NÁRODNÁ BANKA SLOVENSKA
EUROSYSTÉM

MEDIUM-TERM FORECAST

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1 Overview

In line with expectations, Slovakia's GDP growth accelerated to 1.1%, quarter on quarter, in the second quarter of 2018. A pick-up in exports was the main driver of that growth, while among domestic demand components, investment made the largest positive contribution. Private consumption growth moderated, even though the labour market situation continued to improve. While the economy expanded as projected, labour market developments improved beyond expectations. Employment maintained the robust growth rate of the previous period, with job vacancies begin filled by unemployed people, by foreign workers, and via increasing labour force participation. The unemployment rate fell slightly more than projected.

Economic activity growth is expected to accelerate in 2018 to 4.0%, year on year, on the back of increasing growth in exports and investment demand. Export growth is projected to peak in 2019, as Slovakia's newest car plant becomes fully operational. GDP growth is projected to accelerate to 4.5% in 2019. Favourable developments in production and exports are also expected to support the domestic side of the economy, with domestic demand, and private consumption in particular, projected to make an increasingly positive contribution to overall economic growth. In 2020, with the new car plant already running, economic growth is expected to return back to 4.0%. Compared with the previous forecast, the annual GDP growth projection for 2019 has been revised down by 0.3 percentage point owing to the softening of foreign demand and to the rescheduling of the launch of the new car plant.

Based on recent better-than-expected data, employment growth is projected to remain elevated in 2018. Thereafter, however, it expected to moderate as a result of labour market tightening and negative demographic trends. That negative impact may be mitigated by a higher inflow of foreign workers, resulting from steps to speed up the processing of work permits. The unemployment rate is expected to continue falling and to be just below 6.0% at the projection horizon. Shortages of skilled labour should be reflected in strong wage growth, which will be further supported by increases in public sector wage scales and in the minimum wage.

Average annual inflation in 2018 is projected to be 2.6%, driven by energy prices and demand-pull factors. The contribution of demand-pull factors is expected to increase in subsequent years due to the fading of the impact of elevated food prices. On the other hand, high energy commodity prices should have an increasing upward impact on administered energy prices in 2019, with household electricity, gas and heat prices projected to rise.

The risks to the medium-term outlook for the real economy are on the downside, with the principal risk being an increase in protectionism in the world trade system. The risk on the domestic front is uncertainty surrounding the launch of new production in the automotive industry. The risks to the inflation outlook are balanced.

2 Recent developments in the external environment and in Slovakia

Euro area economic growth remained unchanged in the second quarter[1]

The euro area economy grew by 0.4%, quarter on quarter, in the second quarter of 2018, the same rate as in the previous quarter. GDP growth was supported by an increase in investment activity. The contributions of household and government consumption remained positive, as did the impact of changes in inventories. Net trade, by contrast, contributed negatively to headline growth. The available leading indicator data imply that economic growth will remain unchanged in the third quarter of 2018. According to Eurostat's flash estimate, annual HICP inflation edged down to 2.0% in August (from 2.1% in July), with prices of energy, non-energy industrial goods, and services recording a more moderate rate of increase.

Economic growth driven by investment

In line with expectations, Slovakia's GDP growth increased to 1.1%, quarter on quarter, in the second quarter of 2018. Exports were the largest contributor to that growth, and their increase in the second quarter made up for their decline in the first quarter. The boost to exports came from rising foreign demand and also from the production launches of new car models in the automotive industry. Among domestic demand components, investment demand registered the strongest growth, reflecting the sizeable impact of the construction of a new car plant. Private consumption increased more slowly than expected.

The economy's strong growth translated into labour market indicators, which increased more than expected. Employment rose by 0.5% in the second quarter, maintaining its robust upward trend from the start of the year. The highest job growth was in the sectors of trade, industry and services. The unemployment rate fell slightly further than projected, down to 6.9%. Job vacancies were being filled not only by unemployed people, but also by foreign workers and via increasing labour force participation. Nominal wage growth has been higher this year than at any time since the global financial crisis, owing to skilled labour shortages and to increases in labour productivity, in public sector wage scales, and in wage premia for night, weekend and public holiday work.

Annual headline inflation has been at just below 3% in recent months. This relatively strong rate has been supported by petrol/diesel prices and by demand-pull inflation. Food price inflation is still quite elevated, although its impact is gradually subsiding.

1 *For further details, see the September 2018 issue of NBS's Report on the International Economy.*

3 TECHNICAL ASSUMPTIONS OF THE FORECAST[2]

3.1 COMMODITIES AND THE EXCHANGE RATE

The **exchange rate**[3] of the euro against the US dollar followed a depreciation trend between the cut-off dates for the June 2018 forecast and this forecast. The causes included the political developments in Italy, improving economic data in the United States, and the tightening of monetary policy by the Federal Reserve. The assumption for the average exchange rate is therefore 1.8% weaker in this forecast than in the June forecast, at USD 1.16 per euro. However, the assumption for Slovakia's nominal effective exchange rate (NEER), calculated with respect to the country's 15 most significant trading partners, is 0.9% stronger compared with the previous forecast. The NEER's appreciation was largely attributable to the currency exchange rates of China, Russia, the United Kingdom, and the only downward pressure on the NEER came from the US dollar.

In the inter-forecast period, oil price futures came under strong upward pressure from supply shortage concerns triggered by the United States' impending imposition of sanctions on Iran in November, from falling oil production in Venezuela, from output instability in Libya, and from concerns about whether members of the Organization of Oil Exporting Countries (OPEC) and other producers will manage to make up the supply shortfalls. The average **price of a barrel of Brent crude oil** is therefore assumed to be USD 73 in 2018, USD 75 in 2019 and USD 72 in 2020, with the figures for the last two years having been revised up slightly from their levels in the previous forecast. In response to the weakening of the euro exchange rate, the assumptions for the oil price in euro have also been revised up.

3.2 FOREIGN DEMAND

After its robust growth in 2017, economic activity in the euro area is assumed to continue picking up, but at a more moderate pace, according to the *September 2018 ECB staff macroeconomic projections for the euro area*.

Global trade growth is expected to remain subdued amid mounting uncertainties related to trade protectionism. The tariffs implemented so far have had a relatively limited impact on global trade; nevertheless, they have heightened concerns about the outlook for trade policies and the global economy, which is expected to weigh on global activity. In this context, together with the fact that euro area economic growth is lower in 2018 than in 2017 and that leading indicators imply the continuation of more moderate growth in both the euro area and other trading partners, the growth assumptions for foreign demand for Slovak exports have been revised down from the previous forecast, to 4.2% in 2018 (by 1.0 percentage point), 4.5% in 2019 (by 0.5 percentage point) and 4.0% in 2020 (by 0.2 percentage point).

2 *The technical assumptions of this Medium-Term Forecast are based on the September 2018 ECB staff macroeconomic projections for the euro area, with a cut-off date of 21 August 2018. The EUR/USD exchange rate and assumptions for the Brent crude oil price and Slovakia's foreign demand were updated as at 4 September.*

3 *The bilateral EUR/USD exchange rate is assumed to remain unchanged over the forecast period at the average level prevailing in the ten-working day period ending on the cut-off date.*

4 MACROECONOMIC FORECAST FOR SLOVAKIA

4.1 ECONOMIC GROWTH

CARMAKERS TO BOOST EXPORT GROWTH

Leading indicators imply that the upward trend in exports will continue. Export expectations remain elevated. Overall exports are expected to be boosted by rising foreign demand and by the production launch and subsequent export activity of Slovakia's newest car plant, whose impact on export growth should peak in 2019. Slovakia's market share in global trade is expected to increase over the production period.

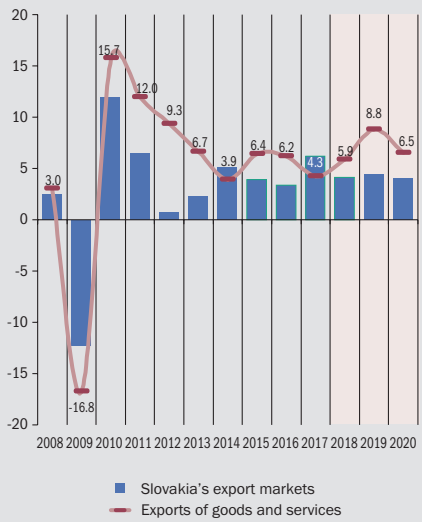
STRONG INVESTMENT DEMAND

Investment activity is increasing sharply this year, owing mainly to heavy investment in the automotive industry. Private sector investment is also being supported by high production capacity utilisation, and in the public sector, too, investment is expected to gather pace (in connection with local government elections). Investment is projected to continue rising in subsequent years, particularly in the public sector as a result of the absorption of EU funds, infrastructure building projects, and defence spending. Private investment is expected to reflect economic activity growth and to continue benefiting from low interest rates.

TEMPORARY SLOWDOWN IN CONSUMER DEMAND

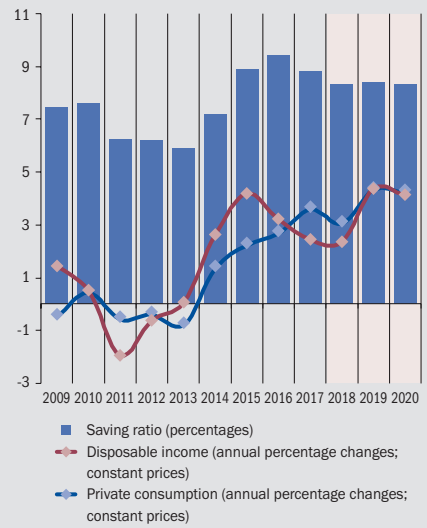
Private consumption growth's downside surprise in the first half of this year appears to have been a blip. The continuing improvement in the labour market situation and resulting growth in labour income are conducive to stronger growth in consumer spending. Therefore, private consumption growth is expected to accelerate in 2019 in line with disposable income developments and to maintain its level in 2020. The disposable income projections take into account the announced increase in Christmas pensions from 2019, which is expected to fully pass through to consumption.

Chart 1 Slovakia's foreign demand and exports of goods and services – trend and forecast (annual percentage changes; constant prices)



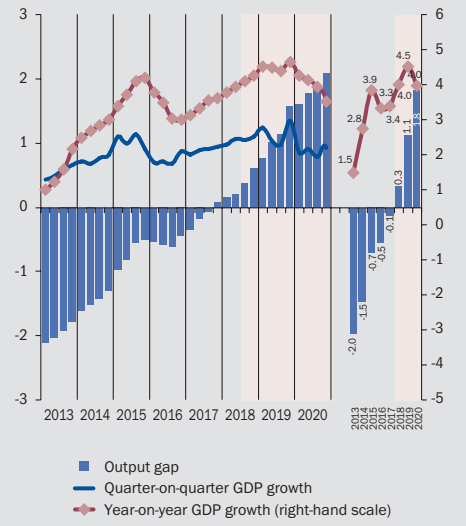
Sources: SO SR, ECB and NBS calculations.

Chart 2 Household income, household consumption and the household saving ratio – trend and forecast (percentages)



Sources: SO SR and NBS.

Chart 3 GDP and the output gap – trend and forecast (percentages)



Sources: SO SR and NBS.

Chart 4 Employment and the unemployment rate (annual percentage changes)

Sources: SO SR and NBS.

Car industry to boost GDP growth next year

Slovakia's GDP is projected to increase by 4.0% in 2018, with exports and investment accounting for most of the growth. This year's export performance is being buoyed by production capacity expansion in the car industry and by rising foreign demand, trends that are expected to peak next year when Slovakia's new car plant becomes fully operational. GDP growth is therefore projected to increase to 4.5% in 2019 before falling back to 4.0% in 2020. Estimations of the output gap and unemployment gap indicate that economic growth is above potential and could have an increasing impact on inflation.

4.2 LABOUR MARKET

The labour market is tightening further

The relatively robust economic growth is expected to continue supporting job creation. As the latest data indicate, employment should increase sharply this year, as it did last year. Job vacancies are expected to be filled by unemployed people, by Slovak citizens returning from work abroad, by foreign workers, and via increasing labour force participation. Over the projection period, economic growth is expected to moderate as a result of negative demographic trends, thereby increasing the mismatch between supply and demand in the labour market. This should be reflected in strong wage growth.

Wage growth is expected to be robust throughout the projection period and to be higher in the public sector than in the private sector. Wage scales in the public sector are due to be increased significantly in January 2019 and January 2020. Furthermore, an increase in the minimum wage in January 2019 is estimated to add around 0.2 percentage point to nominal wage growth. Wage growth in the private sector is expected to be largely caused by the mismatch between labour market supply and demand.

Table 1 Wages (annual percentage changes)

	2017	2018	2019	2020
Nominal labour productivity	2.9	4.5	6.1	6.1
Whole economy – nominal	**4.6**	**6.2**	**6.9**	**6.5**
Whole economy – real	3.3	3.5	4.0	3.9
Private sector – nominal	**4.6**	**6.0**	**6.6**	**6.1**
Private sector – real	3.2	3.4	3.7	3.5
Public administration, education and health care – nominal	**5.0**	**6.5**	**8.2**	**8.0**
Public administration, education and health care – real	3.7	3.9	5.3	5.3

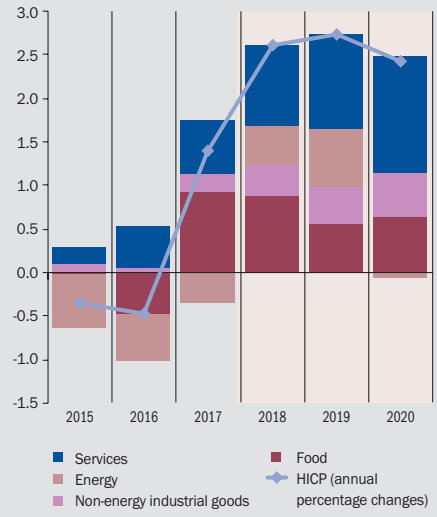
Sources: SO SR and NBS calculations.
Notes: Deflated by the CPI. The sector 'Public administration, education and health care' corresponds to sections O, P and Q of the SK NACE Rev. 2 statistical classification of economic activities. Nominal average wage growth in the general government sector (ESA S.13) is projected to be 6.1% in 2018, 8.4% in 2019, and 8.1% in 2020. Nominal labour productivity – GDP divided by persons in employment according to statistical reporting methodology.

4.3 PRICE DEVELOPMENTS

Inflation driven by energy prices and demand-pull pressures

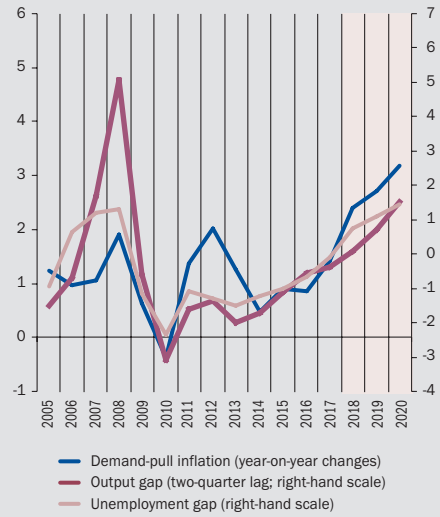
Annual headline inflation over the projection period is expected to reflect both the cyclical position of the economy and cost-push factors. Overheating of the economy and the labour market is expected to support demand-pull inflation, which should include, in particular, a rapid increase in services price inflation. The food component's contribution to headline inflation is projected to fall gradually, given the technical assumptions for agricultural commodity prices. Next year is expected to see administered energy prices have a strong upward impact on headline inflation, as they reflect significant increases in wholesale energy prices in the European market. The impact of energy inflation is expected to abate in 2020, resulting in a slight slowdown in headline inflation. At that point, the main driver of inflation will be rising domestic demand.

Chart 5 HICP inflation and its components (percentage points)



Sources: SO SR and NBS.

Chart 6 Demand-pull inflation and the output gap (percentages)



Sources: ŠÚ SR and NBS calculations.

Table 2 Inflation components (annual percentage changes)

	Average 2004-2008 (pre-crisis period)	Average 2010-2014 (post-crisis period with euro currency)	2016	2017	2018	2019	2020
HICP	4.1	2.0	-0.5	1.4	2.6	2.7	2.4
Food	3.6	3.1	-2.0	3.6	3.4	2.2	2.6
Non-energy industrial goods	0.2	0.3	0.2	0.7	1.2	1.5	1.8
Energy	8.3	2.3	-3.5	-2.5	3.1	4.4	-0.4
Services	5.3	2.5	1.5	2.0	2.9	3.5	4.2
Demand-pull inflation	1.8	1.0	0.9	1.4	2.3	2.7	3.2

Sources: SO SR and NBS calculations.
Note: The 'neutral level' of price growth (i.e. beta-convergence) for Slovakia is estimated to be around 2.6%.
Further details are provided, in Slovak, in the Analytical Commentary entitled Perspektívy dlhodobejšieho vývoja slovenskej ekonomiky (do roku 2020) (Longer-term outlooks for the Slovak economy – up to 2020).

5 Fiscal outlook

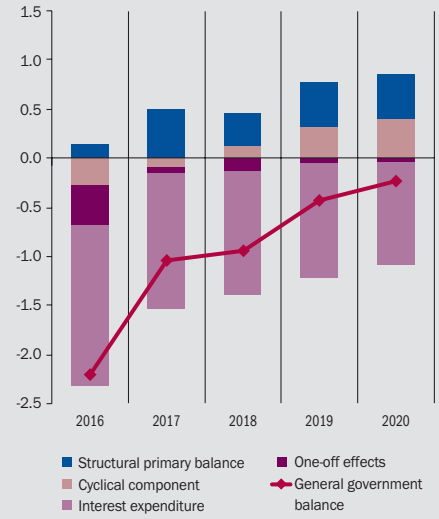
The consolidation effort will not pick up until next year

After falling by 1.2 percentage points last year, Slovakia's general government deficit is projected to decrease by 0.1 percentage point in 2018, to 0.9% of GDP. The consolidation effort has stalled owing to a government-sponsored legislative measure (resulting in the scrapping of tax licences and amendments in the social sphere) and to increases in healthcare expenditure and investment activity. Looking at the rest of the forecast period, the fiscal deficit is projected to fall to 0.4% of GDP in 2019 and to 0.2% in 2020, as robust economic growth and improving labour market conditions have an upward impact on tax and social contribution revenues. Interest expenditure is expected to decline over the whole projection period. By contrast, employee compensation in the public sector is expected to increase sharply, as wage scales for civil servants and public service employees are due to be raised by 10% in both 2019 and 2020, thereby ensuring that no wage scales are below the level of the minimum wage.

Public debt is expected to fall to 49% of GDP in 2018, therefore below the lower range of the debt ceiling path set by the Fiscal Responsibility Act. That represents a year-on-year drop of 1.9 percentage points (from 50.9% of GDP in 2017), which is largely attributable to the expected increase in the primary surplus, falling debt servicing costs, and GDP growth. These factors should remain in play for the rest of the forecast period, and therefore public debt is projected to decrease to 44.7% of GDP in 2020.

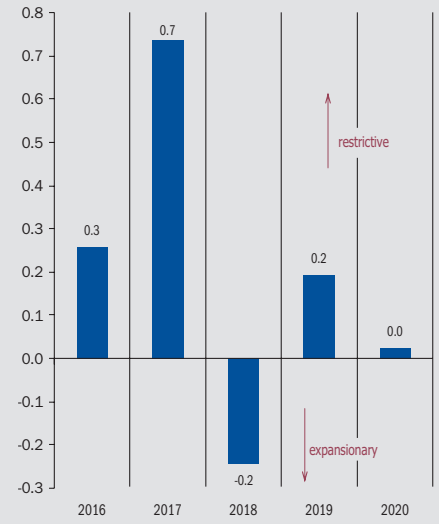
In the light of the developments described above, the domestic fiscal stance is expected to be moderately expansionary in 2018. In the following two years, the stance is projected to be somewhat restrictive, with the fiscal deficit declining largely as a result of interest expenditure developments and the economic cycle.

Chart 7 Breakdown of the general government balance (percentages of GDP)



Sources: SO SR and NBS.
Note: One-off factors include non-cyclical effects that have a temporary impact on the general government balance and should be eliminated in the future.

Chart 8 Fiscal stance (percentage points of GDP)



Source: SO SR and NBS.
Note: Annual rate of change in the cyclically adjusted primary balance, excluding the impact of EU funds.

Table 3 Fiscal developments (annual percentage changes at constant prices, unless otherwise stated)

	2017	2018	2019	2020
General government final consumption	0.2	2.3	1.3	2.3
Government investment	-2.8	23.6	7.7	7.8
contribution of EU funds to rate of change (percentage points)	*-4.2*	*10.1*	*6.7*	*4.8*
General government balance (percentage of GDP)	-1.0	-0.9	-0.4	-0.2
Fiscal stance (year-on-year change in percentage points)	0.7	-0.2	0.2	0.0
Gross debt (percentage of GDP)	50.9	49.0	46.9	44.7

Sources: SO SR and NBS calculations.

Government final consumption expenditure to accelerate and investment activity to pick up

In nominal terms, government final consumption expenditure is expected to accelerate in 2018, owing mainly to increases in goods and services purchases, employee compensation, and healthcare expenditure. Nominal consumption should remain elevated throughout the projection period; in real terms, however, final consumption growth is being dampened by rising inflation.

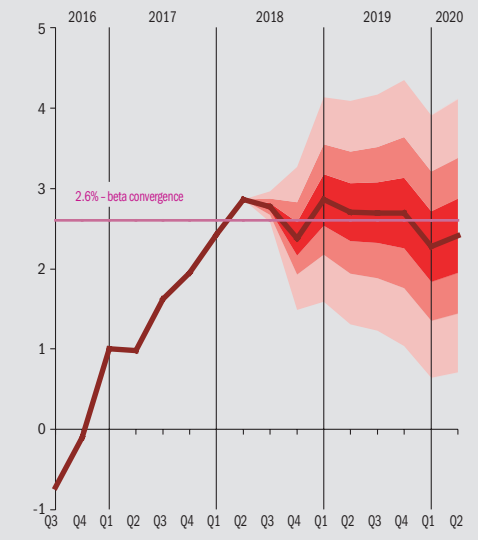
As for government investment activity, it is projected to pick up strongly in 2018 on the back of the increasing absorption of EU funds as well as accelerating growth in own-resource investments. Although public investment growth is expected to moderate in 2019 and 2020, it should remain relatively high.

6 Risks to the forecast

The downside risks to the real economy outlook over the projection period include an increase in protectionism, lower than expected economic growth in the euro area, and geopolitical factors. Another risk is that the launch of production at the country's newest car plant will be rescheduled.

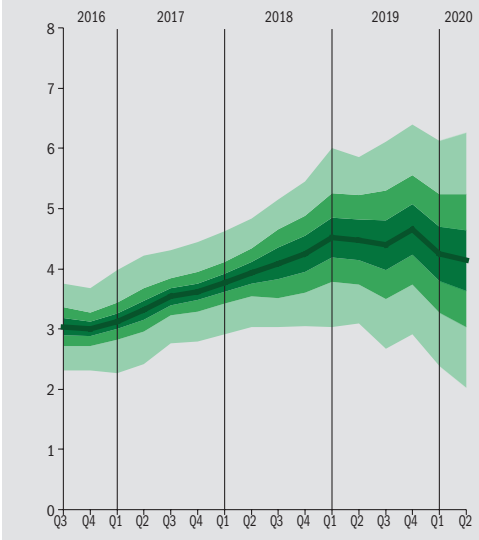
The risks to the inflation outlook are balanced. On the one hand, there could be higher inflationary pressures from the domestic side of the economy; on the other hand, the possibility of the global economy growing more moderately than projected is a downward risk.

Chart 9 HICP inflation forecast (percentages)



Sources: SO SR and NBS.

Chart 10 GDP growth forecast (percentages)



Sources: SO SR and NBS.

Table 4 Risks to the forecast

	2018	2019	2020
GDP	Balanced	↓	↓
Inflation	Balanced	Balanced	Balanced

Source: NBS.

Box 1

CHANGE TO THE CONSTRUCTION METHODOLOGY FOR FAN CHARTS

This forecast (MTF-2018Q3) includes a **change in the estimation methodology for the prediction intervals**, which represent the uncertainty surrounding point forecasts. Furthermore, while previous forecasts used this graphical tool only for the inflation forecast, this forecast uses it also for the real **gross domestic product (GDP) growth forecast.** Unlike the inflation fan chart, however, the GDP fan chart shows intervals for data published for previous quarters. These intervals denote the uncertainty which surrounds past GDP data and which comes from statistical revisions of historical time series carried out by the Statistical Office of the Slovak Republic (SO SR). For graphical purposes, we selected three prediction intervals representing coverage probabilities of 30%, 60% and 90%.

The forecast for inflation as measured by the Harmonised Index of Consumer Prices (HICP) and the forecast for GDP growth both entail uncertainty. This is caused partly by uncertainty about developments in the technical assumptions used in the forecast (e.g. the outlook for the external environment), by unexpected shocks in the economy, and by errors stemming from the model used in producing the forecast. The fan chart is a graphical representation of the uncertainty surrounding the forecast of a given indicator. Under the previous methodology, the probability distribution intervals for eight consecutive quarters were calculated using root mean square error (RMSE) criteria computed from historical forecast errors and assuming normality of forecast errors. This methodology has, however, several shortcomings:

- The RMSE is not sufficiently robust given the potential occurrence of outliers. In non-standard periods, such as a difficult-to-predict crisis, there will be significant forecast errors that have a considerable impact on the RMSE.
- The RMSE is not a consistent measure of uncertainty in the case of (weak) dependence of forecast errors.
- The assumption of normality of forecast errors is in contrast with empirical findings.

Under the new approach, prediction intervals are calculated using empirical quantiles of the marginal distribution of historical forecast errors (Tulip and Wallace (2012)).[4] Empirical quantiles are largely robust to outliers and are also consistent in the case of forecast error dependence. Thus, two of the above-mentioned shortcomings are minimised. However, owing to the small number of data observations (fewer than 30 in the case of NBS forecasts), we modified Tulip and Wallace's approach. Rather than relying on sample quantiles, we calculated the expected quantiles using a **sieve bootstrap**, which improves the accuracy of the estimated quantiles. This approach may likewise be used to estimate the uncertainty surrounding GDP growth data for previous quarters.

Further information can be found in the following Analytical Commentary: *https://www.nbs.sk/_img/Documents/_komentare/AnalytickeKomentare/2018/AK57_Vavra.pdf*

4 *Tulip, P. and Wallace, S. (2012), "Estimates of Uncertainty around the RBA's Forecasts", Research Discussion Paper, No 2012-07, Reserve Bank of Australia.*

7 COMPARISON WITH THE PREVIOUS FORECAST

Compared with the June 2018 Medium-Term Forecast (MTF-2018Q2), the technical assumptions for foreign demand have been revised down. The assumptions for prices of oil and other energy commodities have been revised up in the medium term.

MODERATELY LOWER ECONOMIC GROWTH IN 2019

The broad macroeconomic trends have not changed, and economic growth is assumed to peak in 2019. In response to a softening of foreign demand, export growth projections have been revised down. The most recently released national accounts data prompted an adjustment to the projections for GDP growth components this year. The earlier than expected start of construction of Slovakia's newest car plant led to an upward revision of the investment growth outlook for this year, while the figure for next year has been revised down owing to the base effect. Private consumption has surprised on the downside, and so its projected growth rate for this year has been adjusted down. Despite the improved outlook for the labour market, in particular for labour income, private consumption growth has not been boosted by a revision of the relationship between labour income and real disposable income. Data for recent years indicate that real disposable income elasticity to labour income is lower than originally envisaged.

Box 2

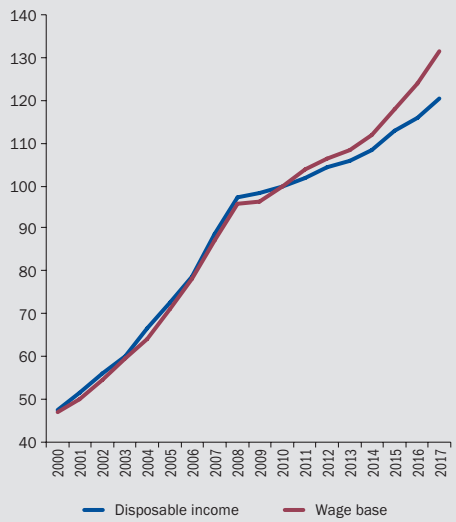
DISPOSABLE INCOME VERSUS LABOUR INCOME

Household disposable income comprises current household income (labour income, property income, social benefits, etc.) less current expenditure (current taxes on income and wealth, net social contributions, property income, etc.). This income, which households then allocate between consumption expenditure and savings, is one of the indicators that determine private consumption developments.

On the income side of household disposable income, the largest items are labour income, i.e. income from employment (compensation of employees) and income from self-employment (gross operating surplus and gross mixed income). Applying the highly simplified assumption that the average compensation of employees and the average 'compensation' of self-employed persons are the same, labour income may proxy for the wage base, defined as the product of the average compensation of employees[5] and the total number of employees (including self-employed persons). It is reasonable to assume that labour income so defined would to a large extent account for household disposable income developments.

In the pre-crisis period, disposable income increased hand in hand with the wage base. Afterwards, however, this relationship broke down.

Chart A Disposable income and the wage base (index: 2010 = 100)



Sources: SO SR and NBS.

5 *The average compensation of employees means the total amount of compensation of employees in the domestic economy divided by the number of those employees.*

The average ratio of household disposable income growth to wage base growth ('the ratio') for the years 2000-08 was 1.02. Post-crisis, however, the elasticity of the ratio fell and its average level for the years 2012-17 was 0.74. The latest data show that the ratio fell still further in the first half of 2018 (to 0.53).

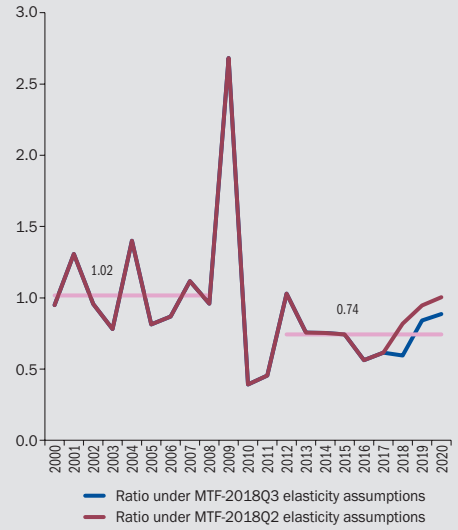
The decrease of the ratio's elasticity in recent years has been caused by several factors; some of them are easy to identify and to interpret in economic terms, others are more difficult. In the past few years, stealth taxation[6] has had a relatively direct impact – its chipping away at labour income is increasingly weighing on the expenditure side of household budgets and thus contributing to the widening of the gap between the wage base and disposable income.

Less understandable, but significant, is the contribution of the gross operating surplus and gross mixed income to reducing the ratio's elasticity. In the pre-crisis period, the 'compensation' of self-employed persons increased faster than did the compensation of employees (12.7% versus 9.2% in nominal terms), but in the period 2012-17, the average labour income of self-employed persons was almost three time lower than that of employees (1.7% versus 4.5% in nominal terms).

Given the trends observed in disposable income elasticity to the wage base in recent years, the assumption for that elasticity has been revised down in this forecast (MTF-2018Q3). Hence the increase in the wage base has not resulted in a revision of the projections for disposable income, nor, therefore, for final household consumption.

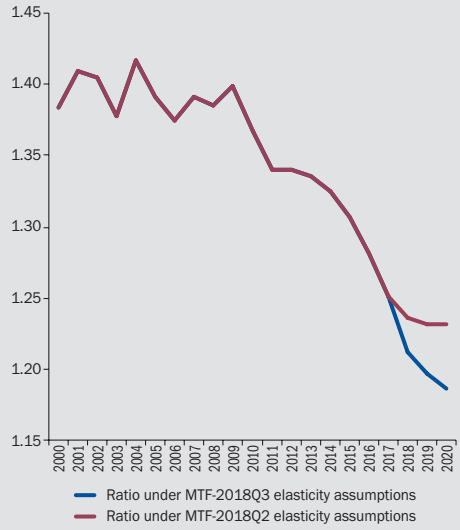
Having regard, however, to the considerable uncertainty about how to explain the sources of the decrease in this elasticity, the downward revision of the assumptions for the elasticity was relatively conservative (not taking into account the elasticity's sharp fall in recent quarters).

Chart B Ratio of disposal income growth to wage base growth



Source: SO SR and NBS.

Chart C Ratio of disposable income to the wage base

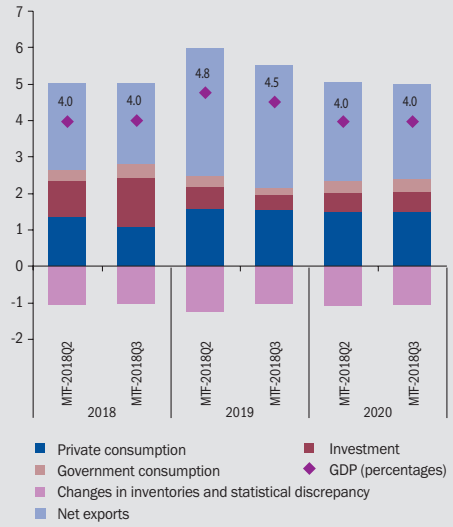


Source: SO SR and NBS.

Nevertheless, the disposable income outlook based on the ratio of disposable income to the wage base indicates that the revision from the previous forecast is not insignificant.

6 *Steal taxation occurs when taxable income increases faster than do tax deductible items, thereby generating additional tax revenue without requiring any law changes.*

Chart 11 GDP and its components[7] (annual percentage changes; percentage point contributions)



Sources: SO SR and NBS.
Note: The item 'Changes in inventories and statistical discrepancy' includes uncategorised imports that remained after the calculation of import intensity.

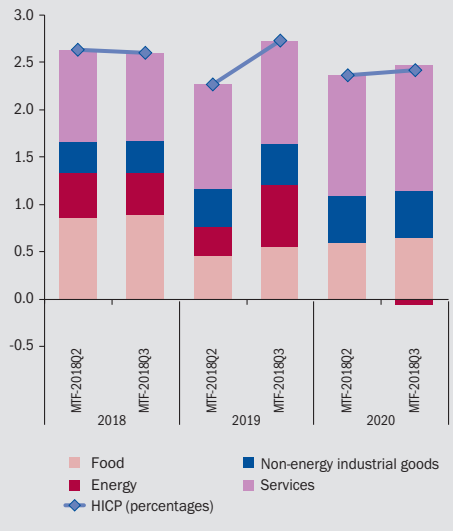
Energy prices to push up inflation next year

The main revision of the inflation outlook was made to the projection for 2019, when energy prices are expected to increase further than previously envisaged. Their acceleration is projected on the basis of largest rises in wholesale energy prices in the European market and their anticipated pass-through to domestic prices of electricity, gas and heat.

Improving labour market conditions

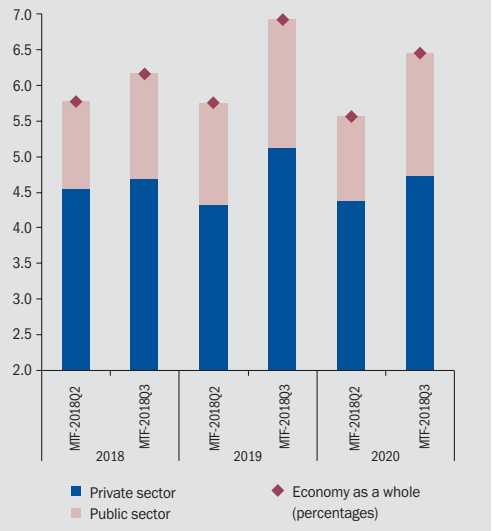
Compared with the June forecast, employment growth has been strong, and therefore the employment growth projection has been revised up in the September forecast. The unemployment data have also been more favourable than expected, and so the unemployment rate at the projection horizon has been revised down slightly from the previous forecast. New job vacancies are expected to be filled to an increasing extent by foreign workers and via increasing la-

Chart 12 HICP inflation and its components (annual percentage changes; percentage point contributions)



Sources: SO SR and NBS.

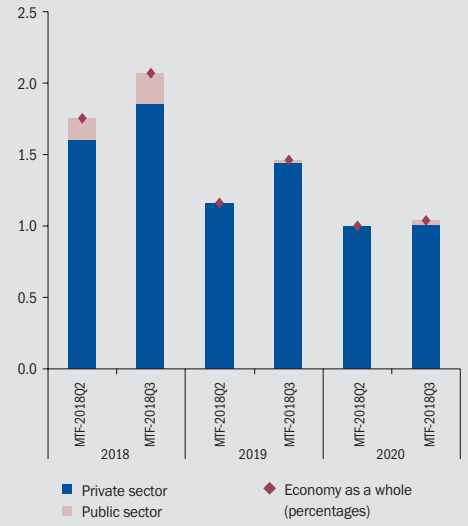
Chart 13 Average wage broken down by public sector and private sector contributions to its rate of change (annual percentage changes; percentage points)



Sources: SO SR and NBS.
Note: The public sector comprises sections O, P and Q of the SK NACE Rev. 2 statistical classification of economic activities.

7 *The composition of GDP growth is calculated as the contributions of components to GDP growth after deducting their import intensity. In this case the calculation uses the constant import intensity of the different GDP components (household final consumption – 30%, government consumption – 7%, investment – 50%, and exports – 62.5%). Remaining imports were included under changes in inventories and the statistical discrepancy.*

Chart 14 Employment broken down by public sector and private sector contributions to its rate of change (annual percentage changes; percentage points)



Sources: SO SR and NBS.
Note: The public sector comprises sections O, P and Q of the SK NACE Rev. 2 statistical classification of economic activities.

bour force participation. Since wage growth has recently been higher than projected, the wage growth projection has been revised up. Its rate over the projection horizon is expected to be further supported by announced increases in public sector wage scales in 2019 and 2020 and by a minimum wage hike in 2019.

Table 5 Medium-Term Forecast (MTF-2018Q3) for key macroeconomic indicators

Indicator	Unit	Actual data	MTF-2018 Q3			Difference vis-à-vis MTF2018Q2 update		
		2017	2018	2019	2020	2018	2019	2020
Prices								
HICP inflation	annual percentage change	1.4	2.6	2.7	2.4	0.0	0.4	0.0
CPI inflation	annual percentage change	1.3	2.6	2.8	2.5	0.0	0.4	0.1
GDP deflator	annual percentage change	1.3	2.4	3.0	3.1	-0.1	0.1	0.3
Economic activity								
Gross domestic product	annual percentage change, constant prices	3.4	4.0	4.5	4.0	0.0	-0.3	0.0
Private consumption	annual percentage change, constant prices	3.6	3.0	4.3	4.2	-0.7	0.0	0.0
Final consumption of general government	annual percentage change, constant prices	0.2	2.3	1.3	2.3	0.6	-0.5	0.2
Gross fixed capital formation	annual percentage change, constant prices	3.2	12.4	3.4	4.5	3.2	-2.1	-0.1
Exports of goods and services	annual percentage change, constant prices	4.3	5.9	8.8	6.5	-0.4	-0.3	-0.2
Imports of goods and services	annual percentage change, constant prices	3.9	5.9	8.1	6.7	-0.5	-0.5	-0.1
Net exports	EUR millions at constant prices	6,107	6,466	7,533	7,854	58.2	136.7	84.9
Output gap	percentage of potential output	-0.1	0.3	1.1	1.8	0.0	-0.1	-0.1
Gross domestic product	EUR millions at current prices	84,985	90,550	97,478	104,475	-0.2	-106.0	128.1
Labour market								
Employment	thousands of persons ESA 2010	2,372	2,421	2,457	2,482	7.4	14.9	15.8
Employment (dynamics)	annual percentage change ESA 2010	2.2	2.1	1.5	1.0	0.3	0.3	0.0
Number of unemployed	thousands of persons[1)]	224	187	172	160	-5.2	-5.7	-2.8
Unemployment rate	percentage	8.1	6.8	6.3	5.8	-0.2	-0.2	-0.1
NAIRU estimation[2)]	percentage points	8.0	7.5	7.4	7.3	-0.2	-0.1	-0.2
Labour productivity[3)]	annual percentage change	1.2	1.9	3.0	2.9	-0.3	-0.6	-0.1
Nominal labour productivity[4)]	annual percentage change	2.9	4.5	6.1	6.1	0.0	-0.4	0.2
Nominal compensation per employee	annual percentage change ESA 2010	4.1	6.2	7.0	6.5	0.7	1.1	0.9
Nominal wages[5)]	annual percentage change	4.6	6.2	6.9	6.5	0.4	1.1	0.9
Real wages[6)]	annual percentage change	3.3	3.5	4.0	3.9	0.4	0.7	0.8
Households and non-profit institutions serving households								
Disposable income	constant prices	2.5	2.4	4.4	4.2	-1.0	0.0	0.0
Saving ratio[7)]	percentage of disposable income	8.8	8.4	8.4	8.3	0.0	0.0	-0.1
General government sector[8)]								
Total revenue	percentage of GDP	39.4	39.3	39.2	38.9	0.1	0.4	0.5
Total expenditure	percentage of GDP	40.4	40.2	39.6	39.1	0.1	0.4	0.6
General government balance[9)]	percentage of GDP	-1.0	-0.9	-0.4	-0.2	0.0	0.0	-0.1
Cyclical component	percentage of trend GDP	-0.1	0.1	0.3	0.4	0.0	0.0	0.1
Structural balance	percentage of trend GDP	-0.9	-0.9	-0.7	-0.6	0.0	-0.1	-0.2
Cyclically adjusted primary balance	percentage of trend GDP	0.4	0.2	0.4	0.4	-0.1	0.0	-0.2
Fiscal stance[10)]	year-on-year change in p. p.	0.7	-0.2	0.2	0.0	-0.1	0.1	-0.2
General government gross debt	percentage of GDP	50.9	49.0	46.9	44.7	-0.2	-0.2	-0.1

Table 5 Medium-Term Forecast (MTF-2018Q3) for key macroeconomic indicators (continued)

Indicator	Unit	Actual data	MTF-2018 Q3			Difference vis-à-vis MTF2018Q2 update		
		2017	2018	2019	2020	2018	2019	2020
Balance of Payments								
Trade balance (goods)	percentage of GDP	0.8	1.3	2.3	2.5	0.2	0.2	0.1
Current acount	percentage of GDP	-2.1	-1.4	-0.3	0.0	0.2	0.2	0.1
External environment and technical assumptions								
Slovakia's foreign demand	annual percentage change	6.2	4.2	4.5	4.0	-1.0	-0.5	-0.2
Exchange rate (EUR/USD)[11),12)]	level	1.13	1.19	1.16	1.16	-1.1	-1.8	-1.8
Oil price in USD[11),12)]	level	54.4	73.3	75.1	71.7	-1.7	2.2	4.4
Oil price in USD[11)]	annual percentage change	23.5	34.7	2.6	-4.6	-2.3	3.9	2.0
Oil price in EUR[11)]	annual percentage change	21.0	28.2	4.6	-4.6	-0.8	4.7	2.0
Non-energy commodity prices in USD	annual percentage change	8.0	1.9	-2.6	4.2	-7.4	-5.1	0.1
Three-month EURIBOR	percentage per annum	-0.3	-0.3	-0.2	0.0	0.0	-0.1	-0.2
Ten-year Slovak government bond yields	percentage	0.9	0.9	1.1	1.3	0.1	0.1	0.1

Sources: NBS, ECB a SO SR.
Note:
1) Labour Force Survey.
2) Difference between the non-accelerating inflation rate of unemployment (NAIRU) and the unemployment rate. A positive value indicates that the NAIRU is higher than the unemployment rate.
3) GDP at constant prices / employment – ESA 2010.
4) Nominal GDP divided by persons in employment (according to SO SR quarterly statistical reporting).
5) Average monthly wages (according to SO SR statistical reporting).
6) Wages according to SO SR statistical reporting, deflated by CPI inflation.
*7) Saving ratio = gross savings / (gross disposable income + adjustments for any pension entitlement change) *100; Gross savings = gross disposable income + adjustments for any pension entitlement change - private consumption.*
8) S.13; fiscal outlook.
9) B9n – Net lending (+) / borrowing (-).
10) Year-on-year change in cyclically adjusted primary balance; a positive value denotes a restrictive stance.
11) Year-on-year percentage changes and changes vis-á-vis the previous forecast are calculated from unrounded figures.
12) Changes vis-à-vis the previous forecast (percentages).

More detailed time series of selected macroeconomic indicators can be found on the NBS website at:
http://www.nbs.sk/_img/Documents/_Publikacie/PREDIK/2018/protected/P3Q-2018.xls