

1 Summary and the Commission’s proposals

1.1 Background

Value added in the Norwegian mainland economy (excluding the petroleum sector) has increased sevenfold in real terms since 1930. This is predominantly caused by higher labour productivity. Looking at more recent data, total national income has increased by 273 percent since 1970. The petroleum sector accounts for a significant portion of such growth, but our prosperity is primarily determined by productivity growth in the mainland economy. This has been the case historically, and will continue to be so in the future. Our future prosperity depends on maintaining good productivity growth. Terms of trade gains, i.e. price increases for exported goods and services outpacing price increases for imported goods and services, have added to total national income growth in Norway, especially over the period from 1998 to 2008. However, the steep oil price decline in recent months shows how swiftly such terms of trade gains can be reversed.

Productivity growth in Mainland Norway over the period 1970 – 2004 was somewhat higher than in other countries. In market-oriented mainland industries,¹ productivity growth declined from about 3 percent per year over the period 1996 – 2005 to 0.8 percent over the period 2006 – 2013; cf. Figure 1.1. It must be assumed that part of the said decline is cyclical in nature, but structural factors may also have impeded productivity growth.

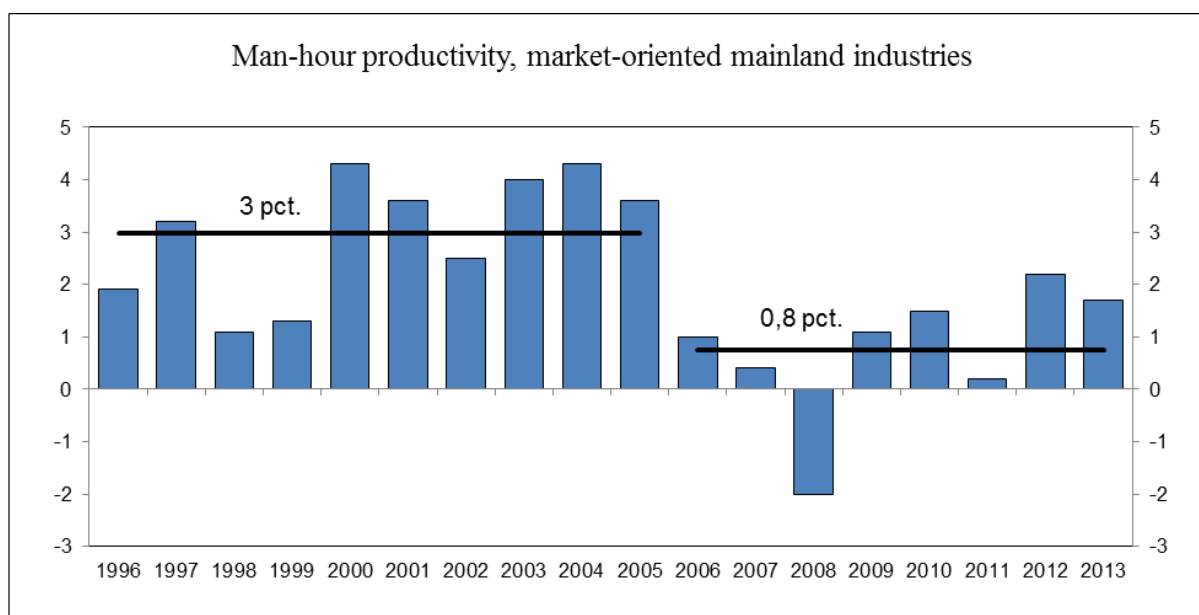


Figure 1.1 Labour productivity growth in market-oriented mainland industries¹

¹ Exclusive of housing services.

Source: Statistics Norway.

¹ Market-oriented mainland industries are highlighted because public sector production and housing services are not traded in markets, for which reason productivity figures are largely based on costs. Oil and gas are excluded because a major part of their production value may represent economic rent, and also to facilitate international comparability. See Box 4.2 for a more detailed description.

A continuation of the labour productivity growth rate from the period 1996 – 2005 would increase Mainland Norway GDP by 85 percent from 2014 to 2035, whilst a continuation of the growth rate from the period 2006 – 2013 would increase it by 17 percent. This illustrates the impact of productivity growth on total national income over time.

Productivity growth has declined in most parts of the Norwegian economy, including large sectors like private service industries, building and construction, as well as the food industry, with productivity growth being significantly lower after 2005 than over the period from 1996 to 2005.

The low productivity growth in 2006 and 2007 reflects strong employment growth, as measured in man-hours. Employment continued to rise in 2008, whilst production growth came to a halt; cf. Table 1.2 below. These years found the Norwegian economy at the end of a cyclical upturn, with capacity in most industries under pressure. Hence there was reason to expect a slowdown in production and productivity growth. The strong employment growth was primarily caused by high labour immigration in the wake of the EU expansion in 2004. A considerable portion of those who immigrated to Norway took employment in relatively labour-intensive industries. When taken in isolation, this would reduce productivity in the economy as a whole.

Table 1.1 Labour productivity growth in market-oriented mainland industries¹. Average annual growth rates. Percent

	Portion of gross product, 2013 ²	1971 – 2013	1971 – 1995	1996 – 2005	2006 – 2013
Market-oriented production in Mainland Norway	100.0	2.3	2.5	3.0	0.8
Manufacturing industry	14.2	1.8	1.6	2.8	1.0
Other goods production, of which	18.4	2.5	3.6	1.6	0.2
Building and construction	11.0	1.1	2.4	-0.9	-0.1
Private service industries, of which	67.4	2.3	2.3	3.4	0.8
Retailing	13.4	3.9	4.0	4.3	3.0
Finance and insurance	9.5	1.4	-0.2	5.6	1.4
ICT industries	7.0	3.6	2.9	5.4	3.6
Technical consulting, auditing, etc.	7.0	1.1	1.4	0.5	0.7
Domestic transport	6.8	1.2	1.0	1.9	0.9
Real estate trading and management	5.3	0.2	-1.8	7.0	-2.3
Corporate service industries	5.3	0.2	0.3	0.5	-0.8
Lodging and meal services	2.4	-1.5	-3.3	1.8	-0.2
Publishing	2.1	0.5	-0.4	1.7	1.6

¹ Excluding housing services for all years, as well as refining, banking and insurance until 1995.

² Portion of gross product in market-oriented mainland industries in 2013.

Source: Statistics Norway.

Retailing underwent a vigorous restructuring in the 1990s. Intensified competition, the emergence of chains, expanded ICT use, as well as the replacement of small shops by large shopping centres, contributed to strong productivity growth.

Table 1.2 Growth rates for market-oriented mainland industries in Norway¹.
2004-2013. Percent

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Gross product	6.5	5.7	5.3	5.8	1.9	-2.3	1.1	1.5	4.4	2.4
Man-hours	2.2	2.1	4.3	5.4	3.9	-3.4	-0.4	1.3	2.3	0.7
Labour productivity	4.3	3.6	1	0.4	-2	1.1	1.5	0.2	2.2	1.7

¹Exclusive of housing services.

Source: Statistics Norway.

Table 1.2 decomposes gross product growth over the period 2004 – 2013 into contributions from man-hour growth and labour productivity growth. Production developments were weak over the period 2009 – 2011 as the result of, inter alia, the financial crisis. Growth in both production and productivity has picked up somewhat over the last two years, but growth rates are distinctly lower than over the period 2000 – 2005.

The financial crisis and the subsequent recession have had a stronger negative impact on growth in many other countries; cf. Figure 1.2. The weak growth of our trading partners has also served to curb growth in Norway.



Figure 1.2 Labour productivity developments in selected OECD countries. Index 1995=100

Source: OECD and Statistics Norway.

Consequently, it is not necessarily straightforward to determine whether the levelling off in productivity growth after 2005 is structural in nature. However, certain factors suggest that

this may be the case. The fact that much of the productivity growth until 2005 was driven by a retailing productivity growth burst specific to Norway may indicate that part of the strong productivity growth over this period was caused by special circumstances of limited future relevance. This applies, in particular, to the very comprehensive restructuring of this industry in the 1990s and into the following decade.

1.2 Challenges for the Norwegian economy and future productivity growth

The favourable economic developments over the last few decades will not necessarily be followed by correspondingly high growth in Norway in the years to come. There are key macro challenges that may partly make it more *difficult* to maintain a high growth rate, and partly make it more *important* to achieve high productivity growth.

1.2.1 Negative impulses from the petroleum sector

A strong upsurge in petroleum sector activity has provided the mainland economy with a major growth impetus in recent years. This has contributed to the development of a large and technically sophisticated petroleum services industry. The oil and gas industry may also have lifted productivity in the remainder of the economy, as the expansion of that industry has triggered higher productivity and more restructuring of industries exposed to international competition. Revenues from that sector have formed the basis for high employment growth in service industries serving the domestic market. It must be assumed that demand impulses from the petroleum sector will be diminished in future; cf. Figure 1.3. Estimates in the report of the Holden III Committee suggest that the average annual negative impulse may be equivalent to about 0.4 percent of GDP in coming decades. The precipitous oil price decline since November 2014 has highlighted the fact that such impulses can be strong and occur rapidly. The quicker the downturn, and the lower the oil price, the more challenging will the restructuring be.

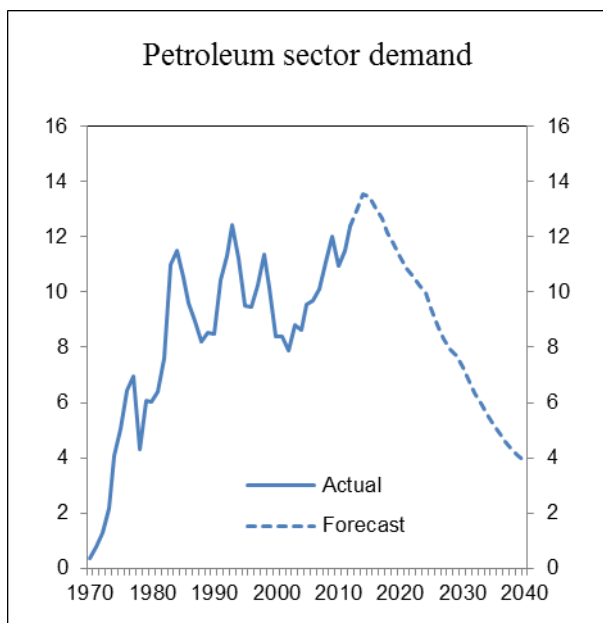


Figure 1.3 Petroleum sector demand. Percent of Mainland Norway GDP

Source: Official Norwegian Reports NOU 2013:13, Wage Formation and Challenges Facing the Norwegian Economy.

1.2.2 Risk of terms of trade gain reversal

Oil price hikes and low import price growth provided Norway with major terms of trade gains over the period 1998 – 2013. About one third of the income growth from 1998 to 2013 can be attributed to terms of trade improvements. Figure 1.4 shows terms of trade developments since 1900. Only once before has Norway experienced gains similar to those of the last 10 – 15 years. History has demonstrated that such terms of trade gains can be reversed, as experienced by Norway in the aftermath of World War I. The oil price has slumped from about USD 110 per barrel as recently as in the first half of 2014 to USD 55 at the beginning of February 2015. Such an oil price reduction will, if it endures, result in a significant income loss and restructuring need, not only for the petroleum sector, but also for the rest of the Norwegian economy. At the same time, the exchange rate depreciation serves to curtail the effects of a lower oil price on activity in the Norwegian economy.

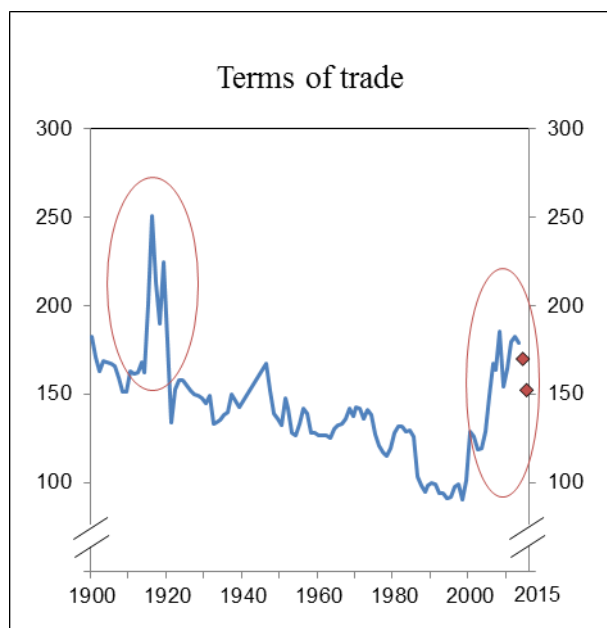


Figure 1.4 Terms of trade.¹ 1900 – 2015. Index 2000=100

¹ For 2014 and 2015 it is assumed that the oil price remains at its level as per the beginning of February 2015, whilst price developments are otherwise assumed to be in line with the estimates from the National Budget for 2015.

Sources: Statistics Norway and the Ministry of Finance.

1.2.3 Steep wage growth and high wage costs

The terms of trade gains and high demand from the petroleum sector have resulted in wages increasing considerably more in Norway than amongst our trading partners; cf. Figure 1.5. The steep wage growth has reverberated through most of the economy, including private and public sector service industries. Fairly parallel wage developments in different parts of the economy reflect the workings of the Norwegian wage formation model. Those parts of manufacturing industry serving the petroleum sector experienced improved profitability for an extended period of time, despite steep wage growth. However, other parts of Norwegian manufacturing industry, which are more exposed to international markets, have suffered a major decline in profitability. This is because the higher wages have not been matched by corresponding productivity growth, and the scope for recouping higher costs through higher

prices has been limited. In industries sheltered from international competition, higher costs tend to be passed on in the form of higher prices.

The restructuring of the industrial structure as the result of a lower oil price and reduced demand from the petroleum sector will be more challenging the higher is the cost level in Norway relative to that of our trading partners. The depreciation of Norwegian kroner between the end of November 2014 and the beginning of February 2015 has, when taken in isolation, resulted in a distinct improvement in Norwegian cost competitiveness.

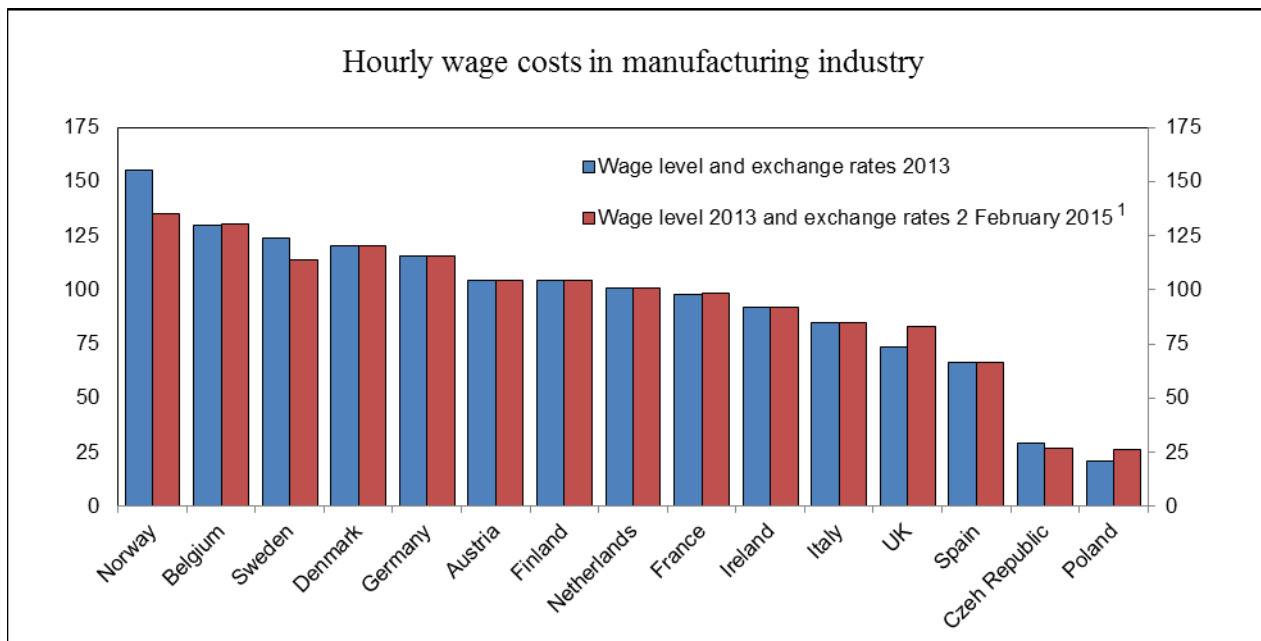


Figure 1.5 Hourly wage costs in manufacturing industry. Norway relative to our EU20 trading partners. Common currency. 2013. Trading partners = 100

¹ Using exchange rates from 2 February 2015, with the wage level in national currency in 2013 remaining fixed.

Sources: The Norwegian Technical Calculation Committee for Wage Settlements and the Ministry of Finance.

1.2.4 An ageing population

Life expectancy has increased considerably over the last few decades. This is primarily caused by general public health improvements, the development of new medicines and treatments, as well as improved diagnostics. It has been assumed that there is less of a potential for productivity growth in the care sector than in most other sectors. However, there is currently a development towards adopting technology with a potential both to reduce resource use and to enhance care quality. It must nonetheless be expected that a significant employment increase in this sector will curtail productivity growth for the economy as a whole.

There may be considerable scope for productivity growth in the health sector, but health sector innovations have historically often led to more extensive and expensive treatments. It will be very important to promote the development, and facilitate the adoption, of new technology, methods and organisational arrangements throughout the health and care

sectors in order to address the capacity challenges these sectors will be faced with in coming decades.

An ageing population means that a working population that is declining as a percentage of the overall population is called upon to fund a population of seniors that is growing in relative terms. This may to some extent be counteracted by seniors remaining economically active for longer. It is also important to increase employment amongst groups that are not economically active at present. This may, when taken in isolation, entail lower productivity growth if these groups have lower productivity than those currently in employment. It will nonetheless be highly profitable from an economic perspective to get more people into work, whilst it may also improve the quality of life and financial situation of the individuals concerned. Generally speaking, the key principle in economic policy should be economic efficiency, and increased productivity will in certain contexts not lead to improved economic efficiency.

Public expenditure on pensions, health services and geriatric care will increase steeply in coming years; cf. Figure 1.6. The National Budget for 2015 estimates that in 2060 there will be a government deficit corresponding to 5.2 percent of Mainland Norway GDP, assuming the continuation of the current standard of welfare schemes. If standards are increased, which has historically been the case, the need for tax increases, expenditure cuts or other ways of covering costs will be considerably higher. Tax increases to meet such challenge will, when taken in isolation, make the economy less efficient, since the tax wedges increase and tax-motivated allocations expand. It is assumed that the cost of higher taxes will increase more than proportionally with the increase in tax rates. An expanded work effort, in line with the increase in life expectancy, will strengthen value added and tax revenues, which will boost funding of the welfare state.

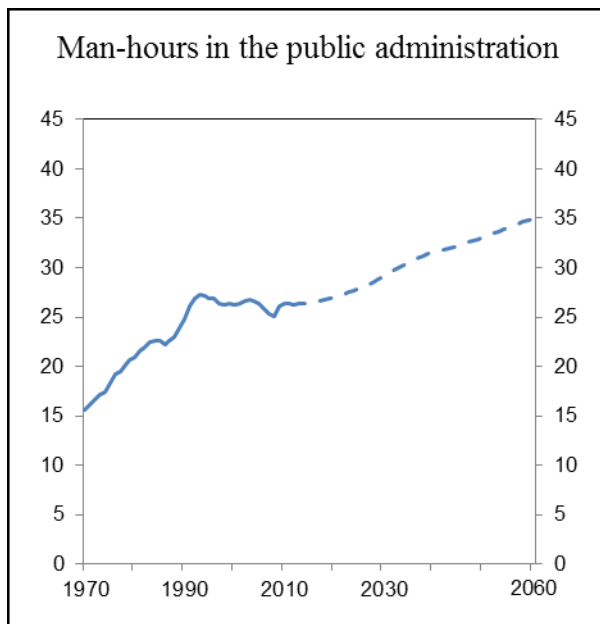


Figure 1.6 Number of man-hours in the public administration as a percentage of the total number of man-hours

Source: 2013 white paper on long-term perspectives for the Norwegian economy.

1.2.5 Weaker international growth

International economic developments are of major importance to a small, open economy as Norway. The level of activity in the euro zone still remains below the level prior to the financial crisis in 2008. At the same time the future outlook is not particularly favourable. Countries or groups of countries will from time to time experience prolonged periods of weak growth. Japan's weak performance since the early 1990s is an example, and the weak growth in many of the euro zone countries after 2008 may be another one; cf. Figure 1.7. Such periods of stagnation may be especially severe if interest rates are so low that one can no longer use monetary policy to stimulate economic growth. Weak economic growth is usually accompanied by weak productivity growth. Norway's most important trading partners are countries in Europe, and continued stagnation on their part will therefore have negative effects on the Norwegian economy.

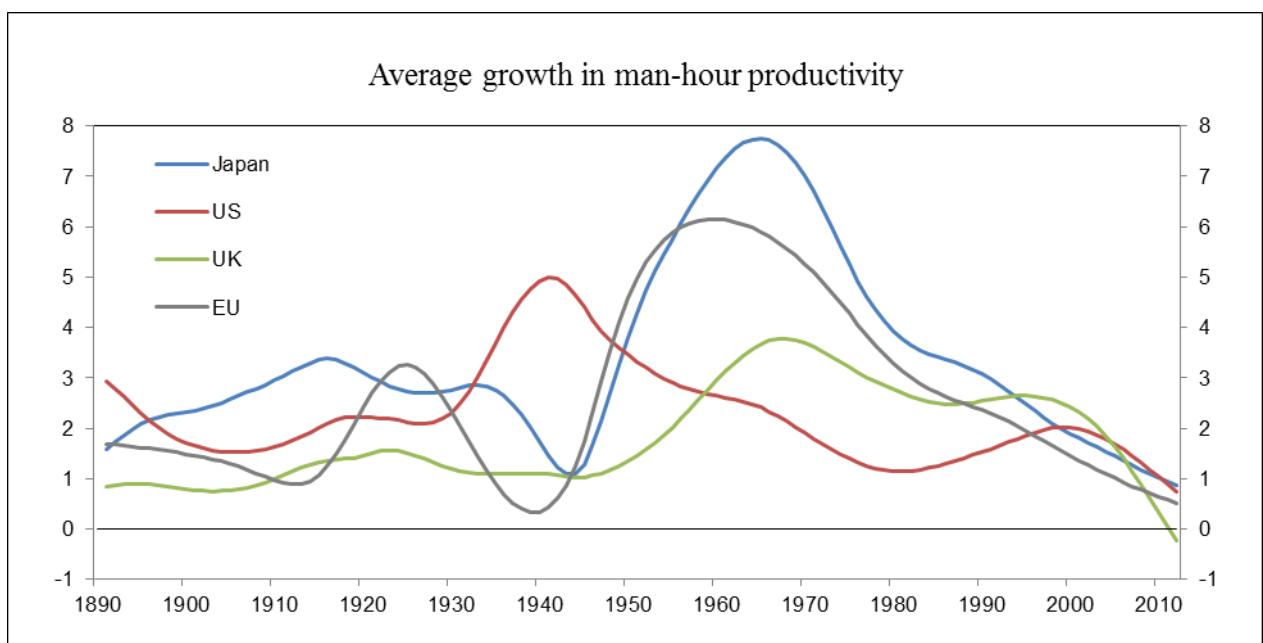


Figure 1.7 Trend growth in man-hour productivity

Source: Bergeaud, Cette and Lecat (2014).

There is an ongoing international debate as to whether trend growth in productivity must be expected to be lower than over the last few decades until the cyclical peak before the financial crisis. Some leading economists are envisaging a prolonged period of low productivity growth, whilst others anticipate high productivity growth via various forms of robotisation and improved IT use. There is considerable uncertainty, but it is obvious that global technological advances will influence productivity growth in Norway. Our ability to utilise such technology will largely depend on our own ability to absorb the progress taking place in other countries and to develop new technology and new products in areas where we are well placed to do so. This will be affected by conditions in many policy areas, not least in education and research policy.

1.2.6 Labour market changes and the need for expertise

The Holden III Committee notes a continuous increase in the number of Norwegian industries integrated into the international exchange of goods and services, and faced with international competition. Key drivers behind globalisation are reduced barriers to trade, lower transport costs, higher labour mobility, fewer restrictions on capital mobility, as well as technological advances. Each of these factors is of importance to productivity growth. The interaction between these has paved the way for an expanded international division of labour, by way of the relocation of labour-intensive production to countries with cheaper manpower. The industrial restructuring triggered by this has lifted productivity in both industrialised countries and emerging economies. Cross-border integration of value chains has become ever more common. Technology is spread more swiftly between countries. Moreover, surging growth in China and other emerging economies has served to lift international economic growth, which may in itself have resulted in higher productivity growth.

Potential negative employment effects in Norway as the result of the international relocation of production have thus far been counteracted by strong growth in demand from the petroleum sector and generally high growth in the Norwegian economy. Consequently, employment has remained high and unemployment has remained low. As work has been relocated abroad, working life has been refocused on other, and more profitable, activities. The restructuring has taken place by way of high-productivity businesses growing at the expense of low-productivity businesses (reallocation gains), as well as enhanced productivity of incumbents and the establishment of new high-productivity businesses (learning gains).

An ever-increasing education level, a learning-intensive working life and access to new technology from abroad have enabled such learning gains to be reaped. Figure 1.8.A shows that the number of persons in Norway with higher education has grown, especially over the last 20 years. This has happened in parallel with the introduction of ICT, which especially increases the productivity of the highly educated. It would not have been possible to utilise such technology without raising the education level. ICT has taken over, in full or in part, many tasks previously performed by unskilled manpower, thus reducing the need for such manpower.

Weaknesses in the education system are curtailing productivity growth. Norway has long suffered a shortage of engineers and skilled workers. The situation has improved as far as engineers are concerned, but the shortage of skilled workers looks set to increase. If current trends prevail, there will also be a shortage of personnel in the education and health sectors, whilst there will be a surplus of business administration graduates and social scientists, according to projections from Statistics Norway (Figure 1.8.B).

Technological advances and global trends will impose more demands on knowledge production in Norway in coming years, if productivity growth is to be maintained or increased. In many countries, the ICT- and globalisation-driven polarisation of the labour market has resulted in a reallocation of labour to service sectors with lower productivity and lower wages. These developments are likely to be reinforced by the major ICT development leaps made possible in the service sectors, via large data amounts, unlimited computing power, sensors and robotisation. High productivity growth depends on Norway being able to utilise – and preferably contribute to – such technological advances in the service sectors. It is therefore necessary that the education system produces more candidates with better and more

relevant knowledge, and that the industry ensures that their skills are continuously updated. In addition, Norway needs to get better at converting knowledge into value added.

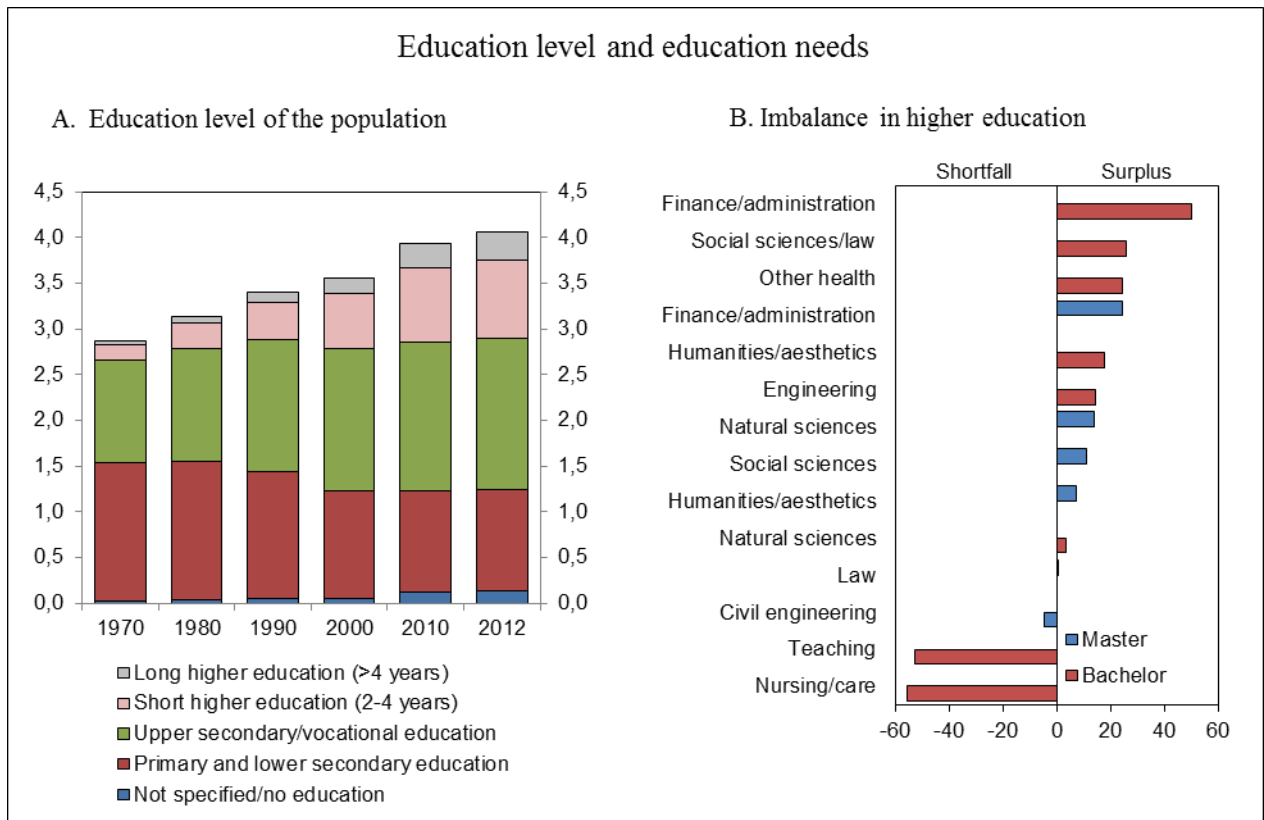


Figure 1.8 Population, millions of persons, 16 years and above, by top education level attained, 1970-2012 (A) and estimated imbalance between supply and demand for education in 2030, thousands of persons (B)

Sources: Statistics Norway and Gjefsen et.al (2014).

1.3 Norway is well placed to meet the challenges

Norway is well placed to accommodate the restructuring needs discussed above. Norwegian industry has shown itself capable of major restructuring over the last few decades. In excess of 10 percent of all businesses are closed down in any given year, with a corresponding number of start-ups. In order for restructuring to deliver gains in productivity and prosperity, it is of decisive importance for businesses with a high productivity potential to be permitted to replace businesses with a low productivity potential. Just under one third of the businesses that were established in Norway in 2007 remained active in 2012. On the other hand, those businesses still in existence had almost quadrupled their aggregate number of employees from 2007 to 2012.

Competition and technological change are key drivers for restructuring, both between businesses and internally within businesses. In 2011, four out of ten Norwegian employees in the private sector reported that their workplace had undergone a substantial restructuring or reorganisation in the last three years; cf. Figure 1.9. Adaptability in the Norwegian private sector also appears to be high as far as the introduction of new technology is concerned. Half of Norwegian employees reported that a new production process or new technology had been introduced in their workplace in the last three years. Manpower also seems to have high mobility between businesses and regions in Norway.

There is less mobility between the private sector and the public sector. A high education level serves to improve mobility and adaptability.

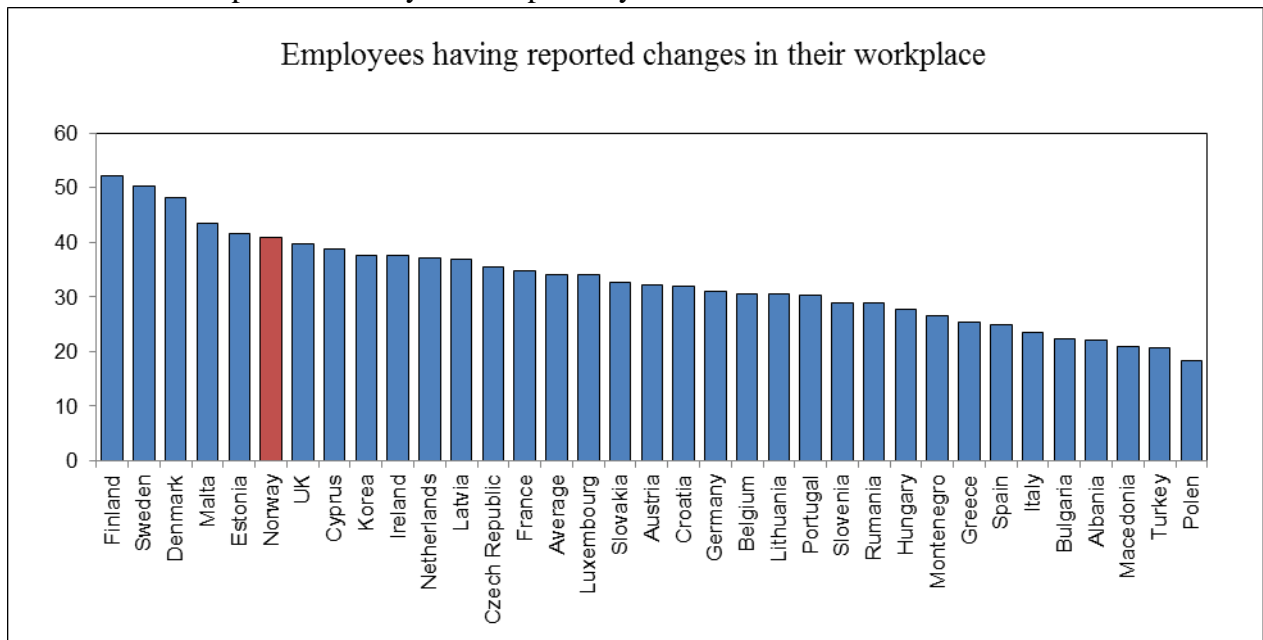


Figure 1.9 Percentage of employees having reported substantial restructuring or reorganisation of their workplace in the last three years. 2011

Source: OECD.

The workings of the Norwegian labour market reduce, in combination with universal and fairly generous welfare schemes, uncertainty for employees who are affected by restructuring. This has facilitated restructuring and innovativeness, whilst also resulting in relatively high productivity growth in combination with small income differentials. A system of local bargaining with productivity growth as one of the criteria for wage growth also serves to reduce resistance against restructuring.

The Holden III Committee noted that the Norwegian income formation system has served to ensure that gains from productivity increases have benefited both businesses and employees. An egalitarian income distribution enables the gains from productivity improvements to be widely disseminated. A high education level facilitates restructuring and strengthens the ability to handle the income distribution challenges posed by, for example, globalisation.

The quality of societal institutions is an important factor in explaining differences between rich and poor countries. High productivity growth is dependent on institutions that promote innovation and competition. Conversely, weak institutions will inhibit economic growth. International comparisons show that Norway has good societal institutions. People generally exhibit high trust in each other and towards the authorities, and have confidence in contractual compliance and the performance of agreements. It must be assumed that these factors will make a significant contribution to the necessary restructuring of the Norwegian economy in coming years as well.

However, certain characteristics of the Norwegian economy may restrict adaptability. The portion of businesses in Norway that are start-ups is low when compared to other OECD countries, whilst the size of start-ups is somewhat larger. But both the EU Innovation Union Scoreboard and the most recent OECD country report for Norway (OECD, 2013) show that only a small number of these evolve into large employers, thus

implying that the portion of rapidly growing businesses is lower in Norway than in most OECD countries. One reason for this may be that capacity utilisation in the economy has been higher than in many other countries, hence making it difficult to obtain labour for new, rapidly expanding businesses. However, the establishment of new businesses that grow is often how new ideas, products and competitors evolve and capture market shares.

Almost two thirds of Norway's total exports are directly and indirectly linked to the oil and gas sector. This makes the Norwegian economy both extremely profitable and vulnerable. In the short run, the high Norwegian cost level will also make it challenging to refocus the sector exposed to international competition onto other markets.

Restructuring entails costs, for individual employees, for businesses and for society as a whole. It is important for both owners and investors that it is not too difficult to try anew after one has failed. Good bankruptcy legislation is important in this regard, to ensure that substandard businesses are closed down and that resources are freed up for businesses that are efficient and offer more development potential. It is especially costly for individuals and for society if the restructuring results in employees dropping out of the labour market altogether. A flexible labour market is important, and it is of decisive importance to have good institutions and systems for following up those who fall by the wayside.

Compared to other countries, a large portion of the population in Norway receives disability benefits. Many of those dropping out of working life are unable to adjust to other occupations. This may be caused by a low education level and specialisation within occupations that are disappearing. There may also be aspects of the design of Norwegian welfare schemes that contribute to some people dropping permanently out of the labour force. This is very costly for the society. Consequently, it is important for the incentives to remain in work to be good, and for the education system and working life to be sufficiently flexible and adaptable to ensure that the labour needs of industry and the public sector are met.

1.4 Summary of the assessments and conclusions

1.4.1 What can Norway learn from other countries?

A number of international organisations and research institutions conduct annual benchmark testing, the purpose of which is to use indicators to map differences between countries in areas relating to growth and productivity.

Such benchmark testing may help to identify areas in which a country differs from others, both positively and negatively. The authorities can use comparisons based on indicators to identify areas that may have a negative impact on the economy's capacity to grow and evaluate, on such basis, whether the objectives underpinning rules and other policy measures are well-founded. Using findings from such an indicator approach in policy formulation requires a thorough analysis of the causes of deviations from best practice, as well as what guidance research can provide as to which measures are the most effective.

The findings presented show that Norway ranks close to the average amongst the countries studied in a number of international comparisons. In many areas there is quite some catching up to do in order to match best practice. Getting closer to best practice may be an important prerequisite for continued productivity growth.

Norway is facing particular challenges in the following areas:

- A number of studies show that Norway scores around the mean when it comes to industry innovation, research and development. Moreover, Norway achieves a weak score in terms of start-ups, low complexity of export products and relatively low private ownership. Investment in firm-specific knowledge capital (intellectual property) is low.
- Low competition in product markets. This may be caused by regulations providing strong implicit or explicit protection for incumbents, extensive requirements in relation to the start up of a business, complex regulatory procedures and high public ownership.
- Insufficient access to relevant manpower, especially engineers and natural science graduates. Many countries have a considerably better education system than Norway, also when measured by primary and lower secondary education performance and drop-outs from upper secondary education. The design of welfare and pension schemes is highlighted as having an impact on the labour market.

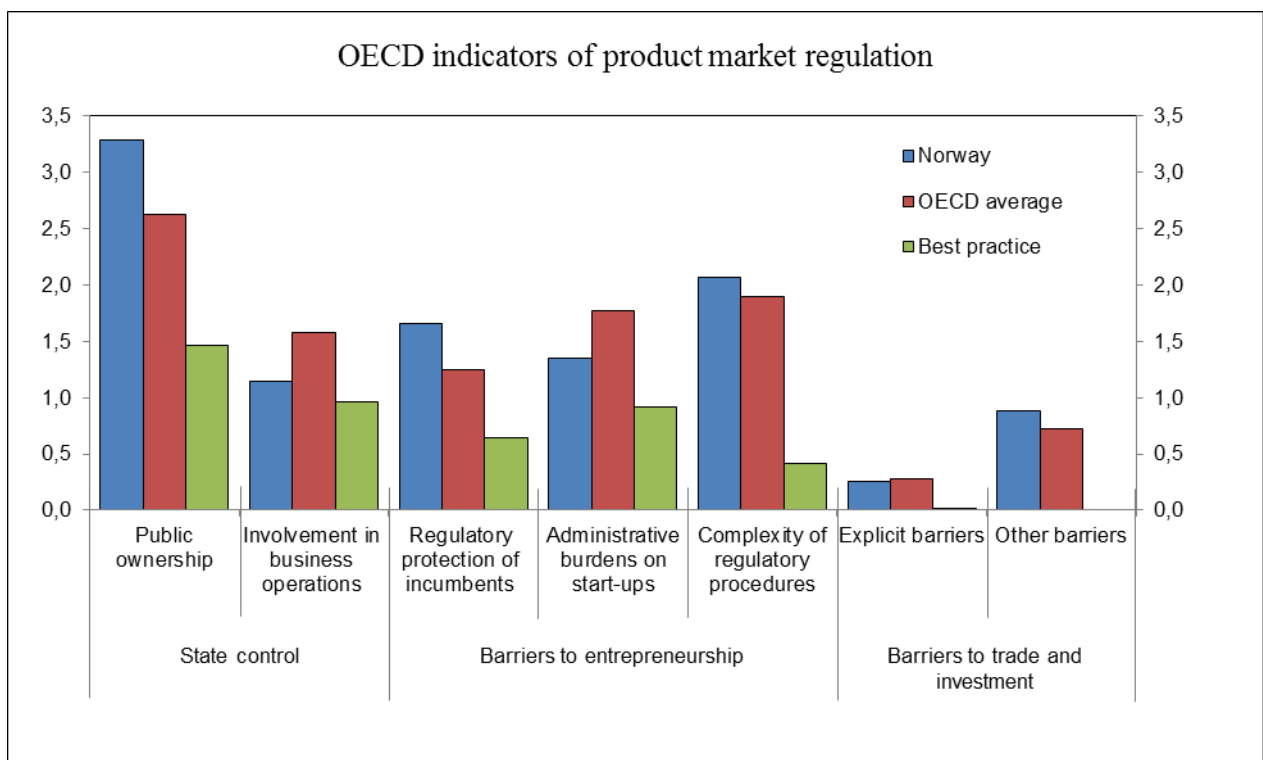


Figure 1.10 Norwegian scores in the OECD indicators for product market regulation. 2013

Source: OECD.

The areas in which Norway excel include macroeconomic factors like income level, public finances, social framework and basic infrastructure in society. Political stability, an effective legal system and a highly educated labour force are other positive characteristics of the Norwegian economy. Terms of trade developments, access to capital markets and unemployment are also areas in which Norway is doing better than many of its peers.

Productivity commissions have been established in several other countries, including New Zealand, Australia and Denmark. The Danish productivity commission generated a large number of recommendations to pave the way for enhanced productivity. More competition

and adaptability, improved investment in, and utilisation of, infrastructure, as well as a better education system, were emphasised to enhance private sector productivity. Proposed reforms in the public sector include attaching more weight to outcomes for citizens, delegation and assignment of responsibility in public institutions, as well as de-bureaucratisation. The Danish productivity commission emphasised improved data on public sector performance and more transparency concerning such performance.

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1.4.2 What drives productivity growth?

Productivity growth is a global process in which different countries are linked, in different ways, to advances at the forefront of global technology. Countries' contributions to, and learning from, the forefront of technology vary with financial and institutional circumstances, especially access to knowledge capital, competition in, and regulation of, domestic markets, as well as the degree of internationalisation of the economy.

In the longer run, a country's productivity growth will depend on its ability to shift the forefront of technology through innovation and, not least, its ability to adopt forefront technology developed abroad (technology adoption). In addition to such learning effects, productivity is determined by restructuring, in the form of production being moved from low-productivity to high-productivity activities and geographical areas.

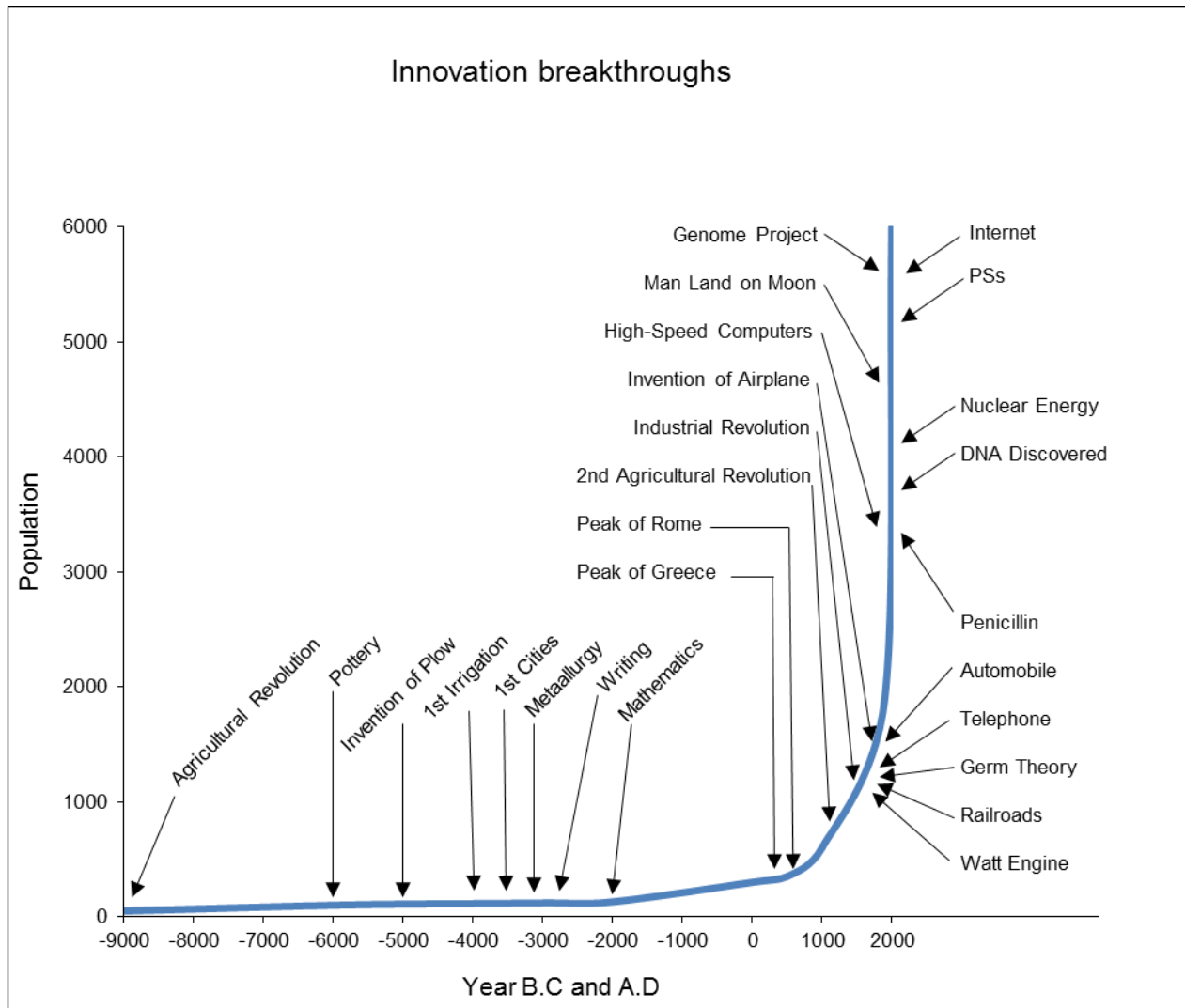


Figure 1.11 Innovation breakthroughs of major importance to productivity developments, 9,000 B.C. – 2014

Source: Fogel.

Technology adoption from abroad is of decisive importance to productivity growth in a small country like Norway, because almost all new technology is developed abroad; cf. Figure 1.11. Research shows that openness to the outside world, in the form of trade, foreign ownership and human mobility, facilitates technology adoption. The ability of a country to utilise technology developed abroad, i.e. its absorption capacity, is largely determined by its aggregate knowledge capital, which again is influenced by the education and research system.

Competition provides incumbents with incentives to engage in both innovation and technology adoption, but competition may also restrict innovation². Competition contributes to the realisation of reallocation gains, as low-productivity businesses are closed down and

² The literature describes the relationship between competition and innovation as the «inverted U». There is little innovation in markets with little competition, whilst the pace of innovation accelerates when competition increases. However, there appears to be an apex, thus implying that innovation slows down when competition becomes too intense.

high-productivity businesses grow or get started. Institutional factors influence both the scope for innovation and technology transfer, as well as the ability of markets to generate new, high-productivity businesses and close down low-productivity businesses.

International trade increases market size, thus enabling businesses to reap economies of scale, and facilitates productivity improvements via technology adoption between countries, whilst also increasing competition in product markets. Free access to imported goods is good for productivity, and this is largely reflected in Norwegian trade policy.

A key underlying mechanism for productivity growth is urbanisation. Urban growth offers positive agglomeration effects, i.e. benefits from geographical proximity – which enhance productivity. These effects are principally to do with urban areas facilitating the rapid dissemination of ideas and knowledge.

Extensive research is being conducted into productivity developments. Recent research has focused on the relevance of the institutional framework, factors that explain innovation at the level of the firm, as well as analyses of the underlying reasons why urbanisation promotes productivity growth.

1.4.3 Urbanisation and productivity

New literature on the impact of urban areas demonstrates a strong link between productivity and urbanisation. Urbanisation is partly the result of enhanced productivity and partly a factor in promoting productivity growth. A growing portion of the Norwegian population lives in large and medium-sized urban regions; cf. Figure 1.12. How urban areas and regions develop is therefore of considerable importance to national development. The urbanisation of Norway is linked, as in other countries, to the transfer from primary industries to secondary industries, and from the latter to service industries. The productivity effect is linked to the role of urban areas in the global economy. In particular, urban areas offer the best scope for connecting, sharing and learning, i.e. for the exploitation of so-called agglomeration effects or urban benefits. Norway is also characterised by higher productivity in large urban areas than in smaller urban regions and rural areas. However, productivity differences between urban and rural areas have declined over time. As expected, urban innovations will gradually be entered into use throughout the country.

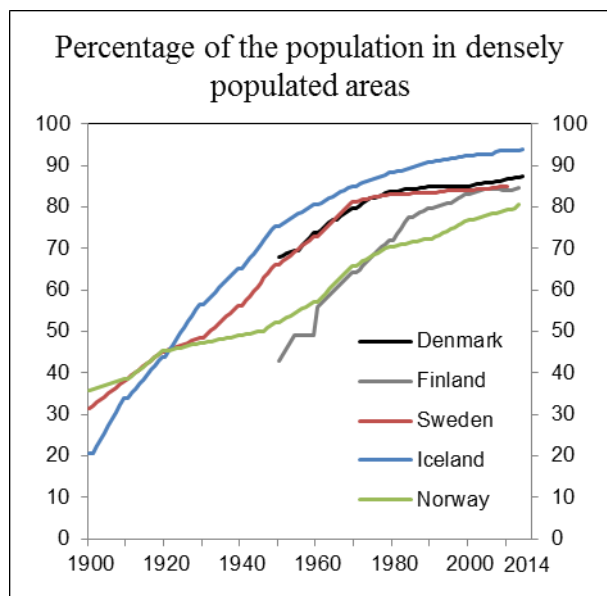


Figure 1.12 Percentage of the population in Nordic countries living in densely populated areas. Developments 1900–2014¹

¹ Data do not exist for all years of this period, and hence the figure reflects data interpolation between data points.

Sources: Statistics Norway, Statistics Iceland, Statistics Sweden, Statistics Finland and the UN.

Norwegian urban areas face challenges with land use and transport solutions. Urban areas often comprise several municipalities. This results in fragmented responsibility for area planning in regions that naturally constitute joint labour markets. Responsibility for transport solutions is split between various sectoral authorities and administrative levels. Consolidation of municipalities may improve governance in this area. This would need to be supplemented by stronger regional coordination in the main labour market regions.

Crowding and queuing in urban areas may cause agglomeration and efficiency losses. Such tendencies are especially notable in the Oslo region, in the form of mounting queuing costs. A land use and transport policy facilitating comprehensive public transport solutions in urban areas is of key importance for achieving a cost-effective transport system. Concentration around traffic nodes and a focus on public transport in urban areas are required. Transport investments that link labour markets may enhance productivity, by giving rise to agglomeration effects that shrink distance and expand labour markets.

Large urban regions will, generally speaking, be conducive to the establishment of knowledge-intensive industries, as illustrated by high R&D investments and a high portion of employees with higher education. In Norway, industrial productivity is highest in urban regions. Nonetheless, innovation rates and productivity growth are not significantly higher in urban areas than in the rest of the country. This may reflect the higher prevalence of service sectors in urban areas, combined with a large labour market for unskilled manpower. The lack of an effective governance system encompassing urban regions may inhibit the exploitation of the benefits from urbanisation.

The interactions between urbanisation, productivity and economic development have been underestimated in political decision-making processes. It is important to expand

knowledge in this field and afford more weight to the policy design challenges associated with productivity developments in urban areas.

1.4.4 Restructuring and growth in Norwegian industry

The economy is in a continual state of change. Technological advances, along with changing organisational forms, demand, competition and economic conditions, bring about the wax and wane of individual businesses and a changing industrial structure over time. Almost all employment growth in Norway since 1970 has come in private and public service industries. Eight out of ten jobs are currently in the service sector. These developments are expected to continue, also as the result of a growing care sector. These tend to be jobs with interpersonal relations, which may offer more limited scope for higher productivity. However, many other parts of the service sector have potential for the same amount of productivity improvement as the production of goods. Retailing productivity growth has, for example, outpaced manufacturing productivity growth since 1970. Petroleum-oriented manufacturing has evolved over the last few decades, whilst traditional export manufacturing has declined in importance. This has made Norway vulnerable to fluctuations in the activity level on the Norwegian continental shelf. Other export industries will need to be developed when activity in petroleum-oriented industries slows down. In the longer run it may be necessary for Norway to refocus its economy towards more heterogeneous and complex value chains. There is already strong growth in new areas of manufacturing and export, which bodes well for future restructuring.

The transfer of labour from low-productivity businesses or sectors to higher-productivity businesses or sectors paves the way for improved utilisation of society's resources. Such restructuring processes are, together with internal productivity growth in businesses, key sources of productivity growth and increased prosperity; cf. Figure 1.13. Recent research has focused on the productivity implications of business management and general working conditions.

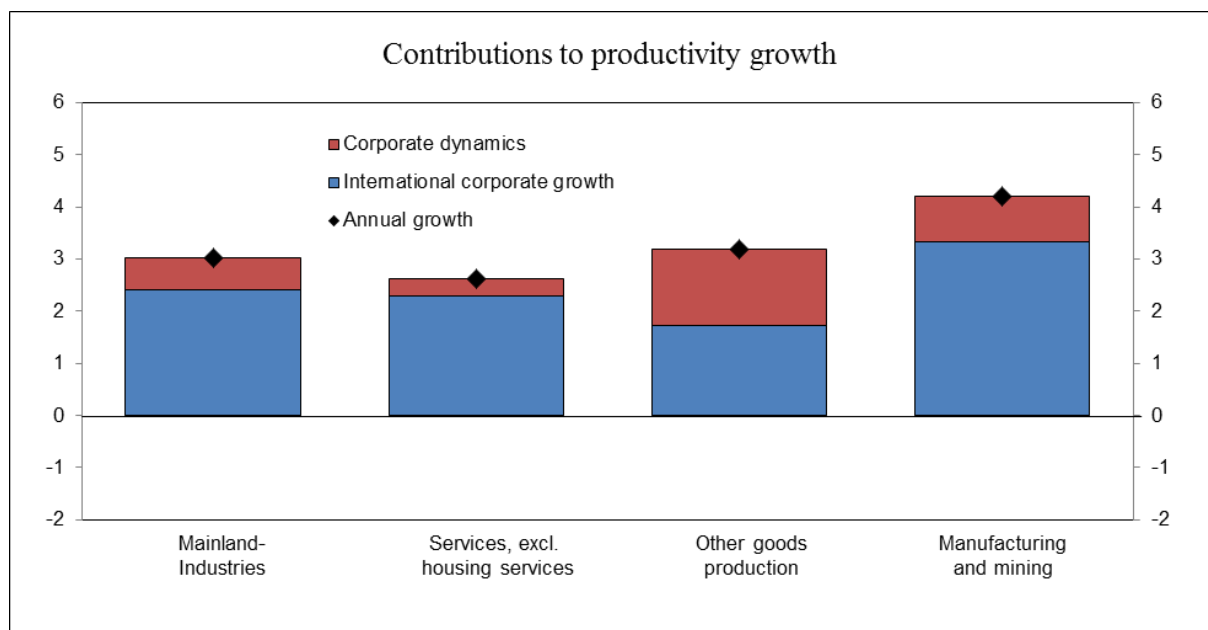


Figure 1.13 Contribution to average annual productivity growth in selected industries.¹ 1995–2012. Percent. Fixed prices

¹The data set only covers limited liability companies. Registered data at the aggregated level may deviate from national accounts figures due to, inter alia, differences in price indices and factor inputs.

Source: Statistics Norway.

Norway has thus far been adept at restructuring its economy in the face of changing circumstances. A well-educated labour force willing to undergo restructuring has been important, together with a business framework that supports restructuring. It is, at the same time, cause for concern that many people are outside the labour market. This may partly be the result of restructuring having made it more difficult for those at the fringes of the labour market to gain a foothold. Given the restructuring needs facing the Norwegian economy in coming years, it will be important to curtail the restructuring costs caused by many people remaining outside the labour market.

1.4.5 Innovation and entrepreneurship

An important platform for restructuring, in the form of new jobs and new markets, is the development of new or improved products and processes. A new idea or invention does not become an innovation that generates value added and productivity growth until it has been put to practical use. Only a minor portion of business innovations are based on research, in Norway and in other countries.

R&D and innovation investment decisions are made by the directors and managers of businesses. These decisions are influenced by the general innovation policies, which addresses general business conditions like competition, tax systems, education, funding, equity markets, etc. Such decisions are also influenced by the targeted innovation policies like subsidy schemes, tax incentives, government funding of research institutes, etc. Good general innovation policies need to be in place in order for the direct policy measures to give full effect and result in the expansion of innovation activity.

The predominant part of global research and innovation takes place outside the borders of Norway. Imitation or adoption of existing technology can be an efficient way for a country to move closer to the technological frontier, and in most areas this is also easier than the development of proprietary technology. A high level of national expertise, in combination with insight into developments at the forefront of international research, is necessary to understand and assimilate the relevant knowledge to be imported. In practice, industrial development combines domestic development with the replication or adoption of solutions and insights developed abroad. Insight into, and transmission channels for, solutions and methods developed elsewhere are of key importance to the launch and improvement of internally developed products and processes.

Access to resources like strong researchers, good infrastructure and robust research establishments strengthens the competitiveness of Norwegian industry. If the education system and other institutions that are sources of knowledge provide good candidates, it is up to the industry to tailor its efforts to its ends. There is, on the other hand, a risk that the industry will, of its own accord, invest less in the development of knowledge and R&D than would be economically desirable, because outcomes, methods and findings from corporate research will also have effects beyond improving the profitability of the specific business in question. Benefits to other Norwegian businesses are not taken into consideration when individual businesses make their investment decisions. Consequently, it is in the interest of society to stimulate industry to develop and utilise knowledge via research and development.

Despite relatively favourable productivity developments overall, Norwegian industry generally ranks close to the international average in terms of innovation and R&D activity, access to venture capital, as well as investment in various forms of company-specific knowledge capital.

Investment in various forms of company-specific knowledge capital (intellectual property) is lower in Norway than in most other OECD countries. Such investment is now more important in terms of value added than traditional investment in physical capital in a number of other countries. Knowledge-intensive, productive businesses are developed through knowledge investment.

Figure 1.14 shows research and development investment on the part of industry over the period from 1981 to 2012.

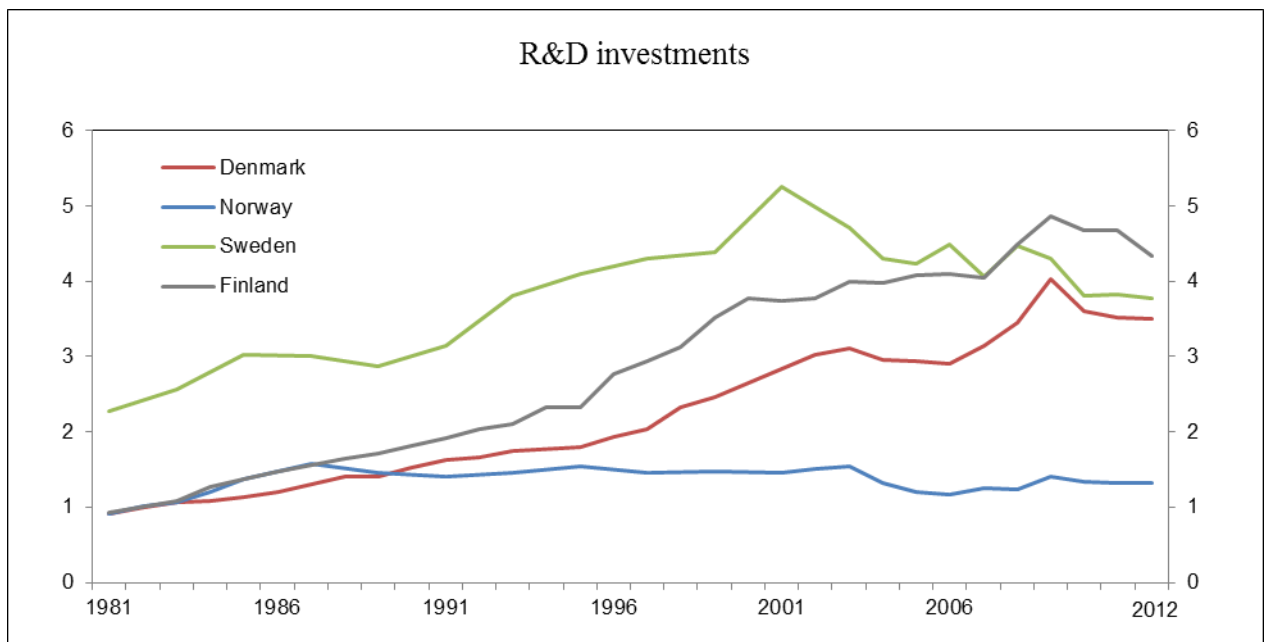


Figure 1.14 Research investment in Nordic industry. 1981-2012. Percent of the gross product of industry

Source: OECD

R&D activity is normally highest on the part of large enterprises. One of the reasons for low R&D activity in Norway is that the proportion of large enterprises is lower than in many other countries. A special challenge for Norway is its lack of typical R&D entities.

Industry itself identifies high costs and a lack of funding as explanations for low innovation activity. The most recent innovation surveys have highlighted problems in retaining or recruiting qualified personnel as an important and mounting curb on innovation activity. In 2012, demand uncertainty also impeded activity. The education system holds an important key to industrial research activity. Measures improving productivity in the education sector may also lift industrial productivity.

Norway differs from other countries inasmuch as individuals, venture funds and some institutional investors appear to opt out of investment in new, growing businesses. This is partly caused by the preferential tax treatment of real estate, but the Commission is of the view that long-term investors should be able to play a larger role in providing equity for

young and growing businesses. There would seem to be a mismatch between relatively large central government budget appropriations for research and relatively small appropriations for making use of outcomes and findings, and for bringing these to the market. Allocations from government seed funds for industry is one example of policy measures to encourage commercialisation and market launch. Statutory amendments requiring universities to facilitate knowledge-based industrial development through the commercial utilisation of research findings, and allocating ownership of employee inventions to universities, are another example. In both cases the objective is to increase value added, and it is intended that all parties shall benefit from collaboration – researchers, businesses and investors. The universities have therefore established so-called Technology Transfer Offices (TTO). It is important for the design of policy tools to be evaluated and improved on an ongoing basis. The Commission is of the view that attaching more weight to commercialisation may increase the industrial activity and value added generated by private and public sector research. Recent research suggests that support for large research enterprises delivers the highest return. These findings suggest that policy measures should increasingly be focused on large and professional R&D enterprises in coming years. However, renewal to create new, knowledge-based industry also involves the establishment of new enterprises in new areas. Public policy needs to facilitate both the growth of incumbents and renewal through start-ups.

1.4.6 Competition and regulation

Competition is an important driver for productivity. The extent of effective competition in a market is closely related to the contents, as well as the enforcement, of the Competition Act. The interface between the public sector and the private sector, competition conditions for government enterprises, as well as the scope and contents of various forms of regulations, are important.

The Norwegian Competition Act is largely equivalent to the EU competition provisions, and does on the whole appear to be well-functioning. However, the exemptions from the Competition Act for collaboration in the sale of books, as well as collaboration, etc., within agriculture and fisheries, mean that economic efficiency and consumer considerations give way to other considerations. This may have negative productivity and welfare implications. It is also inadvisable for the Ministry of Trade, Industry and Fisheries to serve as the appellate body in competition matters, and the Commission supports the establishment of an independent administrative appellate body. Higher merger reporting thresholds may have resulted in the implementation of mergers that significantly restrict competition without it coming to the knowledge of the Competition Authority. The Commission is of the view that the higher thresholds should be evaluated after a while.

The Commission believes that the policy tools available under the Competition Act are insufficient to ensure competition on equal terms between public and private service providers. The competition authorities in our neighbouring countries have in recent years been afforded new tools aimed at solving competition challenges arising when the public sector performs tasks in a competitive market. The Commission is of the view that it is important for Norway get a more robust enforcement regime in this area.

As Figure 1.5 shows, internationalisation and international competition increase productivity. This is especially clear within manufacturing industry, where high-export businesses contributed almost all average annual productivity growth over the period 1995 – 2012. The strong productivity growth in export industries may reflect that high-export businesses are more productive than other businesses at the outset. The literature

emphasises that openness to international markets delivers both increased competition and more scope for technological learning.

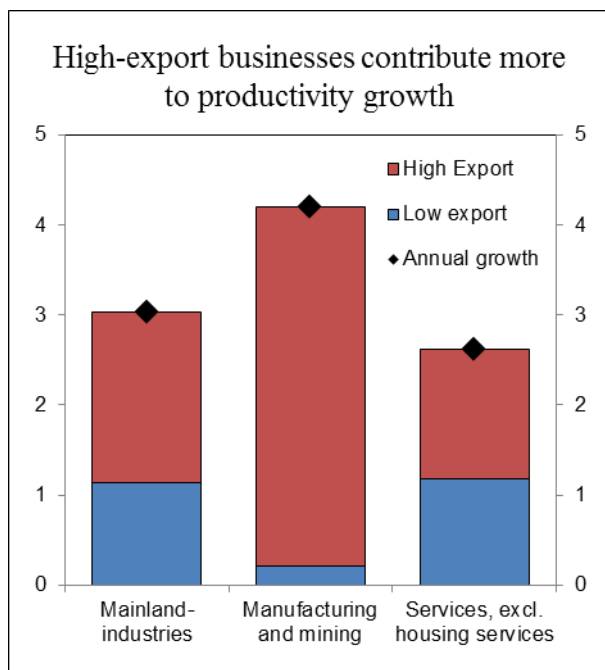


Figure 1.15 Average annual productivity growth contributions from businesses with high and low/no export share.¹ Mainland industries overall, service industries,² as well as manufacturing and mining. 1995 – 2012.

¹ High- and low-export businesses are defined as businesses whose export value is more or less, respectively, than 25 percent of their operating income for the entire period.

² Service industries, exclusive of housing services.

Source: Statistics Norway.

The market will under certain conditions generate an efficient resource allocation, but in case of market failure, regulation will be necessary to bring the economy closer to efficient allocation of resources. Moreover, a multitude of regulations have been introduced to promote political objectives, including regional policy and distribution policy objectives. Regulations may seem necessary and appropriate in view of the purpose these are intended to serve, but competition is often restricted more than would be necessary to realise the objective. This results in less efficient resource utilisation and lower productivity. Costs of regulations should therefore be examined before introducing new regulations.

Countries and sectors with limited competition-inhibiting regulations have generally been characterised by higher GDP per capita and higher productivity growth than countries with more extensive interventions that restrict competition. This may be because regulations reduce rivalry between incumbents, thus impeding technology absorption incentives. Regulations may also increase barriers to entry for new, innovative businesses, thus inhibiting innovation incentives. Moreover, competition-inhibiting regulations in one industry may have ripple effects in other industries, hence curtailing productivity growth throughout the value chain. One such example is the regulation of agriculture, which also impedes productivity in the food industry. The food industry accounts for 20 percent of aggregate industrial production in Norway.

There are several examples of regulations that may inhibit competition and result in lower productivity and higher costs. The discussion in the chapter also shows that competition appears to be weak in a number of markets. The Commission believes that there is a need for a more systematic review of the competition situation in Norway. Such review should encompass both competition-inhibiting regulations and competition inhibitions arising for other reasons.

1.4.7 Regulation of the building industry

Measured productivity developments in the building sector have been weak over the last two decades and the regulations of the sector has expanded. The Commission focuses on government requirements and regulations that influence building and land costs as causes of mounting costs and barriers to entry. Some of the available data pertain to the building and construction industry as a whole, and some of the challenges are also faced by the construction industry. The main emphasis is nonetheless on the building industry.

The building and construction industry plays an important role in the Norwegian economy and its significance in terms of production and investment has been growing in recent years. Housing investment represented 44 percent of private mainland investment in 2013. The building and construction industry, which executes the predominant part of housing investment, accounted for 12 percent of gross product on the part of market-oriented businesses in Mainland Norway. Profitability in the industry has generally been good. There are, at the same time, indications that the degree of innovation is lower than in other industries, and measured productivity growth has been low since the mid-1990s.

The cost of building new homes has increased steeply in recent years. There may be many reasons for the mounting costs, including higher quality, more expensive materials, more complex soil mechanics and more expensive land as the result of centralisation, stricter technical building requirements and low productivity growth in the industry. During periods of strong demand pressure and capacity limitations, high prices may also have pushed costs upwards via higher land prices, higher wages and higher profit margins. Stricter regulation of the building industry has increased the cost of building new homes; as illustrated in Figure 1.16. There is a need for a thorough review of whether these regulations represent an appropriate trade-off between welfare and energy policy considerations, as well as agricultural protection, on the one hand, and cost implications for building projects, on the other hand. Hence, critical reviews of regulations impinging on this industry should be conducted on a regular basis, to evaluate whether such regulations have unintended consequences, and whether simplifications can be made.

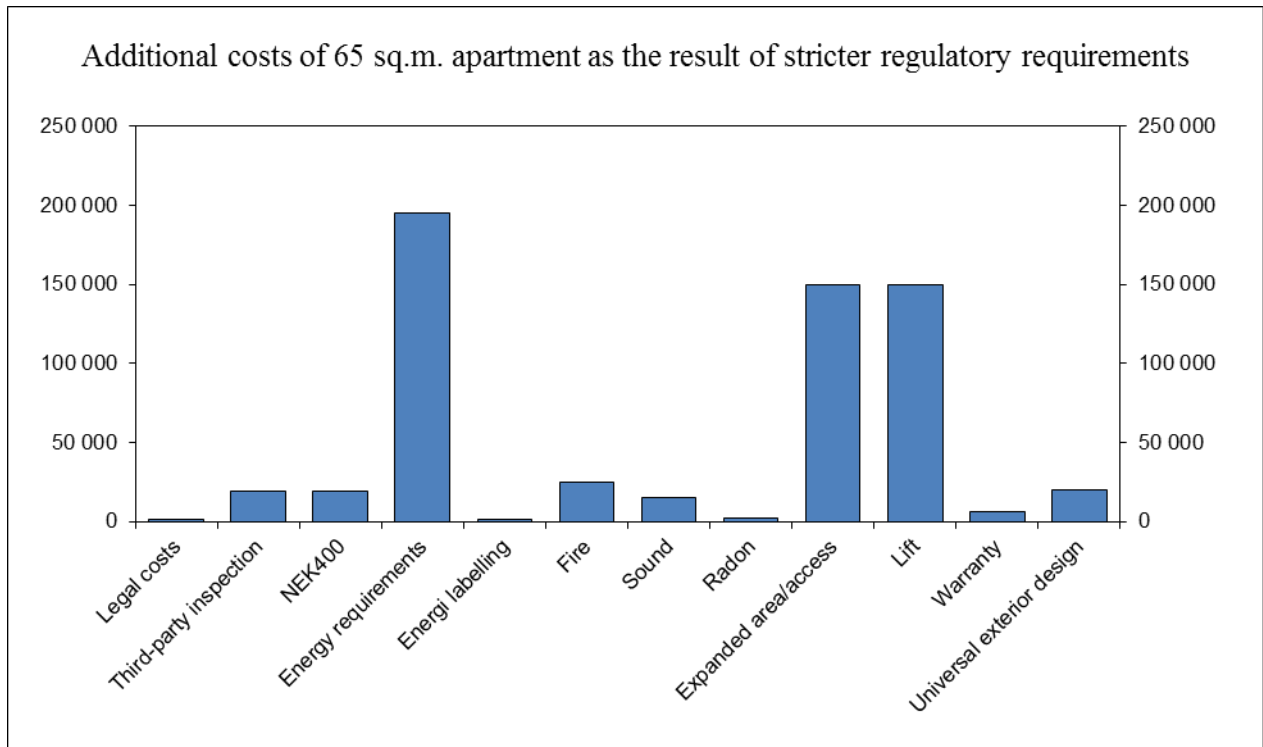


Figure 1.16 Estimated additional costs of building a 65 sq.m. apartment as the result of stricter regulatory requirements (TEK97-TEK10)

Source: Selvaag.

The strong production growth within the industry may suggest that the regulatory framework is relatively favourable. It is nonetheless quite conceivable that market barriers are preventing new entrants from gaining a foothold, and that such potential start-ups would have increased efficiency and expanded innovation in the industry. Complex products as the result of, inter alia, regulatory requirements may pose barriers to new entrants. Limited and expensive land, as well as lengthy and uncertain regulatory processes, may also represent barriers to entry. There may be considerable potential for increased international competition, including improved scalability in production through the utilisation of industrial methods of production and logistics. Consequently, there is reason to expect more international enterprises and employees in coming years. International competition should be stimulated, and the Commission identifies, in particular, increased digitalisation of planning permission processes and more effective and predictable planning processes as means of promoting competition. Less desirable developments have been the expanded use of unskilled manpower, and challenges relating to undeclared work, violations of wage and employment conditions, as well as other criminal conduct. Inadequate qualifications may make it challenging to safeguard the quality of building projects. Criminal conduct in working life may create unfair competition and squeeze out law-abiding enterprises.

1.4.8 The regulation of working hours

The Working Environment Act is a protection statute. There is a well-documented need for protection in relation to long working hours, shift work and night work. Norway has an especially high labour force participation rate amongst women and seniors, compared to other OECD countries. This is partly related to the regulatory framework governing the labour market, for example by making it easier to combine jobs with childcare. Consequently, radical changes may have an impact on labour supply.

There are, on the other hand, major differences between various parts of working life, both in terms of risk (employee health effects, occupational hazards and risk of error) and in terms of the extent to which businesses need flexibility to derogate from the statutory norms. Employees are different and have different preferences concerning, inter alia, overtime and working rhythms.

Flexible use of manpower over time, in response to demand variations and to improve the utilisation of production equipment, may be important to enhance productivity. A number of labour market regulations are intended to safeguard the protection, welfare and social needs of employees. Regulation of working hours, whether statutory or through collective bargaining, may reduce the scope for flexible use of manpower and efficient utilisation of infrastructure and equipment. However, any productivity gains from more flexible use of manpower must be balanced against the inconvenience to employees from long and/or unfavourable working hours.

Various types of agreements for alternative working hour arrangements are in common use. On the one hand, this ensures flexibility and accommodates local considerations. On the other hand, the volume of exemption applications filed with both unions and authorities is large, and granted exemptions need to be renewed on a regular basis. Hence, this system is fairly bureaucratic.

In parts of the public sector, staffing levels during evenings and weekends are significantly lower than would be desirable, from both an efficiency perspective and a user perspective. Working hour regulations in hospitals mean that some activities are only performed during a fairly brief daytime period, thus implying that expensive equipment and infrastructure remain unused for major parts of the day. Many patients and users would also prefer services to be provided outside their own working hours. Working hour regulations in the police also mean that staffing levels are lowest when needs peak, during evenings and weekends; cf. Figure 1.17. Also in schools do working hour regulations laid down through collective bargaining impact on teachers' time use and school management's scope for influencing working hours.

Working hour arrangements in the petroleum sector result in higher costs for Norwegian petroleum operations than, for example, on the UK continental shelf, and hence in a competitive disadvantage for the Norwegian petroleum industry. This may serve to reduce the portion of Norwegian petroleum resources that gets extracted.

The Commission is of the view that it is necessary to take a closer look at the need for flexibility, variations in the need for regulation of various parts of the labour market and the scope for regulating exemptions from the Working Environment Act in a simpler way. A designated Working Hour Committee has been appointed, which will address some of these issues.

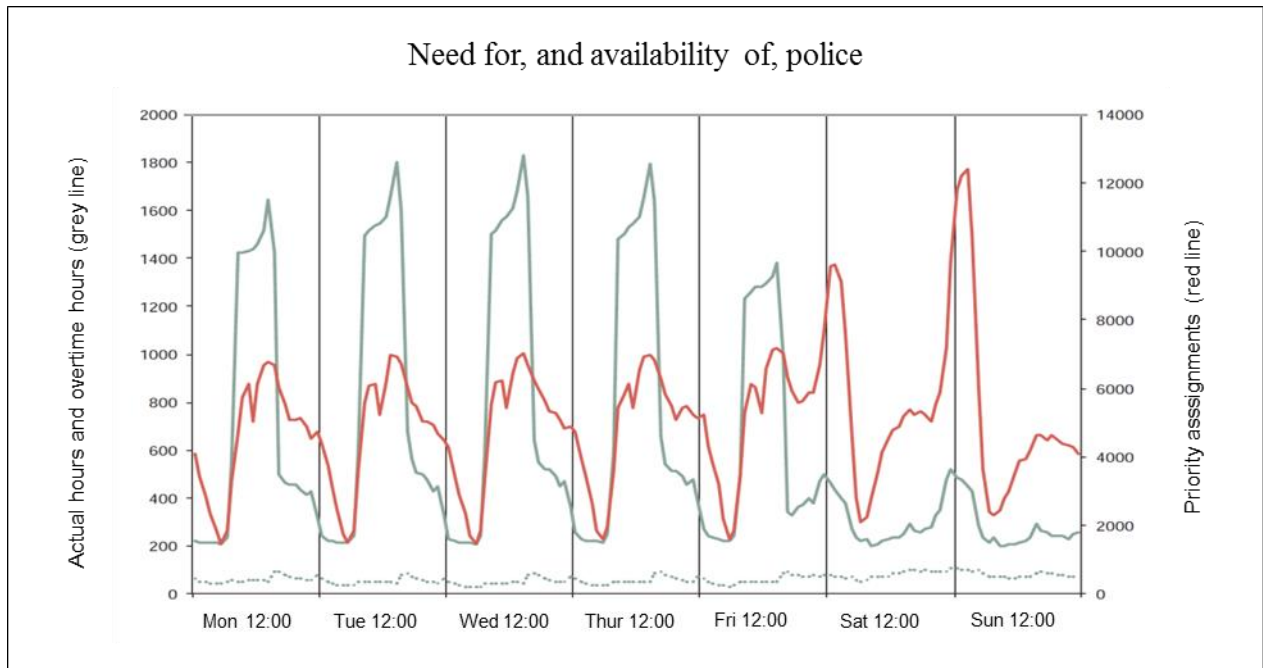


Figure 1.17 Need for, and availability of, police, nationwide. 2011

Source: Official Norwegian Reports NOU 2012:14, Report of the 22 July Commission.

1.4.9 Government subsidy schemes

Government subsidy schemes targeting private industry may promote efficiency improvement and productivity growth in the economy. Government measures providing special financial benefits for one enterprise or one group of enterprises may be defined as state aid. State aid shall, ideally speaking, counteract some form of market failure or serve to realise distribution objectives. State aid may take many forms, from cash subsidies to sheltering from foreign competition. Subsidy schemes targeting industry may serve different objectives. State aid that does not counteract market failure entails an economic loss, due to resources not being used where they generate the highest return for society. The loss is amplified by the fact that such aid needs to be funded by taxes.

About two thirds of budgetary state aid is allocated to agriculture (farming, forestry and reindeer husbandry, with the farming sector accounting for the predominant portion). Tax expenditure and market price support are additional to this, along with the fact that the farming sector is exempted from tax on greenhouse gas emissions. According to the OECD, total state aid for the farming sector amounted to NOK 21.6 billion in 2013. This corresponds to about NOK 450,000 per man-year; cf. Figure 1.18.

The annual efficiency loss caused by agricultural policy may be as much as NOK 40 billion. This cost needs to be weighed against the benefits resulting from the role of agriculture in relation to settlement patterns, environmental goods and food security. A specific problem is that there is little knowledge about the effects of import protection and other regulations on competition, and on efficiency in the food industry and grocery retailing. It is likely that the Agricultural Settlement system is more suitable for ensuring desired income developments for farmers than for counteracting market failure for the benefit of society.

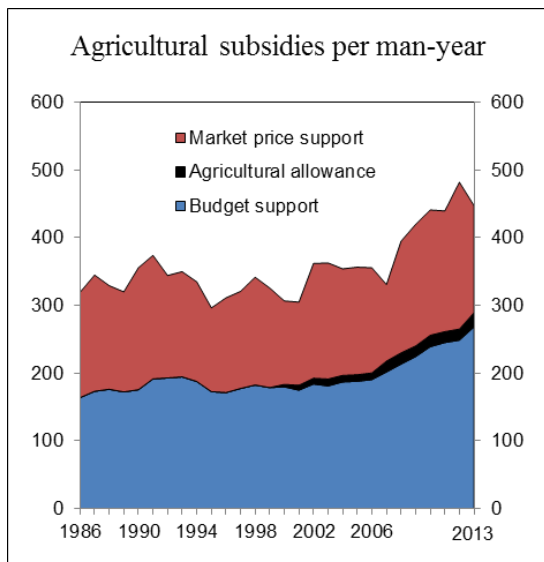


Figure 1.18 Norwegian agricultural subsidies per man-year. 1986-2013. NOK thousands at 2013 prices

Source: OECD

The Commission is of the opinion that current agricultural policy pays insufficient heed to balancing the costs of budget support, market price support, climate target exemptions and sector-specific tax preferences against the benefits afforded by the objectives one is seeking to realise. The Commission finds little merit in aiming for the maximum possible self-sufficiency in the supply of agricultural goods, especially if the food supply capacity of Norway is examined without reference to seafood production. If the main political objective is nonetheless to maintain self-sufficiency in agricultural goods supply, it is likely that such objective can be realised at a much lower cost than at present. The Commission believes, at the same time, that it would be feasible to significantly reduce greenhouse gas emissions from the farming sector by restructuring subsidy schemes and by not exempting agriculture from the cap-and-trade system or from greenhouse gas emission taxes.

Agricultural policy is characterised by a heterogeneous and vague objective structure and a complex range of policy measures that has in practice been dictated by other considerations and principles than the correction of market failure at the minimum possible cost. Such policy is likely to entail a considerable loss of economic efficiency, even when taking into consideration that market failure does occur and that compensatory measures may be relevant. This is aggravated by the lack of acknowledgement of, or weight accorded to, the economic implications of agricultural policy considerations for other policy areas/sectors in political decision-making processes. It is unfortunate that measures taken to shelter agriculture and the food industry (as well as the remainder of the food value chain) from international competition may impede the market access of Norwegian seafood products, which are much more important in terms of value added in Norway. It is likely that the generally robust economy of Norway and its strong public finances have served to make it politically feasible to keep agricultural subsidies at such a high level.

Coastal fisheries have traditionally formed an important part of the subsistence basis and culture along the coast. Fish and fish products represent considerable export value and are important sources of employment in many coastal communities. Although fisheries is an industry involving resource rent, the fish processing industry and parts of the coastal fleet are

characterised by weak earnings. The fisheries industry is facing structural challenges that are amplified, and partly also caused, by regulations that impede productivity growth and innovation. Current regulation of the fishing industry reduces its profitability and weakens incentives for necessary restructuring. Regulations preventing the realisation of resource rent should be liberalised.

Energy and climate policy

Climate problems are global in nature and can only be solved if all major emitting countries introduce adequate measures. It is irrelevant from a climate perspective whether the emissions originate from a coal power plant in China, deforestation in Brazil or car traffic in Norway. This suggests that emissions should be reduced in those countries and sectors where it would be most inexpensive to do so. Such a cost-effective approach is easiest to achieve if the cost of emitting greenhouse gases is about the same worldwide. We are far from such a situation at present. Not much more than 10 percent of global emissions carry a price tag in the form of taxes or emission allowances, whilst a corresponding portion of global emissions are subsidised. Global greenhouse gas emissions have increased over the last few decades.

Norway is conducting an ambitious climate policy. Cross-sectoral measures, taxes and participation in the European cap-and-trade system (the EU ETS) are the key tools of Norwegian climate policy. More than 80 percent of greenhouse gas emissions in Norway are subject to financial policy incentives. Cap-and-trade, along with taxes, is supplemented by direct regulation, standards, agreements and subsidies for initiatives to reduce emissions. Research and development are also important priorities. Norway is amongst the countries with the highest carbon efficiency, i.e. lowest emissions per unit of GDP.

About half of Norwegian greenhouse gas emissions (the petroleum sector and a major part of manufacturing industry) are encompassed by the EU ETS. Total emissions are influenced by the overall cap on volume. Additional measures targeting Norwegian businesses subject to the cap-and-trade system will reduce Norwegian emissions, but lead to a corresponding increase in emissions in other countries.

The average price of emissions in Norway is about NOK 220 per tonne of CO² equivalents, but there are major variations between emission sources, from zero within agriculture to about NOK 470 per tonne of CO² equivalents in the petroleum sector; cf. Figure 1.19, which only shows CO² taxes and emission allowance prices. A number of emission sources/sectors are also subject to other climate-motivated measures. A tax exemption upon the purchase of electric cars does, for example, carry an average cost to society in excess of NOK 4,500 per tonne of CO² emissions saved through the use of electric cars, according to Statistics Norway.

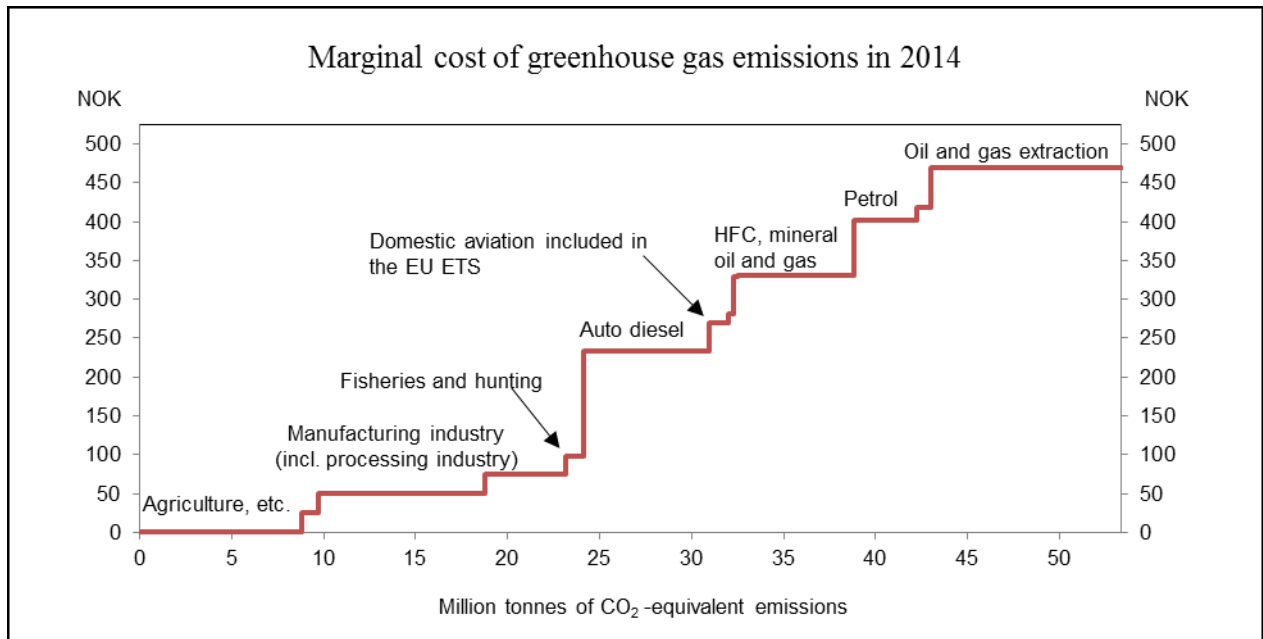


Figure 1.19 Price of greenhouse gas emissions in Norway

Sources: Statistics Norway, the Norwegian Environment Agency and the Ministry of Finance.

Economic efficiency considerations suggest that carbon price differences between different sectors or countries should be kept to a minimum.

Climate policy should be cross-sectoral and cost-effective. Domestic and sectoral emission reduction targets may lead climate policy far away from cost effectiveness and hence should be designed with sufficient flexibility. Any national target should under no circumstance encompass sectors included in the EU ETS.

The Green Tax Commission, which was appointed in the summer of 2014, shall, inter alia, examine how a green restructuring of taxes may improve resource utilisation and serve to realise the objectives of the Climate Agreement.

There are often positive externalities associated with the development of technology. Government funding is required to generate enough technological advances offering positive externalities. It is evident, at the same time, that greenhouse gas emissions need to carry a price tag in order for new emission-reducing technology to be entered into use.

1.4.10 Government ownership

Direct government ownership of Norwegian companies is extensive; cf. Figure 1.20. It is therefore appropriate to discuss the effect of such ownership on productivity in the economy. The standard economic rationale behind government ownership of companies is market failure in the production of public goods and the management of natural monopolies. However, direct government ownership goes way beyond companies belonging to these two categories. Government ownership is largely historically motivated, reflecting industrial and sectoral policy objectives, natural resource management, emergency preparedness and security considerations, separation and incorporation of entities formerly integrated in the central government administration, as well as government intervention in the banking crisis in the 1990s.

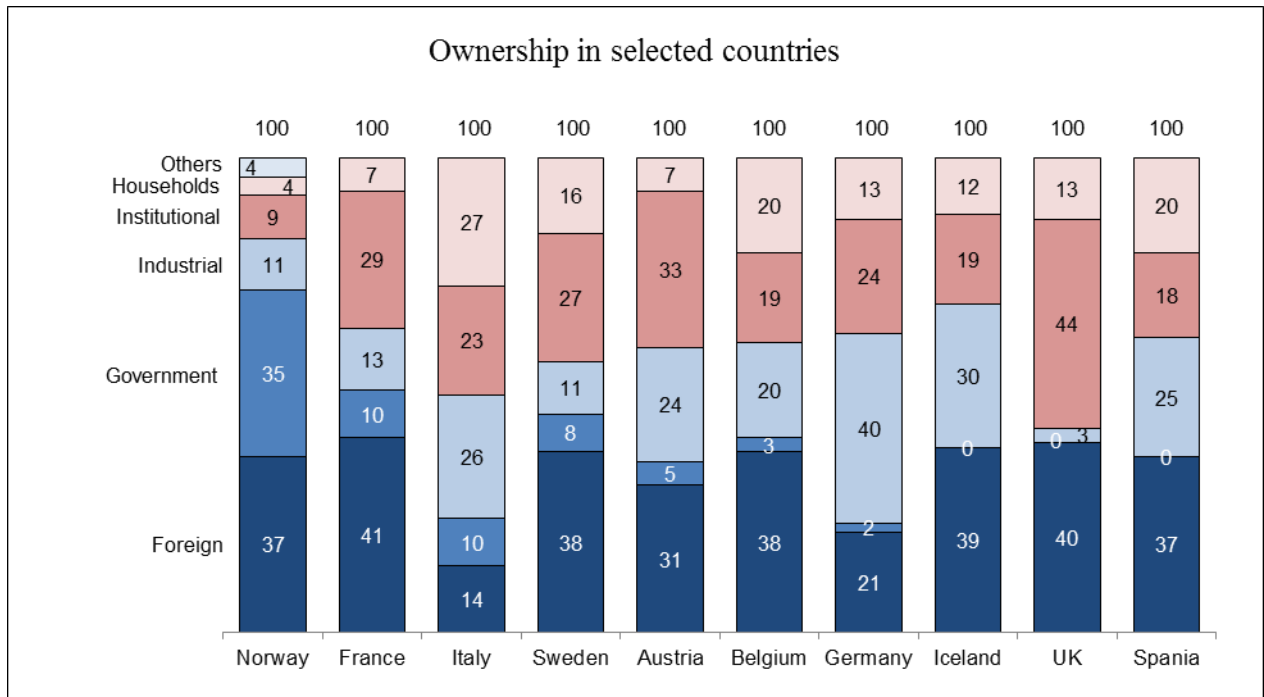


Figure 1.20 Registered ownership stakes per ownership category in selected countries. Measured by value. Data for Norway from 2013. All other data from 2007

Source: Report No. 27 (2013-2014) to the Storting.

The administrative framework for government ownership in Norway appears to be professionally sound and in line with generally agreed corporate governance principles. Government ownership may nonetheless have unintended productivity effects as the result of political intervention in company affairs, and because such ownership may influence the allocation of capital in society, as well as competition in the markets in which such companies operate. Corporate governance is important to impose cost control discipline on companies, as well as to increase value added and productivity. At the same time, political intervention in individual matters may blur responsibilities and provide companies with unclear incentives. The challenge of ensuring adequate predictability does not lie in formal corporate governance arrangements, but in expectations expressed by politicians to the effect that company managers shall adhere to informal governance signals. Besides, corporate governance challenges are mounting due to globalisation, rapid technology shifts and increased competition. This has resulted in more differentiated ownership internationally, whilst ownership diversity in Norway still remains considerably less. This may be caused by high government ownership, but also by a tax system with a strong bias in favour of private real estate investment and a pension system that relies more on public pay-as-you-go schemes than on investment-based schemes, unlike in many other countries. Limited ownership diversity may, in any event, influence the innovation, globalisation and restructuring capacity of industry over time.

Correct capital allocation, both between companies and within companies, is important for productivity in the economy. If government ownership results in more investment in less

profitable projects or industries than would otherwise have been the case, this will have a negative impact on overall productivity developments and value added. Competition is important in determining productivity in the economy. Government ownership may inhibit competition in those markets in which the government-owned companies operate.

The potential negative effects of government ownership call for thorough assessment of the objectives served by such ownership, of the appropriate scale of such ownership, as well as of how the ownership is exercised. The Commission is of the opinion that productivity gains can be triggered if government ownership is concentrated in areas of major market failure and in natural monopolies unsuitable for private ownership, or in which government is unable to realise by other means the objectives motivating such ownership. One should not organise government activities in the form of a company unless a market involving competition can be established. Companies that nonetheless operate in markets in which competition has not or cannot be established should be government owned. This applies to many of the companies serving sectoral policy functions.

The largest government stakes are held in companies for which the rationale behind government ownership is to keep their headquarters in Norway. This applies to a very diverse group of companies, whose current ownership structures reflect various motivations. Government ownership aiming to retain headquarters may prevent ownership constellations that are well placed to increase productivity via diffusion of technology and synergies. The value of retaining headquarters in Norway should be carefully considered for each company in this group. In those cases where it is concluded that society will benefit from government ownership to retain headquarters in Norway, it should in most cases be feasible to reduce such ownership stake to 34 percent. Divestment towards such level may increase the diversity and dynamic of ownership resources without reducing the influence of government on key ownership issues, such as e.g. the location of headquarters.

Government-owned companies should compete on market terms. Government should prevent cross-subsidisation from monopolies, strive for correct equity pricing and refrain from emitting signals that may be perceived as a government guarantee. It may nonetheless be perceived as not particularly credible that government will only accept liability for paid-up capital in a potential bankruptcy scenario, especially for companies serving sectoral policy objectives. One may consider borrowing limits to prevent competitive advantage and curtail the scope for unprofitable expansion. It is also important to distinguish, to the maximum possible extent, the ownership role from the regulator role to avoid uncertainty on the part of potential competitors. For companies charged with the realisation of sectoral policy objectives, one should establish a distinction between such activities and any activities of a commercial nature. Companies that manage economic rent will be especially profitable, whilst at the same time offering limited scope for new investment within their core business. Government should seek to prevent the economic rent revenues from being used for expansion beyond the core business.

A special focus should be placed on markets with a large element of government ownership, or in which government plays an important role as both owner and regulator. The Commission has examined, more specifically, productivity problems within the banking and finance sector, the energy sector and the transport sector.

There is extensive government involvement in the banking and finance sector. This is caused by government lending arrangements via, for example, the Norwegian State Housing Bank and Export Credit Norway, but also more indirectly via government ownership stakes in DNB and Kommunalbanken. The rating agencies have attached weight to expected

support from government as owner, which may influence competition in the market. However, new rules, including additional capital adequacy requirements for systemically-important banks, reduce the advantages associated with expectations of government support in the event of financial difficulties. The overall scale of government involvement may nonetheless reduce incentives for establishing start-ups and curtail competition by reducing the size of the rest of the Norwegian market. Consequently, government involvement should be limited. Government lending arrangements should be restricted to areas in which market failure can be demonstrated.

Hydropower is an important resource that may generate extraordinary returns in the long run. Both networks and power generation are currently subject to extensive regulation, and there is considerable government ownership as the result of the provisions under the Industrial Concessions Act (the consolidation model). Corporate governance weaknesses and a lack of competition put a brake on productivity advances. Besides, the government ownership framework has changed over time. The hydropower market has been deregulated, and the power price is determined in the market irrespective of whether power plants are owned by government or private interests. Both waterfalls and power plants are immobile, and the preference for securing a considerable part of their income for the Norwegian people can be accommodated through the tax system. The current ownership situation within power generation is rigid and fragmented, with a considerable number of small and large enterprises. As far as network companies are concerned, competition considerations suggest that the natural monopoly should be practised as such and separated from other activities exposed to competition.

The Commission identifies special challenges within the transport sector. This sector encompasses companies like NSB (Norwegian State Railways), Norway Post and Avinor. These companies manage key infrastructure for society, but also conduct extensive commercial activities. It may therefore be difficult to establish meaningful rate of return requirements, and difficult to credibly argue that government will only accept liability for paid-up capital in the event of bankruptcy. Incorrect pricing of capital may result in inefficient allocation, and have an impact on competition in markets where such companies conduct commercial activities.

The extensive cross-funding within Avinor may lead to undesirable distortions in the incentives of the company, away from efficient airport operations and towards commercial activities. The cross-funding also implies that expenses incurred in the operation of commercially unprofitable airports are not visible in government budgets. This weakens incentives to make efficiency-enhancing changes to the airport structure. Major changes in road infrastructure in recent years have reduced the need for local airports. Economically unprofitable airports in locations offering good alternative transport options should be closed down. A railway reform has been initiated, with the objective of improving efficiency and economic profitability. The Commission deems this to be a positive development. The introduction of competition in passenger train transport, as well as in the operation and maintenance of the railway infrastructure, may improve efficiency. This may, at the same time, be challenging in view of the government ownership of NSB and Flytoget (Airport Express Train). Good principles for bringing about competition will be competition on equal terms, low barriers to entry and competition along a sufficient number of parameters. The Commission also applauds the announced reform of the postal sector, which shall entail full exposure to competition for the sectoral policy tasks currently assigned to Norway Post.

1.4.11 The public sector

The role of the public sector in the economy is to provide public goods for the entire population and to compensate for market failure. Public goods like the police, the judicial system, defence and the public administration, cannot be provided by a private market and are organised as part of the public sector in every country.

The public sector also performs tasks in relation to social redistribution and security, regulation and management of industry and natural resources, as well as the organisation of services within, inter alia, care, health and education. The division of labour and the cooperation between the public sector and private industry in these areas vary considerably between countries, and also forms part of the political discourse in Norway.

Certain special characteristics of public sector activities pose governance challenges. The objectives informing such activities are complex, competition is limited, and the services are not traded in a free market. Organisational considerations, working hour agreements and remuneration systems also represent governance challenges. The various professions (police, teachers, nurses, physicians, etc.) have a major influence on the development and management of such services in a number of areas. It is important to harness the professional expertise of these groups to improve public services. The power of such professions may, at the same time, also conflict with general societal considerations, such as the need for restructuring. These special characteristics serve to complicate the management of such service production.

Complex, and partly conflicting, objectives for public sector activities necessitate tradeoffs and compromises, and motivate comprehensive control arrangements. In many cases there is a conflict between control considerations on the one hand, and efficient operations on the other hand. Less control and micromanagement may release more time for the core duties, and promote more efficient resource use and innovation.

“Performance management” were introduced as overarching central government governance principles from the mid-1980s, to make the governance system more performance-oriented and less activity-oriented. Reorganisation of public sector entities as independent enterprises has contributed to more efficient performance of tasks for the benefit of users in several areas. This has been premised on the assumption that underlying entities have the best information as to the most efficient way of realising objectives. Political authorities shall clarify objectives and ensure that underlying entities operate within an adequate regulatory framework. However, it has in practice turned out to be difficult to adhere to the premise that political authorities shall manage more at the level of principle and less at the level of detail, and the clear distinction between politics and administration is not that easy to implement. This also applies, in part, to public tasks entrusted to enterprises, as exemplified by the Norwegian hospital reform. A clear understanding of roles in the political system is an important prerequisite for achieving more efficient performance of tasks through delegation and decentralisation. The framework to be established should, to the extent possible, seek to shield the entities from unnecessary and detailed intervention. It is, at the same time, important for managers to use their scope for manoeuvre and implement any necessary restructuring.

It is the view of the Commission that there is a general need for clearer prioritisation of objectives, combined with clear performance requirements vis-à-vis the population. Managers must be held accountable for performance. This may serve to realise the objective of efficient service production. This must be facilitated, to the extent possible, through the design of the regulatory framework, including, inter alia, fewer objectives and better incentives. There must be more of a focus on possibilities, and less on micromanagement and control.

Efficient resource use involves both the provision of the appropriate services, as well as the production of such services in an efficient manner. Political decisions should, to a larger extent than at present, be informed by economic analysis, and more of a focus should be placed on realising the expected benefits from the measures taken. In seeking to improve public sector efficiency, one first needs to identify areas characterised by low efficiency. Such identification necessitates better and more comprehensive data on resource use and performance in hospitals, schools and other institutions than at present. The available information must be utilised more systematically. Studies shows that there a major efficiency differences between comparable public sector entities; cf. Figure 1.21. The degree of daytime utilisation of operating theatres in Norwegian hospitals varies, for example, from 40 to 70 percent. There also appear to be a large difference in productivity between Norwegian and Finnish hospitals. Positive lessons from the best entities should be adopted by weaker-performing entities. Economies of scale and synergies should be exploited whenever circumstances permit it.

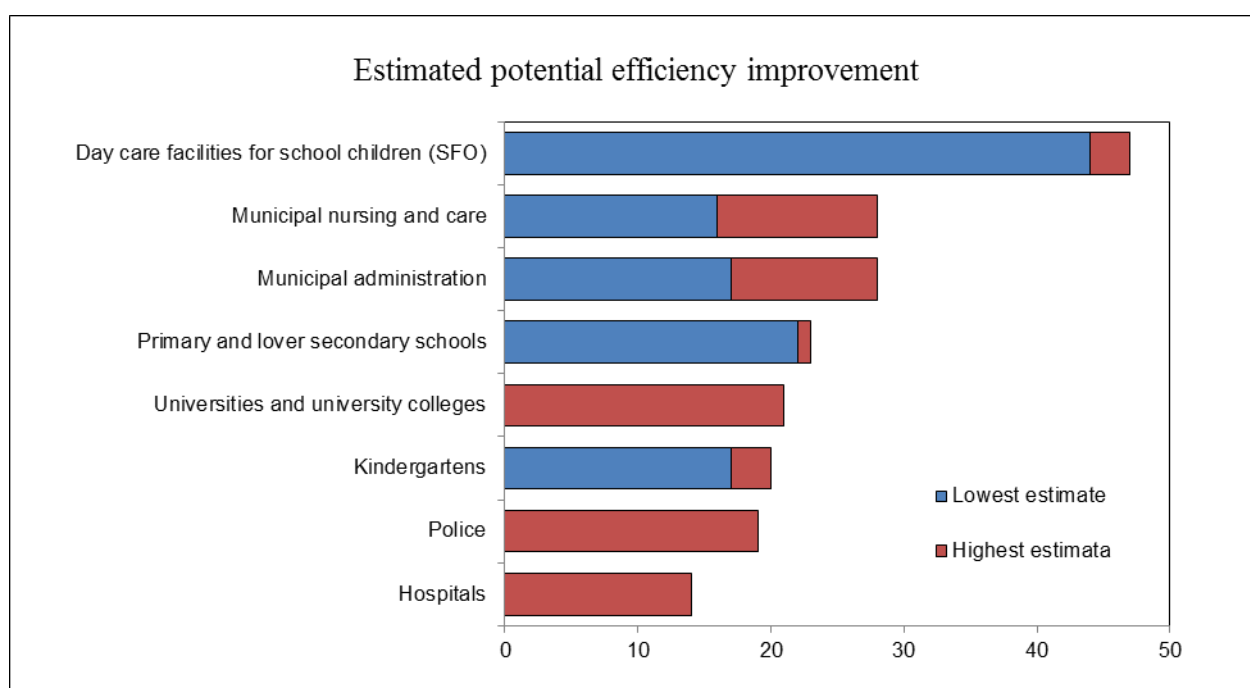


Figure 1.21 Potential efficiency improvement based on DEA method. Percent

Sources: Borge et.al (2011), Førstund et.al (2010), Borge, Pettersen (2012), Kalseth, Rattsø (2004), Borge, Sunnevåg (2006).

Competition should be used to improve public sector efficiency whenever appropriate. Whether this is appropriate depends, inter alia, on whether it is feasible to check compliance with adopted content and quality targets. The use of private entities to realise political objectives implies that private providers receive government funding and, if applicable, user fees. It is therefore important to ensure that private providers use the funds to develop high-quality services and not to generate extraordinary profits for their owners.

The potential offered by ICT and digital communications needs to be better exploited in, inter alia, the health and care sector. Inter-municipal collaboration, as well as collaboration between

municipalities and central government, is necessary to establish efficient systems for all parts of the local government sector.

Annual procurement by the public administration is in excess of NOK 300 billion – which corresponds to about 15 percent of Mainland Norway GDP. In addition, procurement by central government, regional government and local government enterprises amount to almost NOK 90 billion. Both the overall volume and the magnitude of individual procurements mean that these procurement processes have a considerable impact on the private sector. There should be a large potential for productivity improvement in both the public and the private sector through strengthening procurement processes. Procurements can, if done correctly, be a source of knowledge transfer from the private to the public sector. It can thus promote innovation and efficiency improvement in the public sector. This may also serve to strengthen productivity enhancement and competitiveness on the part of industry.

The management of public projects must be improved. There have been large discrepancies between early price estimates and actual costs for a number of major Norwegian public investment projects. Costs have in some cases increased more than tenfold from the initial estimate to the final cost; cf. Table 1.3. Such cost increases tend to be the result of a project initially estimated to carry a small price tag being expanded and elaborated during the planning and design phase (so-called «scope creep»). This may be caused by poor cost control and cost consciousness («gold plating»). It may also have to do with the project objective changing along the way as the result of new needs or other political signals. The quality assurance scheme (QA1 and QA2) has delivered significantly improved cost control, and cost control is normally good after an investment decision has been made and the final cost budget for the project has been adopted. However, this scheme is only mandatory for the very largest investments in excess of NOK 750 million, and does not encompass reforms that must often be considered very large projects when regarded as a whole. The Commission is of the view the stronger cost control and cost consciousness incentives need to be established for the planning and design phase. This may be done by linking project planning and design more closely with responsibility for funding. Many reforms entail large costs, are complex and will have effects over a number of years. It is important for reforms to be thoroughly studied and planned. This is a requirement under the Instructions for Official Studies and Reports. It is important that the current review of the Instructions for Official Studies and Reports establishes mechanisms to ensure compliance with such Instructions.

Table 1.3 Projects with especially large discrepancies between early cost estimates and final costs¹

	Cost estimate	
	Initial estimate	Final cost
Rv. 13 Hardanger Bridge	800	2,570
E18 Bjørvika project	1,200	7,100
Rv. 706 Northern relief road	450	1,600
Double track Ski-Sandbukta	300	1,708
Double track Sandvika-Asker	1,400	3,714
St. Olav's University Hospital	1,000	12,700
Skjold coastal corvettes	1,500	5,000
Frigates	6,000	24,700
Oslo Opera House	750	4,356
New Holmenkollen National Arena	40	1,820

¹ The initial estimate does not necessarily represent the cost estimate presented to the Storting, and a number of the projects have not been subjected to concept selection studies and quality assurance in accordance with QA1.

Source: Concept Research Programme at the Norwegian University of Science and Technology (NTNU).

1.4.12 The local government sector

The municipal structure is an important impediment to good resource utilisation in the local government sector. Many of the existing municipalities are too small to have the capacity and expertise to provide knowledge-intensive services and develop solutions locally. Somewhat larger municipalities are hampered by municipal borders that deviate significantly from actual residential and working patterns, thus giving rise to considerable administrative burdens of collaboration, joint clarification, service procurement, public transport planning, etc.

As Figure 1.22 shows, inter-municipal comparisons reveal large differences in terms of service provision. The efficiency improvement potential can be estimated at up to 30-35 percent for low-efficiency municipalities, if these utilise resources as efficiently as do the most efficient municipalities.

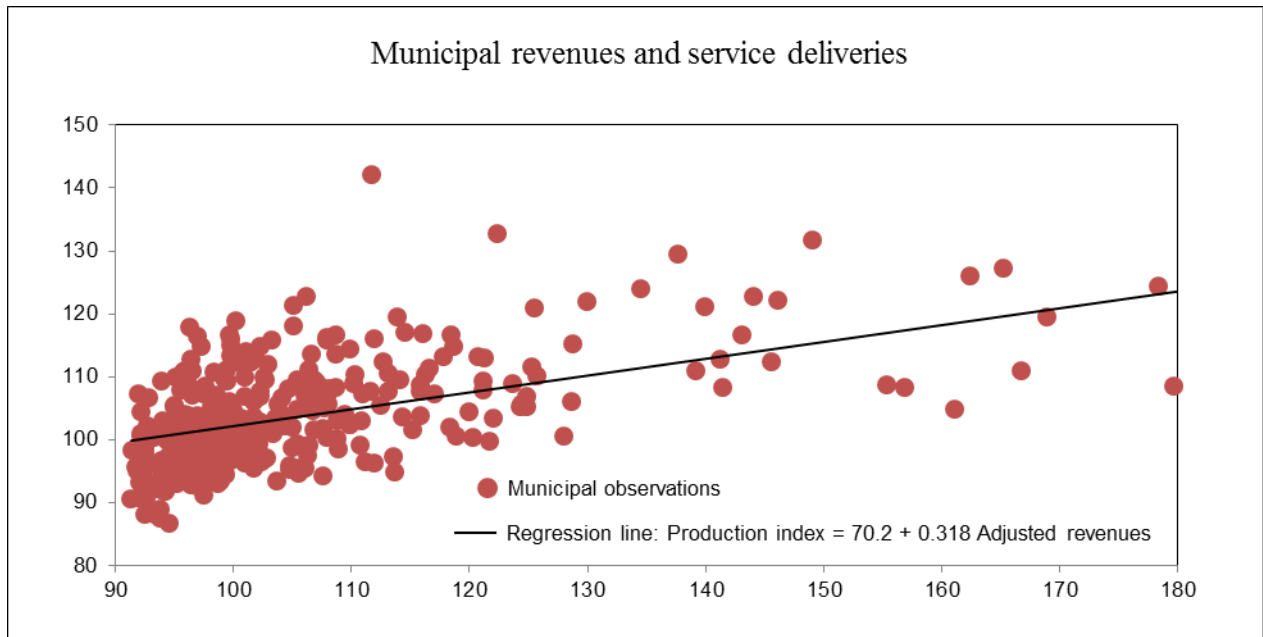


Figure 1.22 Adjusted revenues and service deliveries in 2013 (production index). National average = 100

Source: Technical Calculation Committee for Local and Regional Government Finances and the Centre for Economic Research at NTNU.

A local government reform needs to ensure a more effective municipal structure, with enhanced service quality and improved realisation of economies of scale. In densely populated areas, in particular, the municipal structure needs to be modified such as to provide contiguous residential and working areas with joint governing bodies, more efficient organisation and improved scope for planning. The ongoing local government reform process should also consider modifications to the principle of uniform local government responsibilities across all municipalities, including whether large municipalities should be offered more scope for performing tasks currently assigned to central or regional government.

Municipalities are subject to strict regulation under the current governance system, and have limited scope for influencing their own revenues, with the exception of some leeway with regard to property tax. This governance regime is primarily the result of the large gap between small and large municipalities – these have the same responsibilities, but very different resources. An increase in the size of municipalities following a local government reform may justify less central government intervention and more municipal room for manoeuvre. It should then be considered whether municipalities should be afforded more financial independence and accountability, as is the case in Sweden. Expanded local powers of taxation would make it easier to tailor municipal service offerings to local wishes and needs.

High-revenue municipalities tend to have better service offerings than low-revenue municipalities, but there are nonetheless considerable variations between municipalities at the same revenue level. It is difficult to measure service quality, but there are clear indications of quality problems within a number of areas. Weak performance in international comparisons of primary and lower secondary education, as well as the dropout figures for upper secondary education, begs the question of whether school ownership and management is sufficiently professional in the local government sector. The Healthcare Coordination Reform makes

considerable demands on municipal service offerings, and necessitates more capacity and expertise at both the service provisions level and the administrative level. The organisation of public transport, as well as housing and industrial development, in major urban areas is impeded by fragmented responsibilities. Local government has to face these challenges. One tool is the effective use of available information, with weight being attached to mutual learning.

Lump-sum funding of municipalities generally works well, but it remains challenging to ensure fiscal discipline and control of debts and pension liabilities. In addition, lump-sum funding is challenged during periods of strong growth in earmarked grants, including via central government action plans. The use of action plans, earmarking and reimbursement schemes should be curtailed. The current revenue system is based on the premise that diseconomies of scale represent an involuntary cost on the part of municipalities, which cost is therefore fully compensated. This is undesirable if one would like to base a local government reform on voluntary consolidation.

There is excessive central government intervention in how the local government sector shall solve its statutory duties, despite the lump-sum funding. This results in unclear responsibilities for service offerings. The allocation of duties needs to be revisited, to ensure that the delegation of duties to local government is accompanied by clear local responsibility. Larger and more robust municipalities will offer more scope for such delegation. More freedom to perform the duties in accordance with local circumstances and conditions will improve the prospects for efficient operations. One should consider systematic trials, followed by evaluation, as well as the abolition of any rules that impose unnecessary restrictions on municipalities.

Almost 90 percent of the Norwegian population lives in urban areas and regions. Consequently, more importance should be attached to productivity developments in urban areas in the design of policies. It is about counteracting agglomeration losses and triggering agglomeration benefits through good transport systems and development patterns. Moreover, improved governance in urban regions is needed to ensure integrated land use and transport solutions, as well as to release potential value added and innovation. Municipal consolidation may improve governance prospects in this regard. This needs to be supplemented by stronger regional coordination in the largest labour market regions.

Active urban policy should supplement regional policy. The costs and effects of both urban and regional policy should be examined more thoroughly, and this may be done on a regular basis as part of the white papers on long-term perspectives for the Norwegian economy, which are published every fourth year.

1.4.13 The education sector

Society's most important resource, and the foundation for high productivity, is its total knowledge capital. Productivity growth is driven by new and improved knowledge. The education system is the most important knowledge capital tool available to the authorities. Productivity growth in Norway depends on its ability to utilise new technology that is largely created outside the country. The ability to learn from other countries is closely related to the overall knowledge and skills of the population. A highly developed country like Norway may, through research and innovation, advance the forefront of technology in certain areas where Norway is in possession of world-class expertise. This may serve to improve productivity both domestically and abroad.

Primary and secondary education

Productivity in primary and lower secondary education, as well as in upper secondary education, is low in international terms, based on available information on resource inputs and goal attainment. It would appear that productivity has been declining for a long period of time, with the possible exception of the last decade. The quality deficiencies in primary and lower secondary education – in general and, more specifically, in mathematics – are well documented. Such quality deficiencies have ripple effects further up in the education system, in the form of high dropout figures and a recruitment shortfall in natural science education. This may hold back productivity growth for the entire economy. A mounting shortage of skilled workers is reducing productivity in the economy. Such shortage is primarily due to weak vocational subject performance in upper secondary education, where the student intake is high, but for various reasons the number of students completing their course is small.

Improved use of resources is needed to enhance productivity in primary and secondary education. Given the significance of knowledge capital in advancing productivity throughout the economy, it is of decisive importance to expand goal attainment. This necessitates an improvement in education quality. Education quality is influenced by numerous mechanisms. Key factors are the recruitment and training of teachers, the management team of each school, as well as the school owner's follow-up of its managers. It is hard to see how these factors can be improved without reforming the labour market for teachers. Schools are also subject to extensive micromanagement, which prevents them from doing a good job, both by tying up time on non-productive tasks and by imposing practices that do not promote high performance.

There is, in the opinion of the Commission, a need for reforms to lift the quality of primary and lower secondary education. This will require a long-term commitment in a number of fields. Reallocation of resources to the youngest students, gifted students and students from vulnerable socioeconomic groups, will enhance productivity in primary and lower secondary education.

A stronger emphasis on learning and performance in municipal school governance will promote improved school management and serve to enhance productivity. School governance should to a larger extent be based on measures and tools that have an effect on quality. Costly reforms with no effect on quality have lowered productivity in primary and secondary education.

A higher degree of selectivity within the teaching profession will increase productivity in primary and secondary education, but the Commission is of the view that it will be difficult to bring this about given the workings of the labour market for teachers, and given the weak competition for teaching jobs. New avenues into the teaching profession should be established. A larger portion of the total working hours of teachers should be devoted to teaching.

More paths should be defined through vocational education, which paths are better tailored to the abilities and ambitions of various student groups. One should also develop alternatives to the apprenticeship scheme to ensure that all students who opt for vocational subjects get the necessary work experience. More should be done to prevent psychological problems in children and youth.

Higher education

The Quality Reform delivered a new governance regime within higher education, with expanded delegation to more independent institutions, stronger internal management at the institutions, and new governance methods involving performance measurement and performance-based funding in education and research. At the same time there was established a new degree structure, featuring bachelor's and master's degrees, new teaching and evaluation methods, as well as new rights and contracts for students.

There has been a steep increase in research production in the wake of the reform, but not a correspondingly steep increase in the production of graduates. It would appear that the expanded research production has not been detrimental to quality, but research quality has improved less than in our neighbouring countries. There are no data permitting a corresponding assessment of the impact of the Quality Reform on education quality.

The Commission is concerned about the knowledge capital amongst the bulk of the student population. This is especially the case because international trends in technology and working life make increasing demands on qualifications at the intermediate level. Routine duties will be eliminated, and the qualifications required on the part of graduates will be higher in future.

It is the view of the Commission that the performance-based funding has had unfavourable implications for the dimensioning of higher education offerings. Too many courses and student places have been established within low-cost disciplines, such as undergraduate programmes in social sciences and business administration, to the detriment of natural sciences. This does not match the future needs of industry, and may have a negative impact on productivity in the economy. The fact that the expansion of student numbers also triggers increased research funding aggravates these undesirable developments. Grading varies very considerably between institutions and appears to be used in the competition for students. This is an indication that the current competition for students is unproductive.

The persistently low completion rates in higher education; cf. Figure 1.23, represent a waste of resources. It would appear that many students have too weak a grounding, receive inadequate follow-up, work too much in parallel with their studies or are insufficiently motivated to complete a study programme. Potential students should receive better information about the labour market prospects offered by various educational options. Students should also have stronger financial incentives to complete a degree. The threshold for admittance to higher education should be elevated. Tertiary vocational school may be a better educational option for those wanting a short vocationally-oriented education after upper secondary school. Most vocational school programmes are well adapted to the needs of industry.

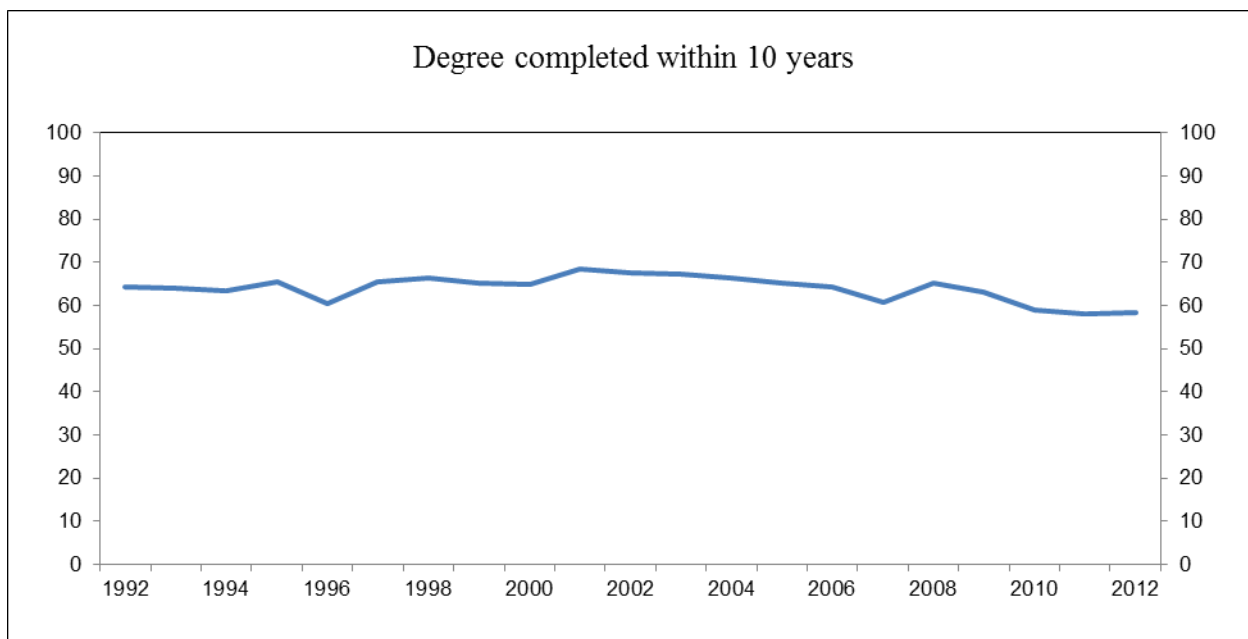


Figure 1.23 Student throughput in the university and university college sector. Degree completed within 10 years of the commencement of studies. Last year of commencement of studies 2002

Source: OECD.

Governance in the university and university college sector has not adequately promoted quality improvement, whilst it has resulted in more bureaucratisation. On the one hand, the authorities are stimulating competition for students and research funding. But on the other hand there are no mechanisms in place to ensure that study programmes with few applicants or weak research establishments are closed down. Nor would it appear that the governing bodies of educational institutions themselves are making use of the room for manoeuvre offered to them. The Government has signalled that a consolidation of institutions will be presented in the upcoming structure report to the Storting. This is a positive development if consolidation can stimulate productive competition in the sector, as well as improved capacity coordination and the restructuring of research establishments and institutions that are obviously too small. However, available research does not give reason to believe that consolidation will in itself deliver major gains in the form of improved quality or reduced costs. Public governance needs to be more focused on quality, and less weight needs to be afforded to other considerations. It is also important to improve the quality of small institutions.

Political intervention in the allocation of research funds is detrimental to research quality. This is unfortunate because low-quality research is of little value to society, irrespective of how relevant the topic may be. The political profiling of thematic and strategic areas of commitment is conducive to opportunistic conduct and mediocrity in the sector by preventing resources from being shifted from low-calibre to high-calibre research establishments. There is a need for measures to ensure that research funds are increasingly channelled to the best researchers and establishments.

Growth in administrative jobs has outpaced growth in research and teaching jobs in recent years. It needs to be examined how such administrative expansion is driven by national regulations and internal governance challenges.

1.4.14 The transport sector

Roads, railways and ports form a key part of society's infrastructure, and hence are also important for domestic productivity growth. Norway invests large sums in the transport sector; more than most other countries. However, the economic profitability of such investments is rather weak.

Central government appropriations for roads, railways and sea transport in Norway amounted to no less than NOK 45.8 billion in 2014, corresponding to 4.1 percent of expenditure via the central government budget. Appropriations for this sector have increased significantly in recent years. In the National Transport Plan 2014-2023, the Stoltenberg II Government stipulated a NOK 508 billion central government budget for roads, railways and sea transport over the said 10-year period.³ This is about NOK 167 billion more than if the appropriation level from 2013 had been maintained. Moreover, the plan assumes that toll funding will amount to about NOK 98.6 billion over the said 10-year period. This represented a total planning amount of NOK 606.6 billion for investment in, as well as operation and maintenance of, roads, railways and coastal transport over the 10-year period 2014 – 2023.

However, the commitment of large resources offers no guarantee that investments and other measures in this sector will enhance the growth capacity of the economy. A considerable portion of the road projects currently being implemented are economically unprofitable, unlike for example in Sweden, where economically profitable projects account for a significantly higher portion of the investment portfolio. The selection of projects for inclusion in the National Transport Plan (NTP) is based on broadly formulated objectives that are partly conflicting and not ranked. Economic profitability is not assigned a particularly prominent role. The overall investment portfolios of the last two national transport plans are estimated to be economically unprofitable. There has been a general tendency for profitability to decline as one is moving towards a final decision; cf. Figure 1.24.

³ Incl. VAT compensation and NOK 9.2 billion for the incentive scheme to reduce car use and expand public transport in urban areas.

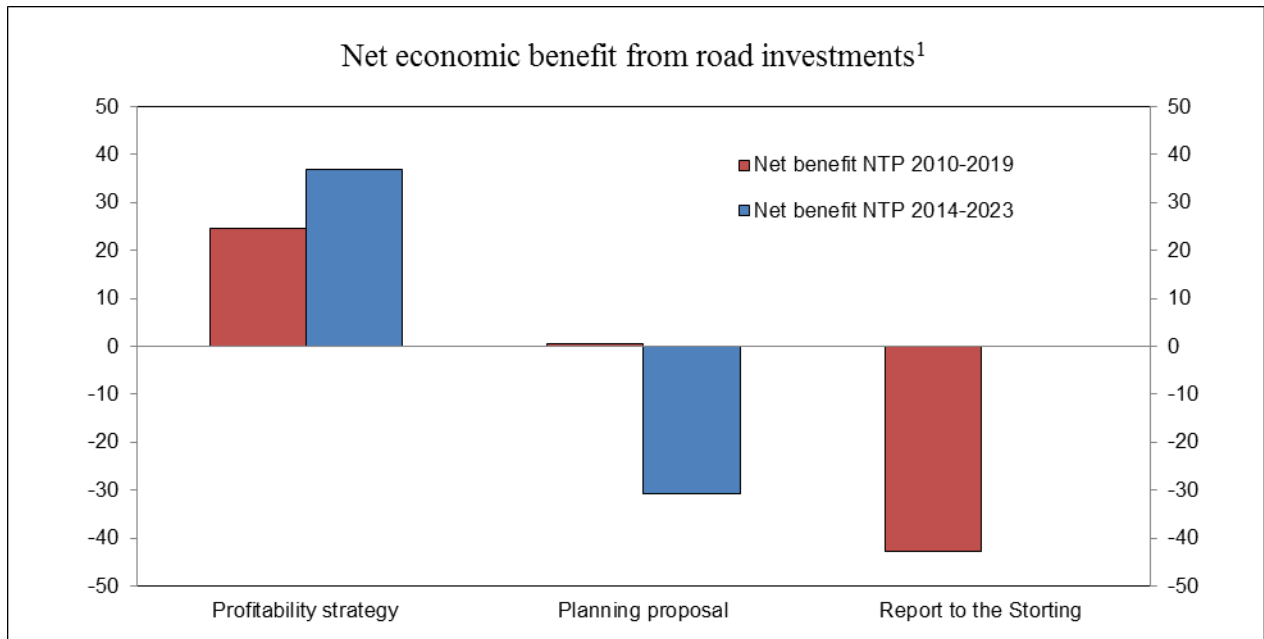


Figure 1.24 Net economic benefit from the investment projects in the National Transport Plan 2010 – 2019 and the National Transport Plan 2014 – 2023. NOK billion

¹ The report to the Storting on NTP 2014 – 2023 had updated the economic analyses with new parameters and methods in line with the recommendations in the report of the Hagen Committee, which had been submitted by that time. Consequently, the figures in the report to the Storting are not necessarily comparable to those put forward by the transport bodies.

Sources: National Transport Plan 2010-2019 and National Transport Plan 2014-2023.

If the projects in the planning proposals submitted by the transport bodies for NTP 2014-2023 had been selected strictly on the basis of economic profitability, the net benefits from such proposals would have been NOK 37 billion. However, the transport bodies proposed priorities within the planning framework that delivered net benefits of minus NOK 31 billion. This represents an economic loss of no less than NOK 68 billion caused by the prioritisations of the Norwegian Public Roads Administration and the Norwegian National Rail Administration between different projects.

Neither the objectives stipulated in the National Transport Plan, nor the planning guidelines laid down by the Ministry of Transport and Communications, suggest that the transport bodies shall attach special weight to economic profitability. Instead, these specify a number of other factors that shall be taken into consideration.

Several stages of the transport project decision-making process involve choices that may, when taken in isolation, seem rational to each of those involved (who are often locals or have a local affiliation), but result in economically inferior solutions overall. Inefficiencies may be traced back to planning processes, conflicting objectives and priorities, decision-making systems with biased incentive structures, documentation and analysis tools. There are also aspects of the actual implementation of the selected investment projects that may result in less efficient resource utilisation.

It is the opinion of the Commission that there is a need for clearer stipulation of the objectives under the National Transport Plan than at present. Economic profitability needs to be given prominence. It will be feasible to significantly increase the return on transport

investments if more weight is attached to economic profitability in the selection of projects.

In order for the benefits of transport projects to increasingly outweigh their costs to society as a whole, a reform of which projects are planned and implemented is needed. It will be necessary to change the transport sector decision-making structure, to ensure that more weight is accorded to general considerations at the level of society in the selection of projects, and to prevent project selection from being determined by the individual interests of those involved in such selection.

The cost level of projects in the transport sector is generally high in Norway. A review of three comparable road projects for four-lane motorways in Norway, Sweden and Denmark, in which one has sought to adjust for cost level differences, estimated a cost of NOK 84 million per kilometre in Norway, whilst the corresponding figures in Sweden and Denmark were NOK 52 and 58 million, respectively. These are only three individual examples, which despite being chosen for comparability do not justify any general conclusions. One should seek to clarify the basis for the cost differences relative to our neighbouring countries, and to improve cost control systems.

Urban transport projects may deliver positive net indirect effects. The existence of this type of additional benefits may justify a prioritisation of resources for transport projects in urban areas. Good urban projects may reduce distances between employees and businesses, thus generating productivity gains on top of the time savings. Transport projects can also link labour market regions, thus enhancing productivity.

Central government should actively use the new urban environment agreement system to realise economically profitable projects. Central government should in such agreements require the efficient utilisation of existing and new infrastructure via the use of congestion charges.

1.4.15 Implementation of reforms

Preceding paragraphs identify numerous aspects of the Norwegian economy that offer considerable productivity improvement potential. Politically initiated measures are required to realise such potential, in the form of either individual measures in specific areas or larger reforms of broader scope. A joint characteristic of such measures and reforms is that these involve the modification of frameworks and regulations for the purpose of improving the resource allocation and growth capacity of the economy. The tax reform in 1992 and the changes to the pension system from 2011 are examples of comprehensive reforms implemented in recent decades. There are also many examples of individual measures in various areas that have contributed to more efficient resource allocation. These can offer major benefits in the form of increased productivity and improved resource utilisation.

Experience shows that the implementation of change can be challenging, especially when such change has a direct impact on individuals and organisations. This can be caused by a number of factors. Whilst the costs and disadvantages of reforms will materialise swiftly, the economic benefits will in many cases only be realised after several years. Moreover, the costs may be concentrated in a relatively small group, whilst the benefits may be spread across very large groups. Groups that stand to lose will reasonably enough be sceptical, and seek to obstruct reform initiatives unless compensated.

Political and institutional factors also have a bearing on reform prospects. Political incentives may result in most weight being accorded to short-term considerations, at the expense of reforms whose benefits will only materialise after a while.

Major reforms require the establishment of sufficiently broad political support. Good communication with groups that are especially affected by such reforms is important to facilitate implementation.

The economic benefits of reforms, and the costs of unsuccessful reforms, can be large. It is generally necessary to make thorough preparations in order to succeed with designing and implementing reforms in the best possible manner. Studies should include a detailed analysis of costs, benefits and the allocation of burdens, and such studies should preferably be conducted by independent experts and professionals in the relevant area. Alternative solutions should be examined before a decision is made. Expected implications in the short and long run need to be carefully outlined in the decision-making documentation. In some cases one should also consider a gradual approach, starting with trial schemes for small groups. Such trials need to be designed such as to offer prospects for learning. This enables the gathering of more knowledge as to whether the reform provides the desired effect, before it is implemented on a large scale. Thorough preparation both improves the design of reforms, and facilitates their implementation. Efficient implementation requires effective governance and competent managers. The purpose of the Instructions for Official Studies and Reports is to obtain a sound basis for deciding on central government initiatives. The Commission has noted the criticism from the Agency for Public Management and eGovernment (Difi) and the Office of the Auditor General concerning inadequate compliance with the current Instructions for Official Studies and Reports. The Commission is aware that the Instructions are under revision, and that such revision process will also consider measures to ensure improved compliance with the requirements laid down in the Instructions.

1.5 Follow-up

In the report, the Commission addresses many important topics and made a number of suggestions for enhancing productivity and improving resource utilisation in the Norwegian economy. The Commission has also discussed challenges in the implementation of measures and reforms.

The process from problem identification to problem solution is often long. It will normally be in somebody's interest to preserve the status quo. This makes it particularly important to have well-founded economic analyses that examine the need for changes from an overarching perspective. And once such analyses are available, one needs the political capacity to actually implement the reforms. Reform implementation is easier if the need for reform can be explained in a manner most people can readily understand. Broad political support is an advantage for major reforms.

The areas selected by the Commission for discussion in this first report are to some extent influenced by other processes that are running in parallel with those of the Commission. An example is tax, which receives little attention in this report since the Scheel Committee has very recently submitted a comprehensive analysis of this area, including a thorough discussion of efficiency aspects of the tax system. The same applies, to some extent, to working hour arrangements, which are discussed by a designated committee.

The Commission discusses topics in certain areas despite the existence of ongoing reform processes in those areas. The clearest example is local government reform. The Commission

has wanted to emphasise, in this context, that so-called agglomeration effects are severely underestimated as sources of economic growth, especially with regard to the roles of urban areas as growth drivers. It is important to take into consideration the scope for improved organisation of processes like transport and industrial development, especially in urban regions, when deciding how to allocate responsibility for various services.

Additional analysis is needed in some areas. The mandate of the Commission asks for areas with a special need for further analysis to be identified in the first phase. The areas proposed by the Commission as meriting follow-up in the second phase are as follows:

1.5.1 Technology, development and innovation – a knowledge-based economy

In the long run, productivity advances are determined by the global forefront of technology. Long-term productivity advances in Norway depend on private and public entities keeping up with the global frontier (through technology adoption), and on Norwegian entities in some cases shifting the global technology frontier through innovation in terms of new products, services, production processes, organisational forms or managerial methods. Empirical research suggests that knowledge capital in the form of education and research is of considerable importance to the ability of a country to adopt new technology (its absorption capacity), as well as to the innovativeness of a country. The OECD holds that the impact of this "knowledge economy" on productivity growth will increase in coming years. Both market imperfections and high uncertainty in the knowledge field make it necessary for the public sector to play an active role, not least with regard to education.

The advancement of the Norwegian knowledge economy may require better and more relevant education and research establishments, as well as improved links between academic circles and industry (businesses, capital markets and owners). This should be supported by the range of available policy tools. The Commission will, when moving into the second phase, place a special emphasis on connections and interactions between activities in the education and research system and private industry activities. This is, in the wider sense, about the development of the future Norwegian knowledge economy. It will also have implications for, and be related to, what happens in the labour market.

1.5.2 Improved use of manpower resources

The way in which industry and the labour market is organised in Norway (the Nordic model) provides a high degree of flexibility and adaptability in working life as the result of the safeguarding of income in the event of job loss (generous unemployment and disability benefits). However, the strictly regulated labour market can also pose challenges in the form of reduced flexibility and weaker incentives to remain in work, for groups that may tend to be less well integrated into the labour market, such as youth, immigrants and certain groups with limited education.

A project focused on the most economically efficient and productive use of manpower resources must firstly provide an analysis of key developments and reasons why certain groups do not enter, or drop out of, the labour market. The risk that the polarisation tendencies in the labour market will create mounting problems for intermediate groups should be analysed. One needs to consider whether skill development measures and strategies may serve to prevent exclusion and to ease the entry of certain groups into the labour market. Is there a need for policies and measures to make the most of the opportunities offered by expanded access to employees with an academic education? Some regulations may also impede the employment of certain groups.

The large groups remaining outside the labour market represent one of the key economic challenges for Norway. It is of the utmost importance, in a situation where the Norwegian economy is facing extensive restructuring, to prevent large employee groups from dropping out of the labour market as a result of such restructuring. These problems are aggravated by the high incidence of dropouts from vocational education and the fragmented follow-up caused by the current division of responsibilities between local government, regional government and central government. There is a need to analyse which working life and social security mechanisms serve to keep such a large number of people outside the labour market. Can a stronger commitment to preventive health measures counter exclusion? A review of the mechanisms leading to exclusion, as well as the measures that may serve to neutralise these, will form an integral part of the analysis as the Commission moves into the second phase, which will in a broader sense focus on making the most economically efficient use of manpower resources.

1.5.3 Measures to improve public sector productivity

The far-reaching role of the public sector in the Norwegian economy motivates further analysis of decision-making structures and organisation. It is proposed that the second phase analysis be focused on two main areas:

- Governance, objectives and management, including the relationship between politics and administration.
- Improved use of technology, including the interaction between public and private entities.

A general finding from both the Danish productivity commission and from various analyses in Norway, is that manifold and complex objectives, combined with detailed reporting requirements, make it difficult for enterprise management teams to operate efficiently. It is necessary to systematically assess experience garnered from delegation and reorganisation as independent enterprises.

It will be necessary, in order to improve central government control, to examine the political processes that result in government enterprises currently being faced with manifold and complex objectives. There is a need for methods that make political authorities select the key objectives, whilst leaving enterprises and their managers to focus on these. Managers need to mobilise such expertise and efforts that are important to realise the key objectives. And then reporting and feedback needs to be organised such as to support implementation.

Expanded and improved use of technology is of decisive importance for increasing public sector productivity. Technological advances offer new organisational opportunities, as well as new service formats that require adaptability and collaboration with private industry. Experience from public-private interaction in ICT investment, especially in the form of large-scale use of consultants, and the implementation of large public sector projects, is mixed. There is a need for evaluating such experience and identifying impediments to technology utilisation and service innovation.

A review of these areas may provide a basis for the formulation of an overall strategy for enhancing public sector productivity.