ECONOMIC PERSPECTIVES

Address by Governor Øystein Olsen to the Supervisory Council of Norges Bank and invited guests on Thursday 16 February 2017

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Analyses and charts are based on information up to and including 14 February 2017

NORGES BANK

Economic perspectives 2017

INTRODUCTION

On 23 October 1921 the steamship Ulvsund was taken by surprise by one of the worst storms to hit Denmark in the last century. The ship sank and all 17 people aboard lost their lives.

When the winds subsided, the Danish Meteorological Institute had to weather a storm of its own when it turned out the Institute had downgraded the storm warning the evening before. In his defence, Director Carl Ryder argued that it was impossible to predict that type of storm. But his defence was in vain as it transpired that the storm had been accurately forecast by Norwegian and Swedish meteorologists. A reluctant Ryder was ordered to the city of Bergen to learn the methods used by the Norwegian and Swedish meteorologists.

The Norwegian physicist Vilhelm Bjerknes had since 1917 built up what came to be known as the "Bergen School" within the field of meteorology. His work had long focused on using the laws of physics to predict the weather. But the practical breakthroughs were first achieved when he, in his own words, "had washed ashore onto Europe's stormiest and, from a meteorological standpoint, most eventful shores".[1]

The shifting weather conditions on the west coast of Norway became a natural laboratory for Bjerknes and his fellow researchers. Their findings were quickly put to use, and the enthusiasm among local farmers, fishermen and seamen sent a clear signal about the importance of good weather forecasts.

THE NORWEGIAN ECONOMY – A MILD WINTER

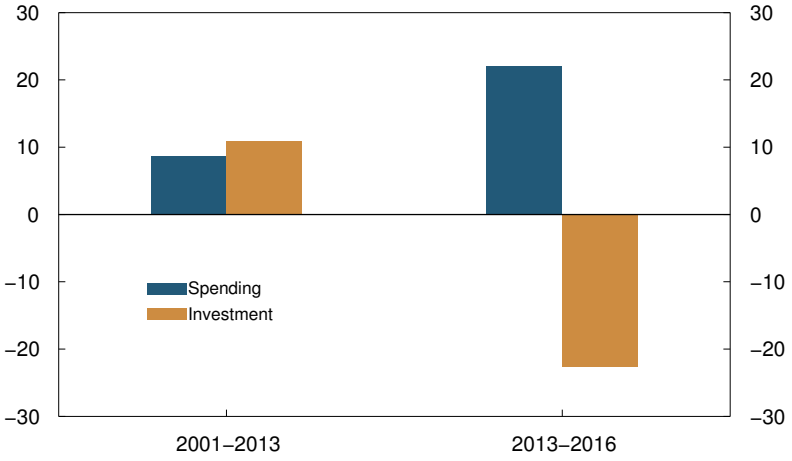
The fields of economics and meteorology have a number of common features. Two key issues in economics involve understanding how the economy functions and forecasting its future path. Great strides have been made in the area of weather forecasting in recent decades. Accurate weather forecasts span increasingly longer periods, but they are not always on the mark. It is no less difficult to make accurate economic forecasts. Human behaviour does not follow the laws of physics. Few predicted the 2008 financial crisis, and the oil price collapse in autumn 2014 came as a surprise to many.

We have now lived with lower oil prices for a few years. The most pessimistic scenarios have not materialised so far. But the fall in oil prices has put a damper on economic activity in Norway, not least in the western and southwestern areas of the country where the oil service industry has predominated in recent decades.

1 Bjerknes, V. (1943) "Hvordan Bergensskolen ble til" [How the Bergen School came to be]. In: *Vervarslinga på Vestlandet 25 år. Festskrift utgitt i anledning av 25-årsjubileet 1. juli 1943* [25 years of weather forecasting on the western coast. Festschrift published on the occasion of the 25th anniversary on 1 July 1943]. A.S. John Griegs boktrykkeri. Bergen.

Countrywide the downturn has not been as pronounced as the contraction triggered by the financial crisis. Excluding that sharp, albeit short, contraction, the period of weak growth we are now experiencing has not been seen since around 1990. Mainland output per capita has stagnated over the past two years, and the level of real wages is lower than in 2014.

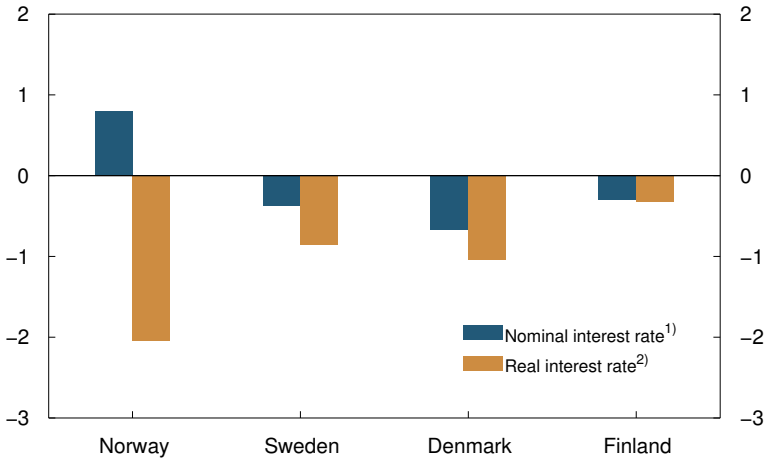
Chart 1 Oil investment and spending of petroleum revenues.
In billions of 2016 NOK. Average annual change



Sources: Statistics Norway and Norges Bank

Most of us might say that the economic winter has been fairly mild so far. This is partly because the economy has been provided with ample fuel. When oil prices started to fall, the economy had for several years enjoyed both strong growth in oil investment and fiscal spending of petroleum revenues (Chart 1). Oil investment has since declined, while government spending has continued to rise. Spending of oil revenues has increased by about as much as oil investment has fallen since 2013.

Chart 2 Key policy rates.
Average of 2015 and 2016. Percent

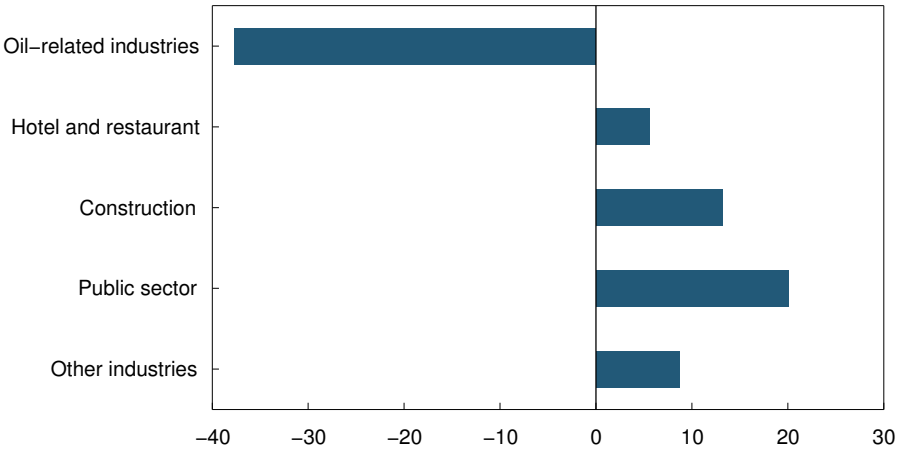


1) Deposit rates are used for Denmark and Finland (euro area).
2) Estimated real rate is adjusted for inflation, measured by the consumer price index, subtracted from the nominal key policy rate.
Sources: Bloomberg, Statistics Norway, Thomson Reuters and Norges Bank

Monetary policy has also made a substantial contribution (Chart 2). An already low policy rate was cut further. The key policy rate has now been kept at a record-low 0.5 percent for close to a year. In our neighbouring countries, interest rates have come down to even lower levels, but in real terms the interest rate level has been lowest in Norway.

The krone exchange rate fell in tandem with the oil price and led to higher prices for imported goods, resulting in a temporary increase in inflation. Since there is confidence that inflation will remain low and stable, we have been able to disregard that increase when setting monetary policy. The social partners have shown wage restraint. The krone depreciation has thus translated into a marked decline in relative labour costs, which has helped strengthen the position of Norwegian firms exposed to international competition.

Chart 3 Changes in employment.
From 2014 Q3 to 2016 Q4. In thousands of persons

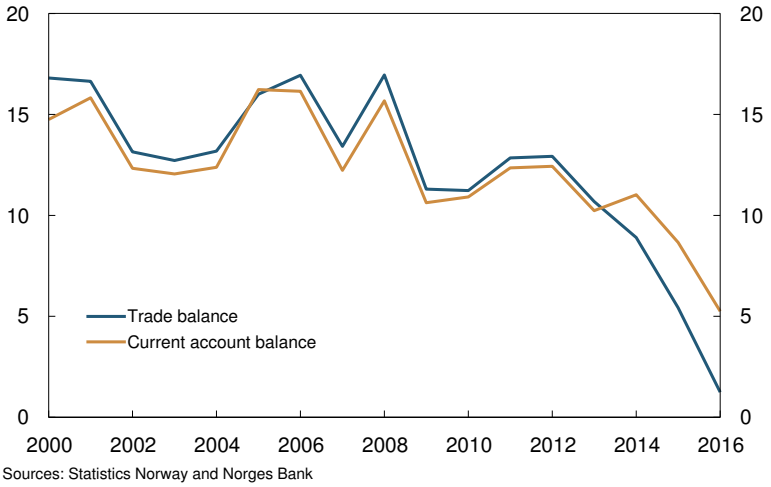


Sources: Statistics Norway and Norges Bank

So far, however, it is only in the tourist industry where a weaker krone has led to clearly higher activity (Chart 3). Since oil prices started falling in autumn 2014, employment has shown solid growth in the hotel and restaurant industry, but otherwise almost two in three new jobs have come in the public sector and the construction industry. Growth in those sectors has offset the decline in oil-related industries, where one in five jobs has been lost.

The strong growth in jobs in the construction industry reflects the economic policy pursued. Public investment has increased, and low interest rates have fuelled house price inflation and led to a sharp rise in housing construction. In 2016, housing starts came to almost 37 000, the highest number recorded since the early 1980s.

Chart 4 Norway's trade and current account balance.
Percent of GDP



Sources: Statistics Norway and Norges Bank

In the present situation, it has been sensible to pursue a potent countercyclical policy. Many countries have experienced that a sharp fall in output and employment can have long-lasting adverse effects. It must be recognised, however, that the longer-term challenges facing the Norwegian economy cannot be resolved by spending more oil revenues and keeping the interest rate low.

As a small open economy, much of our welfare is based on trade with other countries, providing us with access to goods and services others are better able to produce. But we also have to offer something in return. High oil and gas prices have over the years generated large current account surpluses (Chart 4). These surpluses have declined in the past few years.

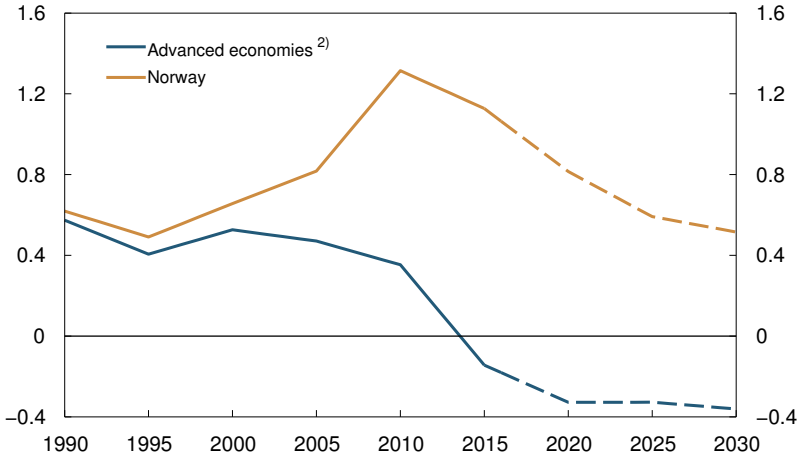
Oil and gas production passed its peak more than a decade ago. We may find once again that these resources have been underestimated. But the oil price collapse and developments in the Norwegian economy in the past few years have reminded us of an inescapable fact: we must drive forward a larger non-oil tradable sector. We need more legs to stand on.

The needed structural adjustments in the Norwegian economy will have to be dealt with against the backdrop of more global challenges. Demographic changes and sagging productivity growth may point towards persistently low growth in advanced economies. Protectionist tendencies and reduced trade in goods and services could put an additional drag on growth. We must also make changes to consumption and production methods in order to reduce greenhouse gas emissions. This evening I will take a closer look at these challenges.

IS LOW GROWTH HERE TO STAY IN ADVANCED ECONOMIES?

In the long term, there are two factors that determine how quickly an economy can grow: the supply of labour and labour productivity.

Chart 5 Working age population. Aged between 15 – 64.
Average annual growth. Percent. 1990 – 2030[1)]



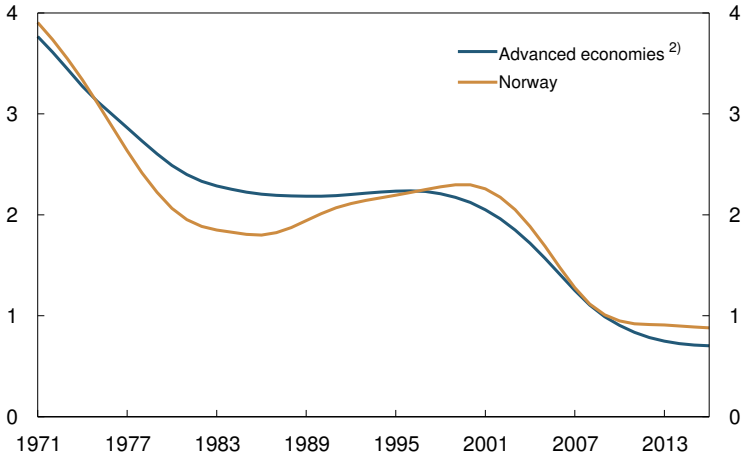
1) The broken lines are projections for 2016–2030 from the United Nations medium fertility scenario and Statistics Norway's benchmark scenario.
2) Europe, North America, Australia, New Zealand and Japan.
Sources: Statistics Norway and United Nations

The decline in the working age population is weighing on the growth outlook for many countries (Chart 5). The large post-war cohorts are leaving the labour force, and the consequences of a long period of low fertility rates are becoming increasingly clear.

At the same time, the proportion of the population who are employed remains low in many countries. High unemployment and low labour force participation among women may make room for further growth in employment even if the population stops growing.

The demographic situation in Norway is more favourable, but the labour force in Norway is also likely to grow at a slower pace. Labour immigration, which has made an important contribution to the labour market since the turn of the millennium, has fallen sharply in recent years. The unemployment rate is relatively low in Norway, but many have dropped out of the workforce. One in six aged between 25 and 54 was without paid work in 2016. If we are able to mobilise more people to join the workforce, labour supply growth may hold steady, but the most likely scenario is slower growth in the labour force.

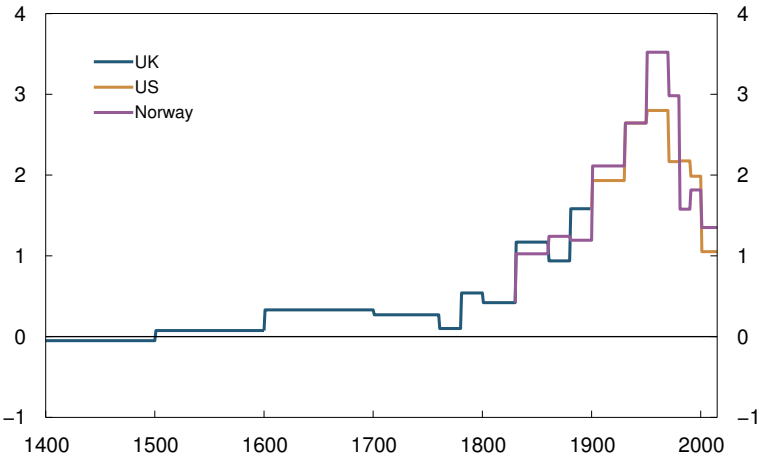
Chart 6 Productivity growth.
GDP per hour worked.[1] Annual growth. Percent



1) Trend estimated by HP filter with lambda = 100.
2) A selection of OECD countries.
Sources: Statistics Norway, The Conference Board *Total Economy Database*™ and Norges Bank

The other factor, productivity, has contributed less and less to economic growth, which is a tendency we have seen for several decades both in Norway and other advanced economies (Chart 6). The question then arises whether the underlying growth potential of mature economies has diminished.

Chart 7 Growth in technology leading countries and in Norway.
GDP per capita. Annual growth.[1] Percent



1) The chart shows average annual growth over different periods.
Sources: Broadberry, S., B. Campbell, A. Klein, M. Overton and B. van Leeuwen (2011) "British Economic Growth, 1270–1870: an output–based approach", *Discussion Papers* 1203. University of Kent School of Economics, FRED database, the Maddison–Project (2013), Statistics Norway and Norges Bank

If we broaden our perspective to span several centuries, it is the rapid rise in productivity in modern times that stands out (Chart 7). For a long time, there were only marginal changes in living standards from one generation to the next. In economic terms, the Middle Ages was something of an ice age.

The industrial revolution that began in England in the late 18th century put an end to this inertia. Instead, major innovations and economic growth became the norm.

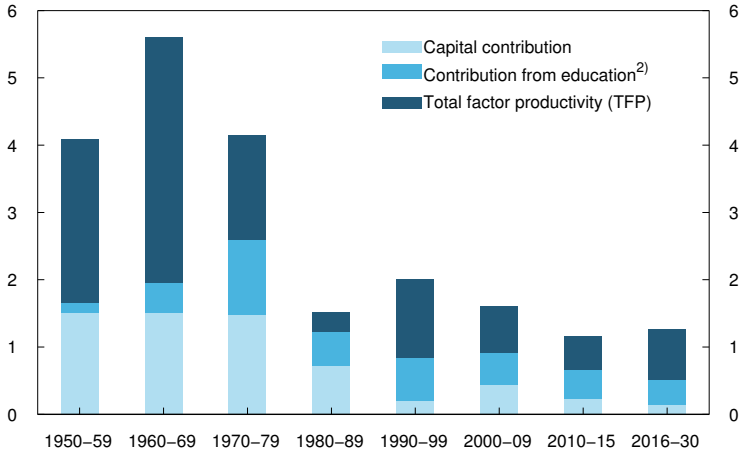
If we are to understand why advances were made so rapidly, we have to look at areas that economists probably do not explore often enough. In England, a parliament had emerged as a counterweight to the crown and the landed nobility. There was also the introduction of patents, private property rights and – by the standards of the day – a stable tax regime. These were important, growth-friendly institutions which remain central pillars of modern economies.

Growth in per capita GDP in England accelerated gradually during the 19th century. More countries eventually came on board and joined the technology race. The groundwork for two of the most important breakthroughs of the late 19th century – electricity and the combustion engine – was laid mainly in the US and Germany. These innovations remained key growth drivers well into the 20th century. At the same time, the US took over from the UK as the most important base for new advances.

With the US in the driving seat, economic growth hit new heights, peaking in the middle of the 20th century. Since 1970, growth has slowed. Growth has moved on a new downward trend since 2000.

Growth in Norway has shown a similar pattern. Immediately after the war, our per capita GDP was only around half that of the US. There was considerable potential for catching up, and growth was higher than abroad for a long period. In recent decades, however, growth in Norway and many other countries has slowed.

Chart 8 Norwegian productivity growth.
GDP per hour worked excluding oil.[1] Constant prices. Annual growth. Percent



1) Estimates 2016 – 2030.
2)The estimation is based on a method provided by Hall, R. and C. Jones (1998) "Why do some countries produce so much more output per worker than others". *NBER Working Paper* 6564. The marginal contribution from education equals 6 percent.
Sources: Statistics Norway and Norges Bank

Since 1980, average productivity growth in Norway, as measured by growth in GDP per hour worked, has been only around one-third of what it was in the first decades after the war (Chart 8).

One explanation is that we have invested less. Increased use of machinery and other real capital per worker long helped make labour more efficient, but since 1980 the contribution from capital has been smaller. With low investment in the business sector over several years, there is the prospect of a further decline in the contribution from capital.

There is probably also less to be gained from raising education standards. If we go back a few decades, the potential was considerable. In 1950, seven in ten Norwegians had only seven years of compulsory schooling. Today, a similar proportion has at least completed upper secondary education, and around one-third have a university education. Those entering the labour force continue to be better educated than those retiring from it. This may provide a boost to productivity. But we cannot expect the same return on higher education standards as in previous periods.

Productivity growth that cannot be explained by increases in real capital or education standards is what we economists call total factor productivity, or TFP. Technological progress, better organisation of work and gains from labour mobility across industries are key factors behind TFP growth. Over time, this variable has provided substantial impetus to productivity growth. But as the chart shows, a lower contribution from TFP is also the main factor behind the decline in productivity growth in recent decades.

In the first decades after the war, Norway was able to make use of many of the solutions that had already been developed in other countries. Today, we have caught up with the technological front line in many areas. However, the front line is now advancing more slowly, which will make it harder to grow at the same rate as before.

The future growth path for Norway and other advanced economies will to a large extent be determined by technological advances, structural changes and international exchange and cooperation. In some areas, such as meteorology, we have been pioneers. Modern weather forecasting is largely based on the principles laid down by Vilhelm Bjerknes over a century ago. But the results achieved by the "Bergen School" and other meteorologists since then would not have been possible without other innovations. Weather balloons, aircraft and now satellites have helped make it possible to measure atmospheric conditions ever more accurately. And modern computer technology has given us almost instant access to up-to-date weather forecasts.

As more and more countries join the technological front line, technological advances may take off again. Good ideas are not confined by national borders, and the conditions for efficient knowledge sharing have never been better. Nearly half of the world's population now has Internet access, with over a billion more people coming online in the past five years alone.

More and more advances in digitalisation and information technology can improve resource use in industries where productivity growth has so far been low. Retail trade and the financial sector in Norway have already shown that efficiency gains can also be achieved in traditional service industries. With the advent of driverless vehicles, the transport sector could well be the next to undergo a major transformation.

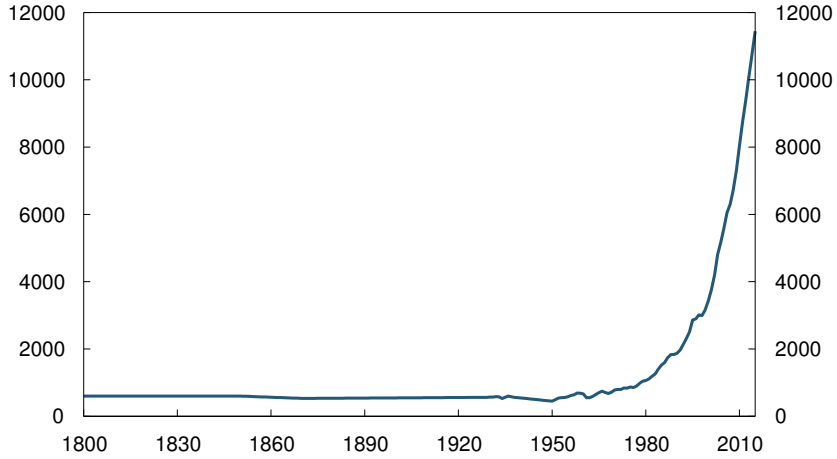
A MORE INTEGRATED GLOBAL ECONOMY – BUT AN UNCERTAIN OUTLOOK

International trade and cooperation have been drivers of global economic growth. Open borders are particularly important for an economy like Norway. They have given us access to technology and capital, and put us in a position to exploit our own

strengths in the production of goods and services. Much of the welfare gains we have experienced have come from reaping the benefits of economic specialisation.

Since the Second World War, the proponents of free trade have had the wind in their sails. Around 1950, international trade accounted for close to 20 percent of world GDP. Today, the share is three times that. This change has been politically willed. Customs duties have been lowered and trade barriers lifted. Technological advances have also enabled more and more goods and services to be traded across countries.

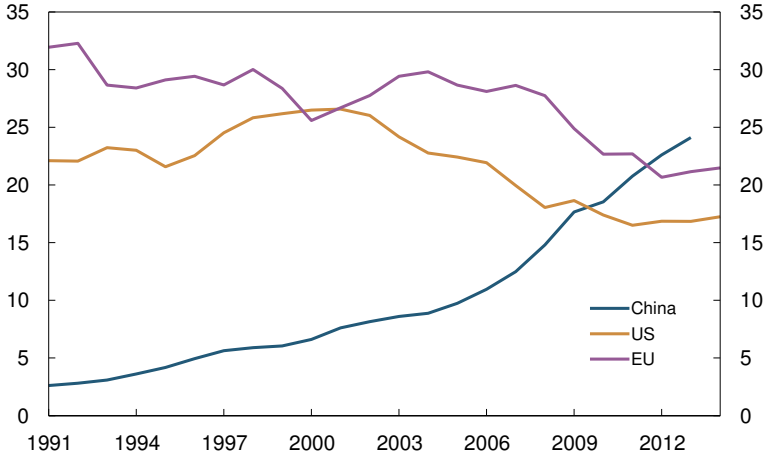
Chart 9 GDP per capita in China.
At constant 1990 USD



Sources: The Maddison–Project (2013) and World Bank

The march towards an ever more closely integrated global economy has been particularly fast in recent decades. The growth story that began in the British Isles has reached China, where we have seen a boom without parallel in world history (Chart 9). What took the West more than 200 years, China has achieved in just a generation.

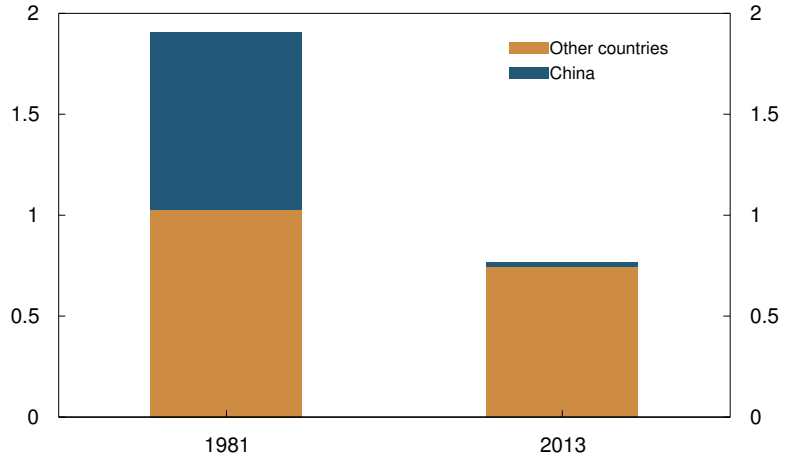
Chart 10 Global manufacturing production.
Percentage shares



Source: World Bank

China's economic rise has seen a labour force twice that of the US and EU combined entering the world market. A quarter of global manufacturing production now takes place in the Middle Kingdom (Chart 10). The land that brought us paper, gunpowder and the compass has become the world's workshop.

Chart 11 Persons living in poverty.[1)]
Billions of persons

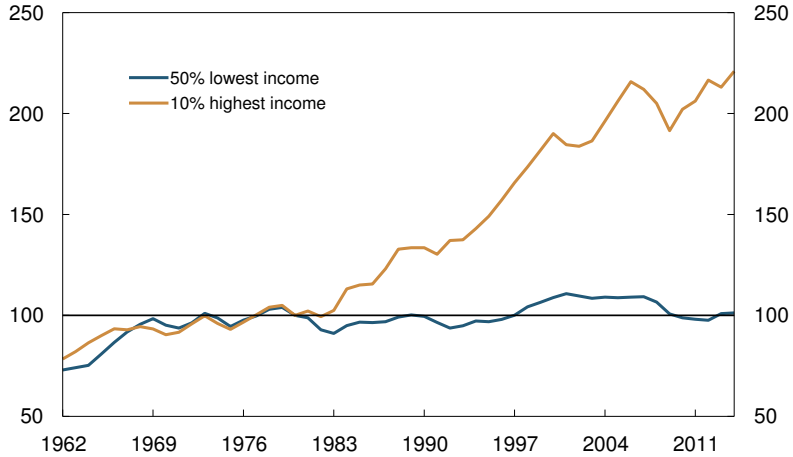


1) Living at less than USD 1.9 per day at constant 2011 prices (PPP).
Source: World Bank

The benefits for the average Chinese have been immense. Worldwide, more than a billion people have been lifted out of poverty since the early 1980s (Chart 11). Three in four of them have been in China.

Trade and technological progress together spell substantial economic gains. But not everyone is a winner. Greater international competition and new production technology also mean that jobs disappear and working conditions come under pressure. In many rich countries, parts of the population have been left behind. For many, the economic downturn following the financial crisis has made things worse.

Chart 12 Income growth in the US.
Constant prices. Index. 1980 = 100



Source: Piketty, T., E. Saez and G. Zucman (2016) "Distributional national accounts: Methods and estimates for the United States". *NBER Working Paper* 22945

The income distribution in the US can serve as an example (Chart 12). The purchasing power of the lowest-earning half of the population has been flat since the early 1980s, while the richest decile have more than doubled their real income in the same period. Much of this increase stems from higher capital income.

If we are to reap the rewards of economic integration and technological advances, structural adjustments are essential. At the same time, we must take measures to

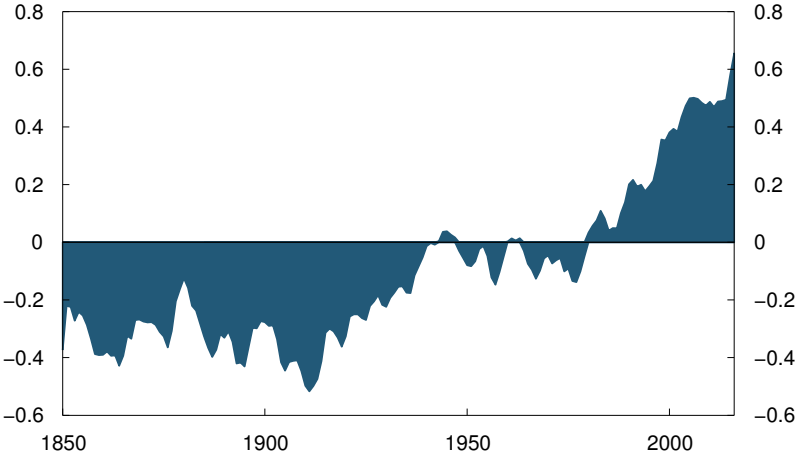
prevent too many from falling behind. In this respect, the education system and social safety nets are important. Redistribution through the tax system and transfer payments can also help spread the benefits more evenly. This is not, however, helped by the international competition to offer ever lower corporate tax rates.

The outcomes of last year's two key popular votes are a signal that the winds have shifted, with opposition to globalisation on the upswing. Few stand to benefit from a shift away from free trade. For small, open economies like Norway the loss may be considerable. But the biggest losers will be the more than 700 million people still living in poverty.

CLIMATE CHANGE – A GLOBAL CHALLENGE

The industrial revolution that began in England in the 18th century was a turning point. Ever better utilisation of resources in terms of working hours, machinery and raw materials has continued to raise total world GDP. But a simple indicator like GDP does not capture the full range of welfare gains. Better health, less heavy work and in many countries a social safety net are also among the gains.

Chart 13 Global warming.
Deviations in earth's surface temperature relative to 1961–1990.[1)] Degrees Celsius



1) Four–year moving average.
Source: Met Office Hadley Centre / Climatic Research Unit

Nor does it capture all of the costs. Our economic progress has taken its toll on our most important public good: the natural environment. The greatest environmental challenge is of a global nature. With ever higher concentrations of greenhouse gases in the atmosphere, the planet's average temperature has risen (Chart 13). This has serious, long-term implications both for meteorological conditions and for society. The research field the "Bergen School" helped pave the way for has now gained fresh relevance.

Greenhouse gas emissions have increased primarily due to human activity. Irrespective of their source, emissions all have an equal weight in global carbon accounting. Action and innovation to combat climate change are therefore necessary in multiple sectors and across countries.

The pricing of emissions is crucial for achieving future emissions targets. The polluter must pay. Firms and consumers will then find it profitable to choose more eco-friendly production methods and products. If everyone also faces the same emissions costs, the

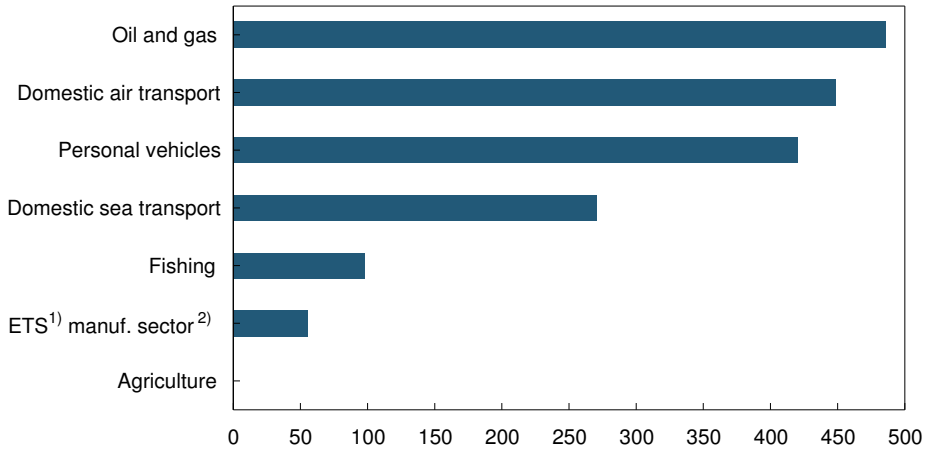
reductions that cost the least will be made first. Departing from this principle will increase the costs of mitigating global warming.

The pricing of emissions also boosts demand for new and more eco-friendly technology, making it more profitable to invest in research and development of new solutions and products. These must stem from choices made by the individual firm and the individual consumer. The development of new technology to combat global warming is advancing too slowly. Inadequate pricing of emissions is one of the culprits.

An international emissions trading system covering all countries could, in principle, provide for equal pricing of emissions. In practice, this has proved difficult to establish. Getting developing countries to sign on to such an agreement is understandably difficult. It is hard to demand that the polluter pays in countries where much of the population is still below the poverty line. The transition to low-carbon technologies in emerging markets is, however, essential for reaching global emissions targets.

The pricing of emissions also encounters opposition in rich nations. Some would argue that higher emissions taxes will simply cause emitters to move elsewhere. This argument may be relevant for some sectors. But there is also opposition from groups who consider themselves better served by financial support to make changes rather than having to bear the costs themselves. For the political authorities, subsidies may therefore appear a more attractive option. The result is a more costly and less effective climate policy.

Chart 14 Price of emission.
NOK per tonne of CO_2 equivalent. 2016



1) Sectors covered by the EU Emissions Trading System.
2) Allowance equals NOK 50 per tonne of CO_2.
Source: Ministry of Finance

Norway was among the first countries to introduce a carbon tax. In addition, several industries are covered by the EU emissions trading system. But a glance at the cost of carbon emissions in Norway shows that even here we have a long way to go before the principle of equal pricing of emissions is realised (Chart 14). Some sources of pollution are completely exempt. While the transport sector faces a carbon tax of more than NOK 400 per tonne of CO_2 emissions, other sectors are exempt from all or part of this tax. When it comes to agriculture, domestic shipping and manufacturing, business policy and climate policy are pulling in different directions.

In order to promote eco-friendly technology, it may be necessary to reinforce climate policy with funding for basic research and for the development and deployment of climate-friendly processes and products. At the same time, we should be on our guard against attempts to abuse the "green" epithet to qualify for public subsidies. The climate challenge will not be resolved by having the authorities designate the "winners" in the transition to green technology. Regulations and subsidies in areas subject to emissions trading or carbon taxes often entail a waste of energy and money.

The efforts to reduce global warming will provide a seedbed for new production methods, new businesses and new jobs. Some of these will be in Norway. But it is difficult to see how we have an advantage over other countries in this area. The transition to a low-carbon society is necessary but is unlikely to take over as a new engine of growth.

OIL REVENUE SPENDING NEEDS TO BE REINED IN

It may give cause for reflection that Norway, as a nation, has gained so much from a resource that is an important source of global warming. If the countries of the world deliver on the commitments made in the Paris Agreement, carbon taxes may be much higher than they are today. This may make our oil production less profitable, but it will strengthen the work on climate change.

A large portion of government revenues from oil production has been transferred to the Government Pension Fund Global – the oil fund – which is invested widely in equities, bonds and real estate. This has provided for good returns and risk diversification.

Interest rates worldwide have fallen to low levels in recent years. The prospect of continued moderate global growth means that interest rates may remain low ahead. The estimated expected real return on the oil fund has therefore been revised down and is now quite a bit lower than 4 percent.

In December, Norges Bank advised the Ministry of Finance to increase the equity allocation in the fund.[2] Historically, equities have produced higher returns than bonds, but the returns have also been more volatile. A lower return on bonds is the price we pay for dampening volatility in the fund's value. In recent years, bonds have become a more effective, but also more expensive, hedge against volatility. Both conditions suggest a somewhat lower allocation to bonds.

Changes in the Norway's overall petroleum wealth also warrant a lower allocation to bonds. Apart from the oil fund, this wealth consists of oil and gas still in the ground. There has always been a considerable risk from having a large share of the nation's wealth linked to a single commodity. But this share has fallen. Only a decade ago, oil and gas reserves made up two-thirds of Norway's petroleum wealth. Today that share has dropped to about a third. Our aggregate wealth has become more diversified, which means we can tolerate slightly higher volatility in our financial wealth.

The Government has today announced that it will propose an increase in the equity allocation in the oil fund to 70 percent. At the same time, the estimated expected real return on the oil fund is adjusted down to 3 percent.

2 Letter from Norges Bank to the Ministry of Finance, 1 December 2016. "The equity share in the benchmark index for the Government Pension Fund Global".

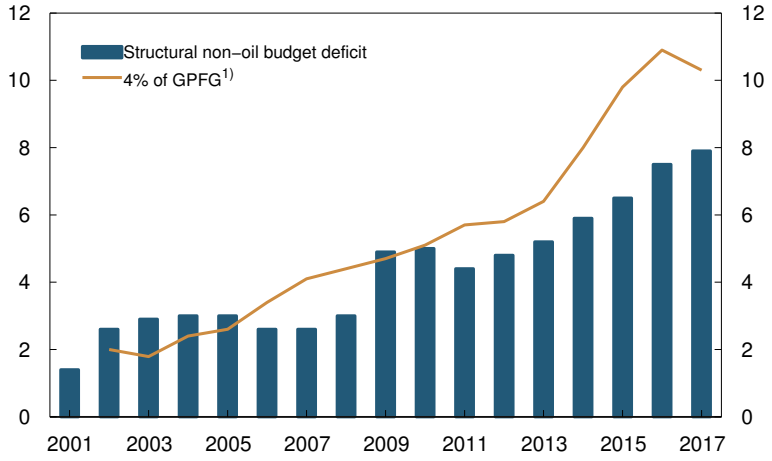
The choice of equity allocation is an important decision. But an even more important choice is the level of oil revenue spending. Fluctuations in the value of the fund present challenges for fiscal policy and for the fiscal rule. Let me comment somewhat further on this issue.

The oil fund and the fiscal rule have long been important pillars of Norwegian economic policy. One key goal has been to preserve large parts of our petroleum wealth for future generations. There has also been an explicit desire to shield the Norwegian economy from swings in oil prices. Allow me to quote from the Revised National Budget for 1995:

> Revenues from the petroleum sector vary more over time than other revenues. […] a fund mechanism […] makes it easier to decouple annual spending of petroleum revenues from current revenues.[3]

Returns in financial markets also vary more over time than other revenues. With the current size of the oil fund, fluctuations in the value of the fund may be considerable from one year to the next. Fiscal policy and the Norwegian economy must be shielded from these fluctuations in the years ahead. The needed decoupling that was highlighted in the Revised National Budget for 1995 has taken on a new form.

Chart 15 Fiscal spending of petroleum revenues.
Share of mainland trend GDP. Percent



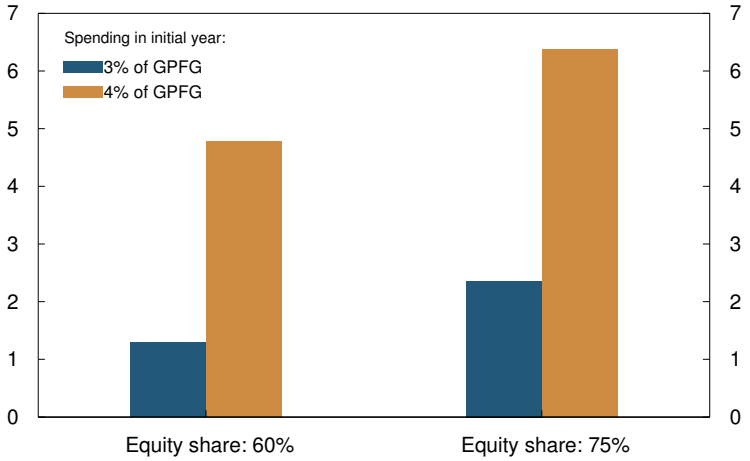
1) Government Pension Fund Global.
Source: Ministry of Finance

Combined with high oil prices and healthy returns, the fiscal rule has brought considerable fiscal leeway. This year around a fifth of government spending will be financed by transfers from the oil fund. The level of oil revenue spending has reached 8 percent of mainland GDP (Chart 15). There will be less leeway further ahead. Last year was the first time money was transferred out of the oil fund to finance the non-oil deficit. We can no longer assume that the oil fund will continue to grow as a share of the economy.

With a high level of oil revenue spending, there is a risk of a sharp reduction in the fund's capital. This could, for example, happen if a global recession triggers both a decline in oil revenues and low or negative returns on the fund's capital. If other government revenues fall, and the expenditure side of the government budget is shielded, the oil fund will have to foot the bill krone for krone.

3 Report No. 2 to the Storting (1994–1995). *Revised National Budget 1995*, p. 68.

Chart 16 Probability of 50 percent decline in the size of the GPFG[1)] over a ten–year horizon.[2)]
Percent



1) Government Pension Fund Global.
2) Estimated probability given variable oil revenues, return on the GPFG, other government revenues and spending of oil revenues. The estimates are based on a model described in NBIM (2016) "Asset allocation with government revenues and spending commitments". *Discussion Note* 4/2016.
Source: Norges Bank

The risk of a sharp decline in the size of the fund is further illustrated in this chart, which shows the probability of a 50 percent decline in the fund over a ten-year horizon (Chart 16).[4] In the initial year, fiscal spending of oil revenues is around 3 percent of the fund's value – that is to say close to today's level. Government expenditure is then assumed to grow in pace with the expected growth of the economy, which means the expenditure side is shielded even in a situation with declining revenues.

When and if that occurs, the oil fund will carry the cost. With a 60 percent allocation to equities, the probability of a 50 percent decline in the fund over a ten-year period is just over 1 percent. A higher equity share increases this risk, but the risk is still moderate.

However, with a higher level of oil revenue spending, the downside risk increases. The yellow bars illustrate a scenario where oil revenue spending in the initial year increases to 4 percent – a familiar figure. In that case, the risk of having to draw down the fund increases considerably. The probability of a 50 percent decline in the fund increases threefold.

My main message concerning this issue: First, fiscal policy must be decoupled from financial assets subject to considerable volatility. Second, it would be unwise to increase oil revenue spending from today's level even if the fund continues to grow.

The period of rising government spending of petroleum revenues should now be over.

INFLATION TARGETING HAS FUNCTIONED WELL

In 2001, the same year as the fiscal rule was established, Norway introduced an inflation target as part of its monetary policy framework. A number of countries had, in the preceding years, abandoned exchange rate targeting in favour of inflation targeting. This policy change was a response to the challenges associated with the fixed exchange rate regimes in an increasingly open global economy. Since the

4 The calculations are based on Norges Bank (2016) "Asset allocation with government revenues and spending commitments". NBIM *Discussion Note* 4/2016.

financial crisis, monetary policy has faced an uphill struggle in many countries. The economic consequences of the crisis have been substantial, and the contributions from fiscal policy have been meagre. Weakened growth capacity has magnified the challenges. At the same time, persistently low interest rates pose challenges to financial stability. Yet despite the fact that monetary policy has been stretched far, no country has retreated from the basic rationale behind flexible inflation targeting.

In Norway, the Ministry of Finance is now considering whether the regulation on monetary policy should be modernised. After more than fifteen years, this is only natural. It should nevertheless be noted that the system has functioned well.

Since the introduction of inflation targeting, the Norwegian economy has been exposed to a number of major shocks, most of which have originated beyond Norway's borders. In responding to these shocks, flexibility and scope for judgement in the conduct of monetary policy have been significant strengths. Inflation has generally been low and stable since the beginning of the 1990s and has remained so throughout the period of inflation targeting. At the same time, monetary policy has contributed to dampening fluctuations in the real economy.[5]

As long as inflation is firmly anchored, monetary policy can address other concerns. We can seek to counteract the build-up of financial imbalances by keeping the interest rate a little higher than would otherwise be the case. But Norges Bank cannot take the main responsibility for developments in house prices and debt. Nor can monetary policy influence the economy's long-term growth capacity.

The past couple of years have been demanding for the Norwegian economy. Monetary policy can be supportive, but cannot take primary responsibility for needed structural adjustments. The shift towards a less oil-driven economy lies ahead.

CONCLUSION

The original task of meteorologists was to forecast the weather so that ships could find shelter and property could be secured before the storm hit. Today, climatologists give advice on how we can curb global warming. When economists take the temperature of the economy, they do so in order to forecast its future path. This exercise provides insight that helps the business sector adapt and facilitates the conduct of economic policy.

The greatest challenges we face are global. In addressing these challenges, we should build on fundamental economic principles. The climate challenge is calling out for cost-effective solutions, nationally and globally. The liberalisation of global trade has brought undeniable benefits. But insufficient attention has been paid to the other side of the coin: Not everyone has shared in the benefits.

The signs of growing protectionism are of concern. In a world facing common problems, going it alone is not the solution. If we all pull together, the burden becomes easier to bear. Come what may.

5 Norges Bank (2017) "Experience with the monetary policy framework in Norway since 2001". *Norges Bank Papers* 1/2017.