ENGLISH SUMMARY

Chapter I: The Danish Economy

The global economic slowdown in 2001 caused increasing unemployment in a number of countries, and the trade weighted average growth rate for Denmark’s trading partners amounted to only 1.4 per cent last year. Trends in both consumer and business confidence indicators point to a turnaround in 2002, and the economic outlook is now assessed more positively than it was before the terrorist attacks on the United States. However, confidence indicators generally have still not reached the levels of the first half of 2001. Despite there being few real economic data to support the presumption of an economic upswing, growth for Denmark’s trading partners is expected to increase to about 1½ per cent this year and to about 2¾ per cent next year.

Denmark also experienced an economic slowdown in 2001, with GDP growing by less than 1 per cent. This slowdown is expected to be short. It is expected that this year economic growth will return to rates close to the maximum attainable, given the low rate of unemployment and the small expected increase in the labour force. GDP is expected to grow by 1½ per cent annually, driven by private consumption, public consumption and net exports, whereas investments are expected to grow less strongly. As a consequence of modest growth last year and in the first half of this year, private sector employment is expected to fall by about 4,000 persons from 2001 to 2002. Because public sector employment is expected to increase by about 6,000 persons, unemployment this year will be largely unchanged compared to last year. Growth is predicted to be around 2 per cent in 2003-04, primarily driven by a larger contribution from domestic demand.
Table 1  Short-term prospects for the Danish economy

<table>
<thead>
<tr>
<th></th>
<th>Current prices DKK bn.</th>
<th>Per cent of GDP</th>
<th>Percentage change, volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private consumption</td>
<td>630.4</td>
<td>46.9</td>
<td>-0.3</td>
</tr>
<tr>
<td>Public consumption</td>
<td>343.0</td>
<td>25.5</td>
<td>0.6</td>
</tr>
<tr>
<td>Gross fixed capital formation</td>
<td>283.9</td>
<td>21.1</td>
<td>10.5</td>
</tr>
<tr>
<td>consisting of:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential investments</td>
<td>53.0</td>
<td>3.9</td>
<td>11.0</td>
</tr>
<tr>
<td>Business fixed investments</td>
<td>207.4</td>
<td>15.4</td>
<td>10.8</td>
</tr>
<tr>
<td>Public investments</td>
<td>23.5</td>
<td>1.8</td>
<td>6.7</td>
</tr>
<tr>
<td>Stockbuilding(^a)</td>
<td>0.3</td>
<td>0.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Total domestic demand</td>
<td>1,257.6</td>
<td>93.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Exports of goods and services</td>
<td>608.9</td>
<td>45.3</td>
<td>11.5</td>
</tr>
<tr>
<td>Imports of goods and services</td>
<td>523.1</td>
<td>38.9</td>
<td>11.2</td>
</tr>
<tr>
<td>GDP</td>
<td>1,343.3</td>
<td>100.0</td>
<td>3.0</td>
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</tbody>
</table>

**Key indicators**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer prices, percentage change(^b)</td>
<td>3.0</td>
<td>2.1</td>
<td>2.3</td>
<td>1.9</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Unemployment, per cent(^c)</td>
<td>5.3</td>
<td>5.1</td>
<td>5.1</td>
<td>4.9</td>
<td>4.8</td>
<td></td>
</tr>
<tr>
<td>Current account, DKK bn.</td>
<td>21</td>
<td>34</td>
<td>31</td>
<td>41</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Current account, per cent of GDP</td>
<td>1.6</td>
<td>2.5</td>
<td>2.2</td>
<td>2.8</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>General government financial balance, DKK bn.</td>
<td>33</td>
<td>37</td>
<td>29</td>
<td>36</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>General government fin. balance, per cent of GDP</td>
<td>2.5</td>
<td>2.8</td>
<td>2.1</td>
<td>2.5</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Hourly wage costs, percentage change</td>
<td>3.5</td>
<td>4.3</td>
<td>4.1</td>
<td>3.9</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Terms of trade, percentage change</td>
<td>0.8</td>
<td>1.5</td>
<td>-0.9</td>
<td>0.6</td>
<td>0.3</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) 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. National definition.

Sources: Statistics Denmark, *National Accounts* and own estimates.
There are several factors that may threaten the relatively rapid return to a more positive outlook for the Danish economy. First, it is uncertain when the global upswing will come and how strong it will be. Second, further increases in the price of oil will contribute to an increase in overall inflation and possibly lead to a tighter monetary policy than expected in both Europe and the United States. Third, fiscal tightening, triggered by large budget deficits, may take place in Germany and elsewhere. There are also risks related to domestic economic developments. Any oil price increases will have a dampening impact on private consumption. Furthermore, as a consequence of the tight Danish labour market there is a risk that wage increases will be higher than predicted, which is particularly likely to happen if demand grows by more than expected.

Private consumption is projected to regain momentum after three years of weak growth. In 2002 the increase in private consumption will primarily be due to vehicle purchases. In the following years private consumption is expected to follow the increases in disposable income. Private investments are projected to grow only weakly this year, which reflects the fact that many investments have been deferred as a consequence of the economic slowdown. Growth in private investments is expected to be somewhat higher next year as prospects become better.

The increase in the price of oil in the beginning of 2002 has contributed to an increase in consumer prices. Thus, consumer price inflation will increase slightly this year to around 2¼ per cent. In 2003-04 consumer prices are expected to grow at around 2 per cent annually. The low rate of inflation is a result of a combination of rather weak growth in import prices and moderate wage increases.

As a consequence of the slowdown abroad and domestically, Danish exports and imports are projected to grow only weakly in 2002. Export growth will be stronger in 2003-04 with market growth picking up abroad. A higher growth rate in domestic demand implies that import growth will increase as well in these years. Thus, the contribution to growth from net exports is only expected to increase slightly. Trade and current
account surpluses will be large, and there will be a significant reduction in foreign debt.

The public budget surplus is expected to decline from 2.8 per cent of GDP in 2001 to about 2 per cent in 2002. The fall is mostly explained by the fact that supplementary pension contributions have been converted to a mandatory private savings scheme, and thus these pension savings are no longer counted as a part of public income. The budget surplus is projected to rise in 2003-04 as a result of the brighter prospects. The tax freeze announced by the government will in itself mean that revenues from certain indirect taxes will not follow general price increases. Public consumption growth is projected to exceed the 1 per cent target in real terms due to pressure for new welfare measures.

A number of empirical studies have shown that the institutional framework is of importance for fiscal policy. The purpose of fiscal institutions is to create constraints and incentives that have a disciplinary effect on policy makers. Budgetary reforms in other countries, for example Sweden, have contributed to significant public budget improvements in the 1990s. In Denmark, consolidation of public finances has also taken place. But the improvements in Denmark have been primarily a result of favourable economic developments in the 1990s and labour market reforms that have reduced the cost of unemployment support. However, the improvements are also a consequence of more formal fiscal rules that fiscal policy must comply with, e.g. supplying convergence programmes to the EU. Moreover, sustainability assessments have become an integrated part of economic policy.

Policy Recommendations

Danish fiscal policy is expected to increase economic growth by 0.2 percentage points this year compared to a situation with a neutral fiscal stance. Due primarily to the tight labour market, the Danish economy has a very high degree of capacity utilization. However, the unemployment rate is expected to increase temporarily in 2002, and therefore the slightly expansionary fiscal policy is within the acceptable range. The
current expectation is that unemployment will start falling again in the following years, so that there will be neither need nor room for further fiscal expansion.

Danish competitiveness is expected to deteriorate during the period 2002-04. This deterioration will be caused mainly by the high wage increases in Denmark compared to those abroad. If this development continues, there is a significant risk that Denmark will lose market shares vis-à-vis our trading partners. In themselves, high wage increases in Denmark do not constitute a problem, providing that growth in productivity is correspondingly high. International comparisons indicate that productivity increases have been higher in Denmark than abroad during the second half of the 1990s. However, this must continue to be the case in the coming years if a deterioration in competitiveness is to be avoided. In the short run it may prove difficult to influence productivity growth, but in the longer run there is little doubt that increased efforts within the fields of education and of research and development will be beneficial to productivity.

In connection with the budget for 2002, the government implemented legislation aimed at improving competitiveness. This legislation included a provision for a longer credit period for VAT payments for smaller companies as well as lower administrative costs for smaller companies in connection with their reports to public authorities. While these initiatives will naturally improve profits for the firms concerned, the total effect on competitiveness will be small in comparison with total wage costs.

In 2001, the previous government set out a number of economic goals for the Danish economy. The central goals were: reducing the level of the public debt in 2010 to half its level in 2000, significant growth in employment and the labour force, tighter control over public expenditures, and making the public sector more effective. The new government has retained these goals.

There is no doubt that the increasing proportion of elderly persons in the population that there will be after 2010 makes
a rapid reduction in the public debt desirable. A speedy reduction of the public debt is needed in order to avoid future tax increases and/or reductions in public expenditures. If the rate of debt reduction falls below that set out in the government’s goals, future generations will either have to pay higher taxes relative to GDP or have a smaller public sector relative to GDP than current generations. Choosing the profile for the reduction of the public debt hence implies an important political choice between the living standards of the current and future generations.

In order to achieve the goal of reducing the public debt by a half between 2000 and 2010, tight control is needed over public expenditures in the coming years. One of the ways the government intends to achieve its goal is by limiting the annual real growth in public consumption to 1 per cent until 2005 and to ½ per cent in 2006-10. Furthermore, a substantial promise to make the public sector more efficient is implicitly included in the goals. Fulfilment of these ambitious goals makes large demands on the institutional frames for fiscal policy management, including the imposition of strict budgetary discipline on local authorities.

Another condition for achieving the medium term goals of reducing the public debt is that the labour force should continue to increase in size. The extension of parental leave which was implemented in connection with the budget for 2002 will actually reduce the labour force and hence conflict with the goal of increased labour force participation in the coming years. Furthermore, it may have indirect effects on wage costs to the extent that workers obtain full wage compensation during parental leave, as has been the case with earlier extensions. Full wage compensation will probably also mean that a very large proportion of the persons affected will take advantage of the increased leave period. This will only serve to strengthen the negative effects on the labour force size.

To ensure that the labour force continues to grow it is necessary that economic policy during the coming years contributes to increased labour force participation, since the demographic trends in the Danish population imply a reduction in the labour
force. It is estimated that the government’s goal of an increase in the labour force by 66,000 persons between 2001 and 2010 can only be achieved if a determined effort is made (see *Danish Economy, Autumn 2001*). Specifically, economic policy should aim at improved integration of immigrants into the labour market. The labour force participation rate of this group is well below the national average. Important elements in this effort are an increase in educational opportunities, more on-the-job training, and greater focus on the economic incentives for this group to enter the labour market. Furthermore, there is a need to strengthen the economic incentives for all sections of the population to choose to remain in the labour force instead of taking early retirement.

Recently, a number of proposals concerning housing policy has been put forward. One of these is that social housing residents should be allowed to buy their own flats. It is unclear at present what effects this suggestion might have. In particular there is great uncertainty about the price at which the apartments will be offered, as well as the timing of the sale. The price level has significance for the distributional consequences of this proposal. Any price below the market price will give the current residents a capital gain. On the other hand it is difficult to imagine that the residents will find it attractive to buy their flats at market prices if they can opt to continue to live there at the current low rents. Another proposal has been that apartments which are constructed in the attics of existing rental buildings should be exempt from rent control. While the first proposal cannot be expected to correct any of the fundamental imbalances in the Danish housing market, the second proposal may do so if it is followed by further deregulation of the market for rented housing. Rent control and the direct and indirect subsidies to social housing and co-operative housing mean that many tenants pay a rent which is significantly below the rent which would be required to give a market return on the capital invested. This fundamental imbalance would not change to any large extent through the implementation of the proposals above.

The market for owner-occupied dwellings is also characterized by imbalances (see *Danish Economy, Spring 2001*). The rate
at which imputed rents in owner-occupied dwellings are taxed
is well below the rate of taxation for other types of capital
income. As a first step towards an overall higher taxation of
owner-occupied housing, it is recommended that the tax rebate
for house owners who bought their houses before 1 July 1998
should be abolished. Apart from an entirely arbitrary tax
rebate to some house owners, this exemption also creates a
large incentive for these people to stay in their current homes,
since the exemption is lost if they move to another dwelling.
The problems in the Danish housing market can only be
resolved by a long-term reform of the entire housing market
which ensures that all types of housing are treated equally.

The European Union has ruled that the distribution system
agreed between car manufacturers and Danish car dealers,
which has provided large discounts on new automobiles, is not
in accordance with EU competition rules. Consequently, prices
of automobiles can be expected to increase in Denmark. With
the current calculation method for the vehicle registration fee,
this fee will also increase when car prices rise. Such an
increase is not supported by any very weighty arguments. On
the contrary, consideration should be given to altering the
taxation of automobiles so that less weight is attached to the
taxation of car purchases and more weight is put on car use,
e.g. by introducing road pricing or similar systems in the larger
cities. This would make it possible to regulate and control
traffic where this is most needed to a greater extent than today.
Another possibility is to let the half-yearly automobile owner-
ship taxes vary with the age of the vehicle, so that newer, less
polluting cars are taxed at a lower rate.

From an economic point of view it is inappropriate to freeze
the tax system, as has been done by the current government.
The current tax system already has embedded problems (see
Danish Economy, Spring 2001). Changes in the economic
environment, e.g. as a result of internationalisation, will
require future adjustments of the tax system. The tax freeze is
therefore inappropriate because it hinders selected reductions
of certain taxes, since other taxes cannot be increased to cover
the revenue loss. One example is that change away from the
taxation of mobile tax sources, such as capital gains and
labour income, and towards the taxation of immobile sources, primarily land and real estate, is not possible as long as the tax freeze is in place. A further reason why the tax freeze is inappropriate is that tax changes have traditionally been used as instruments for stabilising the economy over the business cycle. If a future economic boom becomes so strong that fiscal tightening is needed, the tax freeze will prevent business-cycle-related tax increases and enforce an inappropriate policy mix.

Chapter II: Municipalities and central government

In international terms, the public sector in Denmark is highly decentralised. Municipalities and counties are responsible for 60 per cent of public sector spending. This decentralisation results in local and regional variations in standards of service. However, central policy makers have become less willing to accept these differences. Consequently, during the 1990s central government began to involve itself more directly in policy areas where municipalities and counties have formal responsibility. A crucial question now is whether the existing division of responsibilities between central and local governments is appropriate, given the limited degree to which local and regional differences are regarded as acceptable.

There are 275 municipalities in Denmark, with populations ranging from about 2,500 to half a million. All these municipalities have the same responsibilities to fulfil. The existing structure was established in 1970, but since then the number of tasks for which municipalities are responsible has increased, as has the degree to which the costs of carrying out these tasks have to be met locally. These developments imply a need for an increase in the minimum size of the population for a municipality if the financing of public sector expenditure is not to become too burdensome. Expenditure per capita is higher in small municipalities, and it is difficult for small municipalities to meet minimum requirements with regard to administration. It is therefore recommended that a study be made to determine which of the smaller municipalities would gain if they were
merged with other municipalities.

Denmark is divided into 14 counties. Their main area of responsibility is the health care sector, which is publicly organised and financed in Denmark. The central government accepts only small variations in the health care services provided by the counties. Further, residents have the right to choose to be treated outside the county in which they live, but their treatment is nevertheless paid for by the home county. These factors make it very difficult for the counties to make their own priorities between different treatments, or determine different levels for health care expenditures. In this situation, one of the major arguments for maintaining the counties’ responsibility for financing the health care sector disappears.

The pressures on welfare state expenditures will increase in the years to come. This will make tight expenditure control necessary. It would also be advisable to change the composition of total local taxes.

Local public expenditures are primarily financed by local income taxes. It is recommended that the proportion of property taxes to income taxes be increased and that the ceiling on property tax be removed, because this tax is less distortive than income tax.

A portion of local public expenditure is financed by user charges. The report recommends a broadening of the use of user charges and a closer connection between the amount charged and the quality of the services provided. This would facilitate a more differentiated supply and make it possible for users to choose between different providers of local public services. Changes in income distribution should however be considered if user charges were increased.

Several analyses show differences in efficiency between municipalities, but often the municipal residents are not in a position to assess such differences. This reduces the pressure on politicians to provide efficient solutions. It is therefore necessary that more analyses of efficiency are carried out, and in a wider range of areas. In some areas (e.g. primary educa-
tion and libraries) the analyses available are already of a quality that makes the assessment of efficiency easier for local residents. When levels of efficiency can be compared the pressure on politicians will be higher, and this could reduce inefficiency in public expenditure.

There exists a system of fiscal equalisation between the various municipalities and counties for both fiscal capacity (the tax base) and fiscal need. For the municipalities, the equalisation system removes 45 per cent of the difference between the municipal figure and the national average, for both capacity and need. For the counties, 80 per cent of the difference is removed. This simple model is extended in several further schemes that aim to equalise different kinds of fiscal disparity between municipalities. By replacing the special schemes with a greater degree of equalisation in the base system, the system would become more transparent and yet still have the same equalisation effect. Alternatively, the equalisation of fiscal need could be extended to include the fiscal disparities from the special schemes.

The existing partial equalisation adjustment means that the tax payment for services provided by municipalities varies between municipalities, while the tax payment for services provided by the state does not. This difference seems unfair. At the same time, full equalisation would reduce inequalities in disposable income through changes in local taxation rates.

It is often argued that full equalisation would remove the incentive to local government for economic improvement, because the extra income deriving from the improvement would be taken away through the equalisation system. This argument is somewhat limited, since it would only be the municipality’s share of the extra income that would be equalised. The taxpayers’ extra after-tax income would stay in the municipality. It should also be noted that part of the effort that local government invests in economic improvement today results only in the movement of businesses from one municipality to another. The incentives therefore result in competition between the municipalities, and this is not necessarily efficient, viewed from an overall perspective.
A higher degree of equalisation would result in a more just payment for the services provided by local government, and at the same time reduce inequality in disposable income. It is therefore recommended that the level of equalisation between municipalities should be raised to at least 90 per cent.

Several elements in local budgets suffer from a high degree of uncertainty. To obtain a lower level of risk in the budgeting process, the existing voluntary budget guarantee by the government to the municipalities should be made mandatory. This would mean that municipal income would be guaranteed by the government and thus known at the beginning of the process of drawing up the municipal budget. This would remove much of the random variation in budgets between municipalities. The national budget is adopted by parliament after the local budgets have been made, but the national budget has often contained elements which have an impact on local government spending. The parliament should avoid changing the obligations of local government after local budgets have been fixed.

The municipalities cannot be expected to conduct policies which will dampen business cycles in the economy. It is therefore important that changes in economic conditions should not have an effect on the budgets of municipalities. A high rate of growth will lead to higher income from taxes and lower expenditure for the municipalities. Such an effect could be offset by automatically cutting the non-tied (block) grant from the state to local authorities when local government income rises.

Analyses have indicated that there is a lack of central control over local spending. This lack of control can be problematic in trying to meet goals for total public expenditure. The expected rise in the proportion of the elderly in the Danish population will put greater pressure on local expenditure. It is therefore necessary to strengthen the existing controls over spending at the local level. Municipalities which do not follow the agreements made with the national government should be punished.
A system of punishments could also be used to regulate local taxation rates to compensate for differences between growth in the tax base and the fiscal requirements of the municipalities. A general agreement that taxes should not rise overall must nevertheless allow municipalities with a declining tax base to raise their tax rates, while municipalities with a rapidly growing tax base must be made to lower their tax rates.

Chapter III: Evaluations of Danish Environmental and Energy Policies in the nineties

The influence on the Danish economy of environmental and energy policies increased greatly during the nineties. Such policies have economic value, for example in terms of improvements in public health caused by reduced emissions of pollutants. However, providing public funds for policy measures has an economic cost, for example because increased income taxes lead to a reduction in the supply of labour. Furthermore, environmental taxation and command-and-control regulations are costly for both households and firms.

Previous analyses by the OECD have found that Danish efforts at improving the environment are greater than the international average, but that the achievements resulting from these efforts are less than the average. This finding provides a strong motivation to examine the criteria by which environmental and energy policies are evaluated. It also necessitates close consideration of the balance between the value of environmental benefits and the economic costs incurred by the various policy measures. Finally, thought should be given as to how the balance between the benefits and costs of environmental policy can be improved.

Cost benefit analyses made in the chapter estimate that the most significant energy policy initiatives in the period 1992-99 will create net economic value of approximately DKK 66 billion from 1992 to 2021. Of this amount, some DKK 2 billion arises from the positive effects which the policy has had on the competitiveness of the Danish windmill industry. Most
initiatives are found to have negative net economic value. However, the requirements for the installation of air pollution control systems at power plants give rise to a net economic value of DKK 90 billion. This single initiative alone results in Danish energy policy in the nineties giving an economic surplus to society. The Danish experience with using biomass in power plants creates a net economic deficit of about DKK 6 billion.

A question that remains unanswered is: What led to the implementation of initiatives with negative net economic value? If the reason was a lack of cost benefit analysis prior to the implementation, this should prompt the use of such analyses in the future. As any decision-making process involves uncertainty, there is also a need for systematic sensitivity analyses in order to determine which of the assumptions have had the greatest influence on the outcome of the process. Finding out which assumptions have failed to hold in previous analyses also provides useful information for refining the methods of cost benefit analysis. In any case, the development and constant improvement of cost benefit analyses can help reduce the number of initiatives which gives rise to a negative net economic value to society.

Cost benefit analysis is also useful in finding the optimal level and structure of environmental taxes. The energy consumption of companies for room heating purposes is taxed at the same rate as the energy consumption of households. On the other hand, energy used by companies in manufacturing is taxed less heavily. Analyses in the chapter show that the tax rate applied to the energy consumption by households and the energy consumption for room heating purposes by companies is too high. On the other hand, the tax on companies’ energy consumption in manufacturing is too low.

No cost benefit analyses of measures to improve the Danish aquatic environment have been undertaken in this report, and only a few such analyses are described in the literature. The reason is that estimates of the benefits of the policy are scarce. Danish policy to improve the aquatic environment has mostly used command-and-control regulation. Examples of instru-
ments which have been used to reduce agricultural nutrient pollution are minimum requirements for the manure storage capacity of farms and maximum limits on the amount of manure applied to land each year. The instruments used to reduce the nutrient pollution from agriculture have not been very effective, but they have had great economic costs. Much empirical evidence as well as theoretical considerations suggest that economic instruments such as a tax on the application of nutrients in agriculture would perform better.

The scope of the cost benefit analyses made in the chapter demonstrates that current methods of cost benefit analysis are useful in the areas of energy and transport policy. International experience indicates that cost benefit analysis can also be useful to evaluate policies to improve the aquatic environment. Further use of cost benefit analysis in environmental management is therefore recommended. If the welfare effects cannot be estimated with a sufficiently high degree of certainty, cost-effectiveness analysis should be used to determine how the objectives of a policy measure can be achieved at the lowest possible costs. In all cases, making a comprehensive catalogue of relevant costs and benefits of a policy measure in itself has great value and should be a prerequisite for any important decision-making process.

It is often argued that Danish environmental and energy policies have led to the emergence of a competitive environmental industry. Analyses in the chapter show that the industry employs about 30,000 persons, creates value added of about DKK 18 billion and exports products with a value of approximately DKK 13 billion. This corresponds to about 0.8 per cent of total employment, 2 per cent of GDP and 3 per cent of total exports. The refuse disposal and cleaning industry, the sewage industry and the windmill industry together employ a third of the total of persons employed in environmental industries. The windmill industry alone accounts for more than half of the total environmental industry exports.

Environmental industries generally have rates of return on capital and labour which are lower than those of industries with a similar composition of production factor inputs. Trends
in employment and production levels for environmental industries are also in line with those of industries with similar compositions of production factor inputs. The windmill industry is the only exception to this pattern. Returns to capital and labour are extraordinarily high in the windmill industry, and the industry has experienced more growth in the last decade than comparable industries.

Danish environmental and energy policies have stimulated the use of windmills in power generation, with the primary purpose of providing environment friendly electricity. Several policies have been used. For example, the owners of windmills receive a subsidy per kilowatt hour of electricity produced from their mills. Another example is the favourable tax treatment of windmill owners’ income from the sale of electricity. Analyses in the chapter show that the windmills constructed in Denmark give rise to an economic loss with a net present value of DKK 3 billion. This amount can be broken down as follows. First, there is a cost of DKK 25 billion arising from economic distortions caused by using taxes to finance investments in electricity production capacity. The DKK 25 billion is calculated net of fuel costs saved by using windmills. Second, environmental benefits amount to about DKK 20 billion. Third, a benefit of DKK 2 billion arises because the subsidy to electricity production from windmills stimulates the Danish production of windmills. Stimulating the production of windmills leads to the accumulation of manufacturing experience by Danish windmill makers, reducing their production costs.

Whereas the net economic value of subsidies to electricity production using windmills appears to be negative, the chapter shows that there is evidence that the Danish government grants to research and development in windmill technology are a good investment. A part of the research and development effort has been put into the implementation of a government standard for the technical quality of windmills. There is reason to believe that this standard has facilitated the sale of windmills produced in Denmark by reducing potential buyers’ uncertainty over the quality of these windmills.
Finding that the support of a particular industry has given net economic benefit to society does not suffice to conclude that the policy has been successful. The creation of a competitive advantage for a single industry may be due to chance, or because so many industries have been supported that it would be surprising if no successes occurred. A necessary condition for implementing an industrial policy directed at single industries is that the industries with the greatest potential for creating economic value to society can be identified. For these industries, government support can be expected to lead to greater growth in employment, larger increases in consumer welfare and larger increases in the returns on capital and labour than is the case with support to other industries. Furthermore, there should be an expectation that support to the selected industries will give more economic value to society than other policies such as those related to education or health. These requirements are demanding but are nevertheless prerequisites for directing industrial policy at single industries.

A comprehensive evaluation of environmental and energy policies should take into consideration the costs and benefits to industry of these policies. It might be acceptable that those environmental and energy policies which are most valuable to society give rise to increasing costs to industry, if these costs are compensated for by greater environmental benefits. Therefore, it should be noted that focussing on designing environmental and energy policies which benefit industry may lead to loss-generating initiatives.