

# ENGLISH SUMMARY

## Chapter I: The Danish Economy

Danish GDP is expected to grow only by  $\frac{3}{4}$  per cent this year due to weak domestic demand caused primarily by a large decrease in private investments and slow growth in private consumption. The slowdown has led to a significant increase in unemployment and economic performance has been worse than predicted earlier. Next year the international recovery combined with a reduction in income taxation is expected to accelerate GDP growth to  $2\frac{1}{4}$  per cent, and unemployment will fall considerably in the course of 2004. In 2005 and 2006 the Danish economy is expected to grow around 2 per cent each year, and unemployment will fall further.

Uncertainty in the global economy linked among other things to the war in Iraq has abated significantly. Yet growth in European economies has been disappointing. The weak growth has led to increasing public deficits in most European economies. In the United States, the pick-up in growth is supported by expansionary fiscal and monetary policies. Even though the US economy is confronted with several imbalances, the outlook for US economy in the short run seems promising. In the following years, high growth is expected in the United States. Better global prospects will help bring about a somewhat belated recovery in Europe.

Table 1 Short-term outlook for the Danish economy

	Current prices	Per cent of GDP	Percentage change, volume				
	DKK bn. <sup>e</sup>	2002	2002	2003	2004	2005	2006
Private consumption	653.9	47.9	1.9	1.0	3.0	2.3	2.0
Public consumption	358.7	26.3	2.1	1.1	1.0	0.8	0.8
Gross fixed capital formation	269.0	19.7	0.1	-3.3	2.7	2.1	2.3
consisting of:							
Residential investments	54.8	4.0	6.6	6.0	2.9	2.0	2.0
Business fixed investments	190.1	13.9	-0.9	-5.9	2.8	2.2	2.4
Public investments	24.2	1.8	-3.1	0.0	2.0	2.0	2.0
Stockbuilding <sup>a</sup>	2.6	0.2	-0.3	0.2	0.1	0.0	0.0
Total domestic demand	1,284.2	94.1	1.2	0.2	2.5	1.9	1.8
Exports of goods and services	613.3	44.9	5.8	1.2	3.4	4.1	4.1
Imports of goods and services	532.3	39.0	4.2	0.2	4.1	4.1	4.4
GDP	1,365.2	100.0	2.1	0.7	2.2	2.0	1.8
<b>Key indicators</b>							
Consumer prices, percentage change <sup>b</sup>			2.4	1.8	1.8	2.0	2.0
Unemployment, per cent <sup>c</sup>			5.0	5.9	5.9	5.5	5.4
Current account, DKK bn. <sup>d</sup>			39	47	48	56	63
Current account, per cent of GDP			2.9	3.3	3.3	3.7	3.9
General government financial balance, DKK bn.			21	16	16	17	17
General government fin. balance, per cent of GDP			1.5	1.2	1.1	1.1	1.0
Hourly wage costs, percentage change			4.3	4.1	3.7	3.7	3.9
Terms of trade, percentage change			-2.8	1.3	0.2	0.3	0.2

- a) The percentage changes are calculated as real changes in stock building relative to real GDP in the previous year.
- b) Implicit private consumption deflator.
- c) Percentage of the total labour force. National definition.
- d) Since finishing the present forecast the historical level of the current account surplus has been revised by Statistics Denmark. Taking this revision into account would reduce the current account surplus by app. DKK 10 bn. in the forecast period.
- e) The DKK/USD exchange rate is taken as 8.36 in 2001, 7.85 in 2002, 6.60 in 2003 and 6.35 in 2004-06.

Sources: Statistics Denmark, *National Accounts* and own estimates.

The 2003 slowdown in the Danish economy is among other things due to a weak domestic demand as private consumption is expected to increase by only 1 per cent and investments are expected to drop by approximately 6 per cent. In the following years, domestic demand will be the driving force behind growth in the Danish economy. Private consumption is expected to increase by 3 per cent in 2004 caused by an increase in disposable income, which among other things is due to an income tax reduction. In 2005 and 2006, private consumption will grow around 2 per cent. As economic growth becomes stronger, private investments are also expected to pick up from next year. Towards 2006 growth rates between 2 and 3 per cent each year are expected.

Due to the slowdown in economic activity, employment has fallen considerably, leading to a significant increase in unemployment (above 6 per cent at the end of 2003). As economic activity picks up next year, unemployment is expected to drop sharply. Even though a significant decrease in unemployment is predicted in the course of next year, the unemployment rate will on average remain unchanged in 2004 compared to 2003. Unemployment will continue to fall in the coming years but will remain above the record low level in 2002.

Hourly wage costs are expected to increase by 4.1 per cent this year and between 3¾ and 4 per cent in 2004 to 2006. Even though the forecasts indicate a reduction of wage cost increases, international competitiveness will worsen due to smaller increases in wage costs abroad. This deterioration of competitiveness comes on top of an appreciation of the effective exchange rate of the Danish krone of more than 4½ per cent in 2003 compared to 2002.

In spite of a worsening of wage competitiveness, Danish exports have gained market shares in the last couple of years. One explanation is that productivity has grown faster in Denmark than in the countries of our main trading partners. However, Danish productivity cannot be expected to continue to grow faster than productivity elsewhere, so the worsening of wage competitiveness in the forecast period is expected to result in a loss of market shares. This year, exports will grow

at a slow pace because of low international growth. Export growth will increase in 2004-06, reflecting the recovery in the global economy.

This year the current account surplus is expected to increase by approximately DKK 7½ billions due to weak growth in domestic demand and imports. The surplus is predicted to be unchanged next year where domestic demand and exports increase significantly. In 2005 and 2006 the current account is predicted to improve as a result of more moderate domestic demand growth. The projected current account surpluses will lead to a substantial reduction in the foreign debt.

The public budget surplus is expected to decline from about 1½ per cent of GDP in 2002 to about 1 per cent this year due to weaker activity in Danish economy. Despite an expected increase in economic growth in the following years surpluses about only 1 per cent of GDP towards 2006 are expected as a relief in the income taxation reduces the surplus on public budgets.

## **Policy recommendations**

Despite weak economic growth and the strong increase in unemployment this year, no further fiscal easing is warranted. The level of unemployment is still low and unemployment is forecasted to decrease considerably. Thus, a further easing of the fiscal policy in the current economic situation would represent inappropriate fine tuning and might lead to pressure on the labour market. In addition, the medium and long-term demographic challenges that the Danish economy faces call for a major reduction in the public debt. Therefore, any reduction in taxes or increases in public spending mean that a fiscal tightening would be needed at some point in the future.

According to the 2010 plan, which specifies medium term goals for economic policies, fiscal sustainability is ensured by an increase in labour supply (and employment) and by means of a tight control of public expenditures. The development in recent years with respect to both labour supply and public

expenditures emphasizes the need for further initiatives to increase labour supply and to improve public expenditure control. Reductions in income taxation (of around DKK 5 billions in 2004 increasing to around DKK 10 billions in 2007) strengthen these needs. The recent labour market reforms (*Flere i arbejde*) are insufficient to achieve the goals of the 2010 plan and further labour market reforms are necessary and strongly recommended.

The current management of public expenditure is based on goals for growth in public consumption in fixed prices and a “tax-freeze”, which reduces revenues to the public sector, and thereby puts a limit on public expenditures. In recent years, public consumption has grown stronger than planned, and the current tools to manage public expenditure seem insufficient.

The “tax-freeze” is a very inflexible way to control public expenditures from an economic point of view. Among other things, the “tax-freeze” hinders a desirable change from taxation of mobile sources, such as capital gains and labour income, towards taxation of immobile sources, like land and real estate.

There are several problems related to the use of goals for public consumption growth in fixed prices. Firstly, there is much statistical uncertainty connected to determining the price for public consumption, because no market exists for most of public consumption. This leads to uncertainty concerning the split of public consumption between prices and volumes. Secondly, all public budgets are made using current prices.

An alternative way to manage public expenditure would be to adopt goals for public consumption in current prices. Such nominal goals should be set in accordance with long run goals for public debt with respect to fiscal sustainability and the desired level of public service. First of all, by using nominal goals, errors due to determining the price for public consumption is removed, and they play no role when evaluating the development in public consumption. Second, nominal goals increases transparency to public budgets, making direct comparisons between budgets, outcomes and goals uncompli-

cated.

Sustainability of public finances implies that the current level of public services can continue without increasing taxes in the future. An unsustainable fiscal policy calls for fiscal tightening at some point in the future, and thus passing along a burden on future generations as higher taxes or lower public services will reduce their welfare.

In *Danish Economy, Autumn 2002*, it was concluded that the fiscal policy was unsustainable and that sustainability required an increase in the average tax rate by 2.4 percentage points. Developments since these calculations were carried out have led to a further deterioration of the sustainability of public finances. Tax reductions, stronger than expected public consumption growth and a disappointing development in labour supply and employment all point to a deterioration in public finances. The lost revenue from the income tax reduction in itself implies a deterioration in fiscal sustainability equal to an increase in the average tax rate by 1.4 percentage points or an equivalent reduction in public spending (0.7 per cent of GDP).

In the autumn of 2003, the Danish government and A.P. Møller – Mærsk A/S agreed upon an extension of the concession to exploit the Danish part of the North Sea until 2042. The current taxation contains several in-optimal elements, and the new agreement is in many respects closer to the recommendations of an expert committee (*kulbrinte-beskatningsudvalget*). The prolongation makes a more efficient production planning possible. However, it is unclear whether the agreement implies a fair division of the rent related to the activities in the North Sea. In principle, the resources belong to the society and the oil company should earn a normal interest plus a risk premium. Whether this is the case for the new agreement is not easily established on the basis of available information.

## Chapter II: Education

Education is important both to the individual and to society. For the individual education enables the acquisition of knowledge that may lead to a better life, more challenging assignments at work and a smaller risk of unemployment. In addition education plays an important role in ensuring that the common principles, perceptions and traditions on which a society builds are passed on to future generations. Finally, education is an important prerequisite for social and scientific progress.

The Danish education system is divided roughly into three parts; “Folkeskolen” (primary and lower secondary school – henceforth referred to as the “primary school”) for children aged 7-16 years, youth educations for persons aged approximately 15-20 years, and further education for persons more than 18 years old.

Denmark has 9 years compulsory schooling, and almost everyone enroll their children into a primary school. The primary school – divided into 10 grades including a preschool grade – have a total of 690,000 pupils. Almost 90 per cent of the pupils go to a public school where no tuition fees are paid. The percentage of pupils that go to private schools has been slightly increasing over the last 10 years, but it remains at less than 15 per cent. In terms of expenditures per pupil Danish primary schools are among the most expensive in the OECD. However, in tests of literacy, reading, mathematics and scientific knowledge, Danish students score around the OECD-mean.

The youth educations consist of both theoretical educations preparing for further studies and vocational training educations. While the 100,000 youths studying at theoretical youth educations can choose between three types of schools (upper secondary school (gymnasium), commercial school, and technical school), the 120,000 youths in vocational training can choose between around 100 different educations. More than 95 per cent of persons born in a given year start a youth education, but only around 85 per cent of them finish their

education. The theoretical educations normally last three years while the vocational educations last between 2 and 5 years, but normally about 3½-4 years. During the education 30-50 per cent of total instruction time is spent at school while the rest of the time is spent at a training place. For those who cannot find a training place at a firm school training is offered.

The further educations last between 2 and 8 years and range from short educations specifically targeted a persons with a vocational education to PhD-degrees at universities. Entering a short further education normally requires a vocational education and supplementary courses, while the enrollment in longer studies typically requires a degree from a theoretical youth education. Around 45 per cent of persons born in a given year finish further education, and this is a number that has been increasing somewhat over the last years. In 2002 around 200,000 persons were studying at an institution offering further education. Of these around 100,000 were at universities.

The total public expenditures to education were DKK 123 billion in 2002. This amounts to approximately 9 per cent of GDP. By far the largest share of expenditures are given to teaching, but DKK 13 billion are transfers related to education.

Analyses in the present report show that parents' educational background has a large and significant influence on the choice of youth education. Children of university graduates thus have a significantly higher probability of starting a theoretical youth education and a significantly smaller probability of starting a vocational education than children of unskilled workers. However, parents' background does only have a rather small influence on the probability of finishing the education once it has been started. While children of university graduates have a larger probability of finishing a theoretical youth education, children of persons with vocational education have a larger probability of completing a vocational education themselves. Another interesting result from the analysis is that first and second generation immigrants have a significantly smaller probability of starting vocational education than ethnic Danes.



In further education parents' background also has a statistically significant influence on education choices. Thus children of persons with further education – in particular university graduates – have a significantly higher probability of beginning university studies. Background variables for parents are, however, less important in determining the probability of finishing an education given that it has been started. The grade point average (GPA) from the youth education on the other hand has a large and significant effect on the probability of both starting and finishing further education. This strengthens the view that parents' background may also be influential in determining the choice of further education since analyses show that there exists a clear statistical relationship between parents' education and childrens' GPA. An additional result is that sabbatical years after finishing youth education have a negative influence on the probability of completing university studies. For the other types of further education no such clear relationship between sabbatical years and the probability of completing studies can be found.

Calculations of the economic return of an education are carried out by comparing the benefit and the cost of the education. The cost comprises foregone income during the period of education. The benefit is the relatively high level of productivity that educated people have compared to people without an education. It is assumed that this increase in productivity can be measured by wage differences. There is a distinction between the benefit and the cost to the individual and to society. For example, public student grants and a relatively low level of tuition fees are a benefit to the individual and a cost to society.

In this report three approaches have been applied to calculate the rates of return to education. The first one uses standard earnings functions based upon extensions of Mincer's return to education equation. The second approach compares differences in the lifetime income of a person with and without an education. Finally, private and social internal rates of economic return to education are calculated based on the lifetime income.

Danish and international studies find a statistically significant positive effect of education in influencing the income level of the individual. In this report evidence from register data for the period 1993-2001 confirms a significant positive relationship between the number of years spent in education and the income. Male returns is found to be 6½ per cent per year of education which is approximately 1 percentage point more than the equivalent female returns.

Calculations of post-tax lifetime income of different types of education show that in general it is highest for graduates in the social, technical and natural sciences. The lowest post-tax lifetime income is found for vocational education. The same pattern applies when the net-benefits to society are calculated.

Calculations of the internal economic rates of return to the individual and society of different types of education show that in general there is a positive return to education. The private rate of return is between 5 and 39 per cent while the social rate of return is between 3 and 17 per cent. In general, it is found that the internal rates of return are highest for secondary education (korte videregående) and lowest for graduates in arts.

International studies find that a significant proportion of the work force in for example the United States, Germany and United Kingdom has more or less education than what is actually required for their jobs, meaning that they are either over- or undereducated. In this report over- and undereducation are measured using data-based criteria. The definition of job requirements is based on the actual educational attainments of workers within occupations at a disaggregated level. Computing the required education as the amount of education that most commonly occurs within an occupational category it is found that around 28 per cent of the male work force and around 20 per cent of the female work force were overeducated in 2001. However, in general the level should be interpreted with caution since the classification of workers into occupations is an element of uncertainty.

Discrepancies between the educational attainment of workers and the skill requirements of jobs may affect the returns to education. Using the modal value as a measure of required education, the return to adequate schooling is found to be 7.7 per cent for men and 6.4 per cent for women. The yield to the overeducated men and women are found to be 6.1 and 4.3 per cent, respectively. Hence, overeducated individuals earn less than equally educated individuals who find jobs commensurate with their level of education. Still, there is a positive return to surplus education suggesting that is productive. This result is in line with the findings of similar international studies.

The macroeconomic effects of education may – in addition to the microeconomic gains in productivity – also contain externality effects. Such externalities arise when there are gains from education beyond that which the individual takes into account when he or she chooses an education. It may e.g. be that a high general level of education in an area means a gain to everyone living in the area such that everyone's productivity and welfare is higher. Analyses in the report have tried to quantify the overall macroeconomic effect of public expenditures to education and research. It is found that these expenditures may explain at least a quarter of the total economic growth during the period 1970-2002. However, the estimate should be interpreted with some caution as other variables that may influence total factor productivity only to a limited extent are included in the analysis.

It is thought-provoking that comparisons between different OECD countries show, that expenses per pupil in the Danish primary school are among the highest while the performance by the pupils are on average. This need not be a problem if the primary school passes on valuable skills in a number of other fields that are emphasized in the objects clause of primary school such as personal and social skills. However, it is striking that an independent Danish framework for evaluating the fulfilment of the primary school's objects clause has not been developed. As quick as possible a methodology for evaluation of the primary school that can measure the different aspects should be established.

The government has set itself the goal of increasing the skills of primary school pupils in the subjects on the curriculum. If this is a token of a strong wish to turn the objective of the primary school in the direction of some specific goals then it would be logical to adjust the present objects clause in the Act of the Primary School. Of course, this has to be reflected in the evaluations that are carried out.

To raise the standards in the primary school it has been decided to publish the average marks at the final tests in the schools 9th and 10th form. This is problematic since both Danish and international studies show, that marks and test results reflect the parents' background rather than the quality of teaching. Experiences from the United Kingdom show, that a system with publication of marks leads to a wider variation in the marks of the schools. Among other things this results from resource strong children being taken out of "poor" schools and put into "good" schools. This is also likely to happen in Denmark where changes in the Act of the Primary School from 2002 have made it easier to change from one school to another. If there is a wish for publishing marks and test results, a statistical analysis should be carried out that corrects for differences in parents' background and other conditions that affect the performance of the pupils but is not influenced by the schools. Such a correction is necessary to assess the effect of the quality of teaching in the schools.

In Denmark there is largely unrestricted admission to vocational education. An important part of vocational education is practical experience in a firm. However, not all of the pupils succeed in finding a training place in a firm. Instead they have the possibility of finishing the practical training in a school. The Budget for 2004 means that the State takes over the financing of the practical training taking place in schools. The aim of this agreement is to reduce the number of pupils in this system. However, compared to the present system the agreement does not encourage firms to establish more practical training places. One way to raise more practical training places would be to reward firms that establish practical training financially.

In Denmark there is free admission to secondary and tertiary education which is a good thing for the individual and it is undoubtedly encouraging for finishing the education that there is a great opportunity for choosing education based on personal interests. Among other things free admission is suitable from a social point of view on the assumption that there is a considerable amount of flexibility in the educations such that they can be used widely in the labour market.

With respect to tertiary education flexibility can be assured by a more effective split-up between bachelor and graduate studies. In a number of fields a bachelor education is still a 3/5 of a graduate degree. It is not a goal in itself to educate more bachelors but it seems inexpedient to bind the students to five years of education or more, especially in a situation where admission to tertiary education is increasing.

The financing of further education in Denmark takes place through a so-called “taximeter” system. In this system the state pays the education institutions specific rates per student which completes a course or a year of study. The taximeter could be utilised to promote a socially desirable degree of flexibility from the educational institutions. One possibility is to conduct evaluations at regular intervals. The purpose of such evaluations should be to assess whether

- the form and content of teaching live up to to international standards;
- the structure and content of the educations reflect the demands from those who employ graduates;
- the educational institutions follow the progress of graduates in the labour market and use this knowledge to improve educations;
- the institutions offer relevant supplementary education.

The rates within the taximeter system could then be changed in accordance with the extent to which educational institutions fulfill these demands.

While such evaluations will always contain some elements of judgement, the alternatives are not necessarily any better. If

e.g. the unemployment rate of graduates were used as the only indicator for educations' relevance for the labour market there would be considerable difficulties in interpreting such an indicator: How much is due to the quality of the education? How much is caused by a permanent change of demand? And what can be explained by other factors such a business cycle fluctuations?

There are strong arguments for demanding flexibility and mobility of persons who hold at least a master degree. A large flexibility is the way these persons should pay back society for the extra years of free education and the possibility of a free choice within the education system. An alternative is to change the financing of the master degree such that students face a larger marginal risk than today. Such a change could be achieved by converting education subsidies into loans and/or by introducing tuition fees. A reform along these lines would mean that students do not have to face a lower living standard than today, but would have a larger incentive to finish their education quickly. Today drop-out rates are small in the masters studies so students' risk in such a reform would be relatively small. Furthermore, previous analyses have shown that education subsidies in the present form serve to enlarge inequality seen over a lifetime, so converting subsidies into loans would actually decrease total inequality.

If students were to pay for master degrees themselves or if education subsidies were converted into loans it should be considered to introduce an education tax deduction for persons who have paid parts of their education. Such a deduction would make the education system more robust with respect to migration of graduates since highly educated individuals would be rewarded for working in Denmark. The tax deduction may be awarded over a period of 5-10 years. A similar tax deduction for foreigners working in Denmark should be considered in order to make the Danish labour market more attractive. The deduction may replace the current tax rebate for key personnel recruited abroad (the 25 per cent rule). Tuition fees and tax deductions could be combined such that the total change is neutral with respect to lifetime income.

The strong statistical relationship between parents' educational background and childrens' choice of education does not mean that the public subsidies to education are without effect in helping children of unskilled workers get education. It remains unknown how the situation would have been without any government involvement in the education system. Even if the effect of government involvement is relatively small in the short run it is important to note that the effect accumulates over generations such that the long run effect may be much larger. With respect to sabbatical years it should be considered to reward a quick transition from youth education to further education, e.g. by making education subsidies contingent on the number of sabbatical years.

Specific technological knowledge tends to become obsolete as the technological development progresses, but also basic skills are eroded over time. In Denmark there exists a comprehensive system for adult and supplementary education to which the government makes a significant contribution. However, until now there has been no evaluation or measurement of the effects of this system. Therefore it is recommended that such an evaluation is initiated as soon as possible.

The financing of supplementary education should be shared between employers, workers and the government. One possibility is that industry specific supplementary education is financed by contributions from both workers and employers to a common fund. The specific rules for such a fund – e.g. the size of contributions and the list of educations and courses covered by the fund – could be decided as a part of the labour market negotiations. The government should target its contributions to supplementary education towards the least educated part and the oldest part of the labour force. The main argument for such a targeting is that it would help to ensure that these persons remain in the labour force. However, there does exist arguments for public support of all supplementary education.