

Medium-Term Forecast

Q4 2020

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1 Overview

The Slovak economy will slide into recession this year, but the downturn is not expected to be as severe as was previously projected. This means the economy will rebound more quickly to its pre-crisis level, as early as the second half of 2021. The situation has worsened temporarily amid the second wave of the coronavirus (COVID-19) pandemic, which will interrupt the economy's recovery and result in its further decline in the latter part of the year.

In this forecast (MTF-2020Q4), the economy is projected to contract by 5.7% in 2020, before expanding by 5.6% in 2021, 4.8% in 2022 and 3.7% in 2023. There remains widespread uncertainty stemming from the pandemic situation. The forecast's baseline assumes that the virus is successfully contained and that containment measures are gradually eased. The pandemic's suppression relies on vaccinations being administered to the fullest possible extent next year. Besides the pandemic, another factor affecting the near-term outlook is the end of the Brexit transition period following the United Kingdom's withdrawal from the European Union. In the medium term, investment in the car industry and the absorption of EU funds will have positive effects.

The revision of this year's economic contraction projection is based on better than expected developments in the third quarter. Both the euro area and Slovak economies outperformed September's estimations. Slovakia's economy recorded its largest ever quarter-on-quarter expansion, which left GDP just 2.8% below its pre-crisis level. Globally, the strongest recoveries were recorded by Asian economies and the US economy. This was reflected in a pick-up in global trade, which benefited manufacturing industry in Slovakia and the euro area as a whole. At the same time, this surge in growth had a one-off nature, as pent-up demand was being satisfied and car production was outdoing expectations. The economy was partly supported by fiscal and monetary relief measures.

The impact of the economy's rapid recovery on the labour market was mainly in the form of wage growth. An increase in hours worked caused wage growth to accelerate. Employment, however, still fell moderately in the third quarter. The pandemic's second wave in the latter part of the year is expected to take a toll on jobs, especially in the services sector. At the same time, the number of hours worked is expected to drop again, so also reducing income from work. The situation in employment and wages is not expected to improve appreciably until the second half of next year. In response to the second wave of infections, the government has announced

an increase in aid aimed at preserving jobs. As a result, according to our estimates, around 64 thousand jobs will be safeguarded from the impact of the pandemic containment measures.

Next year is expected to see a notable easing of inflation. The main driver of this slowdown will be a decline in administered energy prices and weaker consumer demand. Inflation is projected to pick up when the recovery of economic activity gathers pace in 2022.

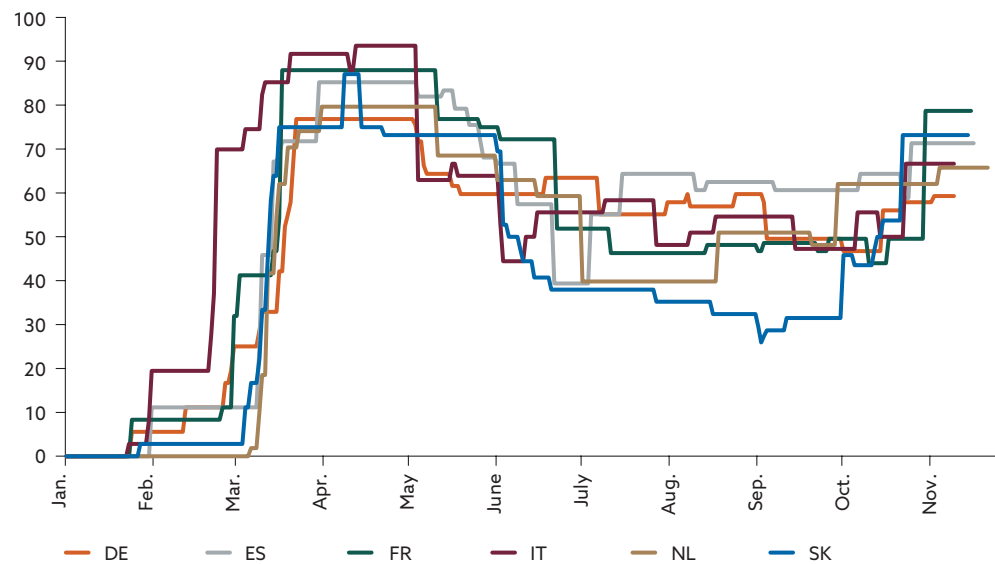
The economic downturn and adoption of government measures to support employment will cause a marked deterioration in the government's fiscal performance. For 2020, the fiscal deficit is projected to increase to 6.6% of GDP and the public debt to 60% of GDP. Once the current crisis has abated, public finances will face challenges concerning their long-term sustainability.

In this forecast, both the real economy and inflation outlooks are subject to balanced risks. The greatest risk continues to be the spread of the pandemic and the assumption about when vaccinations will be rolled out. After some time, positive risks have also appeared. The possibility of the UK and EU reaching a post-Brexit trade deal, which the projections for the euro area do not assume will happen, is one positive risk; the others are the impact of fiscal stimuli (including EU funds) and the effective implementation of the EU's Next Generation EU recovery package.

2 Recent developments in the external environment and in Slovakia

After contracting in the first two quarters of 2020 (by a cumulative 15.1%), the **euro area economy expanded strongly in the third quarter. GDP increased, quarter on quarter, by 12.6%**,¹ which was a far more favourable result than that (8.4%) foreseen in the September 2020 ECB staff projections.² The economy, however, remained below pre-crisis levels. The economic situation in the third quarter benefited from the easing of containment measures, the normalisation of supply-chain linkages, and the recovery of the global economy, including an acceleration of China's economic activity. There was, however, a resurgence of COVID-19 infections at the start of the fourth quarter and a consequent tightening of containment measures (Chart 1). The sector most affected by this response has been services, while, by contrast, the situation in manufacturing industry has so far remained relatively favourable (Chart 2).

Chart 1
Oxford University's Stringency Index (percentages)



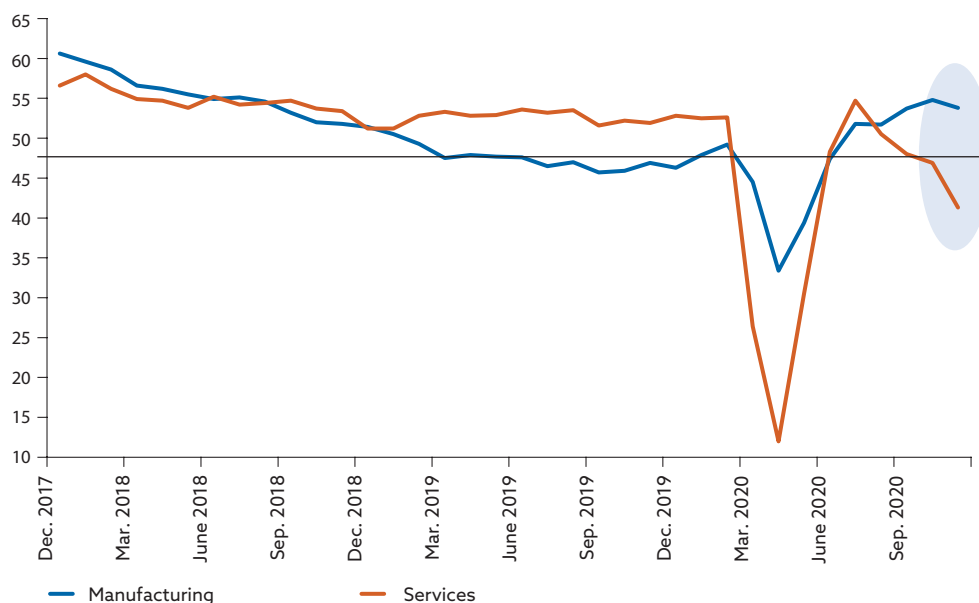
Source: Macrobond.

¹ Eurostat's flash estimate.

² Eurosystem staff macroeconomic projections for the euro area, December 2020.

Chart 2

Euro area – Purchasing Managers' Index



Source: Macrobond.

Headline inflation turned negative in September and remained so until November. This trend is expected to have been caused mainly by a slow-down in core inflation as well as by an easing of food inflation. The annual rate of decline in energy prices, reflecting oil price developments, also continued to have a dampening effect on headline inflation. Another factor was a temporary VAT tax cut in Germany, introduced from July. The core inflation rate reflected mainly developments in services prices, which have been greatly affected by the pandemic's impact on consumer behaviour.

Slovakia's GDP posted its highest ever quarter-on-quarter increase in the third quarter of 2020, as the economy's performance made significant strides back towards its pre-crisis level. The global recovery had a relatively rapid impact on Slovakia. After making the largest negative contribution to GDP growth during the spring months, exports rallied in the third quarter as a wave of pent-up demand for cars was being satisfied. Household consumption growth also rebounded. There was a slight shift in consumption preferences, as households remained cautious in regard to the consumption of services, especially in the area of tourism. Because their spending on services was lower, consumers had greater scope to increase spending on goods, which is also indicated by preliminary retail sales data. The uptrends in household consumption and exports were further accentuated by weaker imports, from which it may be inferred that the increase in demand was largely being met out of inventories.

Employment fell moderately in the third quarter. While the economy rebounded relatively quickly, the labour market improved only gradual-

ly. For the quarter as a whole, employment declined moderately, though in August and September the number of people in employment was no longer falling and, in some sectors of the economy, even increased. Partly because the situation was temporarily improving, firms in the hardest hit services industries were bringing people back to work. However, the situation worsened again at the beginning of the fourth quarter, with the onset of the pandemic's second wave. Paradoxically, employment in the services sector is declining at the same time that firms in certain manufacturing industries are reporting labour shortages caused partly by a falling number of foreign workers. Wages increased strongly in the third quarter, as increasing industrial output and the temporary revival in services had an upward impact on employee compensation. In most sectors, wages rebounded above their pre-crisis level.

Inflation continued to moderate in the third quarter and October. Food prices had a dampening effect, as they reflected the impact of lower agricultural commodity prices as well as the euro's appreciation against the currencies of the other V4 countries (which, unlike Slovakia, are not members of the euro area). This is putting further downward pressure on food prices, since those neighbouring countries account for significant shares of Slovakia's total food imports. Inflation excluding energy and food inflation remained stable, reflecting the impact of both cost factors and the recovery of consumer demand.

3 Technical assumptions of the forecast³

3.1 Commodities, the exchange rate, and interest rates

Compared with NBS's September 2020 forecast, the exchange rate of the euro against the US dollar did not change significantly during the period up to the cut-off date for the technical assumptions of this forecast; nor has it done so in the period since.⁴ The average exchange rate over the projection period is assumed to be USD 1.1837 per euro. A similar trend is envisaged for the nominal effective exchange rate (calculated with respect to Slovakia's 15 most significant trading partners).

The assumptions for the price of a barrel of Brent crude oil in US dollars have been revised down from those used in the September forecast: by 3% in 2020, and by more than 7% in both 2021 and 2022. The oil price is assumed to average below USD 42 in 2020, before accelerating gradually over the medium term, up to USD 47 in 2023.

Euro area monetary policy continues to create favourable financing conditions for governments, firms and households. Both short-term and long-term market interest rates are assumed to remain negative over the projection period. In the case of the three-month EURIBOR and ten-year government bond rate there has been a slight downward revision. The yield on ten-year paper is assumed to average zero in 2020 and then to fall to around -0.3% in 2021. Thereafter, the negative yield gradually moderates, to stand at -0.2% at the end of the projection period.

3.2 Foreign demand

Developments in the third quarter also surprised on the upside in Slovakia's major trading partners. As a result, foreign demand for Slovak exports showed a considerable improvement on September's projections. However, the onset of the pandemic's second wave was adversely affecting those same partners' economies in the latter part of the year. This negative

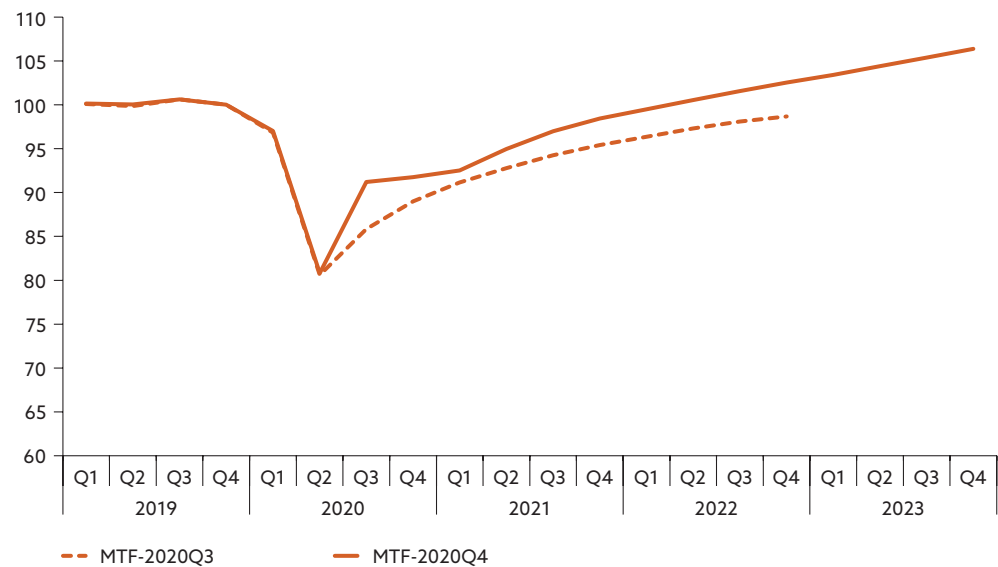
³ The technical assumptions of this Medium-Term Forecast are based on the December 2020 Eurosystem staff macroeconomic projections for the euro area, for which the cut-off date for technical assumptions was 18 November 2020.

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.

impact is assumed to be partly offset by an increase in demand from the United Kingdom (the assumed effect of UK firms' stockpiling of imports before the end of the Brexit transition period). Demand for Slovak exports is therefore still expected to be growing at the end of 2020. Compared with September's forecast, the assumption for foreign demand growth in the first quarter of 2021 has been revised down, largely owing to revised expectations concerning the prospect of a no-deal Brexit. Nevertheless, foreign demand growth in 2021 is assumed to remain solid and, in terms of its geographical breakdown, balanced (Chart 3).

Chart 3

Foreign demand (index, Q4 2019 = 100)



Source: NBS calculations.

4 Macroeconomic forecast for Slovakia

4.1 Economic growth

The Slovak economy is projected to contract by 5.7% in 2020, before rebounding with growth rates of 5.6% in 2021, 4.8% in 2022 and 3.7% in 2023. Trade between the EU and the United Kingdom is expected to default to World Trade Organization terms from the start of 2021, which means the introduction of tariffs and non-tariff barriers. The cumulative negative impact of that change on the Slovak economy in 2021 and 2022 is projected to be around -0.3 percentage point. Good news for the longer term is provided by planned investment in the car industry and by the funding available from the EU's structural funds and NGEU. The car industry investment will have an upward impact on overall investment and also, by the end of 2023, on the economy's productive capacity. The cumulative positive impact of these factors on economic growth between 2021 and 2023 is expected to be 0.9 percentage point.

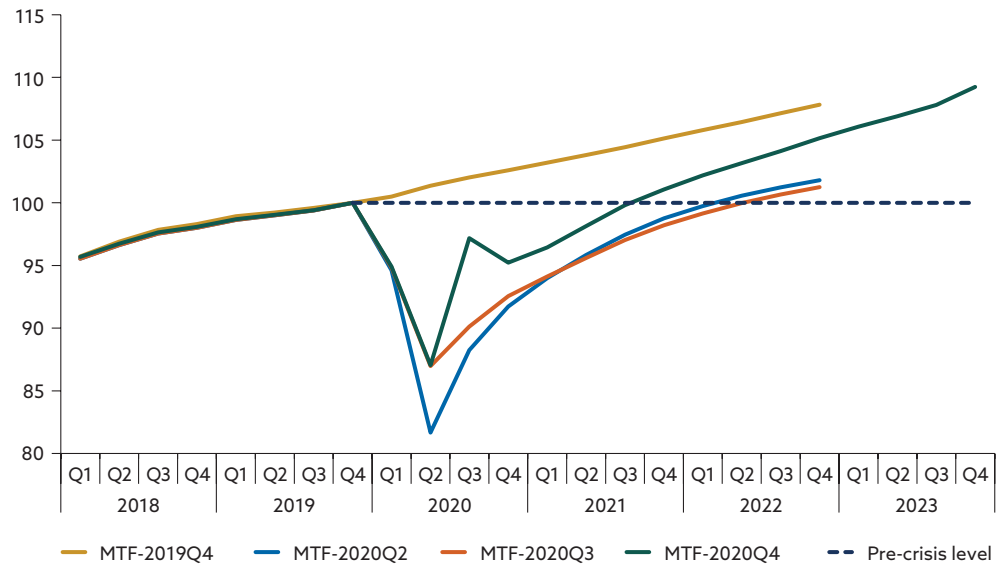
The coronavirus pandemic crisis caused severe economic damage in the first half of 2020. The third quarter's upside surprise suggested, however, that the economy could recoup its lost production more quickly than we previously envisaged. The strong resilience of consumer demand and the resurgence of industrial production to its pre-crisis level added impetus to the economy's recovery, which, however, will be temporarily held up by the pandemic's second wave. At the same time, the exceptionally rapid pick-up in exports and the resilience of consumer demand are assumed to have been of a one-off nature. Export performance is therefore expected to soften somewhat in the near term. It is further assumed that households will rein in spending to a moderate extent in the last quarter, owing to their cautiousness, the worsening of sentiment, and the constraints on shopping in brick-and-mortar stores while containment measures are in place. The economy is therefore expected to decline slightly in the last quarter of 2020; nevertheless, compared with the September forecast, the expected level of production over the whole medium-term projection period has been revised up by around 3% (Chart 4).

The economic recovery in 2021 is predicated on vaccinations being rolled out to a sufficient extent. The baseline projection assumes partially successful containment of the pandemic. The pandemic's second wave has necessitated some restrictions on certain economic activities, especially in the area of services. As vaccinations are successfully rolled out across the country in the first half of 2021, the pandemic situation is expected to start gradually improving and the containment measures will become less

stringent (Chart 5). Only then is there expected to be any significant economic recovery, both globally and domestically.

Chart 4

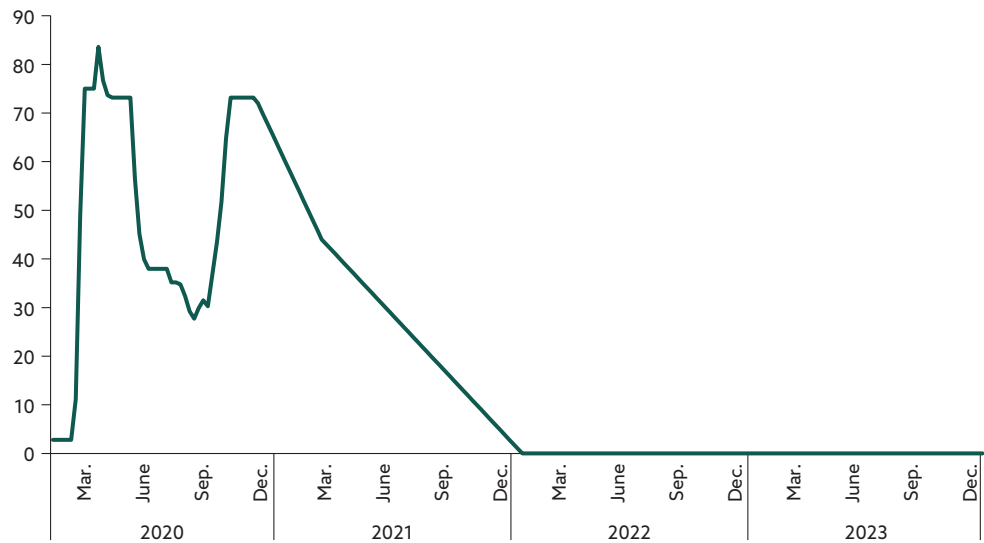
GDP growth forecasts (index, Q4 2019 = 100)



Source: NBS calculations.

Chart 5

Illustrative path of the assumed stringency of containment measures (index)



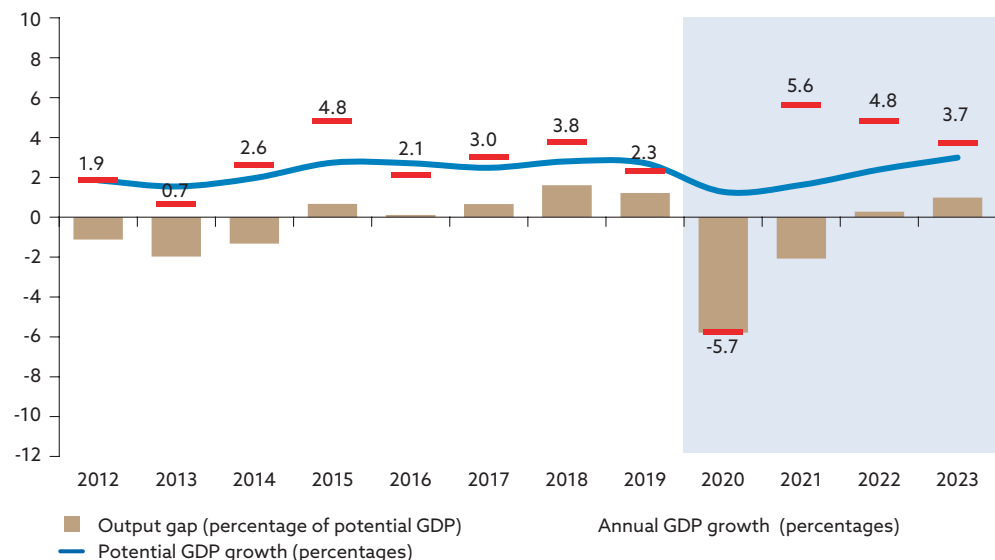
Sources: Oxford University, and NBS calculations.

Despite the adoption of relief measures, the ongoing pandemic crisis has weighed heavily on the economy's productive capacity. On the economy's supply side, some losses are assumed to be permanent. The crisis has affected all factors of production, including labour (via an increase in structural unemployment) and capital (via a decline in investment activity). As for the productivity of production factors, it is expected, on the one hand, that its growth will slow owing to the disruption of global value chains

and deglobalisation, but also, on the other hand, that resources may be re-allocated more efficiently across sectors. After moderating in 2020, potential output is expected to accelerate gradually. The timing and speed of the recovery of the economy’s productive capacity is conditional on the pandemic being successfully contained through the effective implementation of a vaccine and the gradual easing of containment measures. The economy’s capacity is also expected to benefit from the absorption of funds under the European Union’s Next Generation EU (NGEU) package and from significant investment announced for the domestic car industry.

This forecast projects a marked deterioration in the economy’s cyclical position, with the economy expected to have been operating at almost 6% below capacity in 2020. Because of the pandemic crisis, the second quarter of 2020 saw the largest ever cycle downswing. After picking up during the summer months, both domestic and foreign demand are expected to have softened again towards the year-end owing to the impact of the pandemic’s second wave. This is projected to cause a further worsening of the cyclical position in the near term. Over the following two years, the economy is forecast to make a gradual return to equilibrium and thereafter to maintain an expansion path, resulting in a positive output gap in the last year of the projection period (Chart 6).

Chart 6
GDP and the output gap (percentages)



Sources: SO SR, and NBS calculations.

Export growth rebounded strongly in the third quarter owing mainly to car exports. After their negative impact on overall export performance in the first half of 2020, car industry exports made a still larger positive contribution to export growth in the third quarter, even beyond the level implied by foreign demand growth. Exports were satisfying pent-up demand for cars, and total exports rose above their pre-crisis level. The uptrend, however, has

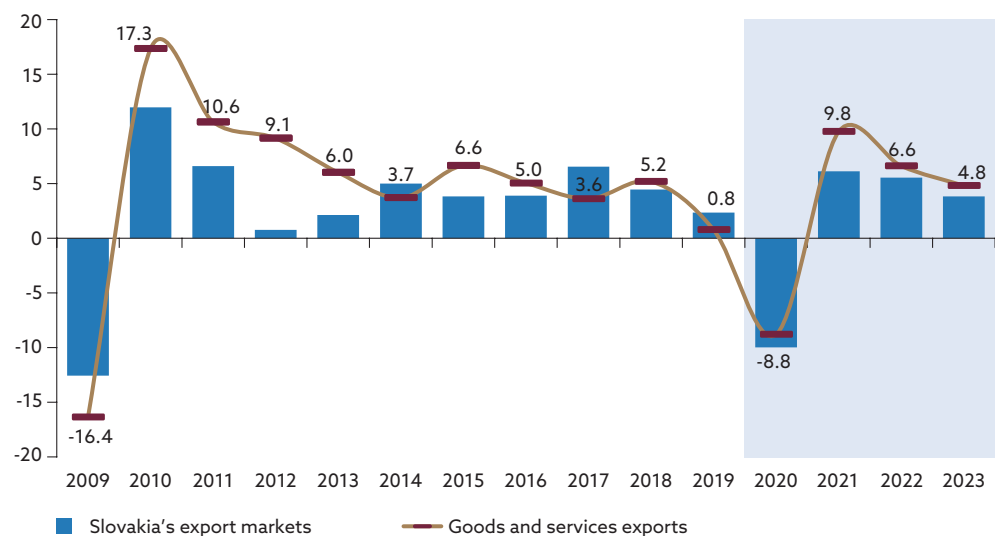
been temporarily interrupted by the pandemic's ongoing second wave. At present in Europe, new car registrations and car orders are falling. Export performance is therefore expected to undergo a correction in the last quarter of 2020 after its outstanding third quarter. Foreign demand is expected to maintain a relatively strong growth trend in 2021, which will be reflected in a further increase in the Slovak economy's export performance (Chart 7).

The impact of Brexit on Slovakia's foreign trade is expected to be moderately negative. Our assumption, like that of the December 2020 Eurosystem staff projections, is that the trading relationship between the UK and the EU will default to WTO terms, resulting in the imposition of tariffs and non-tariff barriers to trade. The cumulative negative impact on Slovakia's economic growth over the projection period is estimated to be around 0.3 percentage point.

The production resulting from new investment in the car industry is due to come on stream in 2023, when it will contribute positively to export growth and the further acquisition of market shares.

Chart 7

Slovakia's foreign demand and exports of goods and services (annual percentage changes; constant prices)



Sources: SO SR, ECB, and NBS calculations.

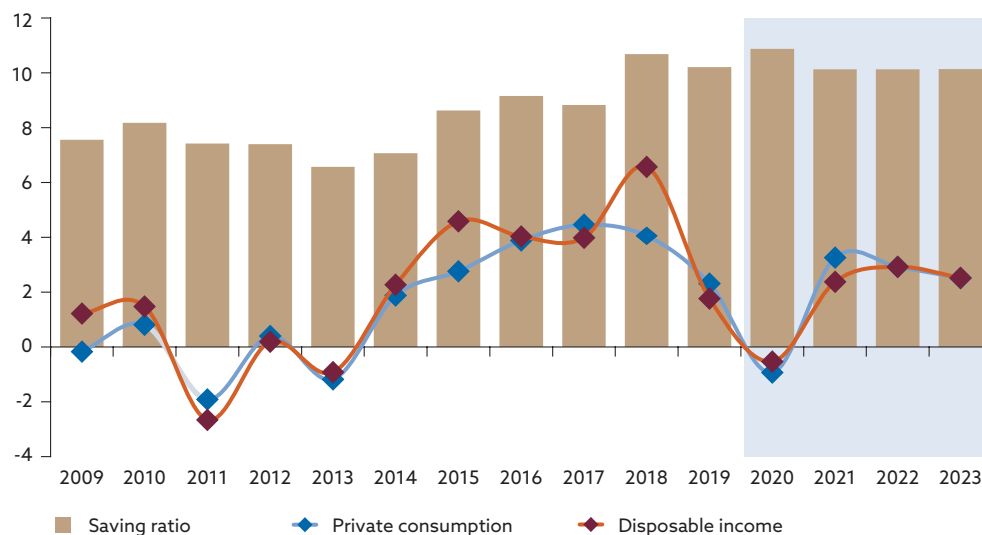
Investment picked up a little in the third quarter, but a climate of uncertainty still prevails and so firms are deferring investment decisions. In the summer months, following the easing of containment measures, firms' investment activity increased modestly. It is assumed, however, that firms are deferring investment plans during the ongoing second wave of the pandemic. This is evidenced by weak leading indicator readings and by monthly data, in particular a softening of construction production. As the situation improves in subsequent years, investment is expected to recover amid favourable financial conditions and rising demand. Overall investment is expected to be supported by the increased absorption of EU funds under the

current budget framework and the start of the absorption of funds under the NGEU package. Factored into the medium-term forecast is new car industry investment, to be implemented mainly over 2022 and 2023. Overall investment is expected to return to its pre-crisis level in late 2021/early 2022.

Consumer demand has exceeded expectations in terms of its resilience during the pandemic crisis, and it was already back to its pre-crisis level in the third quarter of 2020. After falling sharply in the second quarter, private consumption rebounded very quickly in the following period. Unlike in other countries, consumers were not building up savings.⁵ Besides a partial recovery of services consumption, the summer months also brought a shift in consumption preferences across a swathe of households. The impact of the subdued consumption of services was offset by households' increased spending on goods, which to a large extent represented the satisfaction of pent-up demand as well as future demand for durable consumption goods. Private consumption growth is expected to stall in the latter part of the year. The tightening of containment measures in response to a second wave of infections is temporarily restricting the services sector. In 2021, as containment measures are eased, consumer demand is projected to increase in line with disposable income growth (Chart 8).

Chart 8

Household income, household consumption and the household saving ratio (percentages)



Sources: SO SR, and NBS calculations.

⁵ Consumers may have been perceiving the pandemic as a temporary and rapidly fading episode. Some of the additional savings in other countries include also income from various government aid schemes. Given the temporary nature of such schemes, people were putting aside savings if they were able to. Some of the additional savings in other countries may also have resulted from deferred consumption among upper-middle-income groups, which in Slovakia, where income and wealth are more evenly distributed, constitute a smaller share of the population.

4.2 Labour market

Employment will fall in 2020 and will not begin to rebound until the second half of 2021. Employment stopped declining in August and September amid a recovery of economic activity, with this shift being supported by both demand and structural factors. In the services sector, rehiring began cautiously during the summer months, but the second pandemic wave will cause services employment to fall more markedly towards the year-end. In industry, by contrast, there may be far less crisis-related pressure to lay off workers, given that the containment measures are not affecting this sector directly and that some individual industries are facing labour shortages.

When a vaccine is widely and successfully deployed, economic activity is expected to start recovering more strongly, resulting in more vigorous job creation from the second half of 2021. Within the medium term, the labour market is projected to make a gradual return to equilibrium.

As regards economic policymaking in the current situation, it is important not only to dampen demand shocks, but also to temper the decline in labour supply, so that it does not turn into inertia and have a longer-lasting impact on economic performance. Temporary measures aimed at job retention and at supporting firms' liquidity and demand in the economy may prevent such disruption of employer-employee links that would leave many workers permanently outside the labour market. What could also help moderate the labour supply decline is using ways to work relatively safely during the pandemic: for example, remote working, and introducing and implementing measures to prevent the spread of infection at work or when travelling to the workplace. If the pandemic crisis is more protracted, labour supply may be increased by making retraining easier and by the transition of workers, mainly from the services sector, to less hard-hit industries.

Box 1

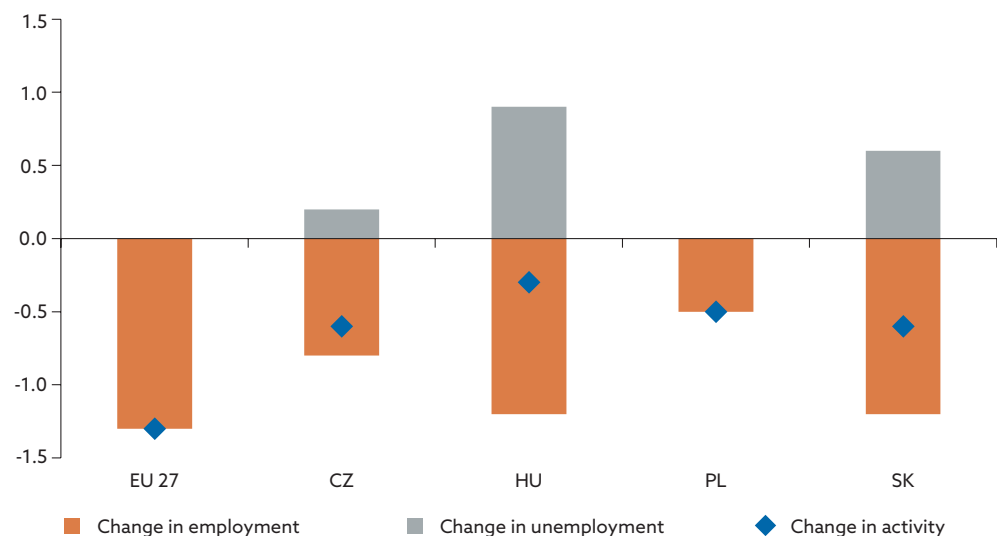
Estimating the pandemic's impact on the labour market

Considerable uncertainty surrounds the future unemployment situation given that part of the inactive population may return to the labour market. The cumulative increase in the unemployment rate could be between 0.3 and 1.1 percentage points, and, during the eventual economic recovery, the rate could fall at a slower pace. Switching people from the category of "inactive" to "unemployed" is, however, desirable as a first step towards getting them back into employment. At the same time, we estimate that the decline in the number of hours worked is largely related to a decline in the labour supply.

The number of people in employment in Slovakia fell by 47 thousand during the first two quarters of 2020.⁶ Of that total, however, “only” 25 thousand registered as unemployed (Chart A). Meanwhile, the number of economically active people fell by 22 thousand. The decline in activity can be looked at in two ways: one is by using change-of-state data for subgroups of inactive people, and the other is by using data on flows between the states of employment, unemployment, and inactivity in the labour market. This allows us to identify changes in activity which may be considered as short term.

Chart A

Changes in employment, unemployment, and inactivity during the first half of 2020 (percentage points of total population)



Sources: Eurostat, and NBS calculations.

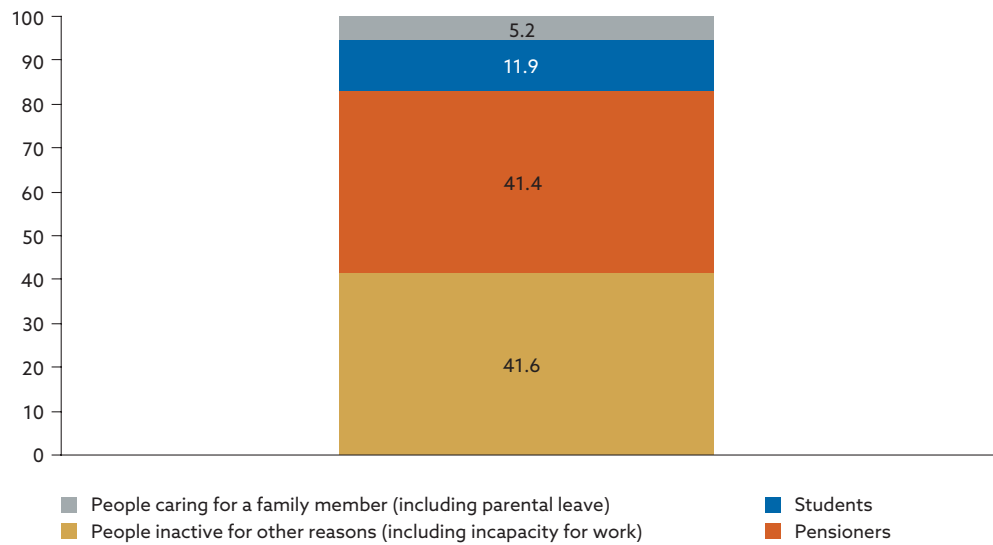
Under the first approach, it appears that out of those people who ceased being active in the first half of 2020, around nine thousand might register as unemployed in the next period. Fifty-eight per cent of the increase in the inactive population was accounted for by subgroups that may be characterised as long-term or naturally inactive, including students, old-age pensioners, and people on parental leave (Chart B). However, the remaining 42% comprised people whose inactivity was short term (they had probably stopped looking for work temporarily during the pandemic), and this group will quickly swell the ranks of the unemployed. It included people who were temporarily unable to work after being laid off, people who had difficulty in communicating actively with labour offices or potential employers during the pandemic containment measures, and people who had opted out for a waiting strategy (whether out of fear or in order to wait for the situation to improve in their particular occupation).⁷

⁶ This box uses methodologically uniform data from the Labour Force Survey (LFS). Under the ESA 2010 (domestic employment), the number of employed people decreased during the same period by 55 thousand.

⁷ The group of so-called discouraged inactive people does not for now constitute a significant share of the labour supply.

Chart B

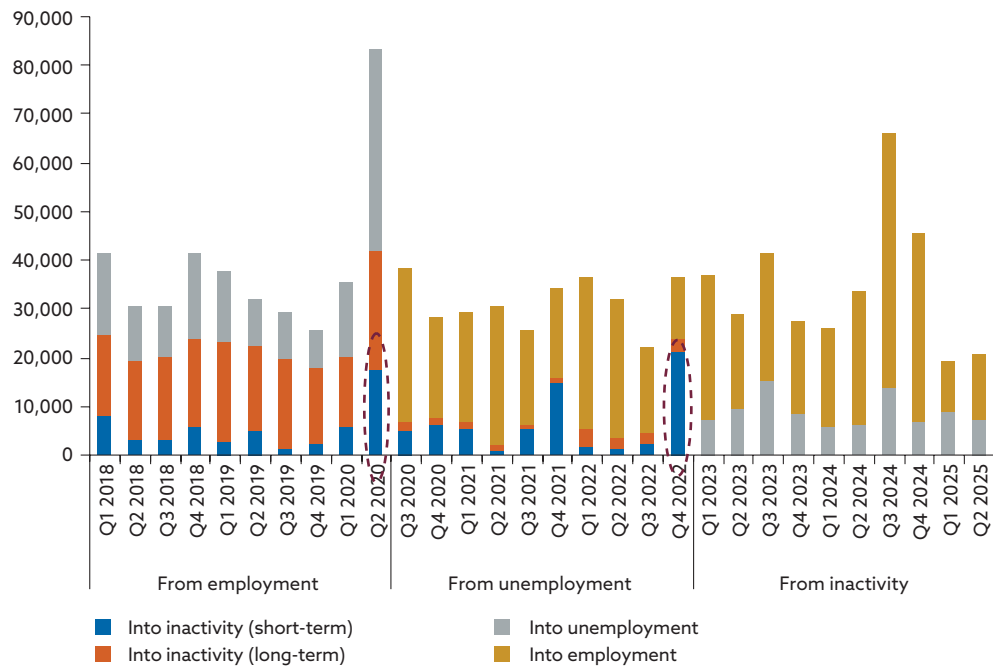
Increase in the number of inactive people during the first half of 2020, broken down by category (Q2 2020 vs Q4 2019; percentage of total increase)



Sources: SO SR, and NBS calculations.

Chart C

Labour market flows in the pre-pandemic and pandemic period (number of persons)

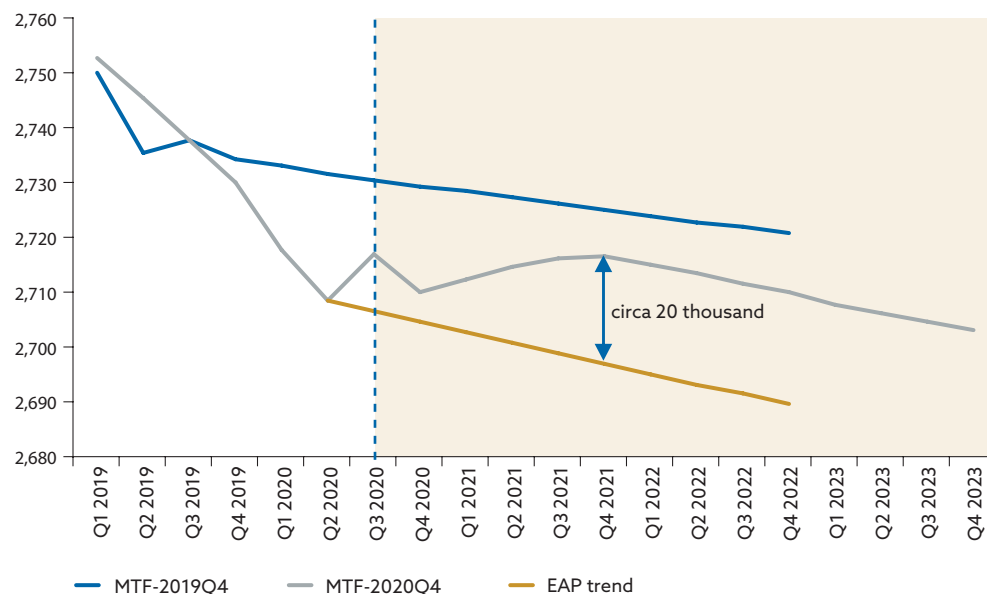


Sources: LFS micro data, SO SR, and NBS calculations.

Note: Numbers of movements (from quarter T-1 to quarter T).

Chart D

Current and projected trends in the economically active population (thousands of persons)



Sources: SO SR, and NBS calculations.

Under the second approach, up to a further 30 thousand people may be added to the number of unemployed. In the second quarter of 2020, the flows of people from the categories of employment and unemployment into the category of short-term inactivity significantly exceeded their average levels during the pre-crisis period:⁸ by 14 thousand and 16 thousand respectively, so by 30 thousand in total (Chart C). It is therefore likely that the recovery from the pandemic's effects will bring a flow of these people back into activity (Chart D) - mainly, though, into unemployment, given the slow start to the labour market's recovery.

The decline in labour market activity may be largely attributed to a contraction of labour supply. The slump in hours worked during the first wave of the COVID crisis was very sharp and rapid, reaching a height of 18.12% in the second quarter of 2020. Using a model calculation we identified a major labour supply shock that on average in 2020 is accentuating the year-on-year declines in hours worked, by 3.2 percentage points (i.e. one-quarter of the total decline), and in the labour force, by 0.8 percentage point (by almost three-quarters of the total decline)⁹ (Charts E and F).

The worsening labour supply situation during the pandemic crisis largely reflects households' reduced willingness and ability to work in more dangerous conditions with more stringent containment measures. The labour force downtrend, peaking at 1.35% in the second quarter of 2020, is expected to continue into early 2021. Labour market supply is being further squeezed, to a less-

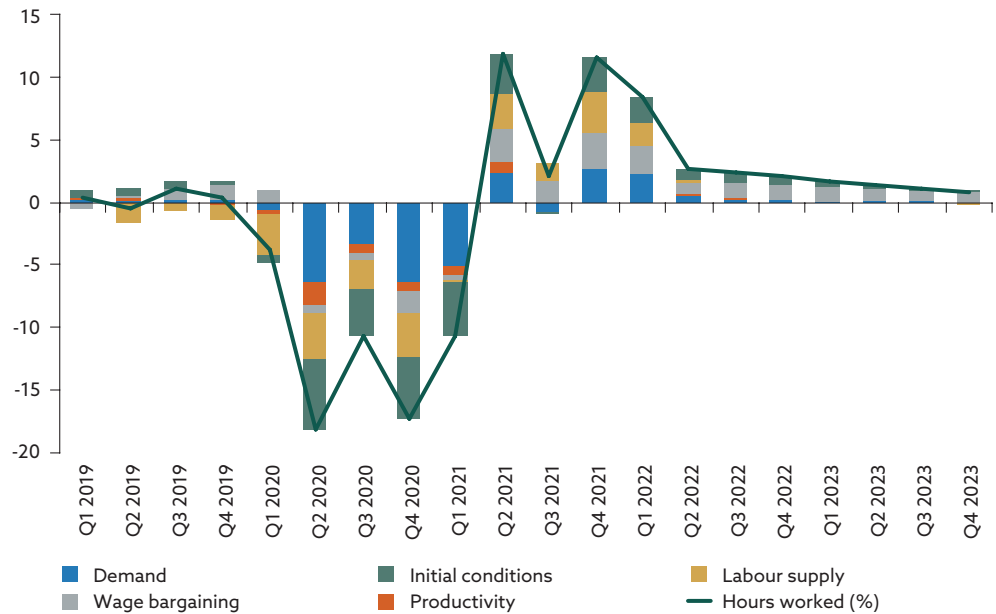
⁸ The comparative period being Q1 2018 to Q1 2020.

⁹ Certain details of the models are further described in an NBS analytical commentary entitled "Trh práce: Nie je kríza ako kríza", published in Slovak on the NBS website at https://www.nbs.sk/_img/Documents/_komentare/AnalytickeKomentare/2020/AK92_Trh_prace_v_dvoch_krizach.pdf

er extent, by negative demand and productivity shocks. Only immediately after the onset of the pandemic did the negative shock to the bargaining power of workers weigh on labour supply; subsequently, as a result of job retention measures, the position of workers gradually improved and moderated the labour supply decline. A combination of weak demand for firms' production, firms' subdued productivity, and, initially, low wages are part of the reason for the lower willingness of workers to offer their labour to employers.

Chart E

Main determinants of labour market demand (hours worked; annual percentage changes; percentage point contributions)

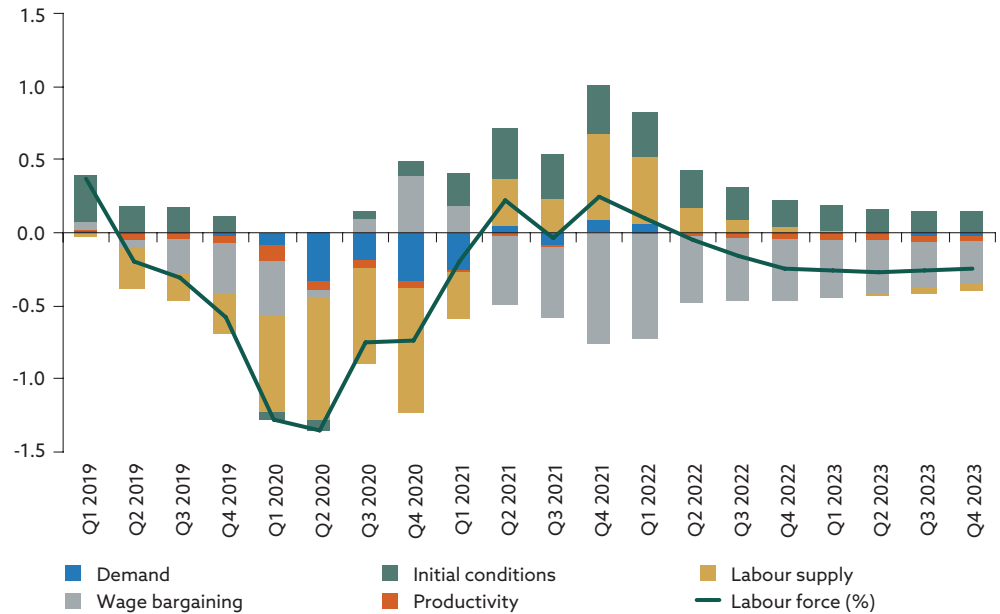


Source: NBS calculations.

Notes: For ease of interpretation, the historical decomposition of indicator readings for the factors contributing to the identified structural shocks is presented as a year-on-year moving cumulative figure for four quarters. Besides stochastic shocks, the path of endogenous variables is also affected by initial conditions and exogenous variables grouped under the item "initial conditions".

Chart F

Main determinants of labour market supply (labour force; annual percentage changes; percentage point contributions)



Source: NBS calculations.

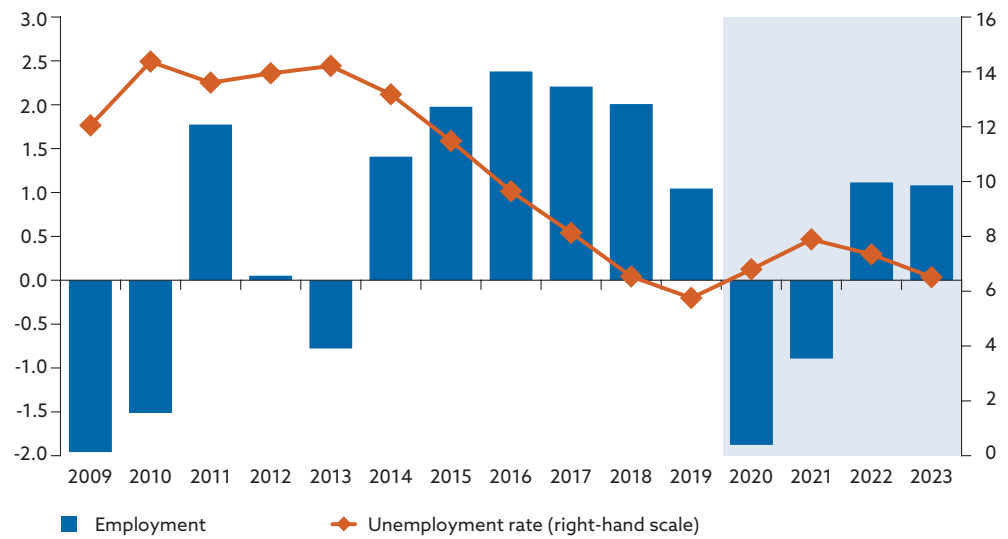
The unemployment rate is expected to be increasing for still some time.

The first half of 2020 saw a sharp rise in inactive workers, including people afraid to look for work due to the pandemic and discouraged workers (those who have given up looking for work because of the difficulty in finding any). More than half of such people may not necessarily return to the labour market; however, micro data indicate that a still relatively large number of these people may remain inactive for only a short time. The inflows of unemployed according to micro and macro data could have a further upward impact on the unemployment rate, cumulatively amounting to between around 0.3 and 1.1 percentage points. In this forecast, the number of economically active people (EAP) incorporates a gradual cumulative increase of 20 thousand between the third quarter of 2020 and the end of 2021. It is assumed that a majority of these people will be added to the unemployment rolls. Unemployment is expected to increase after layoffs climb during the pandemic's second wave in the latter part of 2020. The EAP is projected to continue increasing temporarily in 2021, thereby interrupting a downward tendency dating back to 2017. As employment gradually picks up in the second half of 2021, the number of unemployed is projected to start gradually decreasing (Chart 9).

Government measures to preserve employment are expected to have helped safeguard around 64 thousand jobs in 2020. This estimation is based on information about how much aid has so far been absorbed under these measures and on assumptions about changes in the terms of the aid. These have been revised so that they are more generous, and some of the revisions apply retrospectively.

Chart 9

Employment and the unemployment rate (annual percentage changes)



Sources: SO SR, and NBS calculations.

Box 2

Updated estimation of the impact of fiscal measures on labour market indicators

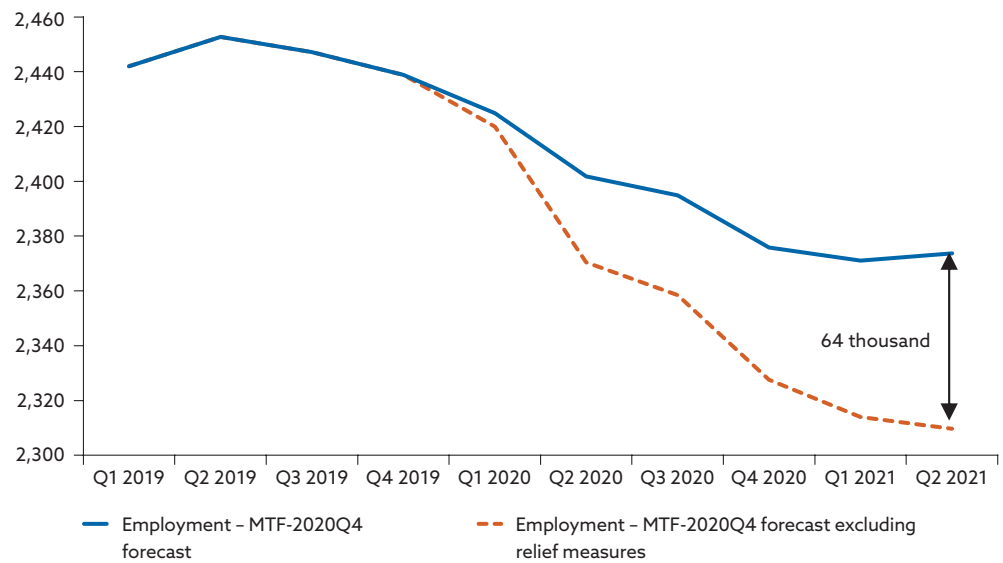
The second wave of the pandemic has necessitated the prolongation of government measures to support the economy. According to the latest estimate, the relief measures have safeguarded around 64 thousand jobs and, by shoring up household income, have positively contributed around 1 percentage point to economic growth.

The government relief measures were revised most recently in October 2020, resulting in the prolongation of the existing measures into 2021 and an increase in the rate of aid (compensation) available under the measures. All the measures, grouped into what is called a wage aid subsidy scheme (hereinafter “the scheme”), are focused on preserving employment and thereby keeping workers out of the welfare net. At the same time, they give some self-employed people an incentive to keep their trade licence and to remain in business during the crisis. The overall amount of aid provided under the scheme is expected to be €1.1 billion.

According to published data, the aid provided under the scheme between March and September 2020 amounted to almost €640 million. Most of the aid was absorbed by large enterprises and micro enterprises. In sectoral terms, the major recipient was manufacturing industry.

Based on estimations of labour cost reductions for employers, and taking into account the absorption of funds up to the end of September as well as the absorption assumptions for subsequent quarters, we estimate that the scheme will have preserved around 64 thousand jobs by mid-2021, therefore it will add around 2 percentage points to the annual growth rate for total employment in 2020 and 0.7 percentage point to the rate in 2021 (Chart A).

Chart A
Employment (thousands of persons)



Source: NBS calculations.

Chart B
Average wage level (annual percentage changes)



Source: NBS calculations.

Besides a decline in labour productivity, another factor that has dampened wages in 2020 is the payment of nursing and sickness benefits resulting from the pandemic crisis. This forecast's baseline assumes these pandemic-related absences from work will cost the state €220 million in 2020 and around €50 million in 2021. If such measures had not been necessary, average wage growth in 2020 would be projected to be 4.2%. Because of the measures, however, the average wage will increase by only 3.0%. In 2021 the lower amount of pandemic-related nursing and sickness benefits will be reflected in wages, with their growth projected to accelerate to 4.8% (representing an addition of 1 percentage point to the rate implied by fundamentals) (Chart B).

Wage growth is expected to moderate in 2020, when it will be driven mainly by public sector wage increases. In subsequent years, as the economy gathers momentum, private sector wage growth is also projected to accelerate. The pandemic-induced decline in productivity in 2020 weighed on wage growth mainly in the first half of the year. The subsequent rebound in wages is expected to have been short-lived, and, as a result of the pandemic's second wave, wages will stagnate in the latter part of the year. Subsequent years are expected to see an acceleration of labour productivity growth, which will put upward pressure on wages, especially in the private sector. Moderately higher inflation is also expected to support stronger nominal wage growth via the collective bargaining channel.

Table 1 Wages (annual percentage changes)

	2020	2021	2022	2023
Nominal labour productivity	-1.7	7.4	5.6	4.6
Whole economy - nominal wages	3.0	4.8	4.9	4.4
Whole economy - real wages	1.0	4.1	3.1	2.4
Private sector - nominal wages	1.6	4.5	5.2	4.4
Private sector - real wages	-0.3	3.8	3.4	2.4
Public administration, education and health care - nominal wages	6.9	5.7	4.1	4.4
Public administration, education and health care - real wages	4.8	4.9	2.2	2.4

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 labour productivity - GDP divided by persons in employment according to statistical reporting methodology.

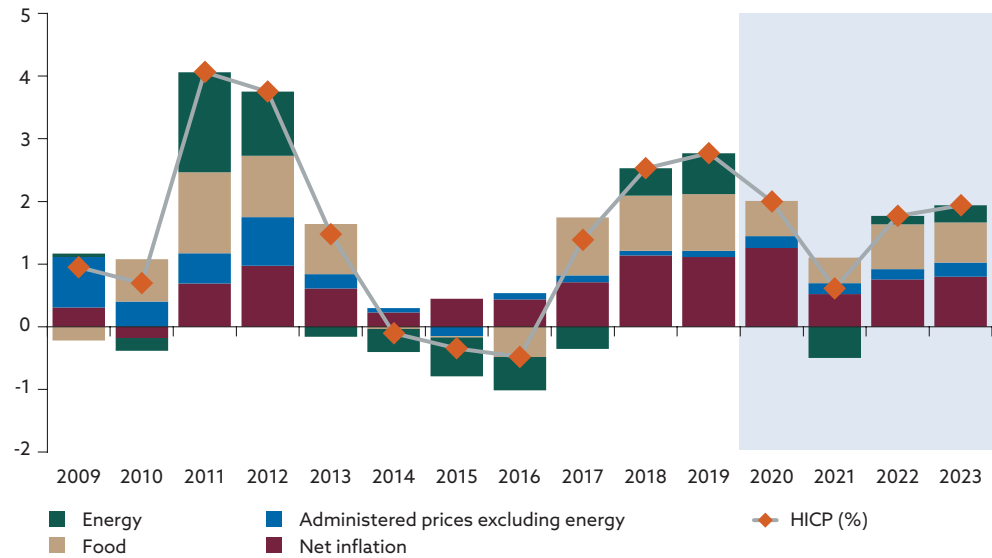
4.3 Price developments

Annual HICP inflation is expected to slow over the projection period. Falling energy prices are envisaged to have a dampening effect, as is a softening of consumer demand. A slump in global energy commodity prices has paved the way for a decrease in consumer energy prices, mainly via reductions in administered prices of electricity and gas. Almost half of the slowdown in headline inflation in 2021 is expected to be accounted for by the energy component (Chart 10).

In the near term, headline inflation is expected to start reflecting the impact of weaker consumer demand and the ongoing deceleration of food inflation. Net inflation is projected to decelerate temporarily. As the economic recovery gradually gathers pace in the medium term horizon, labour costs and consumer demand are expected to increase, thereby pushing up net inflation (Chart 11). At the same time, food inflation is forecast to accelerate.

Chart 10

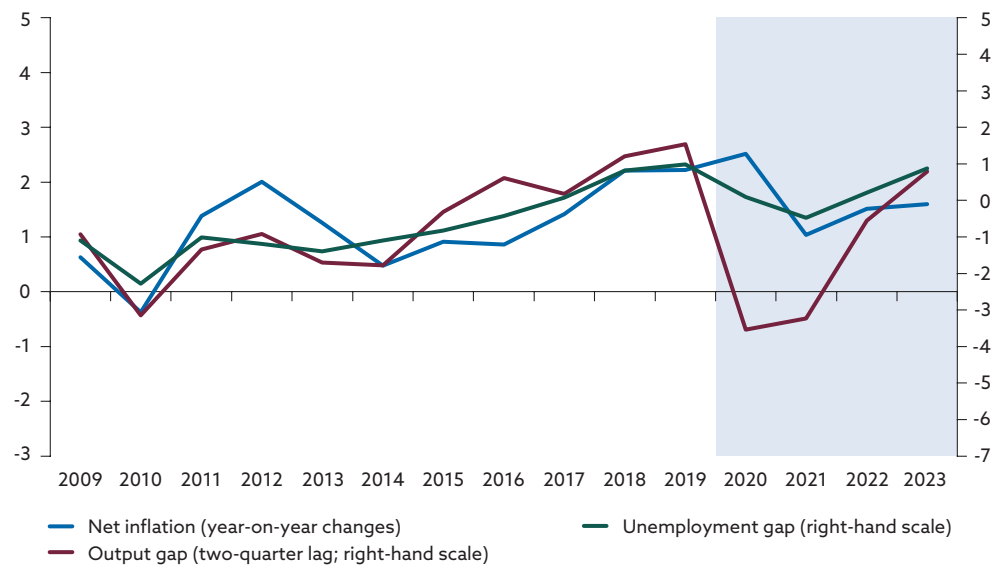
HICP inflation and its components (annual percentage changes; percentage point contributions)



Sources: SO SR, and NBS calculations.

Chart 11

Net inflation and the output gap (percentages)



Sources: SO SR, and NBS calculations.

Note: Net inflation is headline HICP inflation excluding energy, food, administered prices, and automotive fuel.

Table 2 Components of HICP inflation (annual percentage changes)

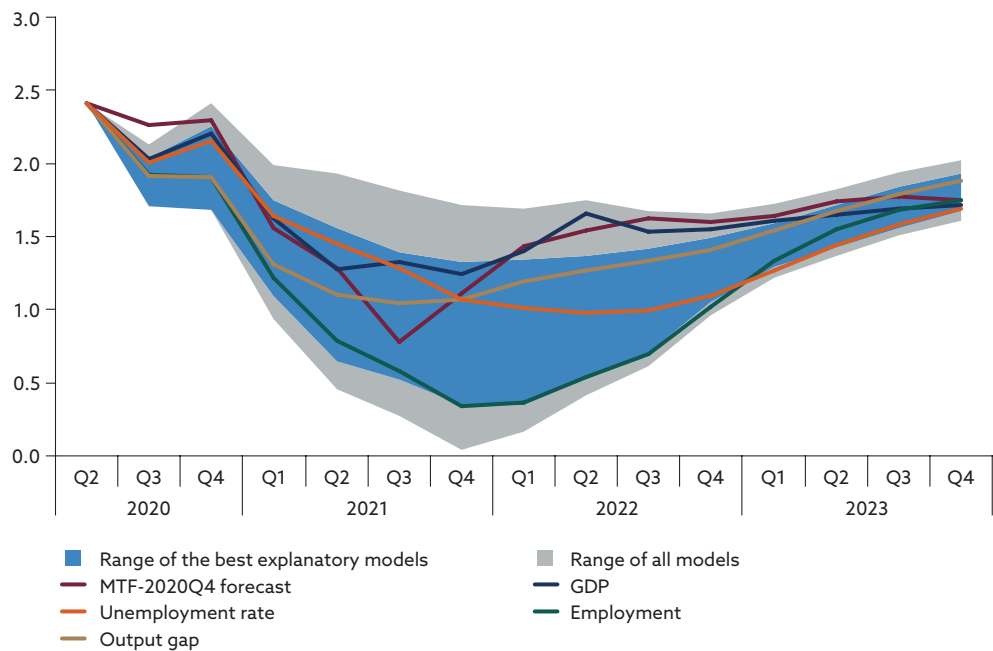
	Average 2004-2008 (pre-crisis period)	Average 2010-2014 (post-crisis period with euro currency)	2019	2020	2021	2022	2023
HICP	4.1	2.0	2.8	2.0	0.6	1.8	1.9
Food	3.6	3.1	3.7	2.2	1.5	2.8	2.4
Non-energy industrial goods	0.2	0.3	1.1	1.7	0.7	0.9	1.0
Energy	8.3	2.3	4.2	0.0	-3.4	0.9	1.9
Services	5.3	2.5	2.8	3.1	1.6	2.2	2.4
Net inflation	1.8	1.0	2.2	2.5	1.0	1.5	1.6

Sources: SO SR, and NBS calculations.

HICP inflation excluding energy and food is expected, amid a cooling economy, to moderate until the second half of 2021. Thereafter, with the output gap narrowing and the labour market situation improving, demand pressures are expected to push inflation higher, even temporarily to the upper end of Phillips curve ranges (Chart 12).

Chart 12

Inflation net of energy and food vis-à-vis Phillips curve estimates (annual percentage changes)



Source: NBS calculations.

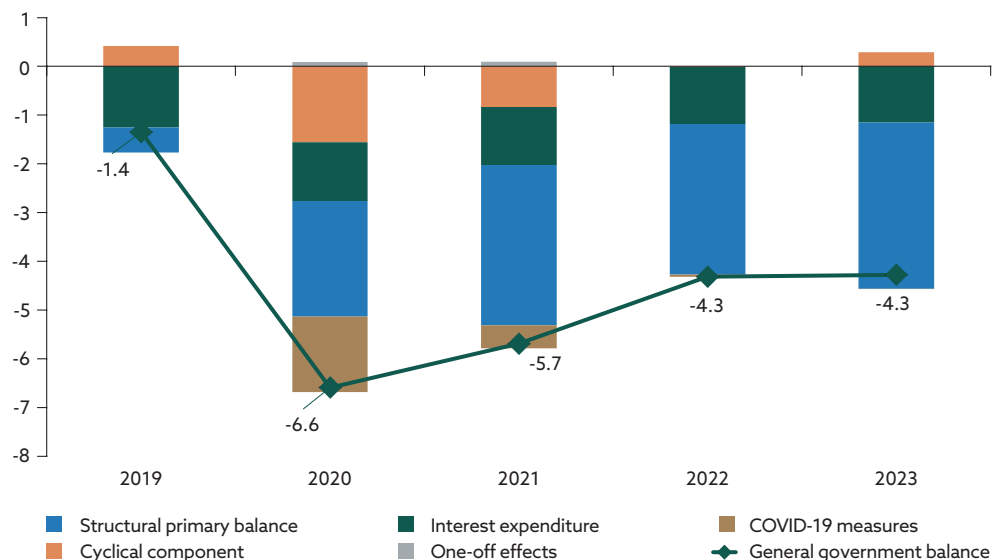
5 Fiscal outlook

The general government deficit is projected to climb to 6.6% of GDP in 2020, which is 5.2 percentage points higher than its 2019 level. The pandemic-induced economic downturn is, on the one hand, causing a drop in tax and social security contribution revenues, while, on the other hand, the need to eliminate its economic impacts is stoking public expenditure, mainly via social transfers to households and subsidies to firms.

Largely because it is expected that spending on relief measures will be lower in 2021 and that the business cycle will have a more moderate impact, the fiscal deficit is projected to improve to 5.7% of GDP in 2021 (Chart 13). The gradual turning of the business cycle and further structural consolidation efforts are projected to bring the deficit down to 4.3% of GDP in 2022. The fiscal stance in 2023 is expected to be moderately expansionary based on an assumed increase in defence spending (Chart 14), while the fiscal deficit in that year is projected to be the same as the year before. Further fiscal expansion towards the end of the projection period is expected to come from the absorption of the remaining funds allocated to Slovakia under the EU's 2014-20 programming period and from the absorption of new EU funding, in particular under the NGEU recovery package.

Chart 13

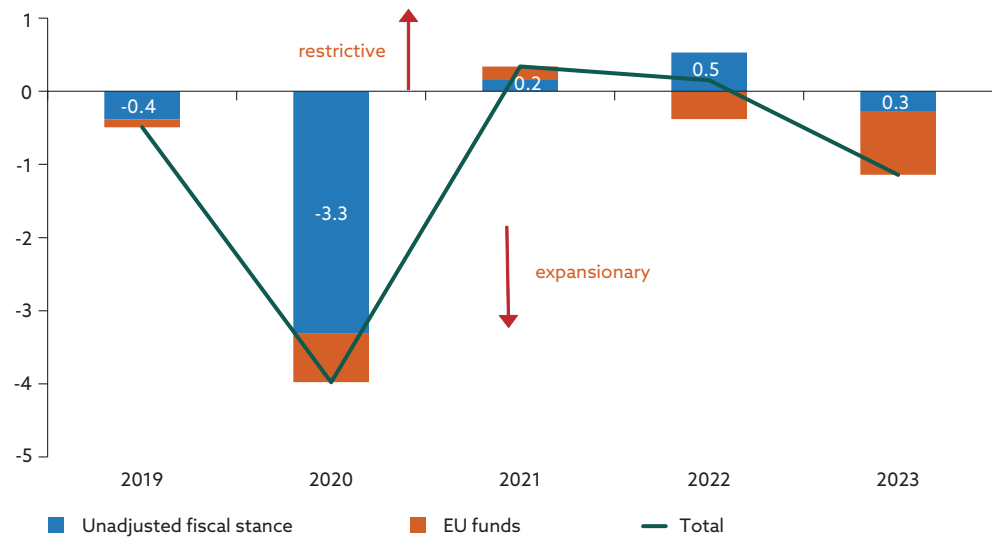
Breakdown of the general government balance (percentages of GDP)



Sources: SO SR, and NBS calculations.

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 14
Fiscal stance (percentage points of GDP)



Sources: SO SR, and NBS calculations.

Note: Fiscal stance – annual rate of change in the cyclically adjusted primary balance, excluding the impact of EU funds.

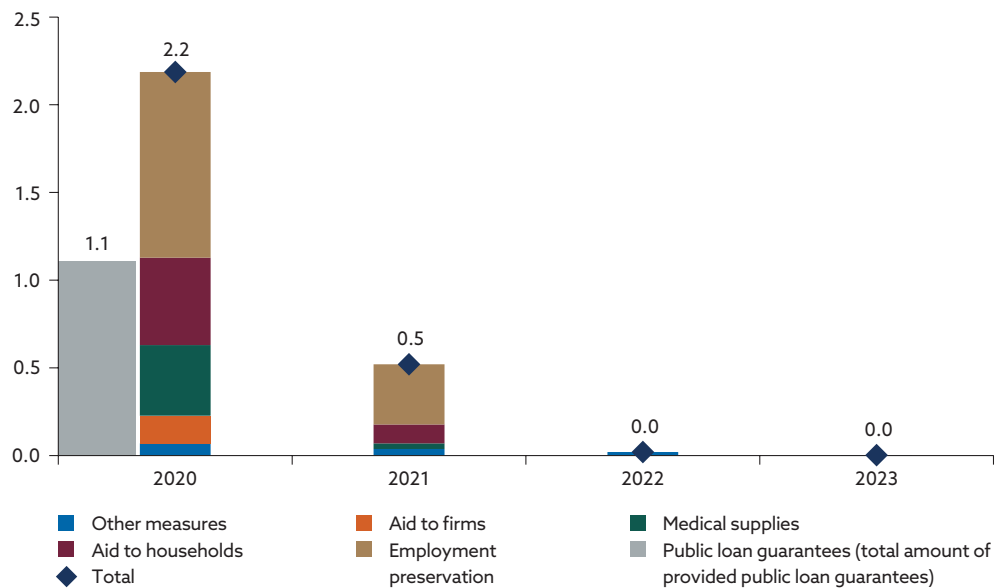
Box 3

Measures to mitigate the impact of the COVID-19 pandemic

Short-term fiscal measures aimed at mitigating the impact of the COVID-19 pandemic are expected to contribute significantly to the deterioration in Slovakia's fiscal performance in 2020 and 2021. We estimate that these measures will have an impact of 2.2% of GDP in 2020 and, with the pandemic's second wave taken into account, 0.5% of GDP in 2021. The aid to the economy is expected to comprise mainly short-term measures to preserve employment, as well as benefits provided to households during school closures and pandemic-related sickness benefits. A further significant share is accounted for by expenditure on the procurement of medical supplies and the equipping of hospitals to deal with the pandemic. Firms are expected to receive aid through targeted subsidy programmes (bus and air transportation, rent compensation), as well as deferrals of tax and social contribution payments. In order to improve the financial situation of firms, public loan guarantees are expected to be provided in a total amount of 1.1% of GDP. It is further assumed that some of those guaranteed loans will default, so triggering the payment of the publicly funded guarantee. EU funds are expected to mitigate the fiscal deficit by funding part of the pandemic relief expenditure. The co-funding is expected to be focused on job retention measures amounting to 0.6% of GDP in 2020 and 0.1% of GDP in 2021.

Chart A

Measures to mitigate the pandemic's impact (percentage points of GDP)



Source: NBS calculations.

Public debt is projected to surge by 12.4 percentage points of GDP in 2020, to 60.9% of GDP. The main components of that increase are an elevated primary deficit, with a contribution of 5.3 percentage points, and the accumulation of liquid reserves in excess of the state's assumed financial requirement, with a contribution of 3.2 percentage points of GDP. At the same time, the indicator is adversely affected by the upward impact of recession on the debt-to-GDP ratio. Borrowing is expected to continue increasing over the projection period, albeit at a slower pace that leaves the debt ratio at 61% of GDP in 2023. The slowdown is expected to be supported by the fading impact of the costs of short-term pandemic relief measures and the gradual recovery of economic growth. Compared with the September forecast, the estimation of public borrowing over the whole projection period has been revised down, mainly reflecting the adjusted impact of a favourable revision of GDP.

The rebound in government consumption over the projection period is expected to be accompanied by double-digit growth in investment. The projection for government final consumption in 2020 assumes a year-on-year decline in real consumption, as nominal expenditure growth decelerates owing to the impact of one-off methodological adjustments made in response to the economic lockdown situation. A lower base in 2020, together with decelerating prices, will lead to an increase in final consumption growth in 2021. Over the rest of the projection period, final consumption growth is projected to increase gradually. Public investment is projected to decline in 2020 owing to the deferral of own investment, which is expected to happen mainly in the local government sector. Thereafter, public invest-

ment is expected to accelerate, supported by the increasing absorption of EU funds, including Slovakia's remaining allocation from the EU's 2014-20 budget and its grants under the NGEU package.¹⁰ Announced deliveries of military equipment are expected to have a temporary upward impact on investment towards the end of the projection period.

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

	2019	2020	2021	2022	2023
General government final consumption expenditure	4.7	-0.8	4.0	1.7	2.5
Government investment	-0.5	-3.1	13.3	21.0	30.1
<i>of which: EU funds (percentage point contribution to rate of change)</i>	-4.3	2.0	9.4	10.2	11.3
General government balance (percentage of GDP)	-1.4	-6.6	-5.7	-4.3	-4.3
Fiscal stance (year-on-year change in percentage points of GDP)	-0.4	-3.3	0.2	0.5	-0.3
Gross debt (percentage of GDP)	48.5	60.9	61.2	61.2	61.1

Sources: SO SR, and NBS calculations.

¹⁰ The Next Generation EU instrument.

6 Risks to the forecast

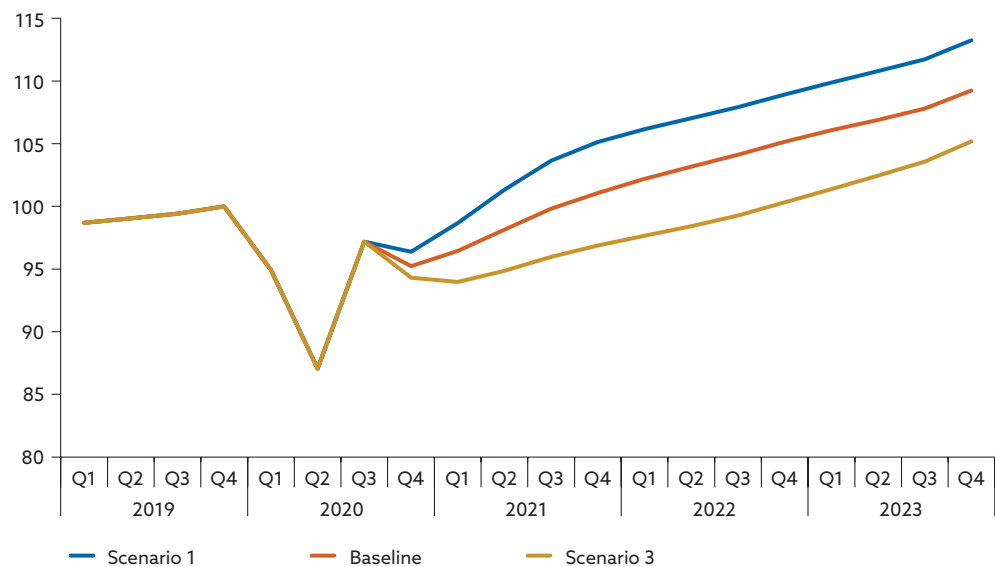
The risks to the current forecast are balanced. The main risk continues to be the pandemic situation and the timing and speed of the vaccination roll-out across the country. In view of the better than expected trends this year, the positive news about vaccine development, the possibility of the UK and EU still reaching a trade agreement, and the implementation of fiscal stimuli, the adverse pandemic-related risks to the forecast have been offset.

This forecast includes two alternative scenarios to its baseline projections (Charts 15 and 16), featuring different assumptions about the evolution of the pandemic.

The mild scenario (scenario 1) assumes a stabilisation of infections following a faster successful implementation of a vaccine across the country in 2021. It is assumed that, gradually, containment measures will be eased and fiscal relief measures will be unwound. In this scenario, the macroeconomic fallout from the pandemic is assumed to be only short term in nature and the economy of the euro area, including Slovakia is seen rebounding relatively quickly to pre-crisis levels.

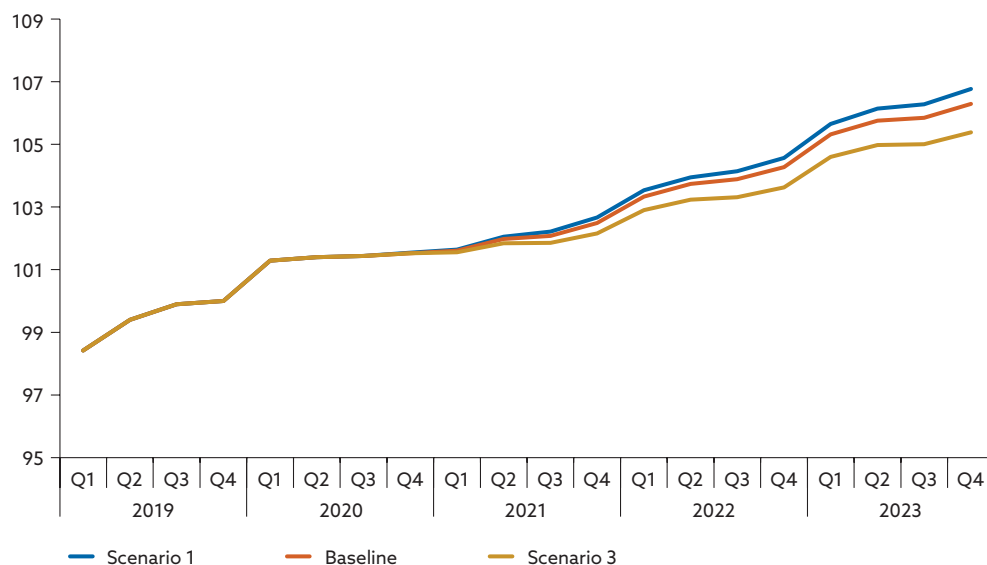
Chart 15

GDP growth (index, Q4 2019 = 100)



Source: NBS calculations.

Chart 16
Inflation (index, Q4 2019 = 100)



Source: NBS calculations.

The severe scenario (scenario 3) assumes that the current increasing trend in infections continues for a longer time and that vaccinations are not successfully rolled out across the country until 2023. At the same time, certain containment measures will be kept in place over the medium term. Longer term restrictions could have an adverse impact on many firms, resulting both in financial difficulties within the business sector and in a deterioration of the banking sector's financial situation. Normalisation will occur only gradually and the permanent economic losses are envisaged to be more severe.

Table 4 Comparison of scenarios (annual percentage changes, unless otherwise stated)

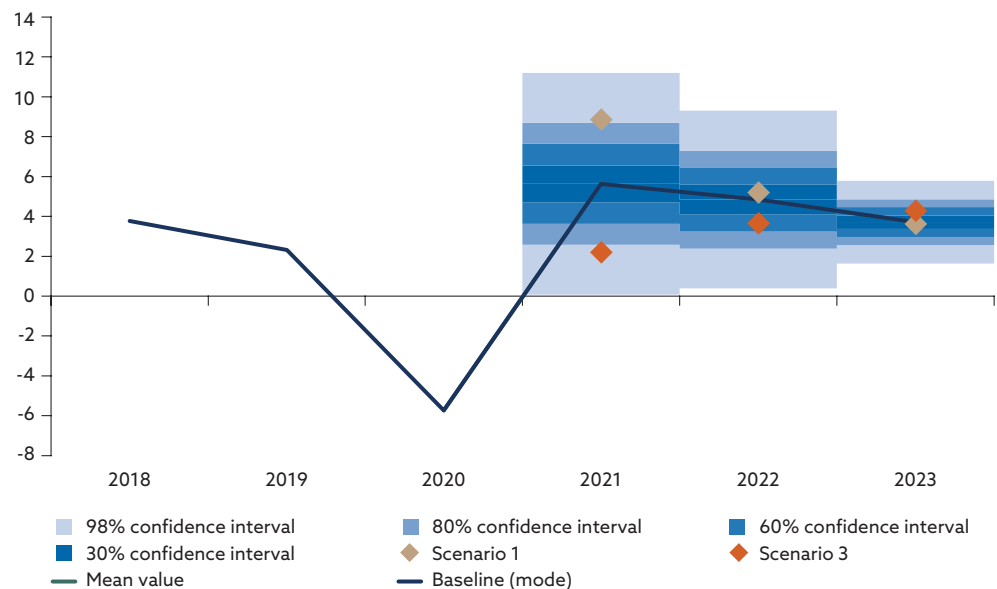
	Scenario 1				Baseline				Scenario 3			
	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
GDP	-5.4	8.9	5.2	3.6	-5.7	5.6	4.8	3.7	-6.0	2.2	3.7	4.3
private consumption	-0.8	5.4	3.5	2.6	-0.9	3.3	2.9	2.5	-1.1	0.6	1.5	2.0
government consumption	-0.1	6.8	1.2	2.2	-0.8	4.0	1.7	2.5	-0.3	5.3	1.6	3.1
fixed investment	-10.3	12.3	12.8	9.9	-10.9	9.3	12.4	10.0	-11.5	1.7	9.5	10.8
exports	-8.6	14.5	7.3	4.8	-8.8	9.8	6.6	4.8	-9.4	3.9	5.4	6.2
Employment	-1.8	-0.4	1.2	1.2	-1.9	-0.9	1.1	1.1	-2.0	-1.4	0.4	0.8
Unemployment rate (percentage)	6.8	7.6	7.0	6.1	6.8	7.9	7.3	6.5	6.9	8.4	8.5	7.9
Wages	3.0	5.9	5.3	4.4	3.0	4.8	4.9	4.4	2.7	2.6	3.7	3.9
Inflation	2.0	0.7	1.9	2.1	2.0	0.6	1.8	1.9	2.0	0.4	1.4	1.7
Foreign demand	-10.0	10.8	6.5	3.7	-10.0	6.1	5.5	3.8	-10.8	0.2	4.5	5.0
General government deficit (percentage of GDP)	-6.5	-5.0	-3.5	-3.3	-6.6	-5.7	-4.3	-4.3	-7.0	-7.6	-6.5	-6.2
Public debt (percentage of GDP)	60.7	58.3	57.3	56.5	60.9	61.2	61.2	61.1	61.1	65.8	69.0	70.4

Source: NBS calculations.

An expert risk estimate corroborated the scenario-based estimation of uncertainty. The risks surrounding the baseline scenario are broadly balanced. In the case of the GDP outlook, the range of uncertainty is consistent with what the scenarios show (Chart 17); in the case of the inflation outlook, however, the estimates in all three scenarios are very close to each other (Chart 18).

Chart 17

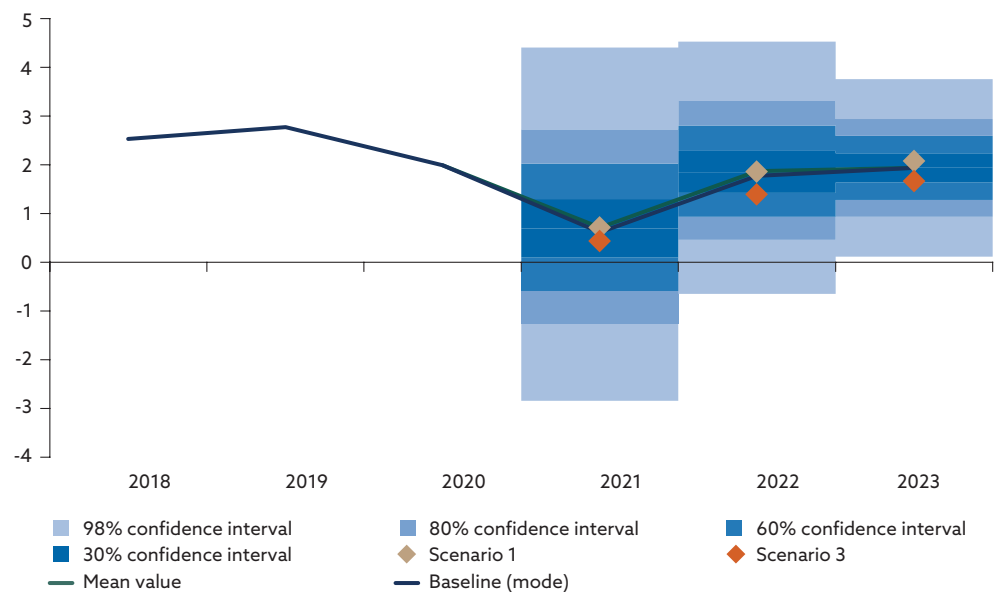
Risks to the GDP outlook (annual percentage changes)



Source: NBS calculations.

Chart 18

Risks to the inflation outlook (annual percentage changes)



Source: NBS calculations.

7 Comparison with the previous forecast

Foreign demand projections have been revised in this forecast. The better than expected result for the third quarter is now being obscured by a more pessimistic near-term outlook brought on by the pandemic's second wave. From the second quarter of 2021, however, foreign trade growth is expected to be slightly higher than projected in the September 2020 forecast (MTF-2020Q3).

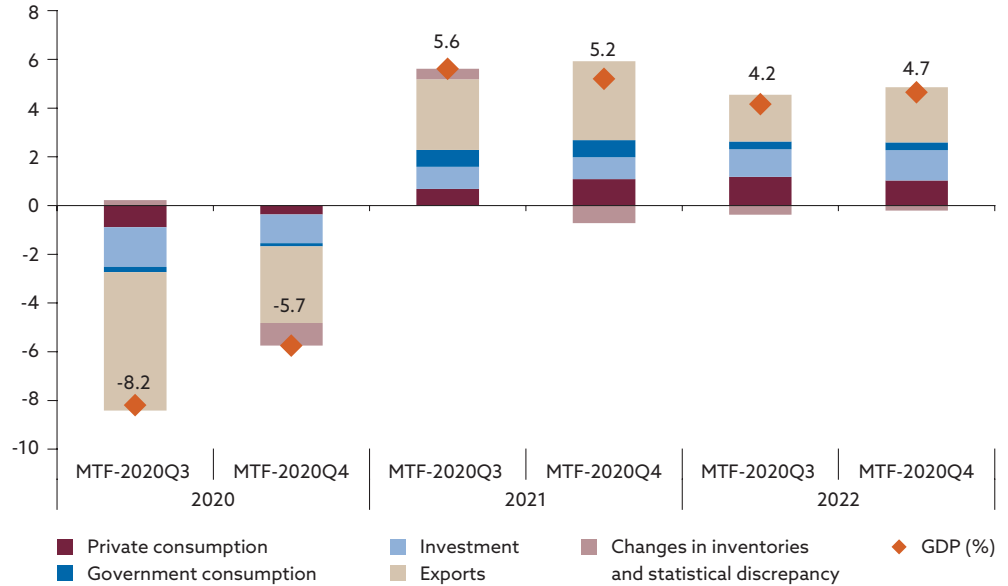
The economic downturn in 2020 is projected to be more moderate than was originally envisaged, and GDP across the whole projection period is expected to be 3% higher than projected in September. GDP growth in the third quarter was stronger than projected. The improvement in the GDP growth outlook for 2020 is broad-based across almost all components. With export performance having already rebounded to pre-crisis levels, the projected decline in exports in 2020 has been trimmed. Likewise, it appears that consumer demand has been more resilient than previously projected, and investment is not expected to fall as sharply as forecast in MTF-2020Q3. In the medium term, the projections for export growth have been revised up on the expectation of stronger foreign demand growth. Projections for the domestic components of GDP growth remain largely unchanged (Chart 19), as the impact of the more favourable recent developments has been offset by the second pandemic wave. This forecast incorporates two one-off factors that were not included in the previous forecast. The first is a slightly negative impact of Brexit on foreign demand and therefore on the Slovak economy. The second factor is an announced expansion of investment in the car industry and the boost that will give to export performance in 2023.

Compared with the previous forecast, the outlook for the labour market is brighter, though the improvement in employment is only slight. The optimism is based on the better than projected developments in the third quarter. The number of people in employment is expected to remain slightly higher than projected in September, even after factoring in the negative impact of the pandemic's second wave in the last quarter of 2020, which is expected to weigh most heavily on service sector employment. Following the easing of containment measures and improvement in the pandemic situation, job creation is projected to pick up in 2021 and employment is expected to rebound to its pre-second wave level. In the medium term, employment is expected to remain on a growth path as envisaged in the previous forecast (Chart 20). The outlook for income from work is similar to that for employment. Compared with the September forecast, the projection for real compensation has been revised. The second pandemic wave

will hold back the pick-up in compensation, which, however, should later follow the same trajectory as previously envisaged (Chart 21).

Chart 19

GDP and its components¹¹ (annual percentage changes; percentage point contributions)

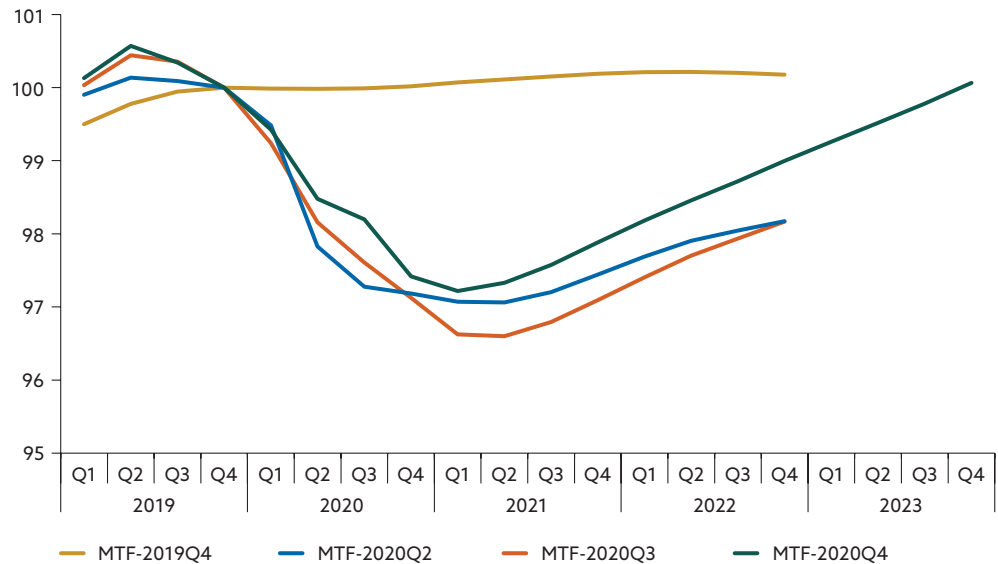


Sources: SO SR, and NBS calculations.

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

Chart 20

Employment (index, Q4 2019 = 100)

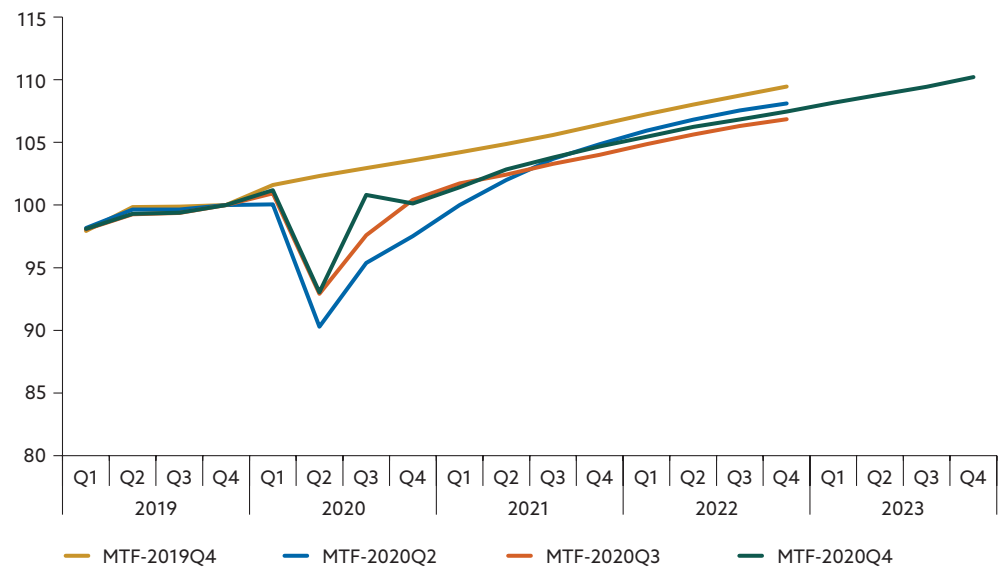


Sources: SO SR, and NBS calculations.

¹¹ 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 21

Real compensation per employee (index, Q4 2019 = 100)

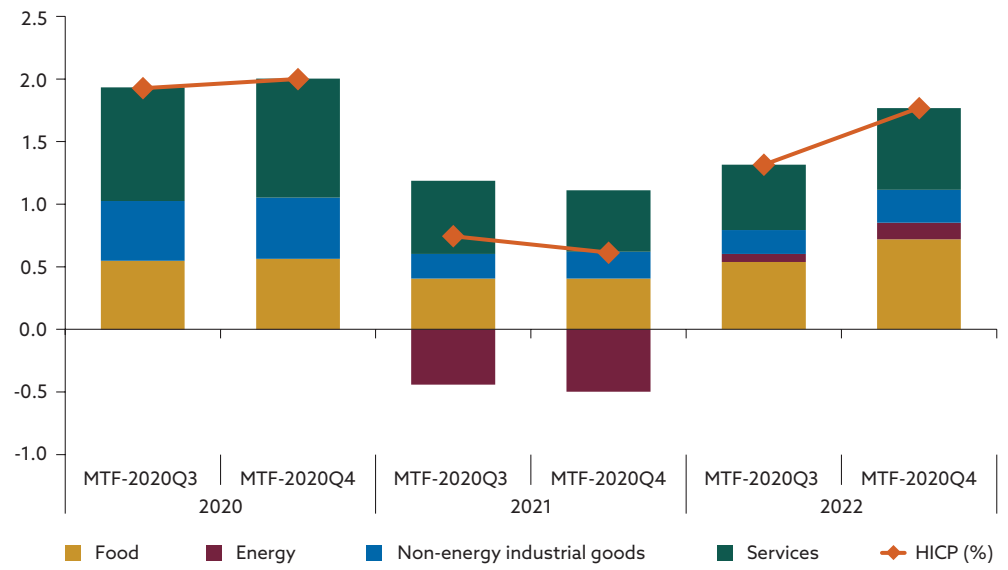


Sources: SO SR, and NBS calculations.

Compared with the previous forecast, the inflation rate projection for 2021 has been revised down. In the medium term, inflation is expected to be higher than previously forecast. While inflation is now higher than projected, this difference is expected to be more than offset in 2021 by the retention of the administrative measure of free school meals. The lower inflation rate will be largely attributable to energy prices (Chart 22). Their projected decrease is now expected to be larger owing to the inclusion in this forecast of a more precise estimation of administered energy prices. In the medium term, inflation is expected to be higher on the back of increasing demand pressures and factors, for example commodity prices.

Chart 22

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



Sources: SO SR, and NBS calculations.

Table 5 Medium-Term Forecast (MTF-2020Q4) for key macroeconomic indicators

Indicator	Unit	Actual data	MTF-2020Q4					Difference vis-à-vis MTF2020Q3		
		2019	2020	2021	2022	2023	2020	2021	2022	
Prices										
HICP inflation	annual percentage change	2.8	2.0	0.6	1.8	1.9	0.1	-0.1	0.5	
CPI inflation	annual percentage change	2.7	1.9	0.7	1.8	2.0	0.0	-0.2	0.4	
GDP deflator	annual percentage change	2.5	2.0	0.6	1.8	1.9	1.1	1.0	0.2	
Economic activity										
Gross domestic product	annual percentage change, constant prices	2.3	-5.7	5.6	4.8	3.7	2.5	0.0	0.6	
Private consumption	annual percentage change, constant prices	2.3	-0.9	3.3	2.9	2.5	1.4	1.7	-0.1	
Final consumption of general government	annual percentage change, constant prices	4.7	-0.8	4.0	1.7	2.5	0.5	0.2	-0.1	
Gross fixed capital formation	annual percentage change, constant prices	5.8	-10.9	9.3	12.4	10.0	4.1	0.3	1.5	
Exports of goods and services	annual percentage change, constant prices	0.8	-8.8	9.8	6.6	4.8	7.0	1.0	1.0	
Imports of goods and services	annual percentage change, constant prices	2.1	-10.1	9.1	6.6	5.5	4.2	1.0	0.7	
Net exports	EUR millions at constant prices	1,858	2,754	3,517	3,723	3,321	2,015.5	2,235.8	2,545.5	
Output gap	percentage of potential output	1.2	-5.8	-2.1	0.3	1.0	1.9	1.9	2.4	
Gross domestic product	EUR millions at current prices	93,865	90,287	95,971	102,454	108,296	3,041.2	4,230.9	5,371.0	
Labour market										
Employment	thousands of persons ESA 2010	2,445	2,399	2,378	2,404	2,430	2.4	11.7	13.1	
Employment (rate of change)	annual percentage change ESA 2010	1.0	-1.9	-0.9	1.1	1.1	0.3	0.4	0.0	
Number of unemployed	thousands of persons ¹⁾	158	184	214	199	176	-3.0	-11.8	-7.5	
Unemployment rate	percentage	5.8	6.8	7.9	7.3	6.5	-0.1	-0.5	-0.4	
NAIRU estimate ²⁾	percentage	6.7	6.9	7.4	7.6	7.4	-0.1	-0.2	-0.1	
Labour productivity ³⁾	annual percentage change	1.3	-3.9	6.6	3.7	2.6	2.3	-0.4	0.6	
Nominal productivity ⁴⁾	annual percentage change	3.9	-1.7	7.4	5.6	4.6	3.5	0.8	0.9	
Nominal compensation per employee	annual percentage change ESA 2010	6.6	1.6	5.3	5.0	4.5	0.9	-0.4	0.7	
Nominal wages ⁵⁾	annual percentage change	7.8	3.0	4.8	4.9	4.4	1.7	-0.1	0.7	
Real wages ⁶⁾	annual percentage change	5.0	1.0	4.1	3.1	2.4	1.6	0.1	0.4	
Households and non-profit institutions serving households										
Disposable income	annual percentage change, constant prices	1.8	-0.5	2.4	2.9	2.5	0.0	0.8	0.3	
Saving ratio ⁷⁾	percentage of disposable income	10.2	10.9	10.1	10.1	10.1	-0.1	-0.8	-0.5	
General government sector⁸⁾										
Total revenue	percentage of GDP	41.4	42.0	41.9	41.8	42.3	-1.5	-1.6	-1.8	
Total expenditure	percentage of GDP	42.7	48.6	47.5	46.1	46.6	-0.9	-1.7	-2.0	
General government balance ⁹⁾	percentage of GDP	-1.4	-6.6	-5.7	-4.3	-4.3	-0.6	0.1	0.2	
Cyclical component	percentage of trend GDP	0.4	-1.6	-0.8	0.0	0.3	0.5	0.6	0.8	
Structural balance	percentage of trend GDP	-1.8	-5.1	-5.0	-4.3	-4.6	-2.0	-0.6	-0.6	
Cyclically adjusted primary balance	percentage of trend GDP	-0.5	-3.8	-3.7	-3.1	-3.4	-1.1	-0.6	-0.6	
Fiscal stance ¹⁰⁾	year-on-year change in p. p.	-0.4	-3.3	0.2	0.5	-0.3	-1.1	0.5	0.0	
General government gross debt	percentage of GDP	48.5	60.9	61.2	61.2	61.1	-1.7	-2.8	-3.1	

Table 5 Medium-Term Forecast (MTF-2020Q4) for key macroeconomic indicators (continued)

Indicator	Unit	Actual data	MTF-2020Q4					Difference vis-à-vis MTF2020Q3		
		2019	2020	2021	2022	2023	2020	2021	2022	
Balance of Payments										
Goods balance	percentage of GDP	-1.0	-1.1	-0.5	-0.1	-0.7	2.0	3.0	3.4	
Current account	percentage of GDP	-2.7	-1.5	-1.2	-1.1	-1.5	2.7	3.6	4.0	
External environment and technical assumptions										
Slovakia's foreign demand	annual percentage change	2.3	-10.0	6.1	5.5	3.8	2.1	0.0	1.0	
Exchange rate (EUR/USD) ^{(1), (2)}	level	1.12	1.14	1.18	1.18	1.18	-0.1	-0.1	-0.1	
Oil price in USD ^{(1), (2)}	level	64.0	41.6	44.0	45.7	46.9	-2.9	-7.3	-7.5	
Oil price in USD ⁽¹⁾	annual percentage change	-9.9	-35.1	5.9	3.7	2.8	-2.0	-5.0	-0.3	
Oil price in EUR ⁽¹⁾	annual percentage change	-5.0	-36.2	1.9	3.7	2.8	-1.8	-4.8	-0.3	
Non-energy commodity prices in USD	annual percentage change	-3.7	2.5	8.4	0.4	1.6	1.0	2.6	-2.3	
Three-month EURIBOR	percentage per annum	-0.4	-0.4	-0.5	-0.5	-0.5	0.0	0.0	0.0	
Ten-year Slovak government bond yields	percentage	0.2	0.0	-0.3	-0.3	-0.2	0.0	-0.1	-0.2	

Sources: NBS, ECB, and SO SR.

Notes:

- 1) Labour Force Survey.
- 2) Non-accelerating inflation rate of unemployment
- 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) Sector S.13; fiscal outlook.
- 9) B9n – Net lending (+) / net 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-à-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/2020/protected/P4Q-2020.xls

Estimating the long-term impact of NGEU grants using model simulations

The European Union has introduced a new recovery instrument, Next Generation EU (NGEU), whose cumulative positive impact on Slovakia's GDP growth up to and including 2030 is estimated to be up to 6.7 percentage points and whose long-term impact on the GDP level is put at between 0.8 and 0.9 percentage points (in 2030). These estimations are based on illustrative model calculations using the EAGLE model calibrated to the Slovak economy.

In mid-2020 the European Council approved an extraordinary €750 billion recovery plan known as Next Generation EU to help Member States address the repercussions of the coronavirus (COVID-19) pandemic.¹² This programme is unprecedented in that it includes the EU's first ever issuance of European Union bonds. The funds raised will be disbursed as grants and loans to the regions hardest hit by the pandemic crisis and are planned to be repaid from the EU budget and through the introduction of new own funds (for example, in the form of indirect taxes).¹³

In this annex we analyse the potential macroeconomic impact of just part of this relief stimulus package, specifically the funds provided in the form of grants. The scenarios under analysis assume the absorption of the available funds allocated to Slovakia, amounting to €6.5 billion (7.3% of GDP), representing 86% of the country's total allocation of €7.5 billion.

Scenario settings:

The scenarios assume that around two-thirds of the funds allocated in the form of grants are used for public investment projects and one-third are used for transfers (of which two-thirds comprise transfers to the public sector, and one-third, direct transfers to households) (Table 1, Chart 1).

Scenario 1 – assumes only partial absorption of the grants that are expected to be used for productive investment projects. This scenario is divided into two sub-scenarios, which differ in their assumptions about the pace of funds' absorption while maintaining the same total volume (4.9% of

¹² At the heart of NGEU is the €672.5 billion Recovery and Resilience Facility (RRF), which will be disbursed as grants (€312.5 billion) and loans (€360 billion).

¹³ <https://www.consilium.europa.eu/media/45109/210720-euco-final-conclusions-en.pdf>

GDP). In **scenario 1a**, absorption is assumed to proceed at a gradually increasing pace, eventually peaking in 2026. In **scenario 1b**, a faster pace of absorption is assumed, with the peak being reached in 2024. The purpose of these two sub-scenarios is to illustrate the importance of the timing of funds' absorption. The scenarios' different absorption profiles are shown in Chart 2.

Scenario 2 – assumes that the grants are absorbed not only for investment purposes but also for general government final consumption expenditure (GGFCE), as well as for direct transfers to households, including relief for the non-profit institutions sector (disposable income).

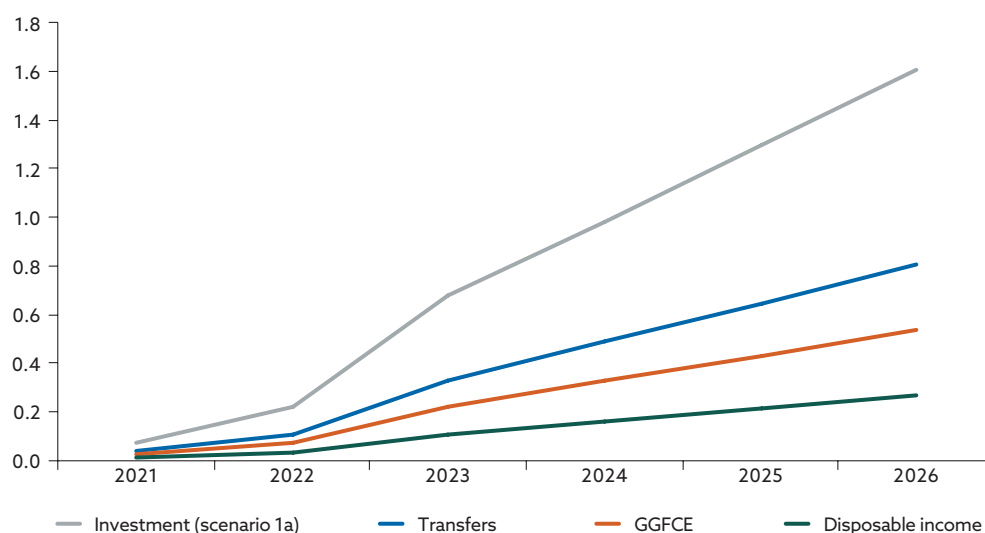
Table 6 Expected disbursement of NGEU grants for Slovakia (percentages of GDP)

	2021	2022	2023	2024	2025	2026	Spolu
Investment							
Scenario 1a	0.08	0.22	0.68	0.98	1.30	1.61	4.86
Scenario 1b	0.08	0.54	1.21	1.63	1.04	0.37	4.86
Transfers	0.04	0.11	0.33	0.49	0.65	0.80	2.42
GGFCE	0.03	0.07	0.22	0.33	0.43	0.54	1.61
Disposable income	0.01	0.04	0.11	0.16	0.22	0.27	0.81

Source: NBS calculations.

Chart 23

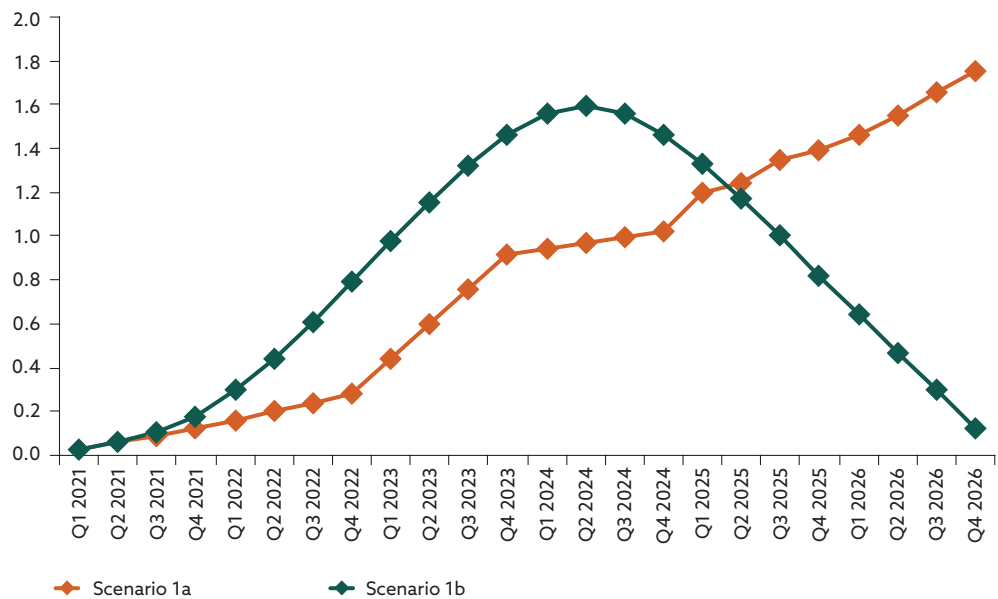
Absorption of grants for Slovakia (percentages of GDP)



Source: NBS calculations.

Chart 24

Different absorption profiles for investment funding (percentages of GDP)



Source: NBS calculations.

Scenario 1 – simulation result

The absorption of grants for productive investment results in an increase in GDP that lasts beyond the absorption period. Government investment increases demand for final goods in the short term and so also increases demand for the labour and capital needed for the production of additional, non-imported investment goods. Government investment includes both tradable and non-tradable goods, so production increases in both sectors. Funds are redirected from the private sector, typically leading to a decline in private consumption and investment. The key mechanism is the contribution of public capital stocks to private sector productivity. The accumulation of public capital has downward impact on marginal costs, so increasing the domestic economy's competitiveness over the medium term. Ultimately, it causes an increase in private investment, though in our scenario that increase is very gradual.¹⁴ This result is in line with the intuition that government infrastructure projects reduce the costs of private firms, which benefit from these projects in the longer term. Such investment may, however, have the opposite effect if the new infrastructure is redundant (Morgenroth, 2011).

In the different absorption profiles (scenarios 1a and 1b), the impact of the grants used for productive investment is approximately the same at the end of 2030, at between around 0.8% to 0.9% of GDP. The size and in-

¹⁴ In line with the result for Ireland: <https://www.esm.europa.eu/sites/default/files/esmwp-20151103governmentexpenditure1.pdf>

ertia of the positive impact on the economy beyond the end of the NGEU disbursement period will depend on the impact of public investment on productive capital in the economy. The grants are creating an obligation to repay the generated debt via so-called EU taxes, but they are not increasing the domestic debt of Member States. In other words, an increase in Member States' contributions to the EU is assumed. Thanks to reforms put in place, these contributions are expected to be partly covered by the higher revenues resulting from the improved performance of national economies (higher potential output).

A difference is observed, however, in the cumulative impact on GDP. The faster absorption of grants is reflected in faster accumulation of productive capital, which shows in the different impacts on GDP: **6.7% of GDP in scenario 1b** (faster absorption) versus **5.7% in scenario 1a** (slower absorption).

At the same time, the evolution of national **debt** is more favourable in **scenario 1b**, as it declines further in this scenario than in **scenario 1a**, thereby potentially increasing the savings available to the government for debt servicing. These simulations confirm that the faster implementation of investment projects leads to a stronger economic performance. It must also be noted, however, that individual countries may, in consequence, face increased need for institutional capacities to implement and successfully manage investment projects.

Scenario 2 – simulation result

In this scenario, not only is the absorption of grants analysed, but so is the absorption of funds available for transfers (which have little productive impact and go directly to household disposable income) and other funds channelled to general government final consumption expenditure (GG-FCE).

In this case there are two factors with opposing effects. On the one hand, the use of such transfers directly to household income results in lower GDP growth compared with the scenario involving only productive investment. Households have complete information about a future increase in taxes on the financing of both investments and transfers. Since they have fully rational expectations, they reduce their investment activity, so causing a decline in GDP. On the other hand, private consumption is higher in the scenario including transfers, since the transfers increase household income. This applies also to households that are able to borrow, as well as to households that use the entire income increase for consumption. At the same time, higher income puts upward pressure on inflation. Because household income is higher, the government collects more tax revenues

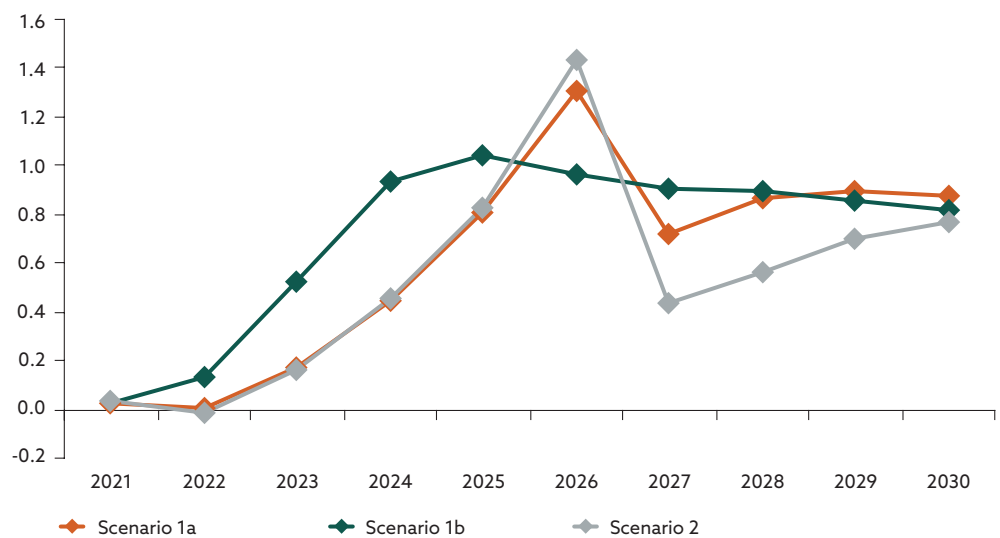
and so can reduce Slovakia's public debt to a greater extent than is possible under scenario 1 (where grants are used only for investment).

In scenario 2, the overall impact on economic performance at the end of 2030 is very similar to that in the scenario involving the absorption of grants without transfers (around 0.8%). This is because transfers have only a limited long-term positive impact on the economy's productive capacity; they have only a short-term demand effect arising from households' increased consumption. That effect, however, does not compensate for the increase in the overall EU debt resulting from transfers, and households therefore reduce consumption and investment in the longer term.

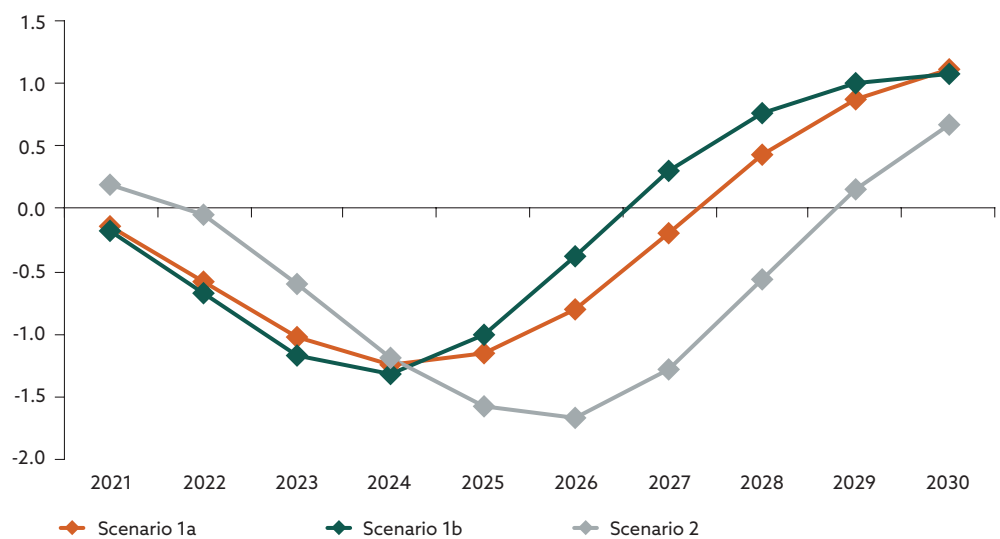
Chart 25

Effects of individual scenarios on selected macroeconomic indicators

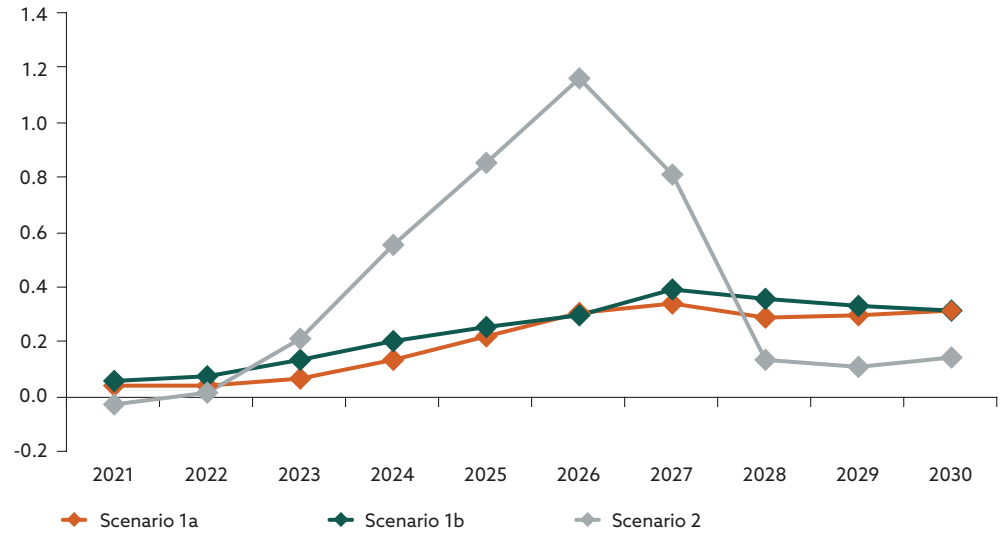
GDP



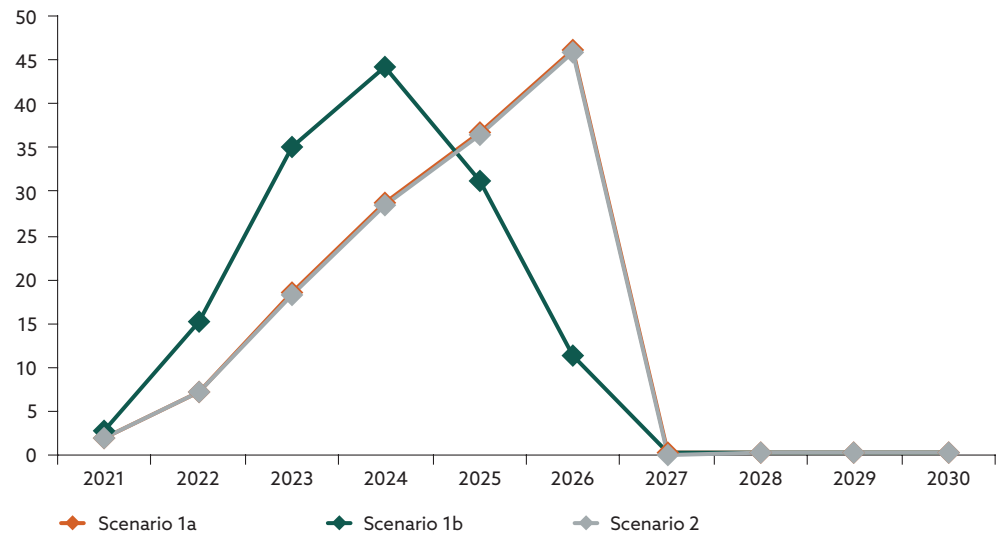
Private investment



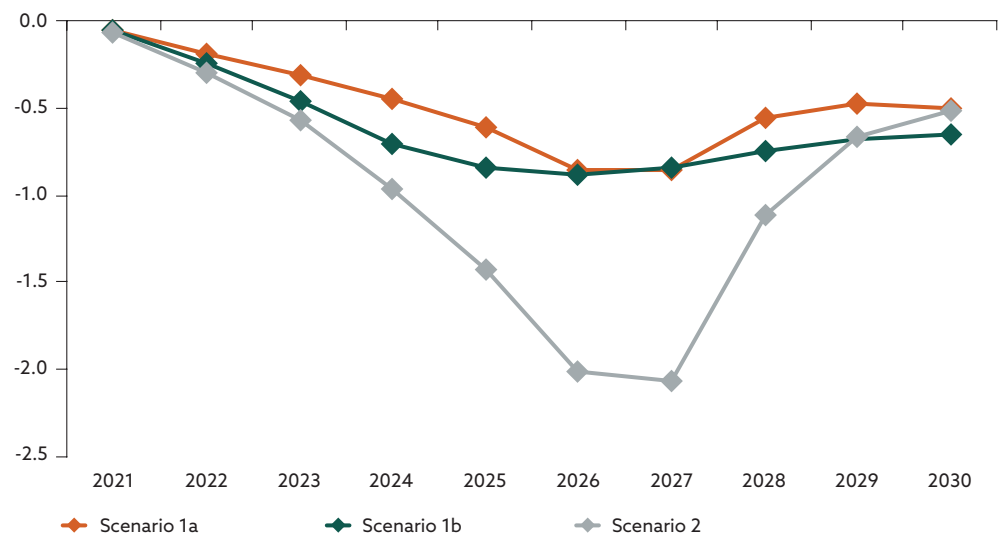
Private consumption



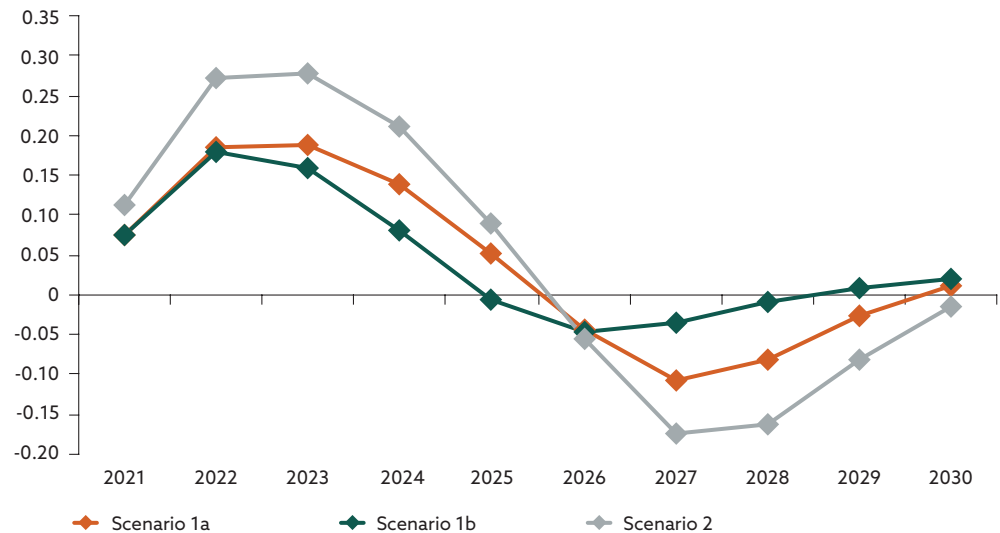
Government investment



Public debt (percentage of GDP)



Inflation



Source: NBS calculations.

Note: The variables other than inflation are expressed as the percentage deviation from steady state; for inflation, the deviation is expressed in percentage points.

Box 4

Description of the EAGLE model

EAGLE is a global micro-founded DSGE model that includes nominal price and wage rigidities, capital accumulation, and international trade in goods. It also incorporates a fiscal bloc that includes productive public investment, meaning that the investment can contribute to the capital stock.¹⁵ The model was subsequently adjusted to include mechanisms that can capture the nature of NGEU. The model comprises four regions: Slovakia, Germany, the rest of the euro area, and the rest of the world. This configuration allows it to take account of the heterogeneous allocation of funds. The model was further adjusted to include a supranational entity that provides funding to member countries and services the debt by which this funding is financed. This debt will be repaid via an indirect tax – a so-called EU tax – imposed uniformly over thirty years across all the European regions in the model.

The model's structure and scenarios do not capture the complex relationships involved in the actual implementation of specific investment projects (for example, differences in their efficiency). Nor do the simulations capture the nature of the economy's initial state, or the existence of possible non-linear relationships in the economy. The presented scenarios are designed to provide an illustrative comparison of their impact on the economy and should not be treated as projections.

¹⁵ For EAGLE with productive public capital, see Clancy, D. et al. (2016), following Leeper, E.M. et al. (2010).