

ENGLISH SUMMARY

Chapter I: The Danish Economy

The Danish economy is entering the next millennium at a moderate pace. Domestic demand, which has driven growth for the last five years, is projected to show a fall for 1999. Only an improvement in exports has meant that GDP growth has not come to a halt; it is expected to be around 1 per cent this year. Next year, domestic demand is expected to recover, so that growth will temporarily reach almost 2 per cent. In 2001, growth will slow down again. Slow economic growth implies that private sector employment will decline. However, unemployment is only expected to increase slightly, thanks to continued increases in public sector employment. The low level of unemployment (the lowest in 20 years) is beneficial for the public budget, and a substantial surplus of around 2 per cent of GDP is expected for 1999.

The slowdown in the Danish economy is primarily due to the tightening of economic policy, a tightening which has been instituted in order to prevent overheating. In addition the decline in interest rates, which encouraged consumption, has now been reversed; interest rates have risen over the last six months, helping to restrain demand. It is expected that house prices will start falling because of the fiscal tightening and the rise in interest rates. However, while private consumption is now considerably weaker, public consumption is still growing, although more slowly than in the past six years.

The global economic situation has improved during 1999. In the United States, the high level of activity has continued. In Japan, GDP growth will be positive this year, even though short-term future prospects for this country are still uncertain. In Western Europe, a weak first half of 1999 has been followed by an upturn during the second half of the year. The recovery is expected to continue next year, with Germany and the United Kingdom among the countries which will experience improved growth rates. In the EMU area, the monetary policy conducted by the European Central Bank will in general not be equally appropriate for all EMU member countries. This will

put on more pressure for adjustments to the structural and fiscal policies of the member countries so that their economies can react flexibly and efficiently to shocks.

It is expected that Denmark's trading partners will have a combined growth rate of 2.2 per cent for 1999, followed by a growth rate of 2.7 per cent in 2000. Inflation abroad has generally increased during 1999, mainly because of rises in the prices of oil and other commodities. Continuing minor increases in inflation are expected over the next two years.

Prospects for Danish exports are somewhat better now after a bad year in 1998, when exports were negatively affected by a general strike. A pickup in growth abroad means that exports will increase over the next couple of years. Weaker domestic demand will lead to a reduction in imports. Furthermore, imports are currently being dampened by the strong stock building which took place in 1998, making it possible to satisfy demand by drawing from stocks. The development in foreign trade will lead to a current account surplus of around 0.5 per cent of GDP in 1999, compared to a deficit in the previous year amounting to 1.3 per cent. This improvement is primarily due to a lower level of investments, since savings are largely unchanged. The current account will improve further in 2000 and 2001 because private savings can be expected to increase slightly. This reflects a falling propensity to consume, which will be mainly caused by lower house prices.

The growth in employment this year, together with a reduction in the size of the labour force, has caused unemployment to fall below 160,000 persons, corresponding to 5.5 per cent of the labour force (national definition). Unemployment is expected to increase slightly in the forecast period. Because of this, wage pressure will abate somewhat, but wages will still grow at a higher rate than abroad – although the differential will be smaller. Inflation will show an increase for both 1999 and 2000, particularly because of increases in raw material prices. The low level of productivity in 1999 without a corresponding fall in wages also contributes to higher inflation. In addition, green taxes will add to inflation. In 2001, however, inflation is expected to fall.

Table 1 Short-term prospects for the Danish economy

	1998	1998	Percentage changes			
	Current prices	Per cent of GDP	in volume terms			
	DKK bn. ^d		1998	1999	2000	2001
Private consumption	592.5	50.7	3.5	0.8	1.6	1.6
Public consumption	298.7	25.6	3.0	1.5	1.0	1.0
Gross fixed capital formation, consisting of:	245.2	21.0	6.9	0.3	0.9	0.4
Residential investments	50.3	4.3	5.1	-2.3	-2.3	-0.5
Fixed business investments	174.5	14.9	8.5	1.3	1.3	0.5
Public investments	20.3	1.7	-2.7	-3.5	4.0	1.0
Stock building ^a	10.9	0.9	0.4	-1.2	0.4	0.0
Total domestic demand	1147.3	98.2	4.6	-0.3	1.7	1.2
Exports of goods and services	408.7	35.0	1.4	3.4	3.1	2.2
Imports of goods and services	387.7	33.2	6.4	0.0	3.0	2.1
GDP	1168.3	100.0	2.7	1.0	1.8	1.2
Key indicators						
Consumer prices, percentage change ^b			1.8	2.2	2.7	1.7
Unemployment, per cent ^c			6.4	5.5	5.7	6.1
Current account, DKK bn. ^d			-14.8	4.7	8.0	11.7
Current account, per cent of GDP			-1.3	0.4	0.6	0.9
General government financial balance, DKK bn. ^d			10.3	24.5	18.3	17.4
Gen. government financial balance, per cent of GDP			0.9	2.0	1.4	1.3
Hourly wage costs, percentage change			4.4	4.0	3.9	3.7
Terms of trade, percentage change			0.2	0.8	0.2	0.2

a) The percentage changes are calculated as the 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.

d) The DKK/USD exchange rate is taken as 6.96 in 1999, 6.79 in 2000, and 6.50 in 2001.

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

Policy recommendations

The Danish economy has no acute problems that require intervention at present. Fiscal policy should therefore be neutral in stance. Only in the event of signs of overheating would new activity-dampening measures be needed.

The risk of overheating is still present, although it no longer seems imminent. One decisive factor for private consumption to remain subdued will be the expected reversal of the rapid increases in house prices seen during recent years. It is also crucial that public consumption should grow significantly more slowly than during the last six years. This may turn out to be difficult to achieve, given a substantial public budget surplus. With a lax fiscal policy, the Government would contribute to undesirable increased activity. Finally, the tight labour market is a potential risk. Increases in wages are expected to be more moderate than of late. However, within certain branches there will still be a shortage of labour and, consequently, wage acceleration may set in there. If this happens, wage increases may spread to other parts of the labour market.

One negative factor in the outlook for the Danish economy is that rates of wage and price increases are higher than abroad. This is particularly worrying in a situation where economic activity is increasing abroad and slowing in Denmark. It will result in deteriorating competitiveness, and consequently Danish exports will not benefit fully from the pickup in growth abroad, and market shares will be reduced. The forecast is based on the assumption that there will be moderation at the wage negotiations next year, leading to a smaller differential between Danish and foreign wage increases.

In connection with the wage negotiations it is important to note that a reduction in working hours (e.g. through longer holidays) reduces labour supply, and in this way increases wage pressure. In addition, more leisure time reduces the tax base. Increases in wages given as increased pension contributions affect private consumption less than ordinary wage increases. Furthermore, increased pension contributions strengthen savings.

The public budget surplus is substantial. The increase in the surplus this year is primarily due to an increase in the tax burden. In order to maintain the surplus, the Government must restrain public consumption. This is also crucial in a situation where the labour market is relatively tight. The Government is relying on the dampening effect of increased green taxes being sufficient to offset the expansionary effect of public consumption. However, because taxes only affect activity indirectly, through higher prices and lower income, a substantial increase in green taxes – and a higher one than already decided – is needed to counterbalance increases in public employment. Therefore it is very possible that fiscal policy may turn out to be too expansionary.

The current public surplus should be used to reduce public debt. This will leave room for expansionary economic policies in future economic slowdowns. A lower level of public debt could furthermore reduce future revenue problems associated with an ageing population. Moreover, a reduction in the public debt will ease the implementation of any necessary future tax reforms and tax harmonization. Therefore, tax reductions which are not followed by public spending cuts or financed by other taxes cannot be recommended at present.

A more globalized world economy puts substantial pressure on the Danish tax system. The Government should therefore already be considering increased taxation on immovable property.

As an alternative or supplement to real estate taxation, capital gains taxation and capital loss deductibility should be considered. Taxation of capital gains on real estate could be attractive for distributional reasons, and furthermore could help to restrain future business cycles. However, the framework for taxation of capital gains should be considered carefully, and in connection with the overall tax system; otherwise, it might produce unintended effects, such as lock-in effects that limit mobility on the housing market. In principle, all capital gains should be taxed equally, otherwise inefficient allocation of assets could result. These undesirable outcomes should be avoided or minimized in the implementation of capital gains taxation.

Private employment is expected to decline in the next couple of years. It is in times of increasing unemployment that a government's active labour market policy is tested. It is important that the effects of recently implemented labour market reforms should be allowed to continue working in the years to come. Otherwise, there is a serious risk that unemployment will return to the previous high levels, and not just increase slightly, as expected in the forecast.

Continued education and training for adults is an important part of labour market policy. Publicly financed continued education should be aimed at those among the unemployed with the lowest skills and with the highest risk of being long-term unemployed. This will reduce structural unemployment. Continued education for others should primarily be paid for by employers and employees, because they benefit from higher productivity and higher wages. The economic incentives may be small for individual firms to engage in financing continued education for their employees when they can hire well-educated labour from other firms, and in this way avoid the costs associated with education. Therefore, all firms should participate in the joint organization and financing of continued education, in order to ensure a suitable level of education. Financing of continued education should not, however, come only from general company financing, but also from the parties benefiting from each particular education scheme. This will ensure high quality and efficient exploitation of the continued education programme.

Chapter II: The Danish Economy 2010

The Danish economy is currently in good condition. This is mainly a result of the recent years of economic recovery, but in addition the Danish labour market reforms of the nineties have reduced structural unemployment, thus contributing to improving Government finances and rising potential output. These favourable circumstances make the outlook for the Danish economy appear promising for the first decade of the new millennium, with expected healthy Government finances, a growing surplus on the current account, and sustained international competitiveness despite low unemployment rates.

However, the overall positive picture depends crucially on at least three important factors. First, the policy makers must continue to manage economic policy with firm discipline. Secondly, the Danish household sector must increase saving to income ratios. Finally, it is necessary that the improved structures on the labour market are maintained. If just one of these three conditions fails to hold, the costs in terms of higher unemployment rates and higher Government budget deficits will become excessive.

A formal, model-based projection of the Danish economy to 2010 is presented and discussed in this chapter. The projection is conditional on a number of crucial assumptions; some of the most important of these can be summarized as follows:

- Growth in Government spending will amount to only 1 per cent per year up to 2005, and will then drop to ½ per cent per year
- The Danish labour market will operate in a manner consistent with a long-term unemployment rate of 5-6 per cent
- Danish price and wage competitiveness will be maintained throughout the projection period
- There will be increasing saving-to-income ratios in the household sector
- The average annual number of hours actually worked per employed person will remain constant
- There will be no unforeseen internal or external shocks to the economy during the projection period

Under these optimistic assumptions, the Government will be able to maintain a balanced financial budget over the entire period from 2002 to 2010. The high growth rates in housing prices are expected to slow down, and because of the close correlation between housing prices and private spending, this will induce the private saving propensity to rise. As a consequence the current account will improve substantially over these years, and accordingly the Danish foreign debt will be fully repaid by 2010. The size of the labour force will decline during the projection period, primarily due to the ageing population, implying a reduction in the rate of

employment growth. The declining labour force will reduce the unemployment rate to 5 per cent by 2010, which will put upward pressure on wages. Because of the reduction in the size of the labour force, the rate of growth in potential output will diminish, causing a lower real growth rate in Danish GDP relative to the average growth rate among Denmark's major trading partners. The annual average real growth rate in Denmark in the projection period 2000-2010 is expected to be 1¾ per cent, whereas the annual foreign real growth rate will be 2¼ per cent, see Table 2.

However, if these favourable assumptions are incorrect, the model indicates that although the Danish economy appears to be strong at present, it is still vulnerable to certain negative impacts and to lack of economic discipline.

Since the middle of the seventies there has been a remarkable decline in the average number of hours worked annually per person in employment in Denmark, which can be interpreted as a relative strong income effect on the demand for leisure. In addition, some labour unions have recently sharpened their demands for an extra week of vacation. Calculations show that a 30-hour reduction in the average annual hours actually worked per employed person – equivalent to introducing an extra week of vacation – would have serious adverse long-term effects on the Government balance sheet. It should be noted that the short-term result of a reduction in hours worked would be a decline in the unemployment rate, which would have a temporary positive effect on the Government balance sheet. However, the long-term unemployment rate is determined primarily by conditions related to fundamental structures of the labour market, and since these would be unaltered by a reduction in hours worked, the long-term level of unemployment would remain unaffected. Since total employment would be unchanged, total hours worked would be reduced in the long run, lowering aggregated output and income, and hence resulting in a smaller tax base and lower general government tax revenues. Consequently, the general government financial balance as a percentage of GDP would be 2 per cent less in 2020 in comparison with the base projection, in which the total hours worked are held at the present level.

Table 2 *GDP, unemployment and general government financial balance in the base projection and under alternative scenarios*

	1980-01	2002-10	2011-20	2020
	----- Per cent -----			Level
Base projection				
GDP	2.0	1.8	2.1	1542
Unemployment rate	8.8	6.1	4.5	4.5
Financial balance	-1.3	0.2	1.0	1.3
Higher structural unemployment rate (1 per cent permanent increase)				
GDP	2	1.8	2.1	1529
Unemployment rate	8.8	6.5	5.9	5.8
Financial balance	-1.3	-0.1	-0.5	-0.4
Reduction in average hours worked per person (30 hours less annually)				
GDP	2.0	1.7	2.1	1513
Unemployment rate	8.8	5.1	5.1	5.0
Financial balance	-1.3	0.1	-0.8	-0.7
Increased general government spending (1 per cent annual growth rate)				
GDP	2.0	1.9	2.1	1549
Unemployment rate	8.8	5.8	3.3	3.6
Financial balance	-1.3	0.2	-0.4	-1.7
No increase in propensity to save (saving propensity constant at the 2001 level)				
GDP	2.0	2.1	2.1	1581
Unemployment rate	8.8	4.8	4.3	4.9
Financial balance	-1.3	1.2	0.2	-0.9
Total (assuming all of the above changes to the assumptions in the base model)				
GDP	2.0	2.0	2.1	1561
Unemployment rate	8.8	4.0	4.4	5.5
Financial balance	-1.3	0.7	-3.7	-6.9

Note: The numbers in the first three columns are period averages, whereas the figures in the last column are levels. GDP is measured in real terms (DKK billions, 1990 prices). The financial balance denotes the general government financial balance as a percentage of nominal GDP.

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

In the base projection it is assumed that the fundamental structures related to the Danish labour market – when the labour market reforms are fully implemented – will be consistent with a long-term unemployment rate of 5-6 per cent. This level of long-term unemployment is necessary in order to ensure constant price and wage competitiveness throughout the projection period, but viewed in isolation it may seem optimistic in a historical perspective. Calculations show that if the fundamental structures of the labour market deteriorate or the reforms are less effective than previously assumed, the consequences for the general government financial balance become highly significant. In particular, if the long-term unemployment rate rises from 5-6 per cent to 6-7 per cent, the general government financial balance as a percentage of GDP will be 2 percentage points worse in 2020.

Government spending is assumed in the base projection to grow at 1 per cent annually until 2005, in accordance with Government policy as stated in *Denmark 2005*.¹ Beyond 2005, general government spending is calculated on the basis of the changing demographic situation, which implies an annual growth rate of ½ per cent. In the period 1980-98 the average growth rate in Government spending was almost 2 per cent annually. Viewed in a recent historical perspective, the growth rate in general government spending in the base projection is clearly below its average level. Alternative calculations suggest that if general government spending rises and continues to grow by 1 per cent annually beyond 2005, then the general government financial balance as a percentage of GDP will be 3 percentage points worse in 2020 relative to the base projection.

The private sector propensity to save rises in the base projection, as a result of a slowdown in the rate of increase of housing prices and the effects of the saving-enhancing initiatives enforced through the so-called Whitsun package. If the propensity to save remains at its present level, the consequences for the current account and the general

1) The publication *Denmark 2005*, The Danish Ministry of Finance, August 1999, constitutes the Government's medium-term scheme on how to manage the macroeconomic policy.

government financial balance will be significant. In particular, computations show that the general government financial balance as a percentage of GDP will be 2 percentage points worse in 2020 compared with the base projection.

The alternative scenarios presented above illustrate how small and plausible changes in the assumptions related to the supply of labour, the private sector propensity to save and general government spending could easily have adverse effects on the outlook for the Danish economy. The impact of any of the individual changes would be significant, but perhaps not alarming. However, if all the changes were to become reality, the impact could be dramatic. In this scenario, the deficit in the general government financial balance as a percentage of GDP would increase very rapidly, and by 2020 it would have deteriorated by almost 7 percentage points compared with the base projection. This level of budget deficit is clearly unsustainable, and in this situation there would be an urgent need for political intervention in order to restore balance to the general government balance sheet.

In the base projection, the medium term outlook for the Danish economy is promising. However, it is important to recognise that this favourable position should not be allowed simply to pass by, but that instead it should be actively utilized for further consolidation of the Danish economy. Unforeseen economic events or lack of responsibility on the part of the Government or the labour market parties could change the positive outlook dramatically. Furthermore, the implications of an ageing population and the resultant demands for increased government spending – especially in the years after 2010 – strongly reinforce the need for economic responsibility and foresight in the years to come.

Chapter III: The Net Economic Value of Danish Oil and Natural Gas Production

The oil and gas reserves in the Danish sector of the North Sea contribute to national wealth, and a sufficient return on these energy resources should be secured for society. The aims of

this chapter are twofold: firstly, to calculate the size and distribution of the past and present net economic value (resource rent) obtainable from the oil and gas reserves, and secondly, to discuss whether present rules and regulations with respect to taxation and concessions secure a fair share of the energy surplus for the Government.

In the period up to 1984, the Danish company A.P. Møller had exclusive access to Danish underground energy resources. Since 1984, it has also been possible for other companies to explore the Danish continental shelf and extract oil and gas. The motive for opening up access was to accelerate the identification of Danish reserves. The official argument for accelerating the identification of the reserves has been that the Danish reserves are expected to be small. Hence, extraction will only be profitable while the present infrastructure equipment (pipelines, etc.) can be utilized.

No analysis has been made of whether it is optimal for society to accelerate or postpone extraction. Instead, the focus has been on the size and distribution of the surplus given the official extraction strategy. The necessary information for making an analysis of the optimal extraction strategy is often not available. For instance, the marginal cost of oil extraction to the oil companies is confidential, for commercial reasons. Knowledge of future energy prices is another prerequisite for determining the optimal extraction strategy. In the past, energy prices have been extremely volatile, so forecasts of energy prices are deemed to be very uncertain.

The latest prognosis by the Danish Energy Agency shows that Danish oil reserves which can be extracted with existing technology total 193 million m³. Technologically accessible gas reserves are estimated at 137 billion m³. The calculations of the reserves are updated annually. The annual revisions have generally been upward. This reflects that positive factors affecting calculations of extractable reserves, i.e. new discoveries and technological progress, more than compensate for negative factors, i.e. extraction.

The latest prognosis by the Danish Energy Agency estimates that annual oil production will reach a peak of 18 million m³ in 2000. Then production will gradually decline to 3 million m³ in 2012. It is estimated that the production of gas will reach a peak of 8 billion m³ in the period 1999-2004 and then gradually decline. The forecasts for the future production of oil and gas are derived from prognoses of the reserves. Due to the uncertainty of the size of reserves, the prognoses for production may be extremely far off actual future production. In the past there has been a discrepancy between actual and forecasted production. The forecast for oil production in particular has underestimated actual production.

The net economic value obtained from oil and gas production is defined as the sum of governmental revenue and net profit to the oil and gas companies (including an imputed return on invested capital). Calculations indicate a total net economic value of DKK 125 billion for the period 1963-2012 (the annual surpluses in the past and present period are discounted to 1998, with a discount rate of 4 per cent). Of this sum, DKK 70 billion is transferred to the Danish Government. DKK 23 and 33 billion are allocated to domestic and foreign companies, respectively. Of the total net economic value, 74 per cent is allocated to the Danish Government and Danish companies.

In the final part of the chapter, the distribution of the net economic value between the Government and private companies is compared to distribution in other countries with energy reserves in the North Sea (the UK, Norway and the Netherlands). It is concluded that taxation of current extraction is not heavy in Denmark when viewed in an international perspective. Together with the UK, Denmark has the most favourable rate of taxation in the North Sea area. It is not obvious whether the governmental share of the net economic value is fair. At the present time, any increased taxation of current extraction could be regarded as unfair by the current producers because they are locked in by huge investments. Furthermore, changes in the taxation of current extraction could reduce the credibility of the existing tax system. Thus, it is most fruitful to discuss the rules for taxation for future extraction, where changes in the tax system have no retroactive consequences.

The Danish taxation of energy production from new discoveries is relatively favourable compared to taxation in other countries with reserves in the North Sea. The official argument for this is that the Government intends to use the tax system to stimulate exploration and extraction in Danish territory. The crucial question is whether the tax system can be improved so that on the one hand it stimulates exploration and extraction while on the other hand it secures a fair share of the surplus to the Government if large oilfields are discovered.

Increasing progression in the tax system would mean that small oilfields would still be taxed favourably, and revenue from large fields would be taxed more heavily than today. Progression could be increased by making the involvement of the government oil company (DONG Efterforskning og Produktion) in energy extraction flexible, in such a way that involvement is increased for large new oilfields. The official assessment is that remaining oil and gas fields are relatively small. However, it is not necessarily wise to base the main principles of oil and gas taxation solely on such an assessment.

Chapter IV: The Danish Natural Gas Sector

The European natural gas markets are changing significantly at present. Natural gas is considered to be the fuel of the future, and the market for gas is growing rapidly in most parts of Europe. Until now, most of the European gas consumption demand has been met by domestic production, and all purchase and sale of gas has been handled by national gas monopolies. In the future, most gas will have to be obtained from oil fields far from Europe. At the same time there will be growing pressure for the introduction of competition on the gas markets. Large gas consumers are demanding a choice of supplier, and the gas directive of the EU-Commission requires a partial opening of the national gas markets from the summer of 2000. The combination of an expanding market and the introduction of competition is a major challenge for the European gas companies, but offers also great opportunities.

Keeping these European trends in mind, the chapter assesses what is needed to secure the gains from the opening up of the market in Denmark. Much will depend on how the EU directive is transformed into Danish law. Therefore, it is discussed whether the reform of the gas sector which has been proposed by the Danish Government will be adequate to ensure a *de facto* opening of the market, or whether it puts too much emphasis on the cash flow of the existing public gas companies.

The existing organisation of the Danish gas sector is simple. DONG Naturgas – a subsidiary of the state owned Dansk Olie og Naturgas (DONG) – purchases all gas for the Danish market, and has exclusive rights to the transmission and storage of natural gas in Denmark. Together with four regional gas companies owned by local authorities, DONG Naturgas also manages all sales to final consumers. Thus, the sector is today characterised by public ownership and monopoly in all parts of the gas chain, from producers to final consumers. In addition, the sector has historically received a considerable indirect state subsidy, in that natural gas has been exempt from energy taxes. This state subsidy will, however, be eliminated in the near future because it is in conflict with the competition rules of the EU.

Another aspect of the gas sector is comprehensive public regulation, including the determination of prices for final consumers. Gas prices are currently based on the prices of the fuels that consumers could use instead of natural gas. Consequently, the price for each consumer type corresponds to the maximum amount that the consumer type is willing to pay for gas. This ensures at the same time that the profit of the gas companies is maximized. The principles for regulating gas prices are thus fundamentally different from those used for other publicly regulated prices. There, the purpose is to give consumers the lowest prices possible, and not to maximize the profit of producers.

As a result of the existing regulation system, different consumer types pay rather different gas prices. Danish households pay more than three times as much as large

consumers in industry and in power and district heat production, even when differences in energy taxes are taken into account. This difference can only partly be explained by variations in the costs of supplying different consumer types. Price discrimination is therefore substantial in the Danish gas pricing system, and it seems to be more pronounced than in other European countries.

Official forecasts by for example the Danish Energy Agency show that Danish gas consumption will stabilize within the next few years. However, the move towards competition in the European gas markets and the commitment to reduce CO₂-emissions make it likely that the prognoses might be too conservative. But even with constant gas consumption, it will soon be necessary to supplement domestic supplies of natural gas with imports. Since all gas consumed in Denmark until now has come from suppliers in the Danish sector of the North Sea, the need for imports is a new challenge for the existing Danish gas companies.

The European gas market is in contrast expected to more than double within the next 20 years. As indigenous reserves are limited, around two-thirds of the European gas consumption in 2020 will have to be covered by imports from countries such as Russia and Algeria. These countries have enough gas to cover European demand for many years to come. Moreover, it seems likely that the infrastructure needed to transport the gas to the European market will become available. The pre-conditions for establishing a proper European gas market are thus expected to be satisfied.

It is more uncertain how this market, which will have relatively few suppliers and many buyers, will function. Historically, the gas streams in Europe have been determined by large but relatively few long-term contracts between gas producers and national gas monopolies. However, lately there has been a trend towards more flexible contracts, and some gas is sold on recently-established spot markets. If a proper European gas market emerges, the possibilities and advantages of creating competition among suppliers to the Danish market will increase.

A European gas market will only emerge, however, if gas markets are opened for competition in the individual countries. One factor in this market opening is that the accounts of gas companies should be split into two parts. Natural monopoly activities, i.e. gas transportation and storage, must be separated from activities related to trade in gas. This separation can be achieved in various ways; but however it is done, effective public regulation will be required to prevent the companies owning the gas networks from excluding potential competitors from the market.

The Danish Government has apparently decided to make a slow start to the opening of the gas market. An important consideration underlying this decision has been the financial state of the existing gas companies. In particular, the substantial debt of the regional gas companies and the long term “take-or-pay” obligations of DONG Naturgas have been reasons for concern among the public owners. To alleviate these problems, the Danish Government made an agreement with the two largest regional companies in June 1999 with the aim of making them more robust when the gas market is opened gradually for competition and the state subsidy is eliminated. This agreement will partially change the organisation and structure of the gas sector, and it is currently being transformed into a new regulatory framework. Moreover, the two regional companies and DONG Naturgas are at the moment negotiating new terms for gas supply to the regional companies. These negotiations must be completed during the spring of 2000, before the EU gas directive comes into force. As far as the position of the two remaining regional companies is concerned, it is still unclear whether they will decide to join the agreement with the Government, and what might happen if they do not.

One consequence of the agreement with the Government is that the regional companies will establish a joint company. All debts of the regional companies will be transferred to this new company, and each regional company will have to contribute pre-specified amounts towards the repayment of the collective debt. This implies that those regional companies joining the agreement will become debt-free at the same time. This will

resolve a potential conflict which could have emerged if the companies had repaid their debt at different times. In that situation it would have been difficult to maintain the two principles of uniform prices across regions and no profits to the regional companies simultaneously. Besides instituting joint debt repayment, the agreement also means that the debt will only be repaid by 2014, whereas the regional companies had previously expected to be free of debt by around 2005. Consequently, the annual debt servicing cost will be reduced, which will partly compensate the regional companies for the elimination of the state subsidy.

In addition to debt repayment, the new joint company is also to be used to provide the means for increased cooperation among the regional companies in relation to the operation and maintenance of the gas networks. The increased cooperation among the regional gas companies will reduce their role as independent companies and effectively prevent them from competing for customers in an open gas market. One can therefore wonder why it was not decided to go all the way by establishing one national gas company comprising DONG Naturgas and the regional companies. The advantage of having just one company responsible for the operations of the entire gas network would be that economies of scale could be fully exploited.

However, the agreement between the Danish Government and the two regional gas companies is likely to secure the future of the companies in the short to medium term, not least because it seems as if the Government will only open the Danish gas market to the extent that it complies with the minimum requirements of the EU directive. Moreover, it is likely that Denmark will make use of some of the exception clauses in the directive. The Government is for example insisting that certain power companies will have to fulfil the long-term contracts they have with DONG Naturgas, despite a ruling from the Danish competition authority that the contracts are in conflict with the competition laws. Therefore, there is a distinct risk that there will be very few large free customers, which may make the Danish gas market unattractive for potential competitors.

International experiences with gas liberalization, for example in the United Kingdom, indicate that it is important to take a firm approach to existing gas monopolies. Thus, competition will only emerge if the existing companies are effectively prevented from using their ownership of gas networks and their initial control over the market to keep competitors out of the market. If the aim therefore is to create an open market, it must be ensured that there are sufficient free and attractive customers available, and that other gas companies can get access to the infrastructure on reasonable terms. This may cause some financial distress for the existing companies, which must be alleviated by capital transfers from their public owners. Yet this may turn out to be a small price to pay, given the gains that can be obtained in the longer term from having a truly competitive gas market.