FINANSMINISTERIET

Working Paper no.: 16/2005

Title: Two decades of structural reform in Denmark: a review[1]

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Abstract

Outside observers are often intrigued by how Denmark manages to sustain one of the highest employment and GDP per capita levels in the OECD, while collecting some 50 percent of gross domestic income in taxes and providing generous welfare support, including access to early retirement and unemployment compensation rates of up to 90 percent of previous income. The answer seems to be, in part, that potential adverse incentive effects of high tax and transfer rates are off-set by: (i) flexible labour market institutions, including low employment protection and relatively flexible wage institutions; (ii) active labour market policies, testing the availability for work of the unemployed effectively; (iii) welfare institutions that raise labour supply, notably among women, e.g. subsidized child care; (iv) fairly competitive product markets with little direct state interference; and (v) an education system, which – although a potential problem area in future – has met the trend increase in demand for skills.

This paper reviews the process of structural reform in Denmark over the last two decades. Denmark entered the 1980s with dismal macroeconomic performance: high and rising unemployment and inflation, chronic current account deficits rooted in insufficient private savings, and mounting public deficits. The reform efforts in the 1980s focused on restoring macroeconomic stability and healthy savings balances. In the 1990s, the focus shifted to the labour market. Reducing unemployment benefit rates proved politically unpalatable, but alternative ways were found to strengthen work incentives. Unemployment was also temporarily curbed in the mid-1990s through various leave schemes, but access to those schemes has subsequently been closed off or tightened significantly.

[1] This paper provides a broad-sweeping overview of the Danish reform experience aimed at the policy-oriented reader. It is in large part inspired by Callesen (1997). An earlier version of the paper was presented at the Österreichische Nationalbank's 32nd Economics Conference, 2004, and is available in the conference volume. The views expressed are those of the authors alone and not necessarily those of the Danish Ministry of Finance.

1. Introduction

In an international perspective, Denmark (and Scandinavia's) economic performance is notable for combining a still-generous welfare state and high income equality with a fairly strong labour market performance, high living standards and reasonably healthy growth. At the same time, the total tax pressure is among the highest in the world, close to 50 percent of GDP, and the number of transfer recipients is high. In 2003, more than 20 percent of Danes of working age (internationally defined as 15-64 years) received some sort of transfer income, a figure boosted by more people being in early retirement or on disability benefits than there are unemployed.

Figure 1a. Employment, per cent of population aged 15-64 years, 2003

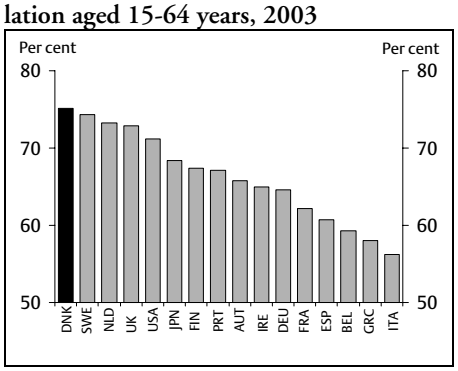


Figure 1b. Unemployment rate, 2003 (harmonized)

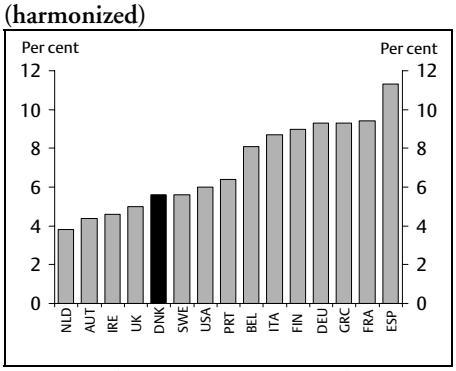


Figure 1c. GDP per capita, 2003

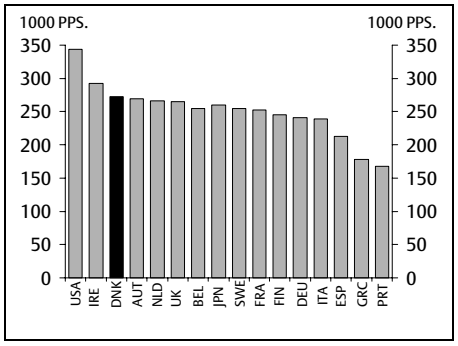
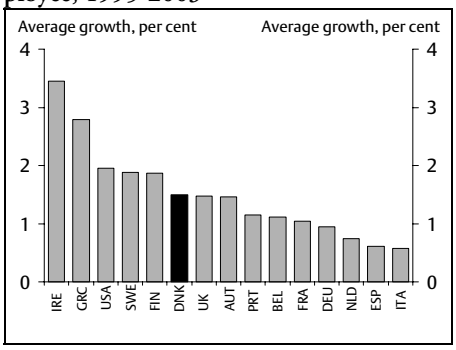


Figure 1d. Productivity growth per employee, 1995-2003



Source: OECD Employment Outlook 2003 and European Commission

The employment rate is among the highest in the EU15-countries, the U.S. and Japan*, cf. figure 1a*. The unemployment rate stood at some 5½ pct. in 2003, a good deal below that of most EU15 countries and lower than the U.S., *cf. figure 1b*. In purchasing power terms, GDP per capita is among the highest in the

EU15, *cf. figure 1c*[2]. Productivity growth per employee since 1995 exceeds the EU15 average, but has fallen behind the strong performance of the U.S. and some of Denmark's Scandinavian neighbours, namely Sweden and Finland which both have a strong(er) presence in IT-sectors, *cf. figure 1d*. Whereas countries more specialized in IT sectors tend to exhibit higher productivity growth, they also tend to experience terms-of-trade losses. Corrected for terms-of-trade shifts and cyclical variations, growth of living standards has kept up with e.g. Finland, as measured by "command GDP" per capita or per hour worked.

Meanwhile, income inequality is among the lowest in the OECD, and the public expenditure ratio among the highest. Policies continue to emphasize high public service standards and avoiding poverty.

Public and private savings are high in an international comparison, providing both for a high level of private gross fixed investment and a sizeable current account surplus (i.e., total national financial savings), *cf. table 1*.

Table 1. Total, real and financial savings , 2002

	DK	Euro area	USA	Sweden	UK
	---------- Percent of GDP ----------				
Total savings	22,9	21,3	14,0	21,2	14,5
- of which private	19,6	21,0	14,0	17,2	14,6
- of which public	3,3	0,3	0,0	4,1	-0,1
Total investment	20,8	20,2	18,6	17,1	16,3
- of which privatee	19,1	17,6	15,2	14,1	14,9
- of which public	1,8	2,6	3,4	3,0	1,4
Total financial savings	2,1	1,1	-4,6	4,1	-1,8
- of which private	0,5	3,3	-1,2	3,1	-0,3
- of which public	1,6	-2,3	-3,4	1,1	-1,5

Source: OECD, *Economic Outlook 74*, 2003, and Statistics Denmark.

The generally favourable employment and savings performance owes much to a long sequence of structural reforms that helped turn around the economy from a dismal position in the 1970s. The reforms have focused on

[2] The gap with the U.S. largely reflects fewer annual hours worked per employee, and so does not imply a similar gap in welfare. Fewer hours worked may reflect different preferences over leisure vs. consumption as well as, e.g., weaker work incentives at the margin from high marginal taxes.

strengthening private and public savings and improving the functioning of labour and product markets[3].

In political economy terms, labour market reforms gathered pace when policymakers moved beyond the traditional efficiency vs. equity debate, with its strong ideological overtones, to find ways of combining these objectives. In particular, generous welfare support systems are maintained for those that qualify, while disincentives are alleviated e.g. by restricting access to benefits and testing availability for work effectively. The tax system has been reformed to reduce marginal tax rates despite a slight increase in the total tax-to-GDP ratio since the mid-1980s – although marginal taxes remain high.

A fairly wide political consensus has also formed behind the objective of running sustainable fiscal (and structural) policies in view of the prospective financial pressures related to ageing. The government's so-called 2010 strategy is focused on running public surpluses to reduce public debt and increasing employment through structural measures. The required adjustment in terms of fiscal measures and/or structural reform to ensure a stable long-run debt path is, on available estimates, moderate compared to most EU countries and the U.S., *cf. Frederiksen (2003, 2004)* and *Economic Policy Committee (2003).*

2. Historical policy challenges and the timing of major policy initiatives

Denmark entered the 1980s in an unfavourable macroeconomic position. As in the rest of the EU, unemployment and inflation had risen from very low levels in 1972 to double-digit ranges in 1982, with Denmark experiencing a larger deterioration than the EU average. Long-term interest rates had soared to above 20 percent under the impact of high foreign rates and low credibility of the exchange rate parity after repeated krone devaluations in 1979-82.

Denmark also had a seemingly chronic current account imbalance with an uninterrupted 30-year run of deficits. The imbalance was rooted in tax incentives to borrow and, from the mid-1970s, mounting public deficits. Under the impact of rising unemployment and high interest rates, the government deficit reached 9 percent of GDP in 1982.

[3] In this paper, "structural reform" refers not only to measures that raise potential output and reduce rigidities, e.g. in labour markets, but also to changes in tax and pension systems that impact savings and investment incentives. Readers interested exclusively in labour (and product) market issues may skip directly to section 4.

Figure 2a. Inflation and nominal long-term interest rates

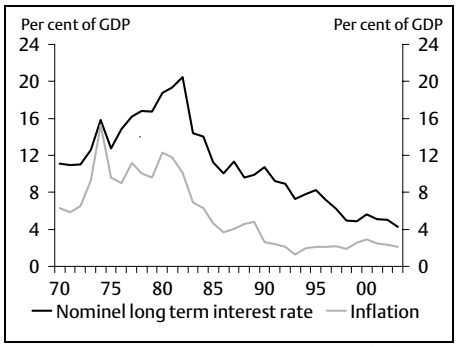


Figure 2b. Unemployment, Denmark and the euro area

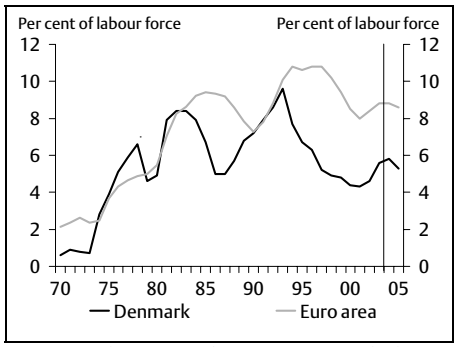


Figure 2c. Current account balance, Denmark and the euro area

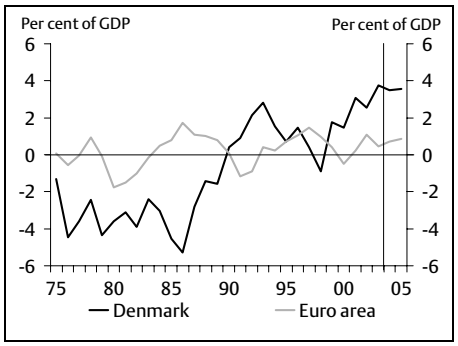
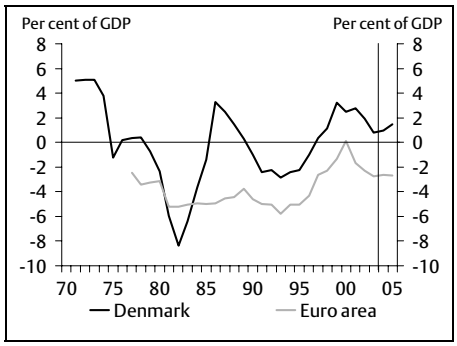


Figure 2d. General government balance, Denmark and the euro area



Source: Statistics Denmark, European Commission, and OECD.

Against this unfavourable background, Denmark has had four major stabilization policy adjustments since the early 1980s, namely:

- The introduction of the fixed exchange rate policy in 1982 backed by strong fiscal tightening and the abolition of wage indexation.
- The 1986 "potato diet" and 1987 tax reform to redress overheating pressures and external imbalances by strengthening private savings.
- The "kick start" of 1994 to promote recovery and reduce unemployment.
- The "Whitsun package" of 1998 to prevent overheating and strengthen savings.

The timing of these policy shifts reflected major imbalances in the economy in the shape of sizeable output gaps, *cf. figure 3a*, or substantial savings-investment imbalances *(figures 2b and 2c)*.

Figure 3a. Output gap and the timing of major stabilization initiatives (grey areas)

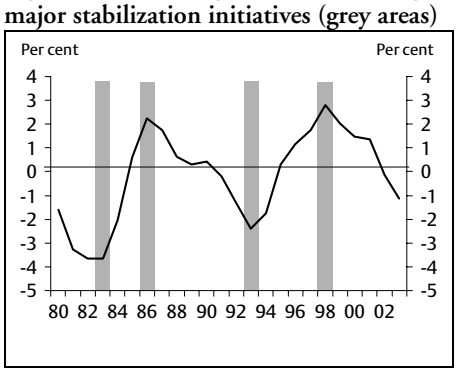
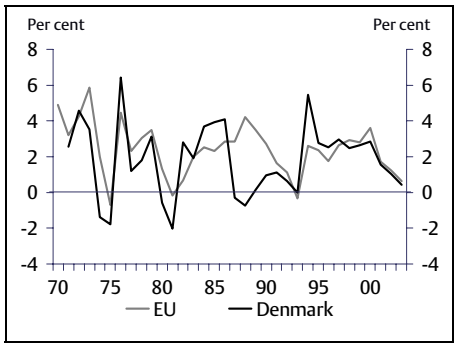


Figure 3b. Real GDP growth, Denmark and the EU



Source: Statistics Denmark, EU-Commission and own calculations

The turnaround was initiated with the introduction of the fixed exchange rate policy backed by strong fiscal tightening from late 1982 onwards. This episode has been labelled an example of "expansionary fiscal tightening", *cf. Alesina and Perotti (1995)* and others. The fiscal contraction was more than offset by an exceptional decline in long-term rates from 20 percent to 10 percent within three years and a rebound in confidence. Consequently, the Danish economy boomed in 1983-86 at a faster pace than the rest of the EU, and the business cycle deviated significantly from the EU average in the mid-1980s, *cf. figure 3a-b*.

As private consumption and investment soared, the current account deficit widened to a record 5 percent of GDP in 1986, and wage inflation accelerated. In response, the "potato diet" of 1986 consisted largely of administrative credit market tightening, particularly in the mortgage credit market (restricting top-up loans, repayment profiles on new loans, etc.). The tax reform of 1987 lowered the tax value of interest deductions to boost savings. The measures had a strong contractionary effect on private consumption and the housing market. To help restore competitiveness, employers' social security contributions were sharply reduced in 1988, fully financed by a 2.5 percentage point increase in (effective) VAT rates, akin to an "internal devaluation".

As the ensuing slump in domestic demand was prolonged by high interest rates in the aftermath of German reunification, growth was meagre and unemployment climbed until 1993. But as foreign interest rates came down and EU growth picked up, the economy revived in 1994. Helped also by the "kick-start" fiscal stimulus, the dismantling of earlier credit measures, and a wave of mortgage refinancing, growth reached 6 percent in 1994.

The crisis atmosphere associated with climbing unemployment through 1993 may have helped create a preparedness for labour market reforms, yet it was the subsequent period of rapidly falling unemployment that was the most active in terms of implementing reforms (see below).

When policy tightening became necessary in 1998 to prevent overheating, the "Whitsun package" mainly took the form of additional reductions in the tax value of interest deductions and mandatory pension savings of 1 percent of income.

Further credit market liberalization has taken place with the introduction of variable rate mortgages and, as of 2003, mortgage loans free of repayment for up to 10 years (which may be rolled over). These new and flexible borrowing instruments have provided substantial support to house prices and private demand during the renewed upswing in 2004.

With changes to the tax value of interest rate deductions and credit market policies heavily influencing domestic demand, demand management has not been restricted to (traditional) fiscal policy, even though monetary policy is bound by the fixed exchange rate. Moreover, traditional fiscal policy has, in contrast to many other EU countries, played a counter-cyclical role. The model-simulated impact of discretionary fiscal policies has, for the most part, been positive during cyclical downturns and restrictive during upturns, *cf. figure 4.*

Figure 4a. Simulated first-year impact of fiscal policy and the output gap

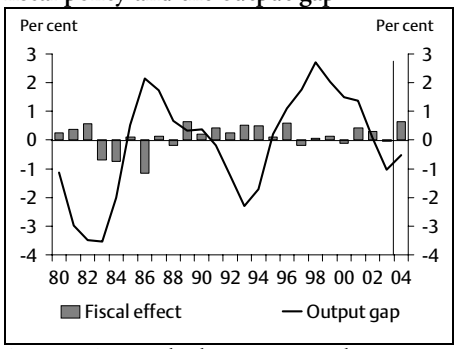
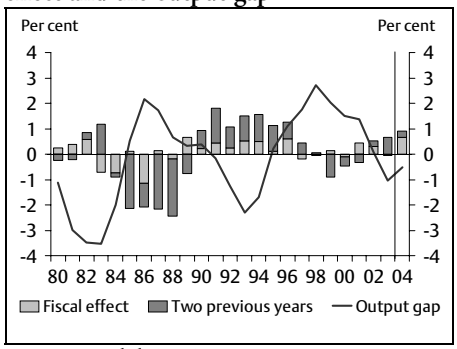


Figure 4b. Three-year cumulated fiscal effect and the output gap



Source: Own calculations using the macroeconomic model ADAM.
Note: The fiscal effect is a model-dependent simulated impact on GDP of discretionary fiscal policy changes relative to a defined neutral path for fiscal variables.

3. Policies to strengthen national savings

Private savings incentives
The chronic savings deficits up to the mid-1980s were largely rooted in three structural factors: the tax treatment of interest payments, the tax-financed pay-as-you-go pension system, and the tax treatment of investments. Policies to deal with each of these aspects were enacted from the mid-1980s.

Until 1987, the tax value of interest deductions depended on the marginal income tax rate, which at the time could be up to 73 percent[4]. The tax value was subsequently reduced through a series of tax reforms agreed in 1987, 1994 and 1998. The tax reform of 1998 reduced the tax value of interest expenditures to its current level of 33 percent, phased in during 1999-2001. These changes have raised the real after-tax rate faced by households despite a decline in pre-tax real interest rates, *cf. figure 5a.*

Table 2. Important tax rates affecting savings, 1980-2007

	1980	1986	1993	1998	2002	2004
	---------- Pct. ----------					
Maximum tax value of interest deductions	68,8	73,2	52,2	46,4	33,3	33,3
Tax on return of private pensions	0,0	44,1	50,1	35,8	15,0	15,0
Corporate tax rate	40,0	50,0	34,0	34,0	30,0	30,0

Denmark has a tax-financed pay-as-you-go pension system with universal coverage. However, the pension replacement levels (relative to previous income) are fairly modest in comparison with many EU-countries. The pay-as-you-go system is complemented by tax-favoured individual retirement savings accounts, by collectively agreed labour market pensions, and by mandatory (legislated) labour market pensions. These schemes are based on actuarial principles with a clear link from individual contributions to future pension rights. The widely perceived need to top up moderate state pensions with personal pension savings underpins incentives to work and save.

In the late 1980s, private pension savings covered about one third of the labour force, mainly white-collar workers. Subsequently, a gradual build-up of supplementary pension schemes has taken place for almost the entire labour market. The decisions to build up labour market pensions were taken

[4] The very high income tax rates in Denmark should be seen in conjunction with the near-absence of payroll taxes. The total tax wedge between wage costs to the employer and the net wage of employees is reviewed in *section 6.*

by the labour market parties themselves in the context of collective bargaining agreements. Individual retirement accounts are also widespread.

Notwithstanding the introduction of a tax on pension returns (see below), the tax treatment of pension savings remains preferential to other savings. There reduced tax subsidy does not appear to have restricted the build-up of private pensions savings significantly, *cf. figure 5b*.

The build-up of collectively agreed and mandatory labour market pensions presumably contributes to higher total private savings, though they may partly substitute for other individual (pension) savings. Particularly households with short planning horizons and households at a point in their life-income cycle, where they do not wish to save for pensions, may save more than otherwise[5].

Figure 5a. Real after-tax interest rates faced by households

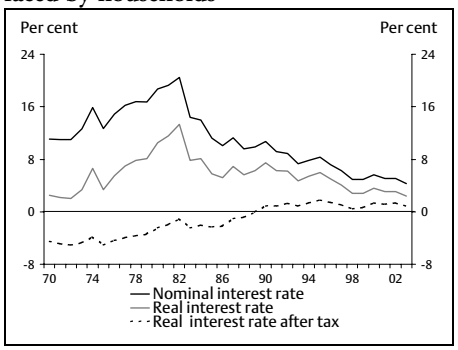
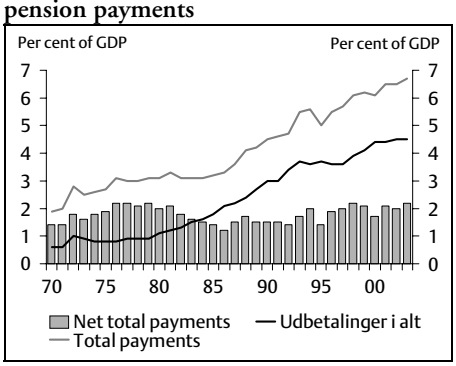


Figure 5b. Pension contributions and pension payments



Source: Statistics Denmark, EU-Commission and own calculations

Formerly generous depreciation rules for investment expenditure reduced the efficiency of investment, and distorted the relative price between the production factors capital and labour. Depreciation rates have been reduced, and the tax base for company taxation broadened, which has allowed a reduction in company tax rates, *cf. table 2*.

[5] This applies to households that cannot easily offset mandatory pension savings by running down liquid asset holdings or take reasonably-priced loans, including many first-time house owners and many who live for rent. As liquidity constraints ease over time for such households, their savings may decline relative to a counterfactual with less mandatory saving. New generations of constrained households may offset this decline.

Strengthening public savings

As the rise in unemployment due to adverse economic shocks during the 1970s and early 1980s interacted with still unreformed Danish institutions, high unemployment increasingly turned out to be of a structural nature. High interest rates also made for a rapidly rising debt service burden, and fiscal policy had to be tightened to arrest the build-up of debt.

Much of the movement in the actual budget balance over the last two decades reflects changes in the (estimated) structural budget balance, *cf. figure 6a*. Discretionary fiscal tightening was key to the sharp improvement in the structural balance in the mid-1980s, partly through tighter control of public consumption from 1982 to 1992, *cf. figure 6c*. Since 1995, however, most of the (estimated) improvement in the structural budget balance has come from the reduction in structural unemployment, *cf. figure 6b*.

Figure 6a. Actual and structural general government balance, 1980-2003

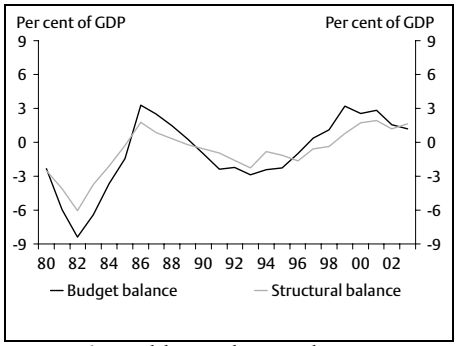


Figure 6b. Contribution of lower structural unemployment to improvement in the structural balance since 1995

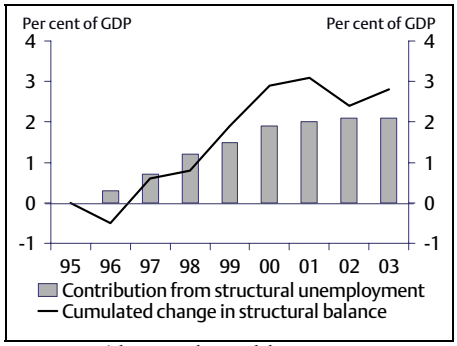


Figure 6c. Public outlays and receipts as a share of GDP

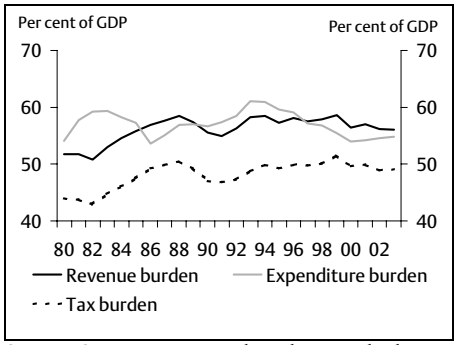
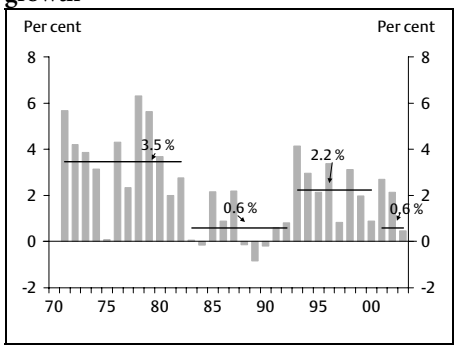


Figure 6d. Real public consumption growth



Source: Statistics Denmark and own calculations

The total tax-to-GDP ratio also increased during the 1980s and1990s. An important contribution to fiscal consolidation came from the introduction of a tax on investment income in the private (and semi-public) pension funds and life insurance companies as of 1983. Still around 50 percent, the tax ratio has eased down in recent years, helped by the current government's institution of a tax freeze from 2001.

4. Key features of the Danish labour market

The Danish labour market is characterized by relatively generous unemployment benefits combined with active labour market policies, relatively stringent availability-for-work requirements and liberal firing rules. These institutions, together with generally strong basic schooling and fairly high educational attainment levels, contribute to a highly adaptable labour force, with job turnover among the highest in the world. Today, government involvement in wage setting is minimal, with no legislated minimum wage, and wage negotiations are predominantly decentralized.

Unemployment benefits

Unemployment benefits are generous for low-income individuals covering up to 90 percent of previous income – the highest rate in the OECD. Benefits are capped at a maximum, however, which corresponds to roughly 60 percent of average wage income (of the employed – a little higher for the average of displaced workers). Hence, only 10-15 percent of the unemployed receive benefits at the 90 percent compensation rate. For high-income individuals, benefits are less generous than in some EU15 countries. Benefits are not reduced over the course of the unemployment spell and the maximum duration of four years is fairly long. Total compensation is the highest in the OECD when measured over a five-year period[6], *cf. figure 7*.

[6] The OECD summary measure of gross replacement rates over a five-year period does not include cases, where the unemployed become entitled to a new benefit period after participating in an ALMP program (as they do in some countries). Hence, the effective period of obtainable benefits may be longer than indicated by the OECD measure. Also, in Denmark, activation periods are counted in the duration of unemployment but may not do so in other countries. These factors impede international comparisons using the OECD summary measure and statutory maximum durations.

Figure 7a. Gross replacement rates, average over five years, 1999

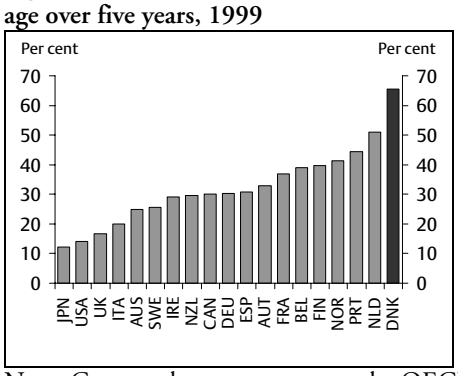
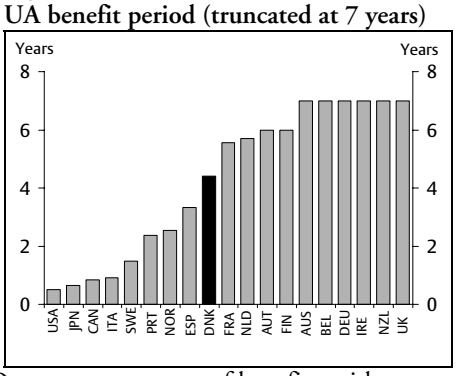


Figure 7b. Maximum duration of UI plus UA benefit period (truncated at 7 years)



Note: Gross replacement rates are the OECD summary measure of benefit entitlements. For Italy, the figure relates to the Mobility Benefit. The maximum duration is the sum of the maximum duration of unemployment insurance (UI) and unemployment assistance (UA) benefits. The duration is truncated at 7 years when the period is unlimited.
Source: OECD, *Benefits and Wages*, 2002.

The potential adverse incentive effects from generous benefits may, however, to some extent be counterbalanced by relatively tight "availability-for-work" requirements for the unemployed, cf. *figure 8a*.

Figure 8a. Tightness of availability-for-work requirements, 2004

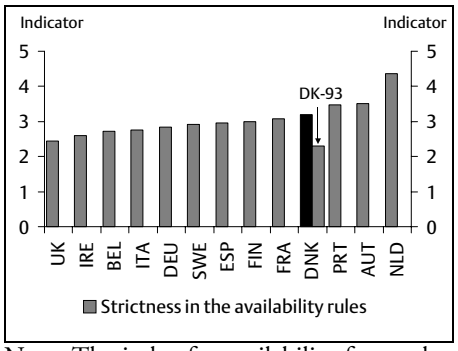
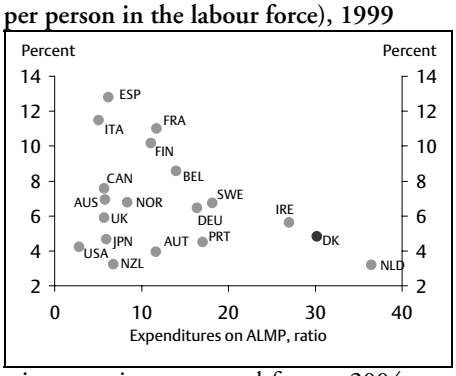


Figure 8b. Unemployment rate and ALMP expenses per unemployed (relative to GDP per person in the labour force), 1999



Note: The index for availability-for-work requirements is constructed from a 2004 survey conducted with the cooperation of the Labour Market Working Group under the EPC and non-EU country experts. The index covers requirements mandated by law.
Source: OECD, and Hasselpflug and Thorball (2004).

Active labour market policies (ALMP)

Among EU15 countries, Denmark spends the second highest share of GDP on ALMP when measured relative to the level of unemployment, cf. *figure*

8b. The extensive focus on ALMP has several objectives. First, ALMP is – if suitably implemented – skill enhancing either through formal education or on-the-job training. Second, ALMP may – if well-directed – alleviate bottlenecks in the labour market. Third, and perhaps most importantly, ALMP can be an effective way of testing availability-for-work. Participation in active measures is required already after 6 or 12 months of unemployment, depending on individual circumstances. ALMP may be at least as important in this respect as formal availability-for-work requirements, cf. *section 5.1*.

Flexible institutions and an adaptable work force
The level of employment protection legislation (EPL) is low compared to most EU countries, *cf. figure 9a.* Consequently, companies may be less hesitant to take on new hires. Turnover in the labour market is high, with Danish workers changing jobs more often than in other countries for which data are available, *cf. figure 9b*. Liberal firing rules may help companies adjust flexibly to structural change and reduce insider power in wage-setting. More job openings associated with easy hiring and firing reduce the likelihood of job-seekers being trapped in long-term unemployment. Across EU15 countries, low EPL is correlated with low long-term and low structural unemployment, *cf. figure 9c* (Portugal being a much-noted exception).

High turnover does not appear to prevent comparatively high investment in worker training. Private employees spend more hours in fully or partly company-financed retraining than in any other EU15-country, *cf. the EU's "Continuing Vocational Training Survey", 2001.*

Despite liberal firing rules, workers' perceived job security is higher than in other EU15 countries, *cf. OECD Employment Outlook 2004.* In countries where firing is costly, some workers may be left to linger in jobs that would, in the absence of restrictions, be abolished more rapidly. High perceived job security seems to be correlated with spending on active labour market policies and high unemployment benefits, *cf. OECD (op. cit.).*

Reemployment chances of displaced workers are also relatively good. For instance, among workers who lost or left a job in a private workplace that was either closed or reduced staff by more than 30 percent in 1997 (a threshold set so as to pinpoint primarily workers who left involuntarily), almost 80 pct. were employed one year later. Only 7½ percent were still unemployed, not much above the average unemployment rate of 6½ percent in that same year. Among longer-tenured workers (with 3 or more years in the job), short-term reemployment chances were somewhat lower, especially

for workers that had held jobs in some trade-competing sectors. But after 3-4 years, employment rates were nearly equal to workers who did not lose or leave their job in 1997.

Figure 9a. Employment protection legislation, EU-15 countries, 2003

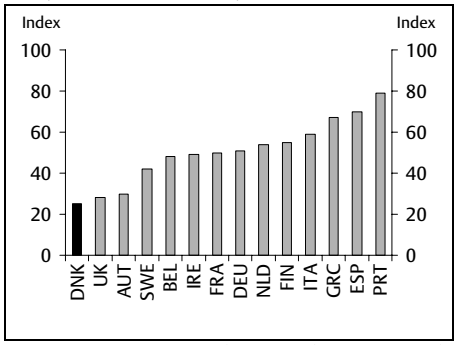


Figure 9b. Job turnover

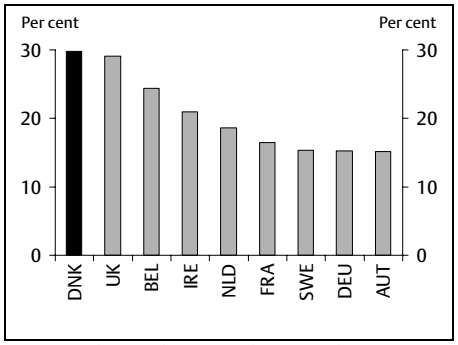


Figure 9c. Structural unemployment and EPL in the EU15, 2003

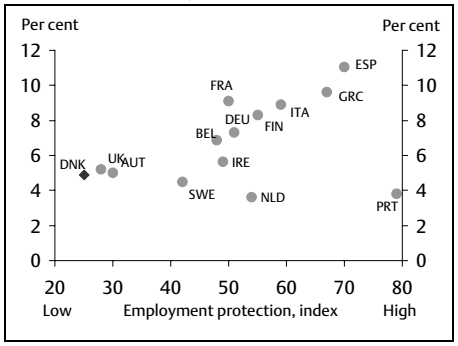
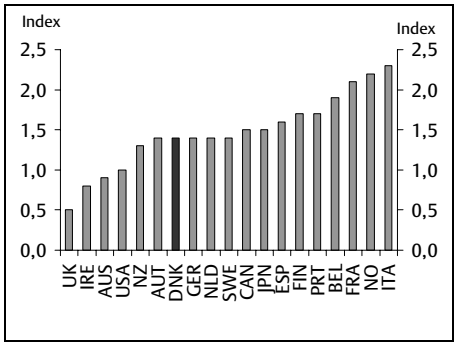


Figure 9d. Product market regulation, 1998



Note: The data on job turnover covers primarily the manufacturing sector.
Source: OECD Employment Outlook 1996 and 1997, Nicoletti et al. (1999), the World Bank (2003), Botero et al. (2003, and Davis and Haltiwanger (1999).

Product market regulation is fairly liberal compared to continental Europe, *cf. figure 9d*. Basically very few attempts are made at halting structural adjustment in the private sector through government intervention or subsidies. State subsidies for private businesses are low and there is little or no direct state ownership of e.g. manufacturing entities or financial institutions.

At least in the Danish context, a strong social safety net and generous unemployment benefits may be a necessary prerequisite for maintaining broad political support for these flexible institutions.

Labour supply-enhancing welfare spending
Some welfare spending acts to raise labour supply, notably subsidized childcare and care for the elderly, i.e. functions that were formerly taken care of at home or in the family. Most local governments guarantee availability of childcare for pre-schoolers, with parental co-payment limited to a maximum of 33 percent of (non-capital) costs. For older children, after-school care is widely available at subsidized rates, and elderly care is quite extensive, including care and assistance in elderly persons' own homes.

Figure 10a. Participation rate among women

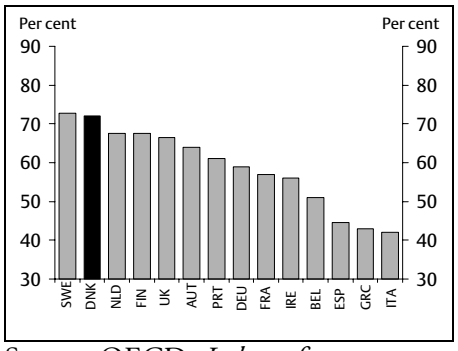
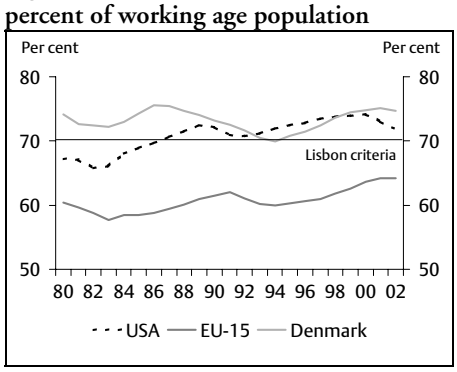


Figure 10b. Total employment rate in percent of working age population



Source: OECD, *Labour force survey*.

Supply and demand for labour across skill levels and wage-setting
The Danish education system appears to have met the trend increase in demand for skills, perhaps to a larger extent than in other countries. Hence, shifts in demand from low to high skilled labour owing to technological progress and reinforced by globalization seem to have been met by similar shifts on the labour supply side, *cf. Fosgereau et. al. (2001)* and *Ministry of Finance, 2005 (forthcoming)*.

Relative unemployment rates by skill have remained broadly constant, or even narrowed, and so have wage differentials across skill levels, *cf. figure 11.* Hence, faced with skill-biased technological change and globalization, Denmark has so far avoided rising wage inequality (which has occurred in the United States), or rising unemployment among the low-skilled (as seen in some EU-countries). The larger uptake of early retirement and disability benefits by low-skilled compared to other educational groups provide part of the explanation, but the growth of these schemes since 1980 explain less than 10 percent of the (log) relative change in the labour supply of low-skilled compared to other groups.

While progressive income taxes and a relatively flat wage distribution may dull economic incentives to invest in human capital, generous student grants and zero or low tuition fees work in the opposite direction. Hence, the private internal rate of return on investment in higher education is about average compared to a group of selected OECD-countries, *cf. Blöndal et.al., 2002* (leaving aside some other potentially critical features of the incentive structure in Denmark).

Figure 11a. Unemployment rates by skill, difference from total unemployment rate

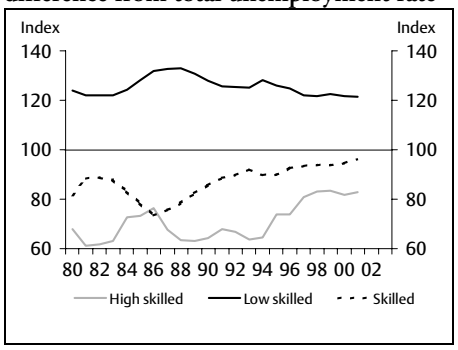
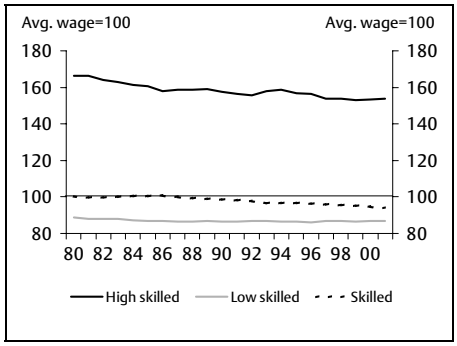


Figure 11b. Relative wages by skill



Source: Statistics Denmark, OECD and own calculations

Wage setting has become increasingly decentralized during the 1990s. Collective bargaining now mainly covers areas such as working time, pensions, maternity leave etc. Among workers covered by collective bargaining, the share of workers for which wages are fixed in collective (sectoral) agreements has fallen from 34 percent in 1989 to 15 percent by 2000. The majority of wages are set at company and individual level.

5. Successes and failures in the 1990s

The labour market policies of the 1990s comprised successes but also a number of unsustainable features, which have subsequently been curtailed. The key success has been a marked reduction in structural unemployment during the 1990s, *cf. figure12a* [7]. On the downside, however, labour force

[7] The structural unemployment rate is estimated in an unobserved components model using the Kalman filter. Similar results are found by the OECD and the EU Commission, although the drop in both actual and structural unemployment is less pronounced when the EU/ILO harmonized measure of unemployment is used rather than the national measure shown in figure 12.

participation contracted in the first half of the decade, partly due to policies, and it has only picked up moderately since then, *cf. figure 12b*.

Figure 12a. Actual and structural employment

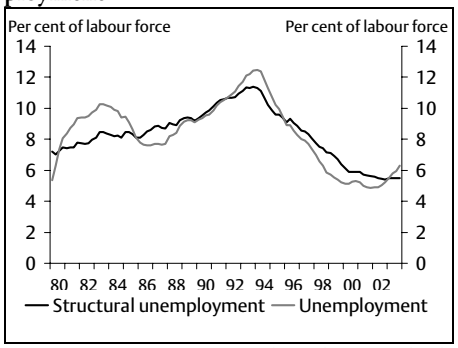
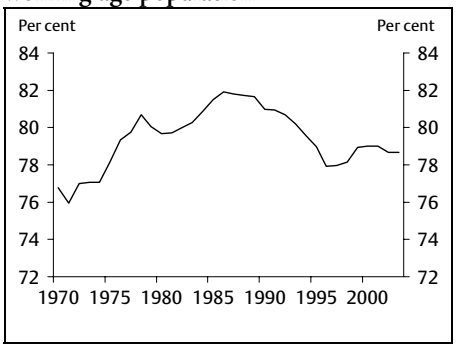


Figure 12b. Labour force, percent of working age population



Source: Statistics Denmark and own calculations.

5.1. Measures to reduce structural unemployment

In the first half of the 1980s, policymakers were preoccupied with what seemed an excessively high average wage level in the economy, a diagnosis founded on the combination of persistent current account deficits and high unemployment. Repeated attempts at income policies, either through direct government involvement or pressure on the labour market parties to settle on "responsible" wage agreements, turned out less successful than hoped-for – although the abolition of price indexation of wages as of 1982 was an important and useful step, particularly in the context of disinflation.

The experience of accelerating wage inflation during the upswing in the mid-1980s – despite official government incantations for continued moderate wage developments – shifted the focus of policymakers towards changing labour market structures. In line with the findings of the theoretical literature, the government's ambition in the 1980s was to reduce replacement rates in the unemployment benefit system and/or alter the profile of payments, but it proved impossible to rally political support for such measures.

As of 1992-94, the agenda shifted to reforms of active labour market policies and various parameters in the UIB system except the general replacement rates.

Active labour market policies (ALMP)

Prior to 1994, the maximum benefit duration was formally capped at 2½ years, but the unemployed could qualify for a new benefit period by partici-

pating in active labour market programs. Effectively, the maximum duration of benefits was approximately eight years. At the same time, availability-for-work requirements were relatively lax. By 1994, substantial reforms were initiated, and these were extended in subsequent years.

Firstly, participation in active programs would no longer qualify the unemployed for a renewed benefit period. This was crucial in shifting the focus of the ALMP system more firmly to getting people into work rather than keeping the unemployed in the benefit system. The formal maximum benefit period was set at 7 years. Subsequently, the maximum period was reduced to 5 years (in 1998) and currently to 4 years (since 2000).

Second, participation in active programs became obligatory in a policy known as "right-and-duty" of activation. Sanctions where put in place in case of refusal or for people that dropped out. Initially, the right-and-duty to participate became effective after three years of unemployment, but this was moved forward gradually and by the end of 2002 it was effective after one year of unemployment. The activation measures may be private or public job placement, education or retraining schemes, or other (quantitatively less important) activities. Over the period, various changes have been made to the exact content and scope of the active measures.

Third, among reform initiatives targeted at specific groups, unemployed aged 25 years or less without a qualifying education are no longer allowed more than 26 weeks on passive benefits (since 1996). Thereafter, they must either work-for-benefits or enter education at a benefit level corresponding to roughly half of the UIB.

There was also an increased focus on alleviating bottlenecks in local labour markets, and a host of other changes of an administrative nature.

Tightened eligibility criteria and formal availability-for-work requirements
Work requirements for qualifying for UIB were extended from 26 weeks to 52 weeks of work in the preceding three years. When the benefit period was shortened in 1998, the work requirement for people to re-qualify for benefits (i.e., for people who had exhausted their benefit entitlement) was reduced to 26 weeks. An attempt in 2002 to restore the work requirement at the previous level was unsuccessful.

Formal availability-for-work rules – such as rules governing the type of job offers that must be accepted if entitlement is not to fall away – have been

tightened in several steps and are, by now, relatively tight compared to most EU countries, *cf. figure 8a.*

Evaluating the impact of reform
The sharp fall in actual unemployment from 1993 to 2002 without resurging inflation provides *prima facie* evidence that the structural unemployment rate has fallen since the early 1990s. This conclusion is confirmed by estimates of the structural unemployment rate in unobserved components models estimated by the Kalman filter employed by, e.g., the OECD, the EU, and the Ministry of Finance (*cf. figure 12a).*

To help quantify the contribution of individual policies to the reduction in structural unemployment, a panel-data analysis of 19 OECD countries is used, in a first step, to attribute variation in unemployment rates to observable differences in labour market institutions, product market regulation, taxation etc., *cf. box 1.* Applying these coefficients to the change in Danish institutions suggests that the reduction in unemployment chiefly came from the increased use of ALMP. Tighter eligibility and availability requirements as well as reductions in the five-year gross replacement rate through shortening of the benefit period also contributed substantially, *cf. figure 13a.*

Meanwhile, active labour market policies entail sizable budgetary costs of roughly 1¼ percent of GDP, with lesser deviations from year to year. Moreover, the lowering of unemployment through ALMP schemes is by some considered to be partly "cosmetic". While the point of activation has been brought forward in several steps, the total number of persons in active schemes has been relatively constant at around 2¾ percent of the labour force, *cf. figure 13b* (which implies an increase in numbers relative to the lower number of unemployed).

Figure 13a. Decomposition of the reduction in unemployment, 1994-99

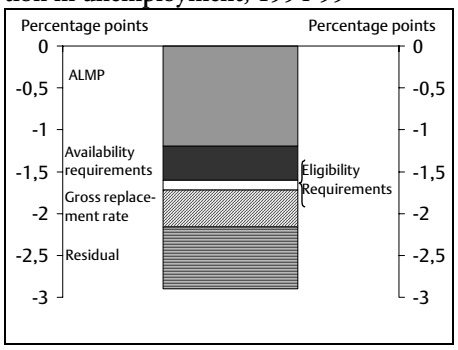
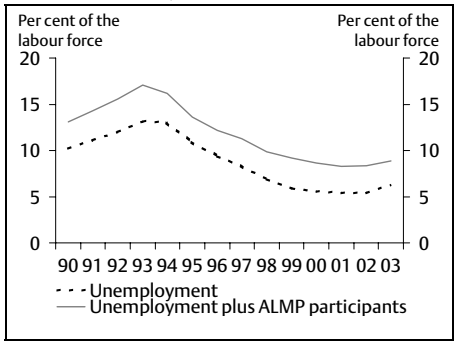


Figure 13b. Unemployed and persons in ALMP schemes, share of the labour force



Source: Own calculations.

Box 1. Explaining cross-country variation in unemployment rates

Panel data regressions for 19 OECD-countries are used to attribute variation in actual unemployment rates to differences in labour market institutions, product market regulation and taxation. The results show that high unemployment insurance benefits (UIB), long duration of UIB, passive labour market policies, and limited testing of availability-for-work are all factors which can raise structural unemployment, *cf. table a.*

Table a. Impact of institutions on unemployment, 1983-99

	Coefficient	Std.dev.
Higher UIB compensation	0,054	(0,023)
Longer duration of UIB[1)]	0,006	(0,005)
Tighter availability-for-work requirements	-0,020	(0,010)
Higher expenditure on ALMP[2)]	-0,001	(0,000)
Tighter eligibility (prior work) requirements	-0,037	(0.020)
Stronger job protection	0,004	(0,002)
More centralized wage bargaining	-0,013	(0,004)
Higher degree of unionization	0,189	(0,010)
Total labour taxes[1)]	0,047	(0,015)

Note: In addition to the listed variables, deviations from HP-trend of log real GDP, country dummies, and, in some specifications, time dummies enter the regressions.
1) The coefficient is based on a sample covering 1963-99.
2) Measured in units of GDP per unemployed in relation to the labour force.
Source: Gaard (forthcoming)

Private job training may also potentially "displace" regular workers, despite formal rules that attempt to prevent such displacement. The size of displacement is not well-known, though studies in Sweden indicate that it may by significant. Private job-training is less predominant in Denmark, however, than in countries where displacement effects have been more actively discussed, perhaps because Danish wage subsidies are relatively moderate.

The positive impact of active labour market policies arises in part because it motivates job search among the unemployed. Evidence suggests that the likelihood of finding or taking a job increases in the run-up to the time when participation in activation schemes becomes mandatory. In the same vein, the bringing forward of the point of activation from 36 to 24 months between 1996 and 1998 led to a significant increase in search at 24 months, *cf. figure 14a.*

Figure 14a. Hazard rate out of unemployment

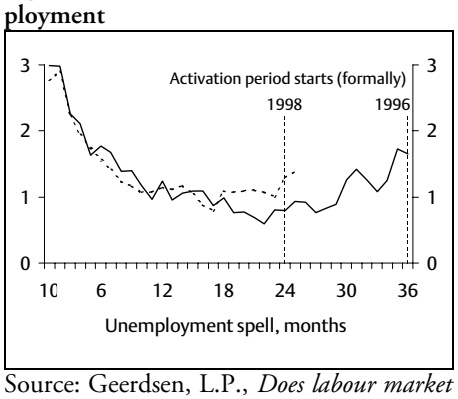
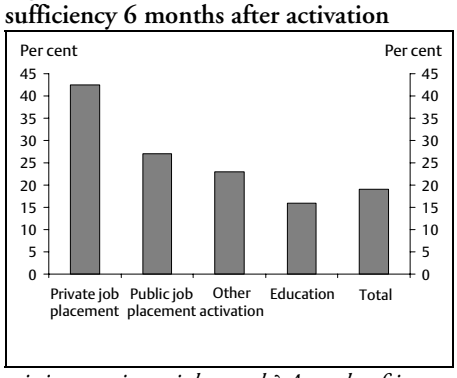


Figure 14b. Improvement in rate of self-sufficiency 6 months after activation



Source: Geerdsen, L.P., *Does labour market training motivate job search? A study of incentive effects of compulsory ALMP in the Danish UI system*, SFI Working Paper 23: 2002. and Ministry of Employment.

Experience shows that job placement in private firms has a higher success rate at getting the unemployed lastingly into employment than training measures, *cf. figure 14b* – although this may in part reflect a selection bias since private job placement may be offered to those who are most job-ready.

5.2. Labour supply management and mismanagement in the 1990s

Many European countries, including Denmark, have attempted to reduce high unemployment – even when mainly of a cyclical nature – by reducing labour supply, e.g. through early retirement schemes. Such measures imply, however, that the labour resources are no longer available once the cyclical upswing materializes and labour demand picks up again. In this way, cyclical downturns in employment tend to become structural, with adverse medium-term consequences for public finances and living standards.

Unemployment in Denmark rose sharply during the cyclical downturn in 1987-93, and in 1992-94 a "pre-early retirement" or "transitional benefit" scheme was gradually introduced for long-term unemployed 50-59 year olds (this scheme was in addition to the already existing early retirement scheme for 60-66 year olds, instituted during the recession in 1979). In addition, leave schemes were introduced that gave workers the right to take leave of absence for educational purposes (at 100 percent of the UIB rate), childcare (at 80 percent of UIB), and sabbatical (80 percent). Particularly as of 1994, the uptake on these schemes reduced the labour force significantly, *cf. figure 15.*

Figure 15a. Persons on leave, full-time equivalents

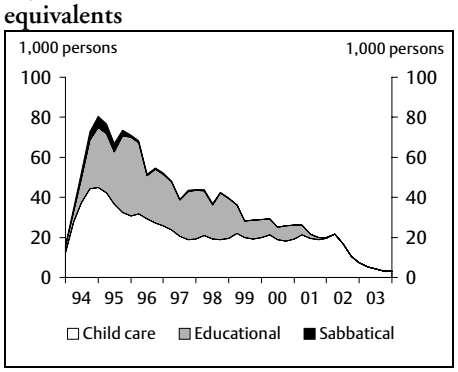
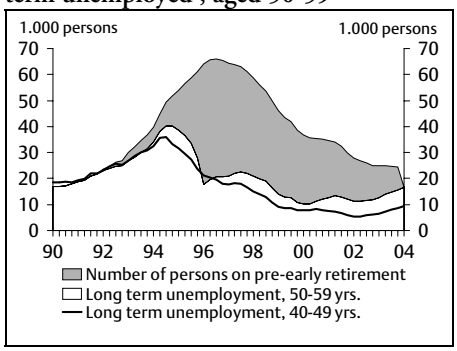


Figure 15b. Pre-early retirement for long-term unemployed[1], aged 50-59



1) Unemployed for more than 12 month
Source: Statistics Denmark and own calculations

The schemes have subsequently been tightened and to a large extent abolished. Hence, the permanent adverse effects on labour supply have been much smaller than if cuts in working hours or retirement ages had been introduced.

The pre-early retirement scheme provides an interesting and cautionary tale. Despite the large uptake on the scheme in 1994-96, long-term unemployment among the 50-59 year-olds fell only briefly. Viewed over a longer period, it developed largely in parallel with long-term unemployment among 40-49 year olds, *cf. figure 15b*. It appears that the flow into long-term unemployment increased, so that the scheme effectively acted as a substitute for employment, not long-term unemployment. As long as access to the scheme was possible, employment among 50-59 year olds fell while it rose for other age groups. After 1996, when access to the scheme was closed, employment among 50-59 year olds developed stronger than total employment, *cf. figure 16a*.

Participation in the temporary leave schemes has dwindled to almost nothing as compensation levels were reduced to first 70 and then 60 percent of UIB for childcare and sabbatical. Access to educational leave and sabbatical has been closed. Lately, the extension of maternity leave periods to one year has caused a sharp decline in the number of persons taking leave for childcare purposes.

Figure 16a. Employment rate among 50-59 year olds vs. the rest

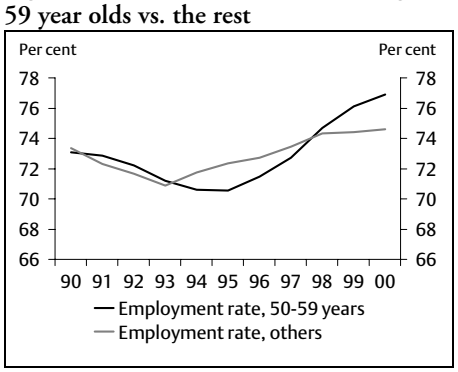
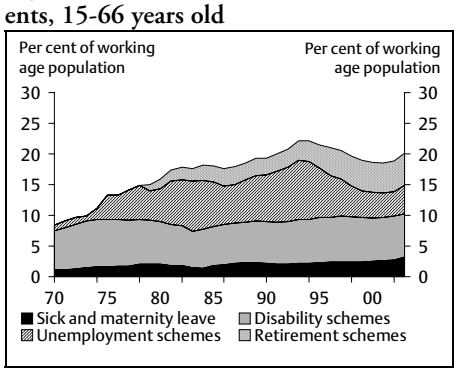


Figure 16b. Number of transfers recipients, 15-66 years old



Source: Statistics Denmark, own calculations and Ecowin.

Other welfare schemes have also been reformed, but take-up is still high. Reforms of the disability schemes have cut the annual inflow and reduced the total number of recipients to below 1995 levels, *cf. table 3.*

Table 3. Labour supply (mis)management

	Introduced	Eligibility	Participation	Reform
Pre-early retirement	1992/1994	Age 50-59 years, long-term unemployed UIB-member	46.000 in 1996 11.500 in 2003	Access closed in 1996
Temporary leave	1992/1994	Childcare, sabbatical and education	77.000 in1995 5.000 in 2003	Gradually tightened 1995-2002
Disability	Before 1979	Disability or in need of permanent social support	270.000 in 1995 259.000 in 2003	1998 and 2000: Annual inflow reduced
Official working hours	1987-1990 2000-2004	From 40 to 37 hours a week From 5 to 6 weeks of annual vacation		
Early retirement	1979	Age 60-66 (from 2004 60-64)[1)] UIB-member	115.000 in 1995. 179.000 in 2003 (6 per cent of total labour force)	1998 (Impact assessment: -15.000)

1) The official retirement age was reduced from 67 to 65.

The early retirement scheme still remains in force. Despite a reform in 1998, which is estimated to reduce the number of recipients by 15,000 persons

(almost 10 percent) over time, the total number of people in early retirement amounts to 6 percent of the labour force in 2003.

Labour supply has also been adversely affected by reductions in collectively agreed weekly working hours (from 40 to 37 hours, phased in during 1987-90) and an extension of annual leave from 5 to 6 weeks of vacation through 2000 to 2004, *cf. table 3*.

Despite the cut-back on leave schemes introduced in the mid-1990s, the total number of transfer recipients of working age is still high, at more than 20 percent in 2003, *cf. figure 16b.*

6. Alleviating the disincentive effects of high taxes

Total tax revenues are high, but the distortion compared to other countries is probably smaller than might appear at first look. First of all, the tax ratio is exaggerated by the fact that transfer incomes in Denmark (as well as some other countries, including Sweden) are taxed, while in most other countries they are paid "net-of-tax". This feature alone boosts the measured tax ratio in Denmark by 4-5 percent of GDP relative to most OECD countries[8]. Secondly, exemptions and loopholes have been virtually eliminated from the tax system, and this has made possible a reduction in marginal tax rates. Third, means-testing of income transfers or public services to persons of working age is not very predominant in Denmark. In many other countries, means-testing e.g. for parental payments to child care implies that composite marginal rates can be higher than would appear from the tax system alone.

The marginal effective tax rate, including employers' social contributions, is close to the average of EU countries for incomes at 100 percent of the average wage, but among the highest for incomes at 150 percent of the average wage*, cf. figure 17.*

High taxes have not prevented high labour market participation rates, in part because the negative substitution effect on work effort from high marginal taxes is off-set by a positive income effect, requiring people to work more to attain a given level of income net of tax. Econometric evidence of labour supply elasticities is mixed and estimated elasticities are subject to considerable margins of uncertainty. Tax progression may have contributed to lower average working hours, through more vacation days and fewer weekly hours, while contributing to the tendency for most families to rely on two incomes.

[8] Correction for other technical factors, especially the inclusion of indirect taxes in the GDP measure in the denominator, would pull in the opposite direction.

Figure 17a. Marginal effective tax rates at 100 percent of average wage

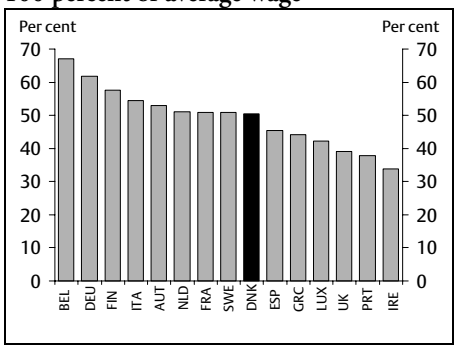
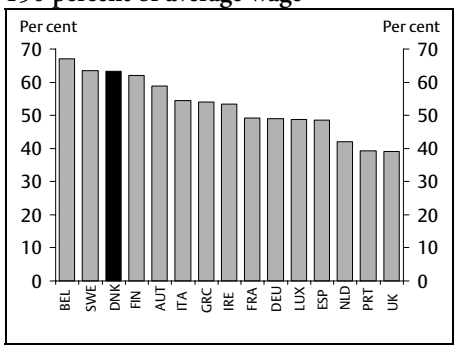


Figure 17b. Marginal effective tax rates at 150 percent of average wage



Note: Two-earner couple with 2 children (2001)
Source: European Commission

For the average employed person, the marginal tax rate has been reduced from close to 60 percent in 1993 to 52 percent in 2004, *cf. table 4.* Lower marginal tax rates have been financed e.g. by lower mortgage interest deductions and higher indirect and green taxes.

Table 4. Marginal tax rates, 1980-2007

	1980	1986	1993	1998	2003	2004
	---------- Pct. ----------					
Marginal income tax, average employed	-	57,7	59,3	54,3	53,8	52,2
Marginal income tax, highest bracket	68,8	73,2	68,7	62,0	62,9	62,9
Marginal income tax, first bracket	43,6	48,0	50,6	45,2	43,7	42,9

Source: Ministry of Finance.

The income distribution remains among the most even in the OECD, and (on standard measures) considerably more even than in the average of the EU, *cf. table 5.*

Table 5. Indicators of income distribution

	Denmark[1)]	EU[2)]
Income quintile ratio (s80/s20)	3.2	4.4
Gini-coefficient (x 100)	23	28
Share of persons living in low-income households	4	9

1) National calculations based on incomes from 2002.
2) Joint inclusion report, 2004. Based on incomes from 2000.

7. The Danish experience

Structural reform is feasible without weakening the basic functions of the welfare state. Reforms of labour and product markets generally require a greater willingness to change and adapt. But flexible institutions do not necessarily imply high income inequality, at least not if skills are not too unevenly distributed and the education system meets the increased demand for skills. Welfare spending has been reformed without important adverse distributional consequences. Also, it has been possible to reduce distortions within the tax system, e.g. lowering marginal tax rates, without reducing the effective progression of the system or overall tax revenue. The tax wedge on labour remains high, though, and is above the EU average, at least for higher incomes.

Welfare expenditures may be a prerequisite for public support for flexible institutions. Liberal firing rules, relatively light product market regulation and a hands-off approach to state subsidies or state involvement in market-based production might not have been politically feasible if not accompanied by a strong social safety net for those affected by structural change and unemployment. The emphasis is not on preventing job losses associated with structural change but on cushioning the income loss and providing opportunity as well as incentives for displaced workers to transition to new jobs.

Deep recessions feed bad policies – it is important not to do irreversible damage. During recessions, external competition and technological progress are often blamed for the economic woes. Pressure may arise for increased government intervention, subsidies, working hours reductions, early retirement schemes, and sometimes protectionist measures. Such measures can do medium-term damage to output and public finances, and are not easily reversible. Reducing labour supply should be avoided or, at the very least, restricted to measures of a temporary nature that can be undone when labour demand picks up.

For countries with a fixed exchange rate or participants in a monetary union, there may be some scope for demand management through administrative credit measures or borrowing incentives, particularly those that affect the housing market. Opportune timing of changes in credit market regulations and borrowing incentives – including mortgage interest deductability – have had strong and generally stabilizing demand effects in Denmark. Hence, demand management is not restricted to (traditional) fiscal policy even though monetary policy is bound by the fixed exchange rate.

Significant policy challenges remain to prepare for the ageing of the population. The Danish government's 2010-strategy aims at ensuring the sustainability of current policies, i.e. ensuring that current rules governing social transfers (indexation, retirement age, early retirement etc.) and public service standards can be sustained without imposing a need for future generations to raise taxes to prevent an unsustainable debt path. The strategy entails running fiscal surpluses of 1½-2½ percent of GDP on average from now to 2010 and implies that the relatively large current generations of working age contribute to the financing of their future state pensions, elderly care etc. The strategy presupposes real public consumption growth of 0.5 percent per year in 2005-10 and further structural reforms that can raise sustainable employment by roughly 2 percent by 2010, *cf. Ministry of Finance (2003).* Further reforms may be considered in the context of the Danish Welfare Commission's reform proposals due by 2005, e.g. with a view to make the welfare system more robust to possible changes in life expectancy (relative to the increase assumed in current baseline projections). Future generations may wish to make different priorities notably with respect to taxes, public services, or working hours. With the 2010-plan already in place, there is more time to discuss and consider possible reforms.

References

Alesina A., and Perotti, R. (1995), "Fiscal Adjustment: Fiscal expansions and adjustments in OECD Countries", Economic Policy, October.

Blöndal, S., S. Field and N. Girouard (2002), "Investment in human capital through post-compulsory education and training: selected efficiency and equity aspects", OECD Economics Department Working Paper no. 333.

Botero, J. , S. Djankov, R.L. Porta, F. Lopez-de-Silanes, and A. Shliefer (2003), "The regulation of labor", NBER Working Paper No. 9756.

Callesen, Per (1997), "The Policy Experience of Structural Reforms in Denmark", paper for the conference "The effects and policy implications of structural adjustments in small open economies", Amsterdam, October 23 and 24, 1997. Available from the Danish Ministry of Finance.

Davis, S. and J. Haltiwanger (1999), Chapter in Handbook in Macroeconomics, Elsevier Science, Amsterdam

Economic Policy Committee (2003), "The impact of ageing populations on public finances: overview of analysis carried out at the EU level and proposals for a future work programme", available at: http://www.europa.eu.int/comm/economy_finance/epc/documents/2003/pensionmaster_en.pdf

Fosgereua, M., S. E. H. Jensen and A. Sørensen (2001), "Relative demand shifts for educated labour", CEBR Discussion paper no. 2000-11, Copenhagen.

Frederiksen, Niels Kleis (2003), "Fiscal sustainability in OECD countries, December 2002", updated March and November 2003, mimeo, Danish Ministry of Finance.

Frederiksen, Niels Kleis (2004), "Fiscal policy in OECD countries, 2000-2005", March 2004, mimeo. Forthcoming in the Danish Ministry of Finance's working paper series at http://www.fm.dk

Gaard, S. "Assessing the impact of labour market reforms in the 1990s – a panel data study of 19 OECD countries," Ministry of Finance Working Paper, *forthcoming.*

Geerdsen, L.P., "Does labour market training motivate job search? A study of incentive effects of compulsory ALMP in the Danish UI system," SFI Working Paper 23: 2002.

Ministry of Finance (2003), Convergence programme update, available at http://www.europa.eu.int/comm/economy_finance/about/activities/sgp/scplist_en.htm

Ministry of Finance (2005), Medium-Term Economic Survey, *forthcoming.*

Nicoletti, G., S. Scarpetta and O. Boylaud (2002), "Summary indicators of product market regulation with an extension to employment protection legislation", OECD Economics Department working paper No. 226.

Hasselpflug, S. and A.K.B. Thorball, "Availability Criteria in 25 OECD countries," Ministry of Finance Working Paper, *forthcoming*, available at http://www.fm.dk

Scarpetta, S. (1996), "Assessing the role of labour market policies and institutional settings on unemployment: a cross-country study," OECD Economic Studies No. 26, 1996/I, ss. 43-98.

Socialforskningsinstituttet (2005), "Lukning og indskrænkning af virksomheder – konsekvenser af globalisering", *04:20.*

World Bank (2003), "Doing Business Database," available at the URL http://rru.worldbank.org/DoingBusiness/default.aspx.