

Structural indicators for comparing Norway with the EU*

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Norway is very well placed compared with the EU in terms of the level of overall value creation, productivity and employment, with a large proportion of the population at work and low unemployment. This is shown by a comparison based on structural indicators, which have been devised to compare and assess trends in countries within the EU. The figures show that Norway has excellent government finances, and scores highly on indicators related to social cohesion, with an even income distribution and limited poverty. On the other hand, Norway trails the EU when it comes to research and development, and other technological indicators. Norway also has a high general price level. In the environmental sphere Norway is relatively poorly placed on indicators of greenhouse gas emissions and energy consumption, but very well placed as regards urban air quality and renewable energy. As well as giving an overview of Norway's position in terms of structural indicators, this article places the work on structural indicators and benchmarking, which is part of the same field, in a wider perspective both nationally and internationally. Some technical challenges posed by the use of such indicators are also discussed.

Introduction

Over the past 50 years the European integration process has brought a steadily growing demand for high-quality statistics in new areas, not least because statistics are used for policy shaping purposes and to monitor attainment of policy objectives. The EC/EU's statistical needs originally referred to topics related to coal and steel production. Subsequently substantial needs arose in connection with the implementation of agricultural and regional policy and with common customs tariffs (foreign trade). In recent years there have been marked needs linked to the implementation of the single market and the development of Economic and Monetary Union with emphasis on short-term economic indicators. One such initiative is the "Lisbon strategy" which sets ambitious goals for competitiveness, social cohesion and the environment in Europe. This entails an even stronger focus on statistics as a tool for comparison and policy implementation. Norway is linked to the single market via the EEA Agreement, and is bound by largely the same compliance

obligations as the EU member states. This also applies in the field of statistics. Where the Lisbon strategy is concerned Norway, together with Iceland and Liechtenstein, has made an active effort under the EEA Agreement to get involved in this process, which is why there have been clear expectations that structural indicators developed in connection with the Lisbon process should be equally comprehensive as for the EU member states.

The EFTA-EEA states delivered comments ahead of the EU summit in Barcelona in March 2002 that underscored their commitment in many of the areas encompassed by the strategy. At the same time they underscored their expectation that statistics for EFTA-EEA countries would be included in future reports to the summit. Moreover, an EFTA plan for following up the Lisbon strategy contains a detailed discussion of measures in the following areas:

- a strategy for the single market
- the European social agenda
- a strategy for sustainable development

Development and use of structural indicators within the EU

Structural indicators are selected via a process involving many players. At the outset the basic work on developing structural indicators was left to the

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¹ The main task of the Economic Policy Committee (ECP) is to contribute to the preparation of the work of the Council of coordinating economic policy. The Committee is composed of up to four members of each Member State, generally senior officials from national ministries of finance or economics and from national central banks. It works closely with DG ECFIN (Economic and Financial Affairs in the Commission)

² The ECOFIN Council normally comprises the finance minister in EU member states and plays a central policy role in the area of economy and finance.

Benchmarking

This testing method compares outputs or performance and relates the results to best practice. The object is to learn and improve. Initially benchmarking was applied in the business sector to gauge a business enterprise's performance in terms of best practice among competitors in the same sector or market. In due course benchmarking has been widened to include comparisons between countries.

Use of benchmarking presupposes the establishment of quantitative data (indicators) that cast light on the results of the examined entities. The indicators are used to rank entities by performance. The method is of a partial nature: a single factor, an indicator, is studied at a time. However, the factors analysed are rarely independent. In general, indirect effects and interactions are not captured by comparing indicators one by one. Developing composite indicators, often as a weighted average of many single indicators, will not change this without further ado. Hence benchmarking cannot replace fuller analyses and models that view aspects of the economy in conjunction.

The benchmarking method is based on empirics in the sense that best practice is established as a reference point on the basis of observed performance or perceptions of performance. The method can be used to identify areas showing wide deviance from best practice, and to gauge the results of action taken. Hence benchmarking can be applied as a systematic process for improving performance.

Economic Policy Committee¹, which subsumes under ECOFIN². The committee presented its report in October 2000. In parallel with this the Commission presented a proposal for 27 key indicators in September 2000. At the meeting of chief statisticians in November 2000 criticism was levelled at the fact that central statistics bureaus had been drawn into the deliberations on indicators at too late a stage and had an inadequate overview of underlying definitions. Since that time the process for developing indicators has been clarified and improved, and a more systematic approach has been applied to quality issues. Statistical circles represented at Eurostat and central bureaus of statistics have also become more involved in the work done to develop structural indicators by various groups within the Commission and under the Council. At the same time some variance persists between politicians' desires to extend the compass of indicators to new themes, and the professional statisticians' caution in presenting figures which may not have been satisfactorily quality assured and are not based on internationally accepted standards and methods. This is a potential source of errors of interpretation.

When indicators were selected for the EU summit in Barcelona, emphasis was given to a reasonable degree of stability with a view to time series, at the same time as new areas (environment) were to be covered (COM (2001) 619 final). Moreover, importance was attached to viewing the indicators in conjunction with

Benchmarking of Norwegian business enterprises

A committee appointed by the Ministry of Trade and Industry presented in December 2001 a report on benchmarking of the framework for value creation in business and industry (NOU 2001: 29 Best in test?). The committee proposes comparing framework conditions in Norway with those in other countries with a basis in 79 indicators distributed on seven areas (natural resources and environment; infrastructure; education; research and innovation; labour market; capital market; product markets and tax). Although the document refers to EU structural indicators, these indicators are only to a limited extent included among those proposed in the Norwegian system. The areas and indicators are selected on the basis of what is considered to be of greatest significance to Norwegian business and industry, what is likely to be affected by government policy instruments and the availability of relevant and reliable data. The bulk of the indicators are based on official sources, including official statistics.

Statistics Norway has issued a submission on the above report (NOU 2001: 29). The submission states that the benchmarking method appears intuitively attractive and will employ internationally comparable official statistics. By means of easily understood tabulations, central information on Norway can be focused on and placed in an international perspective. Indicators that are perceived to be relevant to value creation can be compared country-to-country, and Norway's placing can be read off. In areas where Norway appears to diverge clearly from other countries, the method can provide a basis for closer study and analysis. However, the method has clear-cut weaknesses. It is partial in nature, fails to capture mutual relationships between indicators and does not indicate how the indicators can be weighed together and used as a basis for a consistent industry and economic policy. Hence the benchmarking method cannot replace more comprehensive and deeper economic analysis and research, but should rather be viewed as a supplement to the latter. Go to Statistics Norway's website at <http://www.ssb.no/omssb/horing/> (dated 8 April 2002) for further information on the above submission.

the work on special indicators and benchmarking for various sectors. Finally, the indicators were expected to satisfy the same criteria as those underlying the original choice of indicators:

1. easy to read and understand
2. policy relevant
3. mutually consistent
4. available and timely
5. comparable across EU member states and as far as possible with other countries
6. selected from reliable sources
7. should not impose excessive extra burdens on member states and principals

The Laeken summit in December 2001 decided on a final list of 42 indicators for the 2002 report (in fact 76 indicators when broken down by gender and other subgroups).

The Commission's report to the Barcelona summit in 2002 (COM (2002) 14 final) presents a selection (17 + two not originally included) of structural indicators in the form of averages for the EU member states at the Lisbon summit (2000, figures for 1999) and for Barcelona (2002 figures for 2001, in the event the latest available). An "EU Best Performance Indicator", an unweighted average of the best-placed countries, was also constructed. Moreover, for some areas a target was set for 2010, in the event also for 2005. The comments point out that in some areas comparable figures are lacking for all EU member states for the period since Lisbon, and in other areas (social cohesion and environment) figures are out-of-date. In some areas (GDP per capita, GDP per person employed) the figures are reworked with the USA as the basis (US=100).

Figures for individual countries are presented as an annex in the form of a diagram in which countries are ranked on the basis of the last year. Figures are presented for two years only. In a number of cases estimates are made for some countries, or deviating years are employed.

What do the structural indicators say about Norway compared with the EU?

In the following a brief overview is given of most of the structural indicators with figures for Norway compared with indicators for the EU as a whole (overall figures for the EU, i.e. the 15 member states. Figures (unweighted) are also given for the three "best" EU member states and Norway's ranking in relation to national figures for the 15 member states (EU15 + Norway and Iceland³). "Best" may be either low or high figures, depending on the particular indicator. The presentation is summary with no attempt made to discuss or analyse the selection of indicators and their interrelationships.

The data are taken mainly from the New Cronos database at Eurostat updated as of 11 November 2002.

The data are also available at Eurostat's website (<http://www.europa.eu.int/comm/eurostat/>). Some data for Norway are taken from national sources since data for Norway were not available from these sources at the time the data were obtained. Hence data in many areas are updated in relation to those presented in the report to the summit this spring. Indicators that lack data for Norway are not included in the overview.

Several of the structural indicators are computed in relation to gross domestic product (GDP). It should be noted that such indicators may produce low figures for Norway in periods of high oil prices, and therefore high GDP, as for example in the years 2000-01.

General economic background

The economic background indicators show that the general economic situation in Norway is generally very favourable compared with EU member states.

GDP per capita, a measure of value creation, was 46 per cent higher in Norway than for EU member states as a whole in 2000 and 2001. Adjustments are made for national differences in price levels by calculating GDP per capita in purchasing power standards. Only Luxembourg had higher figures (96 per cent over the EU average in 2001). Norwegian figures for the period 1993-1999 were also clearly higher than for the EU (21-31 per cent higher). It should be noted that the Norwegian GDP figures are substantially affected by the level of crude oil prices (which were relatively high in the years 2000-01).

Norway also receives a high score as regards labour productivity. This applies both to gross domestic product per employed person and per hour worked. For the latter indicator Norway was 46 per cent above the EU average in both 2000 and 2001. Equivalent figures for Norway were also clearly higher than for the EU for the period 1993-1999 (19-26 per cent higher). Apart from Luxembourg no EU member states score higher on this indicator than Norway in 2000-01.

Table 1. General economic background

	EU 15 average	EU «3 best»	Norway	Norway ranked in relation to EU-15 + Iceland and Norway
a1: GDP per capita in PPS -current prices, EU=100 (2001)	100.0	144.4	145.8	2
a2: Growth rate of GDP at constant 1995 prices, % (2001)	1.5	4.2	1.4	9
b1: Labour productivity - GDP per person employed, EU15=100 (2001)	100.0	145.0	125.0	2
b2: Labour productivity - GDP per hour worked, EU15=100 (2001)	100.0	144.8	146.1	2
c1: Total employment growth, % (2001)	1.2	3.7	0.4	12
c2: Employment growth, females, % (2001)	1.9	4.1	0.7	14
c3: Employment growth, males, % (2001)	0.8	3.4	0.2	12
d: Growth in consumer prices, % (2001)	2.3	1.8	2.7	10
e: Growth in unit labour costs, % (2001)	0.3	-2.3	-11.8	1
f: General government net balance as % of GDP (2001)	-0.8	5.3	15.7	1
g: General government gross debt as % of GDP (2001)	63.1	27.0	31.4	2

³ Little purpose is served by including the third EEA-EFTA country, Liechtenstein, since only a minority of the indicators are available for this country.

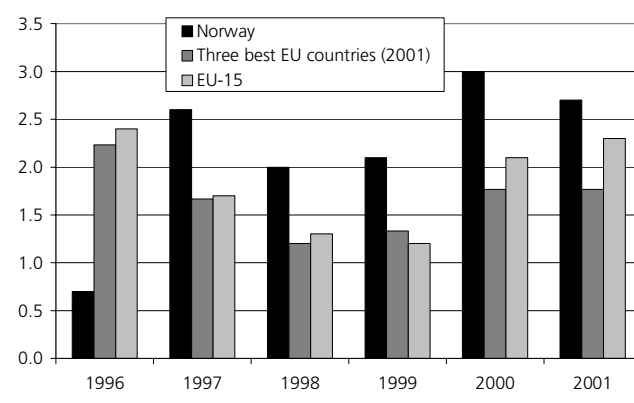
Unit labour costs have fallen in Norway in most years since 1993 (except 1998 and 2001). This means that labour productivity (GDP per employed person) has risen more quickly than labour costs per employed person. Again, this needs to be interpreted in light of the level of oil prices.

GDP growth (at constant prices) was weak both in Norway and the EU in 2001 (1.4 per cent and 1.5 per cent respectively). Growth rates for Norway were appreciably higher than in previous years, and considerably higher than in the EU in the period 1993-1997 (4.6 per cent and 1.8 per cent respectively). In 2000 all EU member states and Iceland showed stronger growth than Norway, while eight countries showed higher growth than Norway in 2001. Ireland showed by far the highest growth in these years at 10.0 and 5.7 per cent respectively (and also the highest growth since 1994).

Employment growth has been slower in Norway than in the EU since 1999. In 2001 growth measured 0.4 per cent in Norway and 1.2 per cent in the EU. The EU showed stronger growth for men and women alike. These figures should be viewed in light of the appreciably higher level of employment in Norway than in the EU (see below).

Consumer prices have risen more quickly in Norway than in the EU in the period 1997-2001, although the

Figure 1. Harmonised consumer price index. Annual change

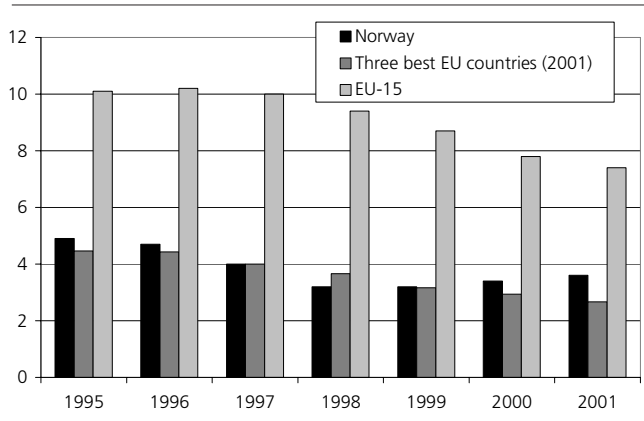


difference has narrowed in the past year. In 2001 consumer prices rose by 2.7 per cent in Norway compared with 2.3 per cent in the EU, and in 2002 the increase growth will be lower in Norway than in the EU.

Indicators of public finances show that Norway is very well placed, with strong growth in net financial assets (assets minus debt) and low gross debt (exc. internal general government debt). Norway's general government net balance measured 15.7 of GDP per cent in 2001, compared with a marginally negative figure for the EU as a whole. Norway's general government sector has enjoyed a higher net balance than all EU member states since 1975. The Norwegian figures are due

Table 2. Employment

	EU 15 average	EU «3 best»	Norway	Norway ranked in relation to EU-15 + Iceland and Norway	
1.1: Employed persons aged 15-64 as a share of the total population aged 15-64, % (2000)	63.2	73.6	77.9	2	
1.2: Employed women aged 15-64 as a share of the total female population aged 15-64, % (2000)	54.0	68.6	73.9	2	
1.3: Employed men aged 15-64 as a share of the total male population aged 15-64, % (2000)	72.5	80.3	81.8	3	
2.1: Employed persons aged 55-64 as a share of the total population aged 55-64, % (2000)	37.8	57.1	65.6	2	
2.2: Employed women aged 55-64 as a share of the total female population aged 55-64, % (2000)	27.9	50.1	59.3	3	
2.3: Employed men aged 55-64 as a share of the total male population aged 55-64, % (2000)	48.0	65.0	71.9	2	
4: Tax rate on low-wage earners - Income tax (incl. employer contributions) as a percentage of labour costs (2000)	37.8	23.6	34.0	7	
5: Life-long learning - Percentage of the population aged 25-64 participating in education and training (2000)	8.4	19.6	14.2	7	
6.1: Accidents at work - serious (> 3 days' absence), per 100 thousand persons in employment, index 1998=100 (1999)	100.0	91.0	91.0	2	Iceland missing
6.2: Accidents at work - fatal, per 100 thousand persons in employment, index 1998=100 (1999)	85.0	59.7	56.0	2	Iceland missing
7.1: Unemployed persons as a percentage of the total active population (2001)	7.3	2.7	3.6	3	Iceland missing
7.2: Unemployed women as a percentage of the total female active population (2001)	8.5	3.0	3.5	3	Iceland missing
7.3: Unemployed men as a percentage of the total male active population (2001)	6.4	2.2	3.7	5	Iceland missing

Figure 2. Unemployment. Unemployed persons as a percentage of the economically active population

to substantial accounting surpluses (for central government) as a result of oil production. Gross general government indebtedness in Norway at the end of 2001 was half as low as in the EU in terms of GDP (31 per cent and 63 per cent respectively). Apart from Luxembourg, no EU state recorded lower relative debt than Norway.

Employment

The population's participation in the labour force is an important factor behind value creation, incomes earned and welfare. In the age range 15-64 the share of the population in employment is appreciably higher in Norway than in the EU; 78 per cent and 64 per cent respectively in 2001. The figure for Norway showed a clear-cut increase from 1995 to 1998, and since then has remained stable, whereas in the EU it has risen somewhat throughout the period. In 1995 the figures for Norway and the EU were 72 per cent and 60 per cent respectively. No EU state has such high employment shares as Norway (since 1996). However, Iceland has an even larger share of its population in employment. It should be noted that Norway shows less deviation in terms of hours worked since average working hours are relatively low in Norway. Work is thus more evenly distributed in Norway than in many other countries.

Where employment shares for women in the above age groups are concerned, the difference between Norway and the EU is even more marked, with shares of 74 per cent and 55 per cent respectively in 2001. The same applies to the older age group, 55-64, where the employment share in Norway was 66 per cent in 2001 compared with 39 per cent in the EU.

One of the indicators measures tax on earned income (incl. employer contributions) for industrial workers on low pay (67 per cent of average pay). This indicator was included since a low tax rate for low income earners could be a means of increasing the supply of labour. The figures show that the tax rate for the workers in question is lower in Norway (34 per cent

in 2001) than in the EU (38 per cent). The EU tax rate has marginally fallen since 1997 when it was close to 41 per cent, whereas it has remained relatively stable in Norway. In 2001 five EU member states and Iceland had a lower tax rate than Norway. The lowest rate was in Ireland and the United Kingdom at 17 and 25 per cent respectively.

Post-qualifying and further education are key to strengthening labour force competence. In Norway the share of employed persons participating in education/training programmes is higher than in the EU, 14 and 8 per cent respectively in the age range 25-64 in 2001. Iceland and five EU member states, including the other Nordic countries, had a higher share than Norway in 2001 (highest in the case of Iceland at 24 per cent).

Unemployment in Norway in recent years has stood at less than half the EU rate. In 2001 3.6 per cent of the labour force were unemployed in Norway, compared with the EU figure of 7.3 per cent. In the EU only Luxembourg and the Netherlands showed lower unemployment than Norway. The share of unemployed in the EU has fallen from around 10 per cent in the period 1993-97. However, employment is now climbing in the EU and Norway alike. In the EU unemployment is substantial higher among women than men, whereas only minor differences are in evidence in Norway.

Education, research and innovation

Public expenditure on education as a percentage of GDP is higher in Norway than in the EU. In 1999 these shares were 7.5 and 5.0 per cent respectively. Only Denmark and Sweden had higher shares than Norway. The Norwegian figure was even higher earlier in the 1990s, measuring 8 per cent in 1992-93. The figure has also fallen somewhat in the case of the EU, down from the 1993 figure of 5.5 per cent.

However, where spending on research and development (R&D) is concerned Norway trails the EU. In 1999 overall R&D expenditure as a percentage of GDP was estimated at 1.7 per cent in Norway compared with 1.9 per cent in the EU. Sweden and Finland spent most in the EU with shares of 3.8 and 3.2 per cent respectively. Only Ireland and the four southernmost EU member states (Portugal, Spain, Italy and Greece) had lower shares than Norway. Business and enterprise sector expenditure on R&D was also lower in Norway than in the EU at 0.95 and 1.25 per cent respectively.

Norway also scores lower than the majority of EU member states when it comes to total tertiary graduates in science and technology per 1000 of population aged 20-29.

The number of new patents can also give an indication of innovation in the respective countries. Returns

Table 3. Education research and innovation

	EU 15 average	EU «3 best»	Norway	Norway ranked in relation to EU-15 + Iceland and Norway	
1: Public expenditure on education as a percentage of GDP (1999)	5.0	7.3	7.4	3	
2.1: Business and enterprise sector R&D expenditure as a percentage of GDP (1999)	1.25	2.25	0.95	10	Austria and Luxembourg missing
2.2: Total R&D expenditure as a percentage of GDP - all sectors (1999)	1.92	3.1	1.7	11	Luxembourg missing
3.1: Percentage of households with Internet access at home (2000)	37.7	61.0	58.2	5	
3.2: Percentage of enterprises (at least 10 employees) with Internet access (2000)	71.2	89.1	73.2	10	
4: Total tertiary graduates in science and technology per 1000 of population aged 20-29 (2000)		20.0	7.9	11	Greece missing (1999 figures for some countries)
5.1: Patents in Europe - Number of patent applications per million inhabitants (2000)	152.7	321.2	131.2	10	
5.2: Patents in the USA - Number of patents granted per million inhabitants (1999)	69.2	142.7	56.7	11	
6.1: Venture capital investments - early stage - as a percentage of GDP (2001)	0.045	0.096	0.036	10	Luxembourg missing
6.2: Venture capital investments - expansion and replacement - as a percentage of GDP (2001)	0.099	0.225	0.115	6	Luxembourg missing
7.1: Expenditure on information technology as a percentage of GDP (2001)	4.17	5.94	3.66	11	Iceland missing
7.2: Expenditure on telecommunications technology as a percentage of GDP (2001)	2.8	3.5	2.0	16	Iceland missing

show that Norway trails the EU in terms of the number of patents per million inhabitants that are applied for in Europe and granted in the USA.

Recent years have seen a burgeoning development in the field of information and communications technology (ICT). Here too Norway trails the EU. Expenditure on use of information technology (IT) is estimated at 3.7 per cent of GDP for Norway in 2001, compared with the EU figure of 4.2 per cent. Among EU countries it was again only Ireland and the four southernmost countries (as in the case of R&D) that showed a lower share than Norway. Sweden showed by far the largest share, 6.8 per cent. Where outlays on telecommunications technology are concerned, Norway's share of 2.0 per cent of GDP in 2001 trails all the EU countries.

The Internet has become an important source of information and a growing market place for trade in goods and services. Two of the structural indicators measure Internet access among households and enterprises. Norway is considerably better placed than the EU where households are concerned, but only marginally ahead in the case of enterprises. In Norway 58 per cent of homes had Internet access in 2001, compared with only 38 per cent of homes in the EU. Iceland and three EU member states (the Netherlands, Sweden and Denmark) had a higher share than Norway in the same year. Iceland had by far the highest proportion, 78 per cent, of homes with Internet access.

There are also indicators for project financing in the business and enterprise sector (venture capital). The figures show that the supply of venture capital to projects at the early stage (conception and start-up) is less ample in Norway than in the EU, but more ample for investments related to replacement and expansion of existing business.

Economic reform

Several of the structural indicators illuminate the effect of economic reforms designed to improve competitive efficiency in the single market, among them measures to dismantle trade barriers and regulatory reforms. Prices and market dominance in the power and telecommunications market are among the items in focus.

An indicator of price differentials shows that Norway has a substantially higher general price level than the EU member states. In 2000 prices in Norway were as much as 29 per cent above the average EU level, i.e. on a par with Sweden but higher than all other EU member states. The price level in Norway has shown no clear-cut decline relative to the EU after the EEA Agreement became effective in 1994.

However, prices in Norway's telecommunications market have fallen substantially in recent years, in some cases to levels significantly below the EU as a whole. In 2001 the price of a local call in Norway was 83 per cent of the price in the EU, whereas prices of long

Table 4. Economic reform

	EU 15 average	EU «3 best»	Norway	Norway ranked in relation to EU-15 + Iceland and Norway	
1.1: Relative price levels of private consumption (EU-15=100)	100.0	78.7	129.0	15	
2a.1: Price of local telephone calls, in EUR per 10 min call	0.41	0.25	0.34	8	Iceland missing
2a.2: Price of national telephone calls, in EUR per 10 min call	1.15	0.34	0.34	3	Iceland missing
2a.3: Price of telephone calls to USA, in EUR per 10 min call	2.65	1.04	1.16	3	Iceland missing
2b.1: Electricity prices - industrial users, in EUR per kWh (2002)	0.062	0.041	0.043	3	Iceland and Austria missing
2b.2: Electricity prices - households, in EUR per kWh (2002)	0.103	0.066	0.093	9	Iceland missing
3.2.2: Markedsandel for største foretak, fasttelefon, nasjonale samtaler, prosent (2000)		53.7	85.0	10	Iceland and Ireland mangler
3.2.3: Market share of the largest operator in fixed telecommunications - long distance calls - as a percentage of the total market (2000)		53.7	71.5	7	Danmark, Island and Ireland mangler
3.3: Market share of the largest operator in mobile telecommunication - as a percentage of the total market (2001)		35.3	78.8	16	Iceland missing
6: Capital raised on stock markets as a percentage of GDP (2000)	4.5	15.6	3.0	10	Iceland missing
7: Gross fixed capital formation by the enterprise and household sector as a percentage of GDP (2000)	18.3	23.0	17.0	11	Iceland missing

Table 5. Social cohesion

	EU 15 average	EU «3 best»	Norway	Norway ranked in relation to EU-15 + Iceland and Norway	
1: Income distribution (S80/S20) (1998)	5.4	3.0	2.9	2	Iceland missing
2.1: Percentage of the population below the at-risk-of-poverty threshold before social transfers (1998)	26	22	24	5	Iceland missing
2.2: Percentage of the population below the at-risk-of-poverty threshold after social transfers (1998)	18	9	11	4	Iceland missing
5: Percentage of the population aged 18-24 with at most lower secondary education and not in further education or training (2001)	19.4	10.3	9.2	1	UK and Ireland missing
6: Long-term unemployed (over 12 months) as a percentage of the total active population aged 15-64 (2000)	3.7	0.8	0.5	3	

distance and international calls (to the USA) measured only 30 and 44 per cent of EU prices. Seven EU member states had lower prices for local calls than Norway in 2001, while for long distance and international calls only two EU countries, Sweden and the Netherlands, were better placed. Returns also show stronger concentration (in terms of the market share of the largest operator) in the telecommunications markets in Norway compared with most EU countries.

Norwegian prices in the electricity market are also below the EU average. In 2001 a Norwegian enterprise with average consumption paid only 53 per cent of what its EU equivalent paid, whereas a Norwegian household with average consumption paid 77 per cent of the price paid by its equivalent in the EU. However, preliminary figures for 2002 show a rise in Norwegian prices with shares of 70 and 90 per cent of EU prices respectively. Where concentration in the electricity market is concerned, the largest generator in Norway has a lower market share than its equivalent in most EU countries.

Returns also show that financing opportunities via the stock market are on the whole better in the EU than in Norway. In 2000, when capital was in particularly ample supply, the amount of new capital raised came to 3.0 per cent of GDP in Norway compared with 4.5 per cent of GDP in the EU. Capital supply was also lower in Norway in the two preceding years when it measured about 1 per cent of GDP.

Business investment in Norway dropped below the EU level in 2000 but was higher than in the EU in the period 1995-99. In 2000 business investment in Norway measured 17 per cent of GDP compared with 18.3 per cent in the EU. Business investment in Norway culminated in 1998 at 22.3 per cent of GDP.

Social cohesion

Indicators in the social sphere are especially difficult to render comparable since the statistical base is less harmonised than in most other areas. This is partly because of the general difficulty in compiling comparable figures in this area due to variations in social

systems between countries, partly because less has been done to achieve harmonisation in this field since social policy has essentially been a national concern. Further significant weaknesses are the somewhat outdated nature of the data and the difficulty in obtaining time series. However, a broader set of indicators in this area is under preparation along with a scoreboard on social policy implementation (see references). A new European survey of incomes and living conditions, in which Norway will be participating, is also under way.

The ratio of total income received by the 20% of the population with the highest income to that received by the 20% of the population with the lowest income is used as an expression of income distribution (S80/S20, income quintile share ratio). An endeavour is made to harmonise the income concept; equivalised disposable income is employed and account is taken of differences in household size by estimating household income in terms of adult equivalents (giving a weight of 1.0 to the first adult, 0.7 to the next adult and 0.5 to each child). For most EU countries figures from the European Community Household Panel (ECHP) are employed, where the most relevant figures derive from 1998. For Norway, and some EU countries, national sources are employed which as far as possible are rendered comparable. Based on the above share ratio, Norway is in second place where income distribution is concerned (least difference). Only Denmark is in front, by a small margin. Norway is close to the average for the three "best" in the EU - our Nordic neighbours Denmark, Finland and Sweden. At the other end of the scale are countries bordering the Mediterranean with a share ratio of around 7.

The risk-of-poverty rate is measured both before and after social transfers, and is stated as the share of persons below the risk-of-poverty threshold. This threshold is set at 60 per cent of median disposable income after social transfers (disposable income reck-

oned in adult equivalents). Measured in this way, the share at risk of poverty (before social transfers) varies between 21 and 33 per cent in the EU. At 24 per cent, Norway is in fifth place, after the Netherlands, and just after Greece, Italy and Germany. When social transfers are taken into account, variations between EU countries range from 8 to 22 per cent, with Norway now in fourth place after Finland, Denmark and Sweden. This shows that social transfers are important for reducing the poverty problem, and it also illustrates that social transfers are best developed in the Nordic countries.

The share of persons aged 18-24 with at most lower secondary education and not in further education or training is intended to cast light on the level of investment in human capital and on the danger of marginalisation, especially in relation to the labour market. In 2001 the figures, taken from the labour force surveys, put Norway in first place, ahead of Austria, Finland and Sweden. This share is in excess of 40 per cent in Portugal and between 25 and 30 per cent in Spain and Italy.

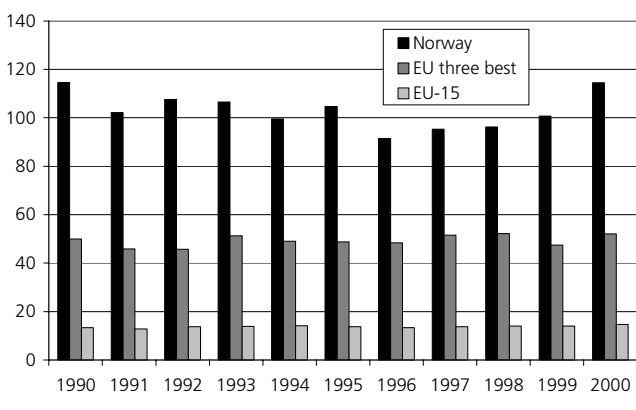
The long-term unemployed are regarded as susceptible to permanent exclusion from the labour market and social participation. In this context "long-term" means in excess of 12 months. The figures, which in this case too are taken from harmonised labour force surveys, show Norway to be very well placed (0.5 per cent), on a par with Luxembourg and just behind Iceland. At the lower end of the scale are Spain, Greece and Italy with shares ranging from 5.9 to 6.4 per cent.

Environment

The environment was included as a part of the structural indicators as a result of the summit in Gothenburg in 2001 where four prioritised areas were identified: climate change, transport, public health and food resources. On this basis an initial set of indicators was constructed for the 2002 report, and the effort to de-

Table 6. Environment

	EU 15 average	EU «3 best»	Norway	Norway ranked in relation to EU-15 + Iceland and Norway	
1: Greenhouse gases emissions; index 1990=100, based on CO ₂ equivalents (1999)	96	76	108	12	
2: Energy intensity of the economy - GDP at constant prices, 1995=100 - Kgoe per 1000 EUR (1999)	198.3	148.0	209.5	9	
3.2: Index of passenger transport volume relative to GDP (passenger-km) (1995=100) (1999)	98.4	87.8	96.9	10	Iceland missing
4.2: Percentage share of car transport in total passenger transport, passenger-km (1999)	80.8	72.9	79.9	12	Iceland missing
5.1: Urban air quality - no. of days of ozone exposure above limit values (1999)	31	3	0	1	Luxembourg, Sweden and Iceland missing
6.1: Municipal waste collected - kg per capita per year (1999)	545	451	596	13	
7: Contribution of electricity from renewables to total electricity consumption (2000)	14.7	52.1	114.4	1	

Figure 3. Share of gross consumption of electricity generated from renewable sources

velop and improve indicators in this field continues as part of the work on developing indicators for sustainable development.

Emissions of greenhouse gases are stated as an index where 1990 = 100. This is based on a summation of the six most significant greenhouse gases (CO₂, CH₄, N₂O, HFCs, PFCs and SF₆) measured in CO₂ equivalents. The indicator shows the degree of improvement (or deterioration) in relation to the 1990 level. Norway ends in twelfth place, with only Iceland, Greece, Ireland, Portugal and Spain behind it. The EU as a whole lies just short of the target set for 2000, which was to stabilise emissions at the 1990 level. Many countries face a challenge in meeting the demands of the Kyoto Protocol which requires an 8 per cent reduction by 2010.

Gross domestic energy consumption (measured in oil equivalents) in relation to GDP is intended to throw light on the degree of energy intensity of the economy. This is viewed in relation to the goal of more effective energy use. Norway is well above the EU average and the three best countries in the EU (Denmark, Austria and Germany) and is in ninth place. Greece, Finland and Iceland foot the list.

The volume of transport is defined as the ratio of passenger kilometres to GDP, and is indexed on 1995. The policy goal is to avoid private transport being a necessary consequence of economic growth. The volume of passenger transport in terms of GDP has fallen by a somewhat larger margin in Norway than the average for the EU, but is far behind the best-placed countries: Luxembourg, Finland and the Netherlands. Norway is in tenth place.

Distribution of the transport volume on modes of transport (road, rail, air and sea) is important with a view to developing more environment-friendly transport, for example by bringing about a shift from road to rail. Due to incomplete figures on freight transport,

only passenger traffic by car is included. The overview shows that about 80 per cent of passenger traffic in Norway is by car, i.e. about the same as the EU average. This is higher than countries with the lowest share (Greece, Austria and Luxembourg), but lower than large countries such as France and the United Kingdom.

Based on the objective of improving urban air quality, indicators have been defined for ozone and particulates. Only the indicator for ozone is included since figures for particulates are lacking for a number of countries. The indicator is defined as the number of days on which the ozone content exceeds the limit values. The figure is based on an average of readings at urban monitoring stations and has been prepared by the European Topic Centre. The overview puts Norway in first place, closely followed by Ireland, Finland and Iceland. At the other end of the scale are Italy with 83 days and Greece with 94 days in 1999, which is the last year for which observations are available.

An aim is to reduce the quantity of waste and, not least, hazardous waste. Hence there are indicators for household waste collected, landfilled and incinerated per capita. Only the first-mentioned is included in this overview. Norway has a relatively high score in terms of amount of waste per capita and takes thirteenth place, well above the EU average and the three countries with the lowest amounts in the EU: Greece, Portugal and Sweden. However, caution must be applied when interpreting the figures since the countries employ somewhat differing interpretations of municipal waste.

The share of electricity from renewable sources is an important indicator for sustainable energy production.

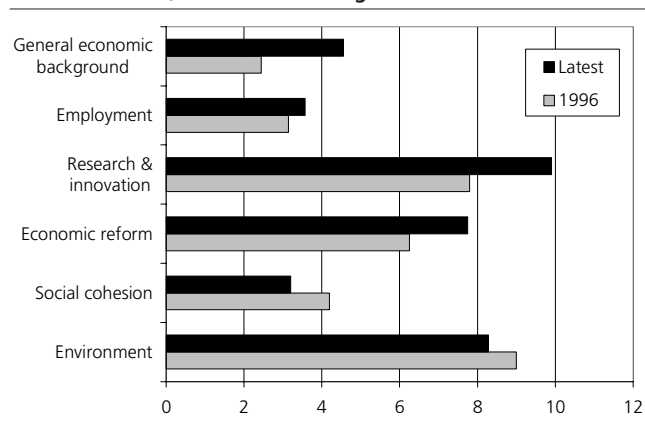
Norway takes a clear-cut first place in this area in 2000 with some surplus production of electricity from hydro-power plants (114 per cent). Iceland follows with 100 per cent ahead of Austria with a share of 72 per cent. The countries with the lowest share of electricity produced from renewable sources are Belgium, the United Kingdom, Luxembourg and the Netherlands.

The share varies somewhat over time in the case of Norway, averaging around 100 per cent (Chart 3). Neither the average for the EU nor for the three best EU countries shows clear-cut evidence of increase in the period since 1990.

Summary and conclusion

This overview shows that Norway is very well placed compared with the EU as regards the level of overall value creation, productivity and employment, with a large share of the population at work and low joblessness. Moreover, Norway has excellent public finances,

Figure 4. Norway's ranking (unweighted average) in various sectors, 1996 and latest figures



and achieves high scores on indicators for social cohesion, with even income distribution and limited poverty. On the other hand, Norway trails the EU in research and development, patents, education and scientific/technical personnel and investment in information and communication technology. Capital available for business start-ups (venture capital) is also in shorter supply. Norway has a very high general price level and higher price inflation than the EU, while prices in deregulated markets for telecommunications and electricity production present a more favourable picture. In the environmental sphere Norway scores relatively poorly on indicators for emissions of greenhouse gases and energy consumption, but very highly in regard to urban air quality and renewable energy.

Overviews based on individual indicators present a confused picture, prompting contemplation of more composite and aggregated indicators. One possibility is to present the average of the country's ranking on indicators in various sectors. An example is given in Chart 4, which also shows the average ranking for 1996 in relation to the latest available figures. This suggests that Norway is best placed relative to the EU in the employment sphere and in regard to social cohesion (highest average ranking). At the same time the comparison with 1996 shows that Norway's relative position has strengthened in the spheres of environment and social cohesion, and weakened in other areas. Caution should be shown in interpreting the result since the selection of indicators is somewhat arbitrary, partly because some indicators had to be omitted owing to missing data. Moreover, no attempt has been made to weigh indicators against each other.

As the above review shows, the structural indicators provide a basis for interesting reflections on the situation and developments in Norway and in EU countries. The indicators are relevant and policy-oriented in the sense that they are designed to measure progress made in attaining the objectives contained in the Lisbon strategy. A continual effort is made to im-

prove the choice of indicators as well as the definition and relevance of the targets. Moreover, the indicators are also gaining interest in a European perspective since the 13 candidate countries applying for EU membership intend to prepare and publish figures for the same aggregates.

Despite the advances made, problems still attend the indicators. Their main weakness is that they come across as a collection of relatively disconnected individual aggregates that fail to constitute an integrated and consistent system. This is the very flaw that was pointed out in Statistics Norway's submission regarding NOU 2001:29 (Best in Test?). The method for comparing countries is partial, fails to capture mutual relationships between indicators and does not indicate how the indicators can be weighed together and used as a basis for a consistent industry and economic policy. An obvious alternative here would be to link the indicator system more closely to the national accounts which provide a wide-ranging, detailed and consistent picture of the economy. In many countries the national accounts incorporate additional modules for various spheres, so-called satellite accounts, for example for employment and the environment. This permits a more coherent view of various aspects of society. If a stronger linkage to the national accounts were established, the structural indicators would come across as more integrated and consistent than they do at present.

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