

The background of the cover features a collage of Euro banknotes. A dark blue circle in the top left corner contains the Eesti Pank logo. The banknotes are shown in various orientations and are partially overlapping. The logo consists of the words 'EESTI PANK' in a white, sans-serif font, followed by a stylized '100' symbol where the vertical bar is a thick white line and the zeros are two white circles.

EESTI  
PANK

ESTONIAN ECONOMY  
AND MONETARY POLICY

**2**  
2018

The Estonian Economy and Monetary Policy is an Eesti Pank review released four times a year that summarises the main recent events in the global and Estonian economies. Twice a year, in June and December, the review also contains the forecast for the Estonian economy for the current year and the next two calendar years.

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Subscriptions of printed versions:

Fax: +372 668 0954

Email: [publications@eestipank.ee](mailto:publications@eestipank.ee)

Review by Anu Randveer, Birgit Strikholm, Eva Branten, Gertrud Koiduste, Helen Ljadov, Kaspar Oja, Katri Urke, Krista Kollo, Kristo Aab, Mari Pärnamäe, Orsolya Soosaar, Rasmus Kattai, Sulev Pert, Taavi Kimmel, Taavi Raudsaar.

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## INTRODUCTION

**The global and European economies have grown steadily, though the growth was weaker at the start of the year than had been expected.**

As the European economy was affected by worse weather than usual, an outbreak of the flu, and strikes among other things, most forecasters find the slowdown in growth was temporary and the rate of growth will pick up again in the second half of the year. At the same time the outlook has become more uncertain as the threats of barriers to international trade have started to become real, which has increased the probability of battle lines continuing to be drawn and having a major impact on the global economy. The exit of the United Kingdom from the European Union is also approaching, though it is not really clear what the consequences will be for the United Kingdom itself or for the rest of Europe. On top of this, the results of the election in Italy showed that financial markets are anxious, and the lack of faith in the sustainability of the financial systems of some members of the euro area could have a wider impact throughout the single currency area.

**Growth in the Estonian economy has also shown signs of weakness at the start of this year.**

It is quite natural that growth has been slower as there have been fewer unused production resources available with which to grow, and investment statistics indicate that new resources are only slowly being added. Higher employment has helped to offset the lack of investment, and has been made possible by net immigration in recent years, a temporary increase in the working age population, and more active participation in the labour force. Participation will be increased further in the years ahead by a rise in the retirement age and in life expectancy and an improvement in indicators for health. Labour force participation has also been encouraged by the Work Ability Reform, which has been successful partly because of the favourable economic climate, in which it is easier for those with less professional training to find work. Unemployment could increase sharply though if

the economy were to cool unexpectedly, as an end to the trend of growth in the economy would make conditions difficult especially for companies providing low productivity jobs.

**The probability of the risk scenario with a sharp slowdown in the economy has increased.**

The danger is greater than before that growth will slow more steeply than forecast because of unexpected events. This could be caused by deterioration in terms of trade and setbacks in foreign markets, and a potential danger also lies in worsening competitiveness, which stems from higher production costs. That the long rise in labour costs shows no sign of abating confirms the risk of competitiveness deteriorating. The very strong upwards pressure on wages shows that the reduction in the effective income tax rate that came in at the start of 2018 did not halt the growth in gross wages, meaning that employers had to increase their wage costs almost as fast as earlier even though net wages had already risen for a large share of employees because of the tax changes. Wage growth is expected to remain close to 6% in the years ahead, so employers will again have to get used to rapidly rising wage demands.

**Companies and households are better protected against shocks than they were earlier.**

Even if the economy should be hit by some unexpected shocks, both companies and households are better prepared as they have built up savings in recent years and their debt levels are lower. Large-scale corporate saving is a downside though as it could hinder long-term economic development. Companies have for years been investing less than their profits would allow, and this is a major difference from the time before the crisis. Estonia has also been a bit less attractive for foreign investment. Assuming that funding conditions remain favourable and given that successful business models require investment in new technology, especially when there are labour shortages, capital needs to be built up over the next two years, though the outlook for this is uncertain.

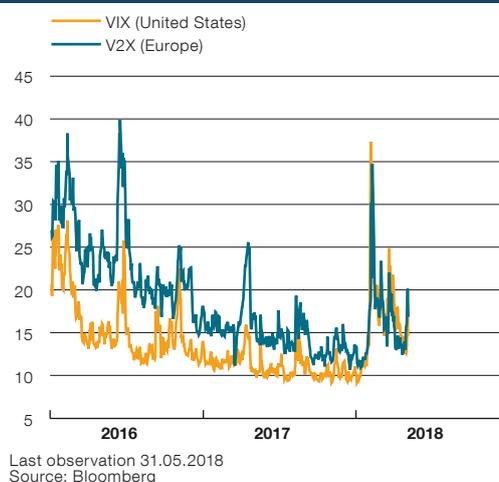
# THE EXTERNAL ENVIRONMENT

## THE GLOBAL ECONOMY

**Growth picked up strongly in the global economy last year thanks to increases in trade and investment,** but it slowed a little in the first quarter of this year. The slowdown is probably temporary as one reason for it was unusual weather conditions. The rate of growth in the global economy this year has been the fastest since 2011 (see Table 1). The Global PMI<sup>1</sup> general index of economic activity strengthened further in May, underlining the good position of both the production and the service sectors. This suggests that the rate of growth in the economy will recover during the year. The continuation of rapid growth is threatened though by trade tensions and geopolitical tensions. This is also reflected in the volatility in international financial markets, which remains close to the highest level of recent years (see Figure 1).

**Economic growth slowed in advanced economies at the start of this year.** Growth remains quite strong though and in many countries it is above the potential growth rate. As economies have grown, so prices have risen faster in some places, reaching the target set by central banks of close to 2% for the first time in some years. In consequence some large central banks have continued to tighten their monetary policy. In some countries like the United Kingdom and Japan wages are showing signs of rising faster. The growth in wages remains quite slow though, which indicates that there is still slack in the labour market. Productivity is also growing at only a moderate rate. Growth in the economies of some countries is being backed this year by large fiscal expenditure and strong foreign demand.

**Figure 1. Stock market volatility indexes in the USA and Europe**



**Emerging economies have become more fragile than was expected at the start of the year.** The speed of growth in those countries depends largely on inflows of capital from advanced economies. When interest rates rise in advanced economies, capital flows to emerging economies generally shrink. The countries affected most in this case are those with the largest imbalances in their current account deficits and public debt. Tighter monetary policy in the US meant the currencies of several emerging economies depreciated sharply this spring. Worst affected was Argentina, where even a sharp rise in monetary policy interest rates by the central bank was not able to slow the fall in the peso, and so IMF aid was needed. The most vulnerable emerging economies are several others in South America, Turkey, India and Indonesia. Higher commodity prices lift overall inflation, which then eats into the purchasing power of consumers and can harm the outlook for growth in an economy.

**Table 1. GDP growth in different regions in 2012 - 2018 (change, %)\***

	2012	2013	2014	2015	2016	2017	Q4 2017	Q1 2018	2018
World	3.5	3.5	3.6	3.5	3.2	3.8			3.9
Advanced economies	1.2	1.3	2.1	2.3	1.7	2.3			2.5
Emerging markets and developing economies	5.4	5.1	4.7	4.3	4.4	4.8			4.9
Euro area	-0.9	-0.3	1.2	2.1	1.8	2.4	2.8 (0.8)	2.5 (0.4)	2.4
United States	2.2	1.7	2.6	2.9	1.5	2.3	2.6 (0.7)	2.8 (0.6)	2.9
China	7.9	7.8	7.3	6.9	6.7	6.9	6.8 (1.6)	6.8 (1.4)	6.6
Japan	1.5	2.0	0.4	1.4	0.9	1.6	1.8 (0.1)	1.1 (-0.2)	1.2
United Kingdom	1.5	2.1	3.1	2.3	1.9	1.8	1.4 (0.4)	1.2 (0.1)	1.6

\* GDP at constant prices; quarterly growth over previous quarter of the same year is in brackets; 2018 is WEO forecast  
Sources: IMF World Economic Outlook Update (April 2018), OECD, Eurostat, National Statistics

<sup>1</sup> IHS Markit.

**The Chinese economy is generally doing well at the moment.** Yearly growth of 6.9% in the economy was fast last year, and growth was again fast in the first quarter of this year at 6.8%, mainly thanks to growth in exports. The good performance of industrial production and exports is also reflected in activity indexes, which have weakened a little recently but are still strong enough by the standards of recent years. Private consumption and the service sector are constantly increasing as a share of economic growth, as is more natural for a developed economy. The economy is still largely based on public sector investment though. Annual inflation remains at 2%, which is quite low for an emerging economy. The imbalances have still not disappeared from the Chinese economy, as the growth in real estate prices has not slowed enough and the debt levels of state companies remain high, despite slower growth in recent quarters. The import tariffs imposed by the US on aluminium and steel and the higher tariffs on various other Chinese goods that are still being negotiated do not threaten the outlook for growth in the Chinese economy seriously, as exports of those goods to the US are quite small. Even so, China has allowed the yuan to rise against the dollar this year, partly in response to criticisms that the weak currency gives it a significant advantage in exports. The biggest threats to the Chinese economy remain a change in international capital flows and a reduction in investment.

**Growth in the US economy is currently based on large fiscal expenditure, but also on private consumption and the generally favourable state of the global economy.** Yearly growth in the economy was fast in the first quarter at 2.8%, but growth was slower in quarterly terms. This was largely due to temporary factors such as colder weather than usual. It is probable that the fiscal stimulus will boost growth in the second half of this year. This is underlined by several activity indexes<sup>2</sup> that are close to their peaks of recent years. Strong foreign demand supports faster growth in exports. The protectionist and unpredictable policies of the US administration are causing some uncertainty for producers though, as they could lead other countries to take

retaliatory measures and damage the economy of the US itself. The labour market is doing unusually well in the US, as is shown by very low unemployment at 3.8% and by wage growth rising to 4.6%. Consumer prices have already risen to 2.4% and some acceleration in the growth in producer prices is also apparent, and so the Federal Reserve has continued to tighten monetary policy this year.

**The Japanese economy continues to grow fast as strong foreign demand encourages the exporting sector, which is important for the country.** Falling domestic demand slowed yearly growth in the economy to 1% in the first quarter, but in the middle of the year some acceleration is rather to be expected in growth. This is indicated by several sentiment indexes<sup>3</sup> that have strengthened in recent months. Corporate profits are at record levels and export orders are increasing in the industrial sector. The yen strengthened a little at the start of the year, worrying exporters, but then it started to slide back again. The labour market remains favourable for employees, as unemployment is very low at 2.5% and the long-awaited signs of an increase in yearly growth in wages to nearly 2% are finally evident. Inflation has fallen at the same time though, as the temporary rise in prices of fresh food at the start of the year, which had raised inflation, has ended. The accommodative monetary policy has kept funding conditions favourable for growth, but the outlook for growth is threatened by US trade barriers and geopolitical tensions in the Asia-Pacific region.

**The growth in the economy of the United Kingdom has slowed.** Yearly growth in the economy slowed to 1.2% in the first quarter of this year, primarily because of a decline in construction. Consumers have also become more careful and are spending less, though inflation has fallen this year to 2.4%. Higher inflation than earlier was a consequence of the quite notable depreciation in the pound sterling following the Brexit vote. Even so, the pound strengthened against other major currencies at the start of this year, as the Bank of England tightened its monetary

2 United States Manufacturing PMI, IHS Markit; University of Michigan's consumer sentiment for the US.

3 The Nikkei Japan Manufacturing PMI, IHS Markit.

policy by raising monetary policy interest rates. However, the weaker pound and strong global demand have encouraged growth in exports and industrial output has increased constantly. The changes to the United Kingdom's economic and trade policy that Brexit has wrought have clearly hurt confidence at companies though<sup>4</sup>, as is shown by weaker activity indexes. At the same time, unemployment is exceptionally low at 4.2% and the employment rate is higher than ever before, and the first signs have appeared in recent months that wage growth could pick up to close to 3%. Real estate prices have come down a little and the rapid growth in private sector debt has slowed.

**Equity prices mainly rose from April to the middle of May.** The MSCI World Index for advanced economies was up, as were the S&P 500 in the US and European share indexes. Although macroeconomic indicators have been good and corporate results have exceeded expectations, US stock markets have not managed to regain the losses of the end of January. Stock market indexes in Europe, and to a smaller extent around the world, started to fall from the middle of May

**Figure 2. World stock indexes (03.01.2016 = 100%)**



primarily because of an escalation of political tensions in Italy. Equity investors are also concerned about the uncertainty surrounding customs tariffs. Although both the US and China have taken the first steps it remains unknown whether the sanctions will be a one-off event or indicate the start of a serious trade war (see Box 1). Equity prices are also being brought down by rising interest rates (see Figure 2).

4 The CBI Business Optimism indicator.

**Box 1. The threat to economic growth from trade tensions**

There is a general feeling in many advanced economies that the gains and losses from globalisation have been unequally distributed. In consequence, more voters than before favour restrictions on immigration, imports of goods and inflows of foreign capital. The foreign trade policy of US President Donald Trump draws on the same basis and claims to aim for free, fair and reciprocal trade<sup>5</sup>, and counts as one measure of its success a reduction in the US trade deficit. In March 2018 the US imposed a 10% tariff on imports of aluminium and a 25% tariff on steel imports, claiming security concerns, granting a temporary exception to several countries including the European Union as a whole, but not to China. The share of foreign trade in the US and producer countries that the products affected by the measures account for is small at 0.6% of Chinese exports to the US and 1.7% of exports from the EU28 (see Table B.1).

The European Union has responded by imposing its own customs tariffs on imports of politically sensitive US goods (EU list in table B.1) and by re-routing flows of aluminium and steel to protect itself. The US is demanding import quotas be introduced and by May the European Union was ready to give some ground. Overall the impact of the measures will be largely limited to steel and aluminium producers and to companies using such products as inputs.

5 [President Donald J. Trump's Policy Agenda and Annual Report for Free, Fair, and Reciprocal Trade.](#)

**Table B1.1. Value of traded goods that could be affected by tariffs (USD billion)**

Country of origin	Destination country	Steel	Aluminium	USA list	China list	EU list	Total imports
China	EU28	3.8	2	80.6	1.0	26.4	423.5
China	USA	1.0*	1.8*	46.2*	6.2	36.5	505.6
EU28	China	2.6	0.5	113.4	1.0	4.1	223.9
EU28	USA	6.0*	1.2*	206.4	62.7	13.4	434.9
USA	China	0.4	0.3	26.2	49.2*	1.4	130.4
USA	EU28	1.0	0.6	77.2	23.3	7.5*	283.5

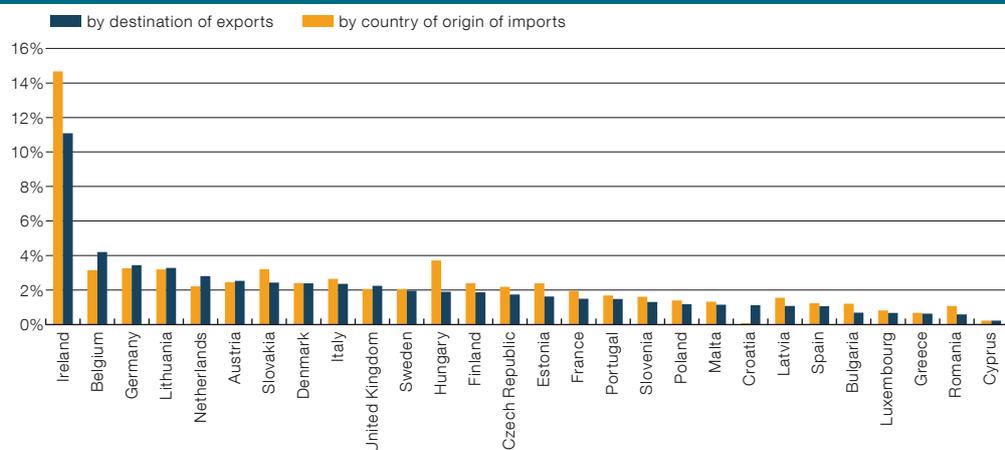
**USA list** – goods imports from China that the USA is considering imposing tariffs on; **China list** – goods imports from the USA that China is considering imposing tariffs on; **EU list** – goods imports from the USA that the EU is considering imposing tariffs on

\* Goods directly affected by the US measures

Sources: [Bruegel](#), European Commission, US Census Bureau

If the tariffs are extended to other export goods, the biggest losses will be faced by Germany, Belgium, Lithuania and the Netherlands, as goods exports to the US are a larger share of GDP<sup>6</sup> in those countries. Assessing the full potential impact also needs account to be taken of onward goods flows to the US from primary trading partners. So while Estonian direct exports of goods to the US last year were worth only 1.6% of GDP, together with those goods produced in Estonia that reached the US through other trading partners the total value was some 2.4% of GDP. This means the direct impact of the tariffs on the Estonian economy is around the average for the other countries in the EU28 (see Figure B.1).

**Figure B1.1. Goods exports to the US as a share of GDP in the EU28, 2017**



Sources: Eurostat, ITC Trade Map

The US has announced plans to impose a 25% tariff on around 50 billion dollars worth of Chinese high-tech goods exports if China does not do more to protect intellectual property rights. This would have a wider impact than the tariffs on aluminium and steel. How the negotiations between the US and China will end is hard to predict, Table B1.1 helps in estimating the magnitude of the trade flows affected. The EU28 imports from China 80.6 billion dollars worth of the goods from China that the US is considering restricting, which are valued at 46.2 billion dollars in the USA list, and the EU28 exports 206.4 billion dollars worth to the US. These measures would impact the European Union indirectly and primarily through changes in exchange rates, but European Union markets may receive Chinese goods that have previously been sent

<sup>6</sup> The large share of Ireland's GDP that comes from exports to the US is an exceptional case that reflects the country's position in international supply chains.

to the US. There will also be changes in global supply chains that are difficult to estimate, but that could give European Union companies a competitive advantage over US companies in the Chinese market. This could prove significant given that the sales turnover of subsidiaries of US companies in China is 1.5 times larger than US exports to China. As the impacts of these factors go in different directions, it is hard to estimate the total effect. If the restrictions remain in place for a long time, the limits on the spread of technology will substantially reduce the growth in productivity in the global economy.

Even more harmful would be the general insecurity arising from the uncertainty about future measures, the collapse of international cooperation, and the combined effect of a series of economic and political sanctions. The uncertainty will itself increase risk premiums and lead to consumption and investment decisions being postponed. This will do some damage to demand for Estonian exports too. It is possible that foreign-policy tensions could escalate into a trade war, but the chances of that are reduced by intensive bilateral negotiations and consultations at the World Trade Organisation.

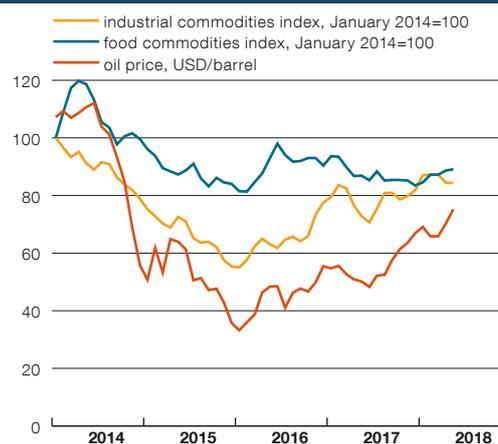
### Bond yields rose for some countries and fell for others.

The interest rate on US 10-year Treasuries reached 3% in April, climbing to its highest level since January 2014, though it fell by the end of May to 2.7%. The rising yield was caused by inflation exceeding 2%, and data on GDP growth in the first quarter. The interest rates on risk-free long-term sovereign bonds in the euro area fell in May primarily because of the inability to form a government in Italy. For the same reason, interest rate spreads widened notably in May for the bonds of several southern European countries over the German government's 10-year bond.

### Commodities prices have mainly risen.

Prices for energy sources were up and especially the price of Brent crude oil, which passed its peak of recent years and reached almost 80 dollars a barrel in May. The price rose because of OPEC, which plans to keep its production limits for oil. The price of oil was also lifted by geopolitical tensions, such as the confusion about Iran's nuclear programme and the possibility of new sanctions related to it. At the end of May the oil price started to come down again as Russia and Saudi Arabia planned instead to lower their output restrictions. Among industrial metals, the price of aluminium has risen because of sanctions imposed by the US on Russia, which is the second largest aluminium producer in the world. The price of steel rose similarly. Among agricultural commodities, prices of grains rose (see Figure 3).

**Figure 3. Commodity price indexes and the oil price in USD**



Sources: HWWI, Reuters, Bloomberg

## THE EURO AREA

### Economic growth in the euro area has slowed.

Survey data show the peak of growth has been passed, as the data have been in decline since the start of this year. The slower growth is partly a consequence of the extraordinarily fast economic growth at the end of last year. Growth in the fourth quarter of 2017 was 0.7% over the third quarter. The growth of 0.4% in the first quarter of 2018 over the previous quarter was clearly below the March forecast of the European Central Bank, but was in line with the December forecast of the Eurosystem. Survey data suggest that growth is slowing in the industrial sector and in

private consumption, meaning growth in the second quarter will be around the same level as in the first quarter. Confidence has fallen a little though it remains strong, and it continues to support investment (see Figure 4). The need for investment is indicated by the exceptionally high capacity utilisation in industry, which stood at 84% in the second quarter. Growth in the second quarter of 2018 continues to be affected by extremely strong consumer confidence and the disappearance of factors that temporarily restricted growth in the first quarter such as the colder winter than usual and a longer flu season. Demand continues to be buoyed by the rising incomes of consumers and higher employment and by interest rates remaining low.

**Employment continued to grow, though labour shortages have started to restrict the expansion of production in euro area countries with lower unemployment.**

The unemployment rate in the euro area fell to 8.6% by the end of the first quarter and to 8.5% in April and continues to fall (see Figure 5). Survey data covering corporate hiring plans confirm that growth in employment continues. Survey data from the European Commission show that a very large number of companies now consider labour shortages to be a factor hindering the expansion of output. There is still a lot of variation between labour markets across euro area countries, and the unemployment rate in April stood at 3.4% in Germany and 20.1% in Greece. Statistics and survey data indicate that wage pressures in the labour market are reaching their peak levels of the past decade, and they are also being driven by the reduction in underemployment among part-time employees who want to work more. Competition remains tight, limiting the ability of companies to pass on higher costs for labour, production inputs and energy sources into final product prices.

**Inflation in the euro area is set by rising energy prices and a steady strengthening of domestic price pressures.** Inflation in the euro area fell in April to 1.2%, and core inflation fell as low as 0.7%, but the main cause of the fall was the effect of Easter, which has a notable impact on how inflation for cultural and leisure services is divided across the spring months (see Figure 6). Inflation in the euro area in May was at 1.9% and core in-

Figure 4. Investment in the euro area

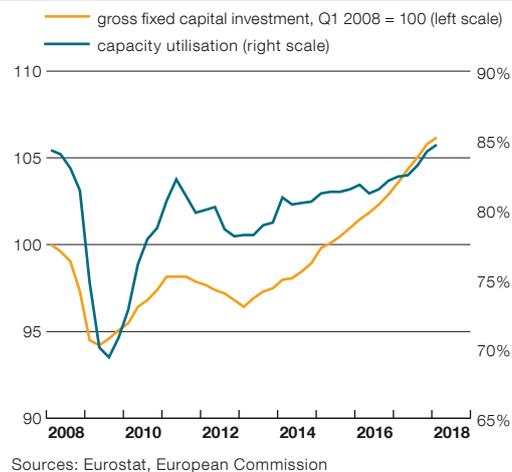


Figure 5. Employment and unemployment in the euro area

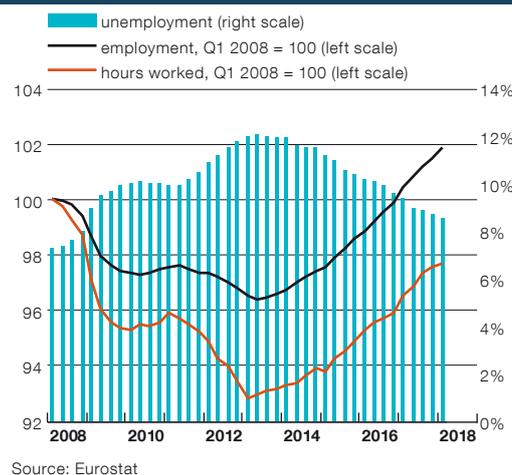
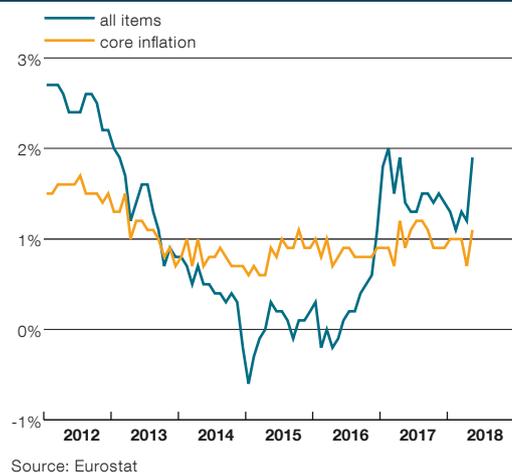


Figure 6. Euro area inflation



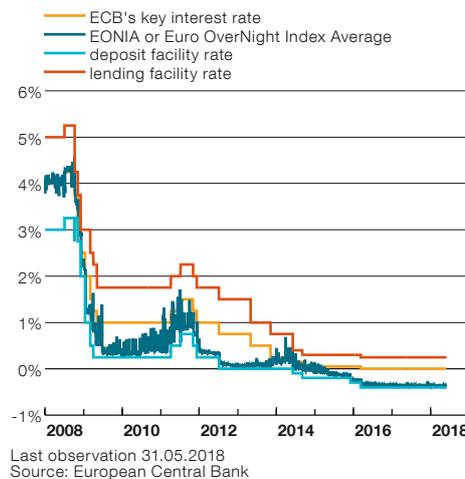
flation at 1.1%. Having risen more than 40% over the year, the oil price started to lift inflation. Core inflation has so far been held down by the lack of change in the price level of manufactured goods. Survey data indicate that consumers and companies have high inflation expectations, which are

likely to be expressed initially in some increase in inflation for service prices. The widening positive output gap and continuing loose monetary policy support a stable rise in inflation expectations (see Box 2).

## Box 2: The euro area's monetary policy environment

The objective of the Eurosystem monetary policy is to maintain price stability in the euro area. The forecast from experts of the Eurosystem of June 2018 expects that inflation will climb to 1.7% by 2020<sup>7</sup>. Inflation is being boosted by monetary policy measures and the underlying strength of the euro area economy. The Governing Council of the European Central Bank has held monetary policy interest rates at their lowest levels under the economic and monetary union in the first half of 2018, with the minimum bid rate on main refinancing operations at 0.00%, the lending facility rate at 0.25%, and the deposit facility rate at -0.40% (see Figure B2.1). The Governing Council assumes that they will remain at their current levels at least through the summer of 2019 and in any case for as long as necessary to ensure that the evolution of inflation remains aligned with the current expectations of a sustained adjustment path.

**Figure B2.1. Eurosystem key interest rates and EONIA**



The Eurosystem has complemented low interest rates with other monetary policy measures, in order to ease financing conditions and ensure the revitalisation of the supply of credit even more strongly to help in meeting the goal of price stability and in supporting the functioning of the monetary policy transmission channels. The monthly purchases under the asset purchase programme are of 30 billion euros from January 2018 to September. The Governing Council of the European Central Bank announced in June that subject to incoming data confirming the medium-term inflation outlook, the monthly pace of the net asset purchases will be reduced to 15 billion euros from October until the end of December and then net purchases will end. On top of this, principal repaid from securities that were bought earlier and have reached maturity will be reinvested as part of the programme over a long time after net asset purchases have ended. This is very important for the Eurosystem as in this way the programme can provide long-term support to monetary policy and favourable liquidity conditions. The expected effect of the measures on the economy of the euro area and on inflation will be seen in the medium term.

The support from the monetary policy measures meant that the consolidated balance sheet of the Eurosystem at the end of May stood at 4.6 trillion euros, which is 2.2 times what it was in autumn 2014, and was equal to 41% of the GDP of the euro area. As at 1 June total asset purchases stood at 2.4 trillion euros (see Figure B2.2). At 2.0 trillion euros, the largest part of the portfolio consists of public sector bonds, of which Eesti Pank's net purchases accounted for

<sup>7</sup> [European Central Bank press conference, 14 June 2018.](#)

5.4 billion euros at the end of May 2018.

Yearly growth of the money supply in the euro area remains strong with support from the accommodative measures taken by the Eurosystem, and in the first quarter of 2018 the broad money indicator M3 was up 4% and the narrow indicator M1 was up 8%. The growth was a little slower than in the previous quarter because of the slightly weaker yearly growth in the corporate loan stock and the smaller asset purchases this year. The growth remained stable in April. The extremely low interest rates have reduced the return earned by the private sector from term deposits, which has fallen to close to 0.2% in the euro area on average. The yearly growth in the stock of corporate and household deposits was also a little slower than previously in the first quarter. The buffers that

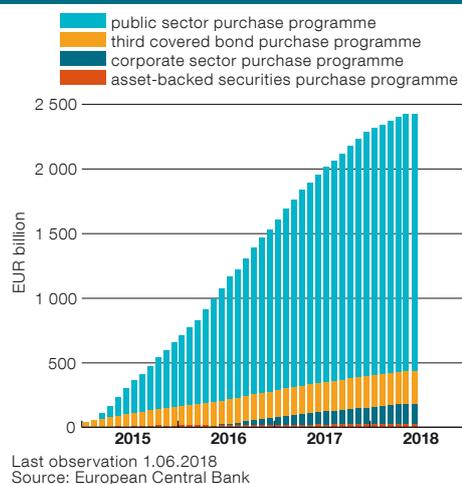
have been built up mean that less external funding is needed for necessary spending and more can be consumed in a favourable economic environment.

Yearly growth in the stock of loans to the private sector has accelerated since the second half of 2015. The yearly growth in the stock of both housing loans and corporate loans has been above 3% since autumn 2017. Corporate loans have grown for all maturities, with support for growth coming from the increased need for investment in fixed assets. Interest rates on loans are at unprecedentedly low levels. The spreads between interest rates for euro area countries facing problems and other member states and those between rates for loans of over 1 million euros and under 0.25 million euros have narrowed significantly in recent years.

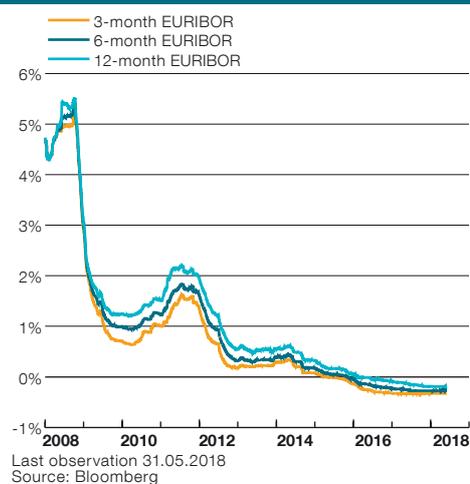
Such changes indicate that monetary policy measures have improved access to loans for the private sector. The latest Bank Lending Survey of lending by banks in the euro area shows that the lending conditions for companies and households have improved<sup>8</sup>, demand for credit is growing, and credit institutions have optimistic expectations for the near term. Banks report that their financing costs have been brought down with help from the monetary policy measures, and that the credit supply has been encouraged by stronger competition and lower risk assessments. It should be noted though that interest rates remaining low could harm the profitability of banks in the long term, and this in turn could reduce their ability to lend and increase the risks to financial stability.

<sup>8</sup> Changes in lending conditions are interpreted in the survey by analysing the net difference in the shares of those banks that have noted in the review that they have tightened credit conditions such as margins or collateral demands, and those banks that said they have loosened their conditions. A negative net rate means that a majority of banks have loosened their credit conditions.

**Figure B2.2. Eurosystem holdings under the asset purchase programme**



**Figure B2.3. Euro area money market interest rates**



The accommodative monetary policy in the euro area has helped short-term money market interest rates stay at their lowest ever level. The expectations for short-term interest rates that are revealed by financial instruments remain low, and this also keeps long-term interest rates low. EONIA was at between  $-0.35\%$  and  $-0.37\%$  from March to May, holding just above the interest rate on the standing deposit facility. At the end of May the three-month EURIBOR was at  $-0.32\%$ , the six-month EURIBOR was at  $-0.27\%$ , and the 12-month EURIBOR was at  $-0.19\%$ , which was the same as at the end of February (see Figure B2.3). The money market yield curve as shown by the gap between the one and 12-month EURIBORs was the same as in February, which shows that the expectations of the market for a rise in monetary policy interest rates have not changed.

## ESTONIA'S MAIN TRADING PARTNERS

**The economies of Latvia and Lithuania continue to grow strongly.** Yearly growth in the Latvian economy picked up to 4.2% in the first quarter of 2018 (see Figure 7) with very strong quarterly growth of 1.6%.

The growth in the Lithuanian economy was 3.7% in the fourth quarter and the economy continued to grow well in quarterly terms too. Growth in both of the economies is driven by domestic demand, while a favourable external environment has helped goods exports grow strongly too (see Figure 8). Rising household incomes have increased private consumption, and the industrial and construction sectors are also growing strongly in Latvia. Investment is also increasing sharply in Latvia and Lithuania, due to higher absorption of European Union structural funds. Labour market developments have also mainly been positive as unemployment fell in the fourth quarter in Latvia (see Figure 9) and employment rose further. The number of people in employment in Lithuania also rose at the end of last year, though the unemployment rate rose in the first quarter of this year. Despite rapid rises in wages, companies are having difficulties in finding qualified labour. Inflation has been relatively stable in Latvia for the past half year, and it was down to 2% in April (see Figure 10). Yearly consumer price growth also came down in Lithuania, descending to 2.3%, which is the lowest rate of inflation in Lithuania since January 2017.

**Economic activity in the Nordic countries is at high levels.** Yearly growth in GDP in Finland was measured at 2.8% in the first quarter, while yearly growth in the Swedish economy accelerated to 3.3%. The economies of both countries also grew faster than in the previous quarter. Growth

Figure 7. Yearly growth rate of the GDP of trading partners



Source: Eurostat

Figure 8. Yearly export growth of trading partners



Source: Reuters

in Finland and in Sweden has mainly been based on investment and household consumption. Last year a large part of the investment came from the construction sector, but this year investment in machinery and equipment is increasing. On top

of the strong domestic demand, foreign trade activity is high in Finland and Sweden and the value of goods exports from both countries was higher in the first quarter than a year earlier. Production of metals and the wood industry have helped growth remain high in the Finnish industrial sector, and Swedish manufacturing has continued its broad-based growth in the past half year. The situation in Nordic labour markets is good as unemployment is falling and the number in employment continues to rise. At the same time there is quite a lot of slack in the Finnish and Swedish labour markets, meaning unemployment is above its natural rate. Inflation is low in both countries, with the yearly rise in consumer prices at 0.8% in Finland in April and 1.7% in Sweden. Although housing investment by Swedish households is still at high levels, the growth in housing investment and residential prices is slowing and the danger of imbalances increasing in the Swedish housing market has declined.

#### The Russian economy is slowly recovering.

The economy posted growth over the year for the sixth consecutive quarter, though yearly GDP growth in the third quarter was only 1.3%. Yearly growth in investment slowed at the start of the year, but energy production supported growth in industrial output. The value of exports was over 20% higher in the first quarter than a year earlier, though the major share of the growth came from the higher oil price, while export volumes of crude oil and oil products shrank at the same time. Export volumes of gas, metals and wheat increased in the first quarter. The rise in salaries for civil servants and in the minimum wage ahead of presidential elections and the growth in real wages supported increased consumption by households and so sales volumes at retail companies have grown steadily in the past half year. Inflation pressures have eased noticeably, and in April the yearly rate of consumer price inflation remained

Figure 9. Unemployment rates of trading partners

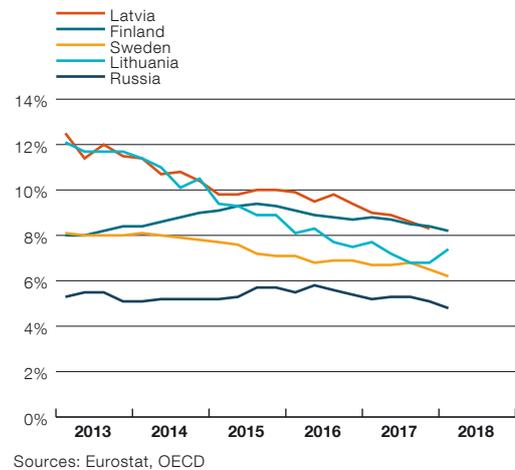


Figure 10. Consumer price inflation of trading partners



at 2.4%. Lower inflation allowed the Russian central bank to cut its base interest rate at the end of March to 7.25%. However, the new sanctions imposed on Russia by the US government in April weakened the rouble, and in consequence inflation may pick up and the postponement of further cuts in interest rates by the central bank may constrain economic growth further.

# THE ESTONIAN ECONOMIC ENVIRONMENT

## ECONOMIC ACTIVITY

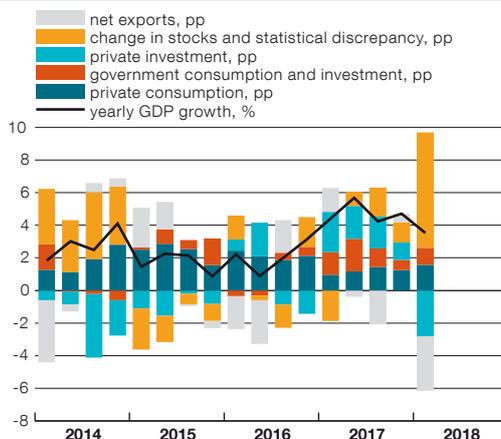
The economy was 3.6% larger in the first quarter of 2018 than a year earlier, but it was down 0.1% on the fourth quarter of 2017 once adjusted seasonally and for the number of working days. Although growth was slower than in the previous quarter, it was still strong and above the potential growth rate. Growth is encouraged by the accommodative monetary policy and the favourable foreign environment, and also by the fiscal policy of the government that has led to increased spending.

**Inventories and statistical discrepancy contributed the most to growth in the economy in first quarter, while growth was modest in exports and consumption, and investment was down** (see Figure 11). The weak contribution of private consumption was unexpected, as the income tax reform was expected to boost the income of households and through that their consumption. It is probable that the income tax reform will have a larger impact on consumption in the second and third quarters.

**Across different sectors, economic activity continued to edge towards business services** (see Figure 12). Value added in information and communications services and financial and insurance activities increased by more than 9% over the year, while that in professional, scientific and technical activities increased by 7%. Despite the slower growth in exports, value added in manufacturing, which is the main exporting sector, increased by 4%, which is even faster than GDP growth. The growth of almost 20% in the construction sector was in contradiction of the decline in its investment. There was also quite strong growth in mining and energy, which can be linked to the rising price of oil and the cold winter. Growth stopped somewhat unexpectedly in agriculture.

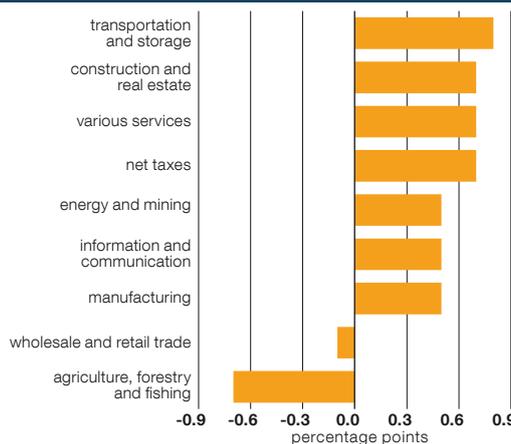
**The growth in industrial output in April was lower than previously.** A large part of the growth came from the energy sector, while the growth in manufacturing was weak. The volume index for industrial output increased over the year in April by 2.2% adjusted for the number of working days, with output growing 17.4% in the energy sector and only 1.1% in manufacturing. Surveys have also

Figure 11. GDP growth



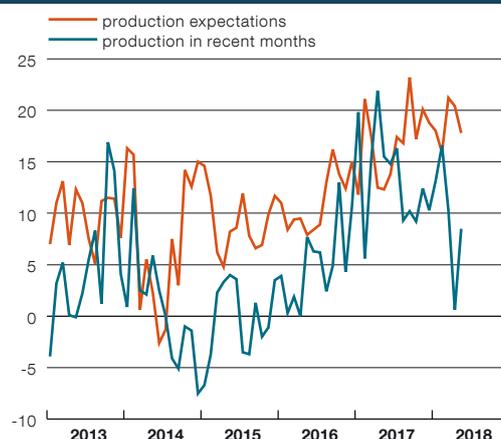
Sources: Statistics Estonia, Eesti Pank

Figure 12. Contributions of sectors to GDP growth in Q1 2018



Source: Statistics Estonia

Figure 13. Industrial surveys



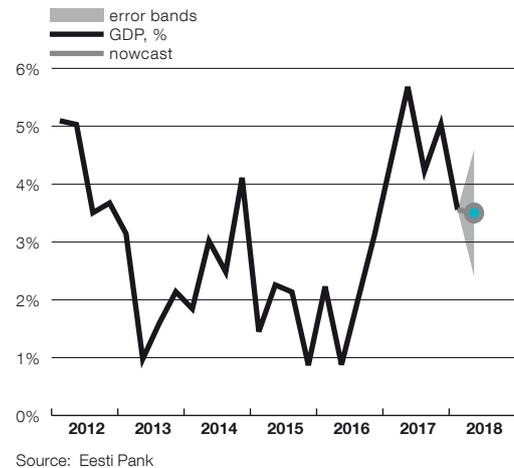
Source: European Commission

indicated weaker growth in industrial output. Corporate expectations for output in the months ahead remain high, suggesting that growth in industrial output will increase in the coming months. Survey data on current output from manufacturing in May also indicate faster growth in output volumes (see Figure 13). The weaker results at the start of the year may have been due to the overall slowdown in growth in Europe, which is considered to have been temporary.

**When reading the economic statistics for the first half of the year, account needs to be taken of the number of working days.** As Easter fell in the first quarter this year, there were fewer working days in March than usual, and so several economic indexes were down. The volume index of industrial output was 0.4% lower in March than in March 2017 for example. Adjusted for the number of working days however, the volume index of industrial output in fact was up by almost 6.2% in March. The opposite is seen in April, where the 9% unadjusted growth came down to only 2.2% after correction.

**Although companies still have high expectations for the months ahead, they are less opti-**

**Figure 14. GDP growth and current quarter nowcast**



**mistic than six months ago and this indicates that GDP growth will continue at a slightly slower rate than last year.** The flash estimate model for economic growth used by Eesti Pank, which uses various short-term statistics as inputs, currently indicates that growth will slow down slightly in the second quarter (see Figure 14). Box 3 discusses the relation between economic growth and confidence indicators.

### Box 3: The link between hard and soft data

Soft indicators, which are mainly sentiment indicators, survey data and similar, are a very useful source of information for economic analysts, as they are published earlier for a given period than the hard macroeconomic indicators, which are primarily GDP data, but also industrial production indexes and so forth. Soft data are monitored so that changes in the cycle can be spotted earlier and the developments in the hard indicators that analysts are really interested in can be forecast.

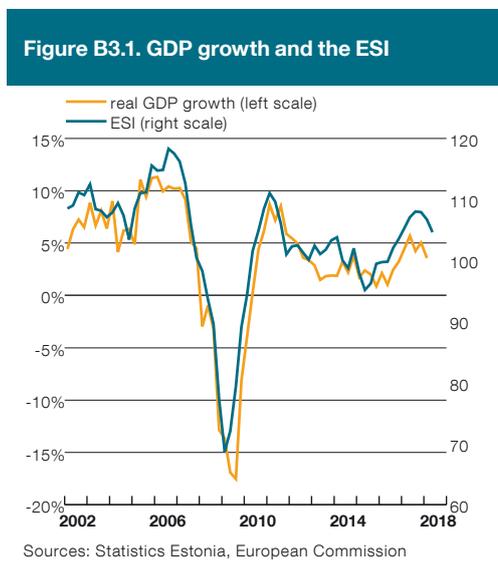
Soft indicators are very useful for analysts in the private sector and for economics researchers, and they are widely used. It has been noted though recently, in both the USA and in Europe, that signals from soft indicators are not always aligned with the later developments of macro indicators<sup>9</sup>. In the second half of 2016 for example the soft data indicated the economy was performing very strongly, as the economic sentiment index climbed well above its historical average, but GDP growth did not accompany it to the same extent. For this reason doubts have recently emerged about the strength or even the existence of a link between soft and hard data.

This box considers the connections between some soft and hard economic indicators and their potential changes over time using Estonian data, trying to answer the following questions:

<sup>9</sup> "The recent strength of survey-based indicators: what does it tell us about the depth and breadth of real GDP growth?", ECB Economic Bulletin, Issue 8 / 2017.

1. Is there a link between the indicators and how strong is it?
2. Has that relationship changed over time, especially since the economic crisis at the end of the last decade?<sup>10</sup> Is there now a 'new normal'?

The focus here will be primarily on the link between the Economic Sentiment Indicator (ESI) and GDP growth (see Figure B3.1). The ESI is constructed to track contemporaneous movements in year on year real GDP growth, and is composed<sup>11</sup> of confidence indexes for five sectors, which are manufacturing, services, households, retail, and construction. The sentiment confidence indicator for each sector reflects the perception of respondents about the current and future economic position of their company or family, and is combined from the responses to three or four questions. The questions to businesses concern orders, production expectations, inventories (with the sign reversed) and similar, and the arithmetic average of the balances of responses pointing to an improvement against those pointing to a deterioration is calculated. Respondents are asked to assess their current situation and outlook relative to a benchmark of 'normal', with questions like "do you consider the number of orders your company currently has as above normal, normal, or below normal?". However, the reduced demand of the long economic crisis may have lowered what companies and consumers consider to be a normal state of affairs, creating a new normal, and this should be reflected in a change in the link between the soft indicator and the related macro variable. This means the relationships from before the crisis may not directly be applicable in the period after the crisis.



**Data:** the first observed values for confidence indexes date back to April 1992, and the time series for seasonally adjusted GDP<sup>12</sup> and its components are available from the start of 1995. The crisis period was defined using the standard definition of recession, which is two consecutive quarters of negative quarterly GDP growth, meaning the recession started in the third quarter of 2008 and ended in the fourth quarter of 2009. To research the link between the quarterly and monthly time series, monthly data were aggregated using the average value for the quarter.

**Tools:** the simplest tools used here are correlation and the Granger causality test, which shows whether adding the contemporaneous value and the lags of the soft data to the forecasting equation of the hard indicator improves its accuracy or not. Changes in the relationship over time can most easily be detected using a moving window. Five-year windows were used in this exercise, and the observations in each window were used to calculate different characteristics. Sliding the window for-

10 The European commission has found that growth rates derived from sentiment indicators fell not only during the last major crisis, but also gradually over almost 20 years. See [European Economic Forecast, Winter 2017](#). The lead time for the OECD leading indicators has fallen steadily, from an average of eight months in the 1970s for the OECD CLI to only four months for the GDP cycle now. See: [Has the crisis affected the CLI's performance? A rolling cross-correlation analysis](#).

11 The weights for the sectors are 40% for manufacturing, 30% for services, 20% for consumers, 5% for construction, and 5% for retail. The disadvantage of the ESI is that it does not cover companies in the financial sector.

12 Although the GDP time series is longer, this observation only considers the period from the third quarter of 2002, as this was when service sentiment started to be recorded as a component of ESI. The time series under analysis has 62 observations.

ward by one observation at a time allowed the development in the values calculated to be observed. Papers on the link between soft and hard indicators and the change in it often use the model:

$$\text{hard indicator}_t = b_0 + b_1 \text{soft indicator}_t + b_2 \Delta \text{soft indicator}_t + u_t \quad (*)$$

To test the theory of the new normal, or the existence of a change over a long time, equation (\*) was also estimated using the five-year moving window set-up. The effect of the recent economic and financial crisis can be detected by estimating the parameters of equation (\*) on two subsamples for before and after the recession. The expected value for the hard data can then be calculated for the periods before and after the crisis to establish whether the connection between the variables inspected has changed. The long and fast change over time can also be studied in a single framework using the smooth transition regression model (STR)<sup>13</sup>.

**Results:** on the face of it economic growth and the Economic Sentiment Indicator are closely related, more so in some periods than in others. Calculating a simple correlation coefficient between those two time series with a shift of up to four quarters gives the strongest result for values in the same quarter at  $\rho=0.95$ . The strength of the connection between these two variables immediately before the crisis was 0.7, and it rose above 0.9 during the crisis, but by the start of 2016, from the moving window for 2011-2015, it had fallen to 0.3. In the past year this connection has strengthened again and has returned to 0.7.

A similar outcome also emerges if equation (\*) is estimated in a moving window and expected GDP growth is calculated for this when ESI equals 100, which is considered a normal and neutral state for the economy. In these conditions, GDP growth of around 4% could be expected in 2007, but during the recession this fell to 0.7% and now under neutral sentiment GDP growth of 2.3% can be expected. This result fits well with what is considered to be the development of potential GDP growth. Analysing the impact of the crisis directly by dividing the data into two parts and removing the data from the recession reveals that the coefficients for equation (\*) are different, though not significantly, and there is no systematic difference between the forecasts<sup>14</sup>. However the statistically more rigorous STR framework indicates

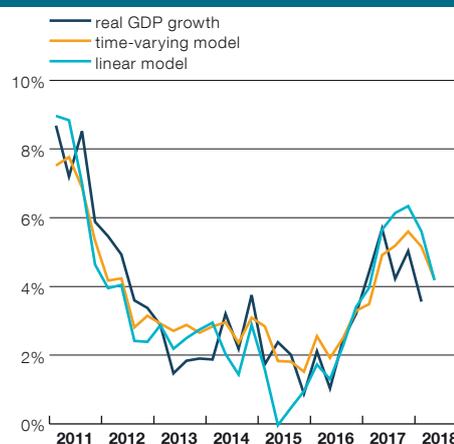
there was a shift in the parameters of the model at the end of 2009 and the start of 2010. The expected value for economic growth from the time-varying STR model for recent periods is 0.7 percentage point lower than that obtained from the simple linear model, but it is still higher for the first quarter of 2018 than that recently published by Statistics Estonia (see Figure B3.2).

Observing the link between GDP growth and the five components of the ESI separately gives similar results, as the correlation of all components with GDP growth has changed over time and the normal growth corresponding to the historical average of the soft indicator has fallen over time.

13 See Teräsvirta, T., Specification, estimation and evaluation of smooth transition autoregressive models, *Journal of the American Statistical Association* 89, pp 208–218.

14 Repeating this exercise on the full sample from 1995 to 2017 allows a change in the parameters of the model to be detected in 2002, and the relation between ESI and GDP before and after the recession is very different, with implied normal growth before the crisis reaching 6-7% when the ESI=100, meaning under normal sentiment.

Figure B3.2. GDP growth and fit of the models



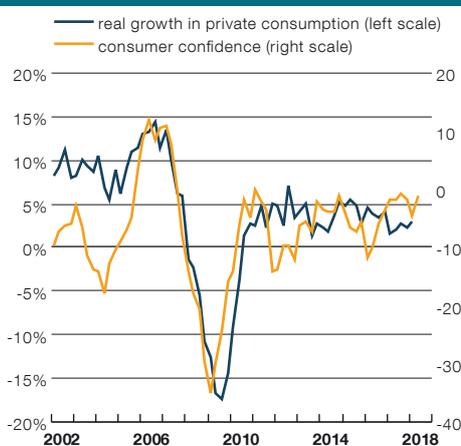
Sources: Statistics Estonia, Eesti Pank calculations

Furthermore, a clearer impact on the link for each component from the recession is evident, while the STR model finds a change in the parameters at the turn of 2009 to 2010, except in the case of consumer confidence, where the relationship to GDP growth started to change in 2008.

Another pair of indicators that are often used and commented on together are private consumption and consumer confidence (see Figure B3.3). In broad terms the movements of the two indicators were more or less aligned until 2011, and the Granger causality test finds consumer confidence to be usable for modelling private consumption. Worries about the future of the Estonian economy that accompanied the adoption of the euro and the sovereign debt crisis that washed over the countries of the euro area, and fears of rising unemployment brought consumer confidence down sharply, though this was not directly expressed in reduced consumption by households. From 2012 the connection between the soft and hard data is more or less random and the correlation calculated with the five-year moving window falls from a strong 0.8 in the starting period to -0.4, meaning that in the last five years the movements were in opposite directions. The impact of the crisis is obvious as the parameters estimated for before and after it are very different. Expected growth in private consumption with neutral consumer confidence has also fallen from 9% during the boom to 4%, and it came close to zero in the moving window that covered the crisis.

**Conclusion:** it can be concluded from this methodology that the strength of the link between the soft and hard indicators probably does change over time and this should be taken into account when modelling the relationships and especially when producing nowcasts.

**Figure B3.3. Growth in private consumption and consumer confidence**

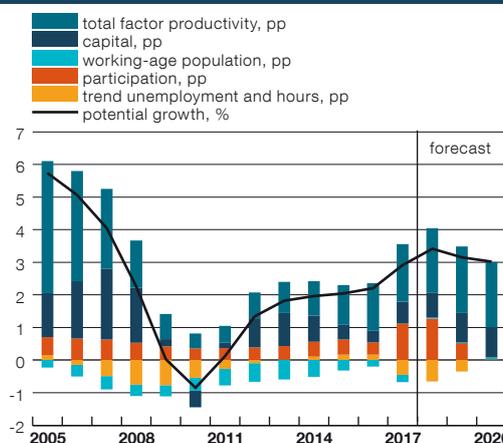


Sources: Statistics Estonia, European Commission

**The potential rate of GDP growth is higher than it was some years ago.**

This is because of growth in the labour supply, and in investment and total factor productivity. The contribution of the working age population to growth in potential GDP has been larger than expected primarily because of higher immigration. Labour force participation has equally increased, because of the Work Ability Reform, a rise in the retirement age, a general extension of life expectancy and improvements in general health, which have all increased economic activity at older ages. Box 4 discusses changes in labour market participation. The potential growth in the Estonian economy is in the region of 3% (see Figure 15), but it will decline in future as the population shrinks and ages. Estonia has become wealthier and adopting new technology from more successful

**Figure 15. Contributions to potential output growth**



Sources: Statistics Estonia, Eesti Pank

countries becomes harder, and this will slow the growth in total factor productivity.

#### Box 4: Estimates of labour force participation from population forecasts

The population forecast expects that the working age population in Estonia will shrink and age substantially in the coming decades. Ageing means primarily that the number of people in age groups with a high labour force participation rate will decline, and the number in age groups with low participation rates will rise. Participation in the labour market is affected by changes in the retirement age and improvements in health and rises in life expectancy, which are reflected in the increase in recent years in the participation in the labour market of the older age groups.

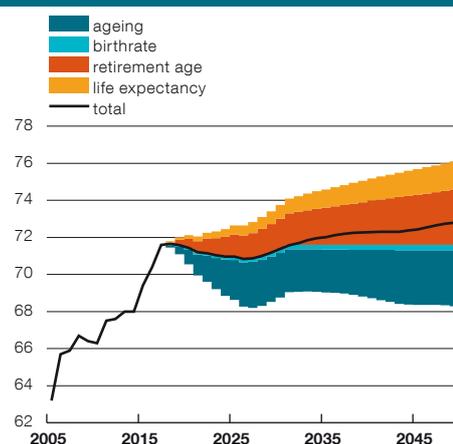
To forecast the number of people in the labour market, it is necessary to know how active participation in the labour force will change in the years ahead. Participation activity is modelled by five-year age groups and gender, with indicators from the population forecast such as changes in life expectancy or the fertility rate as explanatory variables. It is assumed for the rise in the retirement age, which affects labour force participation significantly, that from 2027 the retirement age will rise at the same rate as life expectancy.

The modelling is built on the cohort model of labour force participation<sup>15</sup>, which is applied in generalised form to Estonian data. The cohort model uses panel data that are used to model the participation rate by age groups, taking account of various explanatory variables including the generation effect. This helps to measure whether women or men born in a particular year are more active in the labour market than those born in another year once other factors are taken into account. As the time series for Estonia are short, covering at best a couple of decades, the generation effects have been discarded. To improve flexibility, a system of linear equations has been estimated instead of panel data equations, so the coefficients of the estimates of various equations are related.

Figure B4.1 illustrates that without the Work Ability Reform, the participation rate would fall in the coming years, but after some 10 years or so it would start to rise again. The participation rate is pulled down most by the ageing of the population, as age groups with a high level of economic activity decline as a share of the population. The participation rate is also brought down by the expected rise in the fertility rate, which increases the share of women aged 30-50 who are at home. With the rise in the mean age of women at birth however, the participation of women in their 20s in the labour market could even increase.

Factors reducing the participation rate are offset to a large extent by the rise in the retirement age. The model accounts for the rise in the retirement age through three variables: the retirement age itself, the right to early retirement, and time since reaching the retirement age. For this reason a rise in the retirement age in a particular year increases labour market participation over a long period and does not affect only those people whose age is immediately adjacent to

Figure B4.1. Participation rate in % and change in it from 2017



Sources: Eurostat, Statistics Estonia, Eesti Pank

15 See also Kudlyak, Marianna, 2013. "A Cohort Model of Labor Force Participation," Economic Quarterly, Federal Reserve Bank of Richmond, issue 1Q, pages 25-43.

the retirement age. Equally, participation in the labour force will be increased in future by better health, which is proxied in the model by the mortality rate.

Although the labour force participation rate will rise a little in the longer term, the labour supply will shrink as the number of people of working age will fall until 2050 by 0.3% a year on average.

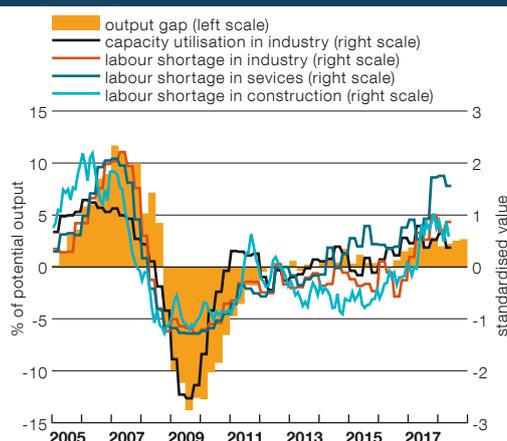
**The economy exceeds its potential level.** The Estonian economy has been growing rapidly for some time now and business survey data for utilisation of equipment and the difficulty in hiring labour exceed the average indicators for the business cycle (see Figure 16). Annual financial reports of firms also indicate that growth in the economy accelerated sharply back in 2016 and so the period of rapid economic growth has lasted for two years, which is a departure from official statistics on economic growth. Companies are finding it ever harder to find employees, unemployment is low and there is less unused capacity than usually.

## DOMESTIC DEMAND

**The growth in Estonian domestic demand was supported in the first quarter of 2018 primarily by increases in inventories, though private consumption also grew** (see Figure 11). Domestic demand was up 4.4% on the first quarter of last year, but the growth was restrained by the fall in investment. Gross fixed capital formation was 8.0% lower than a year earlier because of the fall in corporate investment (see Figure 17).

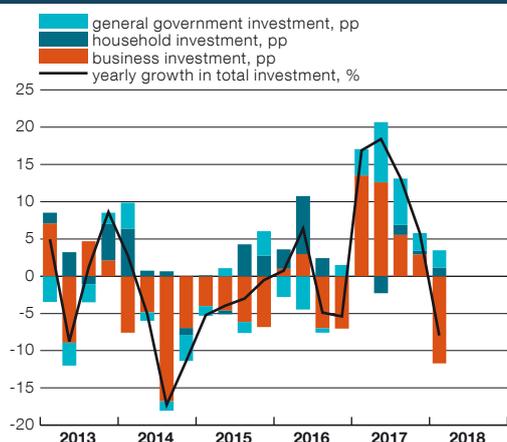
**Investment by non-financial companies in fixed assets was down by almost a fifth on the year at constant prices in the first quarter.** The level of corporate investment was lifted very high in the first quarter of last year by large one-off transactions in transport and storage, and several wood processing companies investing at the same time. This high reference base meant that corporate investment was smaller in the first quarter of this year than it was last year. Leaving wood processing aside, investment in manufacturing grew strongly, which is to be expected given the high capacity utilisation rate in manufacturing. As there was no increase in investment in fixed assets, the growth in corporate debt was small in the first quarter. Interest rates on corporate loans rose a little at the start of 2018. This

Figure 16. The business cycle



Sources: European Commission, Statistics Estonia, Eesti Pank

Figure 17. Gross fixed capital formation



Sources: Statistics Estonia, Eesti Pank

is partly because of the increase in the share of smaller loans with higher interest rates, though the lending conditions have probably been tightened a little as well. Interest rates are still very low compared to what they were in the past decade, and access to loans from domestic banks is good, which is reflected in the relatively rapid growth in borrowing from banks in Estonia, while borrowing from abroad has declined.

### General government investment continued to grow rapidly in the first quarter of this year.

Gross fixed capital formation by the general government was 17.3% larger than last year, primarily because of increased investment in construction. The general government invested one quarter more in buildings and facilities than at the same time a year earlier.

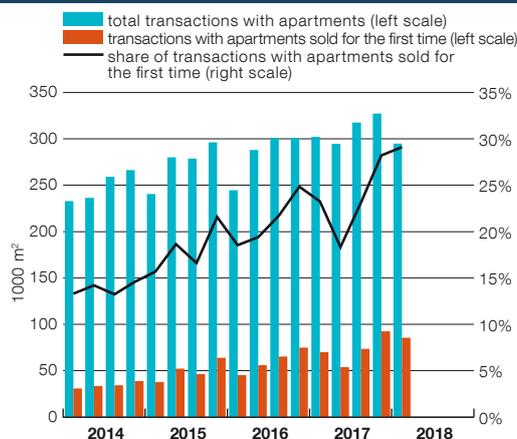
### The market for residential property was active in the first quarter of 2018 and household investments in new residential real estate were up 6.2% on a year earlier.

The supply of new residential property continued to grow rapidly at the start of this year. Statistics for building permits granted and dwellings completed show that one fifth more usage permits were issued in the first quarter for new residential space than in the first quarter of last year. As the share of transactions with new and more expensive apartments continued to increase (see Figure 18), the average square metre price of apartment transactions increased in the preliminary data of the Land Board by 8% over the year. Without the change in the structure of transactions, the rise in prices would have been around 5%. The take-up of housing loans continues to be active. Some 7% more was issued in new housing loans in the first quarter of 2018 than at the same time a year earlier. The Bank Lending Survey indicates that standards for housing loans in the first quarter of 2018 were tightened a little.

### Spending on private consumption by households was 2.8% higher in the first quarter than a year earlier at constant prices

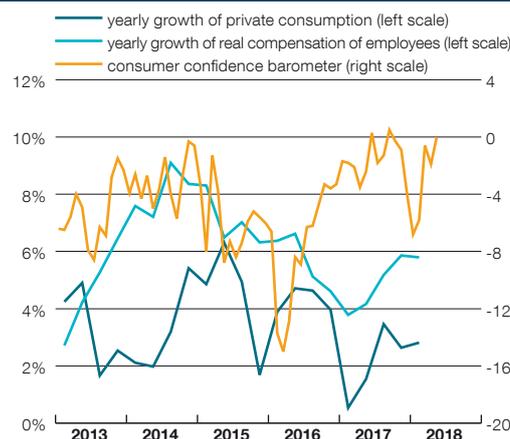
(See Figure 19). The growth in private consumption was notably faster than at the same time a year earlier, though it was still much slower than the growth in the real wage income earned by households. The growth in real wages was accelerated by a rise in the number of people in employment and in the average wage, and by lower inflation. One reason why the growth in private consumption was quite restrained next to that in real wages in the first quarter may be that household confidence was down in the first months of the year, as people were more pessimistic than previously about the outlook for their own family and the national economy. The growth in private consumption may equally have been slower because it is

**Figure 18. Floor area of apartments bought and sold and share of transactions with apartments sold for the first time**



Source: Estonian Land Board

**Figure 19. Private consumption**



Sources: Statistics Estonia, Tax and Customs Board, European Commission

harder to measure private consumption over the short term following a rise in excises, as it is hard to identify how much purchases by foreigners in Estonia have declined and purchases abroad by Estonians have increased. The growth in private consumption was driven mainly by increased spending on services. For the fifth consecutive year, growth in private consumption was pulled down by lower consumption of alcoholic drinks and tobacco products.

**The growth in domestic demand in the first quarter was also supported by corporate inventories growing substantially faster than they did last year.** Inventories increased the most in wholesale and retail, where larger stocks of goods for sale were held than last year.

## EXTERNAL BALANCE AND COMPETITIVENESS

**Exports of goods and services increased by 3.8% at current prices in the first quarter.** The growth received equal support from exports of both goods and services (see Figure 20). Service providers in ICT did particularly well in the first quarter and their exports were up almost a quarter on a year earlier. Exports of transport services were increased by air transport of passengers and transport of goods by road. Exports of travel services and other business services remained more or less unchanged from a year earlier. Data from the balance of payments show that exports of goods increased by 2.7%. The rise in the oil price in the first quarter boosted the transport of goods through exports of mineral fuels, though the very low amount of domestic value added means they do not count as exports in the balance of payments<sup>16</sup>.

**Imports grew about twice as fast at the same time.** Imports of machinery and equipment were up by 11%, a large part of which came from imports of workbenches and similar. Imports of goods were also strongly boosted by metal products. The biggest growth in services was within imports of transport services. Reduced spending in the private travel segment meant that imports of travel services were 5% down on a year earlier.

**Terms of trade have deteriorated in recent months.** Export and import prices grew significantly more slowly in the first months of 2018 than they did a year earlier. Equally the rates of growth of export and import prices have changed relative to each other this year, and since February import prices have risen notably faster (see Figure 21). This represents a turn in the trend of the past two and a half years or so. The new gap in the growth rates was not very wide at first, but if it were to remain over a long time it would be more harmful for the economy.

**Competitiveness indicators show both a rise and a fall.** Self-assessment by businesses in April shows an improvement in competitiveness in Estonia and the European Union and outside

Figure 20. Export growth decomposed

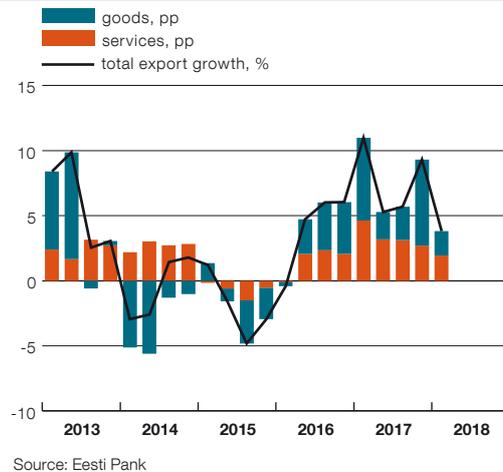
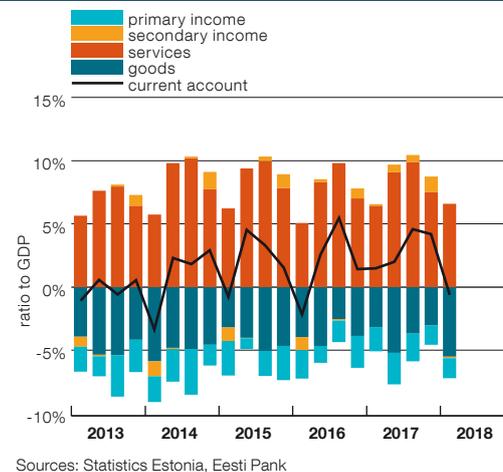


Figure 21. Export and import price indexes in manufacturing



Figure 22. Current account



16 For more on the domestic value added of exports see Box 5.

the European Union. However, estimates of the amounts of export orders have declined both currently and looking forward. The nominal effective exchange rate has climbed some 2% over the year, indicating that price competitiveness may gradually be declining. The real effective exchange rate based on unit labour costs fell further at the end of last year though.

**The current account was in deficit by 35 million euros, or 0.6% of GDP, in the first quarter** (see Figure 22). It was in surplus in the first quar-

ter of last year, but generally it is quite common to see a deficit in the first quarter. The biggest change from a year earlier was that the deficit on the goods account more or less doubled.

**Direct investment in Estonia fell by 38 million euros.** There was an increase in the amount of direct investment in the form of debt, but investment in equity and reinvested income and direct investment in share capital fell. Direct investment outward from Estonia increased by 36 million euros in the first quarter.

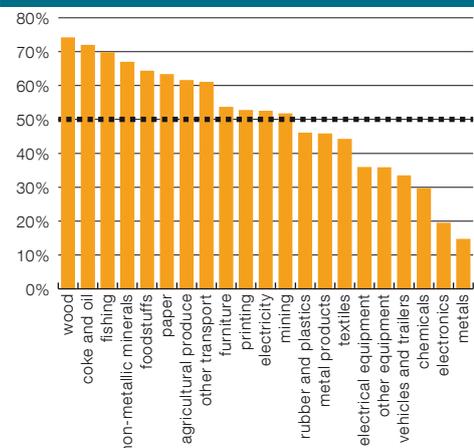
### Box 5: The share of domestic value added in exports

Subcontracted and transit goods, which are those that cross the Estonian border but have no resident owner in Estonia or practically no domestic value added, have played a large role in Estonian exports of goods over the years. These goods affect the turnover of exports substantially, but their relatively high import content means they have little value added for the economy. Furthermore, the value of subcontracted and transit goods can change a lot, making it harder to interpret total export indicators reliably. The value added created domestically and its share in exports reflects the actual impact of exports on the economy better than simply export turnover does. This makes it sensible to analyse core exports alongside growth in total goods exports, as core exports show which groups of goods add the most value to the Estonian economy.

Taking Estonian core exports to mean groups of goods where domestic value added is at least 50% in exports, the following groups of products can be considered core exports<sup>17</sup> (see Figure B5.1): agriculture and fishing products; coal, peat, oil shale, natural gas and other mined resources; food and beverages; wood and wood products; paper and paper products; printing and recording services; other non-metal mineral products; other means of transport; furniture and other manufactured goods; and electricity, gas, steam and air conditioning. Following expert assessment, the group of coke and refined petroleum products has been excluded from core exports, as the value added exported is above 50% in the supply and use tables, but in fact these exports are re-exports.

It is apparent from Figure B5.1 that if the share of domestic value added is moved by, say, 10 percentage points up or down, the structure and volume of core exports will change significantly. If the limit were set at 60%, four groups of goods would no longer be classed as core exports and the volume of core exports would drop by about a third. If it were lowered to 40% though, three more groups of goods would be

**Figure B5.1. Ratio of domestic value added in goods exports, 2010-2014 average**



Sources: Statistics Estonia, Eesti Pank calculations

<sup>17</sup> Average of data from 2008-2009 after the economic crisis; data end in 2014. The domestic value added of exports by group of products is found from supply and use tables.

added and the volume of core exports would increase by around a half.

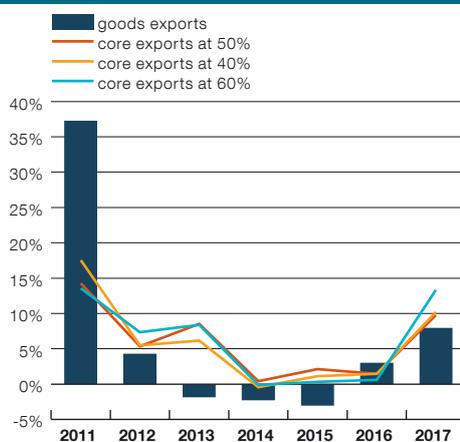
The growth in core exports has been more stable in recent years than the growth in total goods exports. The dynamics of growth have remained similar across the years whichever level is set for core exports (see Figure B5.2).

The share of domestic value added in Estonian exports of goods and services increased sharply after accession to the European Union (see Figure B5.3). Including exports of services raises the share of domestic value added in total exports substantially, as exports of services contain much more domestic value added than do exports of goods. The peak of 72% was achieved during the economic crisis of 2008-2009, as the trade in goods with large import content or based on re-exports was the first to decline when the crisis erupted. From 2011 the share of value added started to increase again. Data from the OECD's TiVA show that only Malta has increased the share of domestic value added in exported production by more than Estonia this century, raising it by 16 percentage points to Estonia's 13. At the same time the domestic value added in the exports of Estonia's neighbours and those of most European countries generally has fallen.

Comparing the share of domestic value added in the exports from Estonia with those from other countries reveals that Estonia places in the middle (see Figure B5.4). The OECD TiVA database suggests that domestic value added accounted for around 68% of the total exports from Estonia in 2014. The indicator is even lower for most of the countries that joined the European Union together with Estonia in 2004 and it is also lower for Finland at 65%. There is slightly more value added in the exports of some of Estonia's neighbours at 71% for Latvia, 74% for Lithuania, and 70% for Sweden. Russia is among the leaders in the table alongside other commodities exporters, as domestic value added accounts for 86% of its exports<sup>18</sup>.

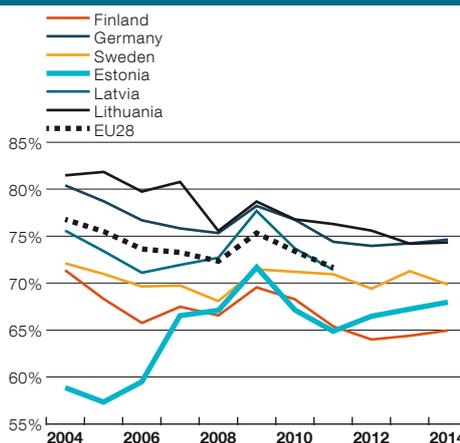
In general terms it can be said that the more domestic value added there is in exports, the more the economy benefits from exporting. It should be noted though that how easy it is to create value added depends on the structure of exports. Countries that focus on exporting commodities get all their domestic value added straight out of the ground, and the state or companies only need to mine the resources, and if necessary process and then market them. The entire process

**Figure B5.2. Export growth**



Sources: Statistics Estonia, Eesti Pank calculations

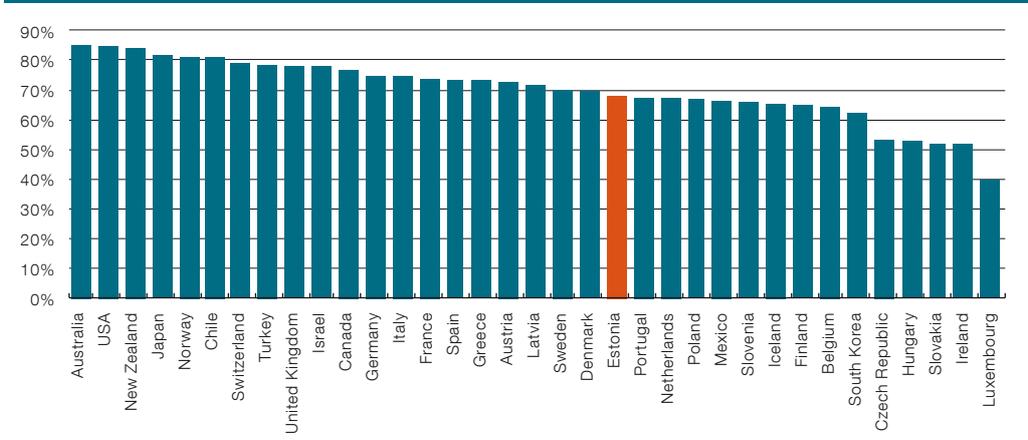
**Figure B5.3. Ratio of domestic value added in exports of goods and services**



Source: OECD TiVA

18 Figure B5.4 shows the share of domestic value added in the exports of OECD countries. For this reason countries like Lithuania and Russia are missing from the figure. [The OECD TiVA database](#) has figures for those countries.

**Figure B5.4. Ratio of domestic value added in exports of goods and services from OECD countries, 2014**



Source: OECD TiVA

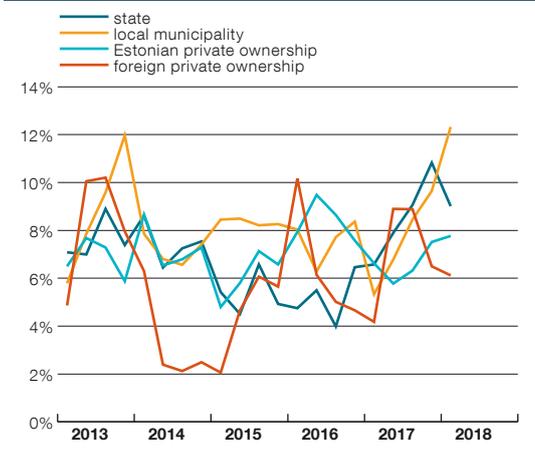
is focused on only one branch of the economy. Industrialised countries have much longer and more complicated value chains though. Producing end products needs inputs from many different branches of the economy, and it is often more sensible to import those inputs. So lower domestic value added in exports does not necessarily mean there is a problem with economic efficiency, productivity or competitiveness.

**THE LABOUR MARKET**

**Both the average wage and labour productivity grew a little faster at the start of 2018 than they did in 2017.** The average wage grew by 7.7% in the first quarter of 2018 and the growth continued to be driven by companies needing additional labour. This is indicated by the increasing growth in the number of people declared as receiving wages in the data of the Tax and Customs Board, and in the expectations of companies for employment. The growth in wages was slowed though by a moderate rise in the minimum wage, and probably also by the hiring of new employees at below the average wage. The reduction of the tax burden on labour through the income tax reform did not yet significantly impact the rise in the gross wage at the start of 2018.

**The rate of growth in the average wage accelerated in the first quarter of this year, as it did at the end of 2017, largely because of the public sector** (see Figure 23). An important role in this was probably played by the new employment contracts signed as part of the reform of administration and the strong rise in wages in education. Data from the Tax and Customs Board indicate that

**Figure 23. Yearly change in average wages by ownership status**



Source: Statistics Estonia

wage growth accelerated sharply in the general government in December and remained faster than in the private sector in the first four months of 2018. Wages in the private sector grew faster in industry, though the growth slowed in services overall.

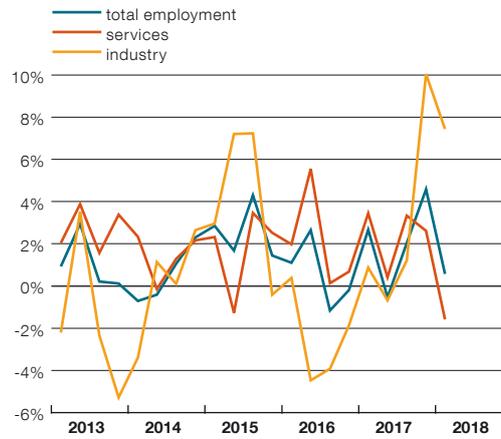
**Having picked up in 2017, the rise in employment slowed at the start of 2018** (see Figure 24). The labour force survey by Statistics Estonia shows the growth in the number of employees

slowed at companies and institutions resident in Estonia from 5% in the last quarter of last year to around 0.9% in the first quarter of 2018. The rise was particularly fast in 2017 and at the start of 2018 in the number of one-person businesses and businesses with no employees, which accounted for as much as 11% of all those employed at the start of 2018. The biggest growth in employment was in manufacturing and construction, though employment fell in agriculture and the service sector. Data from the Tax and Customs Board show the number of employees rose by 1.1% in 2017 as a whole, which is in line with the estimate of the labour force survey. The number of people declared as receiving wages rose faster throughout the year and continued to do so in the first four months of 2018, which is in contrast to the data from the labour force survey, and it reached 1.9% in April.

**Companies were optimistic about employment, like they were in 2017.** The sentiment survey by the Estonian Institute of Economic Research shows that expectations of companies for employment in 2018 remained at the level of 2017 in industry, construction and services. The employment expectations of retail companies declined in the first quarter of 2018, and the share of those companies expecting employment to increase was about the same as the share expecting it to fall. Labour shortages were considered a restricting factor by an even larger number of companies at the start of 2018 than at the end of 2017.

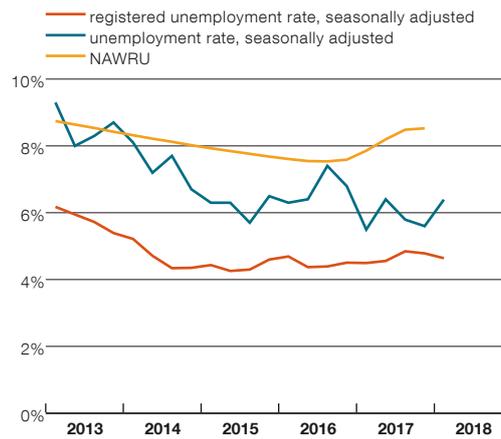
**Unemployment reached 6.8% at the start of 2018 and was higher than at the start of 2017 because of increased participation in the labour force** (see Figure 25). The number registered as unemployed has risen since the work ability reform was introduced, and in the first four months of 2018 a little below one third of Estonia's 33,000 registered unemployed had reduced capacity for work. Leaving out random fluctuations from quarter to quarter, the total unemployment rate has remained quite stable in recent years. Without the Work Ability Reform, participation in the labour force would have increased more slowly and the number unemployed would have fallen. This is because the reform was well timed, as people with reduced ability to work can find a job more quickly at times of labour shortages than otherwise.

**Figure 24. Yearly growth in employment in the labour force survey**



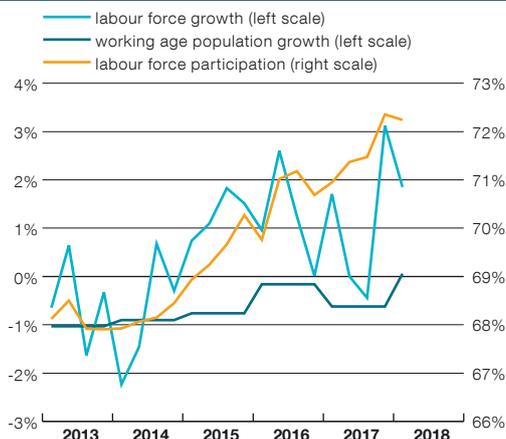
Source: Statistics Estonia

**Figure 25. Unemployment**



Sources: Statistics Estonia, Töötukassa, Eesti Pank

**Figure 26. Labour supply**



Source: Statistics Estonia

**Participation in the labour force increased strongly in 2017, and that trend continued at the start of 2018 too.**

Alongside the higher participation rate, a rise in the number of people of working age also increased the amount of labour in the economy (see Figure 26). The more accurate estimate by Statistics Estonia is that the number of people aged 15-74 did not fall in 2017, but in fact rose by 0.1%. This is partly because Estonia has become a more attractive place to work for foreign labour, and partly because residents of Estonia who had previously gone to work temporarily abroad have returned. The improved migration balance means there is a larger supply of labour in the Estonian labour market and an easing of the wage pressures caused by labour shortages.

## PRICES

**The rise in consumer prices slowed in the first quarter of 2018.** Inflation approached 4% at the end of 2017 but at the start of the second quarter of 2018 it fell back below 3% (see Figure 27). The fluctuation in consumer prices has been caused by changes in global prices for food commodities and energy.

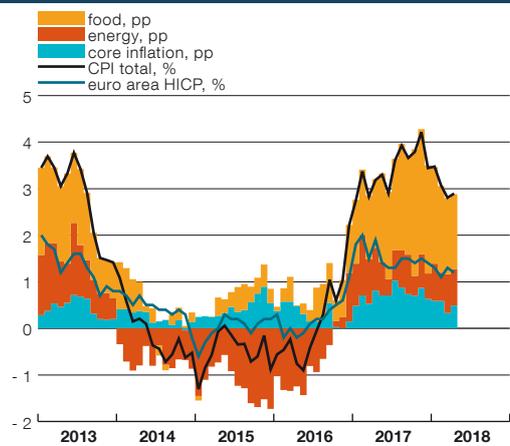
**Inflation slowed for food products more sharply in the first quarter of 2018 than had been forecast.** Prices for food commodities such as sugar and coffee have continued to fall over the year on global markets. Farm gate prices for milk became cheaper on European Union markets, though their price level started to rise again by the second quarter.

**Energy prices continued to rise though, together with the price of oil on global markets.**

A higher oil price is seen most immediately in the price of motor fuels. The price of petrol was also affected by a rise of 10% in excise at the start of the year. Inflation has also increased for other sources of energy as well as for motor fuels, with prices for electricity, gas and wood up more than 6% on the year. The price level of heating energy has not changed notably during the past year in contrast (see Figure 28).

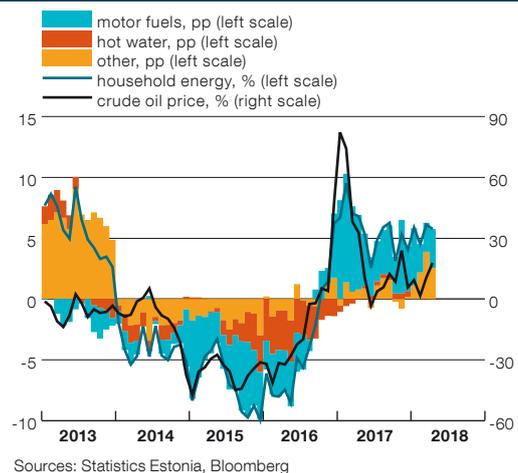
**Core inflation also came down at the start of 2018 due to both services and manufactured goods.** Core inflation fell despite the faster growth in wages and the positive output gap. This was

Figure 27. CPI growth



Sources: Statistics Estonia, Eesti Pank

Figure 28. Growth in energy prices



Sources: Statistics Estonia, Bloomberg

because of lower prices for communications and a fall in some regulated prices, and also in prices for travel services. The high reference base also has an effect as prices for services were higher last year because of the presidency of the Council of the European Union.

**Inflation for manufactured goods has remained low for some years in Estonia and in the whole of the euro area.**

One reason for this may be the appreciation of the euro against the dollar that started in early 2017. The euro was 10% stronger in the first quarter than a year earlier, but the nominal effective exchange rate (NEER) was up 3.6% at the same time. The appreciation in the exchange rate affects energy prices and manufactured goods most (see Box 6).

## Box 6: The effect of changes in the exchange rates on inflation

**Inflation has been lower in Estonia in 2018 than might be expected given the rapid growth in wages and other indicators for economic activity.** Even though prices have risen for commodities and intermediate goods, inflation has remained close to zero for manufactured goods. One cause of low inflation may be changes in the exchange rate. Having fallen for some years, the euro has started to appreciate. This box considers how changes in the euro exchange rate affect inflation in Estonia.

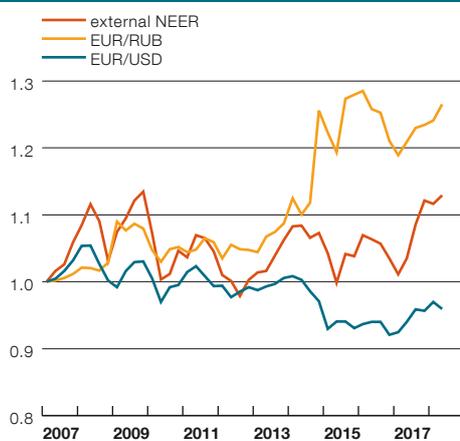
**Changes in exchange rates affect inflation through several channels, both directly and indirectly.** A direct impact of a rise in the exchange rate is that imported consumption goods become cheaper, bringing inflation down. The indirect impact of the exchange rate is seen in lower production costs, as imported commodities become cheaper. Depending on the principles they use to set prices, companies may cut their selling prices or keep them the same.

**The average change in the exchange rates of a range of currencies are shown by the Nominal Effective Exchange Rate index (NEER).** The NEER shows the weighted changes in the exchange rates of the currencies of Estonia's main trading partners, with weights based on the trade flows between countries. Estonia's main trading partners are other countries in the euro area, which account for 60% of trade flows. Countries that have currencies that float freely against the euro include Sweden, which has a weight of 11%, Russia with 7%, and Poland with 5%. The weight of the US in Estonia's trade flows is only 1.9%.

**For various reasons it is hard to estimate the effect on inflation of changes in the exchange rates of currencies.** Partly this is because the NEER probably underestimates the effect of the US dollar on inflation. This is because international trade is often not in domestic currency, but in some other international currency. At 83%, the majority of Estonia's foreign trade transactions with partner countries are in euros, while transactions using the US dollar account for 13% of trade turnover. Imports of oil products for example are mainly priced in US dollars. By groups of goods, 80% of fuels are imported in US dollars and 8% of industrial goods. Equally, the importance of the euro should not be overestimated as the countries in the euro area that are trading partners for Estonia themselves trade in other parts of the world using floating exchange rates that indirectly affect inflation in Estonia too.

**This analysis uses the export prices of Estonia's main trading partners measured in foreign currency.** Export prices of competitors are translated into euros using the NEER index with exports double weighted. Double weighting helps take account of the indirect effect of changes in the exchange rate through third countries<sup>19</sup>. The NEER index calculated in this way strengthened in the first quarter of 2018 over the year against most currencies by an average of 9% (see Figure B6.1).

Figure B6.1. NEER index, Q1 2007 = 1



Source: Eesti Pank

19 Schmitz, M., Clercq, M. et al. Revisiting the effective exchange rates of the euro (2012) Occasional Paper Series 134/2012, ECB.

**How changes in the NEER affect inflation was estimated in two stages.** In the first stage the effect of the weighted exchange rate on the import prices for energy, food products and manufactured goods was estimated. Inputs used alongside the NEER in this stage were commodities prices and the export prices of trading partners in international currency. The second stage estimated how the import prices affected components of the consumer price index. Changes in the consumer price index depend not only on imported goods and services, but also on higher domestic production prices, or the GDP deflator.

**The simulations in the model show that a rise of 10% in the NEER reduces inflation by one percentage point over three years** (see Table B6.1). The largest negative effect on consumer prices comes from lower prices for inputs of energy goods. Changes in the exchange rate are passed on in full into input prices for energy. A rise in the NEER affects the components of core inflation primarily through input prices for manufactured goods and consumer prices for manufactured goods. The NEER has no statistically significant impact on consumer prices for services.

**Table B6.1. Elasticity of CPI levels to a fall of 10% in the NEER**

	CPI weights (%)	Import prices (%)	CPI (%)
Food	29.4	2.1	0.9
Energy	13.8	12.3	4.3
Non-energy industrial goods	29.1	2.0	0.5
Services	27.7	-0.1*	-0.01*
Weighted average	100.0	2.91	1.01

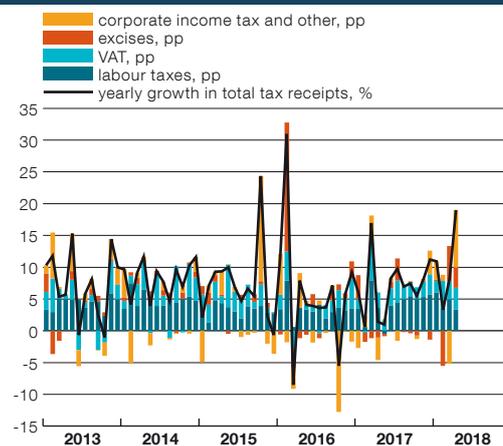
\* not statistically significant

## GENERAL GOVERNMENT

**Despite the sharp cut in the tax burden on labour, tax receipts grew rapidly at the start of 2018.** In the first four months of the year one tenth more was received in tax revenues than in the same month of the previous year (see Figure 29). The good tax receipts are the consequence of rapid growth in the economy, which raised VAT receipts by 11.2% and social tax receipts by 10.5%. Social tax made an even larger contribution to the general government budget, as the government is no longer making additional payments to the second pension pillar funds from 2018. Receipts from personal income tax grew more slowly than wages did, because the sharp rise in the average tax free threshold reduced the tax burden on labour.

**The major changes in tax policy will affect budget revenues gradually.** Although the new personal income tax rules came in from 1 January, there was no immediate impact on the budget revenues. The tax income received in the

**Figure 29. Tax receipts in the state budget**



Source: Tax and Customs Board

state budget in January was paid for December under the old law, and so the effect of the reform was visible only from February. It should be noted though that the effective income tax rate<sup>20</sup> fell even further over the next three months (see Figure 30). This means that employees have adjusted their estimate of their income for the year

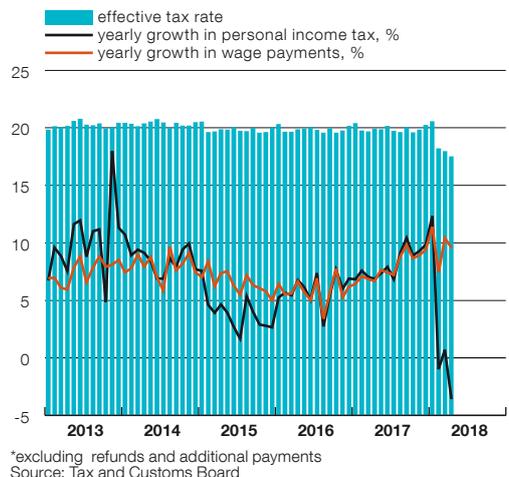
<sup>20</sup> An estimate of actual tax revenues calculated from tax income received as a ratio to declared wage income.

and their tax-free income over time. The actual tax burden is probably even lower, because according to the Tax and Customs Board, employees are declaring a lower tax free income, which will allow them to get back a part of their tax paid in 2018 as a rebate in 2019.

Almost 40% more was received in corporate income tax in the first four months of the year than a year earlier, although it is not entirely clear how much of that is down to the change in the tax rules and how much is due to the recovery of profits in 2017. More certain conclusions can be drawn about the banking sector, where dividend policy is affected not only by the lower tax rates for regular profit distribution but also by the obligation to pay advance income tax. As some large banks have decided to start paying out a larger share of their profit, corporate income tax receipts were up more than 55% in April.

**The strong growth in tax revenues has not improved the fiscal position though, as spending by government institutions has increased at the same time.** Contrary to expectations, the growth in wages did not slow in the first quarter, and it reached 8.7% in yearly terms. Growth in wages in education and health has made a major contribution to the rise in general government labour costs for some years now, though in the second half of 2017 additional costs for the pres-

**Figure 30. Personal income tax receipts\***



idency of the Council of the European Union were added to this, as were additional payments in city and local administrations following the administrative reform and elections. The disappearance of these additional factors was balanced at the start of the year by quite general growth in wages in most sectors.

On top of this, general government spending on acquiring fixed assets increased by one fifth in the first quarter, though this had only a small effect on the general government budget position as a large part of the funding came from the budget of the European Union.

## ECONOMIC FORECAST 2018-2020

The Eesti Pank economic forecast is produced jointly by experts from the central bank's Economics and Research Department and Financial Stability Department. It is a part of the joint forecast for the euro area produced by the euro area central banks and the European Central Bank, which uses shared assumptions about interest rates in euro area money markets, the euro exchange rate and commodities prices. The outlook for demand and prices in Estonia's trading partners is based on forecasts prepared by other central banks in the euro area at the same time. The external assumptions used in the forecast are based on information available as at 28 May 2018, and the Estonian economic indicators on data available as at 31 May 2018. The Eesti Pank forecasts are compiled using EMMA, the macro-model of the Estonian economy developed and regularly updated by Eesti Pank.

### THE INTERNATIONAL ECONOMIC ENVIRONMENT

**International institutions expect that the global economy will grow rapidly this year and next through investment, favourable funding conditions and growth in employment.** The IMF and the OECD forecast growth in the global economy will pick up from 3.8% in 2017 to 3.9% in both 2018 and 2019. The risks to further growth in the global economy increased quite notably in the early part of this year however. Growth in the global economy has until now received strong support from international trade, but further recovery in this is limited by the threat of a global trade war. Geopolitical tensions have increased in several places around the world at the same time. There are also worries about global debt building up in an environment of low interest rates. Overall this suggests that in the longer term, growth in the global economy should be expected to slow.

**Economic activity will increase in 2018 in both advanced and emerging economies.** Growth in the US economy will be supported in the next couple of years by large fiscal expenditure, while growth in the euro area and Japan is based on accommodative monetary and fiscal policy and a favourable external environment. However, some signs of rising inflation are ap-

parent, and so central banks have made more moves to tighten their monetary policy. This is being done very carefully though, so that a change in the interest cycle does not cause excessive volatility in international financial markets and a rapid tightening of financing conditions. This would limit the rate of growth in emerging economies to a notable degree, though the IMF has forecast it will increase from 4.8% in 2017 to 4.9%. Economic growth of as much as 5.1% is expected in 2019. The outlook for growth is favourable primarily in emerging Asian economies, where growth will remain strong in the Chinese economy despite being restrained a little by reduced credit growth and fiscal stimulus. Growth will slow in advanced economies by the end of the forecast horizon mainly because of lower fiscal spending, and this will then restrain the growth in emerging economies.

**Prices for commodities will rise and put further upward pressure on prices.** The oil price will be higher throughout the forecast horizon than was forecast in December and will reach an average of 68.7 dollars per barrel in 2020 (see Table 2). The oil price will be pushed up by tensions in the Middle East and by increasing Asian demand for oil products. At the same time the market will be balanced by the stable increase in production volumes in the US following a rise in the number of operating drilling rigs. In the years

**Table 2. External assumptions in the forecast**

	2017	2018	2019	2020	December 2017 projection		
					2018	2019	2020
Foreign demand growth (%)*	6.7	4.7	4.0	3.5	4.1	3.8	3.6
Oil price (USD/barrel)	54.4	74.5	73.5	68.7	61.6	58.9	57.3
Interest rate (3-month EURIBOR, %)	-0.33	-0.31	-0.16	0.22	-0.31	-0.13	0.15
USD/EUR exchange rate	1.13	1.20	1.18	1.18	1.17	1.17	1.17

\*Foreign demand growth is the weighted growth of imports of trading partners  
Source: European Central Bank

ahead upwards pressure on prices will increase gradually in all economic areas, mainly because of rapid economic growth and rising commodities prices.

**Economic growth in the euro area remains strong.** In the years ahead the size of the economy in the euro area will exceed its potential level, meaning growth will slow. Despite this, total output is expected to remain above its potential level throughout the forecast horizon. Some cyclical slowing in economic growth will be caused primarily by labour shortages in countries with low unemployment and more modest investment activity in countries with lower confidence. The steadily improving labour market and growth in real incomes will increase demand further as well. Low loan interest rates, favourable borrowing conditions and an improved demand environment will encourage growth in investment. With monetary policy rates accommodative, the interest rate environment will remain favourable. It is expected that base interest rates will remain extremely low in the coming years and the three-month Euribor will only move into positive territory from 2020. Volatility in energy prices means that wide fluctuations are expected in the dynamics of monthly inflation because of the base effect. Inflation in the euro area will remain modest in the near term, but by the end of the forecast horizon it will have risen gradually to 1.7%. It will be boosted by a widening of the positive output gap and continuing loose monetary policy. Although the risks in the economic environment are more balanced, investor confidence is threatened by various populist phenomena. The protectionist tariffs imposed by the US on steel and aluminium started to apply from June, and though they will not seriously affect exports from the euro area, the wider spread of protectionism could harm the exporting opportunities for euro area companies and reduce global demand. Political instability in some countries in the euro area could make it harder to continue with the investments that economic growth requires and to introduce the structural reforms that are needed to improve competitiveness.

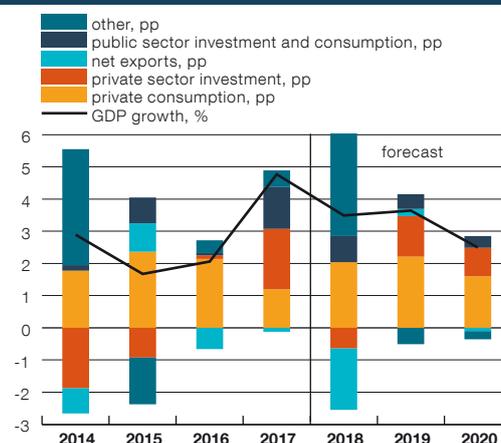
**The outlook for growth in Estonia's main trading partners is good, with growth slow only in Russia.** Growth in Estonia's export partners

was boosted last year by the favourable external environment and will continue to be strong in 2018. The economies of Sweden and Finland will grow by close to 3% this year, and Finnish GDP should exceed the level of before the crisis. The rate of growth in the Nordic economies will slow next year as growth weakens in domestic demand. Growth increased notably in the Latvian and Lithuanian economies last year, and those economies will grow faster in the near future than was predicted last year. The Spring Forecast of the European Commission projects that GDP growth in Latvia and Lithuania will exceed 3% in 2018 and will be at the same level next year. However, GDP growth slowed markedly in Russia in the second half of 2017, and it did not meet the expectations of the Russian central bank in the first quarter of 2018. The central bank expects that the Russian economy will grow by only 1.5-2.0% in the years ahead despite the higher oil price. The Russian economy is growing at close to its potential, and faster and sustainable growth will need structural reforms to be carried out.

## REAL GDP GROWTH

**Growth in the economy is slowing.** GDP will grow by 3.5% in 2018, 3.6% in 2019, and 2.5% in 2020. Growth is partly restricted by supply-side limits, since technical options become limited as it gets harder to find employees and the utilisation of equipment increases. At the same time demand-side factors will also weaken. Growth in external demand will be reined in as the global economy grows more slowly, growth in spend-

Figure 31. Contributions to GDP growth



Sources: Statistics Estonia, Eesti Pank

**Table 3. Economic forecast by key indicators\***

	2016	2017	2018	2019	2020	Difference from December projection		
						2018	2019	2020
Nominal GDP (EUR billion)	21.10	23.00	24.80	26.57	28.11	-0.14	-0.12	-0.27
GDP volume**	2.1	4.9	3.5	3.6	2.5	-0.7	0.5	-0.2
Private consumption expenditures***	4.4	2.2	4.0	4.4	3.1	-1.1	1.0	0.3
Government consumption expenditures	1.9	0.8	1.7	2.3	1.4	-0.4	-0.5	-0.7
Fixed capital formation	-1.2	13.1	-0.7	5.7	4.2	-2.7	1.4	0.0
Exports	4.1	3.5	3.5	4.9	3.9	0.9	0.5	-0.3
Imports	5.3	3.9	6.3	4.7	4.2	1.8	-0.1	-0.2
Output gap (% of potential GDP)	0.6	2.3	2.3	2.8	2.3	-1.4	-1.0	-1.4
CPI	0.1	3.4	2.8	2.5	1.9	-0.4	0.4	-0.1
Core inflation	0.7	1.3	1.1	2.5	1.9	-0.5	0.8	0.2
Services	1.2	2.7	1.9	4.1	3.2	-0.9	1.3	0.3
Non-energy industrial goods	0.1	0.0	0.4	0.8	0.6	-0.2	0.1	0.0
Energy	-3.8	5.5	7.1	0.0	-1.1	3.2	-0.8	-1.6
Food, including alcohol and tobacco	1.6	6.4	4.0	3.7	3.5	-1.7	0.3	0.3
HICP	0.8	3.7	2.8	2.9	2.3	-0.8	0.4	0.0
GDP deflator	1.6	4.0	4.2	3.4	3.2	0.1	-0.4	-0.3
Unemployment rate (% of the labour force)	6.8	5.8	6.9	8.0	8.2	-0.4	0.1	0.3
Employment****	0.3	2.6	-0.1	-0.4	-0.1	-0.1	-0.5	-0.2
Average gross wage	1139	1217	1302	1385	1468	10	19	23
Average gross wage growth	7.4	6.9	7.0	6.4	5.9	0.8	0.7	0.1
ULC	4.0	3.5	3.2	2.3	3.2	0.6	-0.3	0.1
GDP per employee	1.8	2.1	3.6	4.0	2.6	-0.6	1.0	0.0
Private sector debt, outstanding amount (non-consolidated)	1.7	1.4	5.9	6.3	6.8	-0.5	-0.5	0.4
Private sector debt, outstanding amount (% of GDP, non-consolidated)	125.4	116.6	114.5	113.6	114.6	-4.4	-5.1	-4.1
Current account (% of GDP)	1.9	3.3	1.6	1.3	1.7	1.3	0.8	1.1
Budget balance (% of GDP)*****	-0.3	-0.5	-0.5	-0.2	-0.3	-0.1	0.4	0.3
Cyclical component (% of GDP)	0.2	0.2	0.3	0.6	0.6	-0.1	0.2	0.3
Temporary measures (% of GDP)	-0.3	-0.3	-0.1	-0.1	0.0	0.0	0.0	0.0
Structural budget balance (% of GDP)	-0.1	-0.1	-0.7	-0.7	-0.9	0.0	0.2	0.0

\* Numbers reported are annual rates of change in per cent, if not noted otherwise; \*\* GDP and its components are chain-linked; \*\*\* including NPISH; \*\*\*\* employment by domestic production units; \*\*\*\*\* the budget balance forecast considers only those measures on which sufficient information was available at the date of the forecast  
Sources: Statistics Estonia, Eesti Pank

ing by the Estonian general government will slow, and monetary policy in Europe will gradually start to tighten. The economy will grow faster in 2019 than in 2018 because of rises in excise at the start of 2020 which will increase inventories at the end of 2019. Without this the economy would grow more slowly in 2019 and a little faster in 2020 (see Figure 31). The forecast for the key economic indicators is presented in Table 3 and the comparison with forecasts by other institutions in Table 4.

**Although growth will be slower than in 2017, it will remain quite fast throughout the forecast horizon relative to potential growth.** Private consumption and investment will grow faster from the middle of 2018 (see Figure 32) and demand

factors like consumption, investment and exports will grow faster than GDP throughout the forecast horizon as economic growth is held back by supply-side factors. Growing demand will be met by larger imports.

**The probability of a sharp slowdown in growth or of negative growth will increase during the forecast horizon.** The growth in the economy has been boosted by temporary factors such as the extraordinarily loose fiscal policy in the US that has supported growth in the global economy. Monetary policy in Europe has also been loose and Estonian fiscal policy has supported demand despite the economy growing rapidly anyway. A change in these circumstances could

**Table 4. Estonian economic forecasts by other institutions**

	GDP real growth, %					CPI inflation, %				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Eesti Pank	2.1	4.9	3.5	3.6	2.5	0.1 (0.8*)	3.4 (3.7*)	2.8 (2.8*)	2.5 (2.9*)	1.9 (2.3*)
Ministry of Finance	2.1	4.9	4.0	3.2	3.0	0.1 (0.8*)	3.4 (3.7*)	2.9 (3.0*)	2.3 (2.5*)	2.4 (2.6*)
European Commission	2.1	4.9	3.7	2.8		0.8*	3.7*	2.9*	2.5*	
IMF	2.1	4.9	3.9	3.2		0.9*	3.7*	3.0*	2.5*	
OECD	2.2	4.8	3.7	3.2		0.8*	3.7*	2.8*	2.5*	
Consensus Forecast	2.1	4.9	3.5	3.1		0.1	3.4	3.2	2.7	
SEB	2.1	4.9	3.5	3.0		0.8*	3.7*	3.2*	2.5*	
Swedbank	2.1	4.9	3.9	3.0		0.1	3.4	3.0	2.5	
Luminor	2.1	4.9	3.5	3.0		0.1	3.4	3.0	2.7	

\* HICP

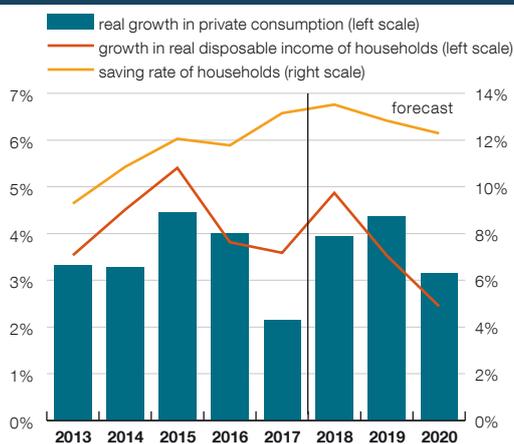
Sources: Eesti Pank, June forecast 26.06.2018; MoF, Spring 2018 forecast 16.04.2018; European Commission. Economic Forecast. Spring 2018. 03.05.2018; IMF, WEO, April 2018, 09.04.2018; OECD, Economic Outlook, May 2018, 30.05.2018; Eastern Europe Consensus Forecasts, May 2018; SEB, Nordic Outlook, May 2018, 16.05.2018; Swedbank Economic Outlook 27.03.2018; Luminor Economic Outlook, 20.03.2018

lead growth to slow sharply. The largest domestic risks in Estonia are related to competitiveness. Although the economy has grown rapidly, profitability has not recovered and investment remains small as a share of GDP. The branches of the economy that are most threatened by problems with competitiveness are those with low productivity that could lose their price advantage.

**Domestic demand will mainly be increased this year and next year by private consumption.**

Real household incomes and private consumption will grow faster in 2018 because of falling inflation and the income tax reform. The income tax changes will lift the incomes of the low-paid and most of this increase in incomes will be carried over into consumption, since the propensity to consume of those with lower incomes is higher than that of the higher paid, because they spend a larger part of their income on consumption. Growth in private consumption will increase to 3.9% in 2018 (see Figure 32), but as in 2017 it will remain below the growth in disposable income, and the household saving rate will rise. Consumer confidence fell quite sharply in the first months of 2018 and then rose back to its earlier high level. The fluctuation in confidence is one reason why the saving behaviour of consumers will remain conservative this year. The confidence of households to consume will increase in the coming years as the economy continues to do well, the saving rate will fall a little, and private consumption will grow a little faster than disposable income. Demand for consumer loans is strong in the good times, and with tighter com-

**Figure 32. Private consumption and the disposable income of households**



Sources: Statistics Estonia, Eesti Pank

petition and an increase in the supply of consumer loans in the market, growth in such loans will remain fast. However, rising household incomes and a higher income tax-free threshold will allow more households to save. Deposits will grow quickly throughout the forecast horizon.

**The rush to add new residential property will fade and growth in investment in residential property will be slow in the years to come**

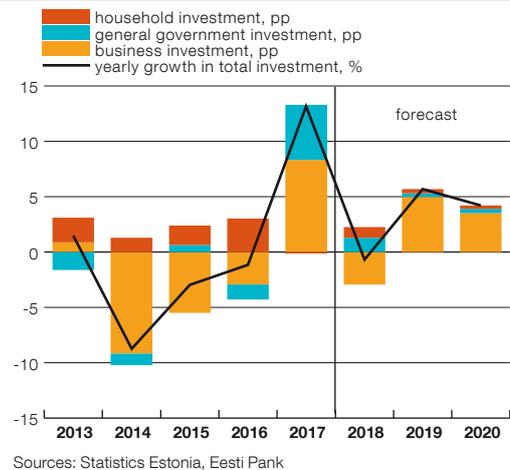
(see Figure 33). Demand is held high in the housing market by the rapid rise of wages over a long period, low interest rates, high levels of confidence among households, and the desire to own modern housing. At the same time the movement of people to large population centres continues, and this raises demand in some particular areas. However these factors can no longer be expected

to give an additional push to growth in investment in residential property. The supply of new residential space will remain large but the growth will be held back by rising construction prices and labour shortages in construction. Growth in investment in residential property will also be slowed this year by the end of the reconstruction support funded by the structural funds of the European Union to make apartment buildings more energy efficient. Investment in residential property may also be restrained at the end of the forecast horizon by stricter building standards. Prices for housing will continue to grow moderately, but at an average rate that will probably not exceed that of growth in incomes. The slower addition of new housing means the growth in housing loans will slow over the forecast horizon. There are few lenders in the market for housing loans and their number is not likely to increase significantly in the years ahead. Lending conditions will remain fairly conservative.

**Corporate investment will not increase in 2018, though if demand continues to be strong and the economies to do well in Estonia's trading partners, more will start to be invested in subsequent years.** Growth in investment by companies will be held down this year by the high reference base resulting from one-off transactions last year. It is notable that a lack of demand is worrying industrial companies less and less, and the capacity utilisation rate has gradually increased. This makes additional investment necessary.

**The options for companies for financing investment will be good during the forecast horizon.** The capacity for lending of the banks operating in Estonia is good. Changes in the structure of the banking sector in recent years will probably increase the competition to lend to small companies, which has so far been weaker. There are fewer banks in the market that are actively lending to large companies, which may lead their loan interest rates to rise a little, though such banks have sufficient capital and large companies are quite able to borrow from abroad. Interest rates on loans remain low and the ability of companies to access capital from the non-bank financial sector as well will probably widen. The growth in domestic bank loans will remain

Figure 33. Gross fixed capital formation



faster than that in debt generally and their share in debt will increase in future. The buffers that companies hold and the increase in their profits will allow them to fund their investments from their own funds as well.

**The growth in general government investment will slow in the forecast horizon.** After growing strongly in 2017, general government investment will do so more slowly in 2018. Although it is planned that the support from the structural funds of the European Union will be used more this year than last, general government investment will grow more slowly because the investment plans of local governments are less ambitious than they were last year. Growth will slow further in general government investment in the years ahead and the structural funds of the European Union will have less and less impact on the growth in general government investment (see also the section on general government financing).

**Exports will grow faster during the forecast horizon.** The growth in exports will remain about as fast in 2018 as it was last year despite the slower growth in foreign demand (see Figure 34). Data from the first months of the year show that exports of mobile communications equipment have stopped falling and there is no reason to expect them to do so again at present. The expectations of businesses for export orders are at their most optimistic of the past five years. Growth in exports in 2019-2020 will reflect growth in foreign demand, as exports will grow faster in 2019 be-

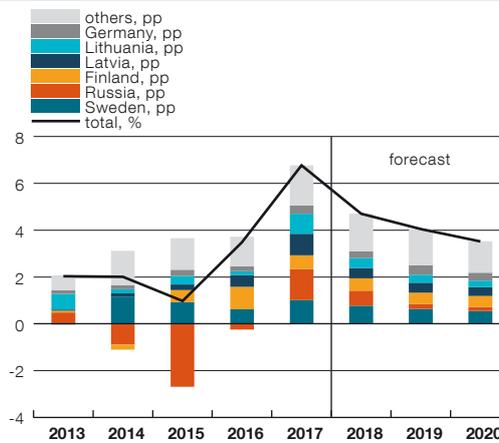
cause of the low reference base, but the rates of growth are forecast to harmonise in 2020.

**Price competitiveness will remain under pressure in the coming years.** Estonian export prices will rise faster in 2018 than import prices in partner countries, which may slightly worsen the competitiveness of companies in foreign markets. Prices will rise at a more equal rate in 2019-2020. The nominal effective exchange rate has been rising steadily and constantly in recent years, and this trend is likely to continue in future. The productivity at companies will grow faster throughout the forecast horizon than wages, which should leave companies with more funds available for the investments they need to make to improve competitiveness.

**The current account surplus is smaller than it has been in previous years.** The need of companies for new investment will increase goods imports and this will increase the deficit on the goods account. Import prices will rise by less than domestic prices in the near-term, and so there may be some substitution effect in private consumption in favour of imported products. Exports of both goods and services will grow more slowly in the second half of the forecast period, and this will reduce the current account surplus further. The active use of structural funds from the European Union will strengthen the current account more in the coming years than earlier.

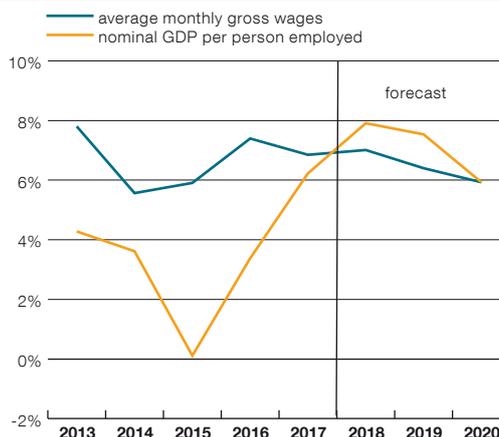
**Wages will rise a little more slowly in the years of the forecast, though productivity growth will still help them rise quickly** (see Figure 35). Higher wage levels will make it more worthwhile for companies to expand the use of efficient technology than to hire additional workers. The growth in wages will be slowed more than in previous years by smaller rises in the minimum wage and a reduction in the tax burden on labour. The strong growth in wages in the general government at the end of 2017 and the start of 2018 will remain faster than was predicted in the December 2017 forecast. Growth in general government wages will peak in 2018, as the temporary factors like the effect of the administrative reform and the generous wage promises made before elections last year will pass out from the calculation of the growth rate.

**Figure 34. Growth in demand for imports in trading partners**



Sources: European Central Bank, Eesti Pank calculations

**Figure 35. Wage and productivity growth**



Sources: Statistics Estonia, Eesti Pank

**Pressure to reduce employment in branches of the economy with low productivity will increase.** Relatively more people work in manufacturing in Estonia than in the other Baltic states, and productivity is lower in manufacturing than in other branches of the economy. This indicates that there are quite a lot of low productivity jobs in Estonia that could disappear in the coming years. The pressure to reduce employment could be increased by faster growth in wages, and also by an appreciation of the euro exchange rate. It is forecast that these jobs will disappear smoothly, though the risk of a sharp adjustment remains, if for example the economy were to be hit by a negative shock. In this case it would be structural unemployment that would increase, as retraining employees and moving them into other branches of the economy takes time.

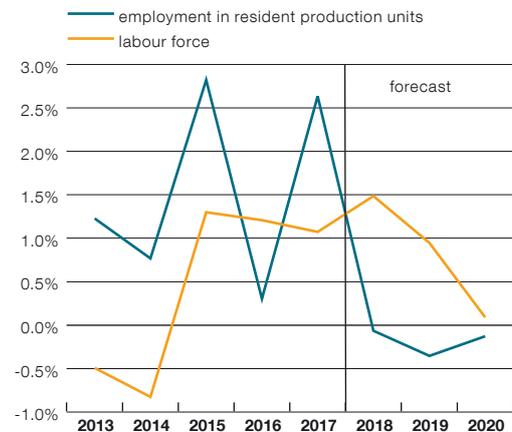
**Although the labour supply will increase in the years ahead, there is little labour available in the market and this will stop employment from growing much further in the forecast horizon** (see Figure 36). The labour force survey suggests the employment rate had risen by the start of 2018 to 66.6%, which is more than three percentage points above the peak figure recorded before the crisis. Labour force participation in Estonia is very high in both international and historical comparison. The favourable labour market for workers and reforms to social insurance have brought additional people into the labour market. However, the actual supply of labour does not increase at the same speed as the participation rate, as structural unemployment also rises. In the long term social insurance reforms will still not be enough to offset the negative effect of the shrinking working age population on the supply of labour.

## PRICES

**Inflation started to fall at the start of 2018 and will continue to do so in the second half of the year.** The average inflation forecast for 2018 is 2.8% and inflation will stop at 2.5% in 2019 (see Figure 37). Inflation will fall assuming that there are no major changes in the oil price on global markets. The contribution of food prices to inflation will decrease until the end of the year, though core inflation will rise at the same time. Inflation may be raised above the forecast rate by higher prices for commodities, and it may be brought down by weaker economic activity than forecast.

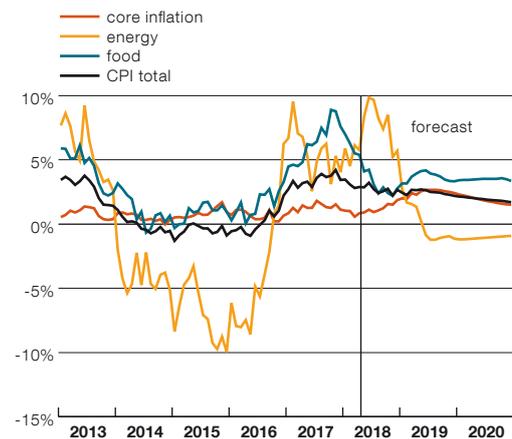
**The contribution of food products in the structure of inflation will decrease in the first half of the forecast period.** The price level of unprocessed food commodities remains relatively low on global markets, and inflation has slowed for dairy products. Inflation was boosted substantially last year by a sharp rise in the prices of milk and butter, and so the reference base of a year earlier will be high throughout the first half of the forecast horizon. Food price inflation will be pushed higher this year by rises in excise on alcohol and tobacco (see Figure 38). Excise on alcohol will not rise in 2019 though, and this will bring inflation down by 0.3-0.4 percentage point.

Figure 36. Annual growth in employment



Sources: Statistics Estonia, Eesti Pank

Figure 37. CPI growth



Sources: Statistics Estonia, Eesti Pank

**Prices will continue to rise for energy in the second half of 2018 because of the earlier rise in crude oil prices.** Markets expect the oil price to stabilise or fall. The consequences of the earlier rise in the oil price will probably pass with a lag into other energy prices. Over the year prices will rise for wood, gas and electricity.

**Core inflation, which depends mainly on domestic factors, will accelerate during the forecast years.** The effect of temporary factors, including some regulated prices and lower prices for tourist services, that have kept higher inflation in check will weaken. On the corporate expenditure side, wage growth will remain relatively fast and profits will increase as a share of value added.

## GENERAL GOVERNMENT FINANCING

**Continuing rapid growth in spending means the government in pursuing an expansionary fiscal policy this year too.** Overall growth in general government spending will continue in 2018, resulting in a pro-cyclical policy stance. Several promises in the coalition agreement will come into force, such as increased subsidies for public transport and pay rises for teachers. The growth in family benefits was first boosted in the second half of 2017 by increased benefits for large families, to which was added the impact of higher child benefit from January. Faster wage growth in the private sector and higher inflation will also put pressure on the general government budget, as wage costs have continued to rise rapidly in government institutions this year, and the budget for their social benefits, which are linked to incomes either directly or through indexing, have increased. These factors will also increase general government spending in 2019-2020, though total spending will grow more slowly than in 2018 as fewer discretionary measures will be added.

**General government investment will be increased this year by greater take-up of the structural funds from the European Union.** At the same time there will be a sharp drop in the growth in investment funded by the government's own resources. According to the Stability Programme, investment funded from the state budget will decline as a share of GDP in the coming years, even though the government plans to set aside extra money for strategic investment.

**The income tax reform will reduce the tax burden on labour in 2018, though the effect of it will start to decrease in the years ahead.** The tax burden on labour will be reduced more slowly than expected, as initial data show that employees have not taken maximum advantage of their tax-free income, and are expecting to receive the balance as a rebate when they submit their tax declarations next year. It should also be remembered that the impact of the reform will start to fade quite quickly as tax-free income diminishes as wages rise. The total tax burden will also decrease a little in the years of the forecast as the main tax base, which is consumption and labour costs, will grow by less than

Figure 38. Contribution of indirect taxes to inflation

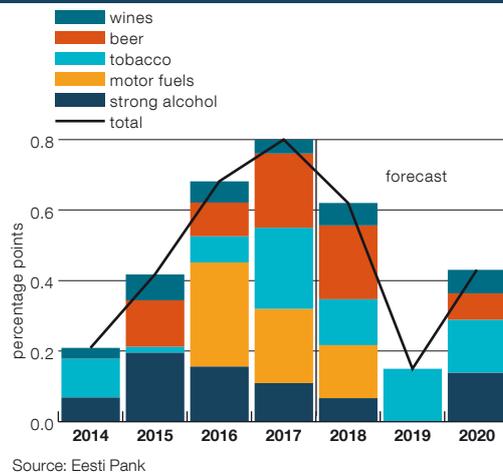
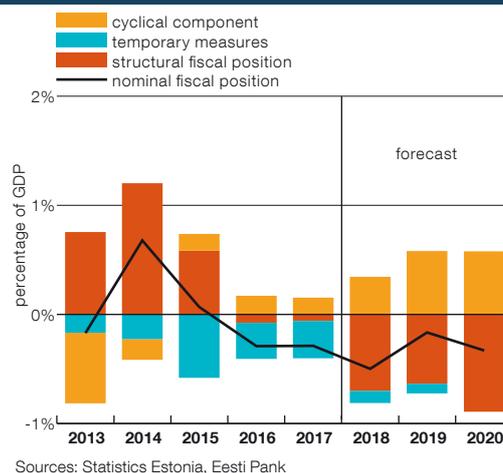


Figure 39. General government fiscal position



the economy and the consumption of some excise goods declared in Estonia will even fall.

**Rapid growth in spending will deepen the structural fiscal deficit this year to 0.7% of GDP, where it will remain until the end of the forecast horizon** (see Figure 39). The government set a target in the latest Stability Programme of keeping the general government budget in structural balance. It plans to do this by taking several economic policy measures that are treated as a positive risk in the Eesti Pank forecast. In addition to that, the change in the income tax system for legal entities will encourage even more companies to pay out more dividends, thus increasing tax revenues<sup>21</sup>. As a result the risks to the fiscal forecast are on the upside.

21 The Eesti Pank forecast only considers changes in the banking sector where advance income tax also started to apply and several large banks have decided to change their dividend policies.

