



# Economic Survey

2019 / 1

Economic developments in Norway

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# Economic developments in Norway

The Norwegian economy is in a moderate cyclical upturn, following a shallow cyclical trough around year-end 2016/17. According to the seasonally adjusted quarterly national accounting figures (QNA), GDP growth for mainland Norway has been higher than trend growth, estimated at just under 2 per cent annually, for more than two years. The knock-on effects of an expansionary fiscal policy, weak krone and low interest rates have contributed to the upturn, but in contrast to most previous upturns, growth in the current upturn

has been only slightly higher than estimated trend growth.

Fiscal policy has gradually become more neutral, following the strongly expansionary fiscal policy conducted in the period 2014 to 2016 to dampen the negative impulses generated by the oil price fall in 2014. We assume that fiscal policy will remain close to cyclically neutral in the near term. Growth in public sector investment and consumption is expected to be somewhat

**Table 1. Main macroeconomic aggregates. Accounts figures. Change from previous period. Per cent**

	2017*	2018*	Seasonally adjusted			
			18:1	18:2	18:3	18:4
<b>Demand and output</b>						
Consumption in households etc.	2.2	2.0	0.1	1.2	-0.1	0.4
General government consumption	2.5	1.5	-0.1	0.0	0.1	0.1
Gross fixed investment	3.6	0.9	-5.5	7.2	1.4	-0.8
Extraction and transport via pipelines	-3.8	3.3	-12.0	13.8	3.5	4.3
Mainland Norway	7.0	0.7	-4.2	5.8	1.4	-2.4
Final domestic demand from Mainland Norway <sup>1</sup>	3.3	1.6	-0.9	1.9	0.3	-0.3
Exports	-0.2	-0.8	0.5	0.9	0.7	-1.9
Traditional goods	1.7	2.5	-0.6	0.6	0.2	4.9
Crude oil and natural gas	1.5	-4.8	-0.9	0.5	1.2	-1.7
Imports	1.6	0.9	-2.3	2.9	-0.4	-1.0
Traditional goods	2.7	3.1	-0.4	1.1	0.4	0.6
Gross domestic product	2.0	1.4	0.3	0.5	0.6	0.5
Mainland Norway	2.0	2.2	0.5	0.7	0.4	0.9
<b>Labour market</b>						
Total hours worked, Mainland Norway <sup>2</sup>	0.4	1.7	0.6	0.4	0.5	0.6
Employed persons	1.1	1.5	0.5	0.3	0.4	0.5
Labour force <sup>3</sup>	-0.2	1.4	0.6	0.3	0.9	-0.0
Unemployment rate, level <sup>3</sup>	4.2	3.8	3.9	3.8	4.0	3.8
<b>Prices and wages</b>						
Annual earnings	2.3	2.8	--	--	--	--
Consumer price index (CPI) <sup>4</sup>	1.8	2.7	0.9	0.8	1.1	0.5
CPI adjusted for tax changes and excluding energy products (CPI-ATE) <sup>4</sup>	1.4	1.6	0.3	0.5	0.6	0.5
Export prices, traditional goods	5.4	5.8	2.3	2.4	-0.4	0.0
Import prices, traditional goods	3.7	5.1	1.2	1.2	1.0	0.8
<b>Balance of payment</b>						
Current balance, bill. NOK <sup>5</sup>	186	285	70	79	92	47
<b>Memorandum items (unadjusted level)</b>						
Money market rate (3 month NIBOR)	0.9	1.1	0.9	1.1	1.1	1.2
Lending rate, credit loans <sup>6</sup>	2.5	2.6	0.6	0.6	0.6	0.7
Crude oil price NOK <sup>7</sup>	452	583	526	601	625	578
Importweighted krone exchange rate, 44 countries, 1995=100	104.5	104.6	105.5	104.5	103.7	104.7
NOK per euro	9.33	9.60	9.60	9.60	9.60	9.60

<sup>1</sup> Consumption in households and non-profit organizations + general government consumption + gross fixed capital formation in Mainland Norway.

<sup>2</sup> Employees.

<sup>3</sup> According to Statistics Norway's labour force survey (LFS).

<sup>4</sup> Percentage change from the same period the previous year.

<sup>5</sup> Current account not adjusted for saving in pension funds.

<sup>6</sup> Period averages.

<sup>7</sup> Average spot price, Brent Blend.

Source: Statistics Norway and Norges Bank.

lower than mainland trend growth in the mainland economy in the projection period, which extends to 2022. On the other hand, the ageing population and increasing growth in real wages mean higher expenditure on old-age pensions and other transfers. Given cyclically neutral spending growth combined with minor changes in the level of taxation, in line with the budget settlement for 2019, the fiscal impulse is expected to remain almost constant through the projection period. Given this scenario, the use of petroleum revenue will be more than 2 per cent of the value of the Petroleum Fund's value in 2022. Such moderate use of petroleum revenue is reasonable in light of the economic situation up to 2022, the desire to build a buffer to counter any major changes in the value of the Fund, and to finance increased spending attributable to an ageing population.

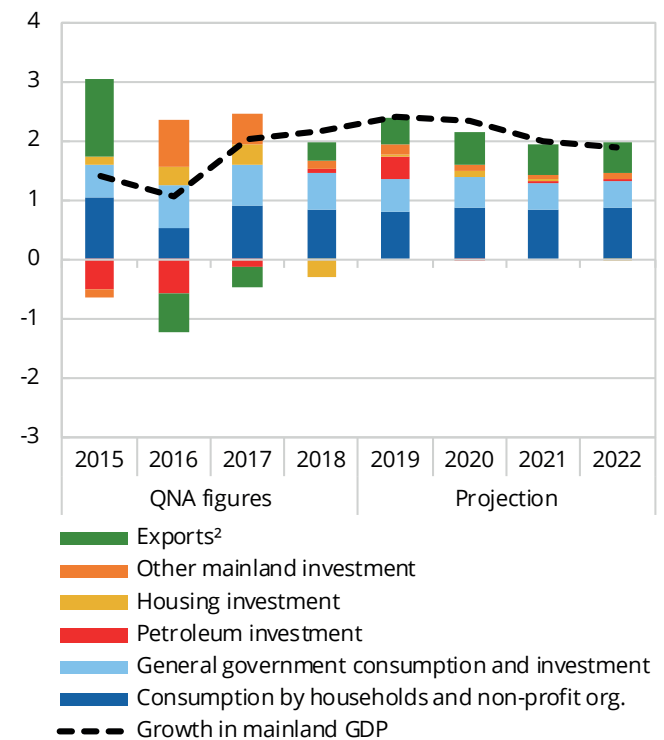
Developments in the housing market are also fairly neutral at present. After falling through the second half of 2017 and the first half of 2018, housing investment remained virtually unchanged in the second half of last year. According to our projections, housing investment will pick up somewhat in the first half of 2019. Higher house prices are making residential construction more profitable, and the upswing is a result of house prices rising through 2018 after falling appreciably through 2017. Real Estate Norway's house price index shows rising house prices through the first two months of 2019. The rise in house prices going forward will be driven by higher income, but checked by higher interest rates and somewhat slower population growth. As a result, the rise is expected to be so moderate that in reality house prices will fall slightly in the period up to 2022. By comparison with the last five years, which were characterised by wide fluctuations in both house prices and housing investment, the housing market is now in better balance.

Petroleum investment has reached a turning point, after a four-year fall starting in 2013. The trend reversed into a slight upturn in early 2018, and investment is expected to grow markedly in 2019, largely owing to the Johan Sverdrup Phase 2 and Johan Castberg development projects. Lower costs and expectations of an oil price of over USD 60 per barrel are also making many

other projects profitable. The investment level in 2020 and 2022 is expected to remain close to the level in 2019, which is almost 19 per cent lower than the record level in 2013.

After two years of high growth in business investment, near-term developments are expected to be more moderate. In 2018 there was strong growth in investment in both distribution and production of power. Further production growth is expected in 2019 as a

**Figure 1. Growth in mainland GDP and contributions from demand components.<sup>1</sup> Percentage points, annual rate**



<sup>1</sup> The demand contributions are calculated by finding the change in each variable, extracting the direct and indirect import shares, and then dividing by the mainland GDP level for the previous period. The import shares used are documented in Economic Survey 1/2019, Box 3. All figures are seasonally adjusted and in constant prices.

<sup>2</sup> The export variable is defined as total exports excluding exports of crude oil, gas and shipping.

<sup>3</sup> Andre avvik er definert residualt slik at det fanger opp alle andre faktorer samt lagerendring og statistiske avvik.

Source: Statistics Norway.

**Table 2. Growth in mainland GDP and contributions from demand components.<sup>1</sup> Percentage points, annual rate**

	QNA				Projection			
	2015	2016	2017	2018	2019	2020	2021	2022
Consumption by households and non-profit organisations	1.1	0.5	0.9	0.8	0.8	0.9	0.8	0.9
General government consumption and investment	0.5	0.7	0.7	0.6	0.5	0.5	0.5	0.4
Petroleum investment	-0.5	-0.6	-0.1	0.1	0.4	0.0	0.0	0.0
Housing investment	0.1	0.3	0.3	-0.3	0.0	0.1	0.0	0.0
Other mainland investment	-0.1	0.8	0.5	0.1	0.2	0.1	0.1	0.1
Exports	1.3	-0.7	-0.3	0.3	0.4	0.6	0.5	0.5
<b>Growth in mainland GDP</b>	<b>1.4</b>	<b>1.1</b>	<b>2.0</b>	<b>2.2</b>	<b>2.4</b>	<b>2.3</b>	<b>2.0</b>	<b>1.9</b>

<sup>1</sup> See footnotes to Figure 1.

Source: Statistics Norway.

result of the building of more wind farms, but overall investment growth will nonetheless be moderate, as the installation of new AMS meters was completed in 2018. In manufacturing, high growth is expected in capital-intensive industries such as basic metals and the industry group refined petroleum products, chemicals and pharmaceutical products. Norges Bank's regional network reports weakly increasing investment in service industries. Higher interest rates, moderate growth in the Norwegian economy and great uncertainty surrounding global developments will curb investment growth in the near term. We forecast that growth in business investment will fall from just over 3 per cent this year to between 1 and 2 per cent by 2022.

Consumption growth will be moderate going forward. Consumption is driven by developments in household income, wealth and interest rates. Wage income, one of the most important sources of household income, is expected to increase in the years ahead as a consequence of both higher annual wage growth and rising employment. Owing to the ageing population and increased real wages, government transfers will also grow. Weak developments in real house prices and higher interest rates will curb consumption growth, however. The result will be consumption growth in the years ahead that is slightly higher than mainland trend growth, but substantially lower than in previous upturns.

Following record-low growth in average annual wages of 1.7 per cent in 2016, wage growth picked up through 2017 and 2018 and is continuing to rise. Although nominal annual wage growth was 2.8 per cent in 2018, increased energy prices meant that there was virtually no growth in real wages deflated by the consumer price index. In addition to the selections of goods and services in the CPI, the national accounts consumption deflator also covers movements in prices for financial services and household purchases abroad. After adjustment by this inflation index, real annual wage growth was 0.8 per cent in 2018. In the near term, an improved economic situation with lower unemployment and lower energy prices will provide a basis for higher wage growth, both nominal and real. In 2022, nominal annual wage growth is expected to rise to around 3.5 per cent. Given this development, the wage share in manufacturing will in the near term be close to the average for the last 30 years.

The fall in unemployment is largely behind us. After peaking at just over 5 per cent in early 2016, unemployment averaged 3.7 per cent from November 2018 to January 2019, according to Statistics Norway's labour force survey (LFS). Although there has been a general decline in unemployment throughout the country, it has fallen most in Western Norway. Unemployment as an annual average is expected to fall to 3.6 per cent towards the end of the projection period. Because of the expected increase in the labour supply unemployment will not fall more in the course of the upturn. According

to our projections, the participation rate will pick up by about one percentage point, to just over 71 per cent in 2022. Inward labour migration is expected to undergo little change in the next few years, and will thus be far lower than it was five years ago.

Exchange rate developments going forward are shrouded in uncertainty. Interest rates are now higher in Norway than in the euro area, which according to the theory of uncovered interest rate parity, points to a weakening of the krone. At the same time, the krone is weak viewed in light of price developments in the euro area relative to Norway. This points to the krone appreciating. As there is great uncertainty concerning exchange rate movements in the near term, and it is not clear which direction aggregate economic forces will pull in, we have assumed an unchanged exchange rate through the projection period. This means that a euro will cost around NOK 9.8 in the near term. This implies a weaker krone than foreseen in our projection of December 2018. In Box 1 we show that in isolation a weaker krone exchange rate pushes the level of Norwegian economic activity up somewhat in the projection period.

We assume that the key policy rate will increase by around one percentage point from the current level by the end of 2022. Norges Bank's operational target is an annual rise in consumer prices of close to 2 per cent over time. Monetary policy shall also contribute to output and employment stabilising around the highest possible level that is consistent with price stability over time. The upturn in the Norwegian economy looks set to continue at a moderate pace. Given a somewhat tighter labour market, wage growth, and hence also domestic cost inflation, show prospects of picking up. Underlying inflation is therefore expected to increase from around 1.5 per cent for the past two years to around 2.0 per cent in the years ahead. In light of this economic scenario, Norges Bank is also expected to continue raising the key rate. We have assumed four interest rate hikes, each of 0.25 percentage point, by the end of 2022. The interest rate on home equity lines of credit will then rise to around 4 per cent in 2022.

The Norwegian economy is close to cyclically neutral. Much of the upturn that is now behind us was characterised by expansionary fiscal policy, low interest rates and wage moderation. Fiscal policy became more neutral through 2018, wage growth has picked up a little and Norges Bank has raised the interest rate for the first time in more than two years. These forces therefore appear likely to generate neutral or contractionary impulses in the years ahead. The picture for petroleum investment is the opposite, and pronounced growth is expected in 2019. On balance the Norwegian economy appears likely to be virtually cyclically neutral for the whole period up to 2022.

**Table 3. Main economic indicators 2018-2022. Accounts and forecasts. Percentage change from previous year unless otherwise noted**

	Acco- unts 2018*	Forecasts										
		2019			2020			2021			2022	
		SN	NB	MoF	SN	NB	MoF	SN	NB	MoF	SN	NB
<b>Demand and output</b>												
Consumption in households etc.	2.0	2.2	1.9	2.9	2.3	2.3	2.9	2.3	2.2	..	2.3	..
General government consumption	1.5	1.8	1.4	1.5	1.8	1.2	..	1.6	1.1	..	1.6	..
Gross fixed investment	0.9	4.7		3.0	1.2		3.2	1.0		..	1.1	..
Extraction and transport via pipelines	3.3	12.9	10.5	8.3	-0.6	3.0	6.9	1.0	0.5	..	1.5	..
Industries	1.8	3.1	3.7	5.3	1.6	1.2	3.3	1.3	0.3	..	1.7	..
Housing	-6.0	1.0	-1.4	-4.3	2.2	1.6	1.7	0.4	1.7	..	-0.3	..
General government	6.6	1.7		1.2	1.4		..	1.3		..	1.0	..
Demand from Mainland Norway <sup>1</sup>	1.6	2.1	1.7	2.3	2.1	1.8	2.3	1.8	1.6	..	1.8	..
Exports	-0.8	1.0		2.2	5.4		5.5	3.3		..	2.2	..
Traditional goods <sup>2</sup>	2.5	3.8	4.7	5.6	3.5	3.1	5.4	3.6	3.0	..	3.5	..
Crude oil and natural gas	-4.8	-1.4		-1.3	10.3		8.4	4.5		..	0.9	..
Imports	0.9	3.3	3.1	3.0	1.6	3.0	3.1	1.8	3.2	..	2.1	..
Gross domestic product	1.4	2.0	2.0	2.3	3.1	1.8	3.3	2.2	1.9	..	1.8	..
Mainland Norway	2.2	2.4	2.3	2.7	2.3	1.6	2.8	2.0	1.4	..	1.9	..
<b>Labour market</b>												
Employed persons	1.5	1.2	1.1	1.3	0.7	0.7	0.9	1.0	0.3	..	0.6	..
Unemployment rate (level)	3.8	3.7	3.8	3.7	3.7	3.8	3.7	3.7	3.8	..	3.6	..
<b>Prices and wages</b>												
Annual earnings	2.8	3.3	3.2	3.3	3.5	3.5	..	3.6	3.8	..	3.6	..
Consumer price index (CPI)	2.7	2.3	1.8	1.5	1.7	1.6	1.7	1.9	1.7	..	2.1	..
CPI-ATE <sup>3</sup>	1.6	2.3	2.0	1.8	1.9	1.9	2.1	2.1	1.9	..	2.2	..
Housing prices <sup>4</sup>	1.4	2.1	2.4	0.0	0.8	2.5		0.9	2.8		1.8	..
<b>Balance of payment</b>												
Current balance (bill. NOK) <sup>5</sup>	285	300		266	377		..	392		..	394	..
Current account (per cent of GDP)	8.1	8.1		7.3	9.7		..	9.7		..	9.4	..
<b>Memorandum items:</b>												
Money market rate (level)	1.1	1.4	1.5	1.4	1.9	1.8	1.8	2.3	2.2	..	2.3	..
Crude oil price NOK (level) <sup>6</sup>	583	571		583	564		562	551		..	538	..
Import weighted krone exchange rate (44 countries) <sup>7</sup>	0.1	2.2	-1.1	-0.7	0.1	-1.7	0.0	0.0	-1.3	..	0.0	..

<sup>1</sup> Consumption in households and non-profit organizations + general government consumption + gross fixed capital formation in Mainland Norway.

<sup>2</sup> Norges Bank forecasts exports of traditional goods and services from Mainland Norway. Ministry of Finance forecasts exports of goods exclusive of oil and natural gas.

<sup>3</sup> CPI adjusted for tax changes and excluding energy products (CPI-ATE).

<sup>4</sup> Norges Bank forecasts the housing price index published by Eiendom Norge.

<sup>5</sup> Current account not adjusted for saving in pension funds.

<sup>6</sup> Average spot price. Brent Blend.

<sup>7</sup> Increasing index implies depreciation. Ministry of Finance forecasts trade-weighted exchange rate.

Source: Statistics Norway (SN). Ministry of Finance. Meld.St.1. (2018-2019) (MoF). Norges Bank. Pengepolitisk rapport 4/2018 (NB).

## Fiscal policy

From 2014 to 2016, an expansionary fiscal policy helped to maintain activity in the Norwegian economy at a high level at a time when reduced petroleum investment contributed to a Norwegian economic downturn. The overall fiscal impulse from 2014 to 2016 was about two per cent of trend mainland GDP. During the financial crisis, there was a similar expansionary impulse in 2009 alone, which then reversed a little up to 2011. In 2017 and 2018 the impulses were modest, however, measured in terms of the structural, non-oil budget deficit (SNOBD) as a share of trend mainland GDP. In these years, growth in public sector purchases

of goods and services was somewhat higher than trend economic growth, and at the same time the general taxation level was reduced. Transfers underwent little change, however.

Preliminary national accounts figures for 2018 show growth in general government consumption of 1.5 per cent, which is appreciably lower than the previous year. Conversely, gross general government investment increased by 6.6 per cent, which is markedly higher than in 2017. This high growth is partly attributable to increased investment in transport infrastructure. The figures show that public sector purchases of goods and

services for consumption and investment purposes increased more than estimated mainland trend economic growth in both 2017 and 2018, but somewhat less last year than in 2017. Household transfers increased nominally by just over 2.5 per cent in 2018 following growth of just over 3 per cent the previous year. The real value of the transfers was thus roughly unchanged in 2018 compared with the previous year, and growth was also moderate in 2017. Real growth in public sector consumption, gross investment and transfers combined was about 2 per cent in both 2016 and 2017, close to estimated trend growth in the mainland economy. In 2018, the sum of these fiscal components increased by 1.7 per cent, so that the most important expenses in government budgets generated less impetus to the Norwegian economy than in the previous two years.

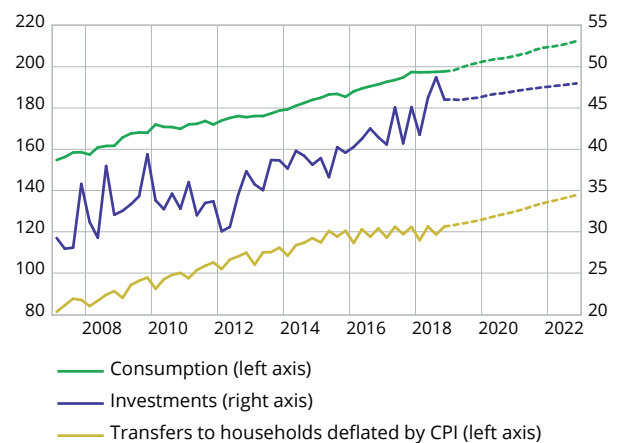
The tax rate on ordinary income for companies (excluding the financial sector) and personal taxpayers was reduced from 24 to 23 per cent in 2018. The petroleum and power supply taxation systems were revised so that these two industries were not appreciably affected by the taxation change. Bracket tax on personal income was increased, so that most of the revenue loss due to reduced tax on ordinary income was recouped through an increase in other income taxes. The increased taxes pushed up CPI inflation by 0.2 percentage point in 2018. On balance, fiscal policy was weakly contractionary in 2018.

Fiscal policy in 2019 is based on projections published in the National Budget for 2019 (NB2019) and changes due to the budget agreement between the Government of the time and the Christian Democratic Party. Growth in consumption and investment combined is expected to be 1.8 per cent, slightly lower than in 2018. Transfers are expected to increase more in real terms in 2019 than in 2018 because of the increase in real wage growth. This means that overall real growth in spending on purchases of goods and services and household transfers will increase more this year than in 2018, but the increase will still be less than estimated trend economic growth. However, some stimuli will be provided through lower indirect taxes (electricity and sugar taxes). Tax on ordinary income has also been reduced from 23 to 22 per cent, while bracket tax on personal income is being regulated so that there is little change in the household taxation level. However, some industries will be affected by several taxation changes. On balance, we forecast that fiscal policy will be roughly cyclically neutral in 2019. In NB2019, the Government forecast that SNOBD as a share of mainland trend GDP would undergo little change from 2018 to 2019.

No fiscal policy has been adopted for the period 2020 to 2022. Our projections for growth in general government consumption and investment are therefore based on extending the projections from 2019, and are thus a little lower than trend growth in the mainland economy. Transfers, on the other hand, are increasing slightly more in real terms than trend mainland economic

**Figure 2. General government**

Seasonally adjusted, billion 2016 NOK, quarter



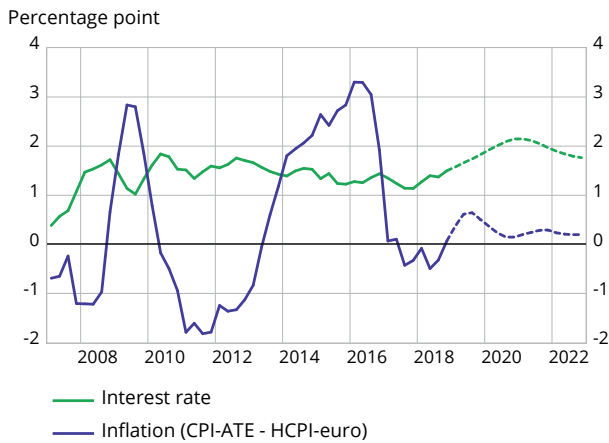
Source: Statistics Norway

growth, which is a distinct change from the preceding years. As a result, the overall demand impulses generated by general government purchases of goods and services and real transfers will result in slightly expansionary impulses from 2020 to 2022. Tax rates are assumed to be unchanged in real terms.

The value of the Government Pension Fund Global (GPGF) was around NOK 8 900 billion at the beginning of March 2019. The krone is still weak, which has increased the value of the Fund calculated in NOK. The price of crude oil has increased again, after falling since November last year, but there is great uncertainty as to how it will move in the near term. If the oil price remains above USD 60 per barrel, as indicated by market expectations, higher oil production in the next few years will increase the cash flow to the state from petroleum activities. This will bring about a substantial increase in the GPGF. As fiscal policy is approximately cyclically neutral in our projection scenario, the increase in the GPGF means that SNOBD as a share of the value of the Fund will fall from just under 3 per cent in 2019 towards 2 per cent in 2022.

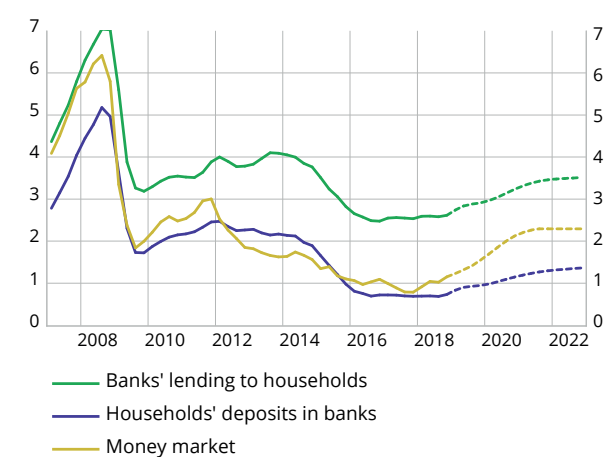
The changes in international equity prices seen in autumn 2018 show that the value of the GPGF can change suddenly and substantially. One way of managing this sort of uncertainty is to create a buffer by reducing SNOBD as a share of the GPGF. The effect achieved is an “extra” accumulation of resources in the GPGF, which is easier to accomplish in a cyclically neutral period, such as we envisage in our projections, than in a cyclical downturn when a tight fiscal policy would have a negative impact on the economy. Stabilisation policy concerns, and the fact that it will be easier to fulfil people’s expectations regarding government-funded care services when the impact of the ageing population is really felt in the 2020s, point to lower spending than adhering rigidly to a 3 per cent path.

**Figure 3. Interest rate and inflation differential  
NOK and the euro**



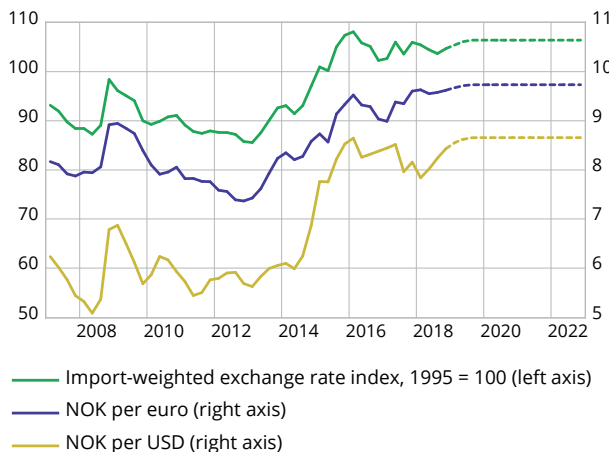
Source: Norges Bank and Statistics Norway

**Figure 4. Norwegian interest rates**



Source: Norges Bank and Statistics Norway

**Figure 5. Exchange rates**



Source: Norges Bank

**Monetary policy**

In March 2018, the Government promulgated a new Regulation on Monetary Policy. The new regulation reduced the inflation target from 2.5 per cent to 2 per cent. In practice, the new regulation does not entail any essential changes in monetary policy, as inflation, measured by the rise in the CPI, has fluctuated around 2 per cent since the introduction of the inflation target in 2001. Norges Bank has stated that the new regulation clarifies the monetary policy mandate and underpins the flexible approach to inflation targeting that has been pursued by the Bank. In its conduct of monetary policy, Norges Bank sets the interest rate with a view to stabilising inflation close to the target in the medium term.

In September 2018, Norges Bank raised the key policy rate to 0.75 per cent. Prior to that, the key rate had been at a record-low 0.5 per cent since March 2016. In the latter half of 2017 and early 2018, the 3-month money market rate was 0.8 per cent. The money market rate rose in 2018, and at the end of the year was 1.3 per cent, a level around which it remained in the first two months of 2019.

In 2018, Statistics Norway only published monthly interest rate statistics, which do not provide full coverage, but which nonetheless cover at least 75 per cent of total deposits and lending. These show that the average interest rate on lines of credit secured on dwellings was 2.6 per cent at the end of each month from January to October 2018. In November 2018 this interest rate rose to 2.7 per cent, which must be viewed in light of the interest rate hike in September. The increase in interest rates on new home equity lines of credit came in October already. The deposit rate was 0.7 per cent from January to October 2018, and increased to 0.8 per cent in November. The interest rate differential between the current lending rate and the deposit rate remained unchanged through the months in 2018 for which we have statistics.

Measured in terms of the import-weighted krone exchange rate, the krone was as weak in 2018 as the previous year, but 0.8 per cent stronger than in 2016, when it was record weak (see Box 2). The krone depreciated at the end of 2018 and has remained at this level so far in 2019. Our projections are based on the assumption of an unchanged exchange rate going forward (see Box 1). Annualised, this implies that the krone has depreciated by 2.2 per cent from 2018 to this year.

An interest rate increase from the current 1.3 per cent to 1.5 per cent by the end of the year has been priced into futures rates. Forward rates, based on interest rate swap agreements (SWAP rates), imply that the money market rate will move up towards about 2 per cent in the course of our projection horizon.



### Box 1. Assumptions for the krone exchange rate

According to the efficient market hypothesis, the current exchange rate reflects all available information. This does not necessarily mean that exchange rate changes cannot be predicted. In the absence of risk premiums, the return in two countries, measured in a common currency, must be equal. If the countries have different interest rates, this difference in return must be accounted for by an equivalent exchange rate change. This is called the theory of uncovered interest parity.

According to the theory, then, if Norway has a higher 3-month interest rate than the euro area, we can expect the krone to depreciate in the next three months. Such relationships have been repeatedly found not to hold true in empirical studies. On the contrary, a country's currency is often found to appreciate if the country has a higher interest rate than other countries.

A classic research article, Meese and Rogoff (1983), found that known exchange rate models have difficulty in predicting exchange rate changes, and that a forecast based on an unchanged rate, often referred to as "random walk", performs better than these models on the whole. This is the reason that several forecasters, like the Bank of Canada and the European Central Bank, assume unchanged exchange rates in their projections. The Bank of England bases its projections for sterling on something in between an unchanged exchange rate and the exchange rate path that follows from uncovered interest rate parity. The IMF, which makes projections for countries with various inflation levels, assumes an unchanged real exchange rate in its projections.

There is an extensive international literature on the ability of exchange rate projections to perform better than an unchanged exchange rate. The results diverge considerably. Some find that models/forecasters perform better than an unchanged exchange rate, while others find that this is not the case. For example, Ince and Molodtsova (2017) find support for professional forecasters' beating random walk, and Rossi (2013) shows that predictions based on Taylor rules and a country's net foreign assets may be more accurate than an unchanged exchange rate. Norges Bank and Sveriges Riksbank make exchange rate projections that differ from an unchanged exchange rate going forward. Statistics Norway has also done that up to now.

Hungnes (2018) studies how different projection paths can be compared. We have used this to compare Statistics Norway's projections for the krone exchange rate with an exchange rate path based on an unchanged exchange rate. When we base the unchanged exchange rate on the exchange rate observed at the beginning of the period for which we normally prepare the projections, about two weeks before the editorial cut-off, we find that this and Statistics Norway's projections have been about equally accurate. If, instead, we compare Statistics Norway's projections with the unchanged exchange rate the day before the editorial cut-off for the projections, we find that Statistics Norway's projection has not contributed to improving the random walk projection for the krone exchange rate. The analysis shows that it is important to have the most updated observations possible of the krone exchange rate when forecasting the path of the exchange rate, and that an assumption of an unchanged krone exchange rate going forward is difficult to beat.

In this report, we base ourselves on unchanged exchange rates going forward, but there is great uncertainty surrounding such

exchange rate movements. In the following, we use simulations from the KVARTS macroeconomic model to illustrate what our projections would have looked like with a stronger exchange rate in the years ahead. In the simulations, we compare the projection path with an alternative path where the import-weighted krone exchange rate strengthens by 0.45 percentage point each quarter from Q2 this year. The krone will then be an annualised average of around 6 per cent stronger by 2022. This is broadly in line with the appreciation of the krone on which our previous projection was based, and is also in line with Norges Bank's exchange rate projection in the Monetary Policy Report of December 2018.

The exchange rate is an important variable in economic developments, and it affects activity through cost-competitiveness. According to KVARTS, a stronger krone results in reduced exports and increased imports. A stronger krone also leads to lower inflation, which has a positive effect on household real disposable income, which in turn pushes up consumption. However, the dominant effect is a negative impact on foreign trade, so that Norwegian mainland GDP is reduced by a total of 0.4 per cent towards the end of the projection path. The effects on the real economy are eased by the fact that the key policy rate rises less than in the projection scenario. In the simulation, fiscal policy is kept unchanged, and we have not taken account of the fact that the exchange rate affects the size of the Government Pension Fund Global measured in NOK, and hence the possibility of using petroleum revenue over the government budget.

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#### Effects of a stronger krone exchange rate. Deviation from projection scenario in per cent

	2019	2020	2021	2022
Mainland GDP	0.0	-0.1	-0.3	-0.4
- Manufacturing	-0.1	-0.4	-1.0	-1.6
Consumption, household etc.	0.0	0.2	0.4	0.7
Household real disposable income	0.1	0.4	0.7	1.1
Exports, traditional goods	-0.1	-0.3	-0.6	-1.0
Employment	0.0	-0.1	-0.1	-0.2
Unemployment (percentage points)	0.0	0.0	0.1	0.1
Consumer price index	-0.1	-0.4	-0.7	-1.1
Money market rate (percentage points)	0.0	-0.1	-0.3	-0.4
Memo: Import-weighted krone exchange rate	-0.8	-2.6	-4.4	-6.1

## Box 2. The import-weighted krone exchange rate and the trade-weighted exchange rate index

Approximately 60 per cent of Norway's foreign trade in traditional goods takes place with countries that are not in the EU monetary union. Traditional goods are exports and imports of goods excluding oil, gas, ships and platforms. The krone exchange rate as measured against the euro accordingly provides limited information about the international value of the Norwegian krone. It is therefore important to supplement with alternative exchange rate indicators that provide a more accurate expression of the breadth of Norway's trading pattern. Examples of these are the trade-weighted exchange rate index (TWI) and the import-weighted krone exchange rate (I44).

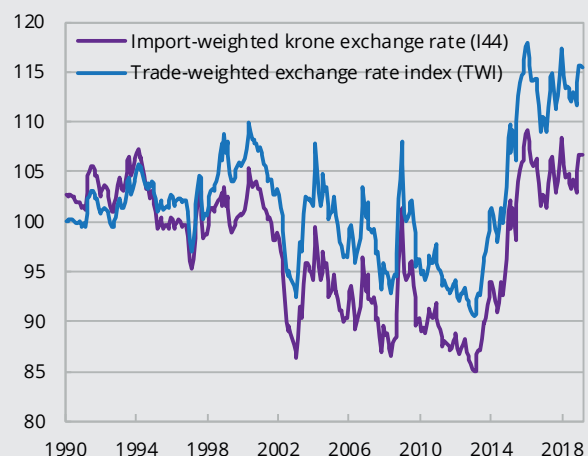
The trade-weighted exchange rate index is calculated from the exchange rates of the Norwegian krone against the currencies of Norway's 25 most important trading partners, and is a geometrical average based on OECD current trade weights. The weights in the import-weighted krone exchange rate are calculated on the basis of the composition of imports of traditional goods from Norway's 44 most important trading partners. The current import weights for China and South Korea are larger than the trade weights, while the reverse applies to the euro area and the UK. Apart from that, there are small differences in the current weights in the two indices. Both the I44 and the TWI are structured in such a way that high values mean a weak krone and low values a strong krone.

The figure shows on both indices that the krone was consistently considerably weaker in the 1990s than from early in the 2000s and up to 2013. The krone was record-strong in early 2013, then depreciated markedly, partly as a result of the decline in the petroleum industry. However, the paths of the two indices do not quite coincide. For example, in January 2013 the krone measured by the import-weighted exchange rate was around 17 per cent stronger than the average for the 1990s, whereas according to the trade-weighted index it was only 12 per cent stronger. This reflects the fact that the two indices are constructed for different purposes. The weights in the trade-weighted exchange rate index are intended to reflect the competitiveness of Norwegian manufacturing in both the export and the domestic market, and not merely have relevance for the domestic market and Norwegian prices. The different paths are due to the fact that the krone strengthened considerably more in relation to countries from which Norway has substantial imports than in relation to countries to which it has substantial exports. The international purchasing power of the krone was

accordingly strengthened more than the international competitiveness of Norwegian manufacturing, viewed in isolation, was weakened by the exchange rates. This trend was particularly pronounced from 1993 to 2004.

From January 2013 to January 2016, the krone depreciated by 28.4 per cent measured by the import-weighted exchange rate and by 30.2 per cent measured by the trade-weighted exchange rate index. This meant that the international purchasing power of the krone weakened slightly less than the international competitiveness of Norwegian manufacturing strengthened. The krone appreciated quite substantially through 2016 before weakening again in 2017. It remained weak in 2018, and on an annual basis was as weak in 2018 as in 2017, measured by the import-weighted exchange rate, and 0.5 per cent weaker measured by the trade-weighted exchange rate index. At the beginning of 2019 the krone was weak, but it was also weak at the beginning of 2018. Measured in terms of the import-weighted exchange rate, the krone was 0.7 per cent weaker in January 2019 than in the same month the previous year. Measured by the trade-weighted exchange rate index, the krone depreciated by 0.8 per cent in the same period.

The import-weighted krone exchange rate (I44) and the trade-weighted exchange rate index (TWI). 1995=100



The weak krone will contribute to higher exports and lower imports as a result of a higher price level abroad, measured in NOK. It will accordingly also contribute to higher GDP. At the same time, the weak krone fuels inflation. Both point to higher interest rates. In Box 1 we have calculated that, in isolation, the weak krone in our projections provides scope for 1-2 extra interest rate increases, compared with an appreciation of the krone approximately as in the previous Economic Survey.

We have included four interest rate hikes in our projections. The money market rate will then rise to slightly over 2.3 per cent in 2022. This is a slightly lower interest rate path than in the previous Economic Survey, but at the same time somewhat higher than what is priced into the forward rates. Our slight downward revision of the interest rate path in Norway is mainly due to the downward revision of global real economic

developments and lower interest rates in both the euro area and the USA.

### Household income, consumption and saving

The real disposable income of households and non-profit organisations decreased by just over 1.5 per cent in 2016, after average annual growth of just over 3.5 per cent from 2008 to 2015. If we exclude share dividend payments, which fell from 2015 to 2016 because of increased taxation of this income, growth in real disposable income remained weak in 2016, at around zero per cent. This is attributable largely to developments in wage income, the most important source of household income. Owing to a marked fall in real wages and close to zero employment growth, wage income made a large negative contribution to growth in real disposable income in 2016.

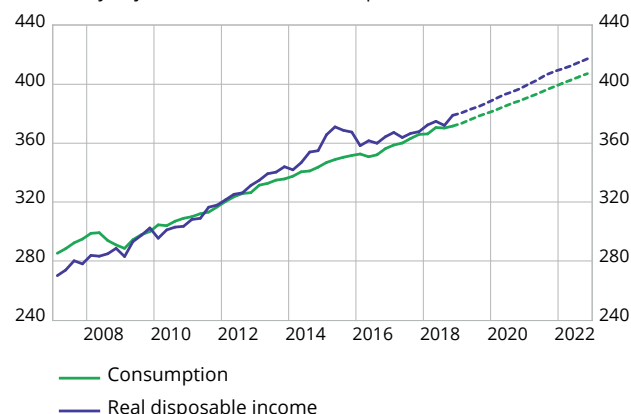
Real disposable income, including and excluding disbursements of share dividend, picked up appreciably in both 2017 and 2018, with growth rates of just under 1.5 per cent and 2.5 per cent. Wage income contributed almost 2.5 percentage points to growth in real disposable income last year. Although growth in real wages was modest, high employment growth contributed to increasing wage income. The contribution of tax on income and wealth was negative in 2018, at around one percentage point, because wage income increased and tax reductions were small. Net capital income also made a clear negative contribution to growth in real income last year, while government transfers did not make any significant contribution.

Consumption in households and non-profit organisations increased by 2.0 per cent in 2018 compared with 2.2 per cent the previous year. By way of comparison, consumption increased by around 5 per cent annually during the cyclical upturn prior to the financial crisis. Seasonally adjusted QNA figures show that consumption moved on a weak trend through the second half of 2018, following strong growth in Q2 and near zero growth in Q1. This largely parallels the course of goods consumption, which fell in all quarters apart from Q2, when growth was a full 1.4 per cent, or an annualised 5.7 per cent. Purchases of food and vehicles, two important groups of consumer goods, are mainly responsible for the unstable developments in goods consumption last year. Lower vehicle purchases last autumn may be attributed to the new emission standard, WLTP, which prompted some manufacturers to halt deliveries of various models with petrol engines. The fall in goods consumption through the second half of the year is also attributable to weak developments in purchases of clothing and footwear and of furniture and white goods. However, electricity consumption, which fell by over 10 per cent in Q2 because of a warm spring and early summer, slowed the decline in goods consumption in Q3 and Q4.

The goods consumption index for January this year shows seasonally adjusted growth of 0.3 per cent after an equivalent fall in December last year. Purchases of food, beverages, furniture, clothing and footwear and electricity pushed up goods consumption in the first month of this year, while purchases of vehicles detracted from this upswing following strong growth the previous month. On balance, goods consumption was nonetheless 0.3 per cent lower in the last three months for which we have figures (November–January)

**Figure 6. Income and consumption in households**

Seasonally adjusted, billion 2016 NOK, quarter



Source: Statistics Norway

compared with the three previous months (August–October).

Growth in consumption of services has been stable, remaining for the most part between 0.5 and 1.0 per cent each quarter for the past two years. On an annualised basis, consumption of services grew by 2.6 per cent in 2018, approximately the same as the previous year, with particularly large contributions to growth from leisure and hotel and restaurant services.

The household saving ratio increased by about 6.5 percentage points in the period from 2008 to 2015, from a level of around 4 per cent in 2008. The saving ratio excluding share dividend payments increased by about 3.5 percentage points in the same period, from a level of about 1.5 per cent. The increase in the saving ratio in this period can probably be attributed to precautionary saving in the wake of the financial crisis and the pension reform that was introduced in 2011. However, the saving ratio including and excluding share dividend payments fell in 2016 to around 7 and 3 per cent, respectively, as a result of weak income developments. The saving ratio fell by just under a further one percentage point in the years 2017 and 2018 combined.

Developments in consumption are largely determined by changes in household income, wealth and interest rates. In the years 2019 to 2022, growth in real wages of between 1 and 2 per cent, coupled with employment growth of between 0.5 and just over 1 per cent, will push up growth in real disposable income. Government transfers will also contribute positively to growth in

**Table 4. Real disposable income by households and non-profit organisations. Percentage growth compared with previous year**

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Forecasts			
												2019	2020	2021	2022
Total	3.4	3.2	2.3	4.1	4.4	3.9	2.9	5.5	-1.7	1.4	2.4	2.1	2.7	2.6	2.2
Excl. share dividends	2.6	3.4	1.8	4.1	4.3	3.8	2.4	2.4	0.0	1.4	2.4	1.5	2.4	2.4	2.3

Source: Statistics Norway.

### Box 3. Higher interest burden ahead

In the KVARTS model, the household interest burden affects the Norwegian economy through demand for goods and services. When the interest burden increases as a consequence of higher interest rates and/or loan debt, household disposable assets for purposes other than servicing debt will be reduced and consumption growth will normally be lower.

For several years, growth in household debt has been substantially higher than income growth. As a result the household debt burden, measured as aggregate loan debt as a percentage of disposable income, was at a historic high of around 245 per cent at the end of 2018. With a high debt burden and floating interest rates on most of their debt, households are fairly vulnerable in the sense that even moderate interest rate increases can rapidly result in a substantially higher interest burden and less disposable assets for consumption purposes.

In the national accounts, household disposable income is calculated as the difference between wage income, mixed income, capital income (mainly interest income, share dividends and estimated return on insurance claims), government transfers and other income on the one hand and taxes, capital expenses (mainly interest expenses) and other expenses on the other. In other words, interest expenses have been excluded from this concept of income. In order to calculate the interest burden as a share of the budget, we have to measure interest expenses in relation to the sum of disposable income and interest expenses, and at the same time adjust for the fact that household interest expenses are tax-deductible. The taxation rate on ordinary income has been gradually reduced, from 28 per cent in 2013 to 22 per cent in 2019.

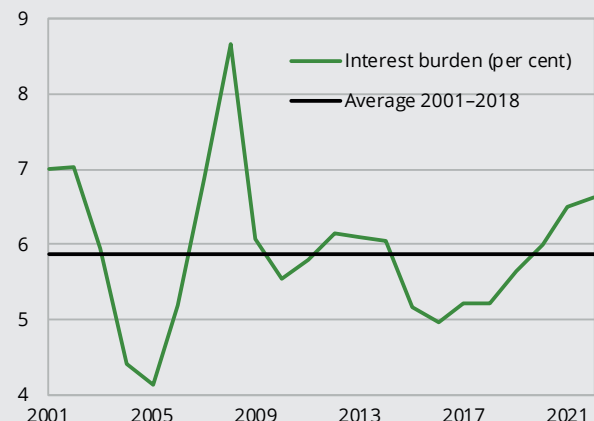
The figure shows the historical development of the household interest burden in the period from 2001 to 2018, during which Norwegian monetary policy has been based on inflation targeting. We see that the household interest burden increased sharply from around 4 per cent in 2005 to over 8.5 per cent in 2008, in pace with rising interest rates in the cyclical upturn prevailing at that time. In the wake of the financial crisis, the interest burden fell to levels of around 6 per cent. With the downturn that followed the fall in the oil price in 2014, the interest burden fell further, to around 5 per cent in 2016. Although the tax deduction was reduced and the debt burden increased, the fall in interest rates from 2014 to 2016 led to a decrease in the interest burden in these years. In the years 2017 and 2018, interest rates remained unchanged at a low level, and the interest burden increased slightly as a consequence of a higher debt burden and lower tax deductions.

According to our projections, the household interest burden will increase in the next few years. There are two reasons in particular for this. First, we forecast that debt will continue to increase more rapidly than household income. Second, we assume that lending rates will increase going forward, and this will be by far the most important contributor to the increased interest burden. This effect will be reinforced by the fact that the tax rate on interest deductions has been reduced to 22 per cent.

Next year, the household interest burden will rise above the average for the period 2001–2018. Whereas the interest burden this year is 4 per cent lower than this historical average, in 2022 it will be 12 per cent higher than the average. All in all, the interest burden will increase by just under 1.5 percentage points in the projection period. In isolation, the increased interest burden will lead to lower growth in disposable income, which in turn will constrain household consumption growth in the projection period.

Our projections paint a picture of the household interest burden for the next few years that is not abnormally high compared with the historical period with inflation targeting. If the near-term rise in interest rates should prove larger than we have assumed, the household interest burden will be even higher. In such a situation, the level of the household interest burden could be more critical for the Norwegian economy and financial stability than indicated by our projections.

The interest burden in households<sup>1</sup>



<sup>1</sup> Interest expense after tax measured as a percentage of disposable income plus interest expense after tax.

Source: Statistics Norway.

real disposable income through the projection period, following weak growth in 2018. The growth in transfers in the years ahead is partly due to increased old-age pensions. Conversely, net capital income will curb real income growth, as interest on household debt will increase somewhat over the next few years. We expect average annual growth in real disposal income of just under 2.5 per cent in the projection period, and slightly less when share dividend payments are excluded. This will stimulate development in consumption. However, weak developments in real house prices and overall wealth in real terms will dampen consumption growth in the near term. Higher real after-tax interest rates may also dampen consumption growth somewhat. All in all, moderate annual consumption growth of just over 2 per cent this year and in the next few years is indicated.

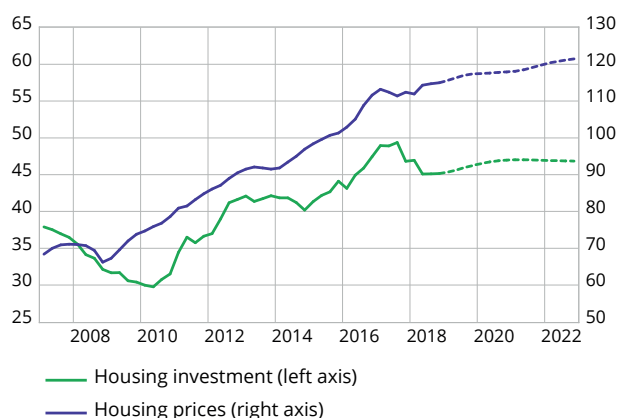
Given our projections for income, consumption and wealth, the saving ratio will remain approximately unchanged this year and then rise by about 1.5 percentage points through the last three years of the projection period. The saving ratio level in 2022 will then be about 8 per cent, compared with an average level of around 6.5 per cent for the period from 2008 to 2018.

### House prices and housing investment

According to Statistics Norway's quarterly house price index, the annual average rise in house prices was as much as 5.5 per cent in the period from 2009 to 2016. In 2017, too, the annualised rise in house prices was strong, at 5 per cent. This rise occurred despite the marked fall in prices through 2017 Q2 and Q3 as a result of a record-high supply of dwellings, lower population growth than previously and a tightening of the

**Figure 7. Housing market**

Seasonally adjusted. Left axis: billion 2016 NOK, quarter.  
Right axis: index, 2015 = 100



Source: Statistics Norway

Mortgage Regulations with effect from 1 January 2017. House prices in 2018 were only 1.4 per cent higher than the previous year.

Seasonally adjusted figures show that the price fall through 2017 Q2 and Q3 stopped at year-end 2017/2018 and reversed into a new rise in Q2 last year. Subsequent developments have been fairly flat. In 2018 Q4, house prices were about 1.5 per cent higher than the level in 2017 Q1. Movements in prices for flats in the Oslo area contributed substantially to the fall in prices for Norway as a whole, and the new upturn was similarly dominated by a strong rise in prices for the same type of dwelling in the same region. The monthly house prices statistics from Real Estate Norway show a seasonally adjusted fall in house prices of just over 2.5 per cent from March 2017 to January 2018. The fall was reversed in its entirety from January to May last year, and house prices then edged up by about 0.3 per cent over the remainder of 2018. In January this year house prices rose by as much as 0.5 per cent, according to Real Estate Norway, while there was no rise in February.

In Statistics Norway's model, house prices are stimulated by an increase in real disposable income and lower real interest rates, and curbed by an increased supply of dwellings and lower population growth. House prices are also influenced temporarily by changes in households' expectations regarding both their own financial situation and the Norwegian economy. Restrictions that lead to less borrowing will also curb house prices. The new Mortgage Regulations, in force since 1 July 2018, are largely a continuation of the borrowing requirements in the Mortgage Regulations of 1 January 2017. Whereas real disposable income will increase going forward, the lending rates facing households will rise further in pace with money market rates. Higher lending rates are forecast to constrain borrowing for housing-related purposes, with the result that growth in household debt will decrease gradually from around 6 per cent in 2018 to around 4 per cent in 2022. At

the same time, higher lending rates will increase the household debt burden in the near term (see Box 3). After several years of increased optimism for the future, Finance Norway's consumer confidence indicator has now fallen for four consecutive quarters, probably owing to increased fear of higher interest rates and greater uncertainty concerning global economic developments. According to our model, weakened household faith in the future will subdue house prices somewhat in the short term.

As in our last report, we envisage a cautious rise in house prices in nominal terms through the projection period as a consequence of a continued fairly good balance between demand and supply in the housing market. Population growth, and hence growth in housing demand, will increase less in the near term than in the years prior to the housing market downturn. As housing investment fell by as much as 6 per cent as an annual average in 2018, the supply of dwellings, i.e. housing capital, will also increase less in the near term than in recent years.

Seasonally adjusted figures show that housing investment fell through the second half of 2017 and the first half of 2018, in line with a falling trend in housing starts, measured in terms of area, since March 2017. Housing investment remained virtually at a standstill through the second half of last year. Although the fall in housing starts has come to a halt and reversed into renewed, cautious growth in recent months, weak developments in real house prices will place a damper on housing investment going forward. We assume that housing investment will rise during the projection period, but at a very moderate pace. Our projections indicate that the level of housing investment in 2022 will be around 3 per cent lower than the peak in 2017.

### Petroleum investment

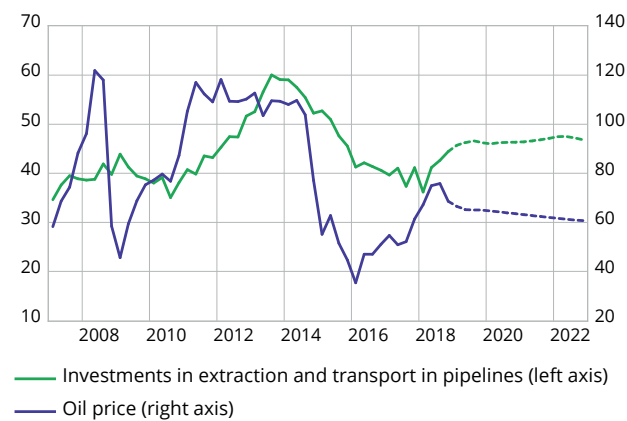
The plunge in the oil price from 2014 to 2016 led to petroleum investment falling by a whole 30.3 per cent from 2013 to 2017. The fall in investment reduced demand for capital goods and services, which in due course resulted in markedly lower prices for factor inputs in the petroleum production industry. The combination of higher oil prices and lower costs triggered a number of new investment projects on the Norwegian continental shelf in 2017 and 2018. This led to a 3.3 per cent increase in petroleum investment in 2018 compared with the previous year.

The turning point for petroleum investment occurred in 2018 Q1. According to seasonally adjusted QNA figures, the investment level increased by as much as 13.8 per cent from Q1 to Q2 last year. Third quarter growth was 3.5 per cent, while preliminary QNA figures for Q4 show growth of 4.3 per cent.

According to Statistics Norway's last investment survey (KIS), licensees on the Norwegian continental shelf

**Figure 8. Petroleum investments and oil price**

Seasonally adjusted. Left axis: billion 2016 NOK, quarter. Right axis: USD per barrel



Source: Statistics Norway

estimate nominal investment in 2019 to be about NOK 173 billion, which is 1.4 per cent lower than estimated in the previous quarter. The downward revision is made in exploration. The projection indicates nominal growth of 7.9 per cent in 2019, compared with the corresponding projection for 2018 made a year ago. This projection for 2018 was the highest made for 2018, and was a full 5.4 per cent higher than final investment in 2018. For the past 10 years, average projections made in February of the statistics year have been 2 per cent higher than realised investments. We therefore assume that the present projection for 2019 will not overestimate final investment to the same extent as the corresponding projection for 2018. No new development projects have been included in the statistics since the previous count, but a plan for development and operation (PDO) of the Duva project was submitted just after publication. It was therefore not included. We expect PDOs for several development projects, including Luno 2, Fogelberg and Tor II, to be submitted this year. These are all relatively small developments, but most of them are expected to get under way quickly, so that there will in fact be some investment activity this year already. According to our calculations, investment in these projects in 2019 will amount to around NOK 4.5 billion. Experience indicates that when planned investment growth is high, some of the plans will be rescheduled for later. We assume that some of the high investment growth in the plans for 2019 will be rescheduled for 2020. We forecast aggregate annual investment growth of 13 per cent in 2019.

Investment developments in 2020 are projected to be somewhat weaker than assumed in the previous Economic Survey. On the one hand, there will be several new development projects in 2020, and the projects that are expected to come in the current year will have higher investment next year. We also forecast moderate investment growth next year in the categories exploration, fields in operation and shut-down and removal. On the other hand, investment in Johan Sverdrup Phase 1, Martin Linge and some smaller developments

will be phased out next year when the development of these projects is completed. We now expect the effect on investment of the phasing out of the large projects to predominate, resulting in a slight fall in investment next year.

We assume moderate investment growth in the categories fields in operation and exploration in 2021 and 2022. Investment activity in the category shut-down and removal is projected to increase moderately in 2021, but fall slightly in 2022. PDOs for many new developments are likely to be submitted in 2021 and 2022. Several of these projects are relatively large. According to plan, there will also be extensive investment in the large projects Johan Castberg, Johan Sverdrup Phase 2 and Snorre Expansion up to and including 2022. We assume that the investment volume will grow by just over 1 per cent in 2021 and 2022.

The costs of petroleum investment have fallen markedly in recent years. Investment prices fell by as much as 5.2 per cent in 2017. According to the QNA, prices edged down 1.2 per cent in 2018. In the near term, the increase in demand for capital goods and services is expected to result in a moderate rise in prices in the projection period.

Petroleum production was subdued in 2018, Gas production was 2 per cent lower than the record production in 2017, while extraction of liquids (crude oil, NGL and condensate) fell 6 per cent compared with the previous year. The Norwegian Petroleum Directorate expects a moderate decline in both oil and gas production this year. In the years 2020–2022, gas production is expected to remain stable at about the same level as in 2017, while oil production is expected to increase substantially from 2019 to 2022 as a result of Johan Sverdrup, which according to plan will come on stream late this year. The Norwegian Petroleum Directorate expects oil and gas production in 2022 to be only 4 per cent lower than in the record year of 2004.

### Business investment

Business investment increased by 16.5 and 9.2 per cent in 2016 and 2017, respectively, and by 1.8 per cent in 2018. There were large differences in investment growth across industries in 2018. The investment level in power supply was record high, with annual growth of 27 per cent. This was attributable to the completion of the installation of AMS meters and investment in wind power. Manufacturing investment was also high, and grew by 10.4 per cent, headed by the food industry and refined petroleum products, chemicals and pharmaceutical products. Investment in services was weaker, however, and in consequence aggregate investment growth was moderate.

The manufacturing investment projections for 2019 in Statistics Norway's investment intentions survey, published in February, are about 30 per cent higher than the corresponding projections for 2018 published in

February the same year. The projections are in current prices, so the survey implies somewhat lower growth in manufacturing investment measured in constant prices. The expected upturn in 2019 is broad-based, with growth of over 5 per cent in the food industry, refined petroleum products, chemical and pharmaceutical products and basic metals. Individual projects in pulp and paper manufacturing, wood and wood products and repair of machinery also make positive contributions.

The investment intentions survey indicates a levelling off of investment in power supply. This must be viewed against the backdrop of the high growth in 2018 in connection with the installation of AMS Smart meters. This investment is gone in 2019, but will be compensated for by investment in wind power production. The figures for 2019 are marginally lower than the projections for 2018 made one year ago.

Norges Bank's regional network surveys economic developments in Norway, including expected investment, by compiling information from businesses throughout Norway. The first report for 2019 will be published on 12 March. The two previous reports showed an expected upswing in retail trade and a decline in other services. Viewed in light of the declining growth in overall business investment, this may be an indication that business investment as a whole will be moderate in 2019, despite positive impulses from manufacturing.

We expect business investment growth to be about 3 per cent this year and somewhat lower in the years ahead. Our projections are based on the assumption that higher interest rates, a neutral domestic economic situation and weak global growth will curb investment in the years ahead.

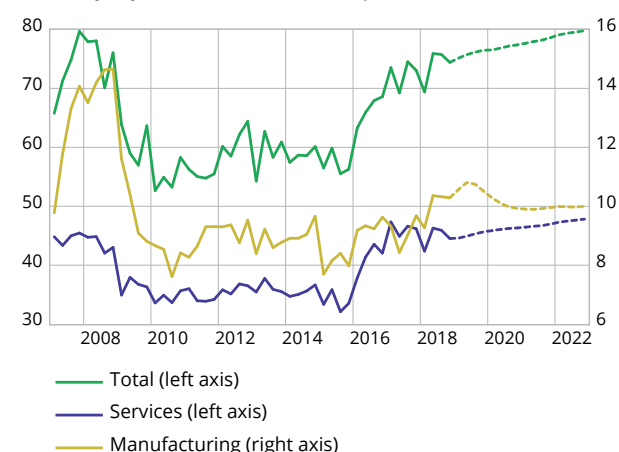
### External trade and current account

Following a large decline in 2016, exports of traditional goods picked up again through 2017 and 2018. In 2018 Q4, exports measured in constant prices were back at roughly the peak level in 2015, according to seasonally adjusted QNA figures. Exports of refined petroleum products, chemical and mineral products and farmed fish made substantial contributions to growth in 2017 and 2018. In 2018 there was also strong growth in exports of products from the primary industries agriculture, forestry and fishing, and of engineering products. On the other hand, exports of metals and metal products fell, after a slight increase in 2017. These product groups are all large, and each of them contributed between 10 and 20 per cent of the aggregate export value of traditional goods in 2018.

While the annualised volumes of traditional goods exports increased moderately in 2017 and 2018, the price index for overall exports of traditional goods rose by from 5 to 6 per cent in each of these two years. The rise in prices for refined petroleum products accounted for from 1 to 2 percentage points of this increase, and

**Figure 9. Investments, Mainland Norway**

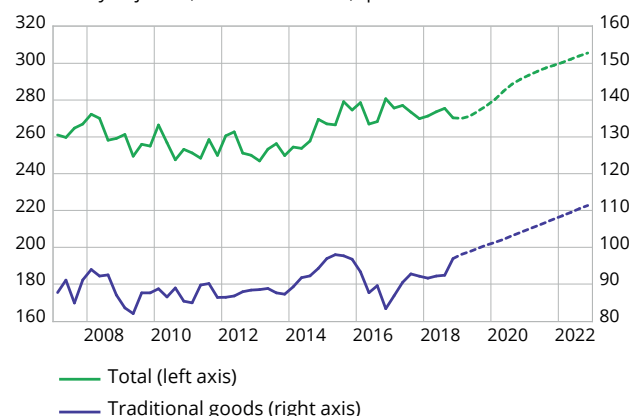
Seasonally adjusted, billion 2016 NOK, quarter



Source: Statistics Norway

**Figure 10. Exports**

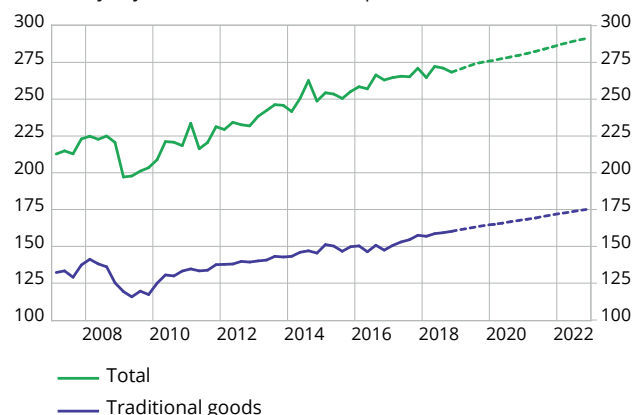
Seasonally adjusted, billion 2016 NOK, quarter



Source: Statistics Norway

**Figure 11. Imports**

Seasonally adjusted, billion 2016 NOK, quarter



Source: Statistics Norway

## Box 4. Import shares

Consumption of goods and services can be divided into final deliveries – i.e. consumption, investment and exports – and intermediate inputs, which constitute a production factor. Some of the final deliveries come directly from imports. The remainder are delivered by Norwegian manufacturers, who use imported intermediate inputs to varying degrees.

This box shows estimated import shares for the Norwegian economy. We use a static input-output model for the purpose. The analysis takes account of imported intermediate inputs, including through subcontractors, in addition to direct imports of final deliveries. However, the static input-output model does not take account of factors such as changes in relative prices, the knock-on effects of changes in earnings, needs for changes in production capacity (investment) and changes in interest and exchange rates. The import shares in the table have been calculated for 2016, which is the last year for which final national accounts figures are available. For purposes of comparison, we also show import shares for 2014 and 2015 from previous calculations. There are generally relatively small changes in import shares from year to year.

Of the main groups of final delivery categories, investment is the one with by far the highest share of imports. We decompose total new investments by both type and industry. The import share in construction investment is relatively modest, while it is high for ships. Other types of investment also have a considerable share of imports. Shipping has by far the highest import share of the industries. The share of petroleum-related imports (extraction and pipeline transport) rose somewhat in both 2015 and 2016 and is markedly higher than the average for other investment. The increase in the share of imports for other vehicles in 2016 is due to electric cars replacing fossil fuel cars subject to high taxes.

Consumption accounts for a little more than half of total final deliveries and a somewhat lower share of imports than the rest of the Norwegian economy. However, there is wide variation among the various consumption subgroups. Norwegians' consumption abroad is regarded in its entirety as imports. Vehicles account for a substantial share of imports, as very few cars are manufactured in Norway. The reason the import share is not even higher than 50 per cent is that mark-ups and taxes account for a large share of the costs of vehicle purchases. The subgroup 'Miscellaneous goods' – which consists of goods such as clothing and footwear, furniture and electronics – also has a relatively high import share of over 40 per cent. Energy products are largely produced in Norway, but despite Norway's high oil production, a considerable amount of petrol and diesel fuel is imported. In periods of low electricity production, power is also imported from neighbouring countries. In aggregate, energy products consumed by households have an import share of around 15 per cent. Apart from dwellings, public sector consumption, which consists largely of labour costs, is the consumption component with the lowest total import share.

There are also major variations among the different export subgroups. Exports of shipping services and traditional goods have a high import content due to the fact that a large proportion of the intermediate inputs are purchased outside Norway. Exports

Importandeler		Import share		
		2014	2015	2016
	Share 2016			
Total final deliveries <sup>1, 2</sup>		24.0	24.8	25.3
<b>Consumption</b>	<b>0.537</b>	<b>22.8</b>	<b>23.2</b>	<b>22.3</b>
Consumption by households and non-profit org. <sup>3</sup>				
	0.369	30.2	30.2	28.9
Food and beverages	0.051	31.2	30.4	30.7
Energy products etc.	0.020	15.5	15.1	14.5
Vehicles	0.016	39.0	40.4	49.9
Misc. goods	0.064	49.1	51.7	43.3
Housing	0.060	6.1	4.9	4.8
Other services	0.121	17.7	17.5	16.6
Norwegians' consumption abroad	0.027	100.0	100.0	100.0
Public sector consumption	0.188	9.2	9.4	9.4
<b>New investments</b>	<b>0.196</b>	<b>34.8</b>	<b>35.4</b>	<b>38.2</b>
By type:				
Buildings and infrastructure	0.083	20.4	21.6	22.0
Ships	0.007	54.5	64.2	68.9
Other types	0.093	44.7	45.7	49.0
By industry:				
Mainland Norway	0.152	30.5	34.0	33.2
General government	0.041	26.9	32.6	29.3
Manufacturing	0.009	42.4	45.2	44.4
Other goods-producing industries	0.014	39.3	40.5	45.4
Housing	0.045	20.4	21.6	22.0
Other service industries	0.042	37.4	40.3	41.0
Extraction and pipeline transport	0.041	43.2	45.3	49.5
Shipping	0.003	52.3	51.1	83.9
<b>Exports</b>	<b>0.260</b>	<b>19.5</b>	<b>20.9</b>	<b>21.8</b>
Traditional goods	0.094	31.4	31.9	30.1
Oil and gas	0.097	3.9	3.6	4.4
Other goods	0.003	30.7	26.7	30.7
Shipping etc.	0.022	55.5	53.0	53.9
Other services	0.043	25.3	22.3	21.5

<sup>1</sup> Share of the value of final deliveries

<sup>2</sup> Shares in column 1 do not add up to exactly 1 because changes in stocks are excluded.

<sup>3</sup> Household consumption is corrected for Norwegians' consumption abroad. Sale of used fixed assets is excluded from exports

Source: Statistics Norway.

of oil and gas are distinguished by the low share of imports involved. This is because most of the production value originates from the Norwegian continental shelf, and thus consists of petroleum rent.

depreciation of the krone for up to 2 to 3 percentage points of the overall annual price rise. The depreciation of the krone meant that the rise in prices was broad-based. Electricity had the highest price rise over the two years combined, at over 60 per cent, while prices for refined petroleum products rose by over 40 per cent and for basic metals by over 20 per cent.

The volume of and the price index for exports of oil and gas have gradually diverged since the turn of the century. From 2003 up to and including 2013, exports of oil and gas fell by almost one third, while the price in NOK tripled. The price was then halved through 2014 and 2015, while the export volume increased moderately. Strong growth in oil and gas exports in 2016 slowed



in 2017 and reversed into a decline in 2018 – largely because of maintenance work and reduced production. However, the price has increased by almost 70 per cent over the past three years. The rise in price is due both to the increase in the oil price in US dollars, and a stronger dollar exchange rate. Whereas natural gas exports increased by 7 per cent in 2017 and fell by almost 2 per cent in 2018, exports of crude oil have fallen by over 11 per cent over the past two years combined.

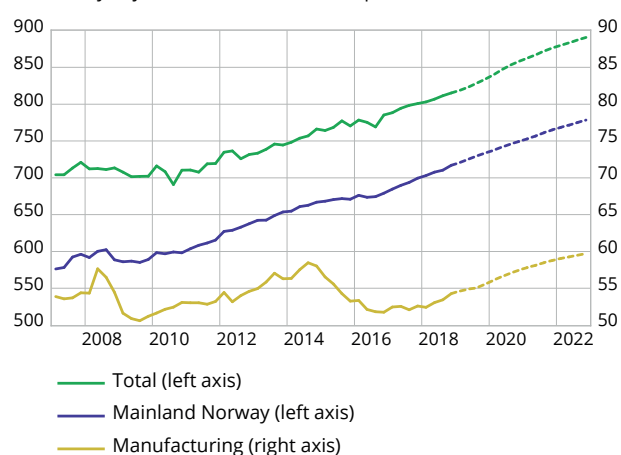
After several years of solid growth, exports of services levelled off in 2016 and fell in 2017 before edging up a little again in 2018. Developments through last year were weak, but the figures for the second half of the year are uncertain and may be revised upward. Shipping increased substantially in 2017 and 2018, while exports of petroleum-related services and financial and business services fell in both years. Global political turbulence and trade restrictions point to even weaker growth in many international markets than envisaged earlier. This implies somewhat lower growth in demand for Norwegian export products and services than previously projected. This negatively impacts mainland exports, while an expected weak krone has a countering effect. On balance, we project steady and slightly higher growth for mainland exports in the projection period. Oil and gas exports will increase significantly when the big Johan Sverdrup field begins producing, in Q4 this year according to plan. This will boost growth in aggregate exports of goods and services.

Since the financial crisis and subsequent recovery, imports of traditional goods have fluctuated round trend growth of almost 3 per cent. Reduced imports of refined petroleum products in both 2017 and 2018 pushed down growth in traditional goods exports to below trend growth both years. By far the largest product group, engineering products, accounts for about a third of total traditional goods imports. An increase of 7 per cent in the volume of imported engineering products in 2018 therefore made clearly the largest contribution to growth of total traditional goods imports. Service imports levelled off in 2017 and 2018. Norwegians' travel abroad accounted for about a third of total service imports, and relatively high growth both years (despite the weaker krone) in that category alone maintained service imports at a high level. We expect low growth in domestic demand and a continued weak krone, and hence also declining growth in imports of goods and services for the next few years.

The trade surplus increased in both 2017 and 2018. The strong rise in prices for oil and gas exports accounts for by far the largest contribution to the increase. A slightly higher rise in prices for exports than for imports of traditional goods also contributed to the increase. The value of oil and gas exports accounted for over 40 per cent of the value of aggregate exports. As Norway hardly imports any oil and gas, the trade

**Figure 12. Gross domestic product**

Seasonally adjusted, billion 2016 NOK, quarter



Source: Statistics Norway

surplus is strongly correlated with the oil price (in NOK). The annual surplus is expected to be even higher in the projection period as a result of a forecast higher annualised oil price in NOK in the near term. As a result of the weakened krone and growing petroleum fund, the balance of income and current transfers strengthened last year. A weaker krone increases the value of incoming payments from other countries in terms of NOK, but not of payments to other countries in NOK. This, coupled with increasing transfers from a growing petroleum fund, will boost the balance of income and current transfers for the next few years. The sum of the trade balance and the balance of income and current transfers is the current account balance. The surplus expressed as a share of GDP is expected to exceed 9 per cent in the projection period.

### Developments in economic activity

Mainland GDP growth increased by 2.2 per cent in 2018 compared with growth of 2.0 per cent in 2017. Seasonally adjusted and working day-adjusted figures show that quarterly growth picked up appreciably towards the end of last year, from 0.4 per cent in Q3 to 0.9 per cent in Q4. This can be attributed to the dry period last summer, which led to a sharp decline in Norwegian agriculture and a corresponding recovery in the late autumn. The growth rate in the Norwegian economy excluding agriculture was relatively stable through the year, with average quarterly growth of a good 0.6 per cent. This is equivalent to an annual growth rate of around 2.5 per cent, which is somewhat higher than estimated trend growth of 2 per cent. The Norwegian economy can thus be said to have been in a cyclical upturn since the beginning of 2017.

The downturn that started in 2013 was driven by a sharp fall in demand from petroleum-related activities. The fall in demand had major negative repercussions for Norwegian manufacturing, particularly petroleum-related industries such as shipbuilding and repair of machinery and equipment. Overall value added in

### Box 5. Effects of a higher oil price

Our projections are based on oil prices consistent with futures rates in the oil market. At the end of February, these indicate that oil prices will fall slightly to about USD 61 per barrel in 2022. There is a great deal of uncertainty surrounding developments in oil prices in the near term (see Box 1.2 in *Konjunkturtendensene* 2019/1). This box analyses the effects of an appreciably higher oil price. It is assumed in the simulation that the price per barrel rises by just under 1 per cent in each quarter from and including the third quarter of 2019, so that the price is USD 75 at the end of the projection period.

A higher oil price affects the Norwegian economy through a number of channels. Many of these channels, such as exchange rates and interest rate responses from Norges Bank, are incorporated in our KVARTS model of the Norwegian economy. Other key factors, such as impact on the global economy, are exogenous to the model, however. In order to analyse the effects of a higher oil price on the Norwegian economy, we therefore have to make some assumptions. First, we assume that the higher oil price is attributable to supply side factors in the oil market. We then make the following assumptions about mechanisms that are not incorporated in the model:

- Aggregate growth in Norway's export markets is reduced by 0.1 percentage point each year from and including 2020 as a result of higher oil prices.
- A higher oil price will cause higher inflation abroad. We assume that CPI inflation abroad will be about 0.05 percentage point higher in 2020, and 0.1 percentage point higher in both 2021 and 2022 than in our baseline scenario. This corresponds approximately to the effects of the rise in the oil price on the CPI in Norway if the exchange rate is not affected.
- Growth in offshore petroleum investment will increase by 0.25 percentage point in 2021 and by 1 percentage point in 2022. Our reasoning is that it takes some time for investment to be affected, and that over time it is probable that a higher oil price will prompt somewhat higher investment in exploration and fields in operation.
- Other exogenous factors, such as the orientation of fiscal policy, are kept unchanged from the projection scenario.

The model simulations show that the higher oil price leads to a stronger krone. As an annual average for 2022, the

import-weighted krone exchange rate is 2.3 per cent stronger than in the projection scenario. This weakens cost-competitiveness which, together with weaker foreign demand, reduces Norwegian goods exports. The same applies to Norwegian manufacturing output.

In the short term, inflation increases marginally, but a little further forward the effect of the stronger krone predominates, so that inflation is lower than in the projection scenario. Investment will be higher than in the projection scenario because equity prices on the Oslo Stock Exchange will rise, but also because lower import prices lead to a fall in prices paid by consumers for capital and intermediate inputs. As a consequence of lower cost inflation, the central bank increases the interest rate a little less than in the projection scenario, which – coupled with higher real wealth – contributes to pushing up household consumption.

On balance, the analysis shows that a higher oil price will increase the level of activity in the Norwegian economy, but only to the extent that mainland GDP is only 0.1 per cent higher in 2022 than in the projection scenario. Markedly higher increases in the oil price than we have assumed would therefore be necessary to change the picture for the Norwegian economy.

#### Effects of a higher oil price. Deviation from the projection scenario in per cent

	2019	2020	2021	2022
Mainland GDP	0.0	0.0	0.0	0.1
- Manufacturing	0.0	0.0	0.1	0.3
Exports, traditional goods	0.0	-0.1	-0.3	-0.6
Business investment	0.0	0.1	0.2	0.3
Household real disposable income	0.0	0.1	0.3	0.6
Consumption, household etc.	0.0	0.0	0.1	0.3
Employment	0.0	0.0	0.0	0.0
Money market rate (percentage points)	0.0	0.0	0.0	-0.1
Import-weighted krone exchange rate	-0.1	-0.6	-1.4	-2.3
Consumer price index	0.0	0.0	0.0	-0.1
Memo:				
Oil price	1.1	6.6	12.9	19.6

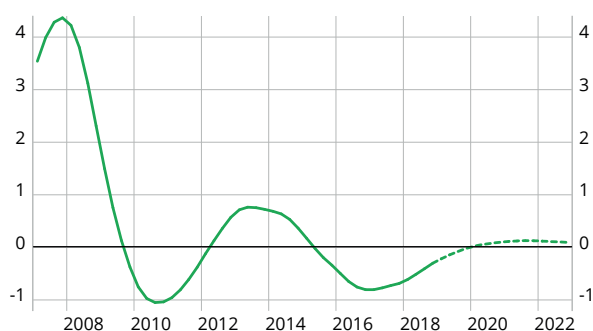
Source: Statistics Norway.

manufacturing fell by almost 12 per cent from the peak in 2014 Q3 to the trough in 2016 Q4. Following on zero growth in 2017, manufacturing grew through most of 2018. The annualised average activity level rose by 0.9 per cent compared with 2017. The underlying growth rate through 2018 – measured as average quarterly growth – was higher, and consistent with an annual growth rate of a good 3 per cent. Growth was particularly high in Q4, when value added increased by as much as 1.6 per cent. The upswing was also broad-based, with especially solid growth in important supplier segments to the petroleum industry. It is nonetheless worth noting that, despite high growth this past year, gross value added in manufacturing as a whole remains around 7 per cent lower than the peak in 2014.

Value added in other mainland goods production increased by 2.4 per cent from 2017 to 2018. Construction activity has been growing strongly for a long time, and as such has been an important driver of the Norwegian economy. The activity level as an annual average rose by 3.9 per cent in 2018, following high growth rates also in 2016 and 2017 of 5.2 and 4.6 per cent, respectively. The prolonged, strong upturn can probably be attributed to the low interest rate level, which has stimulated house prices, and large public sector investment projects in buildings and infrastructure. However, growth in construction declined in Q4, which is not very surprising given the already very high level of activity.

**Figure 13. Output gap, Mainland Norway**

Deviation from estimated trend GDP in percent



Source: Statistics Norway

Developments in other goods-producing mainland industries are strongly affected by naturally occurring factors. They therefore do not provide a reliable reflection of the underlying economic situation. Electricity production fell by 1.2 per cent as an annual average in 2018, with wide fluctuations through the year. Following near zero growth in Q1, production fell by over 6 per cent in Q2 because of the dry spring and summer, and then rose again through the second half of the year. The level in Q4 was nonetheless somewhat lower than in the same quarter the previous year. Norwegian agriculture and forestry were also hard hit by the dry weather, with a fall in activity of almost 30 per cent in Q3. However, production recovered rapidly, and seasonally-adjusted activity in Q4 was approximately the same as in Q2. Developments in agriculture alone were enough to reduce mainland GDP growth by 0.2 percentage point in Q3 and to boost growth correspondingly in Q4. Value added in fishing and aquaculture rose by over 5 per cent in 2018, with particularly strong growth in the last quarter of the year.

Value added in service industries excluding general government increased by 2.6 per cent from 2017 to 2018. Seasonally adjusted growth from Q3 to Q4 was 0.6 per cent, somewhat lower than average quarterly growth for the year as a whole. Growth in service industries was fairly broad-based throughout 2018, particularly in professional, scientific and technical services and in administrative and support service activities and the hotel and restaurant industry. Value added in general government rose by just over 2 per cent in 2018, approximately the same as trend growth in the Norwegian economy.

We expect growth in economic activity to remain at a high level in the near term. The negative demand impulses from the petroleum sector have reversed, and the sector is expected to generate significant positive growth impulses this year. Manufacturing, which has exhibited solid growth recently, will benefit appreciably from this turnaround. We therefore project that growth in Norwegian manufacturing during the projection period will be slightly higher than growth in the rest of the economy.

The construction industry has been growing strongly in recent years, and activity has reached a very high level. Our projections therefore indicate that growth will be more moderate going forward, also because residential construction is expected to grow very cautiously. We also forecast that the upturn in the service industries will continue, in pace with the increasingly broad-based cyclical upturn. Growth in general government is expected to remain fairly stable at slightly below trend growth for the Norwegian mainland economy.

On balance, our projections indicate mainland GDP growth of 2.4 per cent for the current year. Growth will remain buoyant in subsequent years, but gradually fall to about 2 per cent towards the end of the projection period. We estimate trend growth in the Norwegian mainland economy at just under 2 per cent, and our projections therefore imply that the moderate cyclical upturn we have now embarked upon will persist for some years yet.

### The labour market

Employment growth picked up in 2017 following weak growth the two previous years. This tendency continued in 2018 and overall employment increased by 1.5 per cent. The labour force also increased in 2018, in pace with the moderate cyclical upturn, which offset the decline in unemployment. In the second half of 2018, unemployment fell from about 4 per cent to 3.7 per cent.

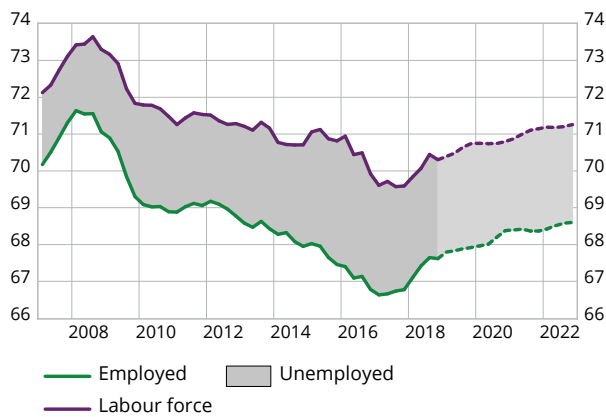
Growth in overall employment in recent years can be attributed to sustained growth in certain industries. Growth through 2018 was high in construction and administrative and support service activities, which include employment activities. In 2018, employment in the hotel and restaurant industry increased, although it dipped somewhat in Q4. Following zero growth in 2018 Q1 and a decline in the following quarter, employment in petroleum-related services rose in the second half of 2018. In Q4, employment increased in both crude oil and natural gas extraction and in manufacturing, as it did in the three preceding quarters.

Relatively large numbers are employed in retail trade, and developments in the industry are strongly affected by developments in consumption. Weak developments in goods consumption in 2018 may thus have led to employment in this industry remaining approximately unchanged through the year, and to it falling somewhat compared with 2017 as an annual average.

According to Statistics Norway, vacancies increased both as a level and as a share of the total number of jobs (i.e. the sum of vacancies and the number of employment relationships) through the first three quarters of 2018. Despite falling in 2018 Q4, the number of vacancies increased by just under 14 per cent as an annual average from 2017 to 2018. They accounted for 2.3 per cent of the total number of jobs, which was 0.2 percentage point higher than in 2017.

**Figure 14. Labour market status**

Percent of population in working age, LFS



Source: Statistics Norway

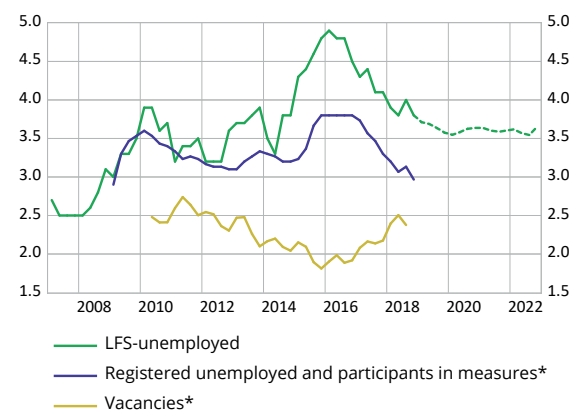
Unemployment measured by the LFS fell from 4.0 per cent to 3.8 per cent through the first half of 2018. Unemployment then increased somewhat before again falling, to 3.7 per cent, towards the end of the year. Annualised average unemployment in 2018 was 3.8 per cent, 0.4 percentage point lower than the previous year. Figures from both the LFS and the national accounts reveal positive employment growth in 2018. At the same time, more workers entered the labour market in 2018 as a result of the increased demand for labour. The increase in the labour force thus slowed the fall in unemployment in 2018.

The LFS employment rate picked up in 2018 after a persistent fall since 2012. In addition to economic developments, changes in the age composition contributed to the fall up to last year. Older employees have a lower employment rate and account for a growing share of the labour force. This has pushed down the overall employment rate since 2012, but a more favourable economic situation led to the rate nonetheless picking up in 2018.

The seasonally adjusted statistics of the Norwegian Labour and Welfare Organisation (NAV) on the number of fully unemployed and persons on labour market programmes showed a fall through the second half of 2018. The decline continued in early 2019. According to seasonally adjusted figures from NAV, 2.3 per cent of the labour force was fully unemployed in February 2019, against 2.5 per cent in the same period last year. The sum of the fully unemployed and persons on labour market programmes accounted for 2.9 per cent of the labour force in February, which was 0.3 percentage point lower than the same month last year. County specific unemployment rates show a broad-based decline in unemployment in 2018. The decline was largest in counties whose economies are closely associated with petroleum activities and which for the previous couple of years had relatively high unemployment. Overall this has led to a reduction in regional differences in local unemployment from 2017 to 2018.

**Figure 15. Unemployed and number of vacancies**

Percent of labour force and of the sum of occupied and vacant positions, seasonally adjusted and smoothed



\*Breaks in the statistics make the numbers incomparable before and after January 2013  
Source: The Norwegian Labour and Welfare Administration and Statistics Norway

A broad-based cyclical upturn indicates that employment will continue to grow in the next few years. Our projections indicate that employment in both private service production and construction will push up overall employment. An improved economic situation and less negative effects from changes in the age composition of the population will contribute to the employment rate picking up further. Stronger demand for labour is drawing more workers into the labour market, and this will continue to slow the decline in unemployment. According to our calculations, annualised unemployment will remain at about 3.7 per cent this year and then fall to around 3.6 per cent towards the end of the projection period.

## Wages

Nominal annual wage growth has been low since 2015. At 1.7 per cent, annual wage growth in 2016 was the lowest since World War II. Wage growth in 2017 was somewhat higher, at 2.3 per cent, and rose further from 2017 to 2018. After a period of low growth, wage growth is on the way up and is expected to continue to edge up for a period to come.

Preliminary estimates of annual wage growth in the national accounts show average wage growth of 2.8 per cent in 2018. The statistics on basic wage growth show the same. The wage settlement norm for the wage leader was 2.8 per cent last year, which is the same as the average for the wage settlements from 2012 to 2017. The Technical Reporting Committee on Income Settlements (TBU) calculates the carry-over for the largest negotiating areas. The committee's preliminary estimates show wage growth for blue collar workers in manufacturing of 2.75 per cent, which is consistent with the norm following the 2017 settlement. Inflation in 2018 was higher than anticipated, largely because of high electricity prices, and the increase in real wages was therefore modest.

Growth in average annual wages can be decomposed into carry-over and contributions from pay increases and wage drift. The carry-over is the difference

between the annual wage level at the end of the previous year and the average annual wage level that same year, and therefore contributes important information concerning annual wage growth for the following year. The negotiated wage increase is the wage increase arising from central negotiations. Wage drift is the sum of all other factors that affect annual wages.

The TBU has made preliminary estimations of the carry-over into 2019 for various collective wage-bargaining areas. The carry-over for all manufacturing under the Confederation of Norwegian Enterprise (NHO) is estimated to be 1.2 percentage points, while it varies for the other negotiating areas from 0.7 percentage point for local government to 2 percentage points for the health enterprises. A comparison with previous years shows the carry-over for manufacturing companies under NHO to be equal to the average for the years 2014 to 2018. The carry-over for central government is higher than the average since 2014, which is due to the fact that a significant share of the amount available for distribution in last year's wage negotiations was transferred to local negotiations and was disbursed late in 2018.

This year's wage settlement is an interim settlement. There are main settlements and interim settlements on alternate years, and negotiations in the interim settlements concern only salary adjustment, in contrast to the main settlements, where there is also negotiating on other collective agreement rules.

At present there are two opposing forces acting on how wages are affected by changes in the composition of the employed: When the labour market is tight, more persons who find jobs will either have been unemployed or have been outside the labour market. This points to lower wage growth. On the other hand there is a highly qualified group, which points the opposite way: When highly qualified workers who have previously worked in the petroleum sector secure jobs in other industries after a period of unemployment, the tendency will be for higher wage growth. These two forces appear to virtually offset one another, so we do not expect significant composition effects on wages in the years ahead.

Last year the labour cost share in manufacturing was higher than the historical average. This is partly due to high energy prices in 2018 leading to weak operating results. Despite relatively stable wage growth later in the projection period, we expect wages as a share of labour costs to decrease somewhat in the near term as a result of normalised energy prices and higher export prices.

According to our projections, wage growth will rise further to just over 3.5 per cent by 2022 as a result of a tighter labour market. Our projections indicate inflation of 2.3 per cent in the current year, so real wage growth will increase by about one percentage point in 2019. We forecast inflation of around 2 per cent for the next

few years, so that real wage growth will increase a little towards 2022.

## Inflation

The rise in the consumer price index (CPI) ended at 2.7 per cent in 2018, and inflation thus increased appreciably compared to 2017, when the CPI rose 1.8 per cent. Underlying inflation measured by the consumer price index adjusted for tax changes and excluding energy products (the CPI-ATE) rose by 1.6 per cent in 2018, a moderate 0.2 percentage point higher than 2017. The difference between the annual rise in the CPI and the CPI-ATE was thus as much as 1.1 percentage points in 2018.

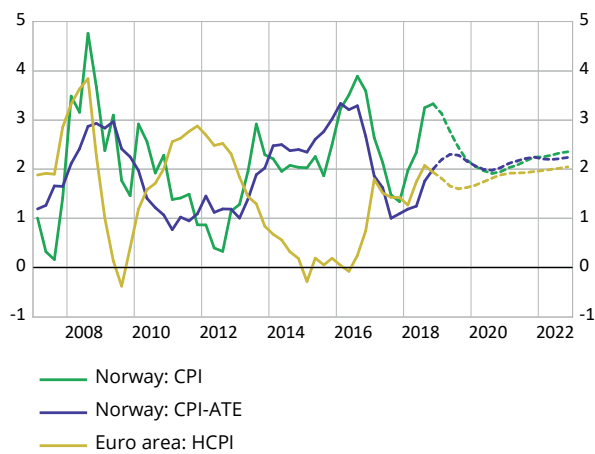
Developments in energy prices were the main reason that the annual rise in the CPI was appreciably higher than for the CPI-ATE. Electricity prices remained at a persistently high level throughout 2018, and prices for electricity including grid charges surged by an annualised 25.6 per cent. The fall in the oil price towards the end of last year contributed to a fall in fuel prices, bringing them back at the beginning of 2019 to roughly the same levels as in January last year. However, fuel prices remained at a high level through much of last year as a result of a high oil price and strong US dollar. Fuel prices as an annual average rose by 7.9 per cent from 2017 to 2018. The CPI excluding energy products (CPI-AE) was 1.8 per cent in 2018. The contribution of energy prices to CPI inflation was thus as much as 0.9 percentage point in 2018. The CPI adjusted for tax changes (CPI-AT) rose by 2.5 per cent from 2017 to 2018, and higher special taxes thus contributed 0.2 percentage point to CPI inflation. A large increase in the tax on chocolate and sugar products made a particular contribution to the rise attributable to special taxes.

There was a considerable difference in inflation measured by the national accounts household consumption deflator and the CPI in 2018. The CPI is included in its entirety in the national accounts consumption deflator. The CPI does not cover all consumption groups in the national accounts, nonetheless. For example, price information on financial services, such as banks' interest rate margins in relation to households, is missing. Purchases from other countries, whether during travel or directly over the internet, are not included in the CPI either. This means that the national accounts consumption deflator may differ from the CPI. CPI inflation in 2018 was 2.7 per cent, while the consumption deflator increased 0.7 percentage point less. Negative inflation on household purchases abroad explains 0.4 percentage point of the difference, while 0.2 percentage point is attributed to developments in prices for financial services (the interest rate margin).

Viewed against the backdrop of increasing wage growth and the rise in energy and import prices, the increase in the underlying inflation rate measured by the 12-month rise in the CPI-ATE was surprisingly low in the first half of 2018, with an average rise of 1.2

**Figure 16. Consumer price indices**

Percent growth from same quarter previous year



Source: Statistics Norway

per cent compared with the first half of 2017. A shift occurred in the underlying inflation rate in the second half of the year, when it picked up appreciably. The 12-month rise in the CPI in June 2018 was 1.1 per cent, while it rose to 1.9 per cent in August and September already. Inflation rose further towards the end of the year, and the 12-month rise in the CPI was 2.2 per cent in November and 2.1 per cent in December. A decomposition of the CPI-ATE for goods and services by supplier sector shows that the rise in inflation in the second half of the year can be primarily attributed to developments in prices for goods, both produced in Norway and imported. The rise in prices for the service groups as a whole was far more stable through last year, but did increase somewhat towards the end of 2018.

The 12-month rise in the CPI-ATE was 2.1 per cent in January 2019, unchanged from December 2018. When decomposed, the sub-indices in the CPI-ATE show that the 12-month rise for goods as a whole decreased by 0.4 percentage point from December to January, while prices for services rose by 0.4 percentage point. The slowing of the rise in prices for goods from December to January was influenced by January sales of clothing, furniture and household articles, with larger price cuts in January this year than in last year's sales. Some of the rise in prices for services is due to prices for air travel, which fell less from December to January this year than at the same time last year. Prices for air travel, together with other transport services and charter tours, push up inflation markedly in January. The 12-month rise in prices for transport services was 6.3 per cent and for charter tours 6.9 per cent.

The house rent index in the CPI consists of actual rent and imputed rent. Actual rent is the rent paid by tenants, while imputed rent is intended to express the value of the service that their dwelling provides for owner-occupiers and unit owners in housing cooperatives. The price for this service is assumed to shadow developments in the rent for equivalent dwellings in the rental market. The rise in rents has remained

unchanged for the last three months, and the 12-month rise was 1.5 per cent also in January for this important service group with a weight of over 20 per cent in the CPI-ATE. Existing rental contracts are largely adjusted according to CPI inflation. We assume that the rise in CPI inflation in 2018 will result in a somewhat higher rise in prices for this service group later in 2019.

Year-on-year CPI inflation was 3.1 per cent in January 2019, and thus 1.0 percentage point higher than CPI-ATE inflation. The most important contributor to the differential between the rise in the CPI and in the CPI-ATE is still prices for electricity including grid charges, which were 30.4 per cent higher in 2019 than last year. A virtual reversal of the increased tax on sugar from 2017 to 2018, and a reduction of the electricity tax reduced CPI inflation by 0.1 percentage point in January. We project that real tax changes will reduce CPI inflation by 0.1 percentage point in 2019. The special tax rates have been adjusted for inflation for the years 2020–2022 so that they have a neutral effect on CPI inflation.

The most important contributor to CPI inflation this past year was the high electricity prices. Norwegian electricity prices are affected both by domestic factors such as temperatures and precipitation and by European power prices through power exchange with other countries. Box 6 reviews the fundamental factors underlying the high electricity prices last year. The prices on the Nordic power exchange were high in all domestic Elspot (bidding) areas through 2018. After falling back somewhat in October, they rose again through November and December, peaking during the cold period in January. The change in weather and above-normal temperatures in February have resulted in lower electricity consumption and falling prices. The prospects of a less tight resource situation have affected futures rate in the Nordic power market. Prices in the forward market indicate that electricity prices will be slightly higher in Q2, measured against realised system prices for the same period last year. Electricity prices will then remain lower than last year's levels for the remainder of the year. According to the Norwegian Water Resources and Energy Directorate (NVE), grid charges excluding tax of 4 per cent increased in January compared with the same time last year. A reduction in the electricity tax curbed the price rise. NVE estimates the nominal rise in grid charges including taxes at 1 per cent on last year. On the basis of forward prices in the power market, we estimate that the price of electricity including grid charges will increase by about 2 per cent as an annual average from 2018 to 2019, but that it will fall by 3 per cent in 2020 as a consequence of carry-over from high power prices in 2019 Q1. Our oil price projections for the years ahead contribute to fuel prices developing moderately. In sum, we forecast that energy prices will have a neutral effect on CPI inflation in 2019, but reduce CPI inflation by 0.2 percentage point in 2020. In 2021 and 2022 overall energy prices are assumed to roughly shadow general inflation.

## Box 6. Prospects for electricity prices

Household electricity prices vary substantially over time. In order to understand the fluctuations, it may be useful to decompose the electricity price. The power price is payment for production of the power. Households can choose from different suppliers of power and different types of contract in which the power price either varies frequently or is fixed for a long period, such as one or three years. "El certificates", a mandatory subsidy scheme for new, renewable energy, are also paid for through the power price. Grid rent is payment for transmission of power through the distribution network from power producers to electricity consumers. The transmission of power is a monopoly service, which means that it is not possible to switch suppliers. Electricity tax (with exemption for some municipalities in the Nord-Troms and Finnmark counties) and ENOVA tax (to subsidise environment-friendly energy) are also paid through the grid rent. Value-added tax is also paid on the power price and grid rent, with exemption for Northern Norway.

The figure shows historical developments in electricity price components from 2012–2018. The power price varies most, while grid charges vary least. Taxes will vary somewhat because of the value-added tax in the power price. The figure also shows developments in the CO<sub>2</sub> emission allowance price in the EU Emission Trading System (ETS), which has increased markedly since 2017.

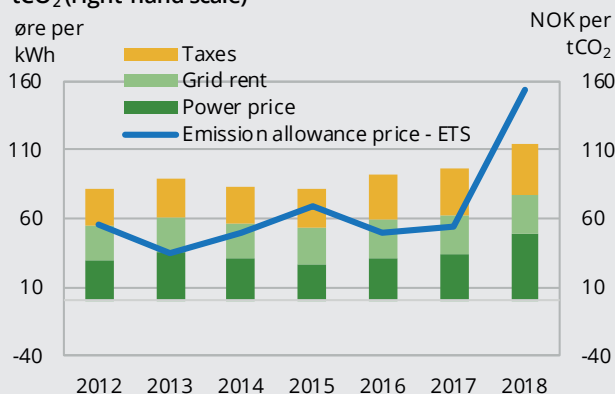
Norway's power production system is mainly based on hydropower. The hydropower production possibilities in the course of a year are largely determined by the quantity of precipitation. In addition, the reservoirs associated with the power plants help to even out production, both within a year and from year to year, so that power is produced when the consumers want to use electricity.

Norway is also linked up to other countries, with a number of power transmission connections that make it possible to import or export power when there is a shortage or a plentiful supply of precipitation available for power production. In the majority of the countries with which we are linked, including Denmark and the Netherlands, the power production systems are based to a far lesser extent on hydropower. Sweden is an exception: hydropower accounts for about 40 per cent of power production.

In most years since 2010, Norway has been in a situation where substantially more power has been produced than used in Norway, resulting in an export surplus. During the same period, power prices have been lower than in the countries with which we trade power, but have nonetheless co-varied with developments in power prices outside Norway. As more power transmission connections are developed, co-variation with power prices abroad may increase.

There was very little precipitation in Norway in the second half of 2018, although the autumn was more normal. So far in 2019, both reservoirs and the quantity of water stored as snow in the mountains have been lower than normal. In the same period, there have been net imports of electricity to Norway, and the power price is somewhat higher than it is abroad. The following is an overview of the most important explanatory factors underlying the power prices in the countries with which Norway cooperates, both directly and indirectly.

Components of the electricity price, øre per kWh (left-hand scale) and CO<sub>2</sub> emission allowance price, NOK per tCO<sub>2</sub> (right-hand scale)



The most important production technologies are gas- and coal-fired power. Therefore, developments in gas and coal prices, and the price for CO<sub>2</sub> emission allowances, are important for power production costs. Greenhouse gas emissions in manufacturing and power production, etc., are regulated in the Emission Trading System (ETS) for the EU-EEA countries. The equilibrium in the ETS determines a price for CO<sub>2</sub> emission allowance. The allowance price is important for developments in the production costs for gas- and coal-fired power in Europe.

The Norwegian Water Resources and Energy Directorate's publication "Kraftsituasjonen: Fjerde kvartal og året 2018" [The power situation: fourth quarter and year 2018] presents a number of facts about the electricity market in 2018.<sup>1</sup> Production costs for European gas- and coal-fired power are reported to have increased by almost 40 per cent in 2018 compared with 2017. The increase is mainly due to a tripling of the CO<sub>2</sub> emission allowance price, but higher gas and coal prices also contributed. This is a major reason why Norwegian power prices increased last year. The decline as a result of a dry summer and in consequence reduction in water stored in reservoirs pushed power prices in Norway up further.

We base our projections on developments in the futures market for Nordic power prices. According to market listings on the Nasdaq, power prices in the Nordic countries (and in Norway) are likely to fall somewhat by 2022 compared with today, by about 10 øre per kWh.<sup>2</sup>

Prices in Germany are expected to rise a little compared to the current level, as also indicated by the futures prices for CO<sub>2</sub> emission allowances listed on the EEX exchange.<sup>3</sup> The reason for there being a widening gap between Norwegian and German prices may be that the levels of Norwegian reservoirs are expected to normalise.

<sup>1</sup> <http://webfileservice.nve.no/API/PublishedFiles/Download/201900767/2643677>

<sup>2</sup> <http://www.nasdaqomx.com/transactions/markets/commodities/market-prices>

<sup>3</sup> <https://www.eex.com/en/market-data/environmental-markets/derivatives-market/european-emission-allowances-futures#1/2019/03/05>

For a long time, it looked as though increased online trading and the struggle for market shares would dampen inflation in 2018. The indirect and direct effects of increased labour costs, high energy prices and a relatively weak krone gradually led to higher inflation, so that in recent months underlying inflation measured

by the 12-month rise in the CPI-ATE has exceeded 2 per cent. Whereas in our last projection we assumed that the krone would strengthen in the years ahead, this time we have assumed that the current weak krone exchange rate will persist through the projection period (see Box 1). Changed exchange rate assumptions push

**Table 5. The consumer price index. Goods and services by consumption group**

	Weight <sup>1</sup>	Change on previous year, per cent				
		2015	2016	2017	2018	Jan. 2019
<b>Total</b>	<b>1 000.0</b>	<b>2.1</b>	<b>3.6</b>	<b>1.8</b>	<b>2.7</b>	<b>3.1</b>
Food and non-alcoholic beverages	124.5	2.9	2.6	0.0	2.5	1.2
Alcoholic beverages and tobacco	39.4	3.0	3.3	2.0	2.2	2.5
Clothing and footwear	48.5	0.4	4.9	-0.6	-3.4	-1.1
Housing, water, electricity and other fuels	239.9	1.3	4.5	3.0	5.0	5.9
Of which: Electricity including grid charges	35.4	-3.7	22.2	9.3	25.6	30.4
Furniture, household equipment and routine maintenance	65.5	5.3	5.3	-1.2	1.2	1.4
Health	32.2	1.7	2.0	2.0	1.6	2.1
Transport	154.2	1.3	2.5	2.5	3.5	3.4
Of which: purchase of vehicles	60.9	1.3	2.3	1.7	2.8	1.9
Communications	22.4	1.1	4.1	1.1	1.0	1.1
Recreation and culture	118.7	3.4	4.5	2.8	2.4	3.9
Education	4.8	2.1	3.4	4.9	6.2	4.8
Hotell- og restauranttjenester	62.2	2.5	3.3	3.6	2.8	3.3
Misc. goods and services	87.7	1.9	1.9	2.2	1.5	1.3

<sup>1</sup> The weights apply from January 2019 to December 2019.

Source: Statistics Norway.

**Table 6. The consumer price index adjusted for tax changes and excluding energy products (CPI-ATE). by supplier sector<sup>1</sup>**

	Weight <sup>1</sup>	Change on previous year, per cent				
		2015	2016	2017	2018	Jan. 2019
<b>Total</b>	<b>1 000.0</b>	<b>2.7</b>	<b>3.1</b>	<b>1.4</b>	<b>1.6</b>	<b>2.1</b>
Agricultural products	..	2.4	..	..	..	..
Fish products	..	4.6	..	..	..	..
Norwegian products	140.9	3.6	3.6	0.3	1.3	2.6
Imported goods	329.2	3.0	3.8	0.7	0.7	0.9
Rent	217.8	2.4	1.8	1.9	1.6	1.5
Services excluding rent	312.1	2.4	3.0	2.4	2.5	3.7
with wages as a dominant price factor	94.8	3.0	2.8	2.8	2.8	2.8
with other important price components	217.3	2.2	3.0	2.3	2.4	4.2

<sup>1</sup> The decomposition by supplier sector was changed with effect from January 2016. In the new classification, agricultural and fish products are distributed between Norwegian and imported products.

<sup>2</sup> The weights apply from January 2019 to December 2019.

Source: Statistics Norway.

up inflation throughout the projection period, and contribute in particular to CPI-ATE inflation remaining slightly over 2 per cent through 2019, compared with the same quarter the previous year. There are prospects of higher growth in Norwegian wages in 2019 than in 2018, and this in itself will reinforce inflation. Given a weaker exchange rate, CPI-ATE inflation will be 2.3 per cent in 2019, which is 0.4 percentage point higher than our previous projection. Inflation will fall back in 2020 as a result of a decline in energy prices, and because the carry-over from a weak exchange rate will be phased out. Wage growth will increase further in subsequent years, but productivity growth will reduce the effect on prices. According to our assumptions, CPI-ATE inflation will fall from 2.3 per cent in 2019 to 1.9 per cent in 2020. In 2021 and 2022, CPI-ATE inflation may increase somewhat and slightly exceed Norges Bank's inflation target.

Given our assumptions about developments in energy prices and special taxes, CPI inflation will be equal to CPI-ATE inflation for 2019 and end at 2.3 per cent. In 2020, a fall in energy prices will lead to CPI inflation

of 1.7 per cent. CPI inflation in 2021 and 2022 will be close to CPI-ATE inflation.

### Uncertainty surrounding the projections

Statistics Norway presented its first quantified projections for the Norwegian economy in 1988, and since 1990 has with few exceptions published projections for at least two years ahead in February/March, May/June, September and November/December each year. The following is an evaluation of our forecasting activities. The evaluation considers three important macroeconomic variables: growth in mainland gross domestic product (mainland GDP), inflation measured by the consumer price index (CPI), and unemployment as a percentage of the labour force (LFS unemployment). The focus is on whether the projections have deviated systematically from the preliminary accounts, and on the spread of the deviations. The analysis is also used to say something about the uncertainty surrounding Statistics Norway's projections for 2019 and 2020.

There are often differences between the preliminary GDP figures published in February the year after the



accounting year (the Utsynsregnskap) and the final figures, which are normally only available almost two years later. The “final” figures may also be revised in connection with periodic revisions when new statistics are incorporated or when the calculation principles are changed. We nevertheless use preliminary GDP figures to represent actual, or ex-post outturns for three reasons: First, the final accounts figures are not available for the years after 2016. The projections for these years must therefore be compared with preliminary accounts figures regardless. Second, the projections are based on preliminary – not final – accounts figures for the recent past. Third, changes were made in definitions in connection with the main revisions in 1995, 2002, 2006 and 2014, which means that projections and final figures are not associated with the same measuring system. For example, our projections for mainland GDP in 2013 made before the main revision in 2014 would have been different if we had used the new definition at the time of making the projections. Final figures for the CPI and for LFS unemployment are available shortly after the end of the year.

**How accurate have our projections been?**

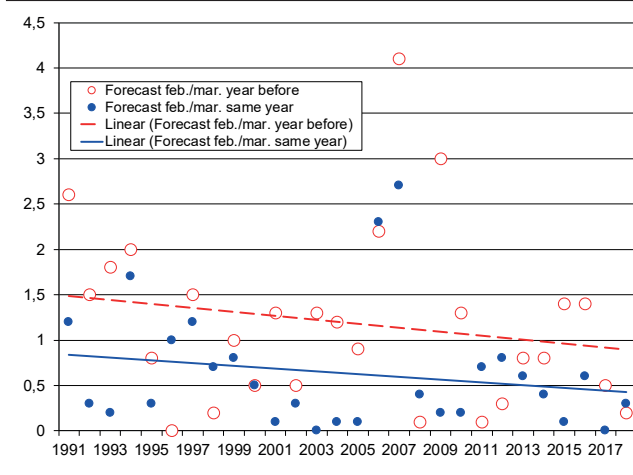
Figures 17, 18 and 19 show developments over time in the deviations between projections and preliminary accounts figures for mainland GDP growth, CPI inflation and LFS unemployment, in absolute figures. The projections for LFS unemployment made the year before the projection year have improved over time, while the projections for GDP growth have improved for both projection horizons.

Figures 20, 21 and 22 show the average differences between projections made at different times and accounts figures for growth in mainland GDP, CPI inflation and unemployment. The figures also provide an indication of the spread in the deviations, by including three different confidence intervals around the average. These intervals are calculated against the background of the historical spread. They do not say anything about how many of the deviations actually lie within the intervals. Under given conditions, the probabilities that the discrepancies between future projections and accounts figures lie within these intervals are 50, 80 and 90 per cent, respectively. We have only used the projections for the years from 1995 onwards when calculating the intervals.

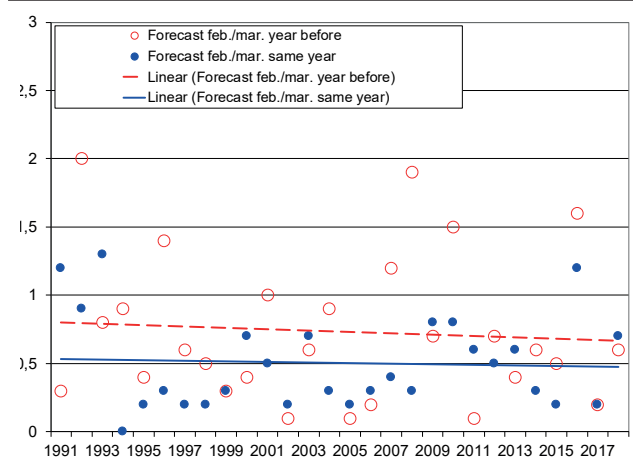
**Have there been systematic deviations?**

On average, the GDP growth projections published in the first half of the year prior to the projection year have been approximately the same as realised growth, but have often been slightly too low from September, and in particular November/December, of the year before the projection year. However, this discrepancy is reduced as the projections are updated in the course of the projection year. The projections made in September and November/December of the year before the projection year are on average 0.1 and 0.3 percentage point, respectively, lower than the outturn.

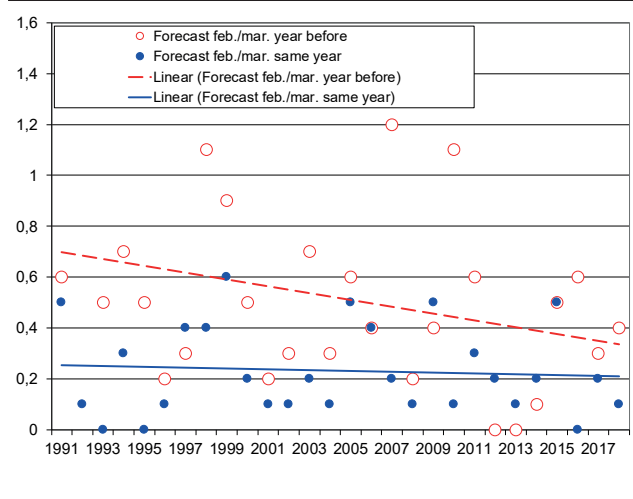
**Figure 17. Projection for percentage change in mainland GDP. Absolute deviation from preliminary accounts**



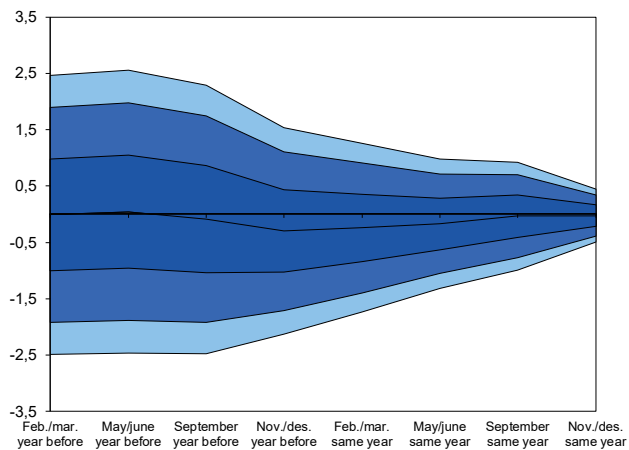
**Figure 18. Projection for percentage change in the CPI. Absolute deviation from published figures**



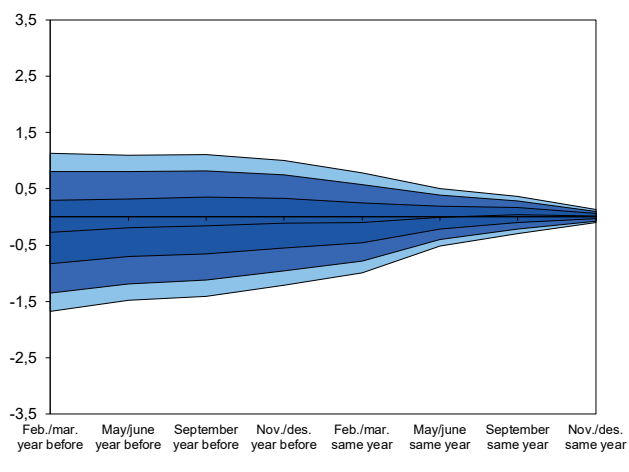
**Figure 19. Projection for unemployment (LFS). Absolute deviation from published figures**



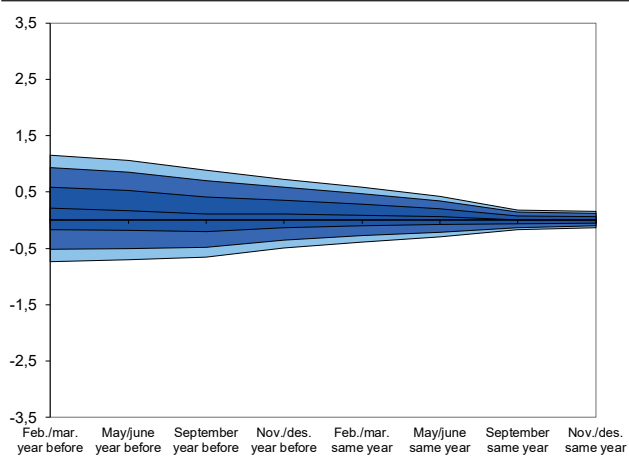
**Figure 20. Projected percentage change in mainland GDP. Absolute deviation from preliminary accounts figures and the spread of deviations. The intervals show 50, 80 and 90 per cent confidence intervals**



**Figure 21. Projection for percentage change in the CPI. Absolute deviations and spread of deviations. The intervals show 50, 80 and 90 per cent confidence intervals**



**Figure 22. Projection for unemployment (LFS). Absolute deviations and spread of deviations. The intervals show 50, 80 and 90 per cent confidence intervals**



The average difference in the CPI inflation projection is reduced from -0.3 percentage point in February/March of the year prior to the projection year to almost zero in February/March of the projection year.

In line with our overly low GDP projections, we find that our unemployment projections have had a tendency to be somewhat too high. The projections made in February/March of the year prior to the projection year are 0.2 percentage point too high. The average discrepancy subsequently is approximately 0.1 percentage point up to and including the projections made in February/March of the year for which the projections are made. After this the differences are virtually zero on average. In view of the large spread for the three main variables, the results indicate that there are no large systematic errors in our projections.

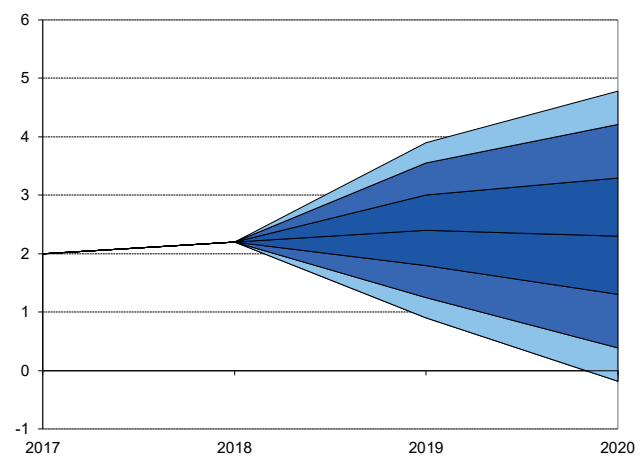
### The spread in the projections

There has been a relatively large spread in the difference between the projection for GDP growth made in the first three analyses in the year prior to the projection year and the preliminary accounts figure. Of the 24 projections we have made from and including the 1995 projection, more than 10 differ by more than 1 percentage point from the preliminary accounts figure. Once the projection was absolutely accurate – in 1996. The projections in 1998, 2008, 2011, 2012 and 2018 were also very accurate, differing by only 0.1–0.3 percentage point. The variation in the differences is considerably less, on average, for the projections made in December the previous year, but 7 of 24 projections are still more than 1 percentage point off the mark. Despite a steadily growing volume of data on economic developments in the year for which projections are made, the spread in the deviations after December the previous year only decreases slightly right up to and including the projections in September the same year. One important reason for this is that the quarterly GDP figures have often been revised considerably through the projection year. Only the last projection we make before the outturn is available again shows a distinct decline in the spread of the deviations.

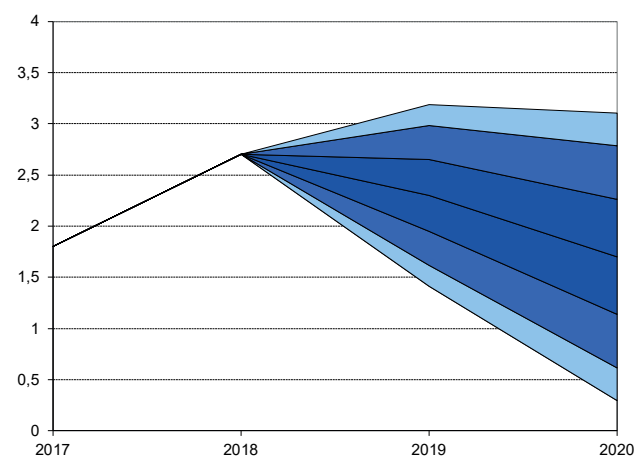
We find a similar pattern in the projections for annual CPI inflation. There is substantial variation between the first three projections and the outturn, then the spread decreases gradually. As the CPI is not revised, this reflects the fact that uncertainty lessens through the year as the actual development of the CPI gradually emerges.

The spread in the discrepancy between the unemployment projection and the outturn shows a steadier decline as the projection horizon shortens. The average discrepancy is 0.6 percentage point in February/March the preceding year and 0.3 percentage point in February/March of the same year. After that the spread narrows gradually. The forecast error for unemployment also decreases considerably in the last two projections before the outturn is available. As in the case of

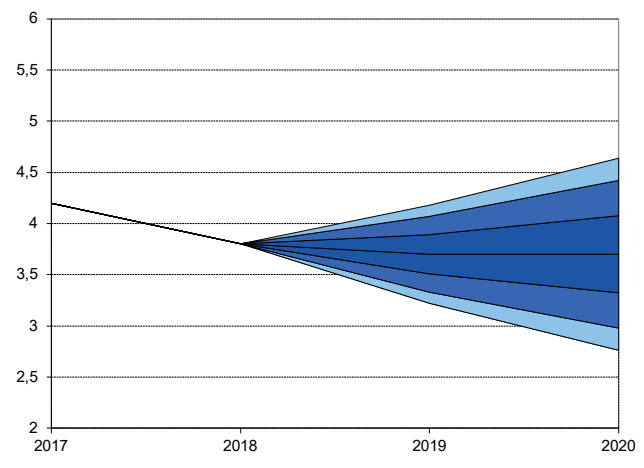
**Figure 23. Projected percentage change in mainland GDP. The intervals show 50, 80 and 90 per cent confidence intervals**



**Figure 24. Projection for percentage change in the CPI. The intervals show 50, 80 and 90 per cent confidence intervals**



**Figure 25. Projection for unemployment (LFS). The intervals show 50, 80 and 90 per cent confidence intervals**



the CPI, this is because the figure is not revised but gradually emerges in the course of the year.

**Uncertainty in the projections for 2019 and 2020**

The uncertainty associated with our projections for 2019 and 2020 is illustrated in Figures 23, 24 and 25. Mainland GDP growth is now forecast to be 2.4 per cent in 2019 and 2.3 per cent in 2020. The estimated uncertainty associated with these projections indicates that in nine out of ten cases the outturn figures will not differ from the projections by more than 1.5 percentage points and 2.5 percentage points for 2019 and 2020, respectively.

CPI inflation was 2.8 per cent in 2018. In 2019 and 2020 it is forecast to be 2.3 and 1.7 per cent, respectively. The estimated uncertainty indicates here that in eight out of ten cases, the projections will not be more than 0.7 and 1.1 percentage points off for 2019 and 2020 respectively.

The unemployment level is forecast to be 3.7 per cent in 2019 and 2020. Whereas historical forecast errors indicate that the projection for 2019 can be regarded as relatively certain, there is more uncertainty attached to the projection for the following year. The calculations, based on earlier forecast errors, indicate that in eight of ten cases the projection for 2019 will not be more than 0.4 percentage point out. The corresponding figure for 2020 is as much as 0.8 percentage point, however.

**How accurate were Statistics Norway’s projections for 2018?**

The first time we published projections for 2018 in our ordinary quarterly economic reports was at the beginning of 2015. The table shows the projections made then, one year later, and thereafter all the projections published through 2017 and 2018.

The first projections for 2018 were based on quite different assumptions about global impulses from those that were realised. Growth among our trading partners has been gradually revised down through the past three years. Whereas growth in the export market indicator for 2018 was forecast to be 6.2 per cent at the beginning of 2015, it was revised down to 5.1 at the beginning of 2016, and down further to 4.4 per cent at the beginning of 2017. The outturn, based on preliminary annual figures for 2018, was 3.5 per cent. Increased trade tensions following Trump’s election to the presidency of the USA and the British decision to leave the EU were two significant and surprising events in 2016 that set their mark on the global economy. These events did not form part of the basis for the projections from 2015.

In parallel with the downward revision of the global economy, projections for output developments in Norway have also been revised down. At the beginning of 2015, it was forecast that mainland GDP would grow

by 2.7 per cent in 2018. The projection for 2018 was revised down to 2.4 per cent at the beginning of 2016. Growth in 2018 was 2.3 per cent. Although the growth projection for 2018 has been revised down, the general picture that the Norwegian economy would be in a cyclical upturn in 2018 has remained constant for the last three years. As output developments were revised down, so too were the projections for annual wages, exports, the money market rate and investment.

In 2015, one euro was forecast to cost NOK 8.3 in 2018, while the outturn was NOK 9.6. From 2016 and through 2017, inflation in 2018 was projected to be around 2.0 per cent. The outturn was 2.7 per cent. The surprisingly high inflation in 2018 must be viewed against the backdrop of the substantial rise in electricity prices as a consequence of a dry, hot summer. The projections for the consumer price adjusted for tax changes and excluding energy products (CPI-ATE) were far more accurate. The largest discrepancy was for projections made in Economic Survey 2017/1, in which the projection for CPI-ATE inflation in 2018 was forecast to be 2.0 per cent, while the outturn proved to be 1.5 per cent.

Table 7. Projections for 2018 published at different times. Percentage growth unless otherwise specified

	KT 1/15	KT 1/16	KT 1/17	KT 2/17	KT 3/17	KT 4/17	KT 1/18	KT 2/18	KT 3/18	KT 4/18	KT 1/19
<b>Demand and output</b>											
Consumption in households etc.	2.3	2.9	2.6	2.2	2.4	2.5	2.5	2.5	2.5	2.0	2.0
General government consumption	2.5	2.1	1.7	1.8	1.7	1.5	1.5	1.6	1.8	1.8	1.5
Gross fixed investment	3.2	2.6	1.4	1.9	1.6	3.2	2.5	0.1	0.6	-0.2	0.9
Extraction and transport via pipelines	-0.1	1.8	-0.1	-1.6	0.2	7.2	8.4	2.4	4.3	3.1	3.3
mainland Norway	3.9	2.5	1.8	2.4	1.5	1.6	0.5	-0.1	-0.1	-0.8	0.7
Industries	4.8	3.6	3.6	4.6	5.1	5.9	5.8	5.5	4.7	1.8	1.8
Housing	1.9	1.2	-0.8	-0.2	-3.1	-3.7	-7.2	-8.8	-10.3	-9.9	-6.0
General government	4.4	2.2	2.3	2.5	1.8	1.5	1.5	1.6	3.0	5.2	6.6
Demand from Mainland Norway <sup>1</sup>	2.7	2.6	2.2	2.2	2.0	2.1	1.8	1.7	1.7	1.3	1.6
Stockbuilding <sup>2</sup>	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.8	0.5	0.1
Exports	2.0	1.8	2.0	1.4	1.6	2.1	2.0	1.6	0.6	0.2	-0.8
Traditional goods	0.3	0.1	4.0	3.4	5.0	4.2	4.7	3.9	3.4	2.2	2.5
Crude oil and natural gas	3.9	3.7	-0.1	0.4	-0.4	-0.5	-0.5	-1.3	-3.1	-4.0	-4.8
Imports	2.6	3.3	2.2	1.8	2.0	2.6	2.2	2.2	2.7	1.5	0.9
Traditional goods	3.9	3.8	3.1	3.1	3.1	3.2	3.2	1.7	3.8	2.8	3.1
Gross domestic product	2.2	1.9	1.9	1.9	1.8	2.2	2.0	1.6	1.8	1.4	1.4
Mainland Norway	2.7	2.4	2.4	2.2	2.1	2.5	2.4	2.1	2.3	2.0	2.2
Manufacturing	3.4	2.0	1.1	2.3	2.8	4.2	4.0	2.1	2.8	0.8	0.9
<b>Labour market</b>											
Total hours worked, Mainland Norway <sup>3</sup>	0.9	1.3	0.8	0.7	0.6	1.1	0.7	0.2	1.3	1.3	1.7
Employed persons	1.0	1.5	1.0	0.7	0.8	1.1	1.2	1.0	1.4	1.5	1.5
Labor force <sup>4</sup>	1.0	1.2	1.0	0.9	0.6	0.9	0.9	1.1	1.1	1.5	1.4
Participation rate (level) <sup>4</sup>	70.2	71.3	70.5	70.2	70.2	69.8	70.0	70.0	69.9	70.2	70.2
Unemployment rate (level) <sup>4</sup>	3.8	4.3	4.2	4.2	4.1	3.9	3.9	3.9	3.9	3.9	3.8
<b>Prices and wages</b>											
Wages per standard man-year	3.4	2.7	3.1	3.1	3.0	2.9	2.9	2.9	2.8	2.8	2.8
Consumer price index (CPI)	1.7	2.1	2.1	2.0	1.9	1.9	2.0	2.5	2.8	2.7	2.7
CPI-ATE <sup>5</sup>	1.7	1.7	2.0	1.8	1.7	1.8	1.7	1.6	1.5	1.5	1.6
Export prices, traditional goods	2.0	2.2	0.5	2.7	1.0	2.6	3.4	4.4	6.9	5.7	5.8
Import prices, traditional goods	1.5	2.1	1.1	3.1	0.5	2.5	2.5	3.9	2.9	5.0	5.1
Housing prices	0.4	6.1	0.6	-1.1	-4.8	-5.0	-2.8	0.0	1.2	1.6	1.4
<b>Income, interest rates and exchange rate</b>											
Household real income	2.5	2.4	2.1	2.7	2.9	3.1	2.7	2.4	2.5	1.7	2.4
Household saving ratio (level)	9.2	8.4	6.8	6.8	6.9	6.9	7.2	7.2	6.9	6.5	6.5
Money market rate (level)	1.5	0.7	1.0	0.9	0.8	0.8	1.0	1.1	1.1	1.1	1.1
Lending rate, credit loans(level) <sup>6</sup>	3.3	2.3	2.6	2.4	2.4	2.5	2.7	2.7	2.7	2.6	2.6
Real after-tax lending rate, banks (level)	0.7	-0.3	-0.1	-0.2	-0.1	0.0	0.1	-0.4	-0.7	-0.7	-0.7
Importweighted krone exchange rate (44 countries) <sup>7</sup>	0.0	-1.1	0.0	0.4	-2.0	0.1	0.0	0.0	-0.2	0.0	0.1
NOK per euro (level)	8.3	9.1	8.9	9.4	9.2	9.5	9.6	9.5	9.6	9.6	9.6
<b>Current account</b>											
Current balance (bill. NOK) <sup>8</sup>	210	179.6	255.6	219.7	143.5	222.3	231	281.5	309	324	241
Current account (per cent of GDP)	6.0	5.2	7.4	6.4	4.2	6.4	6.6	8.1	8.7	9.2	7.9
<b>International indicators</b>											
Exports markets indicator	6.2	5.1	4.4	4.4	4.7	4.7	5.3	5.1	3.6	3.4	3.5
Consumer price index, euro-area	1.7	1.3	1.7	1.4	1.4	1.4	1.6	1.7	1.7	1.7	1.7
Money market rate, euro(level)	0.4	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.2	-0.3	-0.3
Crude oil price NOK (level) <sup>9</sup>	540	407	489	481	448	461	486	561	568	592	583

<sup>1</sup> Consumption in households and non-profit organizations + general government consumption + gross fixed capital formation in mainland Norway.

<sup>2</sup> Change in stockbuilding. Per cent of GDP.

<sup>3</sup> Employees

<sup>4</sup> According to Statistics Norway's labour force survey(LFS).

<sup>5</sup> CPI adjusted for tax changes and excluding energy products.

<sup>6</sup> Yearly average.

<sup>7</sup> Increasing index implies depreciation.

<sup>8</sup> Current account not adjusted for saving in pension funds.

<sup>9</sup> Average spot price Brent Blend.

**Table 8. National accounts: Final expenditure and gross domestic product. At constant 2016 prices. NOK million**

	Unadjusted		Seasonally adjusted							
	2017	2018*	17.1	17.2	17.3	17.4	18.1	18.2	18.3	18.4
Final consumption expenditure of households and NPISHs	1 443 445	1 472 943	358 786	360 126	363 186	365 927	366 306	370 645	370 286	371 659
Household final consumption expenditure	1 364 740	1 390 908	339 387	340 607	343 449	345 986	346 055	350 112	349 649	350 659
Goods	625 914	631 126	155 917	156 607	157 892	159 649	158 390	160 540	158 546	158 247
Services	669 032	686 152	165 476	166 727	167 900	168 908	169 637	171 445	172 726	173 710
Direct purchases abroad by resident households	113 236	117 307	28 335	28 004	28 739	28 406	29 155	29 053	29 213	29 678
Direct purchases by non-residents	-43 441	-43 678	-10 341	-10 731	-11 082	-10 977	-11 127	-10 926	-10 835	-10 977
Final consumption expenditure of NPISHs	78 704	82 035	19 399	19 519	19 737	19 941	20 251	20 533	20 638	21 000
Final consumption expenditure of general government	778 468	790 021	192 694	193 542	194 804	197 481	197 310	197 366	197 569	197 790
Final consumption expenditure of central government	391 089	396 137	96 726	97 388	97 819	99 156	99 118	99 080	99 081	98 864
Central government, civilian	346 231	350 648	85 584	86 207	86 604	87 836	87 782	87 689	87 695	87 488
Central government, defence	44 858	45 489	11 142	11 180	11 215	11 320	11 336	11 391	11 386	11 376
Final consumption expenditure of local government	387 379	393 884	95 968	96 154	96 985	98 324	98 192	98 287	98 488	98 926
Gross fixed capital formation	818 871	826 312	203 663	205 253	203 782	206 165	194 910	209 003	211 997	210 357
Extraction and transport via pipelines	159 147	164 427	39 627	41 042	37 330	41 122	36 180	41 163	42 613	44 429
Ocean transport	3 902	1 298	1 002	999	1 852	50	618	573	-228	334
Mainland Norway	655 822	660 586	163 035	163 212	164 601	164 993	158 111	167 266	169 611	165 594
Industries	290 345	295 537	73 515	69 245	74 528	73 067	69 406	75 915	75 760	74 427
Service activities incidental to extraction	2 436	3 309	374	422	815	825	717	779	908	901
Other services	185 026	179 079	47 347	44 901	46 620	46 167	42 362	46 286	45 913	44 507
Manufacturing and mining	36 450	40 244	9 324	8 428	9 023	9 671	9 268	10 358	10 320	10 285
Production of other goods	66 434	72 906	16 469	15 493	18 070	16 403	17 060	18 492	18 618	18 734
Dwellings (households)	194 017	182 282	48 952	48 900	49 361	46 816	46 950	45 088	45 120	45 157
General government	171 460	182 767	40 568	45 067	40 712	45 111	41 755	46 263	48 731	46 010
Acquisitions less disposals of valuables	414	445	106	96	104	107	107	112	110	116
Changes in stocks and statistical discrepancies	107 799	122 642	22 086	23 770	28 211	32 039	37 843	28 248	27 060	33 332
Gross capital formation	927 084	949 399	225 856	229 120	232 098	238 311	232 860	237 363	239 166	243 806
Final domestic use of goods and services	3 148 996	3 212 363	777 335	782 787	790 087	801 718	796 475	805 374	807 021	813 255
Final demand from Mainland Norway	2 877 734	2 923 551	714 514	716 880	722 590	728 401	721 727	735 278	737 466	735 044
Final demand from general government	949 927	972 788	233 262	238 609	235 515	242 592	239 065	243 630	246 300	243 801
Total exports	1 096 104	1 087 275	275 691	277 131	273 487	269 924	271 311	273 637	275 526	270 309
Traditional goods	361 646	370 584	86 813	90 453	92 770	92 152	91 616	92 200	92 411	96 943
Crude oil and natural gas	379 333	361 227	96 021	97 142	95 265	90 804	90 006	90 431	91 539	89 986
Ships, oil platforms and planes	14 459	11 425	7 468	2 934	1 883	2 174	3 877	3 249	3 254	1 046
Services	340 666	344 038	85 389	86 602	83 568	84 795	85 812	87 757	88 322	82 334
Total use of goods and services	4 245 100	4 299 638	1 053 026	1 059 918	1 063 573	1 071 642	1 067 786	1 079 011	1 082 547	1 083 564
Total imports	1 064 025	1 074 074	264 723	265 609	265 269	270 956	264 696	272 252	271 151	268 362
Traditional goods	613 190	632 418	150 665	152 929	154 487	157 523	156 868	158 575	159 268	160 196
Crude oil and natural gas	10 974	15 264	2 359	2 595	2 795	3 113	3 650	3 874	3 860	3 985
Ships, oil platforms and planes	49 624	36 750	14 785	12 973	10 479	11 369	7 171	11 468	10 190	8 043
Services	390 237	389 642	96 915	97 112	97 508	98 951	97 006	98 335	97 833	96 139
Gross domestic product (market prices)	3 181 071	3 225 564	788 303	794 309	798 305	800 686	803 091	806 759	811 395	815 202
Gross domestic product Mainland Norway (market prices)	2 767 631	2 827 506	684 692	689 768	693 681	699 448	703 004	707 671	710 358	716 891
Petroleum activities and ocean transport	413 440	398 059	103 611	104 542	104 624	101 238	100 087	99 088	101 037	98 311
Mainland Norway (basic prices)	2 398 334	2 454 979	592 744	597 761	600 972	606 604	610 118	614 480	616 930	623 097
Mainland Norway excluding general government	1 797 869	1 841 092	443 931	447 982	450 791	454 915	457 812	461 489	462 972	468 477
Manufacturing and mining	208 289	210 210	52 450	52 538	52 070	52 577	52 398	53 043	53 417	54 268
Production of other goods	316 783	324 403	77 125	78 854	79 611	80 814	81 552	80 931	80 329	82 872
Services incl. dwellings (households)	1 272 797	1 306 479	314 356	316 590	319 110	321 524	323 862	327 514	329 226	331 336
General government	600 464	613 887	148 813	149 779	150 180	151 689	152 306	152 991	153 958	154 620
Taxes and subsidies products	369 297	372 527	91 948	92 007	92 710	92 844	92 886	93 192	93 428	93 794

Source: Statistics Norway.

**Table 9. National accounts: Final expenditure and gross domestic product. At constant 2016 prices. Percentage change from previous period**

	Unadjusted		Seasonally adjusted							
	2017	2018*	17.1	17.2	17.3	17.4	18.1	18.2	18.3	18.4
Final consumption expenditure of households and NPISHs	2.2	2.0	0.7	0.4	0.8	0.8	0.1	1.2	-0.1	0.4
Household final consumption expenditure	2.2	1.9	0.7	0.4	0.8	0.7	0	1.2	-0.1	0.3
Goods	1.6	0.8	0.6	0.4	0.8	1.1	-0.8	1.4	-1.2	-0.2
Services	2.5	2.6	0.7	0.8	0.7	0.6	0.4	1.1	0.7	0.6
Direct purchases abroad by resident households	2.7	3.6	-0.5	-1.2	2.6	-1.2	2.6	-0.4	0.5	1.6
Direct purchases by non-residents	-0.6	0.5	-2.9	3.8	3.3	-0.9	1.4	-1.8	-0.8	1.3
Final consumption expenditure of NPISHs	2.7	4.2	0.9	0.6	1.1	1.0	1.6	1.4	0.5	1.8
Final consumption expenditure of general government	2.5	1.5	0.6	0.4	0.7	1.4	-0.1	0	0.1	0.1
Final consumption expenditure of central government	1.8	1.3	-0.4	0.7	0.4	1.4	0	0	0	-0.2
Central government. civilian	1.9	1.3	-0.6	0.7	0.5	1.4	-0.1	-0.1	0	-0.2
Central government. defence	1.0	1.4	0.9	0.3	0.3	0.9	0.1	0.5	0	-0.1
Final consumption expenditure of local government	3.2	1.7	1.7	0.2	0.9	1.4	-0.1	0.1	0.2	0.4
Gross fixed capital formation	3.6	0.9	1.0	0.8	-0.7	1.2	-5.5	7.2	1.4	-0.8
Extraction and transport via pipelines	-3.8	3.3	-2.4	3.6	-9.0	10.2	-12	13.8	3.5	4.3
Ocean transport	-68.2	-66.7	-72.5	-0.2	85.3	-97.3	..	-7.3	-139.7	-246.6
Mainland Norway	7	0.7	3.5	0.1	0.9	0.2	-4.2	5.8	1.4	-2.4
Industries	9.3	1.8	7.2	-5.8	7.6	-2.0	-5	9.4	-0.2	-1.8
Service activities incidental to extraction	15.9	35.8	-17.4	12.7	93.3	1.3	-13.2	8.7	16.6	-0.8
Other services	12.3	-3.2	12.6	-5.2	3.8	-1.0	-8.2	9.3	-0.8	-3.1
Manufacturing and mining	-2.5	10.4	-3.2	-9.6	7.1	7.2	-4.2	11.8	-0.4	-0.3
Production of other goods	8.1	9.7	0.0	-5.9	16.6	-9.2	4	8.4	0.7	0.6
Dwellings (households)	7	-6	3.2	-0.1	0.9	-5.2	0.3	-4	0.1	0.1
General government	3.6	6.6	-2.1	11.1	-9.7	10.8	-7.4	10.8	5.3	-5.6
Acquisitions less disposals of valuables	5.5	7.6	4.2	-9.4	7.7	2.9	0	4.8	-2.2	6
Changes in stocks and statistical discrepancies	2.3	13.8	24.2	7.6	18.7	13.6	18.1	-25.4	-4.2	23.2
Gross capital formation	3.5	2.4	2.8	1.4	1.3	2.7	-2.3	1.9	0.8	1.9
Final domestic use of goods and services	2.6	2	1.3	0.7	0.9	1.5	-0.7	1.1	0.2	0.8
Final demand from Mainland Norway	3.3	1.6	1.3	0.3	0.8	0.8	-0.9	1.9	0.3	-0.3
Final demand from general government	2.7	2.4	0.1	2.3	-1.3	3.0	-1.5	1.9	1.1	-1
Total exports	-0.2	-0.8	-1.8	0.5	-1.3	-1.3	0.5	0.9	0.7	-1.9
Traditional goods	1.7	2.5	4.2	4.2	2.6	-0.7	-0.6	0.6	0.2	4.9
Crude oil and natural gas	1.5	-4.8	-2.4	1.2	-1.9	-4.7	-0.9	0.5	1.2	-1.7
Ships. oil platforms and planes	-16.1	-21	-19.9	-60.7	-35.8	15.4	78.4	-16.2	0.1	-67.9
Services	-3.2	1	-4.8	1.4	-3.5	1.5	1.2	2.3	0.6	-6.8
Total use of goods and services	1.9	1.3	0.5	0.7	0.3	0.8	-0.4	1.1	0.3	0.1
Total imports	1.6	0.9	0.7	0.3	-0.1	2.1	-2.3	2.9	-0.4	-1
Traditional goods	2.7	3.1	2.2	1.5	1.0	2.0	-0.4	1.1	0.4	0.6
Crude oil and natural gas	26.4	39.1	8.1	10.0	7.7	11.4	17.3	6.1	-0.4	3.2
Ships. oil platforms and planes	-2.2	-25.9	-1.3	-12.3	-19.2	8.5	-36.9	59.9	-11.1	-21.1
Services	-0.1	-0.2	-1.5	0.2	0.4	1.5	-2	1.4	-0.5	-1.7
Gross domestic product (market prices)	2	1.4	0.4	0.8	0.5	0.3	0.3	0.5	0.6	0.5
Gross domestic product Mainland Norway (market prices)	2.0	2.2	0.8	0.7	0.6	0.8	0.5	0.7	0.4	0.9
Petroleum activities and ocean transport	1.7	-3.7	-2.4	0.9	0.1	-3.2	-1.1	-1	2	-2.7
Mainland Norway (basic prices)	1.9	2.4	0.7	0.8	0.5	0.9	0.6	0.7	0.4	1
Mainland Norway excluding general government	1.7	2.4	0.7	0.9	0.6	0.9	0.6	0.8	0.3	1.2
Manufacturing and mining	0	0.9	1.4	0.2	-0.9	1.0	-0.3	1.2	0.7	1.6
Production of other goods	3	2.4	0.7	2.2	1.0	1.5	0.9	-0.8	-0.7	3.2
Services incl. dwellings (households)	1.7	2.6	0.6	0.7	0.8	0.8	0.7	1.1	0.5	0.6
General government	2.3	2.2	0.7	0.6	0.3	1.0	0.4	0.4	0.6	0.4
Taxes and subsidies products	2.9	0.9	1.9	0.1	0.8	0.1	0	0.3	0.3	0.4

Source: Statistics Norway.

**Table 10. National accounts: Final expenditure and gross domestic product. Price indices. 2016=100**

	Unadjusted		Seasonally adjusted							
	2017	2018*	17.1	17.2	17.3	17.4	18.1	18.2	18.3	18.4
Final consumption expenditure of households and NPISHs	102.0	104.1	101.0	101.9	102.1	102.6	102.8	103.6	104.6	105.1
Final consumption expenditure of general government	102.4	105.1	101.4	102.2	102.9	103.2	103.9	104.7	105.5	106.6
Gross fixed capital formation	100.7	102.8	100.1	101.0	100.5	101.2	102.0	102.1	103.0	103.9
Mainland Norway	102.1	105.0	101.1	102.2	102.0	103.0	103.9	104.4	105.4	106.3
Final domestic use of goods and services	101.6	104.0	101.4	101.3	101.4	102.2	103.4	103.5	104.6	104.2
Final demand from Mainland Norway	102.1	104.6	101.1	102.1	102.3	102.9	103.4	104.1	105.0	105.7
Total exports	109.2	123.9	107.9	108.1	107.6	113.0	118.3	122.9	127.7	127.5
Traditional goods	105.4	111.5	104.0	105.8	105.0	107.1	109.6	112.2	111.7	111.7
Total use of goods and services	103.6	109.0	103.1	103.1	103.0	104.9	107.2	108.4	110.4	110
Total imports	102.7	107.2	100.6	102.7	102.5	104.7	105.5	106.3	108.0	108.8
Traditional goods	103.7	109.0	101.9	103.6	103.2	105.9	107.2	108.5	109.6	110.5
Gross domestic product (market prices)	103.9	109.7	104.0	103.3	103.1	105.0	107.8	109.2	111.2	110.4
Gross domestic product Mainland Norway (market prices)	101.1	102.8	100.8	101.1	101.4	101.2	102.1	102.4	103.0	103.9

Source: Statistics Norway.

**Table 11. National accounts: Final expenditure and gross domestic product. Price indices. Percentage change from previous period**

	Unadjusted		Seasonally adjusted							
	2017	2018*	17.1	17.2	17.3	17.4	18.1	18.2	18.3	18.4
Final consumption expenditure of households and NPISHs	2.0	2.1	0.4	0.9	0.2	0.5	0.2	0.7	0.9	0.4
Final consumption expenditure of general government	2.4	2.6	0.4	0.8	0.6	0.3	0.6	0.8	0.8	1.0
Gross fixed capital formation	0.7	2.1	0.0	0.8	-0.5	0.7	0.7	0.2	0.8	0.9
Mainland Norway	2.1	2.9	0.6	1.1	-0.2	0.9	0.9	0.5	0.9	0.8
Final domestic use of goods and services	1.6	2.3	0.8	-0.1	0.1	0.8	1.2	0.1	1	-0.3
Final demand from Mainland Norway	2.1	2.4	0.4	0.9	0.2	0.6	0.5	0.7	0.9	0.7
Total exports	9.2	13.5	5.4	0.2	-0.5	5.1	4.7	3.9	3.9	-0.2
Traditional goods	5.4	5.8	0.6	1.8	-0.7	1.9	2.3	2.4	-0.4	0.0
Total use of goods and services	3.6	5.3	2.0	0.0	-0.1	1.9	2.2	1.1	1.8	-0.4
Total imports	2.7	4.4	1.1	2.2	-0.2	2.2	0.7	0.8	1.6	0.7
Traditional goods	3.7	5.1	1.7	1.7	-0.3	2.6	1.2	1.2	1	0.8
Gross domestic product (market prices)	3.9	5.6	2.3	-0.7	-0.1	1.8	2.6	1.3	1.9	-0.7
Gross domestic product Mainland Norway (market prices)	1.1	1.7	-0.3	0.4	0.3	-0.2	0.8	0.3	0.6	0.9

Source: Statistics Norway.



# Main economic indicators 2007-2022

Accounts and forecasts. Percentage change from previous year unless otherwise noted

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017*	2018*	Forecasts			
													2019	2020	2021	2022
<b>Demand and output</b>																
Consumption in households etc.	5.3	1.7	0.0	3.8	2.3	3.5	2.8	2.1	2.6	1.3	2.2	2.0	2.2	2.3	2.3	2.3
General government consumption	2.0	2.4	4.1	2.2	1.0	1.6	1.0	2.7	2.4	2.1	2.5	1.5	1.8	1.8	1.6	1.6
Gross fixed investment	12.2	1.1	-6.8	-6.4	7.5	7.6	6.3	-0.3	-4.0	5.2	3.6	0.9	4.7	1.2	1.0	1.1
Extraction and transport via pipelines	9.3	5.5	2.9	-8.0	11.4	14.6	19.0	-1.8	-12.2	-16.0	-3.8	3.3	12.9	-0.6	1.0	1.5
Mainland Norway	14.2	0.9	-10.4	-6.4	5.0	7.4	2.9	0.4	-0.2	10.7	7.0	0.7	2.1	1.7	1.0	1.0
Industries	22.7	3.1	-18.4	-9.5	1.1	10.5	-3.2	-0.7	-2.8	16.5	9.3	1.8	3.1	1.6	1.3	1.7
Housing	2.7	-9.0	-8.1	-1.6	17.0	10.9	5.3	-1.4	3.2	6.6	7.0	-6.0	1.0	2.2	0.4	-0.3
General government	8.7	7.2	7.7	-4.8	1.1	-1.8	11.8	4.4	0.2	6.7	3.6	6.6	1.7	1.4	1.3	1.0
Demand from Mainland Norway <sup>1</sup>	6.4	1.7	-1.4	1.2	2.5	3.7	2.3	1.9	2.0	3.5	3.3	1.6	2.1	2.1	1.8	1.8
Stockbuilding <sup>2</sup>	0.4	0.4	-1.8	1.3	0.2	-0.5	0.5	-0.2	-0.1	-0.3	0.4	0.1	-0.2	0.0	0.0	0.0
Exports	1.4	0.1	-4.1	0.6	-0.8	1.6	-1.7	3.1	4.7	1.1	-0.2	-0.8	1.0	5.4	3.3	2.2
Traditional goods	9.2	3.5	-8.0	3.3	-0.1	-0.2	1.3	3.1	6.9	-8.6	1.7	2.5	3.8	3.5	3.6	3.5
Crude oil and natural gas	-2.4	-1.3	-1.6	-6.9	-5.6	0.5	-5.5	2.7	2.1	4.9	1.5	-4.8	-1.4	10.3	4.5	0.9
Imports	10.0	3.2	-10.3	8.4	3.9	3.0	5.0	2.4	1.6	3.3	1.6	0.9	3.3	1.6	1.8	2.1
Traditional goods	7.2	1.2	-12.1	9.2	4.6	2.6	2.3	2.1	3.2	-0.1	2.7	3.1	2.8	2.2	2.2	2.2
Gross domestic product	3.0	0.5	-1.7	0.7	1.0	2.7	1.0	2.0	2.0	1.2	2.0	1.4	2.0	3.1	2.2	1.8
Mainland Norway	5.7	1.8	-1.7	1.9	1.9	3.7	2.3	2.2	1.4	1.1	2.0	2.2	2.4	2.3	2.0	1.9
Manufacturing	3.8	2.7	-7.8	2.1	1.7	2.0	3.3	2.8	-4.6	-4.9	0.0	0.9	1.6	3.6	2.6	1.8
<b>Labour market</b>																
Total hours worked, Mainland Norway <sup>3</sup>	4.8	3.6	-2.0	0.2	1.7	1.8	0.3	1.4	0.7	0.5	0.4	1.7	1.4	1.8	0.9	0.9
Employed persons	4.1	3.2	-0.5	-0.5	1.5	2.1	1.1	1.2	0.4	0.2	1.1	1.5	1.2	0.7	1.0	0.6
Labor force <sup>4</sup>	2.5	3.0	0.2	0.6	1.3	1.6	1.2	0.7	1.5	0.2	-0.2	1.4	1.2	0.7	0.9	0.4
Participation rate (level) <sup>4</sup>	72.6	73.5	72.5	71.7	71.5	71.4	71.2	70.7	71.0	70.4	69.7	70.2	70.6	70.8	71.2	71.2
Unemployment rate (level) <sup>4</sup>	2.5	2.7	3.3	3.8	3.4	3.3	3.8	3.6	4.5	4.7	4.2	3.8	3.7	3.7	3.7	3.6
<b>Prices and wages</b>																
Wages per standard man-year	5.4	6.3	4.2	3.7	4.2	4.0	3.9	3.1	2.8	1.8	2.3	2.8	3.3	3.5	3.6	3.6
Consumer price index (CPI)	0.7	3.8	2.2	2.4	1.3	0.6	2.1	2.1	2.1	3.6	1.8	2.7	2.3	1.7	1.9	2.1
CPI-ATE <sup>5</sup>	1.4	2.6	2.6	1.3	1.0	1.3	1.5	2.5	2.7	3.1	1.4	1.6	2.3	1.9	2.1	2.2
Export prices, traditional goods	2.4	2.8	-6.0	4.5	5.8	-1.9	2.7	3.4	2.0	4.0	5.4	5.8	1.9	1.3	0.9	0.9
Import prices, traditional goods	3.7	3.9	-1.5	0.0	4.0	0.3	1.5	4.4	4.7	1.8	3.7	5.1	3.2	1.2	1.4	1.4
Housing prices	12.6	-1.1	1.9	8.2	8.0	6.8	4.0	2.7	6.1	7.0	5.0	1.4	2.1	0.8	0.9	1.8
<b>Income, interest rates and exchange rate</b>																
Household real income	6.0	3.4	3.2	2.3	4.1	4.4	3.9	2.9	5.5	-1.7	1.4	2.4	2.1	2.7	2.6	2.2
Household saving ratio (level)	0.9	3.8	5.2	4.0	5.9	7.1	7.4	8.2	10.3	7.3	6.7	6.5	6.7	7.5	8.2	8.2
Money market rate (level)	5.0	6.2	2.5	2.5	2.9	2.2	1.8	1.7	1.3	1.1	0.9	1.1	1.4	1.9	2.3	2.3
Lending rate, credit loans(level) <sup>6</sup>	5.0	6.8	4.0	3.4	3.6	3.9	4.0	3.9	3.2	2.6	2.6	2.6	3.0	3.4	3.8	3.8
Real after-tax lending rate, banks (level)	2.9	1.1	0.7	0.1	1.3	2.1	0.8	0.8	0.1	-1.6	0.1	-0.7	0.2	1.0	1.1	0.9
Importweighted krone exchange rate (44 countries) <sup>7</sup>	-1.8	0.0	3.3	-3.7	-2.4	-1.2	2.2	5.3	10.5	1.8	-0.8	0.1	2.2	0.1	0.0	0.0
NOK per euro (level)	8.02	8.22	8.73	8.01	7.79	7.47	7.81	8.35	8.95	9.29	9.33	9.60	9.76	9.76	9.76	9.76
<b>Current account</b>																
Current balance (bill. NOK) <sup>8</sup>	287	408	261	284	346	371	316	331	246	125	186	285	300	377	392	394
Current account (per cent of GDP)	12.1	15.5	10.6	10.9	12.3	12.4	10.2	10.5	8.1	4.0	5.7	8.1	8.1	9.7	9.7	9.4
<b>International indicators</b>																
Exports markets indicator	6.5	1.6	-9.6	11.4	6.3	1.3	2.2	5.3	5.7	3.9	4.9	3.5	3.8	3.7	4.0	4.4
Consumer price index, euro-area	2.2	3.3	0.3	1.6	2.7	2.5	1.3	0.4	0.0	0.2	1.5	1.7	1.4	1.6	1.7	1.8
Money market rate, euro(level)	4.3	4.6	1.2	0.8	1.4	0.6	0.2	0.2	0.0	-0.3	-0.3	-0.3	-0.3	-0.1	0.3	0.5
Crude oil price NOK (level) <sup>9</sup>	424	556	392	485	622	650	639	627	431	379	452	583	571	564	551	538

<sup>1</sup> Consumption in households and non-profit organizations + general government consumption + gross fixed capital formation in mainland Norway.

<sup>2</sup> Change in stockbuilding. Per cent of GDP.

<sup>3</sup> Employees

<sup>4</sup> According to Statistics Norway's labour force survey(LFS).

<sup>5</sup> CPI adjusted for tax changes and excluding energy products.

<sup>6</sup> Yearly average.

<sup>7</sup> Increasing index implies depreciation.

<sup>8</sup> Current account not adjusted for saving in pension funds.

<sup>9</sup> Average spot price Brent Blend.

Source: Statistics Norway. The cut-off date for information was March 5 2019.