

# Economic Survey

Statistics Norway



Statistisk sentralbyrå

- Economic developments in Norway
- Forecasts 2017-2020

**3/2017**



# Economic developments in Norway

After being in a cyclical downturn for almost three years, growth in the Norwegian economy has picked up. The downturn appears to have bottomed out at the end of last year, but the upturn is a fragile one in that we forecast growth only slightly over trend in the near term. Preliminary seasonally adjusted quarterly national accounts figures (QNA) show mainland GDP growth to be higher than trend in the first two quarters of the year. We estimate trend growth to be just under 2 per cent as an annual rate. Highly expansionary fiscal

and monetary policy, a weak krone and strong construction growth have eased the downturn and fuelled the economic turnaround. In addition, impulses from petroleum investment changed from strongly negative in the years 2014–2016 to weakly positive in the first half of 2017. Going forward, we expect that as a result of relatively high growth in demand from Norway's trading partners, a still weak krone and low interest rates, the Norwegian economy will be in an economic upturn that will turn into a weak expansion in 2020.

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

	2015	2016*	Seasonally adjusted			
			16:3	16:4	17:1	17:2
<b>Demand and output</b>						
Consumption in households etc.	2.6	1.5	0.5	0.6	0.6	1.0
General government consumption	2.4	2.1	0.2	0.2	0.8	0.4
Gross fixed investment	-4.0	-0.2	4.0	-1.0	-0.6	3.2
Extraction and transport via pipelines	-12.2	-16.9	-0.4	-0.9	0.9	1.8
Mainland Norway	-0.2	6.1	5.2	-0.9	-0.5	2.7
Final domestic demand from Mainland Norway <sup>1</sup>	2.0	2.6	1.4	0.2	0.4	1.2
Exports	4.7	-1.8	1.3	1.2	-0.9	1.0
Traditional goods	6.9	-8.2	-0.3	-7.3	6.0	3.0
Crude oil and natural gas	2.1	4.3	1.3	2.0	-0.1	2.3
Imports	1.6	2.3	2.5	0.5	4.3	-0.4
Traditional goods	3.2	-0.4	2.4	0.8	4.7	-1.8
Gross domestic product	2.0	1.1	-0.5	1.3	0.2	1.1
Mainland Norway	1.4	1.0	0.1	0.3	0.7	0.7
<b>Labour market</b>						
Man-hours worked	0.6	0.7	0.7	0.4	-0.2	0.2
Employed persons	0.4	0.3	0.2	0.2	0.1	0.4
Labour force <sup>2</sup>	1.4	0.3	0.6	-0.8	0.0	0.2
Unemployment rate, level <sup>2</sup>	4.4	4.7	4.9	4.7	4.3	4.3
<b>Prices and wages</b>						
Annual earnings	2.8	1.7	..	..	..	..
Consumer price index (CPI) <sup>3</sup>	2.1	3.6	4.0	3.6	2.6	2.1
CPI adjusted for tax changes and excluding energy products (CPI-ATE) <sup>3</sup>	2.7	3.0	3.3	2.7	1.9	1.7
Export prices, traditional goods	3.2	3.4	0.7	2.3	1.1	0.4
Import prices, traditional goods	4.8	1.0	-0.3	0.5	1.0	5.1
<b>Balance of payment</b>						
Current balance, bill. NOK	270.0	154.8	19.0	61.7	77.5	35.8
<b>Memorandum items (unadjusted level)</b>						
Money market rate (3 month NIBOR)	1.3	1.1	1.1	1.1	1.0	0.9
Lending rate, credit loans <sup>4</sup>	3.2	2.6	2.5	2.5	2.6	2.6
Crude oil price NOK <sup>5</sup>	431	378	391	428	461	433
Importweighted krone exchange rate, 44 countries, 1995=100	103.4	105.4	105.2	102.3	102.7	106.0
NOK per euro	8.9	9.3	9.3	9.0	9.0	9.4

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

<sup>2</sup> According to Statistics Norway's labour force survey (LFS).

<sup>3</sup> Percentage change from the same period the previous year.

<sup>4</sup> Period averages.

<sup>5</sup> Average spot price, Brent Blend.

Source: Statistics Norway and Norges Bank.

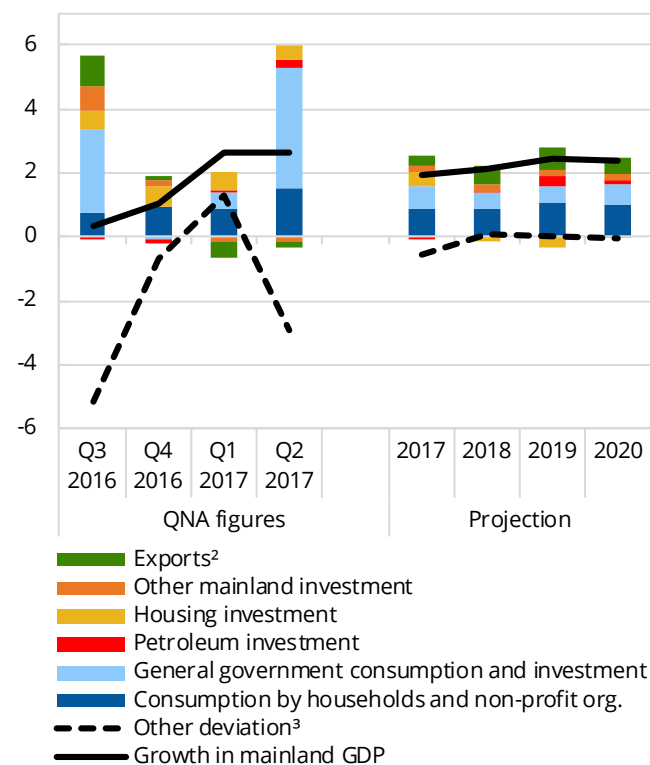
The downturn was driven by the fall in the oil price in the second half of 2014. Petroleum investment was already shrinking in 2013 as a result of the high cost level, but the fall escalated when the oil price plunged from about USD 110 in the summer of 2014 to about USD 50 per barrel at the end of the same year. At the beginning of 2016, the oil price was down to USD 30 per barrel, but it rebounded through 2016 to around USD 50 per barrel. Moreover, the forward market indicated that oil prices would continue to rise. The fall in petroleum investment has slowed in pace with the rise in oil prices, and a slight increase has been recorded for the past two quarters. We expect the oil price to rise to over USD 60 in 2020, and that this will contribute to petroleum investment picking up towards the end of 2018. We expect fairly stable investment until then.

The krone depreciated sharply in pace with the fall in the oil price, thereby acting as a shock absorber for the Norwegian economy. Whereas a euro cost only NOK 8.20 in summer 2014, it cost around NOK 9.60 in January 2016, representing a krone depreciation of about 17 per cent. Measured in terms of both the trade-weighted exchange rate index (the exchange rate of the Norwegian krone against Norway's 25 most important trading partners) and the import-weighted krone exchange rate (the exchange rate against the 44 countries we import most from) the krone depreciated 19 per cent in the same period. For those industry sectors that compete directly or indirectly with foreign companies, this depreciation meant a sharp improvement in competitiveness. Lower costs also made it easier for companies that had previously delivered goods and services to the petroleum industry to adapt to new markets. For example, shipyards that used to build offshore vessels are now building cruise ships or other types of vessel. However, the krone strengthened somewhat in relation to the euro from the beginning of 2016 and up early September this year, and we expect the exchange rate to increase moderately to about NOK 9 at the end of the projection period.

Competitiveness has also been improved by moderate wage settlements since 2014. Annual wage growth in 2016 was 1.7 per cent, which is lower than both

inflation that year and wage growth among trading partners. In addition to the moderate wage settlements, total annual wage growth has been affected by compositional effects. Many previously highly paid workers in petroleum-related industries have had to find jobs in other industries with a lower wage level. The compositional effects helped to push growth in average annual wages down by 0.3 percentage point in

**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 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> Other deviations<sup>3</sup> is defined residually so that it captures all other factors as well as changes in inventories and statistical deviations.

Source: Statistics Norway.

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

	QNA				Projection			
	16:3	16:4	17:1	17:2	2017	2018	2019	2020
Consumption by households and non-profit organisations	0.7	0.9	0.9	1.5	0.9	0.9	1.1	1.0
General government consumption and investment	2.6	-0.1	0.5	3.8	0.7	0.5	0.5	0.6
Petroleum investment	-0.1	-0.1	0.1	0.3	0.0	0.0	0.3	0.1
Housing investment	0.6	0.6	0.6	0.4	0.5	-0.2	-0.3	0.0
Other mainland investment	0.8	0.2	-0.2	-0.2	0.2	0.3	0.2	0.2
Exports <sup>1</sup>	1.0	0.1	-0.5	-0.2	0.3	0.6	0.7	0.5
Other deviations <sup>1</sup>	-5.2	-0.7	1.3	-2.9	-0.6	0.1	0.0	-0.1
Growth in mainland GDP	0.3	1.0	2.7	2.6	2.0	2.1	2.4	2.4

<sup>1</sup> See footnotes to Figure 1.  
Source: Statistics Norway.

**Table 3. Main economic indicators 2016-2020. Accounts and forecasts. Percentage change from previous year unless otherwise noted**

	Acco- unts 2016*	Forecasts									
		2017			2018			2019		2020	
		SSB	NB	FIN	SSB	NB	FIN	SSB	NB	SSB	NB
<b>Demand and output</b>											
Consumption in households etc.	1.5	2.4	2.1	2.1	2.4	2.3	2.5	2.9	2.0	2.8	1.8
General government consumption	2.1	1.9	2.4	1.9	1.7	1.5	..	1.8	1.2	2.2	1.1
Gross fixed investment	-0.2	4.2	..	1.9	1.6	..	2.7	1.9	..	2.4	..
Extraction and transport via pipelines	-16.9	-0.3	-5.2	11.6	0.2	1.0	-4.0	8.2	5.1	3.0	4.9
Mainland Norway	6.1	5.7	..	..	1.5	..	..	0.2	..	2.2	..
Industries	4.1	4.0	..	2.0	5.1	..	..	3.8	..	3.9	..
Housing	9.0	8.4	9.8	7.9	-3.1	0.2	3.8	-6.0	-0.4	0.1	1.0
General government	5.9	5.0	..	5.1	1.8	..	..	1.8	..	1.8	..
Demand from Mainland Norway <sup>1</sup>	2.6	2.9	2.9	2.8	2.0	2.4	2.5	2.0	1.9	2.5	1.6
Stockbuilding <sup>2</sup>	1.4	0.3	..	..	0.0	..	..	0.0	..	0.0	..
Exports	-1.8	1.6	..	1.1	1.6	..	0.4	2.6	..	2.5	..
Traditional goods <sup>3</sup>	-8.2	2.1	..	2.8	5.0	..	5.5	3.3	..	2.6	..
Crude oil and natural gas	4.3	1.4		-0.4	-0.4		-4.4	1.0		2.3	..
Imports	2.3	4.9	2.2	2.5	2.0	1.8	3.0	2.7	2.1	2.7	2.3
Traditional goods	-0.4	5.5	..	3.6	3.1	..	4.4	3.9	..	3.8	..
Gross domestic product	1.1	1.8	1.2	1.5	1.8	1.1	1.2	2.2	1.2	2.3	2.4
Mainland Norway	1.0	2.0	2.0	1.6	2.1	1.9	2.4	2.4	1.9	2.4	2.2
<b>Labour market</b>											
Employed persons	0.3	1.0	0.8	0.6	0.8	1.0	0.9	1.0	0.9	0.9	0.9
Unemployment rate (level)	4.7	4.2	4.2	4.3	4.1	4.0	4.1	4.0	3.7	3.9	3.6
<b>Prices and wages</b>											
Annual earnings	1.7	2.4	2.4	2.4	3.0	2.8	..	3.2	3.1	4.0	3.4
Consumer price index (CPI)	3.6	2.1	1.8	1.9	1.9	1.4	1.6	1.7	1.2	1.9	1.5
CPI-ATE <sup>4</sup>	3.0	1.6	1.4	1.7	1.7	1.6	1.8	1.6	1.5	1.6	1.5
Export prices, traditional goods	3.4	5.6	..	..	1.0	..	..	0.9	..	1.1	..
Import prices, traditional goods	1.0	4.3	..		0.5	..	..	0.2	..	0.0	..
Housing prices	7.0	5.0	7.0	..	-4.8	1.1	..	-1.2	2.7	1.2	2.6
<b>Balance of payment</b>											
Current balance (bill. NOK)	155	171	..	192	144	..	153	170	..	195	..
Current balance (per cent of GDP)	3.3	5.2	..	5.8	4.2	..	4.5	4.6	..	5.1	..
<b>Memorandum items:</b>											
Household real income	-1.5	1.9			2.7			2.6		2.5	
Household savings ratio (level)	6.9	6.5	..	9.2	6.9	..	..	6.9	..	7.3	..
Money market rate (level)	1.1	0.9	1.0	1.0	0.8	0.9	1.1	0.8	1.0	1.2	1.4
Lending rate, credit loans (level) <sup>5</sup>	2.6	2.6	..	..	2.4	..	..	2.4	..	2.7	..
Crude oil price NOK (level) <sup>6</sup>	378	433	..	444	448	..	437	469	..	483	..
Export markets indicator	3.8	4.9	..	..	4.7	..	..	4.4	..	4.2	..
Importweighted krone exchange rate (44 countries) <sup>7</sup>	1.9	-1.7	-0.6	-2.0	-2.0	-1.0	1.0	-0.9	-1.4	-0.9	-0.6

<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> Norges Bank publishes projections for traditional goods, travel, and other mainland transport services.

<sup>4</sup> CPI adjusted for tax changes and excluding energy products (CPI-ATE).

<sup>5</sup> Yearly average.

<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, the National Budget St.meld nr.2 (2016-2017), (MoF), Norges Bank, Monetary Policy Report 2/2017 (NB).

2016 (see Economic Survey 2017/1, Box 5). In the near term, improved profitability and a general economic upturn will lead to somewhat higher wage growth. Annual wage growth is expected to rise 2.4 per cent in 2017, increasing to 4.0 per cent in 2020.

Fiscal policy has been highly expansionary in recent years. From 2014 to 2016, the structural non-oil budget deficit (SNOBD) increased by almost NOK 50 billion in 2017-kroner, according to the Revised National Budget 2017 (RNB 2017). This is approximately on a par with the fall in petroleum investment in the same period. The budget deficit, measured in terms of SNOBD as a share of trend mainland GDP, increased by 1.3 percentage point in the course of these three years. Thus fiscal policy has generated substantial expansionary impulses. The RNB projection for 2017 is a further 0.5 percentage point increase. After 2017, there appears to be little scope for expansionary fiscal policy, given the fiscal rule's new spending limit of 3 per cent of the value of the Government Pension Fund Global (GPF) at the start of the budget year. In light of the economic scenario we foresee, however, there will be no need for an equally expansionary fiscal policy. We therefore assume a neutral fiscal policy in 2018, followed by a slight tightening. SNOBD as a share of trend mainland GDP is expected to remain approximately constant up to 2020.

Monetary policy has also contributed indirectly to checking the cyclical downturn, through the krone exchange rate. Norges Bank's key policy rate had been 1.5 per cent since the beginning of 2012, but was gradually reduced from the end of 2014, to 0.5 per cent in spring 2016. Since then it has remained unchanged. The reduction in money market rates has not been equally large, however. Whereas the key policy rate was cut by one percentage point, money market rates were only reduced by about 0.8 percentage point during the same period. Thus monetary policy has not been as expansionary as the key rate cut might suggest. We expect money market rates to remain at the current level of 0.8 per cent for the next few years, and then to increase by about half a percentage point at the end of the projection period.

The key rate might have been even lower in the period following the fall in oil prices if it had not been for the sharp rise in house prices in the same period. In the period 2014–2016, house prices rose by an annual average of 5.3 per cent. The annual average rise in Oslo was as much as 9.5 per cent in the same period. This trend reversed in 2017, and according to monthly statistics from Real Estate Norway, seasonally adjusted house prices have been falling since May. The reversal must be seen in light of both changes in the mortgage regulations and the record-high level of residential construction in recent years. We expect the weak housing market developments we have seen so far this year to continue through this year and 2018 and then level off. At the end of the projection period, house prices are expected to be at approximately the same level as

in 2016. The low interest rate and an expected fall in housing investment imply that the reduction in house prices will not be larger.

Consumption growth has gathered pace recently. Consumption in the four preceding quarters has generated positive impulses to aggregate demand, and in the second quarter of 2017 consumption increased by as much as 4.2 per cent, measured as an annual rate. Although we are in a cyclical upturn, we expect fairly moderate consumption growth. The weak developments in house prices have a dampening effect on consumption, but given continued low interest rates and somewhat increasing income growth, consumption growth is expected to approach 3 per cent at the end of the projection period.

The low interest rates and greater optimism concerning the outlook for the future are expected to prompt a moderate upswing in business investment. The high growth in power supply is expected to continue, and manufacturing investment is likely to pick up in the years ahead following a sharp decline through the first half of 2017. However, developments in overall business investment, which in the past has typically had double-digit growth rates during cyclical upturns, will be considerably weaker in the current revival. Investment growth is expected to rise to about 5 per cent in 2018 and then hover around 4 per cent annually for the remainder of the projection period.

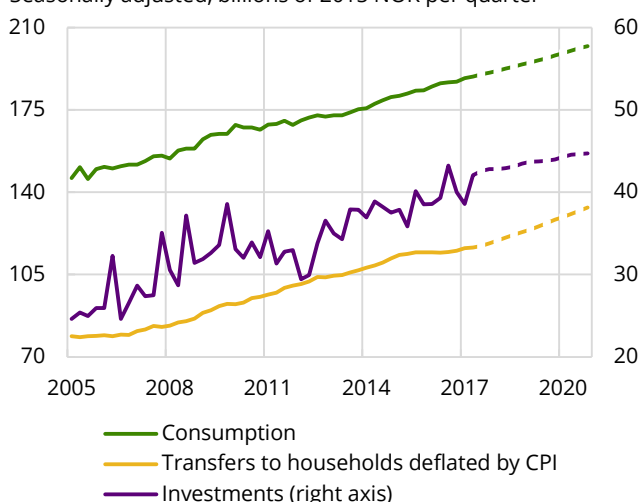
The unemployment rate increased by about one and a half percentage points, in pace with the cyclical decline from 2014. By mid-2016, unemployment had risen to 5 per cent according to monthly figures from the Labour Force Survey (LFS). Since then unemployment has fallen, and is now 4.3 per cent. Much of the decline is due to persons withdrawing from the labour market, both because of the economic situation and as a result of the aging population. In the near term, we expect economic developments to lead to both an increase in employment and a further slight fall in unemployment, to just under 4 per cent in 2020.

Thereafter the cyclical upturn will be moderate. Some of the factors that contributed to the economic turnaround, such as the krone exchange rate, fiscal policy and developments in housing investment, will not continue to generate equally positive impulses in the years ahead. Interest rates will remain low for a long time, however, and thereby contribute to the upswing. Petroleum investment will also make a positive contribution after a while, and global growth has picked up as well. Growth appears likely to be higher than trend, but we expect the recovery to be one of the weakest since the 1970s.

We show the consequences of alternative scenarios for economic policy, the global economy and the petroleum sector in Box 2.

**Figure 2. General government**

Seasonally adjusted, billions of 2015 NOK per quarter



Source: Statistics Norway.

2017 the last year with clearly expansionary fiscal policy

Fiscal policy stimulated growth in the Norwegian economy in 2016. General government consumption increased by 2.1 per cent from 2015 to 2016, while gross general government investment increased by nearly 6 per cent. Some of the high growth was due to increased investment in defence imports, but gross non-military investment also increased appreciably. Public transfers to households increased by 3.9 per cent, so that real growth in transfers was only just positive as a result of the high inflation in 2016. Overall real growth in these three expenditure components was approximately 2 per cent in 2016, in line with estimated trend growth in the mainland economy. As a result of reduced tax rates in 2016, fiscal policy was expansionary on balance, and RNB 2017 estimates that SNOBD as a share of trend mainland GDP increased by 0.7 percentage point from 2015 to 2016. SNOBD was equivalent to 2.6 per cent of the value of the Government Pension Fund Global at the beginning of 2016.

Our projections for fiscal policy in 2017 are based on RNB 2017. Consumption growth this year is forecast to be a bare 2 per cent, and gross general government investment to be 5 per cent. The rise in investment in 2017 can largely be attributed to increased purchases of fighter aircraft (from 2 aircraft in 2016 to 6 per year going forward). Growth in household transfers will be weak also in 2017 as a result of low wage growth. Considerably lower inflation this year than in 2016 will nonetheless push up real growth to about 1.5 per cent. Real growth in the three main expenditure components is now projected to be just over 2 per cent in 2017, only slightly higher than in 2016.

The budget adopted by the Storting for 2017 entails a reduction in taxation compared with 2016. The tax rate on ordinary income for companies (excluding the financial sector) and personal taxpayers has been

reduced from 25 to 24 per cent in 2017. The system for petroleum tax and power supply taxation is being adjusted so that these two industries are not appreciably affected. Bracket tax on high personal income has been increased, so that most of the revenue loss on personal taxpayers due to reduced tax on ordinary income will be recouped through other income taxes. Tax equivalent to 5 per cent of pay has been introduced for the financial sector, and the industry will pay higher tax on ordinary income (25 per cent instead of 24 per cent). Initial write-offs on machinery have also been eliminated, and minor changes have been made in other aspects of business sector taxation. RNB 2017 forecasts that SNOBD as a share of trend mainland GDP will increase by 0.5 percentage point from 2016 to 2017. At the beginning of 2017, SNOBD was a bare 3 per cent of the GPF, i.e. approximately in line with the revised fiscal rule. The municipalities have increased their scope for manoeuvre through increased property tax, particularly on residential property and cabins, so the reduction in overall taxes is somewhat less than might be expected by looking only at taxes levied by the central government.

No fiscal policy has been adopted for the years 2018–2020. We assume that underlying general government consumption growth will be just below 2 per cent annually. There is some variation around this level for the individual years, but this is due to differences in the number of working days, which means that the number of man-hours worked per year will vary from year to year. With regard to gross general government investment, we have assumed an increase in investment in civil infrastructure of just under 2 per cent annually. As mentioned, the purchase of fighter aircraft for the Armed Forces substantially increases investment in 2017, but not in the years 2018–2020. The tax compromise based on the Scheel Committee's report entails a further reduction in the tax rate on ordinary income, to 23 per cent in 2018. We assume that there will be a simultaneous upward adjustment of tax rates for those liable for advance tax, so that only mainland enterprises are affected by the change. The loss of revenue due to this change is projected to be close to NOK 3 billion in 2018. We have assumed that fuel taxes will increase in 2018, yielding revenue of NOK 3 billion, and that there will be a similar increase in 2019 and 2020 as well. The increase in indirect taxes will thus add about 0.2 percentage point to CPI inflation each year. Real growth in pension transfers to households will be slightly more than 2 per cent annually in the period 2018 to 2020, while other transfers are expected to grow somewhat less. We have assumed no changes in (real) direct tax rates after 2018. The assumed increase in environmental taxes implies a small increase in overall taxes in 2019 and 2020. On balance, our assumption, coupled with extrapolation of the growth projections for expenditure, therefore implies an approximately cyclically neutral fiscal policy in 2018 and a slight tightening in 2019 and 2020 when the economic upturn will have taken hold. Given our expectation that the krone will

strengthen a little up to 2020, the fiscal scope for manoeuvre will be slightly less than assumed in RNB 2017. We have therefore reduced growth in public purchases of goods and services slightly in 2019 and 2020 compared with the projections in the previous Economic Survey.

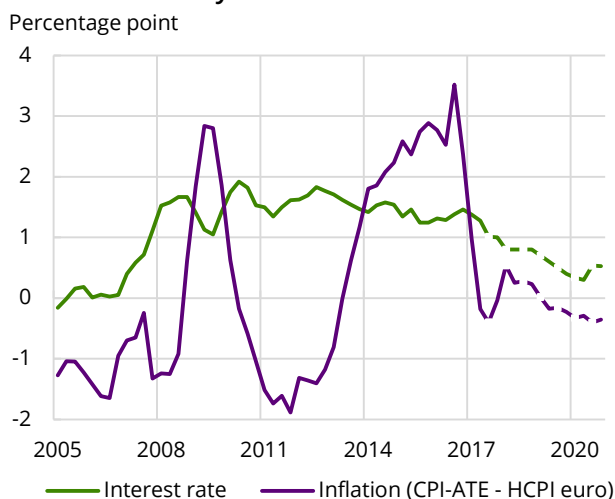
The GPFG amounted to NOK 7 510 billion at the beginning of 2017 and about NOK 7 700 billion at the beginning of September 2017. A slight appreciation of the krone has brought about a pronounced decrease in the GPFG through the summer. This shows that small changes in the krone exchange rate can bring about a major change in the scope for increasing SNOBD. If the krone should continue to appreciate, for example as a result of a higher oil price, the scope for increased spending of petroleum revenue will decrease. There seems to be multi-party agreement that gross general government investment should be maintained at a high level going forward, partly because of major investments in military material and transport infrastructure. At the same time, the aim is to gradually increase defence spending as a share of GDP to 2 per cent by 2025. A larger share of elderly people also means increased outlay for pensions and public spending on care. These plans are not compatible with the fiscal rule unless spending growth is covered in some other way: by reducing investment in other areas, increasing income in the form of charges (payment for public services), financing road projects to a greater extent by means of tolls, or by further increasing municipal property taxes (which are regarded in the national accounts as an indirect tax). Many municipalities have increased their property taxes in recent years, and taxes on dwellings and cabins increased by NOK 3 billion from 2012 to 2016. The spending growth we have assumed going forward is financed through all these mechanisms in addition to increased environmental taxes.

More fundamentally, it should be noted that if the “oil-revenue financed” deficit cannot be increased appreciably in the near term, the hike in taxes must be larger than the increase in spending, because the contribution of SNOBD to financing will undergo little increase compared with recent years. A given increase in spending will thus demand a proportionately larger increase in government tax revenue. If tax rates are not to be increased, spending must therefore grow less than trend mainland economic growth, which may be made difficult by pension rules and bold plans for increased care production, infrastructure and defence. If productivity growth is boosted, however, growth in the volume of service deliveries need not be adversely affected.

### Low interest rate and weak krone

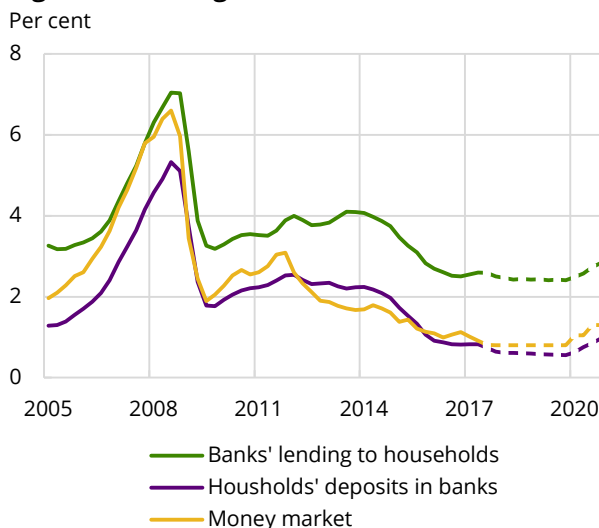
The key policy rate has been at a record-low 0.5 per cent for the past year and a half. Money market rates fell from around 1.2 per cent in mid-January 2016 and up to April the same year – one month after the cut in the key rate. Money market rates then rose again, reverting to 1.2 per cent at the end of 2016. Since the

**Figure 3. Interest rate and inflation differential between Norway and the euro area**



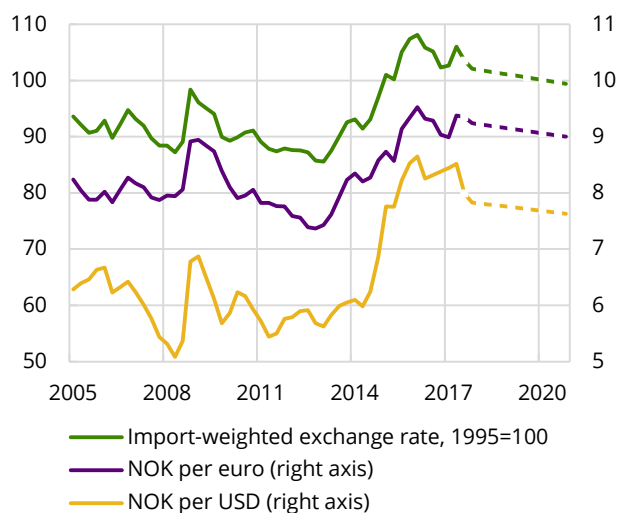
Source: Norges Bank and Statistics Norway

**Figure 4. Norwegian interest rates**



Source: Norges Bank and Statistics Norway

**Figure 5. Exchange rates**



Source: Norges Bank

beginning of the year they have again fallen, down to 0.8 per cent in August this year. The cut in the key rate and expectations of a corresponding more prolonged fall in money market rates were the probable causes of banks' deposit and lending rates falling in the second quarter of 2016. Interest rates on loans secured on dwellings from banks and credit institutions were reduced through this quarter by an average of 0.2 percentage point, from 2.7 per cent to 2.5 per cent. As the fall in money market rates was reversed through the last eight months of 2016, the banks gradually adjusted their rates up at the beginning of 2017. This brought interest rates on loans secured on dwellings up to 2.6 per cent at the end of the first quarter of this year.

The krone depreciated from the beginning of 2013 to the end of 2015, and despite a weak strengthening subsequently, the krone has been at least 11 per cent weaker as a monthly average than the average in the ten-year period prior to the depreciation. Measured by the import-weighted exchange rate index (I-44), the krone is nonetheless about 8 per cent stronger now than at the beginning of 2016. Much of the appreciation is due to the weakening of the US dollar against the krone, from an exchange rate of about 8.80 in January to about 7.90 in August this year. During the same period, the euro exchange rate moved from 9.60 to 9.30.

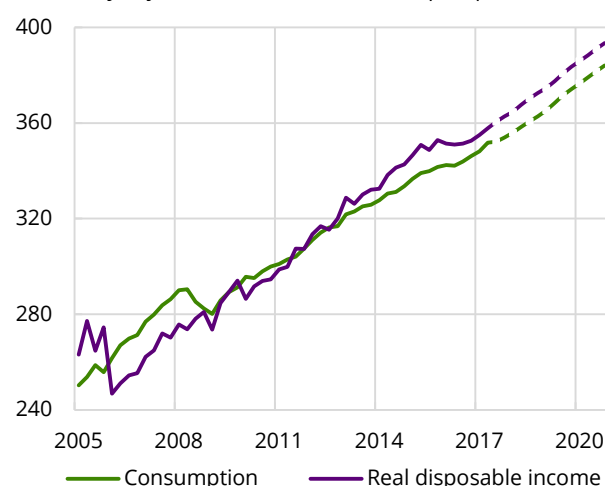
Growth in the Norwegian economy has picked up, and unemployment has fallen. Higher GDP growth and lower unemployment point in isolation to higher interest rates going forward. However, since mainland GDP will remain below trend for the next few years, and unemployment can still be considered high, it will be a while before the interest rate increases come. Recent developments in house prices combined with our forecast of a near term decline also reduce the need for an interest rate hike at present. We therefore assume that there will be no interest rate increases in the immediate future. According to our projections, we will enter a weak economic upturn in 2020, and we assume that is also when the interest rate increases will come.

As a result of the fall in money market rates so far this year and given our projections that they will remain low going forward, we expect interest rates on loans secured on dwellings to edge down, to 2.4 per cent at the beginning of 2018.

At present the krone is weaker than we believe to be indicated by economic fundamentals, which suggests

**Figure 6. Household income and consumption**

Seasonally adjusted, billions of 2015 NOK per quarter



Source: Statistics Norway

a strengthening of the krone in the near term. The expected rise in oil prices points the same way, while a reduced interest rate differential between Norway and the EU will have a countering effect. According to our calculations, the krone will appreciate somewhat in the period ahead. It will strengthen by an annualised 1.7 per cent from 2016 to this year, by a further 2.0 per cent from this year to next and by just under 1 per cent in both 2019 and 2020.

### Rising consumption growth

After fairly weak growth through the first half of 2016, consumption in households and non-profit organisations picked up markedly through the second half of last year. According to the QNA, seasonally adjusted consumption increased by a full 1.0 per cent in the second quarter of this year, after an increase of 0.6 per cent the previous quarter. Goods consumption rose by as much as 1.4 per cent, or an annualised 5.6 per cent. Stronger growth in a single quarter has not been recorded since the first quarter of 2013. The upturn was broad-based, with particularly high growth in purchases of furniture and white goods. However, the upswing in goods consumption was checked by a 1.5 per cent fall in purchases of vehicles, including cars. Seasonally adjusted figures show that the goods consumption index edged down by 0.1 per cent from June to July this year, after rising by the same amount the previous month. Consumption of electricity and fuel contributed particularly to depressing goods consumption in July, while purchases of cars and clothing and footwear pushed consumption up. The lower energy

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

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	-6.6	6.0	3.4	3.2	2.3	4.1	4.4	3.9	2.9	5.5	-1.6	2.2	2.9	2.8	2.8
Excl. share dividends	4.4	4.8	2.6	3.4	1.8	4.1	4.3	3.8	2.4	2.4	0.5	2.6	3.2	2.6	2.6

Source: Statistics Norway.

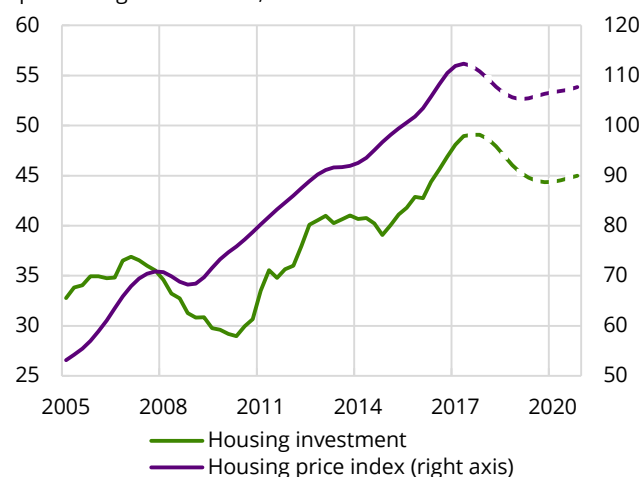
consumption may be regarded as random, and attributable to the weather. Thus the underlying tendency can be said to be somewhat stronger than indicated by the aggregate figures for July per se. Service consumption increased for most groups of services, and overall growth was 0.8 per cent in the second quarter, approximately on a par with average quarterly developments since 2012. If consumption by households and non-profit organisations remains at the level of the second quarter through the second half of this year, the annual average will increase by 2.1 per cent in 2017, as against 1.5 per cent last year. Growth thus appears likely to be markedly higher this year than last.

Consumption developments are largely determined by changes in household income and wealth and the interest rates they face. Real disposable income fell by 1.6 per cent in 2016, following growth of a full 5.5 per cent the previous year. This decline is attributable to a sharp rise in share dividend disbursements in 2015, probably motivated by expectations of higher tax on this income from 2016. However, real disposable income excluding share dividend disbursements only increased by 0.5 per cent in 2016, compared with 2.4 per cent the previous year. Wage income is the primary source of household income, and for many years has made the most important contribution to growth in real disposable income. As a result of a pronounced fall in real wages and weak employment developments, wage income nonetheless pushed down growth in real disposable income last year. The contribution of public transfers to income growth was also modest, and net interest income did not make a contribution of any significance to income growth. Conversely, lower income and wealth tax helped to push up real income somewhat.

According to the quarterly income and capital accounts, seasonally adjusted real disposable income excluding share dividends edged down by 0.2 per cent in the second quarter of this year after falling a good 2 per cent in the first quarter. We envisage substantially higher growth in real wages in the period ahead, and that employment will continue to grow faster as a result of higher production growth. Government transfers may also contribute appreciably to growth in real disposable income through the projection period. However, net interest income will not make any significant contribution to growth, because the interest rates facing households will not change appreciably in the next few years according to our projections. We now expect growth in real disposable income excluding share dividends of around 2.5 per cent this year. The increased real income growth, coupled with increased real house prices, will have a stimulating effect on consumption. Even if income growth should pick up further next year to well over 3 per cent, a marked fall in real house prices would largely neutralise these effects. Given a markedly smaller fall in real house prices, and growth in real income that remains up at about 2.5 per cent, consumption growth could pick up in 2019 and 2020. On balance, our projections imply consumption growth

### Figure 7. Housing market

Seasonally adjusted. Left axis: billions of 2015 NOK per quarter. Right axis: index, 2015=100



Source: Statistics Norway

of just under 2.5 per cent this year and next and up to 3 per cent in the last two years of the projection period.

Since the financial crisis, households have displayed a tendency to increased saving in financial and real assets. Saving as a share of disposable income increased from a level of just over 3.5 per cent in 2008 to over 8 per cent in 2014. Because of the high disbursements of share dividends, the saving ratio increased further to a level of around 10.5 per cent in 2015. The saving ratio excluding share dividends increased by about 3.5 percentage points from 2008 to 2015. However, the saving ratio, both including and excluding share dividends, dwindled through 2016 to annual averages for the year of 7 and 3 per cent, respectively. The downward tendency continued through the first half of 2017. In periods of weak income developments, like last year and the first two quarters of this year, households will normally smooth consumption somewhat, causing the saving ratio to fall. Our projections for income, consumption and assets indicate that the saving ratio will slowly pick up again in the course of the projection period.

### Fall in house prices

According to Statistics Norway's seasonally adjusted house price index, house prices dipped 0.4 per cent in the second quarter of 2017 compared with the previous quarter. This is the first fall in house prices since the fourth quarter of 2013. In the first quarter, house prices rose by 1.7 per cent, a clear slowing of pace compared with the second half of 2016, when house prices rose by 3.2 per cent in the third quarter and 2.7 per cent in the fourth quarter. As an annual average, house prices were 7.0 per cent higher in 2016 than in 2015.

The monthly house price statistics from Real Estate Norway show a fall in house prices that gathers pace through the second quarter. Adjusted for normal seasonal variations, house prices were 1.4 per cent lower in June than in March 2017, and they edged down a

further 0.2 per cent in July and 0.4 per cent in August. Given no change in house prices from August and for the remainder of the year, the annualised average house price rise will be just under 5.9 per cent from 2016 to 2017. The fall in prices is most pronounced in Oslo, and the large regional differences in house prices observed in the last couple of years are now substantially reduced.

In the long term, house prices are positively influenced by an increase in household real disposable income and by lower real interest rates after tax, while they are depressed by an increased supply of new dwellings. In our calculations we also take into account that household borrowing and house prices mutually influence one another, so that measures that curb borrowing also restrain the rise in house prices.

Lending rates fell a little through 2016, and have remained stable at a low level this year. According to Norges Bank's survey of bank lending, banks reported a minor tightening of credit standards to households in the second quarter. This has not as yet been reflected in aggregate domestic credit to households, measured by the year-on-year rise in the credit indicator, C2, which was between 6.5 and 6.7 per cent in the first six months of this year.

In the short term, house prices are influenced by changes in households' expectations of developments in both their own financial situation and the Norwegian economy. The consumer confidence indicator of Kantar TNS and Finance Norway provides a measure of these expectations. Whereas there were roughly as many optimists as pessimists among respondents in the first quarter, the index for the last two quarters has shown a clear increase in the number of optimists. Assessments of the Norwegian economy in particular have improved. We have assumed that households will not change this assessment of the economic outlook in 2017, but that the consumer confidence indicator will rise slightly from the current level next year and continue to do so in pace with the cyclical upturn.

We expect growth in household gross debt to fall somewhat in the near term and be 6 per cent in 2017, and then to fall to around 4 per cent in 2018 and 2019 before rising again to close on 5 per cent in 2020. Household real disposable income is expected to show clear growth through the second half of 2017. However, we expect that an increased supply of dwellings will cause the decline in house prices of recent months to continue in autumn 2017. Since house prices rose sharply through 2016 and further in the first quarter of 2017, the annualised rise in house prices will nonetheless be 5 per cent in 2017.

Although households have slightly higher real disposable income and will continue to face real interest rates of around 0.5 per cent for a long period, our projections indicate that house prices will fall nominally

for the next two years. According to our projections, house prices will fall by almost 5 per cent as an annual average in 2018. Prices are forecast to pick up through 2019, but nonetheless to fall by just over 1 per cent as an annual average in 2019, before rising by 1 per cent from 2019 to 2020. The reason for this reversal is to some extent slightly tighter granting of credit, but first and foremost the record-high housing investment in 2016 and so far in 2017.

According to the QNA, housing investment rose by 9.0 per cent in 2016, and the area of housing starts was more than 10 per cent larger in 2016 than the previous year. Seasonally adjusted housing starts increased across the board in 2016 and in the first seven months of 2017. The level of housing starts is high, but there are signs that the underlying growth is slowing. According to the QNA, housing investment rose compared with the previous quarter by 2.5 per cent in the first quarter of 2017 and 1.8 per cent in the second quarter.

As real house prices fall, we expect housing investment also to stop rising, and then to gradually decline. Because of high growth through 2016 and into 2017, our projections nonetheless point to housing investment growth of close to 8.5 per cent in 2017 as an annual average. We forecast that housing investment will fall by over 3 per cent in 2019 and 6 per cent in 2020, but remain virtually unchanged from 2019 to 2020. After this fall, the level of housing investment in 2020 will be around 1 per cent lower than the peak year of 2016, and will thus remain at a historically very high level.

### **Petroleum investment levels off prior to a new upswing**

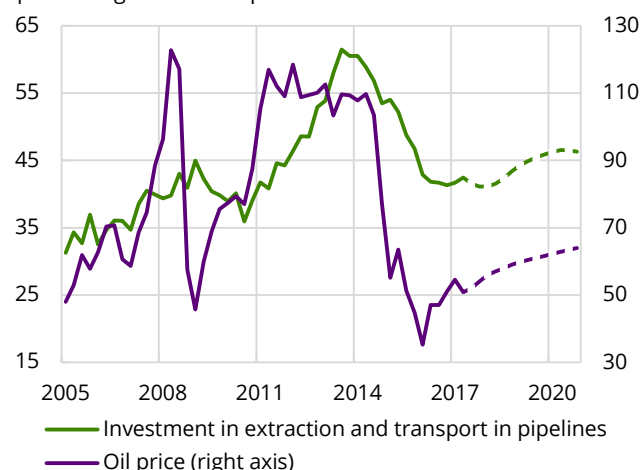
The volume of petroleum sector investment plummeted 33 per cent from the third quarter of 2013 to the fourth quarter of 2016. Sharp cost cuts achieved through lower prices for investment products, coupled with various measures to promote productivity, have made many development projects potentially profitable now, even with oil prices at the current moderate level.

The fall in petroleum investment measured in constant prices therefore braked sharply through 2016, and investment increased somewhat through the first half of this year. The preliminary QNA figures show volume growth of 0.9 per cent in the first quarter and 1.8 per cent in the second quarter, and that the level in the second quarter was only minimally lower than the second quarter last year. Measured in current prices, however, investment continued to fall up to the first quarter of this year, and in the second quarter was 4.4 per cent lower than in the same quarter last year.

According to Statistics Norway's overview of effected and planned investments, licensees on the Norwegian continental shelf will reduce their nominal investment level by 5 per cent in 2017 compared with investments

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

Seasonally adjusted. Left axis: billions of 2015 NOK per quarter. Right axis: USD per barrel



Source: Statistics Norway

effected in 2016, and by 9 per cent in 2018 compared with the recent projections for 2017. Petroleum companies report only projections for projects for which a plan for development and operation (PDO) has been submitted. However, there are prospects that PDOs for several development projects will be submitted in the period ahead. In the first half of the year, prices for petroleum sector investment were almost 6 per cent lower than in the same period last year. We expect this fall in prices to slow appreciably going forward, and gradually give way to a moderate upswing in about a year's time.

We also assume that the increase in volume in the first half of the year represented the start of a period of fairly flat petroleum investment prior to a marked rise in late 2018 or early 2019.

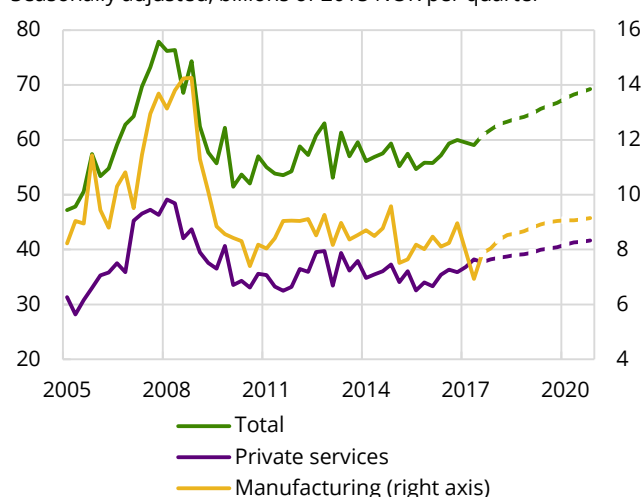
Oil production increased quite appreciably in 2016, while gas production fell back slightly. Overall extraction declined slightly in the first quarter of 2017, but increased appreciably in the second quarter. We assume fairly stable production of oil and gas up to 2019. The completion of major projects is expected to result in an appreciable increase in oil production in 2020, and a fairly appreciable increase in overall petroleum production in that year.

### Mainland business investment will soon pick up

Mainland business investment increased quite appreciably through 2016 after falling moderately through the previous three years. However, the investment upturn has not continued, and investment slipped by 0.8 per cent in both the first and second quarters of 2017. Manufacturing investment fell sharply by 11.3 per cent in the first quarter, and by 12.9 per cent in the second quarter. The decline was broad-based and applied to almost all manufacturing segments. Investment in other goods-producing industries also dropped through the first half of the year, while there was some increase

**Figure 9. Investment in mainland industries**

Seasonally adjusted, billions of 2015 NOK per quarter



Source: Statistics Norway

in investment in service industries, primarily retail trade and transport.

The estimates gathered by Statistics Norway from manufacturing companies indicate a moderate fall in investment volume of about 6 per cent in 2017. The survey indicates growth of about 9 per cent in the volume of aggregate manufacturing investment planned for 2018. As the Norwegian economy is small, individual projects in some industries may appear to dominate developments strongly, and we see some wide fluctuations in these two years for some industries. However, the food industry appears to be going to show a clear increase both this year and next, while the opposite is the case for the metals industry.

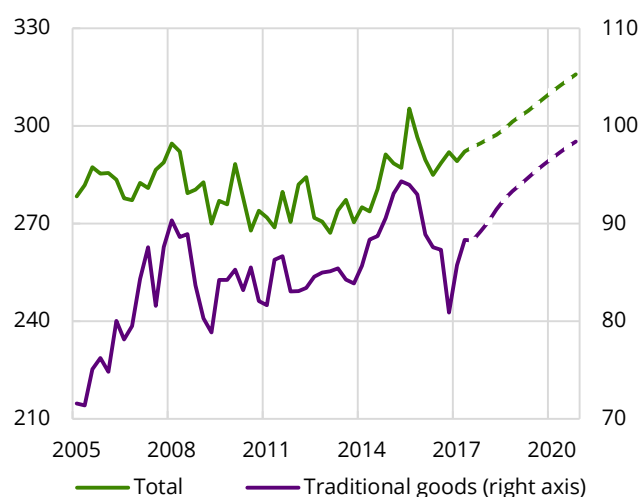
Companies' estimates for investment in power supply indicate that growth may rise to well over 20 per cent in 2017. The main grid is to be upgraded, and all electricity customers are to have smart meters installed before 2019. Growth in investment in electricity production is largely attributable to the development of new wind farms and the upgrading of old power stations. We assume that growth in 2018 will be just below 9 per cent. We expect growth in investment in power supply to slow in 2019, but to increase in 2020 in pace with the building of some large cables for power transmission abroad.

Norges Bank's regional network is a sample survey that gathers data on economic developments in different regions in Norway – including estimates for future investment. The report published in June reveals a positive tendency for service industries as a whole, and implies an increase of 4 per cent through the next 12 months in retail trade and 1 per cent in other services.

The cyclical upturn in Norway and other countries and a continued low interest rate level are providing scope for profitable investment projects in many industries.

**Figure 10. Exports**

Seasonally adjusted, billions of 2015 NOK per quarter



Source: Statistics Norway

Our projections show that aggregate mainland business investment will increase by 4 per cent in 2017 as an annual average. The projections indicate roughly the same growth for the next few years, except for 2018, when investment growth will be slightly higher.

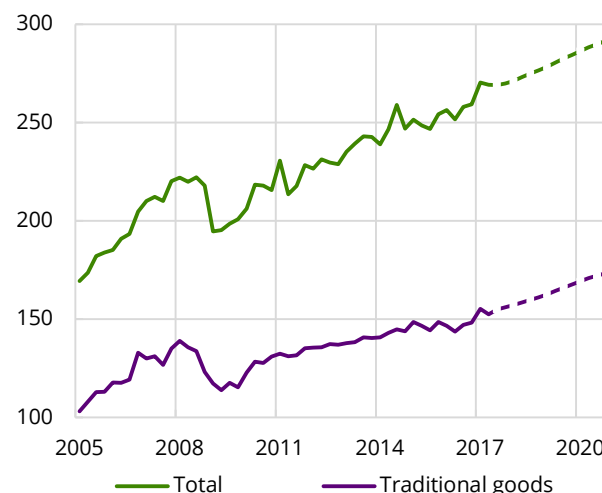
### Exports are picking up

After growing through 2014 and into 2015, the volume of traditional goods exports fell by a total of over 14 per cent through the second half of 2015 and the whole of 2016. The decline was particularly large, at over 7 per cent, in the fourth quarter of 2016. This was followed by a reversal to high growth in the first and second quarters of the year, of 6 and 3 per cent, respectively. The fluctuations during the last three quarters can be largely ascribed to exports of refined petroleum products. The underlying, prolonged decline in traditional exports is mainly attributable to exports of engineering products. Exports of this product group have plummeted 30 per cent since the first quarter of 2015. The total volume of exports of traditional goods other than refined petroleum products and engineering products has remained roughly constant for the past two years. Virtually zero growth or a reduction in exports of several traditional product groups in the past couple of years reflect a weak economic situation and slowing of demand in many global markets, and particularly from the oil and gas sector in many countries.

Exports of crude oil and natural gas have fluctuated around a rising trend in recent years, and grew by just over 2 per cent in 2015 and over 4 per cent in 2016. Following close to zero growth in the first quarter of 2017, oil and gas exports increased by a good 2 per cent in the second quarter. Service exports fell by over 4 per cent last year, and the decline appears to be continuing in 2017. However, despite reduced demand from the oil and gas sector internationally, exports of services related to this sector have surged by about 25 per cent in the last five quarters.

**Figure 11. Imports**

Seasonally adjusted, billions of 2015 NOK per quarter



Source: Statistics Norway

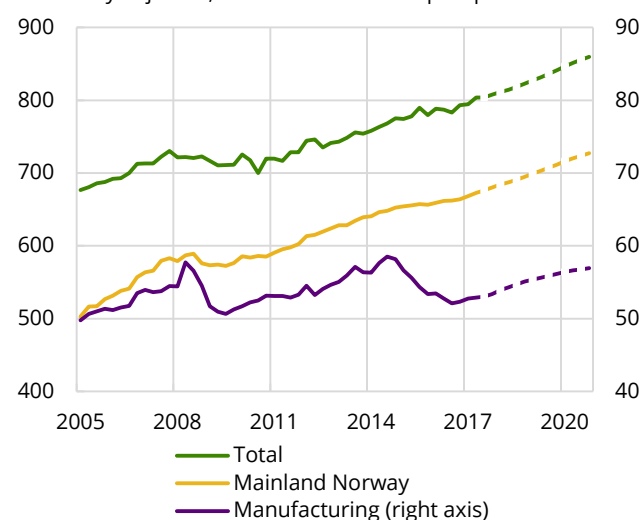
The export price index for traditional goods has exhibited a rising trendy through the past eight quarters. Developments in prices for fisheries and farmed fish products have contributed most to growth, and the price index for these products rose by over 50 per cent through 2015 and 2016. Prices for metals and chemicals and chemical and mineral products have risen for the past four quarters. Export prices for oil and gas fell back in the second quarter of this year after rising through the previous four quarters. The price index - like the volume - of exported services followed a falling trend through 2016 and the first half of this year.

In the current year, exports will strengthen compared with the weak year of 2016. Improved cost-competitiveness as a result of the depreciation of the krone in recent years is expected to boost exports of traditional goods and services in the near term. In particular, exports of goods and services related to international petroleum activities are expected to rebound, as the oil price has increased appreciably after bottoming out last year, and many cost-cutting measures have been implemented by the petroleum sector. Growth in the Norwegian export market otherwise seems likely to be slightly higher this year and next than previously envisaged. This will also generate positive growth impulses to exports of traditional goods and services. Oil and gas exports are expected to grow very moderately for the first few years. Only when the big Johan Sverdrup field starts production, probably in late 2019, will exports of oil and gas grow markedly.

The volume of traditional import goods fluctuated around an almost constant level through 2015 and 2016. In the second half of last year and the first quarter of this year, imports increased by a total of 8 per cent, but fell back in the second quarter. Particularly strong first-quarter growth was due to large increases in imports of food products and beverages, textiles, clothing and footwear, refined oil products, chemicals,

**Figure 12. Gross domestic product**

Seasonally adjusted, billions of 2015 NOK per quarter



Source: Statistics Norway

chemical and mineral products and engineering products. Service imports have grown for the past four quarters. Norwegians' consumption abroad – which accounts for about a third of service imports and a good one ninth of all imports – has moved on a weak trend for the past three quarters following strong growth in the previous period.

The trade surplus was sharply reduced in 2015 and 2016, with most of the reduction attributable to the plunging oil price. Weaker developments in prices for exports than for imports of traditional goods and services in 2015, and weaker developments in volumes of exports than in imports of traditional goods and services in 2016 also played a part. The decline has continued into 2017. The second quarter of this year saw a minimal surplus in overall trade with other countries. We assume that the aforementioned factors will be reversed to some extent, resulting in a growing trade surplus through the projection period.

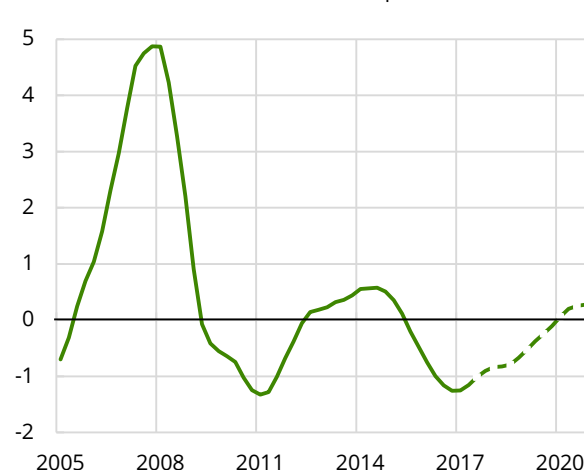
In recent years, the balance of income and current transfers has strengthened considerably. Weak developments in the Norwegian economy, particularly in connection with oil, have resulted in a reduction in transfers to other countries, while a growing GPFG and weak krone have resulted in strong growth in payments from other countries. These factors are expected to persist to a somewhat varying extent, but still such that the surplus on income and current transfers will be larger than the trade surplus. The current account surplus will accordingly also increase. The surplus expressed as a share of GDP is expected to be 4-5 per cent in the projection period.

### Moderate cyclical upturn

Mainland GDP increased by 0.7 per cent in the second quarter of 2017 following similar growth in the first quarter. Developments so far this year are equivalent to annual growth of around 2.6 per cent, which is higher

**Figure 13. Mainland GDP**

Deviation from estimated trend GDP in per cent



Source: Statistics Norway

than estimated trend growth for the Norwegian economy of about 2 per cent. The cyclical downturn that has prevailed since the second half of 2014 has thus turned around into a cautious recovery.

Reduced petroleum sector demand has been the main reason for the sluggish activity growth of recent years. Although the ripple effects of the downturn have affected large sectors of the Norwegian economy, the negative impact on manufacturing has been most pronounced. Following a continuous slowing of activity from the third quarter of 2014 to the third quarter of last year – with an overall fall in activity of over 11 per cent – manufacturing output now finally appears to be on the rise again. Manufacturing value added edged up 0.3 per cent in the second quarter, after positive growth also in the two previous quarters. Most manufacturing segments now show signs of improvement, even those regarded as being closely linked to the petroleum sector.

Value added in other mainland goods-producing industries rose 0.9 per cent from the first to the second quarter. Construction remains buoyant, and the activity level has increased by 0.9 per cent. This industry has long been an important driver of the Norwegian economy, bolstered by low interest rates and large public investment projects. This is an important reason why the cyclical downturn was not deeper than it actually was. Activity is now at a very high level – about 8 per cent higher than two years ago – and it is therefore reasonable to assume that growth will soften going forward when housing investment levels off. Developments in other goods-producing industries, which are all to some extent subject to naturally occurring factors, were more mixed in the second quarter. Power production increased quite substantially, but the activity level in fisheries and aquaculture fell, following a sharp upswing in the first quarter.

Value added in service industries excluding general government increased by 0.6 per cent from the first to the second quarter, following first-quarter growth of 0.5 per cent. So far this year, growth in the service industries has been broad-based. Even services related to oil and gas extraction grew in the second quarter, after falling continuously since the end of 2014. Growth in commercial services has been particularly strong so far this year. The hotel and restaurant industry has also seen strong activity growth. This must be viewed against the backdrop of the weak krone, which not only encourages foreign tourists to visit Norway, but also results in Norwegians holidaying at home to a greater extent.

General government value-added edged up 0.4 per cent in the second quarter, following somewhat stronger growth in the previous quarter. The growth rate is also marginally lower than average growth last year, and lower than our estimate of trend growth for the Norwegian economy as a whole.

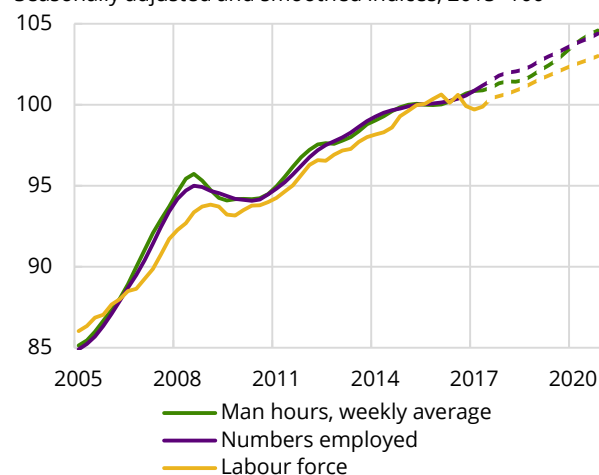
We expect economic growth to continue in the period ahead. The negative demand impulses from the petroleum sector are now waning, and the sector is likely to generate moderately positive growth impulses a little later on. Manufacturing, which has shown signs of improvement recently, will benefit appreciably from this turnaround. We therefore expect the positive tendency seen in several manufacturing segments so far this year to continue, with knock-on effects causing the activity level of manufacturing as whole to grow moderately through the projection period. This expected upturn must also be seen in light of the fact that we have seen a considerable improvement in competitiveness in recent years as a result of a weakened krone and low wage growth.

The construction industry has as mentioned grown strongly for the past few years, and our projections indicate that growth will remain at a high level the whole of the current year. The growth rate will then abate, mainly as a result of slowing residential construction, but also because growth in public investment in fixed assets is expected to be slower. Increased mainland business investment will have a countering effect.

We expect the upswing in the service industries to continue in the near term, as the overall economic upturn becomes even more firmly established. Growth in general government is expected to remain fairly stable at slightly below trend growth for the mainland economy. On balance, we project mainland GDP growth of 2 per cent in 2017 and somewhat higher for the next three years. We estimate trend growth for the Norwegian economy as just under 2 per cent. If we assume this, our projections therefore imply that the economy is in a cautious cyclical upturn which will last through 2020.

**Figure 14. Labour force, employment and man-hours worked**

Seasonally adjusted and smoothed indices, 2015=100



Source: Statistics Norway

### Somewhat higher employment growth going forward

Although employment picked up a little in the second quarter, developments have been relatively modest since 2015. Despite the weak developments in employment, unemployment declined from a peak of 4.9 per cent in the third quarter of 2016 to 4.3 per cent as an average for the period May to July 2017. The decline is largely due to contraction of the labour force.

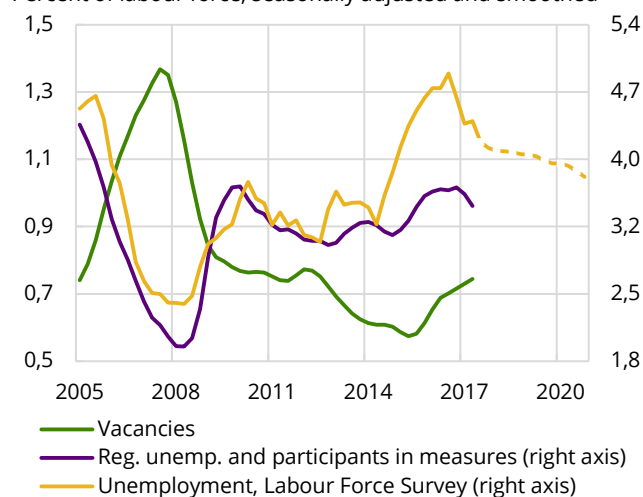
Since the second quarter of 2014, the downturn in the petroleum industry and associated industries has impacted employment negatively. But the fall in employment in these industries eased off in the second quarter of this year. Employment in extraction of crude oil and natural gas, which has fallen by more than one percentage point each quarter since the first quarter of 2016, was only reduced by 0.8 per cent in the second quarter of this year. Moreover, employment in services associated with crude oil and natural gas extraction remained stable.

The decline in manufacturing employment shows signs of tapering off. After falling relatively sharply in each quarter of 2015, employment growth bottomed out in the first quarter of 2016 at -2.1 per cent. Since then the decline has been much smaller. Recently, increased demand for labour in some manufacturing segments that are less closely linked to the petroleum sector has helped to check the decline.

Industries that made positive contributions to overall employment in the second quarter were the hotel and restaurant industry, construction and commercial services. However, the growth of employment in commercial services reflects higher temporary employment in staffing agencies, which may indicate that some

**Figure 15. Unemployed persons and vacancies**

Percent of labour force, seasonally adjusted and smoothed



Source: The Norwegian Labour and Welfare Service and Statistics Norway

enterprises will watch economic developments for a while before making permanent appointments.

Unemployment measured by the LFS remained fairly stable through the first half of 2017 at a lower level than the peak of 4.9 per cent in the third quarter of 2016. Unemployment in February (the average for the months January–March) was 4.3 per cent. After rising temporarily to 4.5 per cent in March and April, unemployment fell back to 4.3 per cent in May and June. According to seasonally adjusted statistics from the Norwegian Labour and Welfare Organisation (NAV), the number of individuals registered as fully unemployed and the total of those registered as fully unemployed and on labour market programmes declined through the first half of this year. About 1 200 fewer persons were registered as fully unemployed or on labour market programmes in August 2017 than in June 2017, and 9 200 fewer than in December 2016.

The recent decline in unemployment is attributable to the fact that a number of people have chosen to withdraw from the labour force during this period. This applies especially to young people, who are opting more for education rather than being active in the labour market. The aging population has also contributed to labour force contraction, as older persons have lower labour force participation than the rest of the working age population.

We expect employment to pick up a little in 2017 and the period ahead, in pace with the economic upturn. The improvement in the economic situation will also translate into an increase in the labour force, however. According to our calculations, unemployment will fall to just under 4 per cent towards the end of the projection period.

## Higher wage growth

Nominal annual wage growth has been low since 2014, and last year's annual wage growth of 1.7 per cent was the lowest observed in Norway for more than 70 years. We forecast higher, but still moderate wage growth both this year and for the next few years. Compositional effects that normally push down wage growth in an economic upturn will probably be more moderate in the near term.

Growth in average annual wages can be decomposed into three parts: the negotiated wage increase includes the increase arising from central negotiations, the carry-over reflects the difference between the annual wage level at the end of the previous year and the average annual wage level for the previous year, and wage drift is the sum of all other factors that contribute to recorded wage growth. The Technical Reporting Committee on Income Settlements (TBU) has calculated the carry-over into 2017 for several negotiating areas. The average carry-over is 1.1 per cent, with some variation across areas. The carry-over in retail businesses in the Enterprise Federation of Norway (Virke) is 0.9 per cent, and the carry-overs in central and local government are 1.5 and 0.9 per cent, respectively. The carry-over into 2017 is somewhat lower than in previous years with interim settlements, mainly because of last year's low wage growth.

Although growth in average annual wages was only 1.7 per cent, annual wage growth was higher than 2.2 per cent for most of the main groups holding negotiations. The difference is due to a sharp decline in employment in industries with relatively high wages, primarily petroleum-related industries.

The Confederation of Norwegian Enterprise (NHO), with the agreement of the Norwegian Confederation of Trade Unions (LO), estimates a norm of 2.4 per cent for this year's wage settlement. The norm is based on a 1.1 percentage point carry-over, a 0.3 percentage point pay increase and 1.0 percentage point wage drift. The moderate wage growth must be viewed against the backdrop of the relatively high unemployment as well as the weak profitability in some petroleum-related activities.

As the economic situation improves and unemployment falls, more low-wage job-seekers are expected to find employment in the period ahead. Labour migrants, who are over-represented in the lowermost portion of the wage distribution, are an example. This is a feature of cyclical upturns that in isolation depresses average wages, resulting in lower wage drift. Countering this trend is the fact that highly qualified workers who previously worked in the petroleum sector get jobs in other industries after a period of unemployment.

We assume that wage settlements in areas other than manufacturing will largely conform to the moderate wage developments in manufacturing, so that annual wage growth this year will be 2.4 per cent. The labour market is expected to become tighter in pace with the cyclical upturn, and real wage growth is forecast to rise to 2 per cent at the end of the projection period.

### Low inflation

Inflation was very high in 2016, peaking in July, and has been falling steadily since. In 2016 the consumer price index (CPI) rose by an annualised 3.6 per cent

and the CPI adjusted for tax changes and excluding energy products (CPI-ATE) by 3.0 per cent. When inflation peaked in July last year the year-on-year rise in the CPI was 4.4 per cent and in the CPI-ATE 3.7 per cent. In July 2017, the year-on-year rise in the CPI and CPI-ATE had fallen back to 1.5 per cent and as low as 1.2 per cent, respectively.

Seasonally adjusted figures show that the CPI-ATE only edged up 0.2 per cent from July 2016 to February 2017. Since then inflation has picked up somewhat, and the increase from February to July was 1.1 per

### Box 1: Macroeconomic effects of higher fuel taxes

This time, as in previous editions of Economic Survey, we assume a real increase in environmental taxes – specifically, the fuel tax. This may be one of several means by which Norway can meet its obligation to reduce greenhouse gas emissions in accordance with the Paris Agreement, and at the same time provide scope for increased public spending and possibly tax relief without deviating from the fiscal rule. Taxes are increasing such that, in isolation, they raise the CPI by 0.2 per cent in 2018 and by the same amount in both 2019 and 2020. The real tax increase is thereafter kept the same as that in the projection scenario.

When fuel tax is increased, fuel prices paid by consumers rise, thereby reducing household real disposable income. Overall consumption will then be slightly lower, albeit less than income, so that saving is also lower than it would otherwise have been. The composition of household consumption also changes because relative prices change as a result of the tax increase. Because of lags in household behaviour, it takes a little while before fuel consumption is reduced. At the same time, Norwegians' consumption abroad falls rapidly, primarily because of a decline in income. Only after 10 years is fuel consumption reduced relatively more than consumption abroad. The budget shares of the various product groups are affected by the relative change in consumption volume compared with overall consumption, and by price changes for the various product groups. As fuel prices rise sharply and consumption has low elasticity in the short term, the budget share represented by fuel increases markedly, while the share of overall expenses accounted for by Norwegians' consumption abroad is appreciably reduced. Other budget shares undergo little change.

Norwegians' consumption abroad is reduced more than the overall decline in consumption for the first four years, so that the impulse generated by consumption to the Norwegian economy is probably positive. This is because holiday travel etc. can be described as "luxury consumption", with an income elasticity of demand close to 2. This, coupled with a small increase in business investment, implies a slight increase in mainland GDP despite reductions in exports excluding oil and gas. Industries substitute away from fuel and into electricity and other intermediate inputs, as well as real capital. Norwegian production of oil and gas is not reduced as a result of the reduced domestic demand, and petroleum exports therefore increase. However, the production of other intermediate inputs and of capital goods increases when domestic demand increases.

Higher fuel prices mean increased costs for the business sector which are passed through to the prices of more or less all products. According to the model's description of wage formation in manufacturing, there is some compensation in the short term for higher consumer prices. Consequently, wage growth in the first four years is higher than in the projection scenario. But because manufacturing profitability is reduced at the outset, this is then reversed, and the wage level in manufacturing falls to below the level in the projection scenario after eight years. However, compensation for inflation is more permanent in the service sectors. The higher Norwegian inflation prompts Norges Bank to adjust interest rates slightly upward, but the krone still gradually weakens a little as a result of higher Norwegian inflation. All these factors cause prices to rise more than the direct effect of the tax increase alone would indicate. In the course of three years with higher taxes, the CPI has increased by 0.7 per cent, and thus by 0.1 percentage point more than the direct impulse generated by the tax increase. It takes time before the increased production costs and depreciation of the krone feed fully through into consumer prices, so the indirect inflationary effects continue to increase, and after 10 years are stronger than the effects of the initial tax increase. The CPI increases as well, because the budget share represented by fuel increases, and it is precisely the price of fuel that shows the clearest increase.

**Effects of increases in fuel tax that in isolation push the CPI up by 0.20 per cent in 2018, and further increases the same size in 2019 and 2020. Percentage deviation from the baseline scenario unless otherwise indicated**

	2018	2019	2020	2030
Consumption by households etc.	-0.03	-0.07	-0.19	-1.03
Budget share fuel etc.	6.27	13.25	19.99	8.89
Consumption of fuel etc.	-0.01	0.01	-0.63	-10.64
Norwegians' consumption abroad	-1.60	-3.40	-5.45	-9.03
Mainland business investment	0.12	0.21	0.23	-0.52
Housing investment	0.00	0.02	0.04	-4.39
Exports excl. crude oil and natural gas	-0.02	-0.08	-0.15	-0.13
Imports	-0.13	-0.29	-0.51	-1.41
Mainland GDP	0.05	0.10	0.12	-0.20
Employment	0.02	0.05	0.08	0.08
Unemployment rate, percentage points	-0.01	-0.03	-0.04	-0.03
Annual wages	0.09	0.20	0.32	0.35
Consumer price index	0.22	0.45	0.71	1.41
House prices	0.05	0.15	0.15	-3.37
Import-weighted exchange rate	0.04	0.07	0.12	1.00
Money market rate, percentage points	0.03	0.07	0.13	0.18

## Box 2: But what if .... – some sensitivity calculations

Like all other projections, those in this Economic Survey are shrouded in uncertainty.<sup>1</sup> The uncertainty can be attributed to the extent to which our model, KVART, captures the most important mechanisms in the economy, and the extent to which variables that are exogenous to the model, but which play an important part in developments, are correctly estimated. This box presents some stylised alternative scenarios that might shed light on near-term developments given different movements in some key variables associated with economic policy and global developments.

All the alternative scenarios are designed so as to be largely expansionary, and the impulses/effects are largely of the same order of size. The scenarios are largely symmetrical, so that the signs can be reversed in order to find the effects of an opposite, or contractionary scenario, compared with the projection scenario. By combining several of the scenarios, it is possible to arrive at consistent forecasts based on alternative assumptions.

All the projections are based on constant, percentage changes from the projection scenario, with the exception of the interest rate change, which is fixed in percentage points. The changes take place with effect from the first quarter of 2018. Fiscal policy is assumed to be unaffected except where explicitly changed.

All the changes are made in two variants; one where interest and exchange rate do not respond, and one where they respond to changes in the economy compared with the projection scenario. The reason for this is two-fold. Monetary policy is intended to counteract disturbances in the economy, and in order to understand the mechanisms in the economy, it can be useful not to have these stabilising mechanisms. Interest and exchange rate can be determined by the model, but the setting of interest rates, like fiscal policy, is fundamentally different

from factors that are directly determined by the market, such as the sum of the behaviour of many individual participants. Norges Bank's setting of interest rates has changed over time, and the Monetary Policy Regulation is currently being revised, so quantification of behaviour is particularly uncertain. Exchange rate responses are also more difficult to quantify, even though it is clear that they are closely linked to factors associated with the interest rate.

The first two sensitivity assessments have altered assumptions for precisely interest rate and exchange rate. Changing the exchange rate alone may be regarded largely as a sensitivity assessment in view of the uncertainty as to how the exchange rate actually is determined. The exchange rate plays an important part in economic developments, and affects economic activity by way of its impact on cost-competitiveness, which in turn affects exports and imports, as it takes a long time before a change in the exchange rate is fully reflected in corresponding changes in all prices. A weakening of the krone leads to price rises that exceed the increase in wages. As a result, household real disposable income is somewhat reduced, which pushes down consumption. However the improvement in the external account is the dominant factor, so GDP increases. This prompts an increase in employment, and the effect is amplified by the fact that labour becomes relatively cheaper than other production factors, because prices for these factors rise more rapidly than wages. Higher inflation and lower unemployment are partly offset by an increased interest rate, which dampens the expansionary effect of the krone depreciation.

Interest rate changes have strong direct effects on both consumption and investment. Households' have debts that outweigh their assets and are directly affected by interest rate changes. Lower interest rates will both make consumption today cheaper and bring down the price of capital for consumers.

**Table 1. Effects assuming unchanged interest and exchange rate (where they have not been explicitly changed) as percentage deviation from the projection scenario unless otherwise stated**

	10% weakened krone			1 percentage point reduced interest rate			1 per cent increased public purchases for consumption			5% higher public investment			Tax relief, equiv. to 1% of public consumption			6% higher petr. investment			5% higher global demand		
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Consumption by households etc.	-0.46	-0.34	-0.59	0.40	1.12	1.65	0.10	0.20	0.29	0.04	0.10	0.15	0.19	0.37	0.51	0.02	0.06	0.10	0.05	0.11	0.19
Public consumption	-0.05	-0.08	-0.07	-0.02	-0.06	-0.10	0.99	0.99	0.98	0.02	0.11	0.18	-0.01	-0.02	-0.03	-0.01	-0.02	-0.02	-0.03	-0.03	-0.04
Investment in fixed assets	0.75	1.14	0.87	0.40	1.01	1.64	0.05	0.12	0.19	1.27	1.31	1.36	0.01	0.08	0.23	1.17	1.25	1.29	0.09	0.14	0.23
Extraction and pipeline transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.00	6.00	6.00	0.00	0.00	0.00
Mainland industries	2.31	3.48	2.73	1.25	2.74	3.41	0.15	0.30	0.29	0.34	0.45	0.48	0.03	0.08	0.17	0.11	0.21	0.25	0.28	0.38	0.53
Housing	0.03	-0.05	-0.28	0.01	0.42	2.09	0.01	0.10	0.38	-0.00	0.02	0.13	0.01	0.22	0.76	0.00	0.02	0.10	0.00	0.05	0.20
General government	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Traditional exports	1.13	1.95	2.16	-0.00	-0.01	-0.01	-0.01	-0.01	-0.02	-0.01	-0.01	-0.01	-0.00	-0.00	-0.00	-0.01	-0.01	-0.01	1.79	1.32	1.93
Imports	-0.37	-0.17	-0.37	0.35	0.92	1.36	0.18	0.26	0.33	0.32	0.37	0.41	0.12	0.24	0.35	0.44	0.48	0.51	0.59	0.61	0.82
Mainland GDP	0.39	0.70	0.64	0.18	0.49	0.75	0.27	0.31	0.34	0.25	0.30	0.34	0.05	0.12	0.18	0.16	0.19	0.20	0.36	0.28	0.43
Employment	0.31	0.57	0.65	0.05	0.16	0.29	0.31	0.33	0.34	0.10	0.14	0.16	0.01	0.03	0.06	0.05	0.09	0.11	0.10	0.14	0.19
Labour force	0.10	0.29	0.36	0.01	0.07	0.14	0.13	0.20	0.19	0.04	0.08	0.09	0.00	0.01	0.03	0.02	0.05	0.06	0.03	0.08	0.09
Unemployment rate, percentage points	-0.21	-0.28	-0.31	-0.04	-0.09	-0.15	-0.19	-0.14	-0.16	-0.06	-0.06	-0.08	-0.01	-0.02	-0.03	-0.04	-0.04	-0.05	-0.07	-0.05	-0.10
Annual wages	0.73	1.18	1.61	-0.01	0.02	0.06	0.19	0.20	0.29	0.05	0.07	0.12	0.01	0.02	0.04	0.03	0.05	0.08	0.07	0.12	0.22
Consumer price index	1.34	1.77	2.15	-0.08	-0.15	-0.26	0.03	0.04	0.06	0.00	-0.00	0.00	0.00	0.01	0.02	-0.00	-0.00	0.00	-0.02	-0.00	0.02
Household real disposable income	-1.06	-0.80	-0.72	1.02	1.50	1.68	0.30	0.32	0.38	0.14	0.18	0.22	0.60	0.63	0.66	0.08	0.11	0.15	0.19	0.20	0.33
House prices	0.25	0.24	0.57	0.41	2.94	6.33	0.15	0.55	1.00	0.06	0.23	0.46	0.28	1.04	1.81	0.03	0.14	0.29	0.05	0.28	0.59
Import-weighted exchange rate	10.00	10.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.08	0.13
Money market rate, percentage points	0.00	0.00	0.00	-1.00	-1.00	-1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Government budget balance, NOK bn	18.68	33.40	36.44	-1.36	3.11	7.81	-5.49	-5.11	-5.41	-6.24	-6.44	-7.09	-8.16	-7.86	-7.54	1.08	1.20	1.17	3.53	3.49	5.49

Higher house prices also have the effect of stimulating consumption. The expansionary effects are amplified by the effects generated by the weakening of the exchange rate.

There are three changes that illustrate the effects of various fiscal policy measures. Increased public sector consumption through a proportional increase in business sector procurement added to increased public sector employment lead to a pronounced and rapid increase in GDP and overall employment. The increased public sector employment prompts an immediate increase in general government production and value creation and there is no leakage – no direct deliveries from abroad associated with this. It is furthermore assumed that there are no spending lags in the form of saving or temporary productivity gains that reduce the impact on employment. However, there is import leakage associated with the increase in consumption attributable to increased purchases of intermediate inputs and direct consumer services from the market-oriented sector. The increase in deliveries from the Norwegian business sector will also entail temporary productivity growth through more intensive use of resources before the intermediate inputs are adapted to the alternative activity scenario. The effects are dampened by weakened cost-competitiveness, which undermines exports and increases the propensity to import. The initial impulse in this shift is an increase in public purchase (including labour costs) for just under NOK 9.5 billion 2017-kroner.

The effect of an equivalent increase in public sector investment on employment is considerably smaller, but the differences dwindle over time. GDP also grows a little less in the short term, but a little more in the second and third years. The slightly smaller increase in employment means that cost-competitiveness is weakened to a lesser extent, which implies a larger GDP effect. In addition, the public sector investment will be reflected in increased consumption of fixed capital which, by definition, is recorded as wealth creation and public consumption.

The same amount used for general personal tax relief has appreciably less effects on GDP and employment, particularly in the short term. The effects in the third year are more similar. The effect on household consumption is decidedly the largest of the three fiscal policy instruments, and the negative effects on competition of tax relief will be insignificant.

Measured in constant prices, a 6 per cent increase in petroleum sector investment is equivalent to a 5 per cent increase in public sector investment. Qualitatively, the effects are quite similar, but quantitatively the effect is appreciably less. The reason is that the import share in petroleum investment is very much larger than that in public sector investment; see the overview of import shares in Economic Survey 1/2017, Box 3. It is also assumed that petroleum production is not affected by the increased investment within a projection horizon of three years, so there are no direct supply-side effects here. This may be considered reasonably realistic in a [one?] three-year perspective, but not much longer.

External impulses are a substantial uncertainty factor in the Norwegian economy. They take various forms, and we have looked here at demand in Norwegian export markets. A 5 per cent increase in demand in the global market will fairly rapidly be reflected in increased exports and increased Norwegian output. In the first year, the increase in GDP would be equivalent to an increase of about 7.5 per cent in public sector investment. Wealth creation increases much less than exports, as imports also increase appreciably. Generally, a substantial volume of intermediate products are involved, directly or indirectly, in the production of increased exports, and this reduces the first-round effects, and hence the whole expansion.

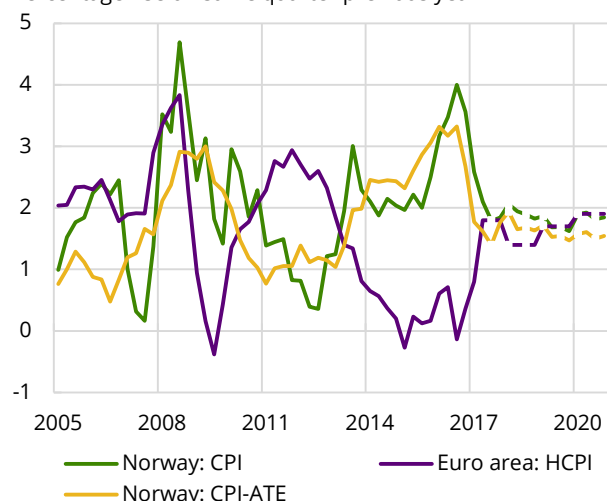
<sup>1</sup> See also the section 'Uncertainty surrounding the projections' in Economic Survey 1/2017 on how the uncertainty of our projections can be determined from the errors we have made in earlier projections.

**Table 2. Effects with interest and exchange rate response (where they have not been explicitly changed) as percentage deviation from projection scenario unless otherwise stated**

	10% weakened krone			1 percentage point reduced interest rate			1 per cent increased public purchases for consumption			5% higher public investment			Tax relief, equiv. to 1% of public consumption			6% higher petr. investment			5% higher global demand		
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Consumption by households etc.	-0.70	-1.74	-2.83	0.19	0.98	1.40	0.09	0.15	0.21	0.04	0.09	0.13	0.19	0.37	0.50	0.02	0.06	0.09	0.05	0.11	0.18
Public consumption	-0.04	-0.00	0.06	-0.05	-0.10	-0.13	0.99	0.99	0.99	0.02	0.11	0.18	-0.01	-0.02	-0.03	-0.01	-0.02	-0.02	-0.03	-0.03	-0.04
Investment in fixed assets	0.50	-0.18	-1.25	0.74	1.50	1.95	0.04	0.05	0.08	1.26	1.30	1.33	0.01	0.08	0.22	1.17	1.24	1.28	0.09	0.13	0.20
Extraction and pipeline transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.00	6.00	6.00	0.00	0.00	0.00
Mainland industries	1.52	-0.28	-2.12	2.29	4.25	4.41	0.11	0.08	0.03	0.33	0.41	0.41	0.03	0.07	0.12	0.11	0.19	0.21	0.29	0.37	0.45
Housing	0.02	-0.34	-2.31	0.02	0.40	1.95	0.01	0.10	0.31	-0.00	0.02	0.12	0.01	0.22	0.76	0.00	0.02	0.09	0.00	0.05	0.20
General government	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Traditional exports	1.13	1.96	2.17	0.51	0.83	0.82	-0.02	-0.05	-0.07	-0.01	-0.02	-0.03	-0.00	-0.01	-0.01	-0.01	-0.01	-0.02	1.79	1.31	1.91
Imports	-0.60	-1.34	-2.19	0.17	0.85	1.20	0.18	0.22	0.27	0.32	0.36	0.39	0.12	0.24	0.35	0.44	0.47	0.50	0.59	0.62	0.81
Mainland GDP	0.28	0.08	-0.36	0.36	0.79	0.99	0.26	0.27	0.29	0.25	0.29	0.32	0.05	0.11	0.18	0.16	0.18	0.20	0.37	0.27	0.42
Employment	0.28	0.38	0.28	0.19	0.41	0.54	0.31	0.32	0.31	0.10	0.13	0.16	0.01	0.03	0.06	0.05	0.08	0.10	0.11	0.13	0.18
Labour force	0.10	0.22	0.17	0.05	0.20	0.29	0.13	0.19	0.18	0.04	0.07	0.08	0.00	0.01	0.03	0.02	0.05	0.05	0.03	0.08	0.09
Unemployment rate, percentage points	-0.19	-0.17	-0.11	-0.14	-0.21	-0.26	-0.19	-0.13	-0.14	-0.06	-0.06	-0.07	-0.01	-0.02	-0.03	-0.04	-0.04	-0.05	-0.07	-0.05	-0.09
Annual wages	0.74	1.17	1.54	0.32	0.53	0.69	0.18	0.18	0.26	0.05	0.07	0.11	0.01	0.02	0.04	0.03	0.05	0.08	0.07	0.12	0.21
Consumer price index	1.41	1.97	2.48	0.53	0.58	0.55	0.02	0.01	0.02	-0.00	-0.01	-0.01	0.00	0.00	0.01	-0.00	-0.01	-0.00	-0.02	-0.01	-0.00
Household real disposable income	-1.83	-3.11	-3.17	0.53	1.17	1.43	0.29	0.26	0.29	0.14	0.16	0.20	0.60	0.62	0.64	0.08	0.11	0.13	0.19	0.20	0.31
House prices	0.06	-2.56	-7.02	0.53	3.02	6.55	0.14	0.45	0.69	0.06	0.22	0.40	0.28	1.04	1.78	0.03	0.14	0.26	0.05	0.28	0.56
Import-weighted exchange rate	10.00	10.00	10.00	4.49	4.03	3.45	-0.14	-0.21	-0.23	-0.02	-0.05	-0.08	-0.00	-0.03	-0.05	-0.00	-0.04	-0.06	0.04	0.01	0.01
Money market rate, percentage points	0.94	1.65	1.52	-1.00	-1.00	-1.00	0.04	0.06	0.08	0.01	0.01	0.02	0.00	0.01	0.02	-0.00	0.01	0.01	-0.01	0.01	0.03
Government budget balance, NOK bn	20.30	31.70	27.27	7.07	17.27	21.11	-5.63	-5.82	-6.49	-6.26	-6.59	-7.38	-8.17	-7.91	-7.70	1.09	1.13	0.98	3.56	3.45	5.16

**Figure 16. Consumer price indices**

Percentage rise on same quarter previous year



Source: Statistics Norway

cent, or an annualised 2.6 per cent, i.e. far less than in the same period last year.

The higher inflation in the first half of last year can be largely attributed to the time-lagged effects of the depreciation of the krone from early 2013 and up to January 2016. Since then the krone has strengthened, on balance, and this factor in isolation pushes Norwegian consumer prices down. The 12-month rise in prices for imported consumer goods peaked in July 2016 at 4.6 per cent, and has since fallen sharply, and in July 2017 was -0.3 per cent. Imported consumer goods account for a third of the CPI-ATE, so this development explains two thirds of the fall in inflation through the past year.

The rise in prices for goods produced in Norway has also slowed markedly through the past year, after fluctuating around the annual average of 3.6 per cent through 2016. However, price inflation hovered around 1 per cent through the first seven months of 2017, and was 0.8 per cent in July. The rise in prices for services has also slowed since July last year, but the decline in July this year was fairly moderate. However, this conceals wide fluctuations with very low inflation in April and June, which largely reflects movements the opposite way last year. The origins of these movements can be mainly attributed to prices for air travel, which can be explained to some extent by developments in demand for holiday travel. This in turn is related to factors such as when Easter takes place. However, factors that may be regarded as random have also played a part. Rent is a stabilising element of services, and the 12-month rise in rent has changed relatively little from 2016 to this year, but has declined slightly through the last two months.

There are prospects of continued low growth in Norwegian wages, albeit somewhat higher than in 2016. The low wage growth is also a factor underlying the slowing of inflation. The economic upturn will be reflected in slightly higher wage growth. In a while, increased productivity growth may neutralise the inflationary effects of higher wages. There is likely to be a moderate global rise in prices for finished products. Given a certain strengthening of the krone, imported consumer goods are therefore likely to generate small negative impulses in the period ahead. Our projections indicate that underlying inflation will remain low, with annual average CPI-ATE inflation at 1.6 per cent in 2017 and hovering around this level for the next couple of years.

Electricity prices surged by as much as 22 per cent last year, causing high CPI inflation. So far in 2017, electricity prices are still appreciably higher than at the same time last year, but the year-on-year increase is substantially less than last year. In July electricity prices were a good 7 per cent higher than in July 2016. This has contributed to CPI inflation remaining higher than CPI-ATE inflation so far this year. The increase in the oil price has also contributed, however, as it was very low at the beginning of 2016. Increases in indirect taxes have also fuelled CPI inflation to some extent this year.

Price developments in the electricity forward market through the remainder of the year are generally weaker than prices realised in the same period in 2016. Forward contracts point to electricity prices rising somewhat this year as an annual average, but falling in 2018 and falling further in 2019. However, grid rental has increased markedly this year, and large investment projects associated with the grid, including new household electricity meters, point to a pronounced rise in grid rental prices also in the period ahead. We assume that the overall electricity price to households will rise by over 8 per cent this year as an annual average but remain roughly unchanged in 2018. We assume that overall electricity prices will fall slightly in 2019 and then rise a little more than general inflation in 2020.

The price of crude oil is expected to increase somewhat more than the CPI-ATE, but is unlikely to push up fuel prices appreciably. The crude oil price accounts for a small part of the price of fuel for consumers in Norway. However, we expect a rise in environmental taxes equivalent to 0.2 percentage point of CPI inflation each year from 2018; see Box 1 for further details of the effects this will have. CPI inflation will thus be generally somewhat higher than CPI-ATE inflation in 2017 and for the next three years as well. Our projections show the CPI as an annual average increasing by 2.1 per cent in 2017, but more slowly over the next few years. Inflation is expected to be lowest in 2019, when falling electricity prices will help to bring CPI inflation down to 1.7 per cent.

**Table 5. National accounts: Final expenditure and gross domestic product. At constant 2015 prices. Million kroner**

	Unadjusted		Seasonally adjusted							
	2015	2016	15.3	15.4	16.1	16.2	16.3	16.4	17.1	17.2
Final consumption expenditure of households and NPISHs	1 353 723	1 374 049	339 854	341 572	342 468	342 206	343 934	346 166	348 216	351 857
Household final consumption expenditure	1 281 171	1 300 106	321 610	323 123	324 688	323 487	325 093	327 549	329 594	333 611
Goods	592 469	591 644	149 185	148 850	148 964	147 772	147 497	148 485	148 947	150 979
Services	621 993	641 123	156 066	157 302	158 477	159 196	161 096	162 018	163 395	164 683
Direct purchases abroad by resident households	106 006	109 815	26 526	26 886	27 413	27 125	27 735	27 460	27 312	28 056
Direct purchases by non-residents	-39 297	-42 476	-10 167	-9 915	-10 166	-10 606	-11 234	-10 414	-10 061	-10 107
Final consumption expenditure of NPISHs	72 552	73 943	18 245	18 449	17 780	18 719	18 841	18 618	18 622	18 246
Final consumption expenditure of general government	729 267	744 879	183 098	183 228	184 914	186 292	186 682	187 026	188 460	189 193
Final consumption expenditure of central government	368 749	377 099	92 315	92 562	94 026	94 232	94 460	94 418	95 041	95 098
Central government, civilian	325 138	333 553	81 409	81 612	83 066	83 318	83 624	83 583	84 201	84 453
Central government, defence	43 611	43 546	10 906	10 950	10 961	10 914	10 836	10 835	10 840	10 645
Final consumption expenditure of local government	360 518	367 780	90 783	90 666	90 888	92 060	92 222	92 608	93 419	94 096
Gross fixed capital formation	741 413	739 701	184 832	183 609	180 156	182 085	189 377	187 543	186 356	192 263
Extraction and transport via pipelines	201 658	167 624	48 790	46 717	42 877	41 832	41 673	41 305	41 672	42 433
Ocean transport	-867	-1 698	-532	-378	147	-634	-486	-679	-1487	-233
Mainland Norway	540 622	573 776	136 573	137 271	137 132	140 887	148 191	146 917	146 171	150 063
Industries	223 056	232 305	54 645	55 861	55 786	57 183	59 344	60 000	59 512	59 059
Service activities incidental to extraction	4 785	2 010	909	748	891	387	234	498	1057	575
Other services	131 832	138 859	31 623	33 282	32 406	35 044	36 122	35 395	35 770	37 617
Manufacturing and mining	31 262	33 794	8 183	8 019	8 475	8 113	8 240	8 965	7 952	6 929
Production of other goods	55 177	57 642	13 930	13 813	14 015	13 640	14 749	15 142	14 733	13 937
Dwellings (households)	165 708	180 689	41 787	42 884	42 764	44 390	45 616	46 905	48 077	48 941
General government	151 858	160 783	40 141	38 525	38 582	39 314	43 231	40 011	38 582	42 064
Acquisitions less disposals of valuables	348	358	84	90	87	92	85	94	94	90
Changes in stocks and statistical discrepancies	117 955	162 323	23 211	28 641	47 482	43 225	32 590	39 664	52 639	47 292
Gross capital formation	859 716	902 382	208 043	212 250	227 638	225 310	221 968	227 207	238 996	239 556
Final domestic use of goods and services	2 942 706	3 021 310	730 995	737 050	755 020	753 808	752 584	760 399	775 671	780 606
Final demand from Mainland Norway	2 623 612	2 692 704	659 526	662 071	664 514	669 385	678 807	680 109	682 847	691 113
Final demand from general government	881 125	905 662	223 239	221 753	223 496	225 605	229 913	227 037	227 042	231 258
Total exports	1 176 078	1 154 856	305 307	296 578	289 596	284 945	288 579	291 899	289 153	292 144
Traditional goods	374 196	343 695	93 971	92 988	88 874	87 572	87 290	80 895	85 720	88 309
Crude oil and natural gas	445 209	464 491	120 195	112 194	116 623	114 034	115 464	117 735	117 579	120 278
Ships, oil platforms and planes	11 508	16 755	3 087	2 916	2 058	2 733	2 927	9 023	7 294	2 266
Services	345 165	329 914	88 053	88 480	82 041	80 606	82 899	84 247	78 560	81 291
Total use of goods and services	4 118 784	4 176 166	1 036 302	1 033 628	1 044 617	1 038 753	1 041 163	1 052 298	1 064 825	1 072 750
Total imports	1 000 668	1 024 017	246 691	254 223	256 251	251 589	257 907	259 235	270 346	269 191
Traditional goods	587 771	585 418	144 200	148 437	146 452	143 645	147 063	148 235	155 219	152 376
Crude oil and natural gas	10 908	9 793	2 387	2 854	3 007	2 238	2 603	1 950	2 658	3 507
Ships, oil platforms and planes	34 895	44 122	8 583	7 478	9 195	10 746	12 056	12 143	14 747	11 906
Services	367 094	384 685	91 522	95 454	97 597	94 959	96 186	96 907	97 722	101 402
Gross domestic product (market prices)	3 118 116	3 152 149	789 611	779 405	788 366	787 164	783 256	793 063	794 479	803 559
Gross domestic product Mainland Norway (market prices)	2 621 032	2 646 221	657 113	656 497	658 872	661 490	662 004	663 715	668 076	672 452
Petroleum activities and ocean transport	497 084	505 929	132 498	122 907	129 494	125 675	121 252	129 348	126 402	131 107
Mainland Norway (basic prices)	2 278 422	2 295 067	571 199	569 827	572 046	573 522	574 190	575 522	578 988	582 248
Mainland Norway excluding general government	1 711 838	1 715 599	429 341	426 934	427 943	428 932	429 002	429 929	432 385	435 081
Manufacturing and mining	219 267	210 218	54 328	53 345	53 462	52 758	52 085	52 315	52 738	52 894
Production of other goods	276 957	284 358	70 477	68 952	71 317	70 601	70 953	71 465	72 076	72 696
Services incl. dwellings (households)	1 215 614	1 221 022	304 536	304 637	303 164	305 574	305 964	306 148	307 571	309 491
General government	566 584	579 468	141 859	142 893	144 103	144 589	145 187	145 593	146 604	147 167
Taxes and subsidies products	342 610	351 154	85 914	86 670	86 826	87 968	87 814	88 193	89 088	90 203

Source: Statistics Norway.

**Table 6. National accounts: Final expenditure and gross domestic product. At constant 2014 prices. Percentage change from the previous period**

	Unadjusted		Seasonally adjusted							
	2015	2016	15.3	15.4	16.1	16.2	16.3	16.4	17.1	17.2
Final consumption expenditure of households and NPISHs	2.6	1.5	0.2	0.5	0.3	-0.1	0.5	0.6	0.6	1.0
Household final consumption expenditure	2.3	1.5	0.2	0.5	0.5	-0.4	0.5	0.8	0.6	1.2
Goods	1.2	-0.1	-0.3	-0.2	0.1	-0.8	-0.2	0.7	0.3	1.4
Services	3.9	3.1	0.7	0.8	0.7	0.5	1.2	0.6	0.9	0.8
Direct purchases abroad by resident households	1.5	3.6	0.9	1.4	2.0	-1.1	2.2	-1.0	-0.5	2.7
Direct purchases by non-residents	9.8	8.1	4.0	-2.5	2.5	4.3	5.9	-7.3	-3.4	0.5
Final consumption expenditure of NPISHs	9.0	1.9	1.3	1.1	-3.6	5.3	0.7	-1.2	0.0	-2.0
Final consumption expenditure of general government	2.4	2.1	0.6	0.1	0.9	0.7	0.2	0.2	0.8	0.4
Final consumption expenditure of central government	3.1	2.3	0.3	0.3	1.6	0.2	0.2	0.0	0.7	0.1
Central government, civilian	3.1	2.6	0.3	0.2	1.8	0.3	0.4	0.0	0.7	0.3
Central government, defence	3.5	-0.1	-0.1	0.4	0.1	-0.4	-0.7	0.0	0.0	-1.8
Final consumption expenditure of local government	1.6	2.0	0.9	-0.1	0.2	1.3	0.2	0.4	0.9	0.7
Gross fixed capital formation	-4.0	-0.2	-1.0	-0.7	-1.9	1.1	4.0	-1.0	-0.6	3.2
Extraction and transport via pipelines	-12.2	-16.9	-6.6	-4.3	-8.2	-2.4	-0.4	-0.9	0.9	1.8
Ocean transport	-232.6	95.9	659.4	-28.8	-138.9	-530.5	-23.3	39.7	119.0	-84.3
Mainland Norway	-0.2	6.1	1.6	0.5	-0.1	2.7	5.2	-0.9	-0.5	2.7
Industries	-2.8	4.1	-4.9	2.2	-0.1	2.5	3.8	1.1	-0.8	-0.8
Service activities incidental to extraction	3.8	-58.0	-44.9	-17.7	19.1	-56.6	-39.6	113.0	112.3	-45.6
Other services	-5.1	5.3	-8.1	5.2	-2.6	8.1	3.1	-2.0	1.1	5.2
Manufacturing and mining	-11.9	8.1	7.1	-2.0	5.7	-4.3	1.6	8.8	-11.3	-12.9
Production of other goods	9.5	4.5	1.0	-0.8	1.5	-2.7	8.1	2.7	-2.7	-5.4
Dwellings (households)	3.2	9.0	1.6	2.6	-0.3	3.8	2.8	2.8	2.5	1.8
General government	0.2	5.9	11.9	-4.0	0.1	1.9	10.0	-7.4	-3.6	9.0
Acquisitions less disposals of valuables	-14.1	2.8	-1.3	7.1	-2.9	5.0	-7.7	10.6	0.4	-4.0
Changes in stocks and statistical discrepancies	-16.8	37.6	-26.1	23.4	65.8	-9.0	-24.6	21.7	32.7	-10.2
Gross capital formation	-5.9	5.0	-4.6	2.0	7.2	-1.0	-1.5	2.4	5.2	0.2
Final domestic use of goods and services	-0.1	2.7	-1.1	0.8	2.4	-0.2	-0.2	1.0	2.0	0.6
Final demand from Mainland Norway	2.0	2.6	0.6	0.4	0.4	0.7	1.4	0.2	0.4	1.2
Final demand from general government	2.0	2.8	2.5	-0.7	0.8	0.9	1.9	-1.3	0.0	1.9
Total exports	4.7	-1.8	6.4	-2.9	-2.4	-1.6	1.3	1.2	-0.9	1.0
Traditional goods	6.9	-8.2	-0.4	-1.0	-4.4	-1.5	-0.3	-7.3	6.0	3.0
Crude oil and natural gas	2.1	4.3	13.0	-6.7	3.9	-2.2	1.3	2.0	-0.1	2.3
Ships, oil platforms and planes	0.0	45.6	23.3	-5.5	-29.4	32.8	7.1	208.3	-19.2	-68.9
Services	7.1	-4.4	5.0	0.5	-7.3	-1.7	2.8	1.6	-6.8	3.5
Total use of goods and services	1.4	1.4	1.0	-0.3	1.1	-0.6	0.2	1.1	1.2	0.7
Total imports	1.6	2.3	-0.7	3.1	0.8	-1.8	2.5	0.5	4.3	-0.4
Traditional goods	3.2	-0.4	-1.6	2.9	-1.3	-1.9	2.4	0.8	4.7	-1.8
Crude oil and natural gas	-0.1	-10.2	-11.4	19.6	5.4	-25.6	16.3	-25.1	36.3	31.9
Ships, oil platforms and planes	-6.7	26.4	-8.0	-12.9	23.0	16.9	12.2	0.7	21.4	-19.3
Services	0.1	4.8	1.9	4.3	2.2	-2.7	1.3	0.8	0.8	3.8
Gross domestic product (market prices)	2.0	1.1	1.5	-1.3	1.1	-0.2	-0.5	1.3	0.2	1.1
Gross domestic product Mainland Norway (market prices)	1.4	1.0	0.3	-0.1	0.4	0.4	0.1	0.3	0.7	0.7
Petroleum activities and ocean transport	4.3	1.8	8.3	-7.2	5.4	-2.9	-3.5	6.7	-2.3	3.7
Mainland Norway (basic prices)	1.3	0.7	0.2	-0.2	0.4	0.3	0.1	0.2	0.6	0.6
Mainland Norway excluding general government	0.9	0.2	0.1	-0.6	0.2	0.2	0.0	0.2	0.6	0.6
Manufacturing and mining	-4.6	-4.1	-2.3	-1.8	0.2	-1.3	-1.3	0.4	0.8	0.3
Production of other goods	0.9	2.7	1.3	-2.2	3.4	-1.0	0.5	0.7	0.9	0.9
Services incl. dwellings (households)	2.0	0.4	0.2	0.0	-0.5	0.8	0.1	0.1	0.5	0.6
General government	2.3	2.3	0.5	0.7	0.8	0.3	0.4	0.3	0.7	0.4
Taxes and subsidies products	2.3	2.5	0.9	0.9	0.2	1.3	-0.2	0.4	1.0	1.3

Source: Statistics Norway.

**Table 7. National accounts: Final expenditure and gross domestic product. Price indices. 2015=100**

	Unadjusted		Seasonally adjusted							
	2015	2016	15.3	15.4	16.1	16.2	16.3	16.4	17.1	17.2
Final consumption expenditure of households and NPISHs	100.0	103.2	99.7	101.1	102.2	103.4	103.2	103.6	104.2	105.1
Final consumption expenditure of general government	100.0	101.7	100.2	101.0	100.8	100.2	101.4	104.6	105.4	104.4
Gross fixed capital formation	100.0	101.5	98.9	101.6	100.8	101.9	101.3	101.6	101.3	103.1
Mainland Norway	100.0	102.4	100.3	101.5	101.1	102.1	102.6	103.3	103.5	105.0
Final domestic use of goods and services	100.0	102.3	100.1	100.2	101.6	101.6	102.5	103.2	103.4	104.0
Final demand from Mainland Norway	100.0	102.6	100.0	101.1	101.6	102.2	102.6	103.8	104.4	104.9
Total exports	100.0	92.1	99.7	96.1	88.6	91.9	91.6	96.0	100.5	97.0
Traditional goods	100.0	103.5	100.2	100.4	99.2	103.5	104.2	106.6	107.8	108.2
Total use of goods and services	100.0	99.5	100.0	99.1	98.0	98.9	99.5	101.2	102.6	102.1
Total imports	100.0	101.3	100.4	101.7	101.9	101.3	101.2	101.4	101.9	104.9
Traditional goods	100.0	101.4	100.3	101.5	101.2	101.6	101.3	101.8	102.8	108.0
Gross domestic product (market prices)	100.0	98.9	99.8	98.2	96.7	98.2	98.9	101.2	102.9	101.1
Gross domestic product Mainland Norway (market prices)	100.0	102.7	100.3	99.8	101.0	102.1	103.0	104.1	104.1	103.3

Source: Statistics Norway.

**Table 8. National accounts: Final expenditure and gross domestic product. Price indices. Percentage change from previous period**

	Unadjusted		Seasonally adjusted							
	2015	2016	15.3	15.4	16.1	16.2	16.3	16.4	17.1	17.2
Final consumption expenditure of households and NPISHs	2.4	3.2	0.8	1.4	1.1	1.2	-0.2	0.4	0.6	0.9
Final consumption expenditure of general government	3.0	1.7	0.9	0.9	-0.2	-0.6	1.3	3.1	0.7	-0.9
Gross fixed capital formation	3.0	1.5	-1.4	2.8	-0.8	1.1	-0.5	0.3	-0.3	1.8
Mainland Norway	3.5	2.4	0.7	1.2	-0.3	1.0	0.5	0.7	0.2	1.4
Final domestic use of goods and services	2.8	2.3	0.0	0.1	1.3	0.0	0.9	0.7	0.2	0.5
Final demand from Mainland Norway	2.8	2.6	0.8	1.2	0.4	0.6	0.3	1.2	0.5	0.5
Total exports	-8.0	-7.9	-2.8	-3.6	-7.8	3.6	-0.3	4.8	4.7	-3.5
Traditional goods	2.0	3.5	1.4	0.2	-1.3	4.4	0.6	2.3	1.2	0.3
Total use of goods and services	-0.5	-0.5	-0.8	-0.9	-1.1	1.0	0.5	1.8	1.4	-0.5
Total imports	5.1	1.3	1.5	1.2	0.2	-0.5	-0.1	0.2	0.4	2.9
Traditional goods	4.7	1.4	1.1	1.2	-0.3	0.4	-0.3	0.5	0.9	5.1
Gross domestic product (market prices)	-2.8	-1.1	-1.5	-1.6	-1.5	1.5	0.7	2.3	1.7	-1.7
Gross domestic product Mainland Norway (market prices)	1.8	2.7	0.0	-0.5	1.2	1.1	0.9	1.0	0.0	-0.7

Source: Statistics Norway.

**Statistics Norway**

Postal address:  
PO Box 8131 Dept  
NO-0033 Oslo

Office address:  
Akersveien 26, Oslo  
Oterveien 23, Kongsvinger

E-mail: [ssb@ssb.no](mailto:ssb@ssb.no)  
Internet: [www.ssb.no](http://www.ssb.no)  
Telephone: + 47 62 88 50 00

ISSN 1504-5625 (electronic)

