ECONOMIC PERSPECTIVES

Address by Governor Øystein Olsen to the Supervisory Council of Norges Bank and invited guests on Thursday 15 February 2018

THURSDAY
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Analyses and charts are based on information up to and including 9 February 2018

NORGES BANK

Economic perspectives 2017

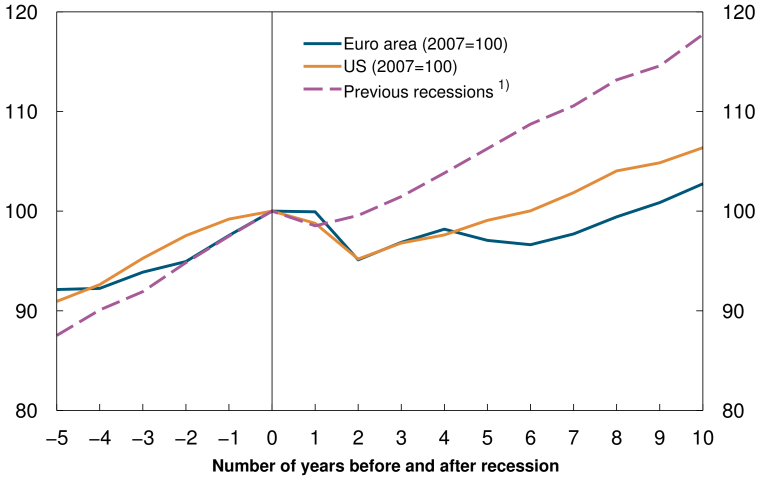
INTRODUCTION

"All things will pass, even a crisis. After the darkness comes the dawn."[1]

With these words, former central bank governor Nicolai Rygg summarised the turning point in the 1930s.

The advanced economies have emerged from another challenging period. Ten years ago the world economy was hit by a shock and thrown into the deepest recession since the 1930s (Chart 1).

Chart 1 Economic growth following the financial crisis.
GDP per capita. Index. Value in year recession started = 100



1) The first year of a recession is defined as a year where per capita GDP growth turns negative. Previous recessions are defined as the median of all recessions in the period 1920 – 2002, based on the Jordà–Schularick–Taylor Macrohistory Database. The database covers 17 countries.
Sources: Thomson Reuters, Jordà–Schularick–Taylor Macrohistory Database and Norges Bank

The economic downturn that followed the financial crisis stands apart from earlier recessions.[2] It was both deeper and longer. Potent measures were deployed to address the crisis, but it has still taken time to get the world economy back on its feet.

The financial crisis has taught us important lessons. First, low and stable inflation was not enough to guarantee economic stability. A complex financial sector, insufficient capital in the banking industry and substantial debt among some groups created risks that were underestimated. Second, we have been given a stark reminder of how severe the impact of a financial crisis can be. A credit crunch, high uncertainty and falling

1 Rygg, N. (1948): "I økonomisk stormvær" [Weathering the economic storm]. Festschrift for Joh. H. Andresen, also published as an annex to the periodical Statsøkonomisk tidsskrift nr. 3/4 1948 (Norwegian only).

2 Data are from Jordà, O., M. Schularick, and A. M. Taylor (2017): "Macrofinancial History and the New Business Cycle Facts" In: M. Eichenbaum and J. A. Parker. *NBER Macroeconomics Annual 2016*, volume 31. University of Chicago Press.

demand set the stage for a downward spiral. Businesses failed and unemployment soared. Third, there were few signs of an unaided return to economic stability. Without powerful economic policy measures, there was a risk of a self-reinforcing recession. Monetary policy had to take on substantial responsibility.

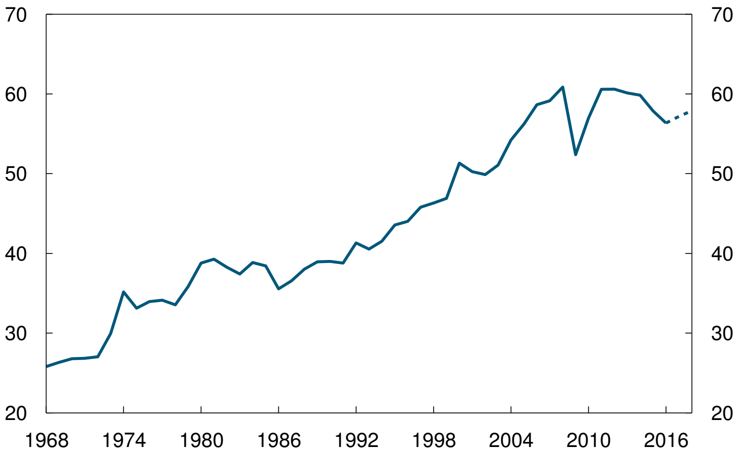
In the past few years, advanced-economy growth has steadily strengthened. Unemployment has fallen back, in Europe too. In parallel with this, longer-term structural developments have changed the economic landscape. A more closely integrated world economy and technological changes are transforming aspects of everyday life and also have consequences for economic policy.

TRADE AND TECHNOLOGY

Trade and technology have been key driving forces of growth in Norway over the past two hundred years. Oil and gas resources have provided a substantial boost to our income level, but even more important is the efficient use of our labour and capital. Technological advances, increased education and better capital equipment have made us more productive. Contact with other countries has helped us get more out of our common resources. Many innovations have come from abroad, where we have also found markets for our own products.

Over the past fifty years, global trade has more than doubled as a share of global GDP (Chart 2). The scaling back of trade barriers has been an important driving force. Since 2011, trade has expanded at a slower pace, primarily reflecting lower growth in the world economy. Private investment in particular has lagged, but growth has also slowed because trade barriers are being reduced more slowly than earlier.

Chart 2 Global trade as a share of GDP.[1)] Percent [2)]



1) Trade is defined as the sum of exports and imports of goods and services.
2) Projections for 2017 and 2018.
Sources: IMF, World Bank and Norges Bank

Global trade has generated substantial welfare gains. As consumers, we have gained access to cheaper and better products. More importantly, over one billion people have been lifted out of poverty.[3] Many people would be negatively affected if the tendency is reversed towards higher trade barriers.

3 http://www.worldbank.org/en/topic/poverty/overview.

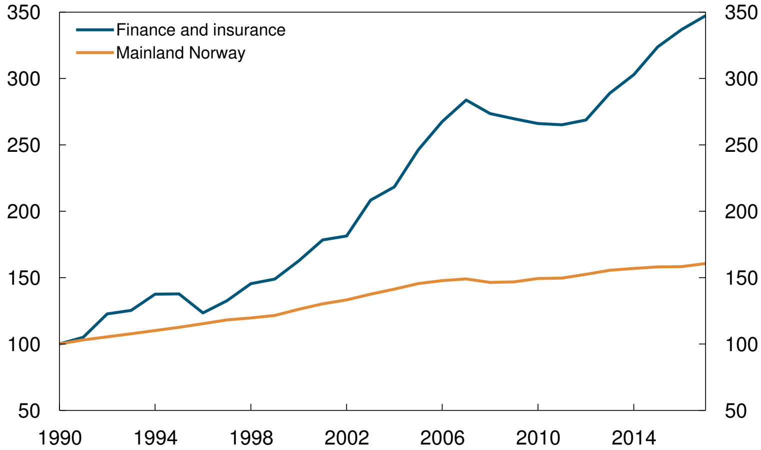
For a long time, trade primarily consisted of finished goods. In recent decades, global value chains have grown rapidly. Lower transport costs and new technological solutions have fostered new ways of organising production and trade. Firms have ready access to information about contractors in other countries. Today, it is also possible to manage production processes in distant locations. This has made it easier to locate high-tech production in low-cost countries.

Society is being transformed by advances in information and communication technology. The capacity of computer devices has increased while their size has become smaller and smaller. Moving a 5 megabyte hard disk used to require substantial muscle. Today, a several hundred thousand megabyte memory stick is easily lost among pocket change. At the same time, the price of ICT equipment has decreased in relation to other goods, paving the way for ever new applications.

A more open world economy and technological innovation have an impact on working life. The world of work is changing. Jobs are being taken over by machines or transferred to firms in different locations. At the same time, new jobs are created. Every year roughly one in ten jobs disappears in the Norwegian economy, and about as many are added.[4] This is part of the restructuring needed to generate growth. In order to profit from new technology, work must become less labour-intensive. When labour flows into other profitable activities, we get more out of our resources.

Restructuring in the Norwegian financial industry has been successful. The banking crisis in the early 1990s became a catalyst for exploiting new technological solutions (Chart 3). Labour-intensive operations were made more efficient. The Norwegian financial industry was also an early adopter of digital payments. Households and enterprises have been quick to use faster and simpler payment solutions. Few of us miss having to run to the bank during our lunch break. We have seen the transition from banking in person to postal giro, online banking and mobile payment applications.

Chart 3 Financial sector productivity growth.
GDP per hour worked. Index. 1990 = 100



Sources: Statistics Norway and Norges Bank

In parallel, banks' branch networks have changed. In 1987, there were almost 200 bank branches in Oslo, while today there are fewer than 40. This has cut costs substantially for both banks and the general public. Our payment system is now among the world's most modern and cost-efficient.

4 Salvanes, K.G. (2017): "Omstillingsevnen i norsk økonomi under finanskrisen" [The adaptability of the Norwegian economy during the financial crisis], Arbeidsnotat 2017/7, Ministry of Finance (Norwegian only).

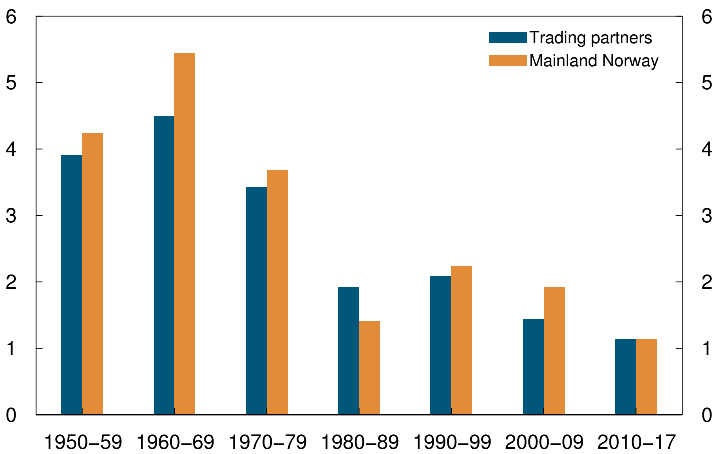
The payment system is facing an era of change. Use of cash is on the decline, while deposit money is becoming available in ever newer forms. The next innovation is instant settlement, which will make it possible to transfer funds from one account to another immediately, regardless of amount. Maybe your car purchase can be paid by pressing “send” on your mobile phone and, at the very same instant, the seller can safely hand you the keys.

Banks continue to play a dominant role in the payment system, but there are clear signs that their position can be challenged. New regulations and technology are making it easier for new participants to take market share. Global technology companies with a large customer base are making their way into the payment system.

New technology and new participants give rise to new challenges. International platforms gather substantial information about us as individuals, especially if they know our payment patterns. Such information should not fall into the wrong hands.

We are living in an increasingly digital world. From the comfort of our sofas, we can now access an unprecedented array of music, film and literature. From a tablet or a mobile phone, we can order groceries or control the temperature in our holiday home. Artificial intelligence and robotisation are also in focus. By managing processes using machine learning, work can be made more efficient. But even if technology appears to be advancing more rapidly than ever before, there is little visible effect on productivity growth for the economy as a whole. Both in Norway and among our trading partners, productivity growth has declined (Chart 4). In recent years, growth has been around one percent.

Chart 4 Productivity growth in Norway and abroad.
GDP per hour worked. Average percentage growth



Sources: The Conference Board Total Economy Database™ (Original version) November 2017, Norwegian Technical Calculation Committee for Wage Settlements, Statistics Norway and Norges Bank

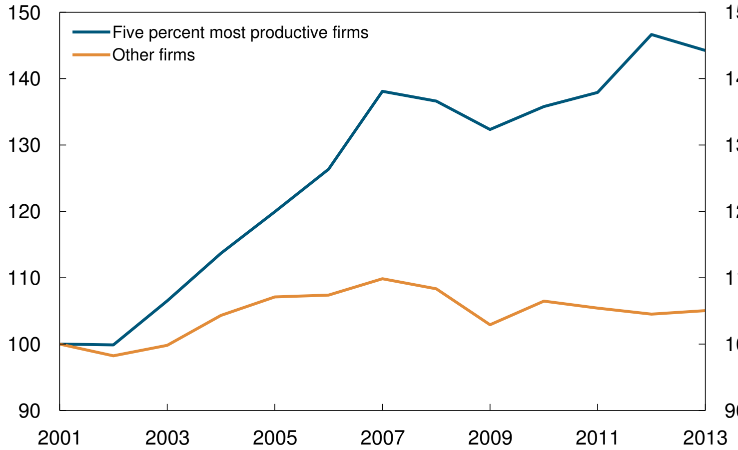
Productivity growth may be lagging because the diffusion of new technology into goods and services production takes time. Productivity growth will only increase once the use of information technology and digital solutions reduces the use of labour.

Behind the average figures we also find an interesting pattern. In many sectors, the gap between the most productive firms and the rest has increased (Chart 5).[5] The chart shows the gap within the service sector, but the same picture applies to other sectors.

5 Andrews, D., C. Criscuolo and P. N. Gal (2015): “Frontier firms, technology diffusion and public policy: micro evidence from OECD”, OECD Productivity Working Paper No. 2.

While productivity growth for frontier firms has remained robust, it has been substantially weaker in the rest of the economy. This may indicate that it is not the rate of innovation that has slowed, but rather the diffusion of new technology from frontier firms to laggard firms.

Chart 5 Productivity for frontier firms and other firms. Services.[1] OECD countries. Index. 2001 = 100



1) Defined as firms in sectors 45 – 82 (excluding 64 – 68) in NACE Rev. 2.
Source: OECD

In the past decade, the fallout from the financial crisis has probably had a dampening impact on productivity growth. Weak economic growth and heightened uncertainty have reduced businesses' willingness to invest. In addition, banks in many countries held back on lending for a long period. This may have discouraged new entrants and slowed the replacement of outdated production equipment.

The legacies of the financial crisis are now fading. Investment is picking up across countries. This could lift productivity ahead.

But this will not materialise of its own accord. It is up to us to take advantage of the possibilities provided by technological innovation. Economic restructuring must continue. A flexible labour market, high education levels and a solid social safety net are preconditions for successful restructuring. In Norway, much of this is in place, but we too must be prepared to adapt to changing circumstances. In addition, nature has endowed us with advantages that it will be important to build on in the years to come.

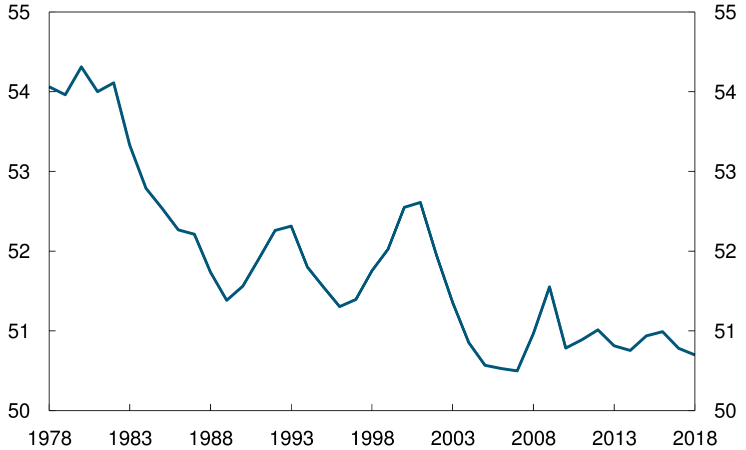
LOW PRICE AND WAGE INFLATION

Not everyone benefits from a more closely integrated global economy and new technology. In many countries, the competition for low-skilled jobs has intensified, depressing wages for these workers. On the other hand, technological advances have pushed up demand for high-skilled labour for which there is a wage premium. The result is wider wage gaps.

The income distribution between labour and capital has also changed. It had long been a widely-held view among economists that the labour share of GDP would remain fairly constant over time. Keynes described the stability of the labour share as "one of the most surprising, yet best-established, facts in the whole range of economic statistics".[6] Yet since 1980, corporate profits have risen faster than wages (Chart 6).

6 Keynes, J.M (1939): "Relative Movements of Real Wages and Output", *The Economic Journal* 49 (193), pp 34–51.

Chart 6 Labour share. Labour costs as a share of GDP. Selected advanced economies.[1)] Percent

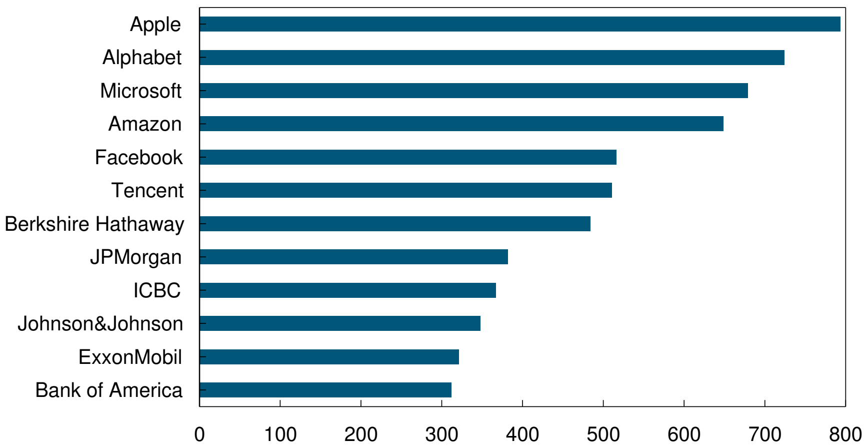


1) Belgium, Denmark, Finland, France, Germany (data for West Germany before 1992), Ireland, Italy, Japan, Netherlands, Portugal, Spain, South Korea, Sweden, Switzerland, the UK and the US. GDP–weighted average.
Sources: European Commission, Thomson Reuters and Norges Bank

Technological advances have reduced the relative cost of capital goods. Tasks have been taken over by robots and other capital equipment. This probably explains some of the decline in the labour share.[7]

The emergence of global technology companies is also reducing the labour share. With broad platforms and vast numbers of users, they dominate the market, which translates into both market power and substantial profits. The winner takes all. A few technology companies stand out by virtue of their size (Chart 7). Alphabet is one example. 80 percent of the world's web searches are done through its Google search engine.[8] Another example is Amazon. In 2017, the company accounted for 44 percent of all US online retail sales.

Chart 7 The world's largest listed companies. Market capitalisation in billions of USD[1)]



1) Market capitalisation at 9 February 2018.
Source: Bloomberg

The decline in the labour share can primarily be explained by the fundamental transformation of the global labour market in recent decades. More countries are participating in global trade, labour mobility has increased, and offshoring production

7 Hagelund, K., E. W. Nordbø and L. Sauvik (2017): "Lønnsandelen" [The labour share], *Aktuell kommentar* 9/2017, Norges Bank (Norwegian only).

8 Source: *Financial Times*, January 2018 (https://www.ft.com/content/95d16c88-f795-11e7-88f7-5465a6ce1a00).

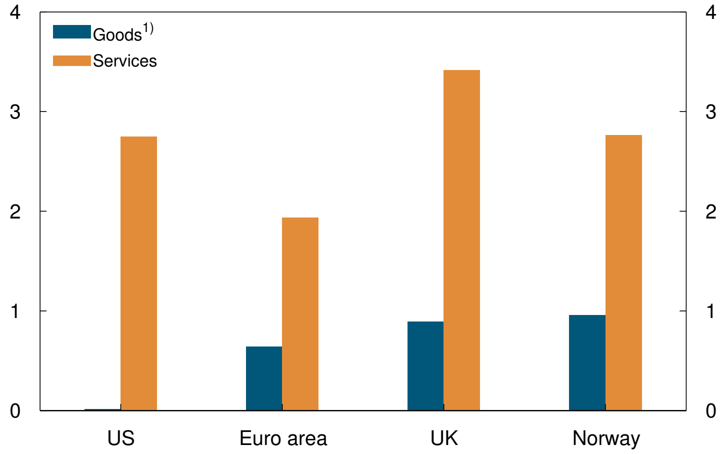
to low-cost countries has become easier. When China, India and Eastern Europe joined the global market economy, the labour force of countries participating in world trade doubled.[9]

The result is that workers in advanced economies face competition from new groups, which pushes down wage growth and affects the income distribution between labour and capital. Lower unionisation levels have also weakened workers' bargaining power. Since 1980, unionisation in the OECD area has fallen from around 35 percent to below 20 percent.

Low wage growth feeds through to prices for goods and services. Many firms also face competition from firms that have relocated production to lower-cost countries. In addition, online shopping reduces the advantage of physical proximity to customers, narrowing the scope for passing on higher costs to prices. Globalisation thus restrains the general rise in prices.

Cheap imports from low-cost countries have long been an important source of low inflation in advanced economies. In Norway, prices for clothing and footwear have fallen by almost half over the past 20 years. The price effects of globalisation have not been exhausted. A rising number of low-cost countries are competing on the global stage. So far, global competition has had less influence on services prices than on goods prices (Chart 8). However, global trade in services has increased recently. This may lead to renewed downward pressure on prices.

Chart 8 Goods and services inflation.
Average annual change 2000 – 2017. Percent



1) Goods excluding food and energy for all countries except the UK.
Sources: Statistics Norway, Thomson Reuters and Norges Bank

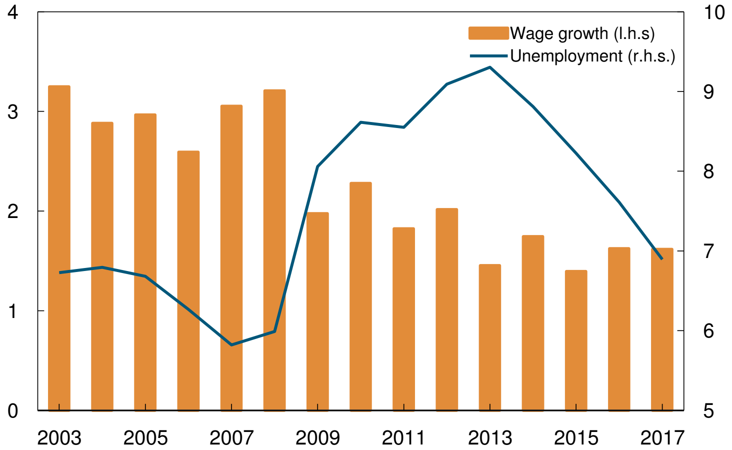
The tendency of lower global price and wage inflation has consequences for monetary policy. On the one hand, inflation is likely to show smaller fluctuations than earlier. But this also means that it may be more difficult to bring up inflation once it has fallen to a level that is too low.

The Phillips curve – the relationship between unemployment and wage and price inflation – may have changed. In many countries, wage growth has been fairly weak, even though unemployment has fallen (Chart 9). The reason for this, among other

9 The figures are taken from Freeman (2008) "The new global labor market". The most recent figures from ILO (2017) show that the global labour force in 2000 was 2.8 billion, while China (0.8), India (0.4) and Eastern Europe (0.2) together accounted for 1.3 billion (rounded).

things, is the global driving forces I mentioned earlier. But the relationship between wages and unemployment has not broken down. There are now signs in many countries that wage growth is rising on the back of a broadening upturn and a tightening labour market.

Chart 9 Unemployment and wage growth. Selected advanced economies.[1)] Percent

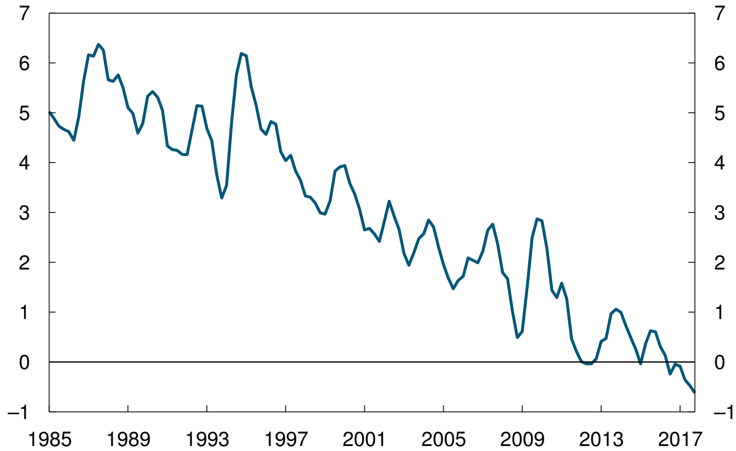


1) Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, Portugal, Spain, South Korea, Sweden, Switzerland, the UK and the US. Unweighted average.
Sources: Thomson Reuters and Norges Bank

EXPANSIONARY MONETARY POLICY IN MANY COUNTRIES

Never before have global interest rates been as low as today over such a long period (Chart 10). The interest rate level was moving down long before the 2008 crisis. What lies behind this is a prolonged decline in long-term real interest rates owing to structural changes. Low productivity growth and weaker labour force growth have diminished the growth capacity of advanced economies and dampened the willingness to invest. At the same time, groups and countries with a high saving rate account for a larger share of income growth, partly owing to demographic changes and wider income gaps. Both lower investment and higher saving have contributed to depressing real long-term interest rates.

Chart 10 Global real interest rates. Yield on 10-year government bonds adjusted for inflation. 14 OECD countries.[1)] Percent



1) Austria, Belgium, Canada, Denmark, France, Germany, Italy, Japan, Netherlands, Norway, Sweden, Switzerland, the UK and the US. Unweighted average.
Sources: Thomson Reuters and Norges Bank

When the financial crisis engulfed the global economy in 2008, central banks responded forcefully. During the crisis, the European Central Bank, the Bank of England and the Federal Reserve cut their policy rates by 4 to 5 percentage points. Many central banks still found it difficult to provide a sufficiently accommodative monetary stance, and the room for further interest rate cuts was gradually exhausted.

Central banks were led into unknown territory and implemented unconventional measures. They have purchased securities on a large scale. In addition, a barrier has been breached. In the euro area, Denmark, Sweden, Switzerland and Japan, policy rates have been cut to below zero. Monetary policy has been stretched far.

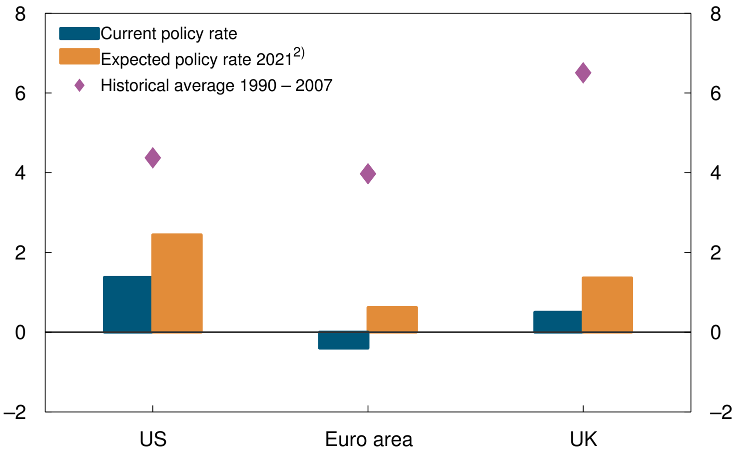
The purpose of the large-scale asset purchases by central banks has been to bring down long-term interest rates even further. This policy has had a broad impact. The average real yield on ten-year government bonds is now negative in the OECD area. Portfolios were rebalanced, which also pushed down yields on bank and corporate bonds.

The potent medicine has worked. Growth in all the major advanced economies has gained a firm footing. Unemployment in major economies is lower than before the financial crisis. Price and wage inflation is rising from low levels.

The need for monetary accommodation is thus diminishing. Global interest rates have bottomed out. Policy rates in the US, UK and Canada were raised in the course of 2017, with more central banks likely to follow suit in 2018. The Federal Reserve has begun to unwind its bond holdings. Other central banks have tapered their asset purchases.

The global interest rate rise will probably be gradual (Chart 11). After a long period of very low rates, the effect of higher interest rates on the economy is uncertain. It is also uncertain how quickly wage and price inflation will rise as activity gains momentum.

Chart 11 Policy rates.[1)] Percent

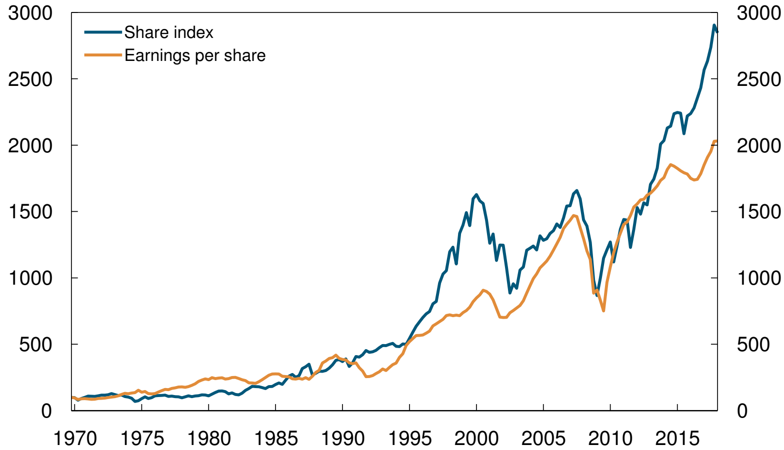


1) In the chart, the policy rate for the US refers to the mid–point of the target range for the federal funds rate. For the euro area, historical policy rates are calculated using the interest rate on the ECB's main refinancing operations from 1999 to 2007. Before 1999, the Bundesbank's discount rate is used. The rate on the ECB's deposit facility is used for the current and expected policy rate.
2) June 2021.
Sources: Bloomberg and Norges Bank

As conditions normalise, interest rates will likely remain lower than they were a few decades ago. The structural conditions that have depressed the global neutral interest rate will not reverse overnight.[10]

Central bank asset purchases have also made a mark beyond fixed income markets. We have seen a sharp rise in equity and real estate prices (Chart 12). When the major central banks put monetary easing into reverse, investors who have taken on added risk may seek to rebalance their portfolios. This could lead to financial market volatility, as we have noted in recent weeks. Strengthening global growth will help reduce the risk of sharp movements in equity markets. But a bigger correction than seen so far cannot be ruled out.

Chart 12 Equity prices and earnings per share.[1)] Standard & Poor's 500.
Index. 1970 = 100



1) The latest oberservation at the end of each quarter. For 2018 Q1, data from 9 February 2018 are used.
Source: Bloomberg and Norges Bank

Monetary policy had to play a substantial role in the wake of the financial crisis. Fiscal space was already limited in many countries and narrowed further through the crisis. Fiscal policy is still constrained. The public sector has done little to deleverage. At the same time, the interest rate level is low and there is very little margin for further cuts. There is less latitude to counter another downturn in the near future.

MONETARY POLICY – LESSONS FROM THE FINANCIAL CRISIS

Ten years of historically low interest rates and large-scale asset purchases give cause for reflection. An important question is what responsibilities should rest with a central bank. A related theme is what is meant by the objective of low and stable inflation. Let me take a closer look at these questions.

The primary objective of monetary policy is to maintain monetary stability, which ensues from the central bank's responsibility for the monetary system. Behind traditional currencies stands a central bank assigned with the mission of maintaining confidence in the value of money. This is in stark contrast to the so-called cryptocurrencies. They fail the crucial test that a means of payment must pass.

10 Rachel, L. and T. D. Smith (2015) "Secular drivers of the global real interest rate", Bank of England Staff Working Paper No. 571.

Both too high and too low inflation have undesired consequences, such as arbitrary wealth redistribution, underinvestment and resource misallocation that may leave resources idle. The result is lower activity and lower welfare.

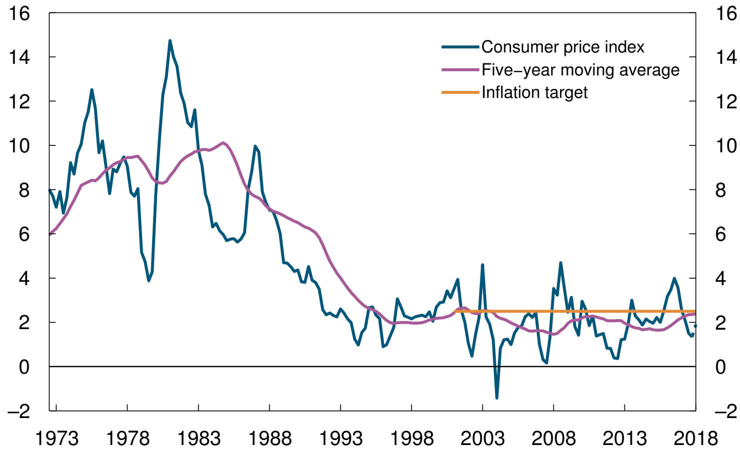
In the distant past, the central bank was to safeguard the value of the country's monetary unit in terms of a precious metal. This was later replaced by fixed rate regimes.

Various forms of fixed exchange rate regimes are still in use in many countries. However, since 1990 an increasing number of countries have chosen to link monetary stability to a numerical inflation target.

Since the financial crisis, all of these countries have maintained their inflation targeting regimes. This reflects their overall positive experience with this framework. It did not get in the way of a powerful response to the financial crisis. With a floating exchange rate and a credible inflation anchor, monetary policy could be geared to stabilising the economy.

In Norway too, inflation targeting has functioned well. Inflation has remained low and stable since it came down in the early 1990s (Chart 13). We can now look back on a quarter century of stable prices. At the same time, employment variability has been lower since 2001 than in previous periods despite the shocks to the Norwegian economy.

Chart 13 Inflation in Norway. Four–quarter change. Percent[1)]



1) Projection for 2018 Q1.
Sources: Statistics Norway and Norges Bank

The formal monetary policy regimes remain intact, but lessons have been learned along the way. Initially, central banks had high ambitions to steer inflation to target within a clearly defined time horizon. But the experience with these regimes provided useful insight, and the ambitions were later adjusted. When confronted with shocks, small open economies in particular experienced that a rapid return to the inflation target could have undesired consequences for the real economy.[11] Norges Bank addressed this concern by giving greater weight to output and employment. The inflation target horizon has been extended and monetary policy has gradually become more flexible.

11 See for example Wheeler G. (2014): "Reflections on 25 years of Inflation Targeting", Reserve Bank of New Zealand, speech delivered on 28 November 2014 and Norges Bank (2017): "Experience with the monetary policy framework in Norway since 2001", *Norges Bank Papers* 1/2017.

Monetary policy shall contribute to monetary stability. It does so by ensuring that inflation stays within a range somewhat above zero, while being kept under control. Since inflation targeting was introduced in Norway, inflation has been close to, but on average somewhat below, the target of 2.5 percent. Inflation has consistently remained within a band where the deviations from the target cannot be said to have entailed significant economic costs.

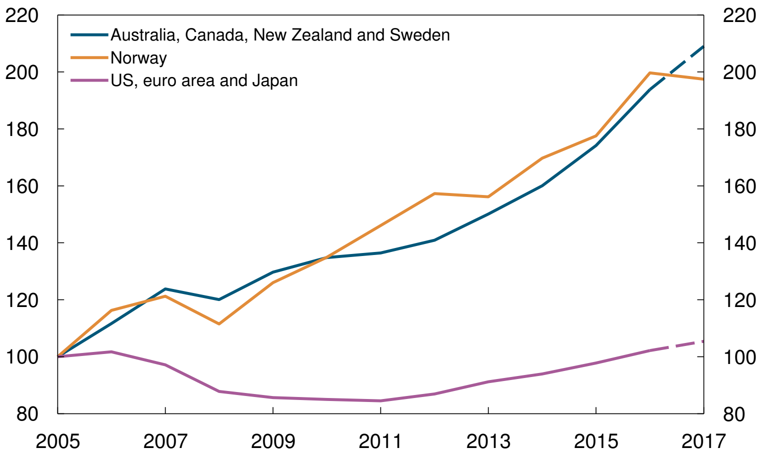
As mentioned, the importance of financial markets and financial stability was underestimated before the crisis – also by central banks. The financial crisis revealed how harmful financial imbalances can be. Monetary policy can in given situations take account of the risk of a build-up of financial imbalances. But monetary policy cannot take primary responsibility for heading off a gathering storm.

This has been of little concern among the major central banks. Their focus has been on counteracting a deeper and more prolonged downturn and on preventing deflation.

In countries that were less affected by the crisis, more attention has been devoted to financial stability considerations. In high-tech, global financial markets, capital moves rapidly between different currencies. At trading desks in the City of London geographical distances vanish. A wide interest rate differential could have a substantial impact on the exchange rate, with repercussions on inflation, output and employment. This is why low interest rates in large economies that were severely hit by the financial crisis quickly led to lower rates in countries where the cyclical situation, in isolation, would have implied higher rates. This was the case in Norway until oil prices fell. Other small open economies have been in the same situation.

These countries have imported low interest rates and experienced rapidly rising house prices and debt (Chart 14). They have introduced measures to limit household debt in order to prevent imbalances from building up further. In Norway, stricter mortgage lending requirements have been imposed on banks. These measures have probably contributed to the recent correction in Norwegian house prices.

Chart 14 Nominal house prices.[1)] Index. 2005 = 100



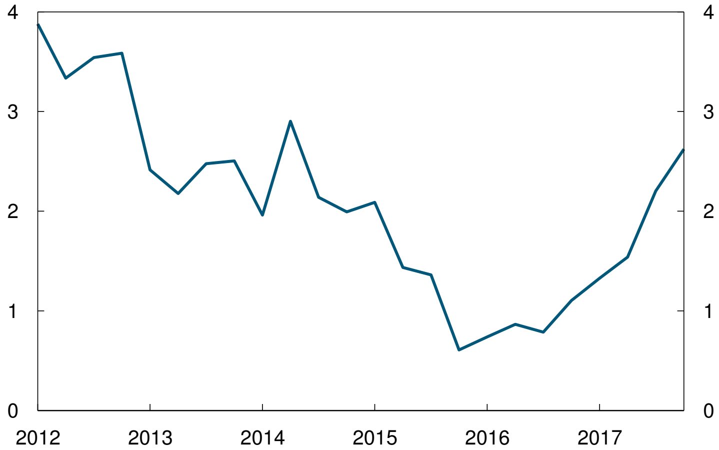
1) Latest available quarterly data for 2017 are used as estimate for 2017 (broken lines). Series is GDP–weighted.
Sources: Eiendomsverdi, Finn.no, Real Estate Norway, Thomson Reuters and Norges Bank

The exchange rate places a limit on how far Norwegian interest rates can deviate from foreign rates. But with a floating exchange rate, monetary policy can help to stabilise the economy when it is exposed to shocks. In addition, the krone exchange rate acts as an important shock absorber, as we last witnessed when oil prices fell in 2014. With confidence in the inflation target, monetary policy has been able to underpin a weaker krone.

The krone depreciation, combined with moderate wage settlements, has contributed to a marked improvement in business profitability and competitiveness. This has provided a considerable boost to Norwegian firms exposed to international competition. At the same time, an expansionary fiscal policy and lower interest expenses have been important in sustaining domestic demand.

This year, the policy rate may be increased for the first time in seven years – this is a good sign. Two years since the cyclical trough was reached in Norway, growth has gained a firm footing and the unemployment rate is approaching a normal level (Chart 15). The impetus from abroad has strengthened and exports are picking up. There is renewed optimism in the petroleum industry. A number of large development projects will contribute to a rebound in oil investment in the coming years.

Chart 15 Mainland GDP. Four-quarter change. Percent



Source: Statistics Norway

Increased economic activity should lead to a pickup in inflation. On the other hand, the effects of technological advances and a more integrated world economy may continue to exert downward pressure on wage and price inflation.

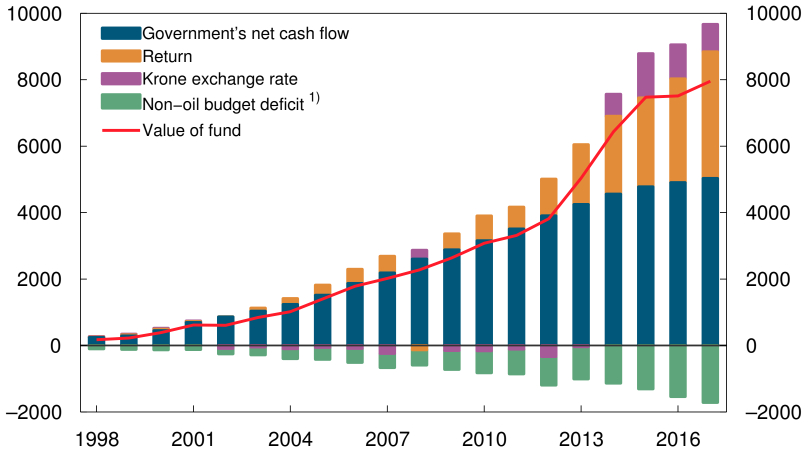
In its conduct of monetary policy, Norges Bank weighs the outlook for inflation against developments in output and employment. In an environment of low inflation, solid economic growth and low unemployment, a conflict may arise between inflation considerations and considerations relating to the real economy. In that situation, we would be less worried about low inflation than if real economic prospects were also weak. We can then choose to bring inflation up to target over a longer horizon, particularly if interest rates are already low and there are signs that financial imbalances are building up.

With flexible inflation targeting, monetary policy can make an important contribution to stabilising the economy. When the economy is exposed to shocks, we can respond rapidly by adjusting the policy rate, as we did in 2008 and 2014. Nevertheless, monetary policy cannot assume primary responsibility for output and employment. The level of economic activity depends on overall economic policy, including wage and income formation, the tax and social security system and the functioning of the labour market. Monetary policy is only one component of this framework.

NORWAY AS A FINANCIAL INVESTOR

While high public debt has made it difficult for many countries to cope with a downturn, Norway has been in a fortunate position. We have built up one of the world's largest sovereign wealth funds. It has provided us with fiscal space both during the financial crisis and in the wake of the fall in oil prices in 2014. The first transfer of close to NOK 2 billion was made to an account at Norges Bank in 1996. Since then, the value of the fund has risen to almost three times mainland GDP. The value of the fund is now around NOK 8 000 billion (Chart 16).[12] Its assets are invested abroad in equities, bonds and real estate. With the substantial capital accumulated in the fund, Norway has become a major investor in the global capital market.

Chart 16 Government Pension Fund Global. In billions of NOK. To 2017 Q3



1) Including discrepancies attributable to accounting differences between the central government accounts and Norges Bank's financial statements. The cumulative discrepancy varies between NOK 5 billion and NOK 41 billion.
Sources: Ministry of Finance and Norges Bank

During periods of substantial oil and gas revenues, large capital transfers have been made to the fund. The government's total net cash flow from petroleum activities comes to around NOK 5 000 billion.

The return on the fund has been solid. The cumulative return amounts to more than NOK 3 800 billion.[13] Since 2014, the krone depreciation has also contributed to the considerable increase in the value of the fund in krone terms. This does not, however, affect the fund's international purchasing power.

The green bars in the chart show fund withdrawals used to finance the structural non-oil budget deficit.

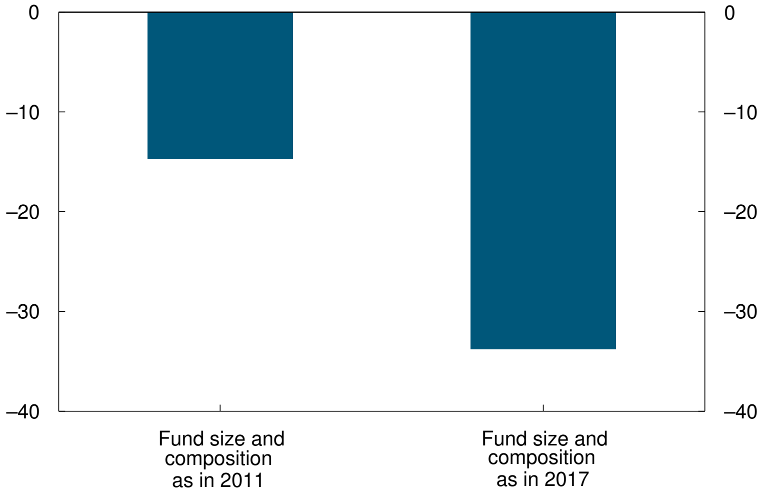
Both returns and exchange rates vary over time. High equity prices have generated substantial gains for the fund in recent years. But this means we must also be prepared for losses when markets turn.

Looking back a few years to 2011, euro area financial markets were marked by the debt crisis. The return on the fund was negative. Weak returns resulted in a decline in the value of the fund corresponding to 15 percent of mainland GDP (Chart 17). But the decline was not larger than what could be expected in one of six years based on historical experience.

12 At the end of 2017 Q3, the value of the fund stood at NOK 7 952 billion.

13 At the end of 2017 Q3, the cumulative return was NOK 3 814 billion.

Chart 17 Illustration of declines in the value of the fund.
Decline in value as a percentage of mainland GDP given the same return as during the euro area debt crisis 2011 – 2012 1)



1) Bond/equity allocation of 40/60 for 2011 and 30/70 for 2017. The return on the two asset classes is represented by the fund's benchmark indexes, measured in foreign currency, for the period June 2011 to May 2012.
Sources: Statistics Norway and Norges Bank

Today, the fund is far larger than in 2011. As a result, return variations will have a greater impact. With the current size and composition of the fund, the same return as in 2011 would have resulted in a loss of almost NOK 1 000 billion, or close to 35 percent of mainland GDP.

The fund has become important for the Norwegian economy. The fiscal rule links fiscal policy to the value of the fund. This year, 15 percent of general government spending is projected to be financed by transfers from the fund. Looking ahead, movements in global capital markets will be the main source of variation in the value of the fund, and at times in a negative direction. The actual stance of fiscal policy must allow for this uncertainty.

The fund had several good years following the euro crisis. Markets turned around, and quickly the loss was more than reversed. We cannot take for granted that this will always be the case.

CONCLUSION

Let me conclude. The global economy finally appears to have fully recovered from the prolonged weakness that followed the financial crisis. Growth has also strengthened in Norway after the decline following the oil price collapse. The government's solid financial position has been of considerable help. An independent and flexible monetary policy has been able to underpin needed restructurings in the Norwegian economy.

Norges Bank's mission is to ensure a well-functioning monetary system. Our success is a fundamental precondition for an efficiently functioning economy. The payment system must provide for safe and fast payments. People must also be assured that the value of money does not suddenly change. Safeguarding the value of money, which today is expressed in the form of low and stable inflation, is therefore at the core of the central bank's social mission.

The payment system is changing rapidly. The future of money and payments is still unknown, but the central bank's primary function remains steadfast: To ensure confidence in the currency unit and the value of money. Come what may!