

II. Raising labour supply for the longer term

Boosting the proportion of people in the workforce would help Denmark to reduce the effective dependency ratio and thereby limit the degree of income redistribution necessary to attain the desired minimum standard of living for everyone as the population ages. Chapter I illustrated the impact on long-term public finances of raising age-specific participation rates. This chapter focuses on sections of the working age population where participation and employment rates could be raised and considers the measures that could be applied to make work more economically attractive. The special situation of immigrants and their integration into the labour market is discussed in the next chapter.

The government has already put in place the first stage of its strategy to increase employment, with the “More People in Work” package announced in the autumn of last year, and signalled its intention to propose other measures to expand the labour supply. This chapter first examines the measures announced in the package and considers areas where it could usefully be extended. The discussion then turns to the two ends of the working-age distribution, the relatively late entry of young people into the workforce and the early exit to retirement, where policies could be adjusted to sharpen the incentives to spend more years in work. Finally, the chapter considers some other dimensions that would boost the total hours worked each year, notably by reducing temporary absences.

More People in Work

Although Denmark has a high employment rate compared with other European countries, there are still people on the fringes of the labour market. Indeed, it actually has marginally fewer prime-age men¹⁶ in work than on average elsewhere in Europe (Table 7), while almost all of the 14 per cent of that age group who are not working are instead drawing some form of temporary or permanent public income support.¹⁷ This suggests that with a stronger mix of economic incentives and assistance, more of those not working could be coaxed back into employment, even if they are not currently active job seekers. The government’s 2002 “More People in Work” initiative endeavours to do this.

Table 7. **Labour force status of prime-age men**
Percentage of men aged 25 to 54, 2000

	Carries out a job or profession	Unemployed	Student, further training, unpaid work experience	In retirement or early retirement or has given up business	Permanently disabled	Other inactive persons including fulfilling domestic tasks
Austria	89.2	5.1	2.0	2.7	0.3	0.8
Belgium	86.7	5.2	0.9	1.5	3.8	1.8
Czech Republic	90.0	5.5	0.6	0.2	3.3	0.3
Denmark	86.3	4.4	3.6	0.4	4.8	0.5
Finland	83.3	8.1	2.8	0.3	5.0	0.5
France	87.5	8.1	0.8	0.6	2.1	0.9
Greece	87.6	7.0	0.8	1.8	2.0	0.8
Hungary	78.5	9.3	0.6	5.8	3.8	2.0
Iceland	95.2	0.7	2.0	–	1.5	0.6
Ireland	87.7	6.6	1.1	0.6	3.1	1.1
Italy	84.2	8.4	2.9	2.7	1.2	0.7
Luxembourg	92.8	0.8	1.6	1.2	1.8	2.0
Netherlands	90.5	1.6	2.0	0.1	3.3	2.6
Norway	89.3	3.4	1.5	0.2	5.0	0.7
Poland	77.5	10.8	0.5	1.3	6.8	3.0
Portugal	89.6	4.4	1.1	2.2	1.1	1.6
Slovak Republic	79.2	15.3	0.4	4.8	–	0.4
Sweden	83.8	5.9	4.4	0.1	3.5	2.3
Switzerland	95.2	1.5	1.1	1.2	–	0.9
United Kingdom ¹	87.1	5.0	0.7	0.2	4.8	2.1
Unweighted average	86.6	6.1	1.6	1.4	3.0	1.2

1. 1999.

Source: OECD (2002a).

The key components of the package are designed to harmonise and streamline the various administrative systems that had previously applied to different categories of unemployed (see Annex V for details):

- A common labour-market system for all unemployed people, whether they are receiving unemployment insurance or cash benefits under the social assistance provisions.
- A faster and more direct path towards employment, with strengthened contacts with the public employment service and individual plans of action for all unemployed, using a new database containing *curricula vitae* for all unemployed.
- Simplified and more results-oriented activation programmes, using three key tools: guidance and counselling, job training in a firm and wage subsidies.

- Enrolment in education courses linked to labour-market participation, while those under 30 years of age would receive the (lower) education benefit rate while undertaking such studies.
- Stronger economic incentives through: greater scope to keep earned income while receiving means-tested cash benefits; a slight reduction in the cash benefit for married “bread-winners” after six months; and a ceiling on the total public income support that a beneficiary can receive after the first six months.
- Clearer and stricter rules governing availability and willingness-to-work criteria. Job search should start from the first day of unemployment, and there is an immediate requirement to accept a “reasonable” job offer. The requirements on geographic mobility have also been extended. Sanctions for turning down job or activation offers have been increased.

These changes certainly go in the right direction and reflect a number of best practices identified by the OECD in recent years, particularly concerning efficient management of active labour market policy approaches to help those out of work back into employment (OECD, 2002a).

But the economic incentives to actively search for work remain relatively weak for those at the lower end of the wage spectrum. The net replacement rates for unemployment insurance are the highest in the OECD for those earning two-thirds of the average wage. For all long-term beneficiaries, including those on daily and social assistance cash benefits, the net replacement rates are also very high by international standards, although there is significantly more variation across countries. The recent measures primarily strengthen the economic incentives of cash benefits recipients, whereas for the average beneficiary, the incentives to work only increase marginally. In contrast, simply bringing Denmark’s average net replacement rate down to the OECD average would imply a reduction of more than 20 percentage points (Table 8).

A significant cutback in benefit rates is clearly the most direct way to reduce the unemployment trap. But the inevitable trade-off is that strengthening economic incentives in this way would mean a lower income for those who remain out of employment, which appears to be politically unpalatable. However, there is evidence that providing a greater reward to those who do find work is almost certain to encourage more intensive job search among the unemployed and also to strengthen the attachment of women, in particular, to the labour force (Pedersen and Smith, 2001). However, even without trimming the benefit rate itself, other measures could help to trim the effective replacement rate indirectly and improve the incentives for job-search. Options would include shortening the maximum duration of unemployment insurance benefits from the present four years length,¹⁸ tapering benefits as the unemployment spell lengthens (by basing

Table 8. Net replacement rates
Average over 60 months of unemployment for four family types at two earnings levels¹

	Single	Married couple	Couple 2 children	Lone parent 2 children	Overall average
Australia	39	34	69	53	49
Austria	57	59	75	72	66
Belgium	57	71	75	77	70
Canada	35	51	56	74	54
Czech Republic	46	71	88	83	72
Denmark	76	76	84	87	81
Finland	61	66	72	77	69
France	47	45	58	59	52
Germany	60	57	69	68	63
Greece	16	16	17	19	17
Hungary	36	37	47	48	42
Iceland	65	58	73	76	68
Ireland	36	52	62	72	55
Italy ²	4	8	22	18	13
Japan	45	60	77	73	64
Korea	12	18	26	23	20
Netherlands	73	80	82	70	76
New Zealand	48	66	78	72	66
Norway	58	65	76	77	69
Poland	41	59	74	65	60
Portugal	57	62	65	65	62
Slovak Republic	49	75	87	79	73
Spain	44	46	55	53	50
Sweden	69	84	95	70	79
Switzerland	74	84	89	86	83
United Kingdom	56	67	81	74	69
United States	13	19	53	44	32
Average	48	56	67	65	59

1. 100 per cent APW and $\frac{2}{3}$ APW earnings levels.

2. Social assistance (*Reddito Minimo di Inserimento*) is not included in Net Replacement Rates due to its experimental character (on trial in 39 municipalities). Long-term NRRs are based on family benefits.

Source: OECD (2002b).

benefits on income earned over the previous 12 months), and instituting longer work requirements before qualifying for full unemployment insurance benefits.

An alternative approach used in some countries is to boost the returns from working via an earned income tax credit (EITC). Denmark has also just announced a type of EITC (see Chapter IV) applying to all workers and which does not gradually abate as incomes rise, a typical feature of EITC arrangements in other countries. Abatement would be particularly problematic in Denmark's case since phasing out a tax credit would imply a significant rise in effective marginal tax rates for a large number of workers because the wage distribution is relatively compressed: one quarter of all employees earn at most 20 per cent more than what the average person on unemployment benefit receives.

With weak direct economic incentives to “pull people into work”, policies such as activation and tight eligibility conditions that “push people into work” need to shoulder more of the task. Denmark has established a tradition of emphasising active rather than passive labour market policies, and the “right and duty” principle embodied in activation policies has been successful in reducing unemployment rates among the young (OECD, 2000). The latest measures seek to refine and build on the experience of what policies work best and are consistent with established international best practice (Martin and Grubb, 2001). However, their success will depend on the willingness to apply sanctions to enforce the eligibility criteria for benefits, which are a sticking point for many countries (Grubb, 2001), especially where they confront concerns about hardship (as when children are involved). Indeed it is difficult to reliably assess the degree of strictness of sanctions across countries, as there may often be significant gaps between legal provisions and actual practice. But the improved operational procedures embodied in the “More People in Work” package should provide a stronger basis on which to enforce sanctions, if the political commitment is there.

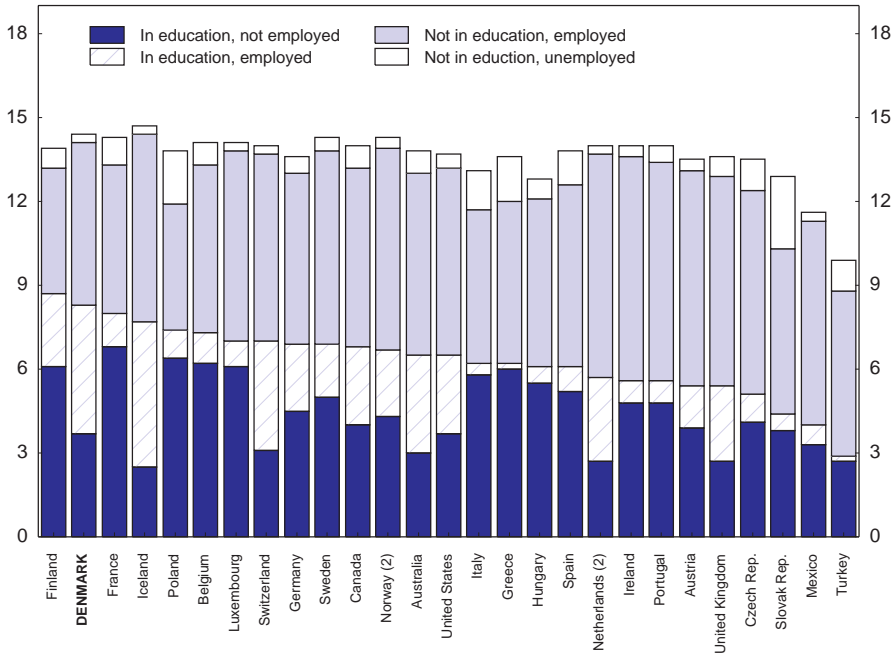
Earlier labour-force entry

Young people in Denmark start basic school comparatively late (at the age of seven) and take a relatively long time to complete their education (OECD, 2002c). The average five year-old in 2000 could expect to spend 18 years in the education system, one year longer than in 1995. More than eight of those years would be between the ages of 15 and 29 years (Figure 10). Many young people do not complete upper secondary school until they are in their early 20s, while almost one-quarter of 25 to 29 year-olds were enrolled in education in 2000. Denmark’s unusually high proportion of students who have jobs while studying complicates the picture: little information is available about whether this work is study-related. But the financial support arrangements discourage students from earning significant incomes, and the average income earned by those students in work corresponds to around 10 hours paid work per week (SUstyrelsen, 2002). In total, some 24 per cent of men and 35 per cent of women from this age group who are employed are working less than 15 hours per week. These patterns suggest that there may be scope for raising the labour supply by encouraging students to complete their studies at a younger age, so that they can spend more time in employment.

A better focussed 10th form

One reason why the number of years of expected education has risen over time has been the increased attendance in the voluntary 10th form, which is normally at the end of compulsory school. Originally, this year was intended to provide for a relatively small number of pupils that were not ready to choose what

Figure 10. **Expected years in education and the labour force for 15 to 29 year-olds**
Number of years, 2001¹



Note: Countries are ranked in descending order of the expected years in education of the youth population.

1. The remaining years are spent neither in education, nor in the labour force.

2. Year of reference 2000.

Source: OECD, *Education at a Glance*, 2002.

upper secondary education they wished to pursue or not yet capable of undertaking a higher course of study. However, its popularity has grown and more than 60 per cent of children now attend 10th grade. But there are serious doubts about its instructional value. The government is currently undertaking an evaluation to identify how the resources and pupils' time can be spent to best effect. Without prejudging the outcome of this review, concentrating the resources currently allocated to this year on those in most need of remedial assistance, while sending other children directly to the next level of education, would help a greater proportion to complete higher education at an earlier age and then enter the workforce.

Better incentives in tertiary education

Danish students face relatively weak economic incentives to start their tertiary studies early or to complete them quickly. Of those who first enrolled in higher education¹⁹ in 1990/91, only two-thirds had completed their original study programme eight years later, and another 9 per cent had completed a different course of study, while more than 12 per cent were still enrolled at university (SUstyrelsen, 2002). On average, only 40 per cent of students who enrolled in 1990 had made normal progress after three years. Younger students were more likely to have progressed at the optimal speed (Table 9). This may indicate an advantage to moving straight from upper secondary school to tertiary education, while study habits are still fresh. But most students do not make such a swift transition²⁰ and on average students from general upper secondary programmes take a break of between one and two years before tackling further studies, while those from vocationally oriented courses take somewhat less (Figure 11).

These trends may reflect the fact that having additional qualifications gives little gain in earnings compared with many other countries (Figure 12). These low market-based rewards for educational attainment are even further compressed by the high income tax rates that apply to incomes not far above the average wage (see Chapter IV). Denmark charges negligible tuition fees and offers students very generous public income support, compared with other countries. In effect, this partly compensates for the low private, after-tax internal rates of return (Table 10), and makes studying more attractive. Public funding encourages more young people to study than would perhaps otherwise be the case. But they also face little financial penalty for stretching out their studies, compared with say, typical US or French students, who not only have to pay tuition fees and receive less income support while studying, but also forego higher earnings by delaying employment. All else being equal, the rate of return for education is lower if

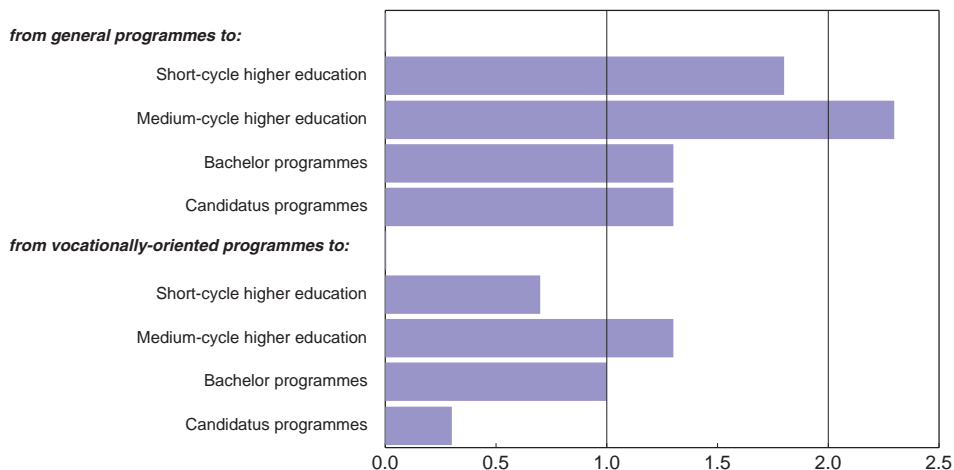
Table 9. **Study progress¹ by age**
1993, after three years study

Age at enrolment	Minimal progress	Medium progress	Optimal progress
	Per cent		
< 21 years	17	35	48
21 to 24 years	31	33	36
25 to 30 years	44	31	25
> 30 years	56	23	21
All students	27	33	40

1. Study progress is defined as follows: optimal progress implies that after three years enrolment, the student should have credits corresponding to 2½ to 3 years' full-time study. Medium progress implies credits for 1½ to 2 years and minimal progress implies credits less than the equivalent of 1½ years of full-time study.

Source: SUstyrelsen (1997).

Figure 11. **Median transition time from upper secondary to higher education**
Number of years



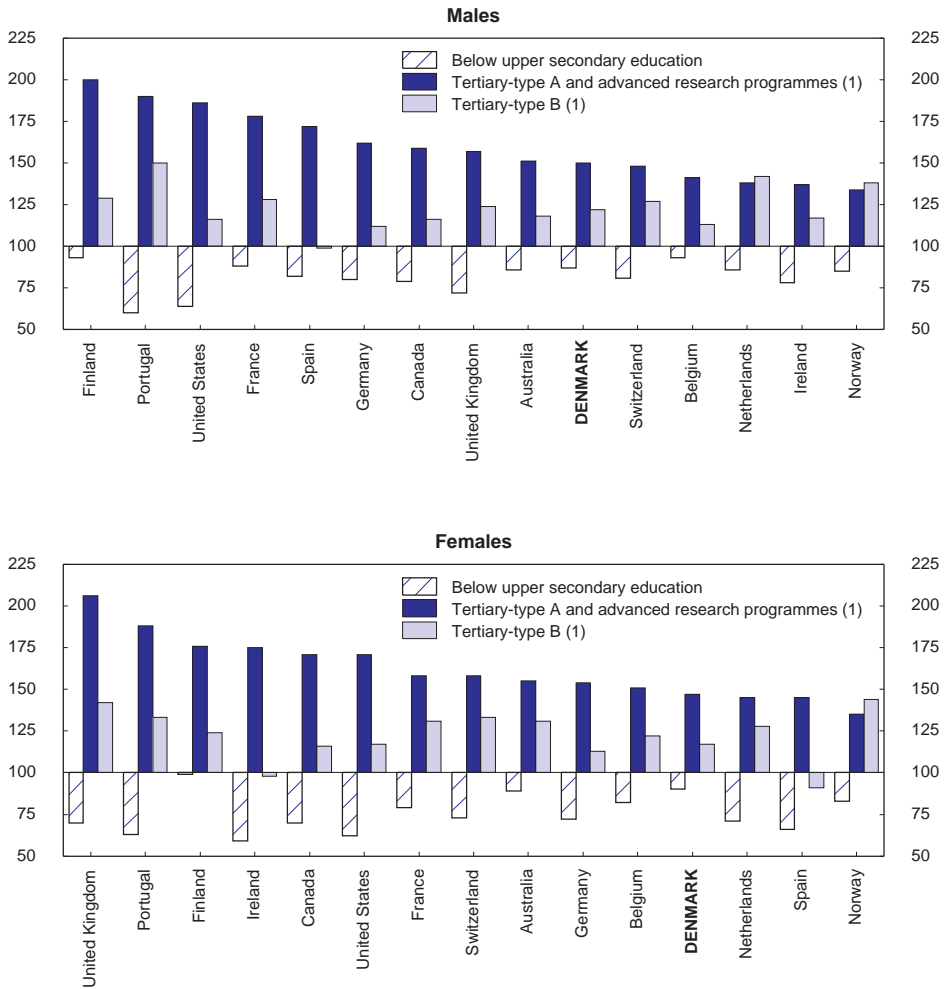
Source: Ministry of Education (2002).

students enter the workforce at a later age, simply because they have fewer years of higher earnings available before they retire.

It is relatively difficult to strengthen the economic incentives to undertake and complete higher education expeditiously in the Danish setting. The task would be made much easier if the wage distribution gave greater reward to educational attainment. But this would be hard to engineer in an economic environment that has relatively high effective minimum wages in collective agreements and a social safety net that provides public support with generous replacement rates (see above). Yet if all the adjustment has to come from higher wages towards the top end, this will push up average wages in a manner that may threaten Denmark's overall international competitiveness. Reducing the very high rates of taxation on higher incomes would at least reduce the current compounding effect of progressive taxation on a compressed wage distribution (see Chapter IV).

One way the government could reshape the economic incentives would be to have students bear a greater part of the cost of their education, either through lower public income support and/or tuition fees, so as to encourage them to undertake studies more efficiently. From a purely economic perspective, it would be reasonable to expect individuals to bear some portion of their costs, as it has been widely demonstrated in many countries that higher education generates benefits mainly to the individual, rather than to society as a whole

Figure 12. **Relative earnings by educational attainment**
 Income from employment
 Upper secondary and post-secondary non tertiary education = 100



1. Tertiary type-A programmes are largely theory-based and provide qualifications for entry to advanced research programmes or professions with high skill requirements. They usually involve a minimum of three years full time equivalent study. Tertiary type-B courses are generally shorter and focus on practical, technical or occupational skills.

Source: OECD, *Education at a Glance*, 2002.

Table 10. **Private internal rates of return to education**
1999-2000, per cent

	United States	Japan	Germany	France	Italy ¹	United Kingdom	Canada	Denmark	Netherlands ²	Sweden	Unweighted average
A. Men											
Tertiary education											
Return based on pre-tax earnings and the length of studies (narrow rate)	18.9	8.0	7.1	13.3	8.0 ³	18.1	8.4	7.9	11.7	9.4	11.4 ⁴
Impact of (in percentage points)											
Taxes	-2.3	-0.3	-1.5	-1.6	-	-2.1	-0.5	-2.1	-2.0	-1.5	-1.5
Unemployment risk	0.9	0.9	1.1	2.4	0.3	1.6	1.3	1.0	-	1.2	1.1
Tuition fees	-4.7	-2.0	-0.3	-1.1	-0.8	-2.7	-2.3	-0.1	-0.6	-0.7	-1.5
Public student support	2.1	1.3	2.7	1.3	-	3.6	1.8	4.8	2.9	3.0	2.4
Comprehensive rate	14.9	7.9	9.1	14.3	7.5	18.5	8.7	11.5	12.1	11.4	11.6
Upper-secondary education											
Return based on pre-tax earnings and the length of studies (narrow rate)	14.4	4.4	10.0	7.5	9.5 ³	12.4	11.9	11.3	6.9	3.9	9.2 ⁴
Impact of (in percentage points)											
Taxes	-0.9	-0.2	-2.1	-1.0	-	-1.5	-1.6	-2.2	-0.2	-0.6	-1.1
Unemployment risk	2.9	2.6	2.9	7.0	1.7	4.2	3.6	2.2	1.2	3.1	3.1
Comprehensive rate	16.4	6.8	10.8	13.5	11.2	15.1	13.6	11.3	7.9	6.4	11.3

Table 10. **Private internal rates of return to education** (cont.)
1999-2000, per cent

	United States	Japan	Germany	France	Italy ¹	United Kingdom	Canada	Denmark	Netherlands ²	Sweden	Unweighted average
B. Women											
Tertiary education											
Return based on pre-tax earnings and the length of studies (narrow rate)	18.8	8.0	7.0	12.1	–	16.4	10.6	6.0	9.4	7.4	10.6
Impact of (in percentage points)											
Taxes	–2.0	–0.2	–1.6	–1.7	–	–2.3	–1.3	–1.1	–1.0	–0.7	–1.3
Unemployment risk	1.4	0.5	0.6	4.8	–	1.3	1.2	0.7	0.7	1.6	1.4
Tuition fees	–6.0	–2.4	–0.6	–1.7	–	–2.5	–2.9	–0.1	–0.7	–0.8	–2.0
Public student support	2.7	1.3	3.0	1.9	–	3.2	2.4	5.6	4.1	3.3	3.1
Comprehensive rate	14.7	7.2	8.4	15.4	–	16.1	9.9	11.1	12.5	10.8	11.8
Upper-secondary education											
Return based on pre-tax earnings and the length of studies (narrow rate)	10.6	6.6	6.1	10.5	–	–	10.8	8.3	7.9	–	8.7
Impact of (in percentage points)											
Taxes	–1.3	–0.2	–1.7	–0.7	–	–	–1.2	–1.4	–1.6	–	–1.2
Unemployment risk	2.5	3.0	2.6	8.1	–	–	3.1	3.6	2.1	–	3.6
Comprehensive rate	11.8	9.4	7.0	17.9	–	–	12.7	10.5	8.4	–	11.1

Note: The rates of return to tertiary education are calculated by comparing the benefits and costs with those of upper-secondary education. In the case of rates of return to upper-secondary education, the calculation compares the benefits and costs with those of lower-secondary education. In Sweden, the theoretical length of standard tertiary courses is used in the calculations rather than the average theoretical length of different programmes. Moreover, earnings differentials for women between upper and lower-secondary levels are not large enough to permit a positive rate-of-return calculation. In the United Kingdom, data on earnings of women up to age 30 with lower-secondary education were not available. In Italy, reliable data on earnings for women were not available.

1. 1998.

2. 1997.

3. Post-tax earnings.

4. Excluding Italy.

Source: Blöndal *et al.* (2002).

(Blöndal *et al.*, 2002). The majority of countries charge some tuition fees, even if these fees are only a relatively modest proportion of the total cost of study, while Denmark stands out for the generosity of income support to students. But there appears to be widespread public attachment in Denmark to the principle that higher education should be free to students. An alternative that might be more politically acceptable would be to tilt the balance of public income support from grants towards loans, since 80 per cent of student income support is currently in the form of grants.²¹

Australia, New Zealand and the United Kingdom have all introduced student loans schemes in recent years, to some extent replacing student grants. This has not had a discernible negative impact on student participation, while it has provided clearer signals to students about the value of completing their studies rapidly (OECD, 2001a). This approach also has implications for equity; free or highly subsidised tertiary education tends to be a rather regressive form of public spending. Since children from relatively better educated, and therefore usually more affluent, families are more likely to attend tertiary institutions in the first place, they benefit disproportionately from the high subsidies and also have higher future income prospects. These effects appear to be less marked in Denmark than in many other countries (Blöndal *et al.*, 2002). But although the Danish system is explicitly designed to ensure that economic circumstances are not an obstacle to further education, children of middle to upper income parents were still five times more likely to complete a long-term higher education course than children from working class backgrounds in the mid-1990s (Hansen, 1997). In any case, equity considerations could be mitigated by introducing means-tested elements into tuition fees and/or to public support schemes for students (Joumard and Suyker, 2002).

The rules governing student support could in any case be tightened to encourage students to choose their courses of study more carefully in the first place and to reduce the tendency for some students to stretch the current rules to take up to a year off their studies while continuing to receive student benefits because they are still enrolled. Students enrolled in a higher education course are entitled to grants corresponding to the prescribed duration of the course of study plus 12 months.²² Within a total of 70 months' grants, the student can change course. Eliminating the extra 12 months coverage and reducing the financial latitude provided to those who decide to change their study programme would provide stronger incentives to students to complete their studies expeditiously, without reducing the level of support offered to those who choose their courses carefully and maintain a satisfactory academic performance.

Contribution to labour supply

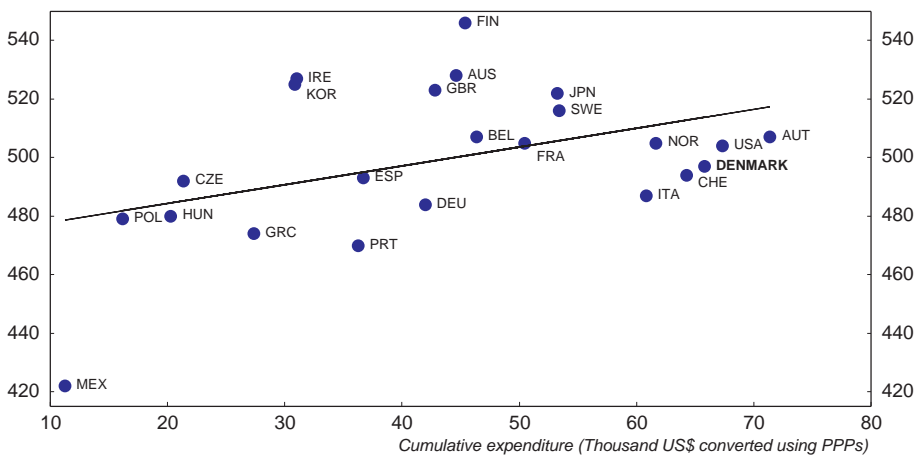
It is difficult to predict the labour supply effects of measures to boost the incentives to complete education more quickly, reduce transition time and focus

the 10th form on those who really need it. However, if the 10th form were reduced to only 10 per cent of pupils, this would mean around 28 000 students able to enter the workforce a year earlier. If the transition time from upper secondary to tertiary education were shortened by a year then this might add around 25 000 more people to the labour market, assuming that only half of them are working anyway during the transition period.²³ In addition, if tertiary students were to spend on average six months less to obtain their qualifications (by studying more efficiently or making better choices about courses of study), this could boost the labour supply by perhaps a further 15 000.

Improving the efficiency of schooling

The efficiency of the education process is another aspect which is relevant to the quality of new entrants to the workforce, even though it will not affect their numbers. The Danish compulsory education system is one of the most costly per pupil in the OECD, and yet it has delivered lacklustre results: in the OECD's recent PISA assessments of 15 year-olds, reading skills are just below OECD average, and science clearly below, though mathematics was correspondingly above average (Figure 13). This suggests that if other countries can produce better outcomes with fewer resources, Denmark should be in a position to improve the

Figure 13. Educational performance of 15 year-olds
Score on the PISA reading literacy scale by expenditure on educational institutions



Source: OECD PISA database.

efficiency of the education process and lift its standards within the present resource allocation. The government's latest schooling reforms have concentrated on the upper secondary sector, but further efforts may be needed to address the compulsory years as well.

Delaying the effective retirement age

The average age at which people withdraw permanently from the labour force is lower today than in the 1980s in Denmark, as in many OECD countries (Figure 14). In Denmark's case this in part reflects deliberate policy choices, and in particular the introduction of the voluntary early retirement benefit (VERB) scheme in 1979, and the 1994 expansion of the transitional early retirement benefit scheme (OECD, 2000). Early withdrawal not only has negative consequences for the productive capacity of the country, but also puts a double burden on fiscal sustainability, because those outside the labour force in Denmark are almost always drawing public income support instead (Table 11). Indeed, in 2001 more than one in ten 40 to 59 year-olds was receiving a permanent benefit, as were close to two-thirds of those aged 60 to 66 years. The bottom line is that, when combined with later entry into the workforce, adults in Denmark spend fewer years in the labour force than those in many other OECD countries.

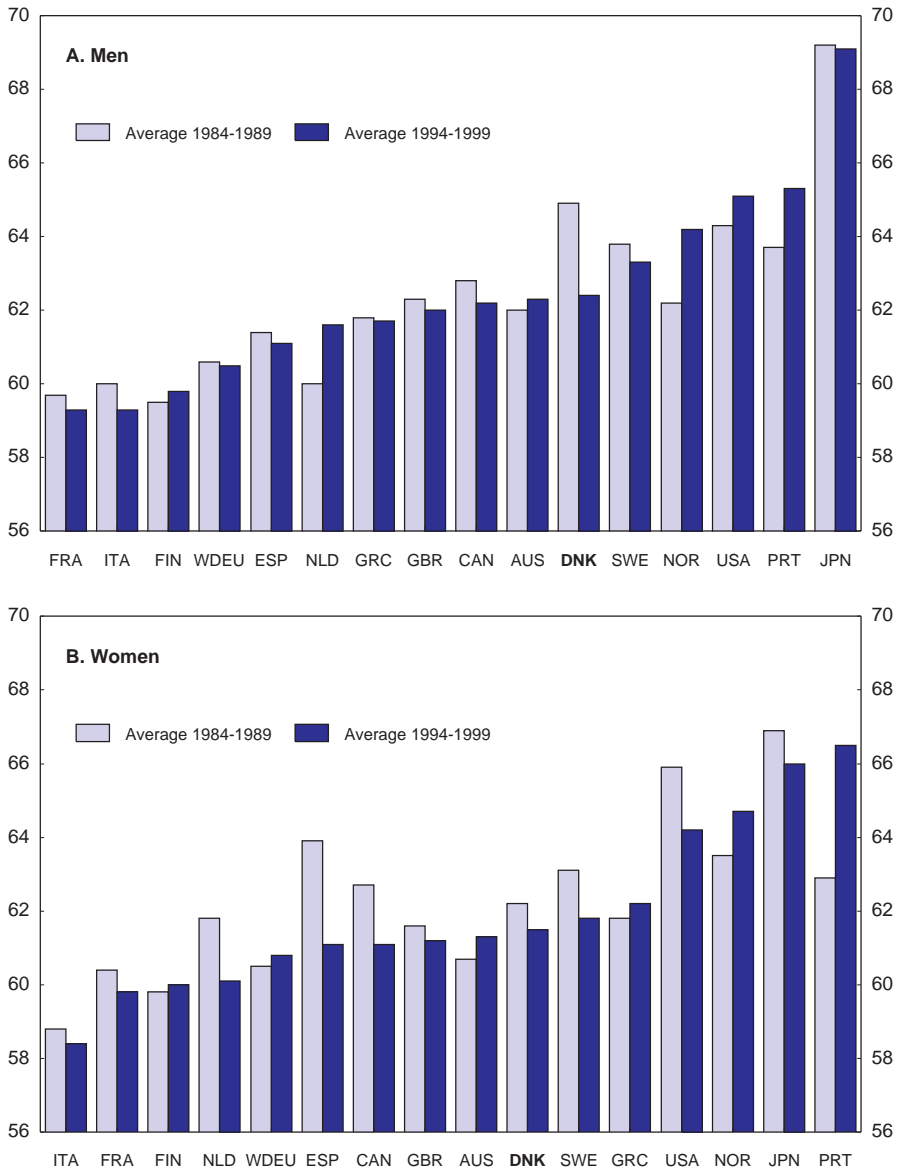
The economic costs associated with this shortening of working life are exacerbated by the likelihood that life expectancy will increase over time, so that the proportion of adult life spent in the workforce will gradually decline unless retirement ages adjust upward over time. But at present there seems little willingness among Danish people to contemplate retiring later, and even modest reforms to the VERB scheme, undertaken to encourage later retirement, have been politically very costly. This is unfortunate, given that shorter working lives and longer retirement make the effective dependency ratio higher than it would otherwise be (see Chapter I).

This section reviews policies in three areas that all play a direct role in influencing the effective retirement age: policies towards unemployed older workers, the VERB scheme and the disability scheme. Ways of adjusting the age of entitlement to the public universal old-age pension to take account of increasing life expectancy are also examined.

Getting older unemployed back into unsubsidised work

Older unemployed are likely to withdraw from the labour force between one and two years earlier than those in work: for both men and women this occurs on average a short time before they reach 60 years of age. Older workers do not appear any more likely to become unemployed than younger ones, but once they find themselves out of work, they are far less likely to return to work. The average age of withdrawal from the labour force for the unemployed has actually risen

Figure 14. Average age of withdrawal from the labour force
Years of age



Source: Scherer (2001).

Table 11. **Population by age and activity status**
2001

	Employed	Unemployed	Total labour force	Temporarily outside labour force	Retirement pensions	Other pensions	Others	Total population
Men								
30-34	87.0	3.5	90.5	2.5	0.0	1.8	5.1	100.0
35-39	87.3	3.3	90.6	2.3	0.0	2.8	4.3	100.0
40-44	86.7	3.1	89.8	2.0	0.0	4.3	3.8	100.0
45-49	86.0	3.0	89.0	1.7	0.0	6.0	3.2	100.0
50-54	84.8	3.2	88.0	1.3	0.4	7.5	2.7	100.0
55-59	78.3	4.9	83.2	1.0	3.6	9.9	2.3	100.0
60-66	36.4	1.5	37.9	0.2	42.2	14.6	5.1	100.0
67+	13.4	0.0	13.4	0.0	0.0	86.0	0.6	100.0
Women								
30-34	80.3	4.8	85.1	5.4	0.0	1.7	7.9	100.0
35-39	82.8	4.0	86.8	4.3	0.0	2.9	6.0	100.0
40-44	83.8	3.4	87.2	3.1	0.0	4.9	4.8	100.0
45-49	82.9	2.9	85.8	2.3	0.0	7.7	4.4	100.0
50-54	78.8	3.3	82.1	1.9	0.9	10.8	4.4	100.0
55-59	64.5	5.6	70.1	1.4	8.2	15.4	4.9	100.0
60-66	19.2	1.0	20.2	0.1	44.7	27.1	7.8	100.0
67+	3.0	0.0	3.0	0.0	0.0	96.4	0.5	100.0

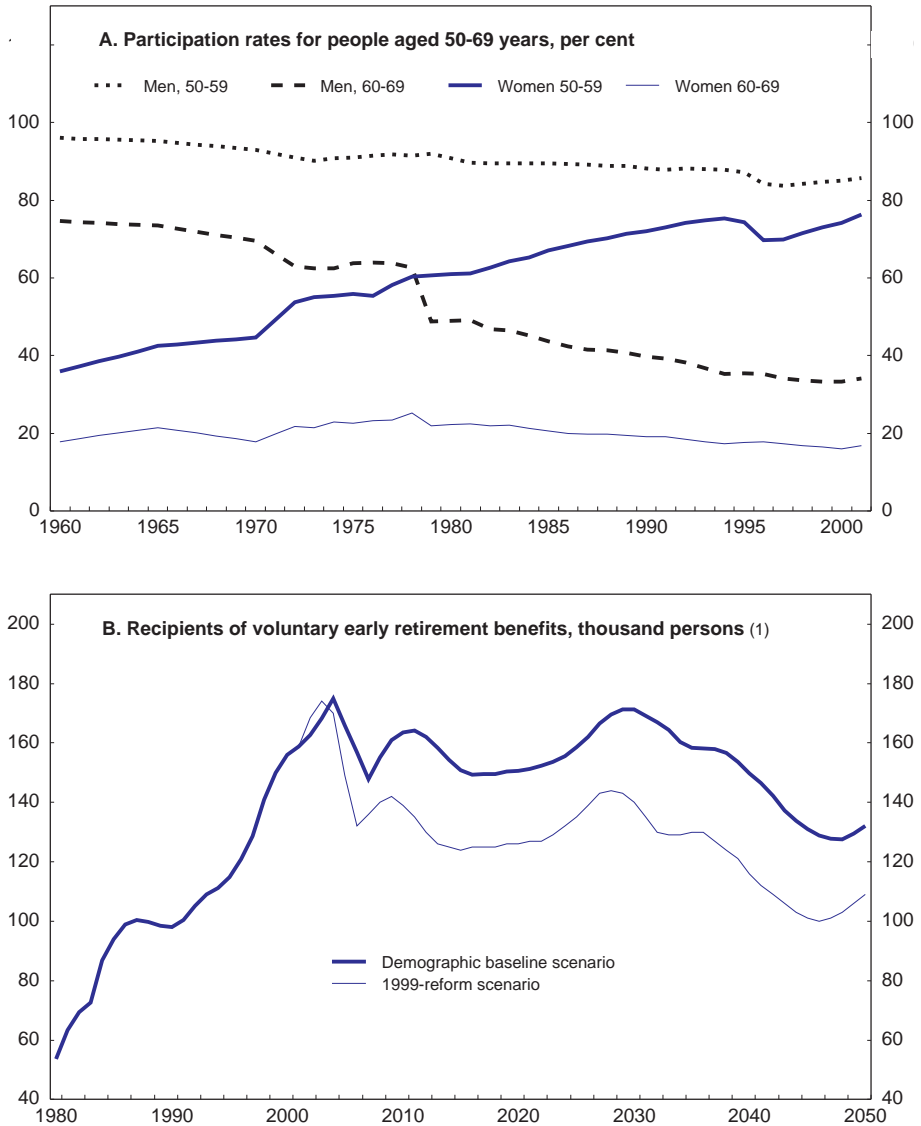
Source: Statistics Denmark.

quite sharply, but this is primarily because the transitional early retirement benefit scheme for unemployed 50 to 59 year-olds was closed to new entrants in 1996. Nevertheless, public expectations remain that older unemployed workers are incapable of returning to unsubsidised work. This can be seen in the service jobs scheme, which provides an indefinite wage subsidy to public employment for people more than 48 years old and who have been unemployed for at least 18 months, although this scheme was closed to new entrants at the end of 2002. In addition, 58 and 59 year-olds can be exempted from the requirement to participate in activation programmes.

Voluntary early retirement scheme

A considerable part of the trend towards earlier retirement can be explained by the introduction in 1979 of the VERB scheme for members of unemployment insurance funds between 60 and 66 years of age. The scheme gained immediate popularity, as illustrated by a drop in participation rates for men aged 60 to 69 years²⁴ by 14 percentage points in 1979 (Figure 15). Female participation rates were affected less dramatically at that time, partly reflecting the low level of participation. Since then, the inflow to the scheme has steadily increased

Figure 15. Participation rates and number of VERB recipients



1. The steep reduction in VERB recipients in 2005-07 is due to the lowering of the formal pension age from 67 to 65 years starting from 2004.

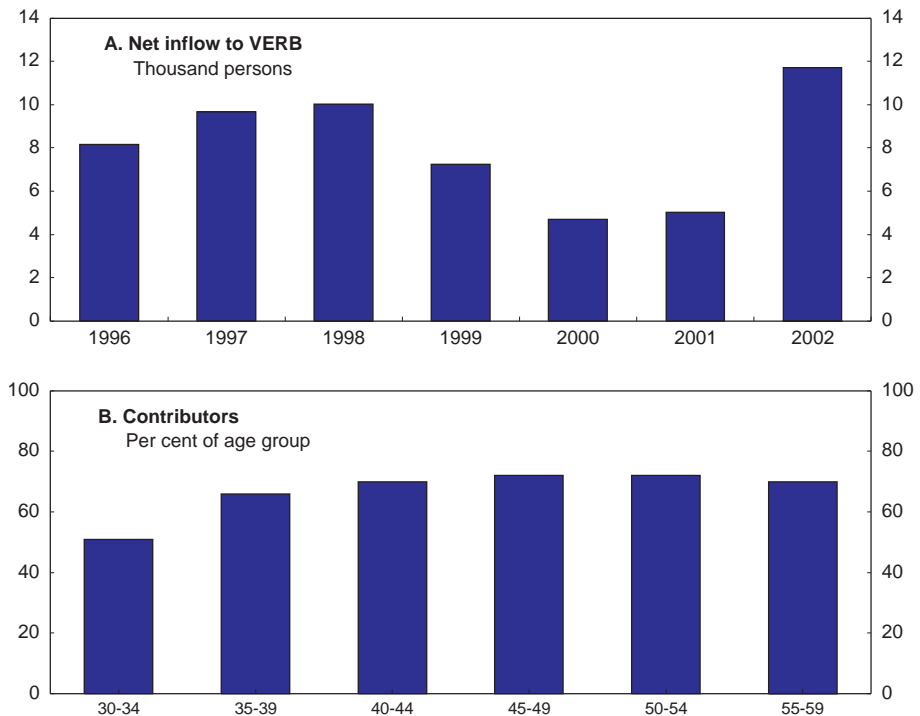
Source: Statistics Denmark; Ministry of Finance; OECD calculations.

in line with a growing proportion of 60 to 66 year-olds choosing early retirement from the labour market as well as a rising number of women on the labour market that become entitled to the benefit.²⁵ New VERB recipients alone have accounted for more than half of the increase in the total number of public transfer recipients (excluding old age pensioners) since 1978, and in 2001 almost 160 000 people received these benefits corresponding to 44 per cent of the population aged 60 to 66 years. The direct cost in terms of public benefit payments amounted to almost DKK 20 billion, which corresponds to around 1½ per cent of GDP. In addition, productive capacity is lower and tax revenue foregone.

The availability of VERB provides a popular exit route from the labour market, and the larger part of Danish early retirees receive this kind of benefits, which is not contingent on reduced working ability. This stands in contrast to the majority of OECD countries, where disability pension schemes provide the dominant path to early retirement (Blöndal and Scarpetta, 1999). To some extent, this could just reflect differences in entitlement criteria, whereas the political perceptions of acceptable reasons for retirement on public support might be more similar between countries. The introduction of the VERB scheme was in part motivated by a wish to offer worn-out (but not disabled) workers a way to leave the labour market before becoming entitled to the old-age pension at the age of 67 years.

An additional and major official motivation behind the introduction of the scheme was the erroneous belief that it was necessary to create room for younger people in the labour market, a belief that is no longer a factor in the Danish debate.²⁶ Similar initiatives to “share out” employment in periods with low activity have been introduced since then, for instance the transitional early retirement benefit for long-time unemployed persons aged 50 to 59 years and various paid leave schemes. During the later part of the 1990s it was recognised that these schemes were damaging growth potential, and they were either abandoned (the transitional early retirement benefit scheme in 1996²⁷) or restricted. However, a correspondingly firm reaction to the continuous net inflow to VERB and the prospects of even higher pressure on the scheme from population ageing was not undertaken. The reform of the scheme in 1999 focussed on changing economic incentives rather than directly restricting access. It involved a mix of carrot and stick measures by introducing additional rewards for postponing retirement and a contribution payment covering part of possible future benefits, while at the same time reducing the formal pension age from 67 to 65 from 2004 (see Annex VI).

The longer-term impact of the 1999 reform has yet to be seen. However, experience from 1999 to 2001 indicates that at least a temporary postponement of retirement has been achieved. The accession rate of 60 and 61 year-olds has decreased, inducing a drop in total inflow, while more people now start drawing benefits at the age of 62 years. This initial postponement effect is reflected in a

Figure 16. Net inflow and contributors to VERB¹

1. Entitlement to VERB requires contribution payments in 25 out of the preceding 30 years. Thus, if a person plans to retire at the age of 60, starting payment of contributions would not be necessary until the age of 35.

Source: Danish Labour Directorate; Ministry of Finance; Danish Employers Federation.

substantial increase in the inflow to the scheme in 2002 (Figure 16). For a permanent effect to emerge, net inflow would have to return to a lower level in 2003. On the other hand, the new contribution rate has apparently not had the expected deterrent effect on younger generations. The proportion of 35 to 39 year-olds paying contributions is almost as high as the proportion of 55 to 59 year-olds, although the older group will see a substantially higher return on their contribution payments.

Notwithstanding these reforms, the scheme remains a long way from being actuarially fair, where each person would receive in benefit payments the net present value of the contributions they had made. Indeed, contributions only cover around 20-25 per cent of direct future benefits to be paid out under the

scheme. Furthermore, because the scheme pays flat-rate benefits, the biggest advantages accrue to the low paid, who also have the weakest economic incentive to stay in work. It may seem less obvious why younger workers continue to pay their voluntary contributions, despite the fact that opinion polls reveal widespread scepticism that benefits will be available to them when they retire. However, *having* the option of drawing these benefits and *using* it are two different things. The net return from paying contributions but staying in the labour force until the age of 65 is still positive, due to the tax-exempt reward paid for not using this option of early retirement. In reality, workers enrolling in the scheme cannot lose, since it is possible to withdraw at any time and have previous contributions transferred to another pension scheme, and politicians have promised repayment of contributions if the scheme is ever abandoned.

The official estimate of the impact of the reform is a gradual net contribution to the labour supply of 9 500 people from 2000 to 2010. Thus, even if this effect is actually realised, the reform makes a relatively small contribution to the increase in employment needed to achieve the government's objectives to 2010 (see Chapter I). In contrast, if the trend during the last ten years towards lower participation rates for 60 to 64 year-olds were to continue, the workforce would be reduced by around 24 000 people by 2010 compared with a scenario where participation rates for this age group were unchanged. This estimate does not take into account a possible positive impact on participation rates for over 60 year-olds due to the termination of the transitional early retirement scheme for 50 to 59 year olds.²⁸

These prospects indicate that additional reforms of the VERB scheme are likely to be necessary in order to achieve the government's long term objectives. However, there seems to be a strong preference at the political level for continued subsidisation of early retirement, even though the potential gains from making the scheme less attractive or abolishing it all together are significant. The Danish system already fully covers those not able to find work (through unemployment benefits) and people with reduced work capacity can receive an early retirement (disability) pension. Thus, the VERB scheme has primarily provided subsidies to early retirement for persons fully capable of working. In the absence of the scheme those with strong preferences for early retirement could still exercise them, but their decision would be based on their own private financial positions alone, rather than being influenced by implicit public subsidies.

Not all current VERB recipients could be expected to have stayed in work if this early retirement option had not existed. Absenteeism due to sickness would most likely be higher, and relatively generous benefit rates in the scheme have probably sheltered inflow to the co-existing early retirement (disability) pension. Based on a rough estimate, Finansministeriet (2002a) indicates that around one-third of the increase in the net accession rate to VERB between 1990 and 1999 might be due to substitution from early retirement (disability) pension.

Using this number as a proxy for the total substitution effect between the two schemes would, however, still imply more than 100 000 people available to work if they had not been offered these early retirement benefits. Thus, even if some groups would continue to withdraw from the labour market before the formal pension age, and if sickness-related absenteeism were to increase, there would still be a significant potential for raising participation and employment.

There are several ways to achieve a substantial contribution to boosting labour supply through modifications to the VERB scheme:

- The most effective solution would be to totally abandon the scheme and pay back contributions. This has already been proposed by the Economic Council (Det Økonomiske Råd, 2002a). It would be the most straightforward way of inducing more people to stay attached to the labour force until they qualify for public old-age pensions or to finance earlier withdrawal entirely through their savings. However, efforts would be needed to minimise the extent to which people seek to use other channels to early retirement instead.
- The next-best solution would be to convert the scheme to a defined-contribution basis. This would eliminate the distortion to retirement behaviour, since it would amount to people drawing down their own savings to finance earlier retirement. However, since pension savings schemes are already provided in the private sector, there is no economic reason why an actuarially-fair government-administered system would need to be maintained.
- A less radical – but also less effective – alternative would be to tweak the rules further to push the entitlement age from 60 to 62 years. The 1999 reform clearly intended to raise the effective age of benefit take-up, but a further adjustment might be needed to obtain the hoped-for effects. A similar approach could endeavour to lift effective retirement ages higher still, although experience indicates that such piecemeal reforms may be politically costly.
- Another option might be to index the early retirement option to the statutory retirement age and raise the official retirement age (see below). The early retirement rules could be redesigned to limit the number of years of early retirement, effectively lengthening time spent in the labour force.

Contribution to labour supply

The effects from reforms of the VERB scheme can be estimated only with some uncertainty. Calculations by the Ministry of Finance indicate that an increase in the labour force by 20 000 people as a result of higher participation rates for 60 to

62 year-olds reduces the public sector surplus required to ensure fiscal sustainability by ¼ per cent of GDP (Finansministeriet, 2002a). The reduction in the required surplus would be somewhat less if the same increase in the labour force originated from higher participation by 60 to 64 year-olds because average annual working hours are lower for the group of 63 to 64 year-olds than for 60 to 62 year-olds.

Using this estimated relationship and assuming that one-third of current beneficiaries would find other forms of public income support, a rise in the entitlement age from 60 to 62 years could increase the labour force by around 30 000 people and reduce the required surplus by 0.4 per cent of GDP (Table 12).²⁹ Under the same assumptions, totally abolishing the VERB scheme could yield around 100 000 more people in the labour force and a reduction of the required surplus of around 1¼ per cent of GDP. The effect of changing to a defined-contribution scheme is more difficult to quantify. However, removing the public subsidy would reduce net replacement rates significantly. The estimated impacts from these reforms do not include counteracting effects on net replacement rates from maturing private labour market pension schemes.

Table 12. **Effects from different changes to the VERB scheme**

	Effect on:	
	Labour force (1 000 persons)	Required general government fiscal balance (percentage point)
Total abolition of VERB	+100	-1.3
Raise entitlement age to 62 years	+30	-0.4

Note: A rule of thumb is used implying that the required surplus is reduced by ¼ percentage point when the labour force is increased by 20 000 persons. This is inspired by calculations in Finansministeriet (2002a).

Source: OECD calculations.

It should be emphasised that changes of the kind mentioned above will require a certain phase-in period, since many people in their 40s or 50s have planned their working lives on the basis of access to the scheme from the age of 60. Policy action is therefore required in the very near future just to see some effect on labour supply in the years ahead. However, the estimated impacts on fiscal sustainability shown above are contingent on immediate implementation and full effect of changes to the VERB by 2010. Thus, the longer a reform is postponed, the smaller the positive contribution that it will make to fiscal sustainability.

Disability as a means for early exit

It is too early to assess the recent reforms to the early retirement (disability) scheme that came into force at the beginning of this year, and in any case their

success depends heavily on the way in which the new eligibility criteria are interpreted in practice (see previous *Survey*). But the benefit trap will, for some recipients, be larger than before, since a proportion of those who qualify under the new rules will receive higher income support than they would have received under the old rules. In any case, it will be important to ensure that efforts to tighten other forms of public income support, especially VERB, do not result in using the disability pension as an alternative channel for permanent exit from the labour force.

Outflow from disability and back into work is low in virtually all OECD countries, in part because of weak economic incentives to return to work, but also because of various rules and expectations that discourage re-entry. In practice in Denmark only a marginal amount of part-time work is permissible without putting pension entitlement at risk. Denmark has some 260 000 working-age people (equivalent to almost 10 per cent of the current workforce) receiving disability pensions, many of whom have less than two-thirds disability and therefore might not have qualified if the new rules had applied (Table 13). Those benefits were

Table 13. **Recipients of early retirement (disability) pensions**

	Early retirement pensions			Total
	Highest	Intermediate	Ordinary/increased	
	Number of recipients			
Recipients, total	61 645	111 166	86 765	259 576
18-29 years	4 342	3 988	678	9 008
30-39 years	8 624	10 353	4 609	23 586
40-49 years	13 650	21 850	15 390	50 890
50-54 years	9 551	18 357	13 141	41 049
55-59 years	12 025	24 124	17 915	54 064
60-66 years	13 453	32 494	35 032	80 979
Men, total	33 217	50 849	29 010	113 076
18-29 years	2 532	2 261	379	5 172
30-39 years	4 909	5 316	2 236	12 461
40-49 years	7 300	9 924	6 725	23 949
50-54 years	4 968	8 031	4 937	17 936
55-59 years	6 350	10 717	5 898	22 965
60-66 years	7 158	14 600	8 835	30 593
Women, total	28 428	60 317	57 755	146 500
18-29 years	1 810	1 727	299	3 836
30-39 years	3 715	5 037	2 373	11 125
40-49 years	6 350	11 926	8 665	26 941
50-54 years	4 583	10 326	8 204	23 113
55-59 years	5 675	13 407	12 017	31 099
60-66 years	6 295	17 894	26 197	50 386

Note: Compiled 1st January.

Source: Statistics Denmark.

awarded on a permanent basis and thus may be seen as an “acquired right”. However, an extensive OECD cross-country review of disability and relevant policy approaches (OECD, 2003c) suggests that a renewed emphasis should be placed on allowing and encouraging the disabled to work, with a shift away from the “giving up” attitude that permanent benefits imply (see Annex VII). Concretely, two particular policy adjustments would seem pertinent for the Danish situation:

- Allowing a greater possibility for those already awarded pensions to take up working again, with easier capacity to suspend their pensions while “trying out” work. Assistance with job search to help them reattach themselves to the labour market would also send a signal that their participation in the workforce is sought and valued.
- Periodic review of disability status, taking into account, *inter alia*, medical developments and rehabilitation opportunities that may have become available since the pension was first awarded.

Keeping time spent in retirement constant

Another element that makes a difference to the impacts of an ageing population is raising the age of entitlement to public old-age pensions in line with increases in life expectancy. Denmark is unusual in having actually lowered its age of entitlement from 67 to 65 years, as part of the 1999 reforms to VERB. This stands in sharp contrast to the upward trend in official retirement ages across OECD countries (Dang *et al.*, 2001). Some countries have gone further and instituted arrangements designed to encourage the age of retirement to shift upwards automatically as life expectancy increases: Sweden’s notional defined contribution and market-based premium pension approach does this.³⁰ Danish private pension arrangements also provide an automatic upward adjustment for life expectancy, because they are defined-contribution schemes. Such pensions automatically embody an incentive to work longer as life expectancy increases, if the individual wishes to receive the same replacement rate on their private pension. But their role is complicated by the statutory old-age pension.

The Danish public old-age pension is universal, with needs-tested supplements, designed to ensure a minimum standard of living to all over 65 year-olds.³¹ The average after-tax replacement rate is around 40 per cent while other pensions and capital income provides another 30 per cent. It, thus, plays a significant role in the individual’s assessment of retirement income, and can undermine the incentives embodied in the defined-contribution pensions.³² Furthermore, as pointed out in Chapter I, increasing life expectancy will undermine Denmark’s fiscal sustainability, as public old-age pensions will be paid out for a longer period, unless the age of entitlement is adjusted upwards as well. Such an adjustment might not seem very relevant when the effective retirement age currently remains well below the current official retirement age, and those not working are almost

invariably receiving some other form of public income support. But it would help to allow the actuarial adjustments available in private pensions to play a stronger role. It would also send a clearer signal about expectations that people should plan to rely more heavily on their own resources (earnings from work or savings) for a longer period and reinforce the point that state funding of earlier retirement should be restricted to those genuinely incapacitated. Such adjustments would also be consistent with improvements in the average health status of older workers.

Raising average hours worked

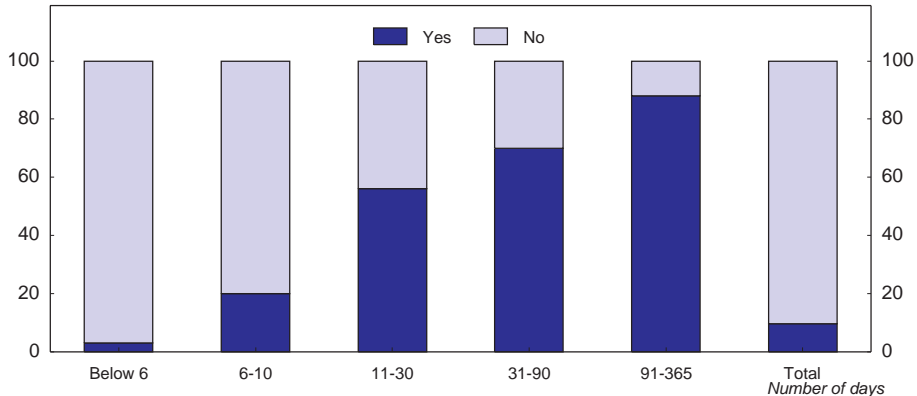
A number of factors contribute to the trends in average working hours, identified in Chapter I. Part of the explanation lies in patterns of average weekly working hours, which are closely related to effective marginal tax rates (see Chapter IV). But there are also a number of reasons why people are temporarily absent from the labour force and typically also drawing public transfers at the same time, notably due to sick leave and maternity leave.

Sick leave

Sick leave taken in Denmark corresponds to the equivalent of around 5 per cent of the labour force being absent from the workplace at any point of time, and publicly-funded sickness benefits were paid to the equivalent of around 70 000 persons (*i.e.* around 2½ per cent of the labour force) over a full year in 2001. As in most countries, almost half of the instances of sick leave last less than two weeks, the period during which payments are the responsibility of the employer. But in 2001, about 45 000 people were on sick leave for between 26 and 52 weeks, while some 15 000 were on sick leave for more than one year (Beskæftigelsesministeriet, 2003), although sickness benefit duration is notionally limited to 12 months, and municipalities must bear full costs of sickness benefit beyond that period.³³ Furthermore, under the old disability rules, some 9 per cent of those exiting long-term sick leave (more than one year) were awarded disability pensions (see above), while only around one third return to the labour market. The proportion of beneficiaries shifting into rehabilitation programmes rises markedly after one year, whereas the findings of the OECD cross-country review of disability (OECD, 2003c) point to the value of early and strenuous rehabilitation efforts in raising the likelihood of return to work. It has also been estimated that the probability of sick leave extending beyond one year actually doubles if the municipality has not carried out its obligation to follow up the case at the latest by the end of the first eight weeks (Danish Employers Federation, 2002). A further concern is that with the new disability arrangements, some of those who might previously have gained a pension may now remain on sick leave instead for much longer periods.

Clearly many sickness absences are for entirely legitimate reasons, although surprisingly few absences are supported by a doctor's certificate, even

Figure 17. **Duration of sick leave and medical certificates**
Per cent, 2002



Note: Respondents were asked whether a doctor's certificate was obtained for their most recent absence from work.
Source: Megafon (2002).

after the first 10 days of a sickness spell (Figure 17). But differences in sickness rates between sectors, municipalities and individuals could suggest some scope for gains in aggregate hours worked and savings in public expenditures (Danish Employers Federation, 2002). Sick leave is higher among employees in the public sector than in the private sector,³⁴ after adjustment for different demographic characteristics, such as gender and age.³⁵ There are also marked differences in long-term sick leave across municipalities, again after adjusting for demographic differences. Short-term sick leave also appears to be disproportionately high in the Copenhagen area for all types of work, the largest gap being for female manual workers whose rate of short-term sick leave is 50 per cent higher than in other parts of the country. Nevertheless, this apparently has very little to do with the working environment, which more than 80 per cent of Danish workers classify as "good", or with workplace accident rates, which have fallen since the mid-1990s.

Increasing the labour supply by reducing sick leave may require careful efforts, especially to avoid penalising those genuinely in need of assistance. Nevertheless, there are several steps which could be taken to tighten up the system, particularly to address the lack of follow-up and timely rehabilitation efforts. These elements could include:

- Making a doctor's certificate obligatory for receipt of public sickness benefits (*i.e.* after the first two weeks of sickness) and for the continuation of benefits after a certain interval. Using independent medical

officers to make assessments in certain cases and tightening administrative controls would help to minimise the moral hazard risk.

- Enforcing the 12-month limit and requiring the municipalities to assume full costs after a shorter period of time. This could reinforce their incentives to carry out their obligations for follow up more assiduously and to deliver better results.

Parental leave

Denmark has generous provisions for maternity leave by OECD standards, as parents have the right to the equivalent of 12 months of full-time income benefits, which can be shared between the parents, taken part time and partly postponed until the child is 8 years old. In 2002, the number of days with state-financed maternity leave benefits amounted to the equivalent of 40 000 full-time persons. While Danish arrangements have a number of attractive features, especially in terms of equity, they also have significant drawbacks (OECD, 2002d). The OECD review of Denmark's policies to reconcile work and family life concluded that paid leave should cover only a short period of child rearing and that a disproportionate amount of policy attention was accorded to leave arrangements, when the real task was to get a better balance throughout childhood. It also pointed out that long leave periods can be harmful to women's future earnings prospects, a finding reinforced by Danish research (Gupta and Smith, 2001). This analysis suggests that perhaps Denmark has gone beyond the length of time where the benefits outweigh the costs.

Summing up

Overall, there are a number of measures and options available to increase labour force participation in coming years. The main focus of attention should be on extending working life at both ends; by speeding transition from education into work and delaying exit. In a number of areas, the task of boosting employment would be made easier if stronger economic incentives made working significantly more attractive relative to drawing public income support than is currently the case. This requires making tough choices about how generous the welfare system should be. But weak economic incentives make the burden of achieving the same results through other channels more difficult. They could also indicate a degree of policy incoherence between the clear political objective and economic requirement to raise labour supply and an apparent political and public reluctance to use the most effective mechanisms available to achieve those ends. Taking all these factors into account, some recommendations are summarised in Box 1.

Box 1. Recommendations on policies to increase labour supply**Boosting employment**

- Continue to emphasise the self-reliance message, and look at ways of reinforcing it with stronger economic incentives. Reduce the effective net replacement rates for those who become unemployed in the future, for example by tapering benefits over the length of the unemployment spell. Shorten the currently long duration of unemployment insurance and increase the working time required to qualify for full unemployment insurance benefits.
- Monitor the results of the “More People in Work” strategy, and stand ready to tighten income support eligibility rules further and to impose stricter sanctions for non-compliance.

Earlier entry to the labour force

- Refocus the pedagogical objectives and content of the voluntary 10th form so that it becomes a remedial option only for those students whose academic performance impedes them from moving directly to upper secondary education.
- Consider introducing tuition fees for higher education.
- Reduce the period for which students in higher education can receive study grants and shift the balance of income support from grants towards a greater proportion of student loans. Make continued assistance more closely linked to academic performance.

Raising effective retirement age

- Abolish the voluntary early retirement benefit scheme or make it a defined-contribution scheme. Alternatively, adjust the rules to push up the effective retirement age.
- Raise the qualifying age for public old-age pension in line with projected increases in life expectancy.
- Make it easier for those on early retirement (disability) pensions to try out working and provide them greater assistance in their efforts.
- Make all disability pensions subject to periodic review, to take into account, *inter alia*, new medical and rehabilitation opportunities.

Sickness benefits and maternity leave

- Make a doctor's certificate obligatory after the first two weeks of a sickness spell in order to establish entitlement to public sickness benefits. Provide scope for independent medical assessment and tighten administrative controls to minimise moral hazard.
- Shift more of the costs of sickness benefit onto the municipalities at an earlier point in the sickness spell.
- Examine whether the costs of the long duration of maternity leave might outweigh the benefits, and consider whether some shortening might be warranted.

Notes

1. Within the ERM2, the krone's rate against the euro shall be kept within a narrow band of ± 2.25 per cent around the central rate. If the krone reaches the upper or lower limit against the euro, both the ECB and the Danish National Bank must intervene to strengthen the weaker of the two currencies, so that the exchange rate is kept within the fluctuation band. In recent years, the krone has been kept close to its central rate.
2. It should be noted that the government does have one other instrument for adjusting demand, namely raising contribution rates to the Special Pension (which is a form of compulsory private savings). However, the difficulties of getting the timing just right to successfully reduce fluctuations in economic activity rather than making matters worse also apply to using this measure. Therefore it should be used only sparingly and when action is clearly warranted.
3. In Dang *et al.* (2001), working age is defined to be 20-64 years, youth 0-19 years and elderly 65 years or above. In the remainder of this chapter, working age is defined to be 15-64 years and youth 0-14 years.
4. Therefore, a great deal of attention has been devoted to ways of shielding public finances, in particular through reforms of pension systems.
5. The Danish Rational Economic Agents Model group is an independent, publicly funded institution administratively located within the Ministry of Finance. It maintains and develops a computable general equilibrium model of the Danish economy, which applies demographic projections as a basic input. While the population projection from DREAM has been widely used in recent years, demographic projections produced by Statistics Denmark still form the basis for planning by local governments, as they include projections for individual counties and municipalities. The projections from DREAM and Statistics Denmark differ slightly in assumptions and therefore outcomes.
6. The number of individuals in each generation is very small for descendants of immigrants from LDCs. Thus, this group is assumed to have the same age-specific participation rates as descendants from MDCs.
7. The general increase in female participation has also reduced the need for men to provide for the household and thereby made temporary or permanent withdrawal more feasible for men.
8. The last effect is likely to be more pronounced in the public sector where the bulk of female entry has been concentrated.
9. A reduction in working hours is also found in most other OECD countries (OECD, 2002a). Differences in sources make the data unsuitable for comparison in level terms, but they seem to indicate that the average annual number of working hours is relatively low in Denmark.

10. Feyrer (2002) finds that countries with a large proportion of workers below 40 years of age have lower aggregate productivity levels than those with large cohorts in their 40s, whereas the proportion of the working force above 50 years is not seen to have a significant effect. The same relationship seems to hold when looking at productivity growth and changes in the composition of the workforce, *i.e.* countries with a change towards a larger part of the working force in the ages below 40 have lower aggregate productivity growth. The regressions of productivity on the population shares of different age-groups are based on panel data from a sample of all OECD countries covering five year intervals from 1960 to 1990.
11. Individual public consumption comprises expenditure that is – directly or indirectly attributable to and/or can be appropriated by individual users. This stands in contrast to public goods such as defence and security or the provision of street lighting.
12. More technically, the government should be able to satisfy its inter-temporal budget constraint, which means that current net debt cannot exceed the present value of future primary surpluses.
13. Real public service standards refer to real public consumption per user. Total real public consumption will change in parallel with the population if these standards are kept constant, and nominal public consumption per user will grow slower than wages because the price on public non-wage consumption increases less than wages. If nominal public service standards, *i.e.* nominal public consumption per user, follow wages, real public consumption per user would increase for the same reason.
14. Both the Economic Council and the Ministry of Finance incorporate “structural” increases in the labour force in their main scenarios that to some extent counteract the demographic developments. Also, the assumption of real growth (if any) in public service standards (either because nominal service standards follow wage increases, or explicit assumptions on real growth are made) can make for substantial differences in the outcome of sustainability indicators.
15. Changes in the discounting rate used to calculate net present values do not significantly affect the results.
16. This group is considered for cross-country analysis because the rules governing younger and older age groups are more difficult to compare across countries, not least because of differences in expectations about the importance or desirability of their being in work.
17. This includes unemployment benefits, social assistance cash benefits, educational support, sick leave, parental leave and early retirement (disability) benefits.
18. Once unemployment insurance entitlements have been exhausted, the long-term unemployed instead receive means-tested social assistance benefits.
19. These data include short-cycle higher education courses but not adult education.
20. In response to these issues, the Danish Government, along with the University and Counselling reform, has emphasised faster study completion.
21. Students in Denmark in 2002 were able to take out a state loan providing DKK 2 165 per month, compared with maximum monthly grants of DKK 2 103 for students living at home and DKK 4 231 for students living on their own. The interest rate is set by Parliament at a rate well below commercial levels, and loans must be repaid within 15 years of graduation or giving up study. In 1988 this scheme replaced an earlier system of student support provided as state guarantees for bank loans at more or less commercial interest rates. Most students at the time took out these loans

- and were heavily affected by the sharp increase in interest rates in the first half of the 1980s. The present scheme was explicitly intended to avoid the problems of severe debt build-up that had occurred for some students, with subsequent high default rates.
22. Pupils over 18 years of age in upper secondary education face no time limits on support, although they are required to attend classes and sit examinations.
 23. These estimates are based on 49 353 students admitted to higher education in 2001 and 29 669 students completing higher education courses up to and including bachelor's degree (Ministry of Education, 2002).
 24. Data are not available for the age group 60 to 66 years for that period.
 25. For women the effect is illustrated by a slowly falling participation rate for 60 to 69 year-olds, in contrast to a marked increase in participation for 50 to 59 year-olds over the last 25 years.
 26. This "lump of labour" fallacy was a relatively common motivation of policy around that time but is thoroughly discredited by economic analysis (see, for example, OECD 1994).
 27. The termination of the transitional early retirement benefit scheme by 1 January 1996 was announced in the autumn of 1995, which led to a massive inflow to the scheme in the last months of 1995. This is reflected in the drop of participation rates for 50 to 59 year-old men and women from 1995 to 1996.
 28. The calculation assumes that the trend decrease in age-specific participation rates for men and women during the period 1992-2001 is prolonged until 2010. The decline in participation rates in the late 1990s is to some extent due to the outflow from the transitional early retirement benefit scheme. This outflow will gradually fall and totally cease from 2007. Thus, prolonging the fall in participation rates in the last 10 years might exaggerate the underlying trend.
 29. The Economic Council estimates that abolishing the VERB scheme for 60 to 61 year-olds would reduce the required increase in the ordinary state tax rate to ensure fiscal sustainability by 1.7 percentage points (Det Økonomiske Råd, 2002a).
 30. The Swedish pension system has three separate components: the guaranteed pension for those on low or no income; the PAYG income pension where payments are determined by lifetime earnings (including transfer incomes) in a notional defined contribution scheme with returns based on the performance of the economy as a whole; and the premium pension, which is fully-funded, defined contribution and provided through market-based funds. The income pension component also has an automatic balance mechanism to ensure that the scheme remains financially sustainable. It would do this by spreading the burden of adjustment across society as a whole in a pre-defined manner.
 31. No labour market attachment or earnings history is necessary, the only requirement is a residential one.
 32. It can also be drawn by those over the age limit but still working, but only a few workers continue beyond that age.
 33. This is intended to provide an economic incentive for municipalities to make greater efforts to get people on sickness benefit back to work before that point, and they must already shoulder half the costs out of their block grants after the first four weeks (see previous *Survey*).

34. The gap is less than a day per year for state employees, more than 2 days for county employees, and around 3 days for municipality workers (Danish Employers Federation, 2002).
35. Short-term sick leave rates are marginally higher for those in the 25 to 35 years bracket than for older workers, but long-term sick leave rises significantly with age, while women tend to take more sick leave than men.
36. The measured improvement over time may also be biased upwards by those migrants from earlier cohorts who have left the country again (Edin *et al.*, 2000). More than 17 000 foreign nationals emigrated from Denmark in 2001: some 5 per cent of the stock of foreigners. Almost two-thirds were of working age, and although there were actually more foreigners from MDCs than from LDCs, those who left had a slightly lower employment rate than those who chose to stay. However, there is little further concrete information about the characteristics of those who departed or their reasons for doing so.
37. For example, the Integration Act 1999 imposed a requirement to attend a three-year introduction course (including a significant language component) on all immigrants, not just refugees, and an amendment to the Aliens Act in May 2000 tightened the rules on family reunification.
38. For example, Australia, Canada, New Zealand and the United States all operate quotas for total immigrant flows or for certain categories. In France and Japan, some immigrants are granted residence permits but are not permitted to work or face restrictions on the work they may do.
39. This assessment was in part based on a reappraisal of the extent to which the mere act of seeking asylum in another country put them in danger in Iraq, and of the consequences of refusing military service.
40. The United Kingdom has also operated a programme of voluntary assisted returns since early 1999. Most of those who have availed themselves of this facility were still working their way through the asylum process at the time. An evaluation by Deloitte and Touche found that this approach provided clear financial and human benefits, especially for those who would have been refused leave to stay at the end of the asylum process (see United Kingdom Home Office, www.homeoffice.gov.uk/rds).
41. Two ethnic groups stand out for such family reunification: Turks and Pakistanis, where some 80 to 90 per cent of young people marry someone from outside the country and seek to bring them to Denmark.
42. For example, the United States operates a significantly more generous policy towards family reunification, while Austria operates a quota for family reunification for those who arrived since the beginning of 1998 that is limited to the spouse and unmarried minors. Those who settled in Austria before 1998 may only bring in their spouse and children under the age of 14 years. The family member is not allowed access to the labour market until after four years residence, and even then, it is not automatically granted. In Canada, the family class includes grandparents as well as dependent children, but it does not include fiancés, who have recently been moved to the humanitarian and compassionate category to allow for more detailed scrutiny and avoid abuse of this provision.
43. This scheme provides for foreign, highly paid employees to pay 25 per cent gross income tax instead of normal (higher) rates of taxation on earned income, for a maximum of three years. The expert may choose to remain in the country for up to four more years, under normal tax rules.

44. Contributions are required for unemployment insurance, although workers overseas can still be members of an unemployment fund. Access to cash benefits is now restricted to those who have been in the country for seven out of the previous eight years.
45. However, it should be noted that the government has also been working actively on addressing the elimination of all forms of discrimination on grounds of racial or ethnic origin. The government is working towards introducing legislation to implement the EU directive on equal treatment irrespective of race or ethnic origin, based on recommendations prepared by a committee set up in May 2001 by the then Minister of the Interior. In May 2002 the Danish Parliament adopted the Act that established the Danish Centre for International Studies and Human Rights, whose tasks include the promotion of equal treatment and which can publish independent reports. Awareness campaigns were also conducted within the context of the UN Year against Racism in 2001.
46. It not only provides financial independence, but also can provide valuable work skills and experience together with greater opportunities to mix with Danes and acquire language and customs (Husted *et al.*, 2001).
47. Although these workers are relatively poorly paid by host-country standards, for migrants the alternative is returning home to even less attractive economic prospects. A separate issue is the extent to which these immigrants have driven down wages for low-skilled native workers, although the evidence suggests this impact is over-stated. For example, Friedberg and Hunt (1995) find that a 10 per cent increase in the fraction of immigrants in the population reduces native wages by at most 1 per cent.
48. In the United States some 20 per cent of jobs pay less than two-thirds of the median hourly wage and 30 per cent pay less than three-quarters of the median wage (Economic Policy Institute website).
49. One study of black market activity in Denmark found that it was primarily being undertaken by young, skilled males, including students and involved on average less than 3 hours per week for each person engaged in such activity (Pedersen, 1998).
50. For example, 25 per cent of Pakistani and 8 per cent of Iranian and Turkish family-owned businesses are small-scale supermarkets, kiosks, etc, compared with less than 0.5 per cent for Danes (Bager and Rezaei, 2001).
51. This phenomenon can also be seen for Pakistani migrants to the United Kingdom (Clark and Drinkwater, 1999), where the self-employment rate is almost 30 per cent for those over 35 years old and almost 40 per cent for those aged 16 to 24 years.
52. Part of the difference can be explained by the average age difference, since amongst descendants there is a bulge at the younger end of the age group.
53. See, for example, a number of studies cited in H.S. Nielsen *et al.* (2002).
54. Jakobsen and Smith (2002) found that an additional five years of education for mothers (the equivalent of raising Turkish mothers' levels to those of ex-Yugoslavian mothers) would increase the probability of formal education by 10 percentage points for young women and 5 percentage points for young men. A very positive attitude to education among parents increases the probability by 18 percentage points for men and 31 percentage points for women.
55. For each year that marriage is postponed in the sample that Jakobsen and Smith (2002) examined, the probability of completing education rose by around 2 percentage points for men and 3 percentage points for women.

56. In contrast, already in the early 1980s, some 25 per cent of Mexican American marriages in California were mixed, and this rate had risen to 50 per cent by 1997 (Duignan, 1998).
57. For example, English proficiency has been shown to have a significant impact on both employment probability and earnings in both the United Kingdom and the United States (Dustmann and Fabbri, 2000), while speaking Swedish well has been shown to increase chances of getting a job in Sweden (National Board of Health and Welfare, 1999). It is worth noting that for the United Kingdom it was found that verbal skills boosted employment prospects only slightly, while writing abilities make about three times as much difference. Language proficiency makes a difference to earnings as well, although the effect seems to be stronger in the United Kingdom than in the United States, Canada or Australia, while in Germany the difference is slight.
58. In contrast, a study for the United Kingdom, where language skills were also assessed by the interviewer, 78 per cent of immigrants arriving before the age of 10 years old, and 24 per cent of those arriving after the age of 24, were fluent. Among different minority groups, Pakistanis had the weakest language performance (Shields and Wheatley Price, 1999).
59. Bilingual education involves providing some proportion of the instruction in subjects other than Danish language in the student's home language.
60. In the United States, the question has become highly politicised and closely intertwined with the objective of preserving ethnic cultures as well as an issue for educational attainment (Duignan, 1998).
61. The rationale for home-language teaching has also varied between countries and over time, including: facilitating the return home of guest workers' children; recognition of separate cultural identity; building minority children's self-esteem and sense of security; and cognitive benefits of bilingualism.
62. The rest of this housing is allocated by the housing association itself.
63. This would be the result if a shift to market-based rents removed the incentive for people to hang on to good quality, larger flats, on which they pay cheap rents. This would boost turnover, and a greater supply of available accommodation would reduce market prices.
64. Average hourly wages for refugees in 1995 were 18 per cent lower than for Danes and for immigrants from Africa, Pakistan and Turkey, earnings were still 14 to 15 per cent lower than for Danes (Husted *et al.*, 2001).
65. For refugees, early and firm attachment to the labour market is a critical determinant of future wages; although their wage levels are much lower at the outset, they climb more steeply than Danish wages if firm attachment is obtained within 10 years of arrival. But because such attachment is difficult for refugees, average wages remain low. Indeed, the probability of a male refugee finding employment starts to fall after 10 years in Denmark and more sharply so after 20 years, although this may also be an age effect.
66. In addition to the tax freeze, a nominal ceiling on increases in land taxes (taxes levied on land, whereas property value tax is levied on owner-occupied houses) has been introduced. Previously, land tax payments to municipalities and counties would follow adjustments of the land value, given unchanged tax rates. By imposing a ceiling on the increase in the land value used when calculating the tax payment, landowners are protected against rises in land tax payments that substantially exceed their income growth. However, it also means that a fall in land values will not reduce land tax

payments, if the ceiling has previously been binding. Therefore, the scheme provides a smoothing of land tax payments, but it does not erode the tax base, as is the case for the nominal ceiling on the property value tax.

67. In principle, the tax freeze is binding only for the current government, which – if re-elected in 2005 (at the latest) – will have to agree on a new programme. The tax freeze is implemented until 2010 in the government's medium-term survey and in the fiscal sustainability calculations. The tax freeze in itself lowers tax revenue by $\frac{3}{4}$ per cent of GDP (at the 2002 level) by 2010. It implies a permanent net revenue loss of 0.6 per cent of GDP when converted into a fixed annual amount (net present value) in 2003, compared with a scenario where excise taxes, etc., are indexed to prices.
68. The freeze does not imply that the overall tax burden will always decrease from one year to the next because increases in tax bases could exceed nominal GDP growth.
69. In theory, changes in consumption taxes (including excise duties) and labour income taxes affect the optimal labour supply decision for an average individual in a fairly similar manner. However, lower consumption taxes benefit everybody and will thus imply a certain deadweight loss. Also, income tax is progressive and the marginal excess burden rises sharply as the marginal tax rate increases. If the same reduction of tax revenue was applied to labour income, the labour supply effects would most definitely be larger. Also, it could be argued that individuals are more likely to react to clearly visible increases in their pay check than to lower increases in prices (due to the constant nominal excise taxes) on a number of goods, which to the broad public are not obviously identified. Joumard (2001) concludes that EU countries in general would gain by shifting from (relatively high) labour taxes to taxes on consumption and/or property.
70. Such manipulation can be constrained by strict application of Generally Accepted Accounting Practices (GAAP) for the public sector, along with a strong, independent auditor, such as operates in New Zealand.
71. See OECD (2002f) for a thorough description of the relations between central and local governments.
72. The bill giving the Minister for the Interior and Health legal authority to enforce sanctions on counties was passed by Parliament in February 2003. The government has announced that a similar bill concerning municipalities will be presented if a breach of the tax freeze occurs at the municipality level. The sanctions are therefore described as applying at both the county and the municipality level.
73. The sanctions scheme was not subject to formal game-theoretic testing (which could be very complicated) before its introduction.
74. See OECD (2002f) for a detailed description of the income tax system in Denmark.
75. The Economic Council has found that increases in the top state tax threshold provide most "value-for-money": their self-financing degree is somewhat higher than that found by the Ministry of Finance (Det Økonomiske Råd, 2001). The quantitative differences can be attributed to differences in methods and data, the most crucial difference probably being the financing rule and the applied income distribution (see Finansministeriet, 2002c).
76. By the period 2008 to 2012, the government projects emissions of 80 million tonnes of carbon dioxide equivalent, against a burden-sharing target of 55 million tonnes. Of the projected total, 10 million tonnes is the result of growth in electricity exports and 5 million tonnes represents a rebound from the abnormally low level of emissions in 1990.

77. The availability of hydroelectricity in the Nordic countries was particularly high in 1990, boosting Danish imports of electricity and reducing domestic emissions in that year.
78. For the wind industry, previous subsidies have resulted in the industry being able to make significant technological progress that has lowered generating costs.
79. A cross-ministerial working group reached a different conclusion in 2001. The government has launched a new working group to reconsider the welfare benefits of investments in renewable energy and the benefits of other environmental instruments.
80. Together these requirements were known as the "Public Service Obligation" (see previous *Survey*).
81. High efficiency cars are those that consume less than 4 litres of fuel per 100 kilometres.
82. Cordon pricing requires payment for entry into certain zones that are, on average, highly congested. Congestion (or road) pricing takes into account where and when a car is being used and the extent of congestion at that point.
83. In 2001, there were 14 trades involving 0.5 million tonnes of CO₂. In 2002, permit trading was also weak, but one electricity company swapped Danish permits for UK permits, as the latter can be rolled forward to years beyond 2003. The market price for these permits was EUR 14.4 per tonne of carbon in 2001 and fell to EUR 10.4 in 2002 (Natsource, 2002).
84. The tax rates were DKK 11 per kg of biochemical oxygen demand equivalent (EUR 1.48), DKK 20 per kilogram of nitrogen (EUR 2.69), and DKK 110 per kilo of phosphorus (EUR 14.78).
85. Such an instrument places a tax on the nitrogen that does not leave agriculture in the food chain, staying either as excess nitrate in the soil or animal manure. The nitrogen content of each type of output is constant so that the appropriate rebate can easily be established.
86. Almost half of all waste is generated by power plants, sewage plants and construction. Such waste materials are reused on a commercial basis, though the waste tax and regulations introduced in 1995 have reduced the proportion of such waste going to landfill from 15 per cent in 1994 to 8 per cent in 2000.
87. Life-cycle analysis attempts to calculate the extent of pollution embodied in a given product, adding the pollution caused by the production process, the delivery process and other environmental impacts. One problem with this analysis is that a number of environmental externalities are already internalised in the market price of a product, either through regulations or taxation. With the advent of greenhouse gas trading in the EU, a further externality will be internalised, lessening the need for life-cycle analysis.

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BASIC STATISTICS OF DENMARK

THE LAND

Area (sq. km)	43 094	Population of major cities, 2002, thousands:	
Agricultural area (sq. km) (1997)	26 470	Copenhagen	501
		Århus	289
		Odense	184
		Ålborg	162

THE PEOPLE

Population, 2002, thousands	5 368	Total employment, 2002, thousands	2 772
Number of inhabitants per sq. km	123	By sector:	
Population, annual net natural increase (average 1997-2001, thousands)	7.7	Agriculture	100
Natural increase rate per 1 000 inhabitants, 2001	1.3	Industry	435
		Construction	166
		Market services	1 084
		Community, social and personal services	987

THE PRODUCTION

Gross domestic product, 2002:		Gross fixed capital formation, 2002:	
Kr billion	1 358.3	Kr billion	270.6
Per capita (US\$)	32 092	Per cent of GDP	19.9
		Per capita (US\$)	6 394

THE GOVERNMENT

Public consumption, 2002, per cent of GDP	26.1	Composition of Parliament:	Number of seats
General government current revenue, per cent of GDP	56.5	Social Democrats	52
Public gross fixed capital investment, per cent of GDP	1.8	Liberals	56
		Danish People's Party	22
		Conservatives	16
		Socialist Peoples's Party	12
		Social Liberals	9
		Left Alliance	4
		Christian Democrats	4
		North Atlantic	3
		Other	<u>1</u>
		Total	179
Last general elections: 20.11.2001		Next general elections: 20.11.2005 (at the latest)	

THE FOREIGN TRADE

Exports, 2000		Imports, 2000	
Exports of goods and services, per cent of GDP	44.2	Imports of goods and services, per cent of GDP	38.3
Main merchandise exports (per cent of total):		Main merchandise imports (per cent of total):	
Agricultural products	9.9	Intermediate goods for agriculture	2.4
<i>of which:</i> Products of animal origin	8.1	Intermediate goods for other sectors	40.8
Manufactured products	75.8	Fuels and lubricants	4.3
<i>of which:</i>		Capital goods	14.4
Machinery and instruments	27.8	Transport equipment	5.9
Other manufactured products	48.0	Consumer goods	28.3
Other products	14.3		

THE CURRENCY

Monetary unit: Krone		Currency units per US\$:	
		Year 2002	7.884
		April 2003	6.831

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

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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The economic situation and policies of Denmark were reviewed by the Committee on 23 April 2003. 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 7 May 2003.

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The Secretariat's draft report was prepared for the Committee by Deborah Roseveare, Martin Jørgensen and Richard Herd under the supervision of Peter Jarrett.

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The previous Survey of Denmark was issued in February 2002.