NÁRODNÁ BANKA SLOVENSKA
EUROSYSTÉM

Medium-term forecast

Q1
2017

Published by:

Address:
Národná banka Slovenska
Imrich Karvaša 1
813 25 Bratislava
Slovakia

Contact:
+421 2 5787 2146

http://www.nbs.sk

Discussed by the NBS Bank Board on
28 March 2017.

ISSN 1338-1474 (online)

CONTENTS

1 Overview

The Slovak economy continued on its growth path in the last quarter of 2017. Domestic consumption supported by improving labour market conditions was the main driver of growth. Exports also contributed positively and their marked recovery after a weak third quarter reflected growth in foreign demand. On the other hand, the investment component continued to decline due to falling government investment.

GDP growth is projected to be around the same level in 2017 as in the previous year, at 3.2% (0.1 percentage point higher than projected in the January 2017 forecast). Exports and private consumption should continue to be the mainstays of growth. Consumption is being boosted by strong growth in employment and wages, while exports will benefit from an improvement in foreign demand. The GDP outlook for subsequent years is boosted by new investment in the car industry, **with the economy projected to grow by 4.2% in 2018 and 4.6% in 2019 (both figures are unchanged from the January forecast).**

Job creation is expected to be particularly strong in services and industry, and employment growth in 2017 is projected to remain robust, almost at the level of the previous year. Job growth is expected to slow over the rest of the projection period amid an increasing mismatch between supply and demand in the labour market. **The unemployment rate is projected to continue falling and to reach a historical low of 7.1% in 2019.** The decline in labour market slack is therefore beginning to have an upward impact on wage growth and consequently on demand-pull inflation.

The inflation rate is expected to accelerate over the projection period. The annual headline inflation rate for 2017 is forecast to be 1.4%, driven mainly by the food component. Services inflation is also expected to increase moderately, owing to the impact of cost factors. Over the remainder of the projection period inflation is projected to accelerate to around 2%, based on demand pressures arising from wage growth and on imported inflation.

Both the real GDP and inflation outlooks are subject to balanced risks.

Table 1 GDP and inflation projections (annual percentage changes)

	MTF-2017Q1			Difference vis-à-vis MTF-2016Q4U		
	2017	2018	2019	2017	2018	2019
GDP	3.2	4.2	4.6	0.1	0.0	0.0
HICP	1.4	2.0	2.1	0.2	0.1	0.2
Demand-pull inflation[1)]	1.6	2.3	2.8	0.1	0.2	0.2

Sources: SO SR and NBS.
1) The HICP inflation rate excluding food, energy and administered prices. It better reflects domestic price pressures than does the overall HICP and, when external shocks fade, it is a more accurate indicator of the future inflation path.

2 Current developments in the external environment and in Slovakia

Euro area GDP growth was the same in the fourth quarter of 2016 as in the previous quarter[1]

Euro area GDP increased, quarter on quarter, in the fourth quarter of 2016 by 0.4%, the same pace as in the previous quarter. Economic growth continued to be driven by strong exports and domestic demand, particularly private consumption. Euro area GDP growth for 2016 as a whole stood at 1.7%. Leading indicators are at present sending out favourable signals, and suggest that growth may accelerate in coming quarters. The annual HICP inflation rate in February was 2.0% according to the flash estimate, and reflected increases in the energy and food components.

Slovak economic growth was based mainly on private consumption[2]

Slovakia's GDP increased in the fourth quarter of 2016 by 0.8%, quarter on quarter. Although the growth rate was in line with the previous forecast, the composition of that growth differed from projections. Exports and private consumption were the main drivers of growth, with the latter benefiting from favourable labour market conditions, improving sentiment and the low inflation environment. The investment component of domestic demand fell, meaning that there was no correction of the previous quarter's weakening of investment demand. Some investment may, however, have been temporarily subsumed in inventories. Tailwinds from the euro area contributed to a notable increase in exports. As exports and private consumption grew, more imports were sucked in as projected.

Slovakia's economy expanded by 3.3% in 2016, with exports showing a pronounced improvement. Domestic demand edged down and encompassed the opposite trends of growing private consumption and declining investment.

The labour market maintained its robust progress in the last quarter of 2016. Employment growth remained at 0.6% in quarter-on-quarter terms, higher than projected in the previous forecast. As the economy continues to grow, it is supporting strong job creation, which is resulting in labour shortages in certain sectors. In this situation, wage growth has accelerated moderately, particularly in those sectors where skilled labour shortages are most acute (in trade and in certain subsectors of services and industry).

Annual inflation turned positive in December 2016 for the first time in three years, thanks mainly to rising food inflation that was supported by the fading of the impact of last year's VAT increase and by an upward trend in food commodity prices. The annual headline inflation rate in February stood at 1.3%, slightly higher than projected. The causes of its increase, besides food prices, were rising automotive fuel prices and a revision to the reporting methodology for used car prices. Upward pressures on inflation from the domestic side of the economy remain subdued so far.

1 *For further details, see the "Report on the Slovak Economy – March 2017"*

2 *For further details, see the "Report on the Slovak Economy – March 2017"*

3 Technical assumptions[3]

3.1 Commodities and the exchange rate

The exchange rate[4] of the euro against the US dollar remained largely unchanged in the period following the cut-off date for the January 2017 update of the December 2016 forecast (MTF-2016Q4U). In this March 2017 forecast (MTF-2017Q1), the assumption for the average exchange rate over the projection period is USD 1.06 per euro, which is 0.7% stronger than the assumption applied in the January forecast. The nominal effective exchange rate (NEER), calculated with respect to Slovakia's 15 most significant trading partners, is 0.4 % lower in this update than in the previous forecast.

The **price** of a barrel of Brent **crude oil** was relatively stable after the cut-off date for the previous forecast and then fell in the run-up to the cut-off date for this March forecast. Owing to that decrease, and based on the path implied by futures markets, this forecast assumes the oil price to be USD 53.5 in 2017, USD 53.0 in 2018 and USD 52.6 USD in 2019. The assumptions for the oil price in euro have been revised down from the previous forecast, by 7.2% in 2017, 8.9% in 2018 and 9.0% in 2019.

3.2 External demand

According to the ECB's macroeconomic projections[5], the economic recovery in the euro area will firm further. Real GDP is expected to grow by 1.8% in 2017, by 1.7% in 2018 and by 1.6% in 2019. Domestic demand underpinned by the ECB's accommodative monetary policy stance is expected to remain the mainstay of activity growth, including robust private consumption and a positive contribution from investment. Euro area exports are also projected to strengthen over the projection period, supported by an expected recovery in global trade and the past weakening of the exchange rate of the euro. Subdued import growth in the United Kingdom is expected to dampen the momentum in euro area foreign demand. Euro area labour market conditions should continue to improve over the projection period. Compared with the December 2016 projections, real GDP growth has been revised up by 0.1 percentage point in both 2017 and 2018.

In the light of leading indicators' current favourable trends and the improved short-term outlook for euro area GDP growth, the projections for Slovakia's foreign demand have been revised up by 0.3 percentage point in 2017 (due mainly to brighter data at the end of 2016), to 3.9%, and by 0.1 percentage point in 2018, to 4.2%. The assumption for foreign demand growth in 2019 remains unchanged (4.1%).

3 The technical assumptions of this Medium-Term Forecast are based on the "March 2017 ECB staff macroeconomic projections for the euro area", with a cut-off date of 14 February 2017. The assumptions for the EUR/USD exchange rate, Brent oil prices and Slovakia's external demand were updated as at 9 March 2017.

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

5 According to the "March 2017 ECB staff macroeconomic projections for the euro area".

4 Macroeconomic forecast for Slovakia

4.1 ECONOMIC GROWTH

Exports to accelerate

After slowing for a period last year, export growth is expected to accelerate over the projection period. The gains in Slovakia's market shares will be largely driven by the launch and escalation of new production in the car industry.

Investment demand to pick up

Investment is expected to recover gradually after declining in 2016. The general government sector is projected to be the main contributor to the pick-up in investment demand in 2017, through the launch of large infrastructure projects and through an expected rebound in local authorities' investment activity. Private sector investment is expected to be at the same level in 2017 as it was in the previous year. In the subsequent two years, carmakers are projected to have a substantially higher impact on overall investment, as their construction investments will be complemented by technology investments. This, together with the gradual utilisation of EU funds under the current financing programme, will cause a sizeable increase in investment demand.

Chart 1 Forecast for foreign demand and for Slovak exports of goods and services (annual percentage changes; constant prices)

Sources: SO SR, ECB and NBS calculations.

Strong private consumption growth

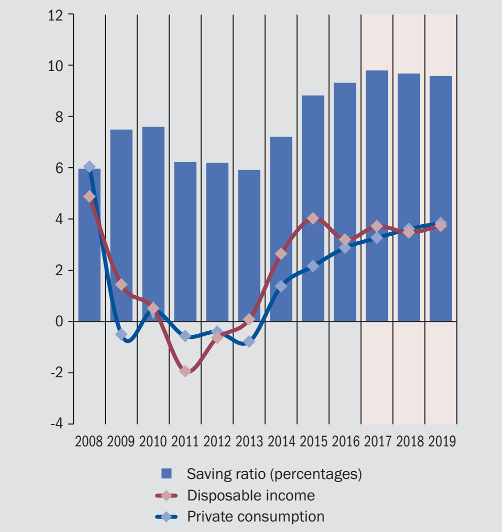
Private consumption growth is expected to accelerate over the projection period and therefore to make a positive contribution to overall economic growth. Disposable income growth will be supported by rising employment and accelerating wages. Private sector wages should reflect growing labour productivity and declining labour market slack, with the result that negotiated wages in some large firms increase quite sharply. Public sector wages are projected to rise significantly, supported mainly by wage increases in the education and administration sectors. Despite moderate inflation growth, household real disposable income should remain sufficiently high that it boosts private consumption without any significant change in the propensity to save.

Table 2 Investment (annual percentage changes; constant prices)

	2016	2017	2018	2019
Gross fixed capital formation in total	-9.3	2.5	8.1	4.4
– private sector	4.0	0.1	6.2	4.2
– public sector	-44.4	14.3	16.7	5.4

Sources: SO SR and NBS calculations.

Chart 2 Household income and consumption (annual percentage changes; constant prices) and the household saving ratio (percentages)



Sources: SO SR and NBS.

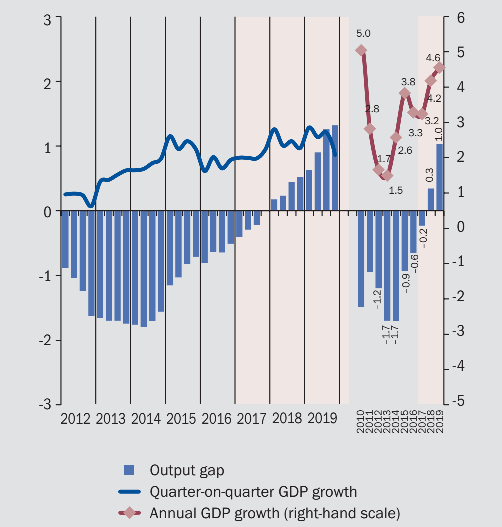
Chart 4 Employment, hours worked (annual percentage changes), and the unemployment rate (percentages)

Sources: SO SR and NBS.

Economic growth to accelerate

Moderately accelerating foreign demand growth in both 2017 and 2018 is expected to support export performance. Exports should be further boosted towards the end of the projection period by the launch of production at a new car plant. Hence, exports are envisaged to be the main driver of economic growth over the projection period. Domestic demand is expected to pick up and to gather momentum amid strong growth in private consumption and the recovery of investment demand. **Economic growth** is projected to be balanced **and to reach 3.2% in 2017, 4.2% in 2018 and 4.6% in 2019. Thus, the output gap is projected to close before the end of this year, with an inflationary impact** on nominal variables in the economy.

Chart 3 GDP growth and the output gap (percentages)



Sources: SO SR and NBS.

4.2 THE LABOUR MARKET

The labour market situation should continue improving

Job creation is expected to remain strong over the projection period, albeit not as high as in 2016. The sectors expected to create most of the new jobs are services (supported by domestic demand) and industry (thanks to new investment in the car industry). Employment growth over the period under review is projected to moderate due to skilled labour shortages. Lower employment growth will therefore be accompanied by an increase in the number of hours

Table 3 Wages (annual percentage changes)

	2016	2017	2018	2019
Nominal labour productivity	0.4	2.2	5.0	5.9
Whole economy – nominal	3.3	4.4	4.8	4.9
Whole economy – real	3.8	3.0	2.7	2.6
Private sector – nominal	2.6	4.3	4.6	4.9
Private sector – real	3.1	2.9	2.5	2.6
Public administration, education and health care – nominal	5.6	4.9	5.5	5.0
Public administration, education and health care – real	6.2	3.5	3.4	2.8

Sources: SO SR and NBS calculations.
Note: 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 5.3% in 2017, 5.5% in 2018 and 5.0% in 2019.

worked per employee and an increase in labour productivity through the introduction of new technology. Thus the positive impact of economic expansion will be reflected more in wage growth than in employment growth.

The unemployment rate is expected to maintain its downward path in line with employment growth. The rate is projected to fall to almost 7% in 2019, despite a slight fading of the impact of labour force participation growth and an expected inflow of Slovaks who have been working abroad.

4.3 PRICE DEVELOPMENTS

Inflation to rise moderately

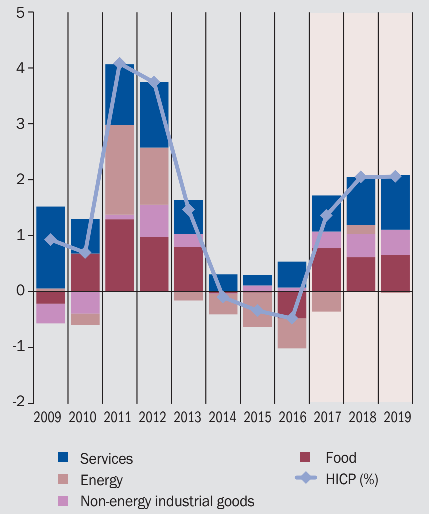
The inflation rate is expected to begin accelerating in 2017. This should reflect, among external factors, the gradual pass-through of demand pressures from an overheating labour market. The upward impact of strong wage growth on labour costs is expected to be passed on to prices, particularly in the services sector. Imported inflation is projected to push up prices of non-energy industrial goods. The headline inflation rate is therefore expected to be around 2%.

Table 4 Inflation components (annual percentage changes)

	Average 2004-2008 (pre-crisis period)	Average 2010-2014 (post-crisis period)	2015	2016	2017	2018	2019
HICP	4.1	2.0	-0.3	-0.5	1.4	2.0	2.1
Food	3.6	3.1	-0.1	-2.0	3.0	2.4	2.5
Non-energy industrial goods	0.2	0.3	0.4	0.2	1.1	1.5	1.6
Energy	8.3	2.3	-3.9	-3.5	-2.5	1.1	-0.2
Services	5.3	2.5	0.6	1.5	2.0	2.7	3.1
Demand-pull inflation	1.8	1.0	0.9	0.9	1.6	2.3	2.8

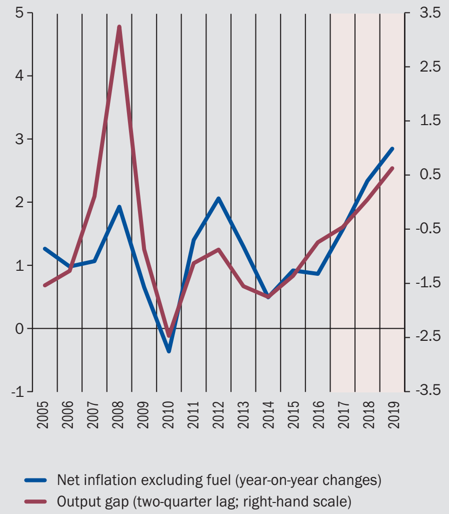
Sources: SO SR and NBS calculations.
Note: The ‚neutral level' of price growth (i.e. beta-convergence) for Slovakia is estimated to be around 2.6%.

Chart 5 Annual HICP inflation and its components (percentage point contributions)



Sources: SO SR and NBS.

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



Sources: SO SR and NBS calculations.

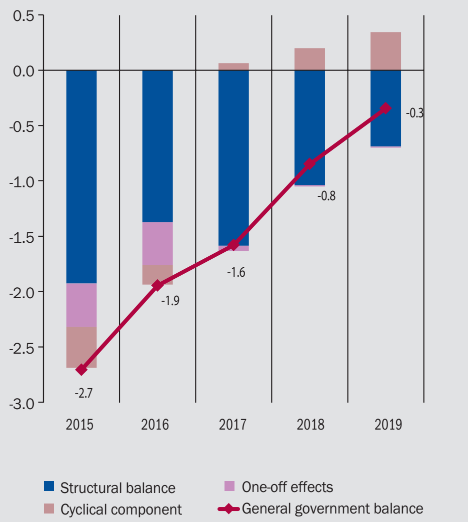
5 Fiscal outlook

Public finances to improve gradually over the projection period

The general government budget deficit in 2016 is expected to have moderated year on year by 0.8 percentage point, to 1.9%, in line with the fiscal target. This deficit reduction is predicated largely on favourable trends in direct taxes and social contributions, savings from a reduction in the co-financing of EU-supported projects, and an unexpected softening of local authority investment. Given the significant surplus in the local authority component of the overall budget, it may be assumed that the slowdown in investment activity was temporary and that there is scope for substantial investment growth over the projection period. The fiscal deficit is projected to continue its downward path, to 1.6% of GDP in 2017, 0.8% in 2018, and 0.3% in 2019. Revenues are envisaged to be boosted mainly by ongoing economic growth and favourable labour market conditions, as well as by revenue-generating measures now in place (in particular, the prolongation of the special levy in regulated industries, an increase in the special levy on financial institutions, the cancellation of the maximum assessment base for health insurance contributions and the raising of the base for certain social contributions, and the taxation of dividends). Public finances are expected to be negatively affected by the reduction in the corporate income tax rate, as well as by the scrapping of tax licences. On the expenditure side of the budget, growth in social expenditure and goods and services expenditure is expected to moderate, and interest expenses are projected to decline in the very low interest rate environment. Other negative contributions are expected from strong growth in public investment and the raising of public sector salaries, as well as from certain measures in the social field (notably an increase in minimum pensions in 2017).

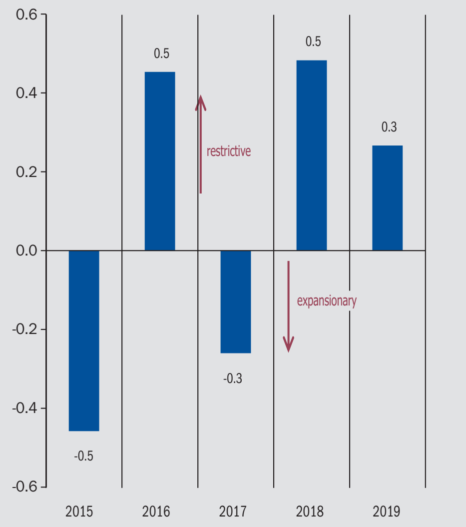
In 2016 the fiscal stance was restrictive, while this year, with the government not making any change in its fiscal objectives, a moderate structural expansion is envisaged. Fiscal consolidation is expected to continue over the forecast period, on the back of accelerating economic growth as well as restrained trends in certain expenditures.

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 (year-on-year change in percentage points)



Sources: SO SR and NBS.
Note: Annual rate of change in the cyclically adjusted primary balance. Excluding the impact of EU funds outside the public sector.

Public expenditure influenced by EU funds

After growth in real final consumption slowed markedly last year due mainly to a slump in EU co-funded goods and services, its rate this year is expected to fall further due to lower expenditure on healthcare as well as to stronger inflation that reduces expenditure growth in real terms. The growth rate is expected to remain moderate in 2018 and is not envisaged to accelerate until 2019.

Last year saw a marked drop in investment activity owing to the slower absorption of EU funds under the new financing period. Their absorption, as well as related investment activity, is expected to pick up this year and gain momentum over the remainder of the projection period. Investment activity should also be supported by increasing investment out of own resources.

Government debt expected to fall gradually

Government debt is expected to have fallen in 2016 by 0.5 percentage point, year on year, to 52% of GDP. The downward trend in the debt level is expected to continue throughout the projection period as the primary balance outlook improves and interest expenses fall. Government debt is projected to decrease to 51.9% of GDP in 2017 and eventually down to 49.2% in 2019.

Table 5 Fiscal developments and forecasts (annual percentage changes at constant prices, unless otherwise stated)

	2016	2017	2018	2019
General government final consumption	1.6	1.3	1.2	1.6
Government investment	-44.4	14.3	16.7	5.4
General government balance (percentage of GDP)	1.9	1.6	0.8	0.3
Fiscal stance[1)] (year-on-year change in percentage points)	0.5	-0.3	0.5	0.3
Gross debt (percentage of GDP)	52.0	51.9	50.5	49.2

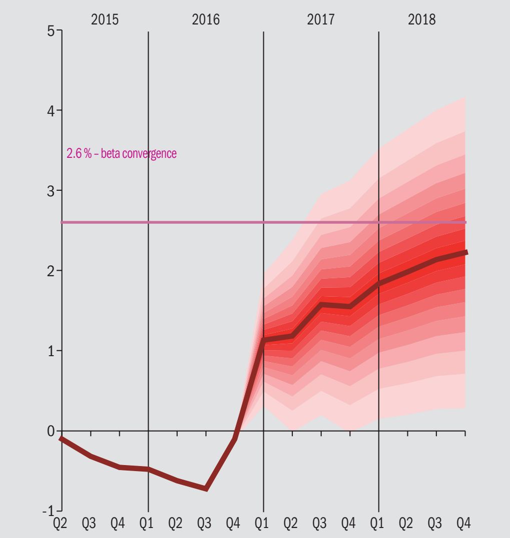
Sources: SO SR and NBS calculations.
1) The annual rate of change in the cyclically adjusted primary balance adjusted for the impact of PPPs not included in the general government balance and excluding the impact of EU funds absorbed outside the public sector.

6 Risks to the forecast

Foreign demand represents a downside risk to the GDP growth outlook, given the uncertainty surrounding both the UK's decision to leave the EU and the plans of the new US administration. The domestic demand component also carries a downside risk in that the absorption of EU funds under the new financing programme may be lower than expected. The outlook could be surprised on the upside by stronger growth in public consumption and in wages.

The risks to the inflation outlook, like those to the GDP growth outlook, are balanced. On the one hand, the effect of lower than projected foreign demand could have a dampening effect on prices, primarily through imported inflation. On the other hand, a stronger than expected increase in prices could results from high growth in wages and commodity prices.

Chart 9 HICP inflation forecast (percentages)



Sources: SO SR and NBS.
Note: The chart is calculated using historical inflation prediction errors and a risk survey. The chart's construction is described in more detail at: http://www.nbs.sk/_img/Documents/PUBLIK/MU/pris_04.pdf, and http://www.nbs.sk/_img/Documents/PUBLIK/MU/Hucek_Gavura09-07-Biatec.pdf.

Table 6 Risks to the forecast

	2017	2018	2019
GDP	Balanced	Balanced	Balanced
Inflation	Balanced	Balanced	Balanced

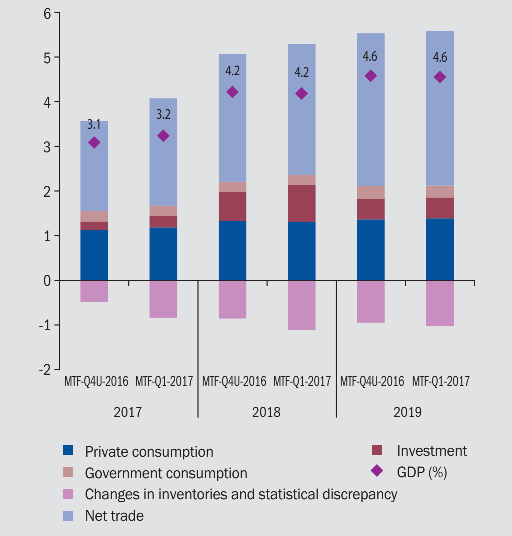
Sources: NBS.

7 Comparison with the previous forecast

Economic growth outlook unchanged

Recent economic developments, as well as the technical assumptions, have not resulted in a significant revision of the GDP growth projections in the January 2017 update of the December 2017 Medium-Term Forecast (MTF-2016Q4U). The growth projections for the export and domestic demand components have been revised up, alongside a downward revision of the impact of import intensity.

Chart 10 GDP growth[10] and its components (annual percentage changes; percentage point contributions)

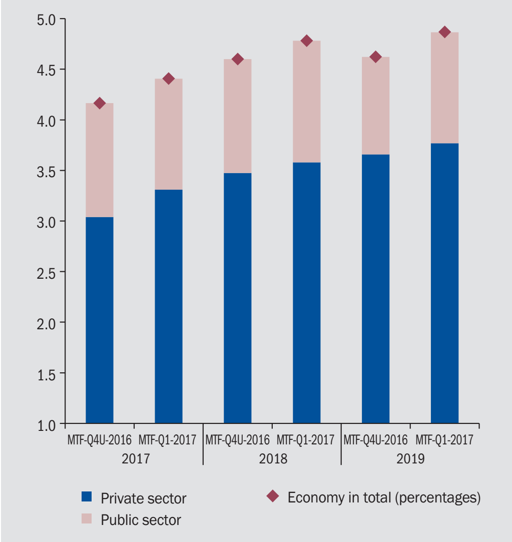


Sources: SO SR and NBS.
Note: The item 'Changes in inventories and statistical discrepancy' includes uncategorised imports that remained after the calculation of import intensity.

Improved labour market outlook

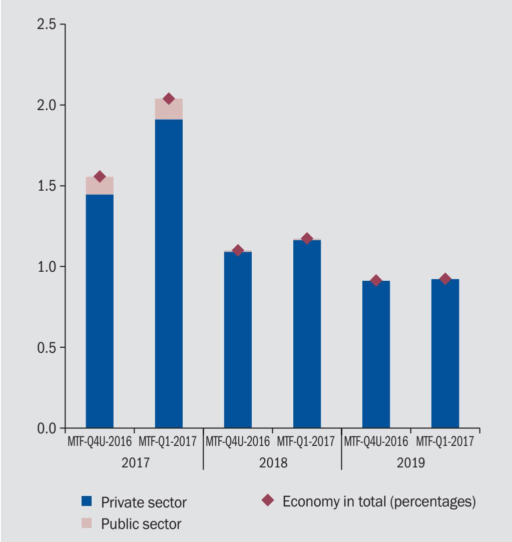
Recent developments in the labour market were more favourable than projected in the previous forecast, and, according to surveys of employers, this trend is expected to continue in 2017. As a result, the employment growth forecast for 2017 has been revised up. In response to the decline in labour market slack and higher than expected increases in negotiated wages in certain large firms, the wage growth forecast for 2017 has also been revised up. It is therefore assumed that labour market overheating will be largely reflected in wage growth over the projection

Chart 11 Average wage in the economy and contributions from the public and private sectors (annual percentage changes; percentage point contributions)



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.

Chart 12 Employment in the economy and contributions from the public and private sectors (annual percentage changes; percentage point contributions)



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.

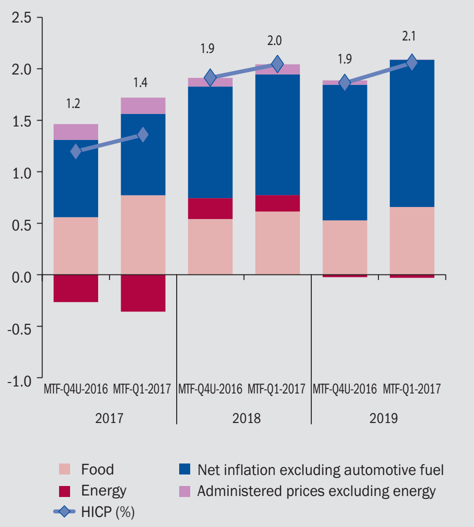
6 The composition of GDP growth is calculated as the contributions of components to GDP growth after deducting their import intensity. In this case the calculation uses the constant import intensity of the different GDP components (household final consumption – 30%, government consumption – 7%, investment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

period. Stronger than expected employment growth resulted in the unemployment rate falling appreciably more than projected in the previous forecast.

Higher inflation over the projection period

The inflation forecast has been revised up for the first time in a long time, despite lower than projected oil prices and a smaller contribution from the energy component. The increase in the inflation forecast for 2017 reflects mainly current developments (the impact of bad weather on food production and a change in the reporting methodology for used car prices). **Over the medium term, however, the acceleration in the inflation forecast is driven by labour market tightening and the consequent upward impact on wage growth.** Thus the demand-pull channel is expected to be the main conduit of inflationary pressure, especially in services prices and non-energy industrial goods prices.

Chart 13 HICP inflation and its components (annual percentage changes; percentage point contributions)



Sources: SO SR and NBS.

Box 1

THE IMPACT OF BREXIT ON THE MTF-2017Q1 FORECAST

The prospect of the United Kingdom leaving the European Union ('Brexit'), widely perceived even a year ago as a downside risk to macroeconomic projections, is gradually being incorporated into baseline forecasts. What form Brexit will eventual take is, of course, still unclear, but various institutions have to some extent factored it into their macroeconomic forecasts.

Current economic indicators for the UK suggest that the impact of the Brexit process on the UK economy has not been as negative as expected. In fact, the composition of UK GDP growth is showing an upward trend in domestic demand with the increase being met by domestic suppliers; at the same time, the openness of the economy is falling. The Brexit process appears to be having a much greater impact on foreign trade than on overall economic growth.

It is the downward impact of Brexit on foreign trade that is the principle channel through which Brexit is affecting the Slovak economy. If current conditions are compared with those existing before the UK's referendum on EU membership (held on 23 June 2016), it is clear that other transmission channels – the exchange rate, heightened economic uncertainty – have not as yet been a factor. Indicators of uncertainty in the euro area are actually more favourable now than before the referendum, and Slovakia's effective exchange rate is currently close to its pre-referendum level.

Nevertheless, the drop in the volume of UK imports and consequent weakening of GDP growth (as well as imports) in trading partners of Slovakia is exerting an appreciable drag on foreign demand for Slovak exports. This NBS forecast (MTF-2017Q1) estimates that **over the projection horizon (until the end of 2019), the cumulative negative impact of the Brexit process on growth in foreign demand for Slovak exports will be 1.18 percentage point. The Brexit impact on NBS's baseline**

Table A Impact of Brexit on foreign demand for Slovak exports and on Slovakia's GDP growth

	2016	2017	2018	2019	Cumulative
Impact on foreign demand growth (percentage points)	-0.21	-0.34	-0.33	-0.30	**-1.18**
Impact on Slovakia's GDP growth (percentage points)	-0.11	-0.17	-0.15	-0.13	**-0.55**

Source: NBS.

forecast had previously been confined to a negative contribution to GDP growth, amounting to -0.55 percentage point for the period up to 2019 or the equivalent of around 5,500 jobs.

Although it is already affecting NBS forecasts, the Brexit process will not stop being a downside risk to Slovakia's economic outlooks, given the current uncertainty about the unwinding of the UK's existing trade relations. There may be a more negative than expected response from UK firms (reductions in investment due to the impact of WTO tariffs or relocations to EU countries) and from the UK financial sector (relocations to EU countries). At present, however, the risks are difficult to quantify and it is necessary to wait to see the specific responses of economic agents.

Box 2

MEDIUM-TERM MACROECONOMIC OUTLOOK UP TO 2024

This box looks at the annually presented extended macroeconomic outlook for Slovakia, covering the period of five years beyond the ordinary macroeconomic forecast period, in this case up to 2024. The aim is to outline underlying trends in the Slovak economy (potential growth) as well as to describe its cyclical position using a model simulation.

Trend path of potential output growth

In the wake of the global economic crisis, many countries experienced a severe slowdown in economic activity, with long-term implications for their potential (sustainable) performance. In this, the Slovak economy is no exception. After recording average potential output growth of over 5% in the pre-crisis period, the domestic economy has since been growing at far lower rates. Although NBS and other institutions have been expecting a gradual acceleration in the Slovak economy's potential growth, no return to pre-crisis levels is anticipated. Whereas **output growth averaged 5.2% in the pre-crisis period (2000–2008), it is expected to average 3.0% over the projection period.**

In estimating long-term trends in the Slovak economy, principal consideration is given to two factors from which potential output growth may be derived, i.e. the long-term growth of a reference economy[7] and the pace of real convergence towards that economy.

The projected moderation of Slovakia's long-term economic growth is predicated largely on an increasing degree of economic convergence. The greater the economy's convergence towards the reference economy, the slower the catch-up process is expected to be over the longer term. The degree of real convergence and related growth in potential output is captured by the concept of beta convergence (β-convergence).[8] The pace of real convergence is a corollary of the economy's potential performance. Average potential output growth according to β-convergence is ex-

7 *The reference country for convergence analysis is Germany, with which the Slovak economy is closely linked and which has a high level of technology sophistication.*
8 *Further details about β-convergence are provided in NBS Analytical Commentary No 8/2014 and in NBS Analytical Commentary No 28/2015.*

Table A Potential economic growth and the degree of real convergence

		The Slovak economy's potential growth according to β-convergence (%)	The Slovak economy's potential growth according to NBS's MTF-2017Q1 forecast (%)	Degree of SK/DE convergence (β-convergence; convergence midpoint T=26; since 1995)	Degree of SK/DE (actual data + forecast; GDP per capita at constant prices, adjusted for purchasing power)
Period	2000 – 2003	4.3	3.7	49.4	45.3
	2004 – 2008	3.4	6.4	55.1	56.3
	2009 – 2015	3.0	2.3	61.8	63.2
	2016 – 2024	2.4	3.0 (2.8)[1)]	70.2	73.3 (72.0)[1)]

Source: NBS.
1) Data in brackets are adjusted for the impact of car industry investment.

pected to be 2.4% over the projection period, which is 1.4 percentage point lower compared with the pre-crisis period. Of that slowdown, only around 0.14 percentage is accounted for by the drop in the potential growth of the reference economy; the rest represents the degree of real convergence.

Table A shows that over the eight-year pre-crisis period of higher potential growth, the level of the Slovak economy's convergence increased by almost 20 percentage points, from 43% in 2000 to 62%. Since the level of convergence is now higher (up to 70%), β–convergence suggests that potential output growth will gradually decelerate over the projection period.

In this MTF-2017Q1 forecast, the long-term projection of the Slovak economy's potential growth is that it will accelerate by an average of 3.0% due in large part to increases in investment and production in the car industry. After adjusting for these effects, long-term economic growth after 2017 is projected to average 2.8%. These figures are greater than β-convergence analysis would imply. Nevertheless, on such projections of potential output growth, the Slovak economy is expected to make up the ground lost in real convergence during the post-crisis period of 2009–15 (Chart A). At the same time, however, the implication is that future **long-term economic growth of over 3% will not be in achievable without a substantial acceleration in structural reforms.**

Projections for the cyclical position

The long-term outlook for economic activity was derived using a model called PREMISE[9]. The model simulation is based on the following technical assumptions: foreign demand growth falling moderately, from 4.1% in 2019 to 3.8% in 2024[10]; foreign (imported) inflation falling from 2.0% in 2019 to 1.5% by the end

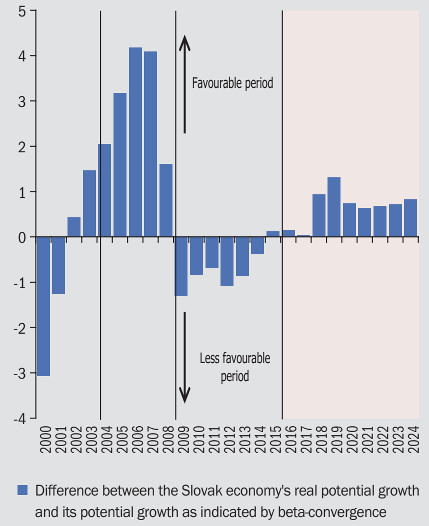
Table B The Slovak economy's potential growth over the projection period

	2016	2017	2018	2019	2020	2021	2022	2023	2024
Slovakia's potential output taking into account β-convergence (annual percentage change)	2.8	2.8	2.6	2.5	2.4	2.2	2.1	2.0	1.9
Slovakia's potential output as projected in NBS's MTF-2017Q1 forecast, including the impact of the car industry (annual percentage change)	3.0	2.8	3.6	3.8	3.1	2.8	2.7	2.7	2.7
of which: Car industry's impact on potential output (p.p.)	0.3	0.1	0.8	1.0	0.3	0.0	0.0	0.0	0.0
Slovakia's potential output as projected in NBS's MTF-2017Q1 forecast, excluding the impact of the car industry (annual percentage changes)	2.7	2.7	2.8	2.8	2.8	2.8	2.7	2.7	2.7

Sources: NBS.

9 PREMISE – is a standard DSGE model for Slovakia's small, open economy.
10 IMF World Economic Outlook, http://www.imf.org/external/pubs/ft/weo/2016/02/c1/fig1_1_1.pdf.

Chart A Difference between the Slovak economy's real potential growth and its potential growth as indicated by β–convergence



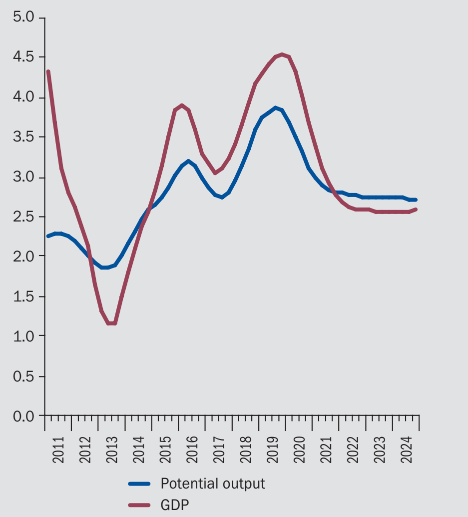
Sources: NBS.

Once the positive impulses have faded, the output gap is expected to close alongside a gradual deceleration in overall economic growth. The output gap is expected to remain positive until the end of the projection period despite a projected increase in the nominal interest rate. The projection for GDP growth at the end of the period remains, at 2.6%, slightly higher than the projection for potential growth.

In the MTF-2017Q1 forecast, HICP inflation is projected to increase and reach 2% in 2018. Over the longer-term, the positive output gap is expected to remain accompanied by of the projection period; and the short-term nominal interest rate rising gradually, up to 2% in 2024.

In this forecast, MTF-2017Q1, the negative output gap is projected to close by the end of 2017 and thereafter the economy should gradually overheat. The output gap is forecast to be positive in 2019, at 1.0%. GDP growth in subsequent years, up to 2021, is expected to remain above potential owing to strong domestic demand and stable growth in foreign demand. GDP growth is expected to peak in 2019 (at 4.6%), with the culmination of the positive impact of increased production capacity in the car industry.

Chart B Real GDP growth (percentages)



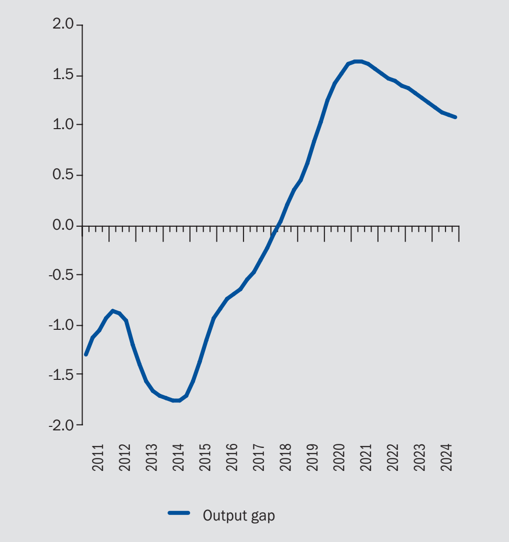
Sources: NBS and the SO SR.
Note: Annual rates of change are calculated as the year-on-year change in the annual moving average.

Table C Long-term outlook

	2016	2017	2018	2019	2020	2021	2022	2023	2024
Real GDP growth (%)	3.3	3.2	4.2	4.6	3.7	2.8	2.6	2.6	2.6
Output gap (percentage of potential GDP)	-0.6	-0.2	0.3	1.0	1.6	1.6	1.4	1.2	1.1
HICP inflation (%)	-0.5	1.4	2.0	2.1	2.5	2.9	2.9	2.8	2.7

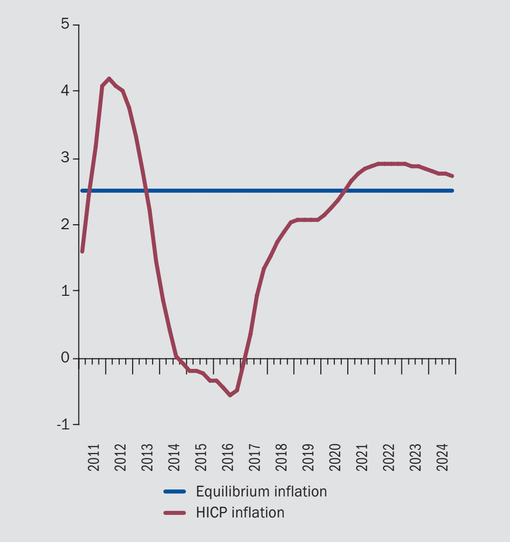
Sources: NBS.

Chart C Output gap (percentage of potential GDP)



Source: NBS.
Note: The output gap is also calculated using annual moving averages.

Chart D HICP inflation (percentages)



Sources: NBS and the SO SR.
Note: Annual rates of change are calculated as the year-on-year change in the annual moving average.

a gradual increase in domestic production costs. These cost pressures are envisaged to have an upward impact on the headline inflation rate, which is projected to peak at 3% in the first half of 2022. As inflationary pressures subsequently ease, the inflation rate should decline. The average inflation rate for the period 2021-2024 is forecast to be slightly higher than optimal (in regard to convergence), at 2.6%.

Table 7 Medium-Term Forecast (MTF-2017Q1) for key macroeconomic indicators

Indicator	Unit	Actual data	MTF-2017Q1			Difference vis-à-vis MTF2016Q4U			
		2016	2017	2018	2019	2016	2017	2018	2019
Prices									
HICP inflation	annual percentage change	-0.5	1.4	2.0	2.1	0.0	0.2	0.1	0.2
CPI inflation	annual percentage change	-0.5	1.4	2.1	2.2	0.0	0.2	0.2	0.2
GDP deflator	annual percentage change	-0.4	1.2	1.9	2.2	0.0	-0.1	0.0	0.1
Economic activity									
Gross domestic product	annual percentage change, constant prices	3.3	3.2	4.2	4.6	0.0	0.1	0.0	0.0
Private consumption	annual percentage change, constant prices	2.9	3.3	3.6	3.8	0.2	0.2	-0.1	0.0
Final consumption of general government	annual percentage change, constant prices	1.6	1.3	1.2	1.6	-1.3	-0.1	-0.1	-0.1
Gross fixed capital formation	annual percentage change, constant prices	-9.3	2.5	8.1	4.4	-2.3	0.7	1.8	0.0
Exports of goods and services	annual percentage change, constant prices	4.8	6.4	7.6	8.7	0.5	1.0	0.0	0.0
Imports of goods and services	annual percentage change, constant prices	2.9	6.5	7.6	8.0	0.8	2.0	0.2	-0.1
Net exports	EUR millions at constant prices	5,790	6,113	6,604	7,743	-226.5	-875.1	-996.3	-1,036.1
Output gap	percentage of potential output	-0.6	-0.2	0.3	1.0	0.0	0.0	-0.1	-0.2
Gross domestic product	EUR millions at current prices	80,958	84,584	89,824	96,009	-27.9	-6.6	17.8	145.8
Labour market									
Employment	thousands of persons, ESA 2010	2,321	2,368	2,396	2,418	1.5	12.8	14.6	15.1
Employment	annual percentage change, ESA 2010	2.4	2.0	1.2	0.9	0.1	0.4	0.1	0.0
Number of unemployed	thousands of persons[1)]	266	231	214	198	-2.7	-12.9	-11.8	-11.0
Unemployment rate	percentage	9.6	8.4	7.7	7.1	-0.1	-0.4	-0.4	-0.4
Unemployment gap[2)]	percentage points	0.4	-0.4	-0.7	-1.1	0.2	-0.1	0.0	0.0
Labour productivity[3)]	annual percentage change	0.9	1.2	3.0	3.6	-0.1	-0.3	-0.1	0.0
Nominal productivity[4)]	annual percentage change	0.4	2.2	5.0	5.9	-0.1	-0.6	0.0	0.1
Nominal compensation per employee	annual percentage change, ESA 2010	1.8	4.3	4.8	4.9	0.2	0.2	0.2	0.3
Nominal wages[5)]	annual percentage change	3.3	4.4	4.8	4.9	0.0	0.2	0.2	0.3
Real wages[6)]	annual percentage change	3.8	3.0	2.7	2.6	-0.1	0.1	0.1	0.0
Households and non-profit institutions serving households									
Disposable income	constant prices	3.2	3.7	3.5	3.7	0.3	-0.1	0.0	0.0
Saving ratio[7)]	percentage of disposable income	9.3	9.8	9.7	9.6	0.1	0.1	0.1	0.1
General government sector[8)]									
Total revenue	percentage of GDP	39.8	40.1	40.2	39.7	-0.7	-0.6	-0.4	-0.4
Total expenditure	percentage of GDP	41.8	41.7	41.1	40.1	-1.1	-0.5	-0.4	-0.4
General government balance[9)]	percentage of GDP	-1.9	-1.6	-0.8	-0.3	0.4	0.0	0.0	0.0
Cyclical component	percentage of trend GDP	-0.2	0.1	0.2	0.3	0.0	0.1	0.0	0.0
Structural balance	percentage of trend GDP	-1.4	-1.6	-1.0	-0.7	0.4	-0.1	0.0	0.0
Cyclically adjusted primary balance	percentage of trend GDP	-0.1	-0.1	0.4	0.6	0.4	-0.1	0.0	-0.1
Fiscal stance[10)]	year-on-year change in p. p.	0.5	0.0	0.5	0.3	0.4	-0.5	0.1	0.1
General government gross debt	percentage of GDP	52.0	51.9	50.5	49.2	0.0	0.0	0.0	-0.2

Table 7 Medium-Term Forecast (MTF-2017Q1) for key macroeconomic indicators (continuation)

Indicator	Unit	Actual data	MTF-2017Q1			Difference vis-à-vis MTF2016Q4U			
		2016	2017	2018	2019	2016	2017	2018	2019
Balance of Payments									
Trade balance (goods)	percentage of GDP	2.9	2.8	2.9	3.8	-0.9	-1.0	-1.1	-1.0
Current acount	percentage of GDP	-0.7	0.2	0.6	1.7	-1.8	-0.9	-1.0	-0.9
External environment and technical assumptions									
Slovakia's foreign demand	annual percentage change	3.4	3.9	4.2	4.1	-0.1	0.3	0.1	0.0
Exchange rate (USD/EUR)[11)]	level	1.11	1.06	1.06	1.06	0.0	0.8	0.7	0.7
Oil price in USD[11)]	level	44.0	53.5	53.0	52.6	-0.3	-6.5	-8.3	-8.4
Oil price in USD	annual percentage change	-15.9	21.4	-1.0	-0.7	-0.2	-8.0	-1.9	-0.1
Oil price in EUR	annual percentage change	-15.7	27.0	-0.9	-0.7	-0.2	-9.5	-1.8	-0.1
Non-energy commodity prices in USD	annual percentage change	-3.9	13.2	3.5	4.6	0.1	6.6	-0.3	0.1
Three-month EURIBOR	percentage per annum	-0.3	-0.3	-0.2	0.0	0.0	0.0	0.0	0.0
Ten-year Slovak government bond yields	percentage	0.5	1.1	1.4	1.6	0.0	0.2	0.3	0.3

Sources: NBS, ECB and SO SR.
1) *Labour Force Survey.*
2) *Difference between the unemployment rate and NAIRU (non-accelerating inflation rate of unemployment). A positive value indicates that the unemployment rate is higher than the NAIRU.*
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. Data for 2016 are estimates.*
9) *B9n – Net lending (+) / borrowing (-)*
10) *Year-on-year change in cyclically adjusted primary balance; a positive value denotes tightening.*
11) *Changes vis-à-vis the previous forecast (percentages).*

Time series of selected macroeconomic indicators can be found on the NBS website at
http://www.nbs.sk/_img/Documents/_Publikacie/PREDIK/2017/protected/P1Q-2017.xls