0	70.3	48.0	45.8	–54
ADSL 512/128 kbit/s (price per month)	–	–	86.1	55.4	58.8	57.7	46.7	–46
ADSL 2048/512 kbit/s (price per month)	–	–	143.0	119.0	107.5	104.7	89.9	–37

Note: Prices from August each year (2004: January).

1. For fixed-line and mobile telephony since 1998; for ADSL since 2000.

Source: Danmarks Statistik (2004), *Nøgletal om informationssamfundet – Danmark 2004*, *www.dst.dk*.

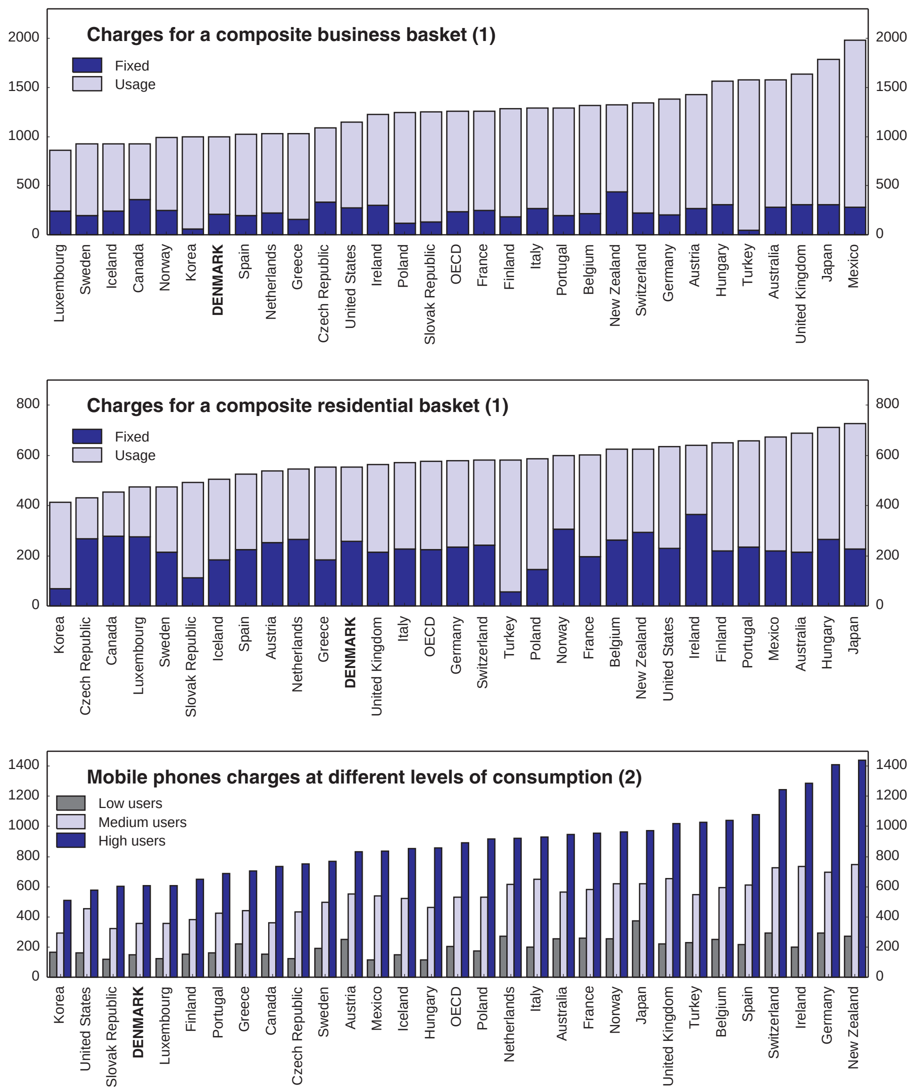
was privatised in 1998 when the government sold its majority stake, local loop unbundling has been implemented, and network access prices have been based on Long Run Average Incremental Costs (LRAIC) since 2003. Full number portability is to be implemented by the end of 2005.[12] Entry to the market has reduced the market share of the incumbent, TDC, especially in mobile telephony where it now has only one-third of the market. End-users have benefited from substantial reductions in retail prices (Table 4.6), and prices are on the low side in international comparisons (Figure 4.7). A roll-back of regulations started in 2002 and has continued in segments of the market where the stance of competition is deemed adequate; for instance, caps on per-minute prices for both domestic and international calls were abolished in 2003. Nevertheless, there are some areas where further efforts are required for consumers to benefit fully from the liberalisation of the market.

First, competition in the mobile-phone market is well established, but mobile termination fees remain well above costs, as in many other countries. In Denmark, termination fees in the mobile net are much higher than fixed-net termination fees, and it seems that price competition in the mobile market has been paid for by high prices for fixed-net subscribers when calling mobile phones, suggesting that termination fees need to be regulated (Konkurrencestyrelsen, 2004a). Also, in an ongoing case, TDC is accused of abuse of dominance (margin squeeze) on calls from fixed-net to mobile phones.

A second area where there may be inadequate competition is broadband internet. Although DSL is available to 95% of the population and the broadband penetration rate is one of the highest in Europe (Figure 4.8), broadband is expensive (OECD, 2004c). That is likely the result of inadequate competition between various platforms and between companies operating within each platform. This is illustrated by TDC's price structure: baseline cable modem services are offered at lower prices than DSL services (where TDC has a very large market share).[13] In Belgium for instance, where there is strong competition between DSL and cable, take-up of broadband is about the same as in Denmark, but baseline speeds of 3 Mbps are offered at prices equal to or less than the Danish price for unmetered services at 256 kbps. The telecom regulator is currently investigating the reason for the high prices in Denmark and possible means to address the issue. One reason may be that Danish households effectively pay twice (at the margin) for raw copper rental when ADSL and ordinary phone lines (PTSN) are used simultaneously. This is because TDC redistributes the extra revenue from raw copper rental in the form of a price-reduction to all subscribers, not just individual users of a shared line. Denmark is the only OECD country where this happens. A change in price

Figure 4.7. **Telecommunications charges are relatively low**

US dollars, May 2004, annual rates

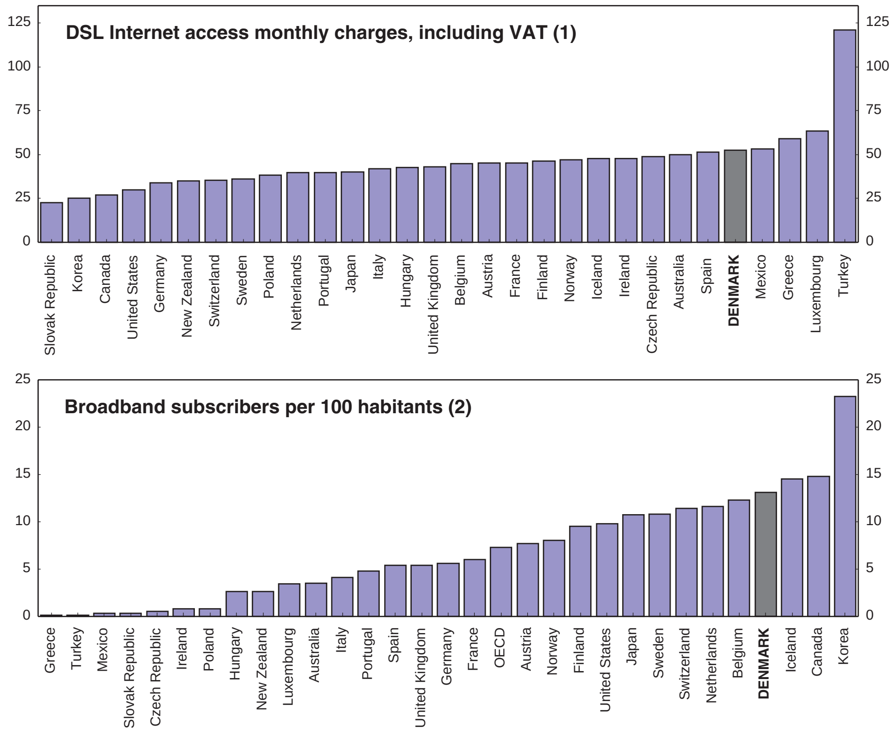


1. Excluding VAT.
2. Including VAT.

Source: OECD, *Communications Outlook Database.*

regulations would avoid this. More competition pressure should arise from the increasing number of households in building associations that are sharing broadband connections *via* local access networks, thereby lowering individual access prices (OECD, 2004c), and from electricity companies establishing new broadband networks in conjunction with modernisation of the low-voltage electricity grid (NESA, 2004).

Figure 4.8. **Broadband is expensive but penetration is high**



1. USD per month. Modem rentals are excluded, as in most countries these can be purchased by users. October 2003.
2. December 2003.

Source: OECD, *Communications Outlook Database*.

Passenger rail transport needs more competition exposure

While the market for rail freight transport is fully liberalised and the responsibility for infrastructure has been transferred to an independent state agency, the passenger rail market is only slowly being opened up for competition. The first step was taken in 2001, when 15% of traffic volume outside the cities was put to tender; the government aims to increase that share to between 30 and 45% by 2014. However, competitors to the incumbent, DSB, have been disadvantaged by stricter service requirements, for instance on punctuality, than those applied to DSB. The playing field needs to be levelled. Furthermore, the Complaints Board for Public Procurement ruled in 2003 that the ministry had mixed up its roles as owner of DSB and tender-inviting institution in the procurement process, although this was not seen to affect actual decisions. Similar situations are less likely to occur in the future, as a new agency, the National Rail Authority, was established in 2003 to manage and prepare rail tenders. But whether this provides an effective separation of the government's roles needs to be monitored carefully.

Competition on interregional routes between different modes of transport was enhanced by the deregulation of long-distance bus services in 2002. Thus, the right to operate these bus routes is no longer awarded on the basis of need for establishing such routes. However, operators are obliged to uphold at least one return trip on four days of the week for a minimum period of six months. In addition, a level playing field *vis-à-vis* DSB's passenger rail routes has not been achieved, as private bus operators pay more for crossing the Great Belt.

Effective competition is absent in other sectors because of various regulations

Competition in construction suffers from several unnecessary regulations

Prices in construction are particularly high in Denmark. This is likely to be associated with inefficient use of inputs and relatively little R&D investment resulting from inadequate competition. From 1993-2002, prices for electrical work and plumbing increased around 40%, while the overall construction index rose around 30% (Finansministeriet *et al.*, 2004b). At least for electrical work, this development could partly be explained by bid-rigging: in 1998, a cartel of 360 firms was broken up, leading to several court cases that resulted in fines to the involved companies.

The market for construction is sharply segregated between trades (*e.g.* carpentry, plumbing) with tradition as well as government regulation impeding cross-trading. A ministerial working group has recommended that certain regulations be changed in order to introduce more competition between trades; for instance, other professionals than electricians and plumbers should be allowed to offer electricity and plumbing works that can in fact already be done by a private citizen.[14] As another competition-improving measure, all public housing projects have been put to tender since 2003.

Another reason for high prices in construction seems to be a lack of competition in the market for building materials. The market for materials is characterised by non-transparent price formation, high concentration and low imports.[15] Competition from abroad is limited because little progress has been made in harmonising building material standards across EU countries. The government has introduced a website for price comparisons and is working within the EU to speed up harmonisation. Furthermore, a ministerial working group has recommended that the requirement to obtain a special Danish approval of certain building materials be abolished and that approval procedures in general be simplified. A more pro-competitive measure would be to unilaterally allow the importation of products approved from countries with standards on a par with those in Denmark.

Regulations make rental and co-operative housing markets highly inefficient

As in all Nordic countries, the market for non-owner-occupied housing is malfunctioning. This is primarily a result of heavy regulation, especially of prices, which was originally implemented out of concern that everybody should be able to afford decent-quality housing. Much of the regulation was introduced during wartime (mainly WW2) and has remained in place ever since (although rent controls do not apply to property built since 1992). The result has been a disconnection between price and quality, extensive black-market activities, weak incentives for owners to improve quality, creation of ghettos, little mobility, and thus an allocation of dwellings that is far from the objectives of the regulation.

The government has taken one small step towards a more market-based rental market by allowing the rent on new rooftop apartments to be freely set. The courage to do away with rent regulation did not extend to public housing, however. Instead, a three-year pilot scheme has been introduced for tenants in public housing to buy their apartments at market prices, with the net revenue to be used for construction of new housing. The direction of the government's efforts should be applauded; however, it is still a long way from earlier OECD recommendations (see OECD, 1999) to remove all rent controls applying to private rental housing, while taxing away any induced economic rent caused by higher property prices. Social goals should instead be achieved by rent allowances, thereby making clear the costs of such policies.

Housing co-operatives are a special element of the Danish housing market. These are a sort of combination between renting and ownership, which were initially intended to combine cheap housing – favoured by government subsidies and tax rules – with joint responsibility for the premises. The result has been purchase prices far below the market, and access to this type of housing often depends on personal contacts or willingness to pay the previous holder of an apartment an excessive amount for an old carpet, for example ("key money"). Recently, it has become popular for co-operatives to dissolve themselves and sell the property, thereby reaping substantial capital gains. These gains ought to be taxed, and given the *de facto* breakdown of the market, it would also make more sense to adjust acquisition prices towards those on new co-operative housing or owner-occupied housing and remove the preferential tax treatment.

Retail and wholesale competition is hampered by a variety of regulations

Despite a low outlet density and relatively large shops, productivity in the retail sector is very low by European standards (Table 4.7). Competition is impeded by the Planning Act

Table 4.7. **Key structural features of the retail sector**[1]

	Outlet density[2]	Employees per enterprise	Value added per employed person[3]	Value added per unit of labour costs[3]	Maximum weekly opening hours[4]
Denmark	**45.5**	**8.4**	**82.7**	**97.2**	**Variable**[5]
Austria	45.6	7.6	102.2	97.1	66
Belgium	73.8	3.8	108.3	92.9	91
Finland	44.7	5.2	125.2	108.7	81
France	64.3	4.3	133.7	102.0	75
Germany	32.4	9.6	100.3	105.7	70
Ireland	45.0	8.2	95.4	99.2	No limit
Italy	128.8	2.3	97.4	78.9	78
Netherlands	53.6	8.5	87.6	116.1	No limit
Norway	67.7	6.0	92.0	104.5	–
Portugal	136.6	2.6	66.0	87.8	Variable
Spain	130.0	2.9	91.8	98.5	Variable
Sweden	63.9	4.3	104.0	85.1	No limit
Switzerland	53.3	8.6	117.7	–	Variable
United Kingdom	35.9	14.9	85.8	121.6	No limit
European Union[6]	69.0	6.4	100.0	100.0	–
EU excluding Italy, Portugal, Greece and Spain[7]	51.9	7.4	104.1	103.2	–

1. 2001 or latest available data.
2. Number of enterprises per 10 000 inhabitants.
3. Value added expressed in USD PPP terms. European Union = 100.
4. Data from 1998.
5. Closed from 17.00 on Saturday to 6.00 on Monday, except for some outlets and tourist regions.
6. Unweighted average of EU 15 excluding Greece.
7. Unweighted average.

Source: O. Boylaud and G. Nicoletti (2001), "Regulatory Reform in Retail distribution", *OECD Economic Studies*, No. 32, 2001/1; Eurostat, *Structural Indicators Database*.

and the Opening Hours Act, both of which are aimed at other objectives (in particular the environment), while specific regulations restrict competition in other areas such as the book market, food retailing and pharmacies.

A change in the Planning Act in 2002 transferred certain planning competencies from counties to municipalities and raised the limit on the size of some outlets. This should lead to the establishment of more shops in the largest cities. However, the Act continues to put strict limits on the size and placement of new shops, thus impeding entry in the retail market, with approval decisions based partly on discretionary assessments of "market needs" by local or regional authorities. Needs-based regulation is particularly harmful to competition and should be abolished. The Opening Hours Act is due to be revised in 2005, possibly involving a minor easing of the restrictions on Sunday opening. As the ultimate outcome is likely to be full liberalisation anyway, the government might as well remove restrictions on opening hours altogether, thereby aligning Denmark with neighbouring Sweden and most non-European OECD members.[16]

Although partially liberalised in 2001, the Danish book market still stands out in international comparison for its exclusivity rights. While publishers are no longer required to fix the price of new releases, most of them still opt to do so, and price competition therefore applies only to around 10% of bestsellers (Annex 4.A4). Price discrimination has also been practiced by some publishing groups by requiring booksellers to sell at fixed prices, while at the same time offering cheaper paperback versions *via* their own book clubs. This calls for a complete withdrawal of publishers' right to fix prices.

While competition in food retailing may not seem particularly weak in general, the Danish market for dairy products has for a long time been associated with competition problems related to heavy concentration (due to the co-operative structure of producers), which has resulted in relatively high prices, especially on fresh milk. Two mergers within the last five years have further increased concentration, as the new Danish-Swedish co-operative, Arla, now has a near-monopoly. Some elements of Arla's contractual bindings on suppliers of raw milk to the co-operative have subsequently been deemed anti-competitive by the Competition Council, which ordered the company to cease and desist. However, these orders were overruled by the Appeals Tribunal on non-transparent and controversial grounds (Blomgren-Hansen and Møllgaard, 2004). Competition in food retailing has also been hampered by the Danish bottle-return system, which is operated by a monopoly owned by the dominant domestic producers of beer and soft drinks. While serving reasonable environmental objectives, the system has been a significant barrier to the entry of foreign and smaller beer brands with odd-size packaging and may partly explain the high prices of alcoholic beverages and soft drinks. Operation of the system should be made independent of industry interests when the company's contract ends in 2008.

The retail market for pharmaceuticals was partly liberalised in 2001 when a large range of over-the-counter drugs were allowed to be sold outside pharmacies at prices that could be set freely. This has led to significant price reductions on certain drugs (OECD, 2004e). However, the market for prescription drugs remains heavily restricted by government objectives of equal access to and equal prices of these drugs in all areas of the country. Both the number and location of pharmacies, profit-margins and end-user prices are fixed by the authorities. This excludes competition in end-user prices and prevents efficiency gains – for instance from the use of Internet – and discounts on pharmacies' purchases from wholesalers from being passed on to consumers. Pharmacies are also subject to an aggregate cap on gross profits, set in negotiations with the Minister of Health. The pharmacies with the largest turnover (benefiting from their geographical monopoly in areas where demand is big enough for an additional pharmacy to be profitable) are required to subsidise those with the smallest through an equalisation scheme, in order for otherwise unprofitable pharmacies – typically situated in sparsely populated areas – to be able to stay in the market. Options for introducing more competition would include replacing fixed prices with maximum prices near current price levels – so that all changes would be Pareto improvements, *i.e.* no consumer would lose out – and allowing free entry subject to certain requirements on standards being met, as has been the case in Iceland since 1996. The equalisation scheme should also be modified to remove its inherent bad incentives. Services in sparsely populated areas could be guaranteed *via* tenders or block grants to pharmacists operating in these areas. Such block grants could be partly or fully financed by fees paid by other pharmacies. The current restriction on ownership of pharmacies by pharmacists should also be lifted, as it holds no obvious merit.

Ownership and entry restrictions impede competition in professional and financial services

Professional services are regulated in all OECD countries, typically to protect consumers from disadvantages related to asymmetric information and to ensure high professional standards. These regulations typically govern matters such as entry into the profession, the conduct of its members, the granting of exclusive rights to carry out certain activities, and the organisational structure of professional firms. However, such regulation can have the direct or indirect effect of restricting competition, raising prices and limiting variety and innovation.

The relative restrictiveness of government-imposed regulations in Denmark differs markedly between professions, with lawyers, pharmacists, doctors and dentists being the most regulated (Table 4.8). Danish regulations of architectural and engineering services are among the least restrictive in OECD countries, while they are around average in legal services and accountancy (Figure 4.9). Most regulations concern access, but the health

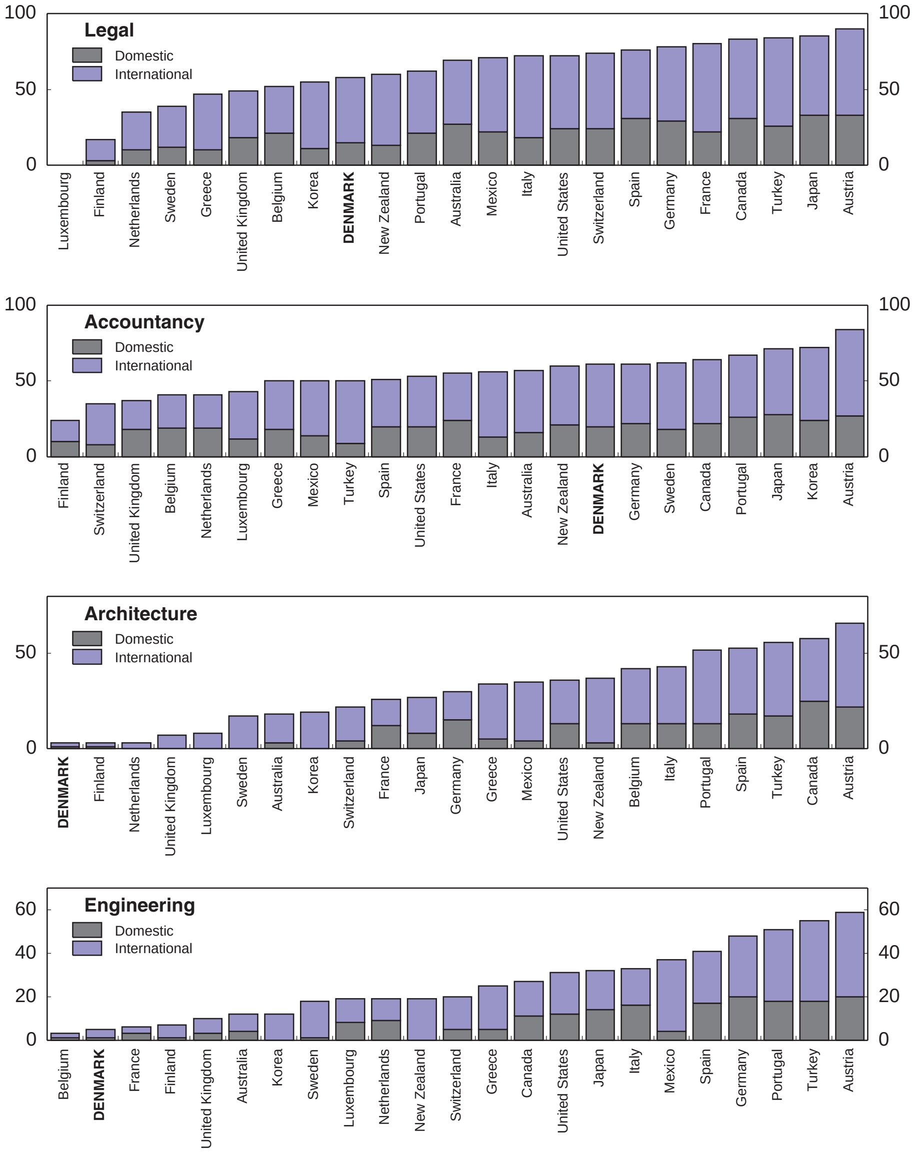
Table 4.8. **Government imposed competition limitations in various professional services**

	Lawyers	Realtors	Accountants	Engineers and architects	Pharmacists	Doctors	Dentists
Authorisation	x	x	x	–	x	x	x
Education	x	x	(x)	(x)	x	x	x
Other requirements[1]	x	x	x	–	x	x	x
Exclusive rights	x	–	x	–	x	x	x
Membership of trade association required[2]	x	–	–	–	–	(x)	(x)
Number regulation	–	–	–	–	x	x	x
Type of business	x	x	x	–	x	–	–
Price regulation	(x)	–	–	–	x	x	x
Marketing	–	–	–	–	x	x	x

1. For instance required practical experience and requirements concerning economic solvency.
2. Lawyers must be members of the Danish Bar and Law Society, and doctors and dentists are implicitly required to be members of the organisations that negotiate with the public sickness insurance in order to offer services that are paid by this insurance.
3. Brackets indicate that restrictions work implicitly.

Source: Konkurrencestyrelsen (2004a), *Konkurrenceredegørelse 2004*, June.

Figure 4.9. **Regulations of professions: restrictiveness indices**[1]



1. The more restrictions, the higher the index.

Source: Nguyen-Hong, D. (2000), "Restrictions on Trade in Professional Services", Productivity Commission Staff Research Paper, AusInfo, Canberra.

sector is also subject to regulations on price setting and marketing. In dental care, where consumers pay a significant part of the cost themselves, price competition is allowed on one-quarter of services (constituting almost half of dentists' turnover), while prices for the remainder are determined in negotiations between the Dentists Association and the public health insurance system. Such prices could more appropriately be set as maximum prices – as recommended by a ministerial working group – in order to encourage price competition on these services too.

Certain ownership restrictions should be lifted

While some entry restrictions are well founded, others seem redundant. It is, for instance, prohibited for those others than lawyers to advertise their legal services (except for certain types of legal advice given in close connection with ordinary services in some other professions), and owners of law firms must also hold a law degree. Ownership restrictions exist for chartered surveyors and real estate agencies too, keeping foreign firms out of the Danish market. None of these restrictions seems necessary, as codes of conduct should be able to deal with malpractice.

Realtor service provides one example of the effects of inadequate competition pressure from entry. Between 1995 and 2002 realtor fees rose 100% in the Copenhagen area (50% in the rest of the country), while the consumer price index increased by 17%, reflecting the fact that fees are typically set as a percentage of the value of the real estate (Konkurrencestyrelsen, 2004a). Such increases would be unlikely if there were efficient competition from entry into the market for these services of, for instance, lawyers. Part of the explanation is that lawyers face a number of regulatory disadvantages; they are, for instance, not allowed to receive commissions for arranging loans or insurance or to promote such products, as opposed to realtors who are often associated with financial companies or chains. A more level playing field between the two professions is thus called for. Also, more transparency as to realtors' commissions and rebates received from business partners in the financial market would make for a more informed decision by home owners and buyers when choosing whom to engage for selling a house or providing advice on a purchase.

The financial market suffers from various barriers to competition

In the financial sector, the government has focused on ways of allowing individuals to choose between pension companies when paying certain compulsory pension contributions. Such freedom was granted for statutory Special Pension contributions from 2004. Most pension contributions are part of wage agreements between the social partners, which typically stipulate that contributions be made to particular pension funds (although savings can be moved if the employee changes profession). There are gains to be made by opening up the industry, as significant differences in efficiency and investment performance currently exist between the various pension administrators. The gains would, however, have to be weighed against a likely increase in administration costs. Apart from the lack of free choice of pension funds, competition in the sector is hampered by the current tax arrangements, which discriminate against savings in foreign pension funds.[17]

Competition in the banking sector may suffer from barriers to entry. Denmark has relatively high concentration in its banking sector, and foreign banks have only a small share of total loans on the domestic market. While there are no legislative barriers for foreign companies to establish themselves locally, administrative barriers – for instance membership in the common payment system for banks and restrictions in the Planning Act on establishing branches in city centres – constitute significant impediments for new players in the market.

Customer-sharing arrangements and entry barriers impede competition in the taxi market

The taxi market is heavily regulated, with virtually no price or quality competition. Maximum prices and the number of operators are determined by each municipality, and cab owners must be affiliated with a call centre where customers are distributed evenly among cab owners; the law even prohibits customers from asking for a particular company.

Box 4.6. **Priorities for policy**

Improving the legislative framework

Reduce merger thresholds and improve the leniency programme. Abolish either the Competition Council or the Appeals Tribunal; for example, a specialist commercial court could also replace the Tribunal, mirroring the EU system. But if they are to be retained, the Council should be slimmed down, it should hand responsibility for merger decisions to the Authority, and the Tribunal should be strengthened by giving it more economic expertise. Have an independent arbitrator (*e.g.* the Competition Authority) decide whether restrictions on competition are necessary to achieve the purpose of a particular regulation.

Moving the public sector towards competitive markets

In areas where there are well developed private markets, these should be exploited more by the public sector, for instance *via* greater tendering and free-choice arrangements. Make sure there is a level playing field for private and public providers by improving accounting and management information systems and aligning tax rules, and strengthen programmes for cost and quality evaluation.

Impose an obligation to tender on local governments (above a reasonable threshold). Improve the rules on the challenge right by removing the possibility of refusing a reasonable offer; such an offer should either be accepted or lead to an open tender.

Clarify the conditions under which government players can operate on competitive markets and ensure the playing field is always level. Restrict operations to core public-sector services. Intensify privatisation efforts, and focus more on the functioning of competitive markets than on raising revenue.

Competition in network industries

In *electricity*, the new system operator should push for establishing more capacity on the inter-connectors out of the country. Redesign the structure of the price system to make a larger part of households' electricity bill dependent on the market price of electricity.

In the *gas market*, make sure there are no barriers for foreign suppliers entering the market. Privatise the incumbent before letting it diversify into other sectors (diversification should be approved only if significant synergy gains can be demonstrated).

In *water supply*, open up access to networks and allow consumers to choose their supplier.

In *telecommunications*, change price regulation to ensure that users of shared lines pay only once for raw copper rental. Consider introducing price regulation for termination fees in the mobile network.

In *passenger rail*, ensure contractual requirements are the same for private and public providers.

Adjust or remove unnecessary regulations in other industries

In the *construction sector,* abolish the sharp division among professions, and eliminate special approval requirements on EU building materials.

In *rental and cooperative housing*, remove rent controls while taxing away any induced economic rents to landlords from higher property prices. Tax capital gains from dissolving housing co-operatives, and adjust acquisition prices to those applying to new co-operative and owner-occupied housing; the preferential tax treatment and other subsidies to co-operative housing should also be removed.

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Box 4.6. **Priorities for policy** *(cont.)*

In the *retail sector*, remove the needs-based elements in the Planning Act that govern approval of establishment of shops. Liberalise shop opening hours. Withdraw the fixed-price exemption on the book market. Make the bottle-return system independent of industry interests. Replace the fixed-price system with a set of maximum prices and allow free entry into the retail market for pharmaceuticals.

In *professional and financial services*, change price regulations in dental care so the current fixed-price setting is replaced by maximum prices; remove ownership restrictions in a number of professional services; and persuade labour-market partners to allow employees to decide on who should administer their pension savings.

Open the *taxi market* to more price and quality competition.

The potential benefits to consumers from more price and quality variation would seem significant. The industry would also benefit from changing the tax advantages involved with reselling used taxies, since many operators are in the business purely to take advantage of this loophole.

Notes

1. These indicators are: regulation; concentration; import-corrected concentration; entry; mobility of market shares; spread in productivity; wage premia; profit rate; profit rate compared to EU9; and price levels.
2. The wage premium measures relative wages in a sector, after taking skills and other factors into account; it can be a sign of rent-sharing between firms and unions.
3. Concentration is found to be high (a four-firm concentration ratio greater than 80%) in oil and gas extraction, food, beverages and tobacco, chemicals, parts of the market for building materials, gas supply, air transport, banks, real estate and renting activities and a number of other services. In at least one industry – dairy products – the high concentration is associated with amalgamations before the implementation of merger control; the co-operative structure of this industry further adds to the concentration through horizontal integration.
4. In a recent study, Denmark was found to have a relatively low trade utilisation, primarily due to low imports (Økonomi- og Erhvervsministeriet, 2003a). This conclusion was fairly broad-based across sectors and industries. Denmark is among the top one-third of OECD countries in terms of inflows and outflows of foreign direct investment (FDI) as a per cent of GDP, and restrictions on FDI are generally found to be relatively low. In a comparative study of 79 countries, inflow of FDI to Denmark was found to be at a level close to what could be expected, given its economic and institutional conditions (Økonomi- og Erhvervsministeriet, 2003b).
5. The electricians' cartel is the most successful and complete antitrust case that has been prosecuted under the Competition Act. Around 360 firms were involved, and many cooperated with the investigators. Courts accepted leniency-type arguments when meting out the fines. The firms received fines up to € 400 000, but so far no customer has filed for damages. Customers include big firms and municipalities, but they may have decided that the uncertain damages that might result would not justify their legal expenses.
6. It should be noted though that external purchases do not include private companies' activities in areas that are exempt from VAT, for instance health care and education. Also, it indicates only the share of services produced by private companies and not the share of activities that are actually exposed to competition.
7. For instance, private providers of certain VAT-exempt welfare services have to pay a payroll tax that is not levied on public providers. Also, private companies may be disadvantaged when competing with a public provider in areas that are VAT exempt, such as health services, because they cannot deduct VAT paid on their purchases of intermediate goods. Public providers, on the

other hand, get a refund from the municipal VAT fund for VAT paid on such purchases, allowing them to deliver at lower costs than the private producer. In principle, the incentive for choosing government in-house production is countered by a special VAT-compensation if contracting the private supplier. However, the compensation is based on an estimate of the private providers VAT-costs, which in some cases is too small to fully adjust for the VAT-induced price differences. The government was recently urged by the Outsourcing Board to enter talks with trade associations on how to handle these problems (Outsourcing Board, 2004).

8. Only around 50% of the population fully supports outsourcing of garbage disposal and operation and maintenance of public buildings even if private companies could provide the same level of service at a lower price (Økonomi- og Erhvervsministeriet, 2003b). This percentage declines for services closer to core public activity; only one-fifth support private operation of hospitals.
9. Previously, all net revenue (revenue less initial capital injection) from municipalities' sell-off was in principle offset by a reduction in the state block grant, although the exact application of the legislation was unclear. With the new reform, 40% of the proceeds from municipalities' sale of utilities or from distribution of dividends will be offset by a reduction of the state block grant, and proceeds will have to be deposited and released by one-tenth each year over a ten-year period. Sixty per cent of the proceeds will be offset *via* a lower block grant if municipalities do not wish to deposit their proceeds (Økonomi- og Erhvervsministeriet, 2003b).
10. Corporate separation implies that different activities are transferred to independent companies, although these can all be owned by the same holding company. The electricity sector is by and large owned by municipalities and consumer co-operatives through their direct holdings of distribution companies (on the low-voltage grid), each of which is a monopoly within its own local area. These companies in turn own a large part of all other companies within the sector: transmission companies and system operators of the high-voltage grid (there are two system operators with monopolies in East and West Denmark, respectively), production companies, retailers and companies with public service obligations.
11. The measures proposed include replacing the no-profit principle for companies with a system that has incentives to make production more efficient and introducing accounting principles that would reveal any cross-subsidisation. In water supply, third-party access to water networks and to incumbents' reserves (within a network or for networks that can be connected) should be established, with a system operator ensuring non-discrimination, along with free choice of supplier for consumers. Introduction of public-service obligations for larger suppliers would ensure supply to all citizens. In waste water treatment, better possibilities for companies and institutions to establish their own water treatment could be instituted, while fixed contract periods or a withdrawal fee would ensure that there are incentives to expand existing treatment facilities.
12. Portability for fixed-line numbers was implemented in 1999 and for mobile phone numbers in 2001. Full (or cross) portability between mobile and fixed-lines was set to be implemented by 1 April 2004 but has been postponed until end-2005 (Konkurrencestyrelsen, 2004a).
13. TDC's dominant position does not seem to have followed from unlawful behaviour. In fact, in spring 2004 the Competition Appeals Tribunal sustained the Competition Council's verdict that TDC did not squeeze margins on ADSL connections. The Competition Council ruled that TDC did not offer ADSL connections at prices below its costs and thus did not abuse its dominant position. The Competition Authority's investigation had showed that TDC carried out an aggressive price policy, but that it had covered all costs while increasing its market share. Thus, it had achieved economies of scale that its competitors were unable to match (OECD, 2004d).
14. Currently, a joiner setting up new kitchen cabinets is not allowed to install a new mixer tap at the same time, even though his customer is allowed to do it himself as a private person (Finansministeriet *et al.*, 2004b).
15. Producers have different price lists for different customers and individual rebate and bonus systems are common, thus making price comparisons particularly difficult. A number of sub-industries are dominated by a very small number of domestic producers, and the wholesale market is highly concentrated as well, with, for instance, three wholesale dealers/chains supplying 90% of the professional market for timber-yard products (Økonomi- og Erhvervsministeriet, 2003b).
16. Retail shops are generally required to be closed between 17:00 on Saturday and 06:00 on Monday. In connection with certain holidays, less restrictive rules apply. Shops are also free to open on eight Sundays a year. Smaller supermarkets and shops with special locations (typically in tourist areas) are already exempted from the current restrictions. Bakeries and a number of other types of shops are also exempted.

17. Contributions to foreign pension funds are – contrary to Danish funds – not tax deductible, because of fears that it will not be possible to collect revenue from taxation of investment returns and pension payments. However, pension payments may not be taxed either if a person having saved in a Danish fund moves abroad and there is no mutual tax agreement with that country. The EU Commission is currently preparing a case against Denmark on this issue.

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ANNEX 4.A1

State ownership and privatisations

Over the last 15 years, the government has sold of a number of its company holdings, taking in around DKK 42 billion in total (3% of GDP). In most cases, shares or assets were sold off directly, but open bidding was also used in a minority of cases (Table 4.A1.1). The most prominent of the sales was that of the previous telecommunications monopoly, TeleDanmark (now TDC), in 1998, that brought in more than DKK 30 billion.

It is the government's objective that companies owned by the state be operated in a way that makes private part-ownership possible, and it is continuously evaluating whether government ownership has any justification – if not, privatisation of the company (partly or fully) is preferred (Finansministeriet, 2004). Currently, the government is preparing the sale of (some of) its shares in Post Danmark A/S, TV2/DANMARK (the second national television broadcaster) and DONG A/S (gas company). These three companies together constitute around two-third of the value of government remaining company holdings (Table 4.A1.2).

Table 4.A1.1. **Privatisation of state holdings**

1989-2002

Company	Year	Ownership share	Method	Revenue, million DKK
Junker industries (wood processing)	1989	37/0	Direct sale	52.2
Byggeeksportrådet A/S (construction export consultant)	1989	51/0	Direct sale	0.1
Byggeriets Maskinstation A/S (construction machine pool)	1990	68/0	Block sale	44.7
Statsanstalten for Livsforsikring (civil servants' life insurance)	1990	100/0	Direct sale	4 276.3
GiroBank A/S (postal bank)	1993	100/49	Open bidding	730.1
	1996	49/0	Direct sale	745.0
TeleDanmark A/S (telecommunications)	1993	94/90	–	82.0
	1994	90/*	Reorganisation	901.5
	1998	*/0	Direct sale	31 565.7
Københavns Lufthavne A/S (Copenhagen airport)	1994	100/75	Open bidding	707.8
	1996	75/51	Open bidding	1 102.6
	2000	51/34	Open bidding	983.4
EKR Kreditforsikring A/S (export credit insurance)	1995	100/75	Direct sale	74.5
	1997	–	Sale of assets	275.7
Datacentralen A/S (data processing)	1996	100/25	Direct sale	342.7
	1999	25/0	Direct sale	126.7
DEMKO (standards and testing)	1996	100/0	Direct sale	29.8
Skandinavisk Reisebüro GmbH (travel agency)	1998	100/0	Direct sale	6.7
Banestyrelsen Rådgivning (railroad consultancy service)	2001	100/0	Direct sale	74.5
Total				**42 121.7**

Source: Christoffersen and Paldam (2004), "Privatization in Denmark, 1980-2002", *CESifo Working Paper* No. 1127.

Table 4.A1.2. **State company holdings**

As at 31 December 2003

	Main activity	Ownership share	Equity, million DKK	Value of holdings
State companies				
AB Carl Gram	Ferry service	100	0	0
Aktieselskabet Stekua (in liquidation)	Export credit insurance	100	26	26
Dansk Jagtforsikring A/S	Hunting insurance	51	27	14
Dansk Tipstjeneste A/S	Betting services	80	197	158
Det Danske Klasselotteri A/S	Lottery	100	128	128
DONG A/S	Energy company	100	16 794	16 794
ETA-Danmark A/S	Approving building materials	100	7	7
Københavns Havn A/S	Harbour administration	100	2 113	2 113
Post Danmark A/S	Postal services	100	2 080	2 080
Statens Ejendomssalg A/S	Real estate sales	100	636	636
Statens og Kommunernes Indkøbs Service A/S	Purchasing services	55	10	6
Sund and Bælt Holding A/S	Bridge administration	100	–4 877	–4 877
TV2/DANMARK A/S	Television broadcasting	100	805	805
Independent state companies				
DSB	Rail transport	100	7 852	7 852
Other companies with state ownership share				
Air Greenland A/S	Airline services	25	228	57
Beijing Danhua Highway Consultants C., Ltd.	Road construction	13	–	–
Bella Center A/S	Conference centre	15	314	47
Dansk Bibliotekscenter A/S	Library centre	29	31	9
Danske Telecom A/S	Telecommunications services	22	65	7
Københavns Lufthavne A/S	Airport administration	34	3 136	1 066
NORDUnet A/S	Broadband network services	22	13	3
Orange Holding A/S	Telecommunications services	10	–1 830	–183
SAS AB	Airline services	14	10 773	1 508
Scandlines AG	Ferry service	50	2 891	1 446
Total		–	–	**29 702**

Source: Finansministeriet (2004), *Statens selskaber 2004*, June.

ANNEX 4.A2

Renewed momentum in energy market reform

In June 2004, a new law was passed by Parliament involving a number of changes to the regulatory framework in the electricity sector, constituting the first major follow-up on the 1999 reform. The bill includes a number of measures to increase competition in the electricity sector, many of which are in line with previous OECD recommendations (OECD, 2003). The items include:

- Full ownership separation between system operation and other activities in the market. A state-owned company will take over high-voltage transmission and system operation from the two system operators in East and West Denmark, both of which are owned by low-voltage distribution companies. The new system operator will draw up a plan for development of the electricity infrastructure.
- In return for handing over high-voltage transmission and system operation to the state, distribution companies will get full access to their tied capital (capital accumulated because operating surpluses and capital gains could not be distributed as return to owners after introduction of the "no-profit" principle in 1977 and revenue caps in 2000). This capital was previously required to benefit consumers by either remaining as operating capital in the company or through a reduction of network tariffs. A new revenue cap regulation will ensure that this does not lead to higher network tariffs.* In effect, this implies a transfer of these assets, worth several billion DKK, from consumers to owners. However, since owners are all municipalities or consumer co-operatives, the redistribution will be primarily within the group of consumers, and so the direction of the redistribution is to be determined by the eventual use of these funds.
- Various restrictions on ownership in the sector will be lifted. Power plants will no longer need to be owned by distribution companies, and production and trading companies will be allowed to own more than 15% of supply companies with concessions on distribution or transmission operations. Also, owners will now have the effective majority in distribution companies rather than consumers.

* Network tariffs would increase if distribution companies and regional transmission companies were allowed to earn a return on previously tied capital. However, revenue caps will not be raised because of this change in capital assets, and a new regulation will ensure that network tariffs do not increase more than other consumer prices. That means that the capital will yield a lower return until the time (estimated to be in around five years) when efficiency improvements and price developments can form the basis for a return equal to the interest rate on long-term Danish bonds plus 1%.

- Approval of extensions and restructuring of the transmission grid will now be based on more than ensuring adequate supply, including the effect on competition from enhancing transmission possibilities and reducing bottlenecks.
- An overlap of management and board members between monopoly companies and those operating in competitive markets will no longer be allowed. All monopoly companies must draw up programmes for internal surveillance to ensure that no favouritism is taking place.
- The price regulation for companies with public service obligations (PSOs) will be based on the spot price of electricity plus an administratively set supplement, thereby preventing cross-subsidising between customer groups. Following this, PSO companies will be allowed to offer other services and operate in other geographical areas than their current concession areas.
- The obligation to buy electricity produced by windmills and decentralised CHP plants will be abolished. This output will now be sold by the system operator on the competitive market (Nord Pool). A restructuring of subsidies will ensure unchanged prices for a substantial transition period for those mills and plants that are still covered by these schemes. Other new production plants will receive a fixed supplement to the market spot price or have their subsidies adjusted on the basis of monthly averages of spot prices instead of hourly spot prices. In both cases, producers will have an incentive to adjust production to hourly spot prices, thereby reducing the market power of the dominant generators. As time passes, more producers will thus have incentives to react to price signals from the market.
- The Minister for Economic and Business Affairs is authorised to impose rules on billing of consumers so that they would receive only one bill instead of two if they change supplier.

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ANNEX 4.A3

Competition in the wholesale electricity market

Wholesale trade is fully liberalised in the Nordic electricity market, comprising Denmark, Finland, Norway and Sweden. Denmark is connected both to the Nordic market, *via* transmission links to Norway and Sweden, and to the German market. Electricity on the wholesale market is either traded *via* bilateral agreements (Over-The-Counter or OTC) between suppliers and purchasers or at the Nordic spot market, Nord Pool.

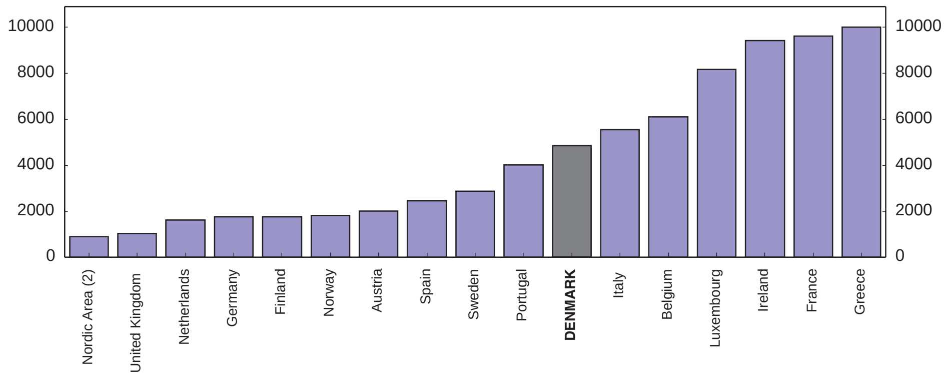
At Nord Pool, a spot price of electricity (the system price) is determined through matching of price and quantity bids on supply and purchase. Nord Pool is divided into six price areas, of which West Denmark and East Denmark are two. If there is excess supply or demand within a price area for a given system price, the area price diverges from the system price, and Nord Pool will attempt to equalise price differences between the price areas by sending electricity through the transmission lines from low-price areas to high-price areas. If transmission lines are not congested, the system price will apply in the whole area. However, if transmission lines become congested, a high price can be sustained in the importing area and a low price in the exporting area. Exporting producers will receive the low price in their price area for all their production, while the purchasers in the importing price area will pay the high price applying in their price area.

Because of the limited capacity on inter-connectors, producers with a dominant position in a price area will be in a good position to manipulate the price in the area *via* their bids on Nord Pool. In a situation where the dominant producer expects that electricity will flow out of its area, reducing supply so that inter-connectors are not fully – but almost – congested (thus preventing it becoming a low-price area) will ensure the highest price. Similarly, reducing supply so that inter-connectors become congested will ensure the highest price if the producer expects its price area to be importing electricity.

In Denmark, a major part of generation is controlled by two producer groups, and many other generators cannot, for technical reasons, vary output in response to price. Generation for the competitive market takes place at big central power plants, while non-marketed (until 1 January 2005), "prioritised" electricity is produced on decentralised combined heat and power (CHP) plants and windmills receiving administratively fixed prices for their output. Measured by a traditional Herfindahl-Hirschman Index (HHI), concentration is not among the highest in OECD countries (Figure 4.A3.1), but since purchasers are obliged to buy all "prioritised" electricity before turning to the competitive market (until 1 January 2005), the potential for the two big producers, Elsam and Energi E2 operating in the western and eastern part of Denmark respectively, to exercise market power is greater than indicated by the index, especially when inter-connectors to

Figure 4.A3.1. **Market concentration in electricity generation**

Herfindahl-Hirschman Index[1]



1. This is defined as the sum of the squares of percentage market shares of all firms in the relevant market. The more concentrated a market, the closer the index will be to its maximum of 10 000.
2. Denmark, Finland, Norway and Sweden.

Source: Nordic Competition Authorities (2003).

the surrounding countries are congested. At present, East and West Denmark are not inter-connected, and these companies' market shares are therefore practically 100% (HHI around 10 000) in their respective *local* markets. The high local concentration is not a problem *per se* when Elsam and Energi E2 participate in effective competition with generators in other Nord Pool price areas. But the two companies have ample incentives and potential to exercise market power when the inter-connectors to Norway and Sweden are congested. Indeed, it is a stated strategy of the companies to place bids at Nord Pool that would give them a price equal to the highest among the neighbouring areas, and the Competition Authority has identified several instances when they have succeeded in doing so (Konkurrencestyrelsen, 2004*b*). In 2002 and 2003, the percentage of hours when various inter-connectors were congested varied between 0 (for the export-connector between East Denmark and Sweden) and 46 (for the export-connector between West Denmark and Norway).

The recently approved merger between Elsam and NESA, the dominating electricity company in the eastern part of Denmark holding around 36% of the shares in Energi E2, will probably worsen the situation. While currently operating in separate price areas, Elsam and Energi E2 will have little incentive to compete in the likely future scenario where the two price areas are connected *via* a cable across the Great Belt and capacity on inter-connectors to other Nordic countries and Germany has been enhanced. The merger was approved by the Competition Council contingent on a number of remedies. Given previous identification of examples of abuse of dominant position by Elsam and Energi E2, the most obvious requirement would have been a sell-off of NESA's shares in Energi E2. But instead, negotiations between the two companies and the Competition Authority (as secretariat for the Council) resulted in Elsam committing itself to sell off some of its CHP plants* and auction off virtual capacity (auctions of options to buy electricity from a power plant,

* Elsam owns 17% of the CHP production capacity in the western part of Denmark, while NESA and Energi E2 together hold around half of the capacity in the eastern part (Konkurrencestyrelsen, 2004b). The companies also operate a large number of windmills.

where the purchaser can decide on a daily basis how much of the purchased capacity should be put on the market). In addition, Elsam will refrain from buying new decentralised CHP plants or making agreements on operation with other CHP producers.

OTC trading is basically possible only between suppliers and purchasers within a price area, as all inter-connectors in the Nordic market are at Nord Pool's disposal. Nevertheless, it still constitutes the larger part of the wholesale market despite a declining market share. This is partly because integration into the German market does not function the same way as does Nord Pool, since there is no body trying to eliminate price differences. Therefore, most of the trade with Germany results from OTC operations with auctions used for distribution of capacity on the transmission lines. This has the awkward effect that net flows are sometimes inversely related to short-term price differences.

Environmental concerns play a large role in almost all aspects of the energy market, and various environmentally related taxes are the reason why Danish households pay one of the highest prices for electricity among OECD countries. Environmental charges comprise CO_2 and SO_2 duties and contributions to research and other efforts to reduce electricity consumption. In addition, the price system for electricity consumption has followed from a stated policy of fostering renewable energy and CHP production through large subsidies to windmills and small CHP plants using bio fuels. According to some studies, this has been an expensive and ineffective way of reducing CO_2 emissions, with the bill being paid by end-users through the obligation to buy energy from these sources (see, for instance, the previous OECD *Economic Survey* and Nordic Competition Authorities, 2003).

The 1999 reform of the electricity market in principle included a rearrangement of subsidies for renewable energy production to a market-based system through awarding of tradable renewable energy certificates. The certificates were to be allocated to renewable energy producers, and consumers would be obliged to purchase certificates in proportion to their consumption. However, the introduction of this system was virtually abandoned as investment in capacity of renewable energy production shot up in reaction to the favourable subsidies, thus making for a much faster meeting of government objectives. This has left Denmark with significant spare capacity, and the country is a big net exporter to neighbouring countries.

Tradable and saveable CO_2 emission quotas, on the other hand, have been in place since 2000. Until now, the market has been too small for an actual CO_2 exchange to be established and trading has been on a bilateral basis: in 2001 and 2002, only around 1% of the allocated quotas were traded (Pedersen, 2002). However, from 2005 there will be a European trading system, which should ensure more cost-efficient CO_2 reductions.

ANNEX 4.A4

Competition in the book market

Publishers and booksellers were previously allowed to trade with their respective counterparts only if these complied with trading regulations, and booksellers were obliged to sell at the price set by the publisher. The result was price levels 15-20% above those in other EU countries (OECD, 2000).

Publishers now have the right to fix the price (the fixed-price exemption from the Competition Act is maintained out of cultural policy concerns), setting a recommended retail price or giving no price indication at all. A number of restrictions apply to publishers' right to fix prices: *i)* prices can be fixed only on new books or new versions of books; *ii)* the price can be fixed only in the calendar year of the initial publication and the subsequent year; *iii)* prices cannot be fixed on imports from publishers abroad and on books that are exported; and *iv)* the price cannot be fixed on books sold to libraries, schools and other institutions.

Although the entry of a number of new outlets selling books (primarily supermarkets, toy stores and websites) may have contributed to pushing up book sales, the new players have not gained large market shares (Økonomi- og Erhvervsministeriet, 2003b), because many publishers have maintained some sort of price indication, thereby limiting price competition.

In 2004, the Competition Council ruled that one of the main publishing groups, Gyldendal, had abused its dominant position by requiring booksellers to sell at fixed prices while at the same time offering cheaper paperback versions *via* its own book club. As other publishers used similar methods, the Competition Council partially withdrew the fixed-price exemption (from 2005), so that the exemption will end at the time when a cheaper book-club version is offered.

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Chapter 5

Raising productivity growth

This chapter looks at ways to increase productivity growth and build a more innovative, knowledge-based economy. It focuses on improving the Danish school system, which is expensive but delivers results that are just average. It also discusses policies to make universities more flexible and labour-market oriented, how to encourage greater commercialisation of R&D and how to get better value for money from the research funding system. Finally, it looks at measures to boost entrepreneurship and expand the venture capital market.

As shown in Chapter 1, Denmark's productivity growth has been below average over the past decade or so. If recent productivity trends were to continue, the country would slip about five places in the OECD's income rankings over the next decade (unless its terms of trade continue to increase). Boosting productivity growth is central to maintaining a high growth rate in living standards. The previous chapter looked at one way to help bring this about – namely, through greater competition. This chapter deals with two others: human capital and innovation. Many important reforms to both these areas have been implemented over the past few years, and have been described in previous Surveys. This chapter does not provide a comprehensive survey of the issues, but just concentrates on a few of the more important problems that remain. First, the education of the workforce needs to be improved. The compulsory education system is performing below expectations while the tertiary sector still has some way to go towards providing the skills needed in a modern knowledge-based economy. Second, there are ways of encouraging greater innovation and entrepreneurship and of getting more benefit from the research paid for out of the public purse.

The school system is underperforming

The performance of Danish students in international comparisons is only average and is well below that of students in other Nordic countries. As explained in Chapter 1, the scores of Danish 15 year-olds in the international PISA comparison in 2000 were around the OECD average in reading, slightly above average in mathematics but below average in science. Outcomes seem to have worsened over the 1990s. This middling performance is especially disappointing given that Denmark spends more per pupil on primary and secondary education than almost any other OECD country. Consequently, value for money is poor (Figure 5.1, left panel).

The reasons for the high level of spending are clear enough. Denmark has more staff per student than any other OECD country. However, that does not translate into smaller class sizes. Instead, the teachers spend very few hours in the classroom: on average only around 37% of their time is spent in direct contact with students, a much lower proportion than in other countries.[1] There is also an extremely high level of spending on non-teaching staff (Figure 5.1, right panel), although this may partly be due to after-school-hour activities being organised within the school system.

Explaining why these resources do not deliver better outcomes is more difficult. It may be partly because of policies aimed at equalising performance throughout the system. As in all Nordic countries, schools are relatively similar in the sense that there is less variation in average outcomes between schools than in the typical OECD country. In reading at least, the top Danish schools are closer to the average than in other Nordic countries, thus "dragging down" overall performance (in other words, average student performance in the best Danish schools falls short of the top schools in other countries, but performance at the bottom end is no higher). In contrast, Finland – which was one of the best performers in

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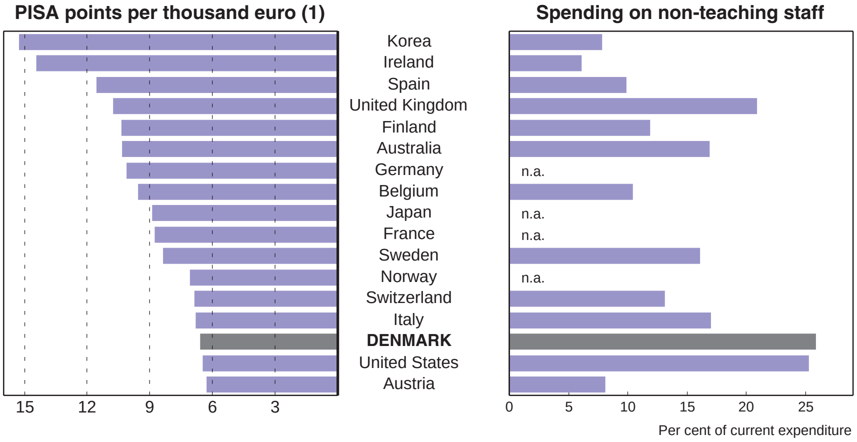
Figure 5.1. **Value for money in the school system is disappointing**



1. PISA points are measured by the average PISA score for literacy, mathematics and science. Expenditure on education is cumulative expenditure per student over the duration of primary and secondary of schooling, measured in euros (PPP adjusted).

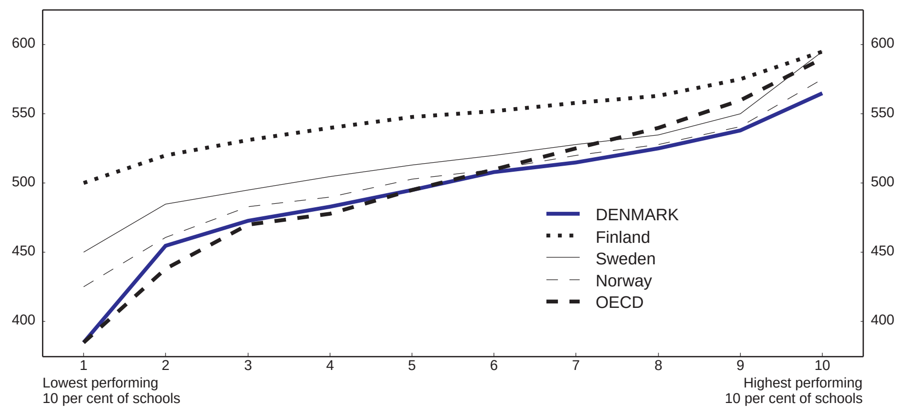
Source: OECD (2004), *Education at a Glance*; PISA 2000.

PISA 2000 – has managed to maintain standards at the highest end and lift performance at the bottom (Figure 5.2).

This underperformance was noted by the OECD's Expert Review of the Danish school system (OECD, 2004). The Review also found that the system fails to achieve its goal of equitable outcomes. Family background is an important determinant of an individual student's performance in all countries, but the Danish system is less successful than its Nordic neighbours at overcoming these differences. For example, the impact of socio-economic status on student performance in Denmark is similar to the OECD average, whereas it is significantly less pronounced in the other Nordic countries. The same is true

Figure 5.2. **School underperformance is most noticeable at the top end**

Mean PISA scores of the schools on the combined reading literacy scale



Source: Välijärvi, Jouni and Antero Malin (2001), "The Two-Level Effect of Socio-Economic Background", Chapter 10 of Northern Lights on PISA: Unity and Diversity in the Nordic Countries in PISA (2000), edited by Svein Lie, Pirjo Linnakylä and Astrid Roe, Department of Teacher Education and School Development, University of Oslo.

of other background factors, such as whether there are books or other learning resources at home, the extent to which children are exposed to cultural activities, and how often parents discuss social issues, or even books and TV programmes, with their children (Jensen and Turmo, 2001).

The Danish system has several strengths, however, including an active role for parents, local autonomy, good equipment and personnel, small gender differences in outcomes and significant room for innovation. Nonetheless, the Review highlighted some areas where improvements are needed:

- *Create a culture of evaluation*. There is little systematic evaluation of student work. With the exception of national examinations at the end of years nine and ten, teachers have few tools with which they can judge objectively how well their students are doing or diagnose causes of poor performance. Feedback to students and parents is therefore limited and is usually given orally, rather than on paper. Evaluation of schools is equally limited, although this is changing. Since 2002, it has been compulsory for each school to publish on its website the average scores in the ninth-grade leaving exam. But more diagnostic testing and more frequent monitoring of outcomes is needed, although it need not be as crude as publishing "league tables" of schools.
- *Challenge students more*. Social and emotional development of children is given a high priority. While this is important, it has resulted in too little weight being placed on intellectual development. This affects both the quality and the equity of the system. It helps explain why Denmark produces relatively few "high flyers", but an unchallenging system also favours children from socially and economically advantaged backgrounds because their families are more able to provide the "push" that schools are not offering.
- *Let teachers become more specialised*. Teachers receive generic training and are expected to be able to teach any subject to children of any age. It is still common for pupils to have the same teacher all the way through their education, although some schools are moving away from this approach. Moreover, teachers often do not teach the subjects they specialised in during their training, especially in science.[2]
- *Improve teacher training*. Gaps need to be plugged, including insufficient training on how best to support children with special needs or from bilingual backgrounds and on how to evaluate and diagnose student performance. Surprisingly, a specialised course on the teaching of reading is not compulsory. There are also questions about whether there are sufficient in-service training opportunities.
- *More classroom hours*. A rigid teachers' contract is partly to blame here, but so too is the negotiation process, which occurs at three levels: nationally, municipally and within the school. In principle, the teachers' contract allows up to two-thirds of time to be spent in the classroom, but local negotiations reduce this to around 37% of the total working hours for teachers on average. Moreover, different types of counter-productive working practices have developed in the Danish school system. For example, if the children of immigrants need to be given extra Danish language classes, then they most often are pulled out of some ordinary class rather than work extra hours.

In response to the OECD report, the government set up four working groups charged with coming up with concrete recommendations on how to achieve these objectives in practice. The working groups have a short deadline since the government is anxious to begin implementing reforms within a few months. Some reforms have already been put in place, including a general reform of the compulsory education system that focuses on better basic reading and math skills and a greater focus on evaluation. More recently the government set aside an extra DKK 600 million (€81 million) to boost science teaching, and the Ministry of Education is working to improve the sorts of counter-productive working practices described above.

The university system needs more focus on providing skills for the labour market

The tertiary education sector can also be improved. Universities in particular "have considerably more potential than is being realised at present" (OECD 2003, p. 8). Major reforms were agreed to in 2003, with the aim of improving the quality of teaching and research. The priority areas for further improvement are threefold: to boost participation; to shift the focus of teaching from research skills towards preparing students for employment in a knowledge-based economy; and to become more flexible and innovative in responding to the needs of adult students. In particular, there is a need to:

- *Give universities more freedom to innovate by removing unnecessary regulations*. Reforms in 2003 went a long way towards increasing self-governance of institutions, which are now overseen by a board with a majority of external members. Even so, the ministry has retained control over property matters, the approval of new academic programmes (albeit on a more limited basis than in the past) and (in conjunction with the relevant union) the number of professors and administrative staff.
- *Put more emphasis on stand-alone bachelor's courses* that include employment-related skills. Most universities still treat a bachelor's degree as a stepping-stone towards a master's degree. This contributes to the problems of low participation, high dropout rates and long duration of studies.
- *Improve the coherence of the sector*. There are three separate tracks of tertiary education, each under the jurisdiction of a different ministry: the academic track falls under the Ministry of Science, Technology and Innovation; vocational training is the responsibility of the Ministry of Education; while the Ministry of Culture oversees 20 art and design institutions. This separation of responsibilities hampers the development of a coherent policy for higher education, and the split between the academic and vocational tracks may reduce the pressure on universities to provide job-relevant courses.
- *Improve the allocation of the research budget*, which is based more on history than on quality (the share of funding received by the major institutions has remained more or less unchanged for many years).
- *Improve the transfer of knowledge and technology* between the public and private sectors (which is discussed in more detail below).

The innovation environment is getting better

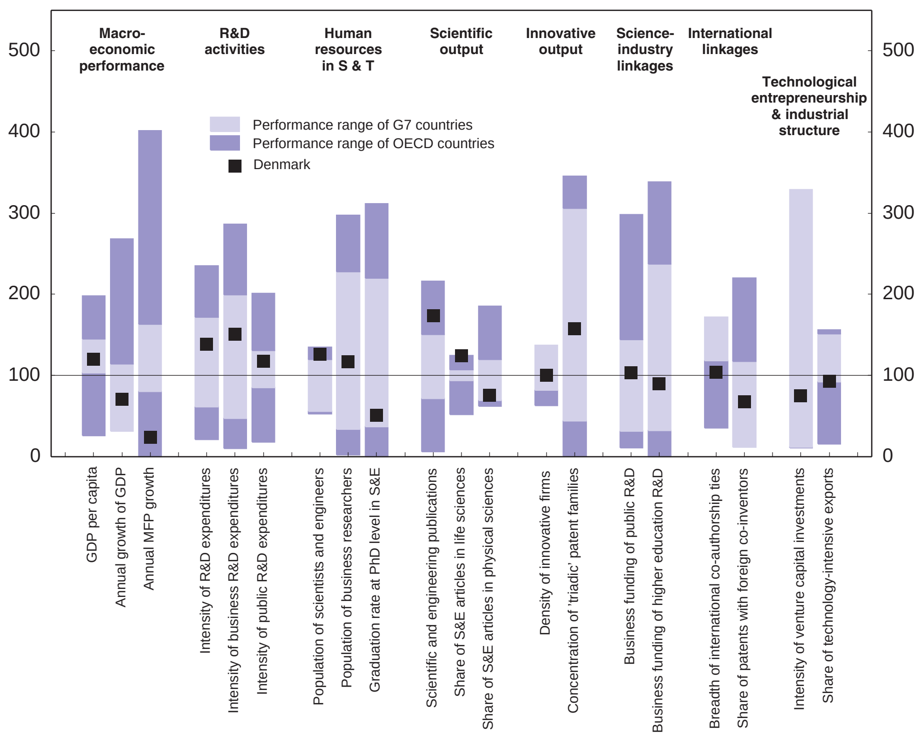
The OECD's Growth Project demonstrated the importance of research and innovation for growth. In particular, its empirical analysis showed a strong link between R&D and multifactor productivity growth (OECD, 2001a). It also illustrated that small countries cannot just free ride on innovations developed abroad, and nor is publicly performed research a perfect substitute for private R&D. While international knowledge diffusion is many times more important for growth than domestic research, especially for small countries, the ability to make use of basic R&D that has been performed elsewhere requires a strong local research base. Moreover, private-sector research is important not just in its own right, but because it also raises the effectiveness of public R&D spending.[3]

After lagging behind much of the OECD, and especially its dynamic neighbours Sweden and Finland, Danish innovation activity picked up in the second half of the 1990s. Indicators of innovation activity show a mixture of strengths and weaknesses (Figure 5.3). In particular:

- R&D spending by the private sector took off in the second half of the 1990s and is now above the OECD average (Figure 5.4). Much of the growth in recent years has taken place in the service sectors and in the pharmaceuticals industry. Government expenditure on R&D is slightly above average.
- Patenting activity has also caught up. The number of patent families per capita filed in the world's three main patent offices edged past the OECD average in the late 1990s.
- Survey measures suggest the amount of product innovation by businesses is relatively high by European standards. Surprisingly for a small country, invention is more prevalent than diffusion (*i.e.* the rate of product imitation is low – see Chapter 1).
- The quality of research is high, judged by publication and citation rates in international journals.

Figure 5.3. **Indicators of innovation activity**

OECD average = 100

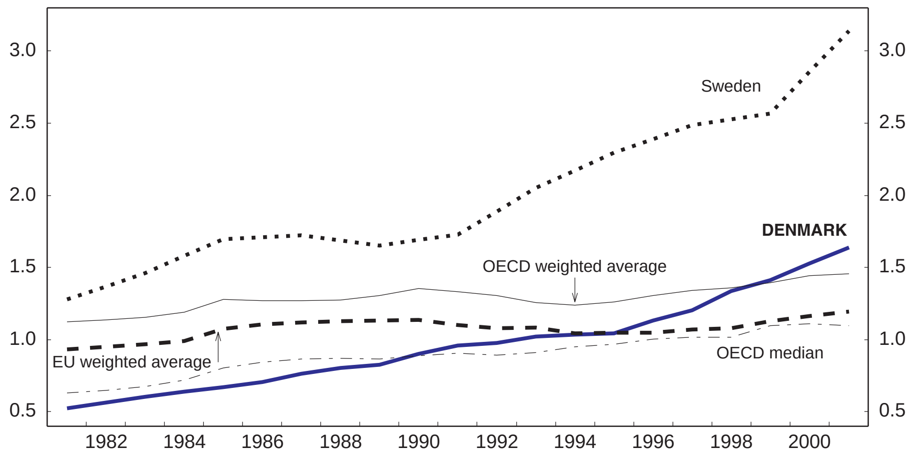


Note: S&E refers to Science and Engineering; triadic patent families are those registered in the world's three main patent offices.

Source: OECD Database of Science and Technology Indicators.

Figure 5.4. **R&D spending has picked up**

Business-sector spending, excluding defence, per cent of GDP

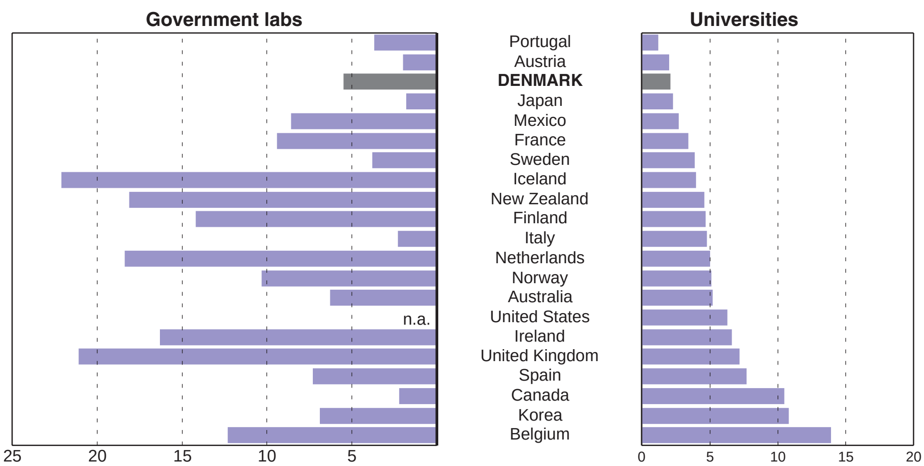


Source: OECD, *Main Science and Technology Indicators.*

- Commercialisation of research may be lagging a little. Several indicators – such as the number of spin-offs, business incubators and commercially exploited patents – suggest that turning knowledge into commercial gain may be a relative weakness.
- Co-operation and the diffusion of knowledge between government and industry seem inadequate. While surveys have uncovered numerous informal links between the sectors, businesses do not back those contacts with hard cash. Corporate co-financing of research carried out by universities and other government agencies is rare (Figure 5.5).
- The business and employment environments are relatively dynamic. Firm turnover, measured by the birth and death rates of enterprises, is relatively high – especially in the

Figure 5.5. **Business-university collaboration is weak**

Percentage of government and university research funded by business, late 1990s



Source: OECD, *Science, Technology and Industry Scoreboard*, 2001.

service sector. Many of these firms, however, have no employees. It is therefore difficult to know whether they are "real" businesses who intend to grow and employ people, or whether they are just set up for tax or other reasons. Excluding these sole proprietorships, entry and exit rates are close to average in services and a little on the low side in manufacturing (Brandt, 2004). However, the employment market is definitely fluid. Around a quarter of working Danes change jobs in a typical year, which is one of the highest turnover rates in Europe (Stimpson, 2000).

Denmark does not make the most of its public R&D

Commercialisation of university research has been weak because of meagre incentives and too much red tape. Only since 2000 have universities been able to claim ownership of their employees' inventions and therefore take them to market. This reform, modelled on the US Bayh-Dole Act, has the potential to boost technology transfer, as institutions are usually better placed than "once in a lifetime" inventors to commercialise intellectual property (IP), especially as many researchers would prefer not to have the hassle and risk of doing it themselves. Most universities have now set up internal patent policies and rules for sharing royalties (usually one-third each for the inventor, the department and the institution). However, progress in the first four years has been modest. Patenting activity has picked up but licensing activity remains low: Belgium, Switzerland, Germany and the Netherlands produce between 4 and 15 times more license agreements after adjusting for budget size (Inside Consulting, 2004). Institutions report that the biggest barriers to commercialisation are a lack of finance for "proof of concept" activities and that their patent departments are too small. For an introduction period of four years (2000-2003), the government has offered co-financing to encourage commercialisation. But the amount has been limited to around € 20 000 per invention, in order to force institutions to contribute the additional funding needed to complete the patenting process and bring the product to market.

In addition, some regulatory restrictions have been lifted only recently. Perhaps the most important is the difficulties that universities have faced in setting up technology transfer companies. These had been expressly forbidden until the passing of a bill by Parliament in 2004 allowing universities to set up limited liability companies, albeit with stringent conditions.[4] This act allows institutional companies to engage in co-ownership of science parks and innovative incubators as a way of transferring knowledge. Still, the legislation on IP ownership in public research applies only to IP that can be patented; other IP (such as software or databases) is regulated by copyright law. Universities themselves could play a part in improving incentives for researchers by, for example, giving higher priority to patents alongside publications in career advancement.

In an attempt to boost collaboration between business and the public sector, a tax credit scheme was tried out in 2002 whereby a firm received a 150% tax credit for payments made to a public institution as part of a collaborative research project. Initial take up was poor, so the tax credit was extended this year (for small firms only) to cover the company's own wage expenditure on the project, and not just the payments made to the government body. This programme has not yet been evaluated. One danger is that it gives a competitive advantage to public organisations at the expense of private institutions. The programme's objective is to encourage research collaboration rather than to act as an incentive for R&D in general. This is to be commended. While tax incentives are used in many countries to encourage private-sector research, international evidence suggests they have limited

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effectiveness. Tax breaks typically do not encourage firms to start an R&D programme if they did not already have one; instead, they tend to expand and speed up existing ones. Nor do they induce firms to pursue projects with higher social returns or greater spillovers (OECD, 2001b).

Improvements should be made to the way research funds are allocated

The research funding system has been simplified following the Research Commission's report in 2001, but further improvements can be made. The majority of funding is still allocated on an institutional rather than project-specific basis and with little explicit link to quality or performance. Consequently, each institution's share of the public research budget has been fairly stable over time. From 2003 onwards, there has been open competition for public research grants (excluding the portion set aside as basic funding for institutions), and these have been distributed through a noticeably streamlined structure of granting councils.[5] Even so, the competitive portion of funding amounts to only 15% of the total, and two agencies – the Danish National Research Foundation and the High Technology Research Fund – have been left outside the more integrated funding structure. It would be useful to shift further towards a contestable funding model, although at least some funding needs to remain long-term and perhaps institution based in order to maintain an adequate level of fundamental research. Allowing private firms to bid for public funds on an equal basis can also be an effective way of increasing their R&D; after all, the ultimate objective is to fund public good science, and whether it is performed by a public or a private institution should be less important. A policy reform along these lines has been very successfully implemented in New Zealand.

A stronger link between funding and performance would be useful. Two options worth considering are the performance-indicator approach, which is used by Australia and Israel, among others, and the peer review approach, used by Britain and Hong Kong. The performance-indicator method ties funding to measurable factors such as publication and citation rates, the number of doctoral students and the amount of external funding that an institution manages to attract. This system has the advantage of being objective, but indicators are not perfect and it can therefore lead to a neglect of activities that are not measured in the funding formula. Denmark already uses aspects of this approach, albeit to a very limited extent. The peer review approach also uses these measurable factors, augmenting them with a subjective quality assessment through a periodic Research Assessment Exercise (RAE). Such an exercise can be especially valuable if the assessment panel includes foreign researchers.

The venture capital market remains small

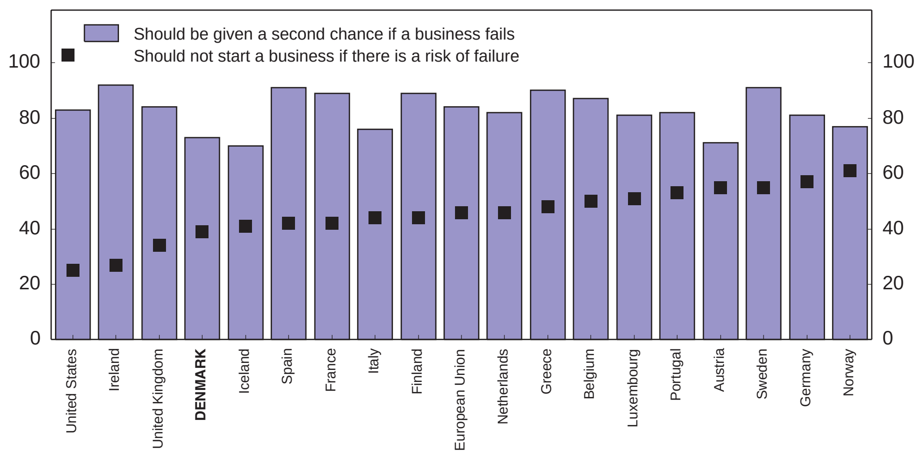
Innovation and structural change may also be held back by a shortage of venture capital (the Danish market being one of the smallest in the OECD when measured relative to GDP). The government made several attempts to jumpstart the industry in the 1990s. These measures included loosening regulations on institutional investors, providing equity financing and guarantees to small firms and creating a second-tier stock market. However, they were largely unsuccessful. Banks and institutional investors continue to provide an unusually large share of private equity finance, while pension and life insurance companies are reluctant to get involved. More recently, the government has been playing a bigger role through its Danish Investment Fund (*VækstFonden*), which provides start-up financing for small firms. However, it is uncertain whether the low level of venture capital investment is causing financing constraints for high-risk entrepreneurial activity. A significant portion of the venture funds that are raised in Denmark is invested abroad, while foreign venture funds are providing increasing amounts of capital. Thus, it is possible that the small venture capital market reflects a lack of demand for such finance, rather than a lack of supply. But if so, it begs the question of why there are so few venture opportunities in Denmark.

The lack of enthusiasm for entrepreneurial financing by pension and life insurance funds is surprising. Although they face ceilings on the proportion of funds they can invest in unlisted shares, these ceilings have progressively been raised and have seldom been binding. In 2001, these institutions invested just 1% of their funds in unlisted shares, well below the 14% legal limit.[6] Investment rules were liberalised in the late 1990s to permit additional asset classes such as unit trusts, but only a handful have been created. Extreme risk aversion and a lack of entrepreneurial culture within the fund management industry have sometimes been blamed, but this is at odds with surveys which show that ordinary Danes have quite liberal attitudes towards risk-taking – although they are less willing than other Europeans to give failed entrepreneurs a second chance (Figure 5.6). Restrictive taxation rules may also be a factor; the government is currently looking at whether tax rules need to be simplified in order to encourage pension funds to enter the industry.[7]

In most countries, venture capital investors – be they pension funds or "business angels" – tend to insist on having a clear exit strategy before they become involved with a company. This applies equally to selling out and booking a profit on a successful venture and to "pulling the plug" on a failing firm. In Denmark, both these exit routes are more difficult than elsewhere. First, there are limited opportunities to sell successful firms, as IPOs are rare (only seven have taken place since 2002). That may reflect an undeveloped stock market, which is small in relation to GDP, has low turnover and comparatively high spreads between buying and selling prices (Elkins/McSherry, 2000). The thinness of the stock market may be attributable to minority shareholders having less protection than in

Figure 5.6. **Danes are willing to take risks but are less tolerant of failure**

Percentage of answers, 2001



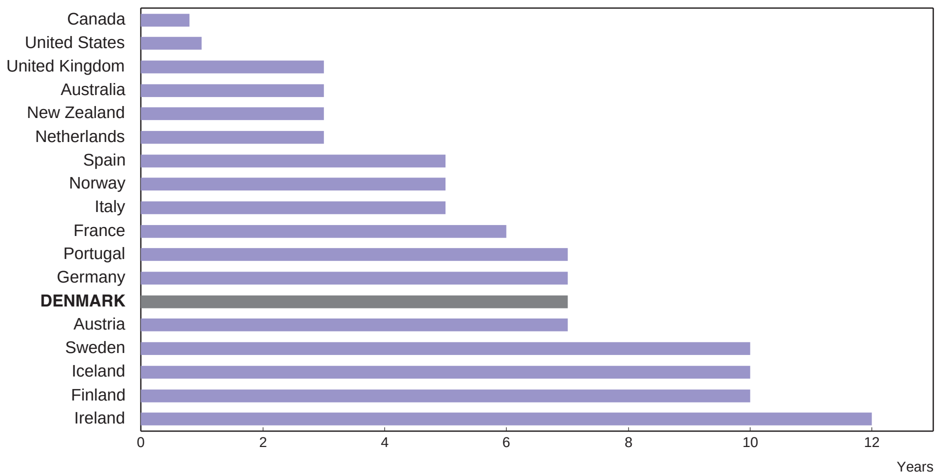
Source: Gallup Europe (2002).

many countries (La Porta *et al.*, 1998), although the evidence on this point is too flimsy to support any weighty conclusions.[8]

Getting out of a failing business is also difficult. In most respects, Denmark's corporate restructuring procedures compare well with other European countries: it has fully or almost fully implemented the majority of the World Bank's Principles and Guidelines for Effective Insolvency and Creditor Rights Systems (EC, 2003). Where it falls short compared with other countries is in the framework for informal corporate workouts and restructurings, in which the firm and its creditors may together work out a rescue plan. In addition, bankruptcy rules are more stringent than elsewhere. Debts are usually not discharged for seven years (Figure 5.7), and in some cases not until after 20 years. Moreover, debt release requires the approval of all creditors; Italy is the only other EU-15 country that has a similar requirement. Finding the optimum in this area is difficult, but Denmark's rules have probably reached the point where they are hurting rather than helping entrepreneurship. The government put a proposal to parliament in late 2004 aimed at relaxing these regulations and making it easier for failed entrepreneurs to start over. Pushing ahead with this reform would be likely to boost growth and innovation, as there is some evidence that entrepreneurs learn from their mistakes – the success rate of people who have been through a business failure is relatively high.

Figure 5.7. **Length of time that creditors have claims on a bankrupt's assets**

2000



Source: OECD (2001), *The New Economy: Beyond the Hype – The OECD Growth Project*, Paris.

Box 5.1. **Summary of recommendations**

The main recommendations from this chapter are summarised below. Recommendations made in previous Surveys are listed in Annex 3.A1.

Improving the education system

Schools: Make more use of diagnostic testing and have more frequent monitoring of students' and schools' outcomes. Increase the weight placed on intellectual development. Allow teachers to become more specialised. Plug the gaps in teacher training, including in-service training opportunities. Increase teachers' classroom hours. Shift resources from non-teaching to teaching staff.

Universities: Continue giving more autonomy to universities. Put more emphasis on stand-alone bachelor's courses that include employment-related skills. Consider making a single ministry responsible for the whole post-secondary system.

Improving the innovation and research framework

Shift further towards project-based rather than institution-based funding. Move to a single, contestable pool for publicly financed research. Allow private firms to bid for funds on equal terms. Tie funding to quality. Remove remaining restrictions on setting up technology transfer companies and science parks. Encourage universities to share a patenting department rather than having one each.

Promoting venture capital

Revise taxation rules if they are discouraging pension funds from entering the venture capital market. Ease the bankruptcy rules and allow greater opportunities for informal corporate rescue plans.

Notes

1. See Chapter 14 of Danish Government (2000) for further details.
2. A (small) survey by the Danish Teachers' Union in 2004 found that fewer than half the teachers who were instructing Danish language and general science (nature and technology) were specialists in their subjects. Similarly, a third of physics and chemistry teachers did not specialise in those subjects during their training.
3. Econometric evidence that higher local R&D intensity increases the ability to make use of foreign research is presented in Guellec and van Pottelsberghe de la Potterie (2001). Other empirical evidence is reviewed in OECD (2001b).
4. A university can create only one holding company, and if it becomes insolvent a new company can be formed only with the approval of the funding authorities. The university's investment in the firm is limited to the greater of DKK 5 million (approximately € 670 000) or 3% of its research budget, and all profits must be paid back to the university in full.
5. The number of funding councils has been reduced from 11 to 4, and all parliamentary appropriations for specific research programmes are now channelled through one of these councils.
6. Since 1998, insurance companies and pension funds have been able to invest up to 70% of their funds in shares, of which 20% could be unlisted. This is significantly more liberal than 1994's rules (35-40% in shares, of which 10% could be unlisted).

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7. The details, as always with taxation law, are complex. The key issue is the extent to which accounting rules allow investors to consolidate their venture investments with other assets, and the tax implications thereof.
8. Denmark's performance on shareholders' rights appears poor relative to other OECD countries because it is not possible to vote by letter at general meetings, there are no rules on proportional representation of minority shareholders on the board of directors, and shareholders do not have preferential rights to purchase new shares. However, listed companies are subject to an over-riding "no discrimination" clause in which case shareholder protection may be higher than suggested by the La Porta *et al.* study.

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