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Macroeconomic Projections for Slovenia

June 2022

This publication is dedicated to Feliks Cimperman, a friend and long-time colleague at the Analysis and Research Department.

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Executive Summary

The macroeconomic projections for Slovenia are strongly affected by the worsening outlook in the external environment as a consequence of Russia's military aggression against Ukraine. The GDP growth projection for this year is 5.8%, but over the remainder of the projection horizon the growth will moderate at 2.4% and 2.5% in 2023 and 2024 respectively. The projection for relatively high growth this year mostly derives from the statistical effect of the carry-over of the strong economic activity in the second half of last year.

In parallel with the pronounced carry-over effect, the expectation is that the downturn in the external environment and the strengthened inflationary pressures will gradually slow current economic growth over the course of this year and the early part of next year. The projected within-year growth for 2022 and the overall GDP growth in 2023 stand 2 percentage points and 0.9 percentage points lower compared to the Banka Slovenije's December projections. The decomposition of the GDP growth projection for this year into the carry-over effect and the within-year growth is examined in detail in the Special topics section.

Economic growth will remain broadly based over the entire projection horizon. Private consumption will be driven by high employment, projected wage growth, and the savings built up during the pandemic. Following the strong growth at the beginning of this year, investment activity will gradually slow over the remainder of the year and next year, as a result of lower growth in foreign demand and the reduced availability of investment goods. The lower growth in foreign demand and unfavourable terms of trade conditions point to on average relatively low current account surplus over the projection horizon. With the stabilisation of the situation in the external environment and the gradual resolution of disruptions to supply chains, growth in private investment and exports is expected to strengthen again in 2024.

The situation in the domestic economy and the external environment is reflected in the projections for inflation, which is expected to average 9.0% this year, before decreasing to 4.5% in 2023 and 2.3% in 2024. The prevailing factor in this year's high inflation will be high energy price inflation, but the contributions of other price categories will also strengthen. This will be driven by an increasingly strong pass-through of rising energy prices into other prices, relatively strong domestic demand and rising labour costs. As the contribution by energy prices gradually declines, inflation will remain elevated in 2023 as a result of growth in food prices and services prices. The two factors will keep headline inflation above the inflation target of 2% also in 2024.

Employment is projected to increase throughout the entire horizon, supported by the strong current activity and a relatively favourable economic growth going forward. Employment is projected to grow by 2.8% this year, 1.1% in 2023 and 0.7% in 2024. The labour market projections underline the growing imbalances between supply of and demand for labour. Amid record-low unemployment, and unfavourable demographic trends, employment growth will primarily be driven by the hiring of foreign workers. The gap between supply of and demand for labour and the expected gradual pass-through of elevated inflation expectations into wages are reflected in the projection for nominal growth in compensation per employee, with the annual growth expected to average at 4.5% over the projection horizon.

The macroeconomic projections are exposed to major risks, primarily related to the further development of the war in Ukraine. The baseline projection is thus accompanied by an alternative severe scenario, which envisages the continuation of the war in 2023 and further intensification of sanctions, including a total ban on Russian energy imports into the EU. The realisation of this scenario would entail a pronounced rise in energy and other commodity prices, significantly lower growth in global demand, and a partial production cuts due to shortages of raw materials. The economic growth projections under the severe scenario are 4.3% for this year, -0.4% for 2023 and 3.6% for 2024. Inflation would be higher than under the baseline projection throughout the projection period, at 9.8% in 2022, 6.6% in 2023 and 2.5% in 2024.

Table 1: **Macroeconomic projections for Slovenia, 2022-2024**

									Projections					
	2015	2016	2017	2018	2019	2020	2021		**2022**		**2023**		**2024**	
								Δ	**June**	Δ	**June**	Δ	**June**	Δ
Prices	*annual average % changes*													
HICP	-0.8	-0.2	1.6	1.9	1.7	-0.3	2.0	0.0	**9.0**	5.2	**4.5**	2.7	**2.3**	0.3
HICP excluding energy	0.4	0.6	1.1	1.4	1.8	1.3	0.8	0.1	**5.9**	3.0	**3.5**	1.4	**2.8**	0.5
HICP energy	-7.8	-5.2	4.7	6.0	0.8	-10.8	11.3	-0.3	**30.2**	20.4	**9.5**	10.3	**-0.8**	-0.3
Economic activity (real)	*y-o-y growth rates in %*													
GDP	2.2	3.2	4.8	4.4	3.3	-4.2	8.1	1.4	**5.8**	1.8	**2.4**	-0.9	**2.5**	0.0
Private consumption	2.0	4.4	1.9	3.6	4.8	-6.6	11.6	2.1	**8.7**	4.0	**0.9**	-2.0	**1.9**	-0.5
Government consumption	2.3	2.4	0.4	3.0	2.0	4.2	3.9	1.8	**0.2**	-1.5	**1.9**	0.5	**2.1**	0.7
Gross fixed capital formation	-1.2	-3.6	10.2	9.7	5.5	-8.2	12.3	-1.5	**8.4**	0.8	**3.9**	-0.7	**0.4**	-1.3
Private gross fixed capital formation	0.1	6.0	12.2	6.9	4.9	-10.7	10.3	-0.4	**4.5**	-0.2	**2.4**	-3.0	**4.0**	-0.7
Government gross fixed capital formation	-4.7	-31.7	0.9	23.7	8.2	2.3	19.8	-5.6	**21.8**	4.6	**8.2**	6.0	**-9.4**	-2.5
Exports (goods and services)	4.7	6.2	11.1	6.2	4.5	-8.7	13.2	2.4	**4.3**	-1.6	**5.2**	-1.7	**5.4**	0.9
Imports (goods and services)	4.3	6.3	10.7	7.1	4.7	-9.6	17.4	1.8	**7.1**	0.1	**4.6**	-2.2	**4.6**	0.4
Contributions to real GDP growth	*in percentage points*													
Domestic demand (excluding inventories)	1.3	2.2	2.9	4.2	3.9	-4.4	9.2	1.1	**6.4**	2.0	**1.6**	-1.2	**1.5**	-0.4
Net exports	0.6	0.4	1.2	-0.2	0.3	0.0	-1.9	0.6	**-1.9**	-1.4	**0.8**	0.2	**1.0**	0.4
Changes in inventories	0.3	0.6	0.7	0.4	-0.9	0.1	0.8	-0.5	**1.3**	1.2	**0.0**	0.0	**0.0**	0.0
Labour market	*y-o-y growth rates in % (unless stated otherwise)*													
Survey unemployment rate (in %)	9.0	8.0	6.6	5.1	4.5	5.0	4.7	0.0	**4.2**	0.0	**3.9**	0.0	**3.7**	0.0
Total employment	1.3	1.8	2.9	3.2	2.5	-0.6	1.4	0.1	**2.8**	1.1	**1.1**	-0.3	**0.7**	-0.1
Compensation per employee	1.5	3.1	3.0	3.9	5.0	3.5	5.4	-0.7	**4.1**	1.4	**5.0**	1.7	**4.5**	0.5
...Productivity	0.9	1.3	1.9	1.2	0.8	-3.7	6.6	1.2	**2.9**	0.6	**1.4**	-0.6	**1.8**	0.1
...Unit labour costs (ULC)	0.6	1.8	1.2	2.7	4.2	7.4	-1.1	-1.9	**1.2**	0.8	**3.6**	2.3	**2.6**	0.4
Balance of payments	*y-o-y growth rates in % (unless stated otherwise)*													
Current account: in bn EUR	1.5	1.9	2.7	2.7	2.9	3.5	1.7	-0.3	**-0.1**	-1.9	**0.3**	-1.9	**0.7**	-1.7
in % GDP	3.8	4.8	6.2	6.0	6.0	7.4	3.3	-0.7	**-0.1**	-3.5	**0.5**	-3.3	**1.0**	-2.9
Terms of trade*	1.3	0.8	-0.6	-0.1	0.5	0.7	-2.4	-0.5	**-1.9**	-2.0	**0.1**	0.2	**-0.1**	-0.1

Note: * Based on national accounts deflators. Δ: difference between the current projections and the projections from the December 2021 issue of Macroeconomic Projections for Slovenia.
Source: Banka Slovenije projections, Eurostat, SORS.

1 International Environment and External Assumptions

Banka Slovenije's baseline projection is accompanied by elevated uncertainty in the international environment, which is in the assumptions reflected in weaker foreign demand for Slovenian exports, higher import prices, exchange rate depreciation and less-favourable financing conditions.

The impact of the war in Ukraine on energy prices and other commodity prices, the ongoing bottlenecks in supply chains amid resurgences of the pandemic in China, and the geopolitical uncertainty represent major headwinds to further growth in the global as well as the euro area economies. Rising energy and food prices are reducing household purchasing power, where households are expected to handle general consumer price inflation over the short term by reducing consumption of non-energy industrial goods and services, and partly by tapping into their accumulated savings. Firms are experiencing the uncertainty via the deterioration in the business environment, which is primarily reflected in weaker export developments and the postponement of planned investments.

The aforementioned challenges are weakening the short-term outlook, which is ingrained in this year's projected slowdown in global and euro area economic growth, while in the medium term a gradual easing in geopolitical tensions is assumed. Taking into consideration the aforementioned factors, the baseline projection for economic growth in the euro area is 2.8% in 2022, 2.1% in 2023 and 2.1% in 2024.

European countries' heavy dependence (particularly of major Slovenian export partners) on Russian energy supplies[1] and the consequent stronger impact of disruptions to supply chains are also reflected in the assumption for the growth in foreign demand for Slovenia. Compared to the December's projections, it has been revised down by around 2.5 percentage points and 3.0 percentage points respectively for this year and the next year, but will be slightly higher for 2024 as the situation eases.

The core projection assumes that the sanctions against Russia will remain in place until the end of the projection horizon, while the current intensive phase of the war will last until the end of this year.[2] Disruptions to energy supplies will not give rise to more pronounced production constraints, and the decline in firms' and consumers' confidence will merely be temporary. The baseline projection also assumes the gradual resolution of supply-chain issues by the end of 2023.

Given the elevated uncertainty surrounding the geopolitical situation, the baseline macroeconomic projection for the euro area is accompanied by an alternative scenario. This envisages a longer and more intensive war until the end of next year, and the escalation of sanctions against Russia, including a total embargo on energy imports into the EU. The severe scenario envisages a more-pronounced decline in output, which could lead to long-term disruptions to supply chains and additional indirect effects caused by higher energy prices. The increased uncertainty would be reflected on the

[1] According to Eurostat figures, Russia accounted for approximately 45% of EU gas imports and 25% of oil imports in 2021.

[2] At the time of preparation of the projections, the assumptions with regard to the sanctions against Russia were made on the basis of the information known at that time, and encompassed a total embargo on Russian coal, minor disruption to gas supplies, a total embargo on Russian oil on the part of the UK and the US, a gradual embargo on Russian oil on the part of the EU (30% in the second half of this year, before gradually rising to 100% by the end of the projection horizon), the complete substitution of Russian oil in the EU by other sources, and a rise in cereal prices caused by higher energy prices.

financial markets in increased volatility in assets, and a deterioration in financing conditions for firms, which would further curtail investment activity. Under the assumptions of the alternative scenario, the euro area economy would slide into recession in 2023, which would be followed by a relatively strong recovery in the final year of the projection horizon. Under the alternative scenario the growth of economic activity in the euro area would therefore stand at 1.3% in 2022, -1.7% in 2023 and 3.0% in 2024.

The technical assumptions for this year resemble a pronounced rise in US dollar prices of crude oil, and a weaker euro. The assumptions for developments in commodity prices are based on market expectations on futures markets over a two-week period ending on the cut-off date.[3] After rising by more than 70% last year, the price of Brent crude oil will rise again to average USD 105.8 per barrel over the year, comparable to the prices between 2011 and 2014. It is expected to gradually decline over the remainder of the projection horizon towards USD 84.3 per barrel.

The war in Ukraine and the persistent disruptions to supply chains are also significantly driving up prices of other primary commodities, which are expected to rise by 14.4% in line with the methodology of tracking prices of futures contracts. They are expected to gradually decline over the remainder of the projection horizon in line with the expected stabilisation of the international situation.

The technical assumption for the euro exchange rate against the US dollar, which reflects the average levels prevailing in the two-week period ending on the cut-off date, denotes a weaker euro. The euro exchange rate is expected to average USD 1.07 this year, and USD 1.05 in 2023 and 2024, USD 0.06 and USD 0.08 down on the previous projections respectively.

Table 2: **Assumptions for factors from the international environment**

	2016	2017	2018	2019	2020	2021	Assumptions		
							2022	**2023**	**2024**
World (excluding Euro Area) real GDP growth (in %)	3.3	3.8	3.8	2.9	-2.3	6.4	**3.0**	**3.4**	**3.6**
Real GDP growth in Euro Area (in %) – baseline projection	1.8	2.8	1.9	1.6	-6.5	5.4	**2.8**	**2.1**	**2.1**
Real GDP growth in Euro Area (in %) – downside scenario							**1.3**	**-1.7**	**3.0**
Foreign demand for Slovenia (growth in %)	3.7	6.4	4.5	2.9	-9.4	10.9	**2.6**	**3.0**	**3.7**
Oil price (in USD/barrel)	44.0	54.6	71.0	64.9	41.5	71.1	**105.8**	**93.4**	**84.3**
Oil price (in EUR/barrel)	39.8	48.4	60.1	57.9	36.4	60.1	**98.7**	**88.9**	**80.2**
Oil price (in USD/barrel, growth in %)	-15.9	24.0	30.1	-8.7	-36.0	71.3	**48.8**	**-11.7**	**-9.8**
Exchange rate (EUR/USD)	1.11	1.13	1.18	1.12	1.14	1.18	**1.07**	**1.05**	**1.05**
Non-energy commodity prices (growth in %)	-3.4	9.4	5.1	-6.4	3.4	42.1	**14.4**	**-4.9**	**-6.3**

Source: ECB, Banka Slovenije calculations.

[3] The technical assumptions are based on information available by the cut-off date of 20 May 2022. The assumptions with regard to foreign demand for Slovenia and the external technical assumptions of medium-term projections that serve as the basis for the Banka Slovenije projections were drawn up as part of the joint preparation of projections by Eurosystem experts. For more on the methodology used, see the latest release of ECB projections, which are also available in Slovene.

2 Projections

Economic activity will remain relatively solid and broadly based over the entire projection horizon. The labour market projections primarily reflect the anticipated persistence of imbalances between supply of and demand for labour, with employment still projected to rise over the entire horizon. The imbalances on the labour market and the increasing pass-through of rising energy prices into other price categories will keep inflation above its target level, even after the anticipated gradual decline in the contribution by energy prices.

2.1 Economic activity

GDP growth will remain high this year, primarily on account of a strong carry-over effect from the previous year, but will gradually slow due to the deterioration in the international environment.

This year's economic growth of 5.8% is primarily attributable to the carry-over of strong activity from the end of last year (see Special Topic 1). The strong carry-over effect of past activity into the annual growth projection thus masks the anticipated slowdown in quarterly GDP growth during the current year. The slowdown is largely attributable to developments in the international environment, which are dominated by the war in Ukraine, and the persistence of the pandemic and the related measures in parts of the world such as China, which is reflected in a lower assumption for growth in foreign demand for Slovenia. A gradual slowdown is also expected over the remainder of the projection horizon, with GDP growth projected to stand at 2.4% in 2023 and 2.5% in 2024 (see Figure 1).

Economic growth will remain broadly based over the projection horizon. This year it will be largely driven by domestic demand, primarily private consumption, although investment will also increase. The government sector will significantly strengthen its investment activity, on account of the electoral cycle and the utilisation of EU funding.

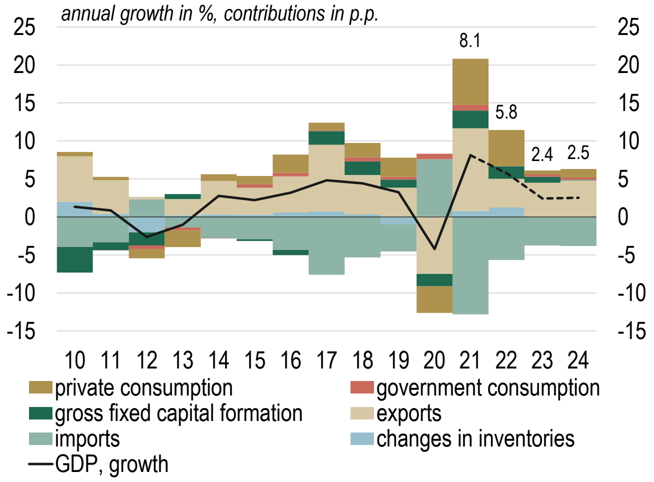
Economic activity will also continue to be supported by exports, which are being curtailed by the ongoing disruptions to supply chains, in recent months further exacerbated by the war in Ukraine. With strong domestic demand, the import growth is projected to outpace export growth, which will result in a negative contribution of net trade to economic growth in this year. This is also reflected in a narrowing of the current account surplus.

The stabilisation of the situation in the international environment means that export activity is expected to strengthen over the course of the next year. The importance of domestic demand to this year's GDP growth is also reflected in the alternative decomposition of economic growth that illustrates the contributions of demand components after eliminating their import shares.[4] According to the alternative decomposition, the contribution by exports also rises sharply, and in this case accounts for approximately a third of this year's projected economic growth (see Figure 1).

[4] More detailed analysis of the import shares of GDP components in Slovenia was presented in Box 2 (page 14) of the December 2019 issue of Macroeconomic Projections for Slovenia, and will also be provided in an upcoming Banka Slovenije Discussion Paper.

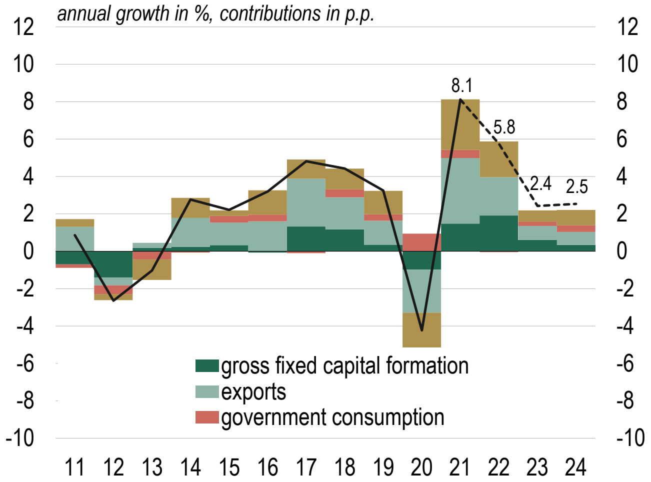
Figure 1: **Decomposition of GDP growth**

Projection of expenditure components' contributions to real GDP growth



Note: Due to rounding, sums of components may differ from aggregate values.
Source: SORS, Banka Slovenije projections.

Projection of expenditure components' contributions to real GDP growth (alternative method)



Note: Due to rounding, sums of components may differ from agregate values.
Source: SORS, Banka Slovenije projections.

Private consumption will remain the key driver of domestic demand this year, and, following the relaxation of the containment measures, will continue to be supported by the labour market situation and by savings built up during the pandemic, which will mitigate the decline in purchasing power over the short term.

Private consumption rose sharply last year following the relaxation of the containment measures, and was well above its level of 2019. Growth remained favourable in the first quarter of this year, which had a positive influence on the projection for this year's growth in private consumption. Current growth in consumption is expected to gradually slow over the remainder of the year, as a result of rising prices and increasing caution due to the growing uncertainty, which mostly comes from the external environment. Growth in private consumption is projected at almost 9% this year (see Figure 2), in which the carry-over effect is responsible for 8 percentage points, and the remainder consists of growth within the year.[5]

The measures that sharply limited spending opportunities after the outbreak of the pandemic owing to the unavailability of many goods and services also led to a rise in the household savings ratio, which was well above long-term average over the two previous years, 2020 in particular. The built-up savings and the various fiscal policy measures that maintained purchasing power during the pandemic are also allowing for encouraging growth in private consumption during a period of higher consumer price inflation.

The favourable growth in private consumption is also being supported by the situation on the labour market, where employment and wages are both expected to rise. While all the aforementioned factors will also mitigate the impact of rising inflationary pressures on aggregate growth in private consumption, we expect for the impact of the rising prices and uncertainty to vary greatly between different types of household. The impact will depend on the structure of consumption and income, which differ mainly

[5] In contrast to 2021, when growth within the year contributed more than 12 percentage points to the growth of almost 12% amid a slightly negative carry-over from 2020.

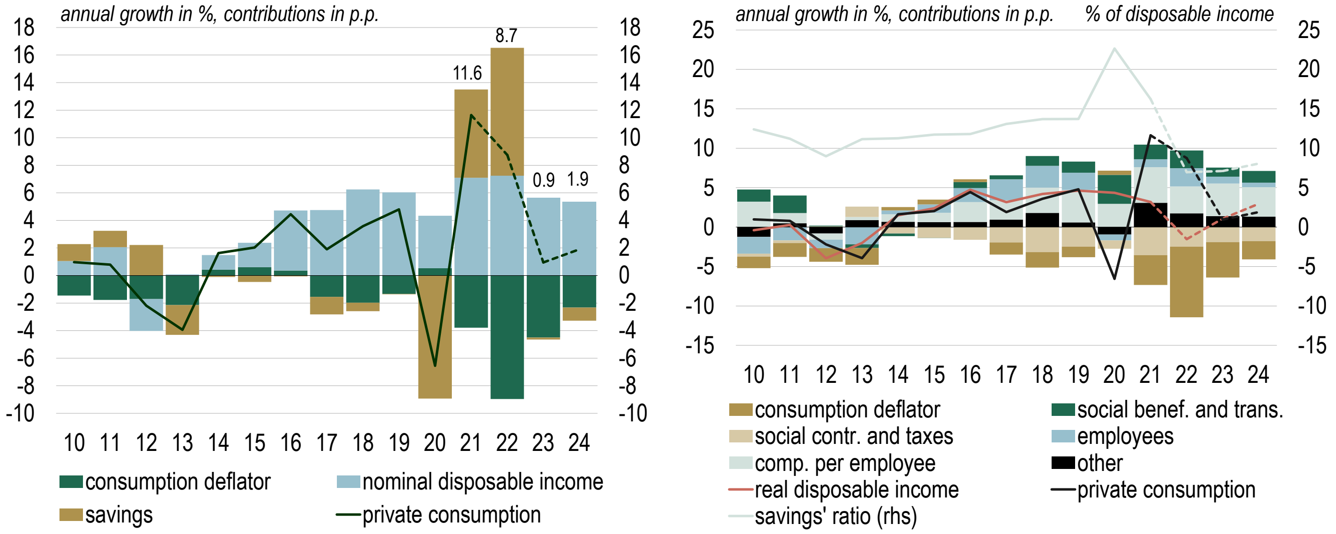
with regard to the age and income bracket of consumers. The fiscal policy support measures during the pandemic and the measures to alleviate the impact of higher energy prices have thus made a significant contribution to maintaining purchasing power, particularly among the most vulnerable population groups.[6]

In the wake of the gradual decline in inflation, our expectation is that the household savings ratio will stabilise at around 8% over the following years, below its long-term average, while private consumption will mainly be driven by growth in disposable income amid the anticipated real growth in wages (see Figure 2).

Figure 2: **Breakdown of growth in private consumption and disposable income**

Projection of components' contribution to private consumption growth

Projection of growth in private consumption, disposable income and households' savings ratio



Source: SORS, Banka Slovenije calculations and projections.

Source: SORS, Banka Slovenije calculations and projections.

Projected aggregate growth in gross fixed capital formation for this year and the next will be driven by private investment and government investment alike.

Private investment will be a significant factor in domestic demand throughout the projection horizon. The increased uncertainty and lower growth in foreign demand will slightly slow corporate investment activity over the remainder of this year. Our expectation is that firms will also be more cautious in committing themselves to new investment because of the rising costs related to the situation in Ukraine, the labour shortages, and the supply chains bottlenecks, which are continuing to curtail supply and increase the prices of capital goods and materials. In addition to the aforementioned factors, this year and the next, corporate investment activity will also be held back by the less favourable financing conditions in line with the expectations of the gradual tightening of monetary policy.

Growth in private investment will be relatively high this year, at 4.5%, on the basis of solid growth in the first quarter. Given the projected gradual slowdown over the remainder of this year and the first half of next year, we expect growth in private investment

[6] Detailed analysis of prices in the consumer baskets of households according to their income bracket was given in the special topic (page 74) of the October 2021 issue of Economic and Financial Developments. The patterns and factors of household savings ratio were analysed in the December 2020 issue of the Macroeconomic Projections for Slovenia (pages 16 to 19).

to decline to 2.4% in 2023. With the gradual stabilisation of the international situation and the anticipated easing of supply chain disruptions, we expect growth in private investment to rise again in 2024 to 4.0%, and to fully support aggregate growth in gross fixed capital formation (see Figure 3).

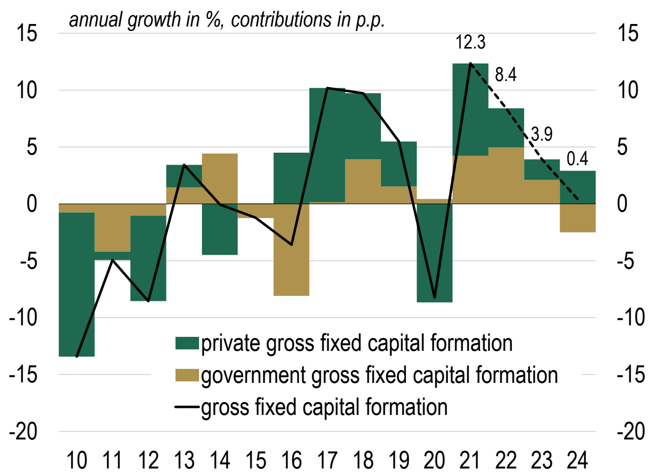
Growth in private investment will also be supported by residential construction throughout the projection horizon. The shortage of newly-built housing, particularly in urban centres, their surroundings and the main tourist destinations, which is evidenced in the high average prices of real estate of this type, will remain a significant driver of growth in housing investment.

Government investment will account for more than a half of aggregate investment in gross fixed capital formation this year and the next, but its contribution will turn negative by the end of the projection horizon as certain EU schemes come to an end. The expectation is for the government investment cycle to remain at a high level this year, making use of domestic funds and EU funds, including the NGEU instrument. Utilisation of the NGEU funding will gradually increase, but the expiration of the previous European financial framework and certain other funds (e.g. React EU) will lead to a decline in government investment in 2024 (see Figure 3).

It should also be noted that the increase in wealth of the Western Slovenia region means that a higher level of domestic co-financing of projects will be required under the new EU financial framework. Growth in government investment will also be affected by certain major domestic projects, such as the construction of the Divača-Koper railway line to double track, and the electoral cycle. Government investment will remain high throughout the projection horizon, at between 5% and 6% of GDP. There are significant risks to the projections in the area of government investment, including those related to the usual delays in investment projects, and the likely decline in available grants from the NGEU as a result of the final allocation of funding across EU Member States.[7]

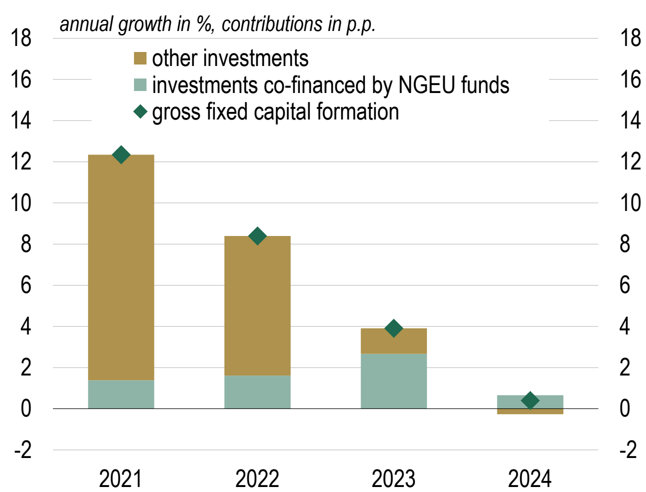
Figure 3: **Breakdown of growth in gross fixed capital formation, and estimated impact of the NGEU instrument**

Projection of components' contributions to gross fixed capital formation growth



Note: Due to rounding, sums of components may differ from aggregate values.
Source: SORS, Banka Slovenije projections.

Contribution of investments co-financed by NGEU funds in 2021-2024 to total projected investment growth



Note: Due to rounding, sums of components may differ from aggregate values.
Source: SORS, MF, SVRK, Banka Slovenije estimations and projections.

[7] Grants under the recovery and resilience facility were allocated to EU Member States on the basis of population, the inverse of per capita GDP, and the average unemployment rate over the five years before the pandemic, all in relation to the EU average. In the middle of this year, 30% of the funding will be reallocated, with the unemployment rate being replaced among the aforementioned indicators by the change in GDP in 2020 and 2021. Because Slovenia's GDP growth over both years was above the EU average, we can expect to a see a reduction in the allocated funding (see link).

Growth in government consumption will slow this year, primarily as a result of reduced expenditure to mitigate the impact of the pandemic, but will rise again to around 2% over the remainder of the projection horizon.

In contrast to government investment, final government consumption will slow profoundly this year following two years of above-average growth; last year's realized growth rate exceeded the projection by almost 2 percentage points. The higher realisation was primarily attributable to intermediate consumption and social transfers in kind, partly on account of expenditure related to the pandemic, such as testing and vaccinations. As a result of the higher past realisation, and the reduction of expenditure related to the pandemic, growth in government consumption is expected to be much lower this year (0.2%). The long-term care act adopted in December of last year begins implementation in 2023, and the planned changes will require more general government expenditure.[8] With the enactment of long-term care, growth in government consumption will rise again to around 2% over the remainder of the projection horizon.

According to current projections, expenditure on employees in the government sector will be lower this year than last year, given that the pandemic-related bonuses are no longer available. Employee compensation is expected to rise again over the next two years, in part as a result of a rise in the number of employees. Employment in the government sector rose by 1.6% last year, and, over the entire projection horizon, is expected to grow at a higher rate than previously foreseen. The revision to the projections is based on current developments, the needs in connection with the introduction of long-term care, and the change in standards and norms in social care services, which are expected to be gradually put in place by 2030.

Export activity remains a significant factor in economic growth, despite the difficulties in the international environment.

The war in Ukraine and the strategy for handling the pandemic in China are exacerbating the disruptions to supply chains, which is evidenced in lower growth in foreign demand for Slovenian goods and services, and lower projections for export growth. The pressure on export activity will in this year be mitigated in part by services trade, which is being reflected in a rise in the number of foreign tourist arrivals and overnight stays, and in transport services. While the deterioration in the international environment is curtailing export growth, strong domestic demand is driving import growth, which is reflected in a current account deficit. This is also attributable to a deterioration in the terms of trade, with firms unable to fully pass high import costs through into their own export prices.

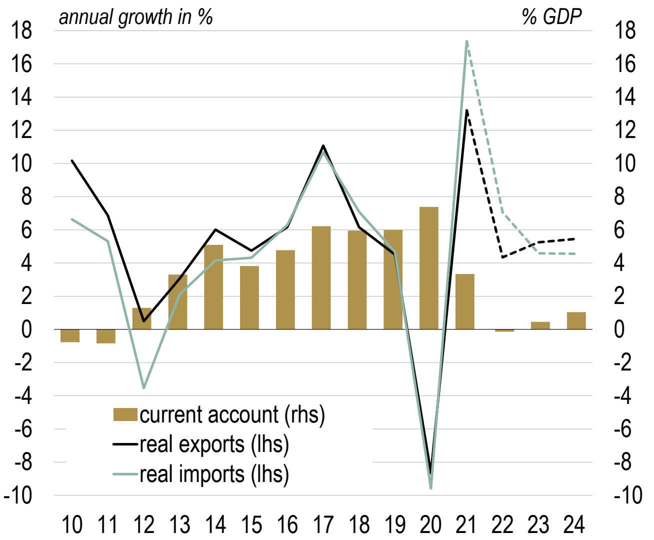
The current account will be in deficit this year for the first time in over a decade, and is expected to only gradually improve over the next two years: by the end of the projection horizon it will be in surplus in the amount of 1% of GDP, almost 5 percentage points less than in 2019 (see Figure 4). Because domestic demand, and thus imports of goods and services, are growing faster than foreign demand and exports, the expectation is that net trade will again make a negative contribution to growth this year, despite the still-solid growth in exports (see Figure 4). Export growth will average approximately

[8] An analysis of the long-term care act can be found in Box 8.1 of the January 2022 issue of Economic and Financial Developments.

5% over the projection horizon, while import growth will be approximately 0.5 percentage points higher.

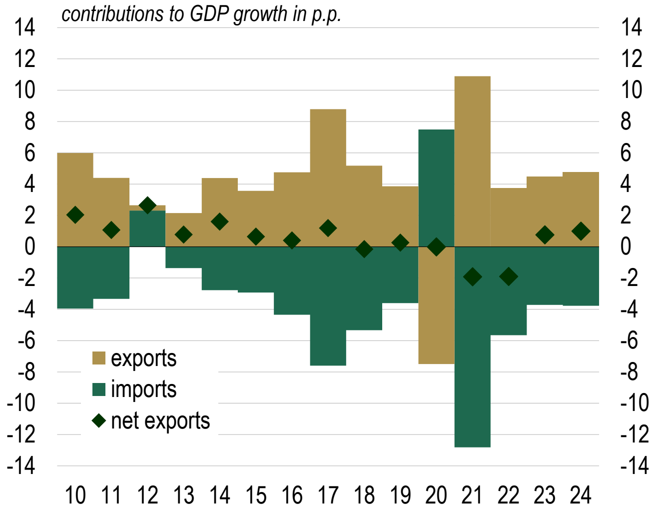
Figure 4: **Imports, exports and current account balance**

Current account, real exports and imports projections



Source: SORS, Banka Slovenije projections.

Projection of net exports' contributions to GDP growth



Note: Due to rounding, sums of components may differ from aggregate values.
Source: SORS, Banka Slovenije projections.

Compared with the December projections, the projection for this year's economic growth is 1.8 percentage points higher, while the projection for 2023 is 0.9 percentage points lower. The GDP growth projection for 2024 remains unchanged.

Economic growth in the final quarter of last year was higher than projected in the December projections, and this has been reflected in a significant contribution of the carry-over effect in this year's economic growth.[9] The carry-over effect is responsible for 5.1 percentage points of this year's GDP growth projection, approximately 4 percentage points more than set forth in the December projections. Conversely, the current projections envisage a significant downward revision in contribution of the within-year growth, which stands at 0.8 percentage points, down 2.2 percentage points on the December projections. The downward revision in the within-year growth resembles the deteriorated situation in the international environment and associated revisions to the external assumptions.

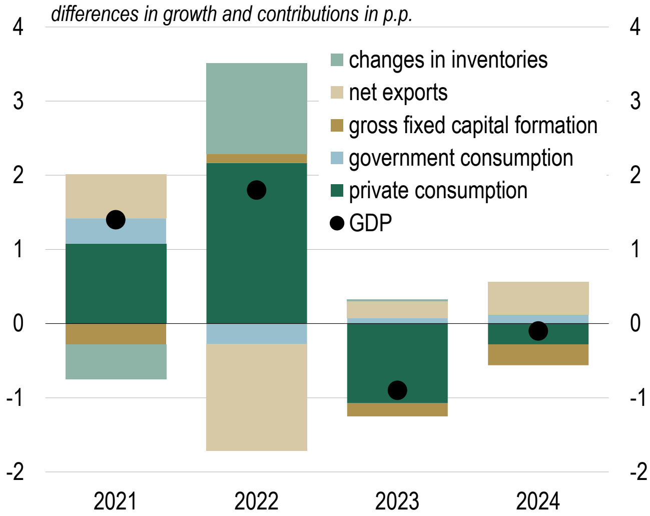
The most pronounced adverse effect from these factors is expected in the second half of this year and in the early part of next year, which is consequently reflected in a smaller carry-over effect and a reduction in the projected within-year growth in 2023. Compared to the December projections the GDP growth in 2023 is thus reduced by 0.9 percentage points. In the wake of a gradual stabilisation of the international situation and the easing of disruptions to supply chains, the projections for 2024 remain mostly unchanged relative to the previous projections.

[9] Details of the carry-over effect in this year's economic growth are examined in Special Topic 1.

The largest change in this year's projections for individual GDP components was in private consumption growth, which is approximately 4 percentage points higher compared with the December projections. Similarly to the revision to the projected GDP growth, the revision to growth in private consumption comes from a strong carry-over effect, while the projection for growth during the current year has been revised significantly downwards compared with December. By contrast, the carry-over effect in gross fixed capital formation has been revised downwards since the December projections, but growth within the current year is expected to be higher, primarily on the basis of strong growth in the first quarter of this year. Growth in gross fixed capital formation during this year will mainly be driven by government investment. Growth in exports was the sole component to see its projection revised downwards from the December projections, primarily on account of the decline in foreign demand caused by geopolitical tensions.

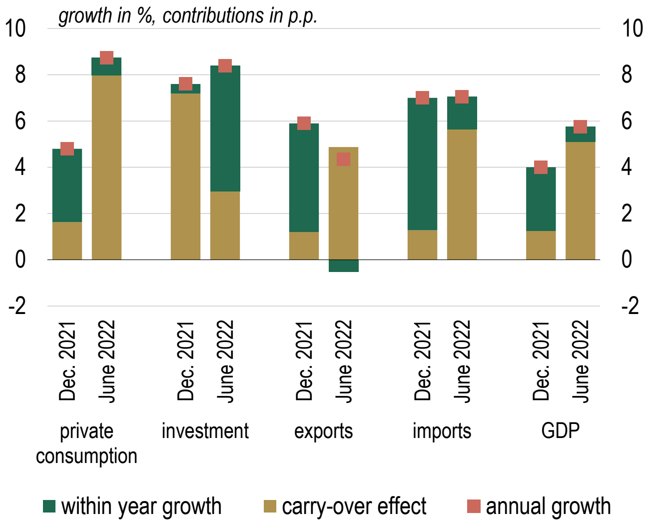
Figure 5: **Revisions to the GDP growth projections**

Revision to GDP growth projections by components



Note: Due to rounding, sums of components may differ from aggregate values.
Source: SORS, Banka Slovenije projections.

Decomposition of annual GDP growth and selected subcomponents in 2022



Source: SORS, Banka Slovenije calculations and projections.

The baseline economic growth projections are accompanied by various risks, which could radically alter the situation at home and in major trading partners.

The most significant risk to the economic growth projections comes from the situation in Ukraine, which could have a profound impact on developments in international trade and in global production chains. These had already suffered under the pandemic, when bottlenecks were caused in particular by factors on the supply side, which was unable to track the increase in demand following the release of pent up demand from the time of (partial) lockdowns and unavailability of goods. The war in Ukraine and the various sanctions put in place against Russia are increasing the uncertainty in supply chains. This is particularly true of manufacturing segments that are heavily dependent on Russian energy and other raw materials. Given the extremely high risks in connection with the further course of the war in Ukraine, this publication devotes a special section to a severe scenario that includes a deterioration in the situation in Ukraine and the escalation of sanctions, including a total ban on Russian energy imports to the EU.

Another significant risk factor is the strengthened inflationary pressures, which should they persist, they might pass through more strongly into inflation expectations. The latter could also give rise to a wage-inflation spiral, which would hit the real sector via pressure on corporate performance and household purchasing power.

Additional risks to the economic growth projections stem from possible new outbreaks of the pandemic, and the ongoing period of uncertainty in connection with fiscal policy measures.

Potential revisions to the current national accounts figures, when additional data becomes available, might be another factor in subsequent revisions to the projections. Revisions to this data could alter the size of the carry-over effect, which is responsible for more than 5 percentage points of this year's economic growth projection according to current calculations.

2.2 Labour market

Employment growth will be high this year, but will slow over the following years in line with the economic growth projections.

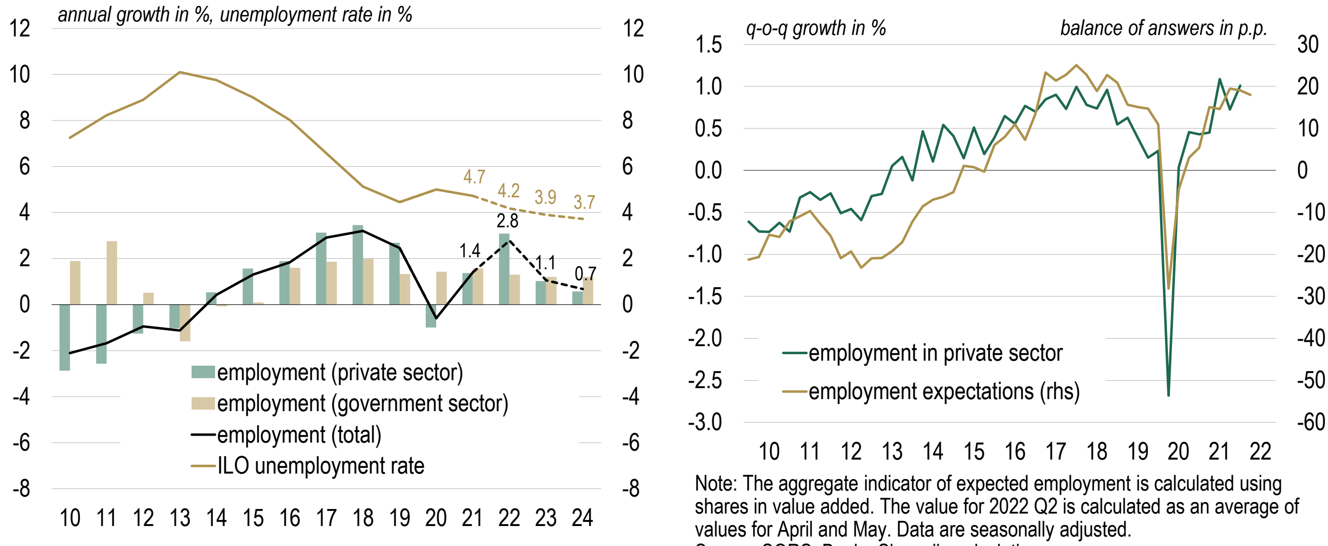
Year-on-year employment growth increased to 3.3% in the first quarter of this year, up just over 0.5 percentage points on the final quarter of last year. Our assessment is that employment growth will slow slightly by the end of the year, in the wake of a slowdown in economic growth and growing labour shortages. At 2.8% it will be just over 1 percentage point higher than projection in the December projections, with stronger hiring in the private sector (see Figure 6). As a result of a year-on-year fall in the number of employees included in job preservation measures, growth in the number of hours worked will outpace employment growth this year.

The upward revision to employment growth is primarily attributable to developments in the first quarter of this year, and the persistence of high demand for labour, which is evidenced in the record number of notified vacancies and strong employment expectations. Survey data from the SORS and the Employment Service suggests that employers will continue hiring in the second half of this year (see Figure 6), with employment expectations being highest in labour-intensive sectors, most notably construction, administrative and support service activities, which includes employment activities, and accommodation and food service activities. According to the Employment Service survey, the occupations most in demand in the second half of the year will again be those where employers are already finding it difficult to hire qualified people. Against the backdrop of widening mismatches between supply and demand in the domestic labour market and a more pronounced moderation in economic activity, employment growth will slow more rapidly by the end of the projection horizon than expected in the Banka Slovenije December projections.

Figure 6: **Current developments and outlook for employment and unemployment**

Employment and unemployment

Short-term employment growth prospects in private sector activities



Source: SORS, Banka Slovenije projections.

Note: The aggregate indicator of expected employment is calculated using shares in value added. The value for 2022 Q2 is calculated as an average of values for April and May. Data are seasonally adjusted.
Source: SORS, Banka Slovenije calculations.

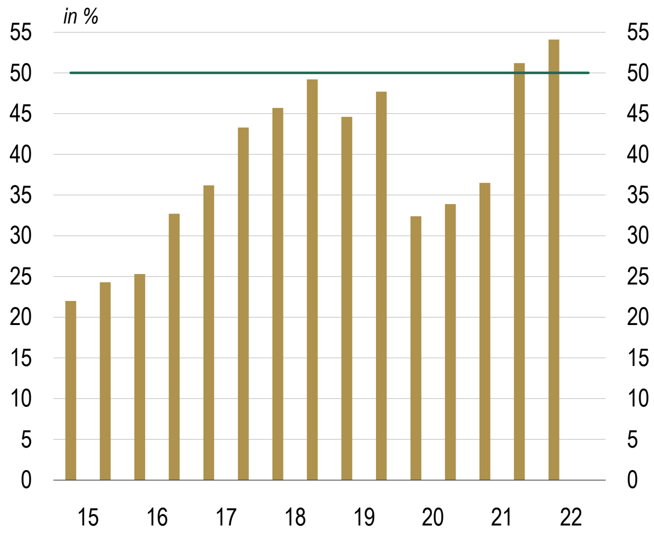
Employment growth over the projection horizon will mostly be driven by the hiring of foreign workers.

According to our projections, unemployment will continue to fall over the entire projection horizon, with the surveyed unemployment rate already at a record low this year, and falling below 4.0% in 2023 and 2024. The current projections for surveyed unemployment rate do not differ significantly from the December projections: the expectation is that the fall in unemployment will be limited by structural unemployment, where difficult-to-employ groups are increasingly prevalent. As the pool of available labour on the domestic labour market empties, more and more employers are facing difficulties with recruitment. According to the Employment Service survey, in the first half of this year more than half of all employers were already having difficulties with shortages of qualified workers, large enterprises in particular (see Figure 7).

Adverse demographic developments are another factor in the shortages on the domestic labour market. Eurostat's latest demographic projections for Slovenia (Europop2019) suggest a fall in the population aged between 20 and 64 over the projection horizon, even under a scenario of increased immigration. Employment growth will largely be driven by the continued hiring of foreign nationals, who accounted for more than half of March's year-on-year increase in the persons in employment excluding self-employed farmers (see Figure 7), and only to a lesser extent by a fall in unemployment and by previously inactive people joining the labour force.

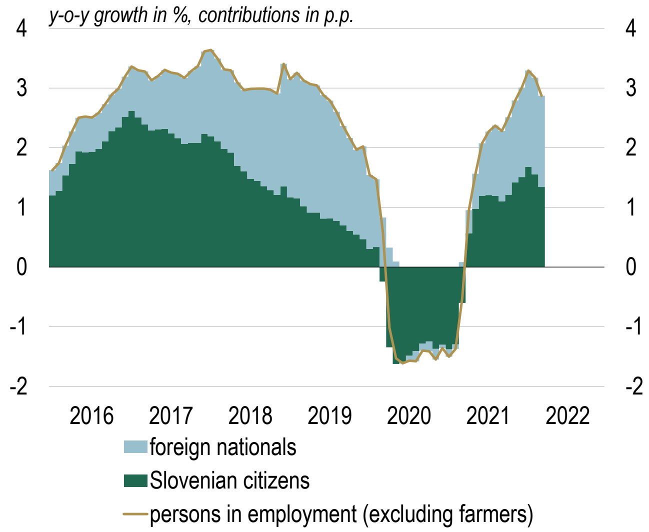
Figure 7: **Imbalances between supply and demand on the labour market**

Share of employers facing shortage of skilled workers



Source: Employment Service of Slovenia (Employment Preview 2022/I), Banka Slovenije calculations.

Persons in employment (excluding farmers) by groups of citizenship



Source: SORS, Banka Slovenije calculations.

Wage growth will average 4.5% over the projection horizon, and in the private sector will be driven this year by the strong economy, inflation, and the growing imbalances between supply and demand on the labour market.[10]

In addition to the aforementioned factors, measures put in place during the pandemic will continue having a significant impact on wage developments this year. The technical year-on-year effect of the job preservation measures will be positive this year in the private sector, as employees who were included in such measures last year will have higher earnings this year under their ordinary workloads.[11] Conversely, this year's aggregate wage growth will be slowed by the year-on-year effect of the ending of pandemic-related bonuses in the government sector, for which reason year-on-year wage growth will be lower than last year (see Figure 8).

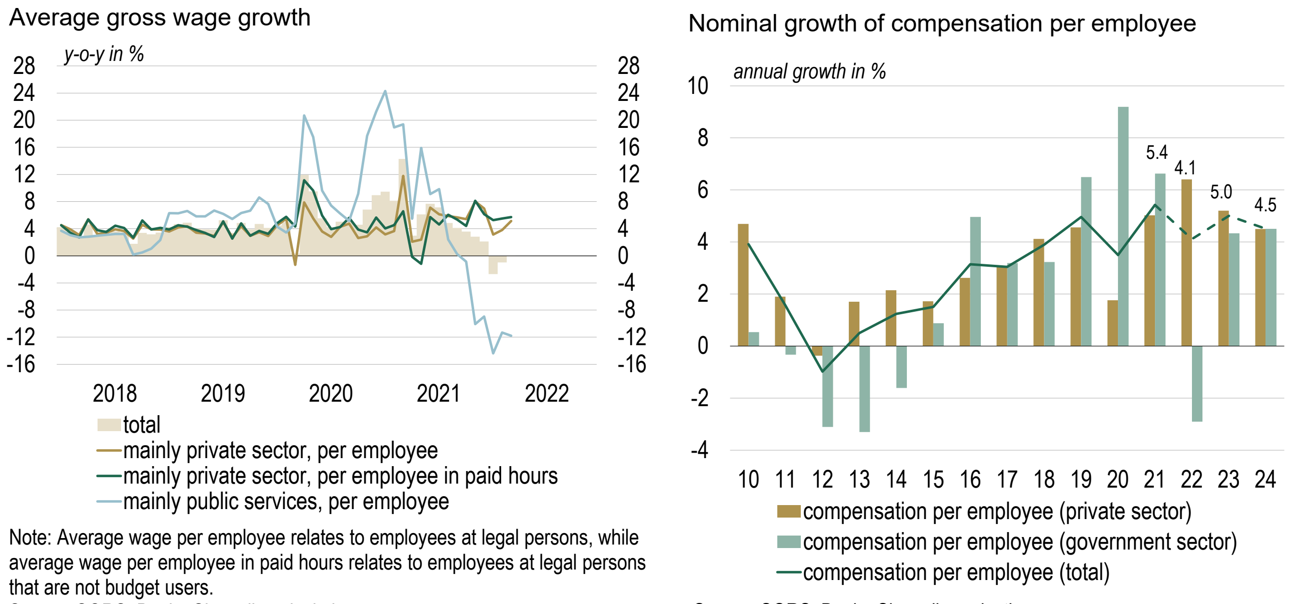
Wage growth over the remainder of the projection horizon will mainly be driven by the growing labour shortage, which will strengthen workers' bargaining power, and elevated inflation. The latter will also drive up the minimum wage, which has risen by 4.9% this year, and given the inflation projection a significant rise is also expected next year.[12] Wage growth over the entire projection horizon has been revised upwards compared with the December projections, primarily on account of higher consumer price inflation and the growing imbalances between supply and demand on the labour market (see Figure 7).

[10] The projection for wage growth relates to average compensation of employees per employee based on the national accounts definition.

[11] A detailed description of the impact of the measures to alleviate the impact of the pandemic on the labour market projections is given in Box 6 of the June 2020 Macroeconomic Projections for Slovenia.

[12] Under the Minimum Wage Act, the minimum wage is adjusted at least once a year with regard to consumer price inflation, wage developments, the state of the economy, and employment developments, where the data used for the adjustment is the year-on-year growth in consumer prices in December of the previous year. The adjustment is based on the CPI, which differs slightly from the HICP, which is otherwise projected at Banka Slovenije. This year's rise in the minimum wage was in line with the December projections.

Figure 8: **Nominal growth in compensation per employee**



Note: Average wage per employee relates to employees at legal persons, while average wage per employee in paid hours relates to employees at legal persons that are not budget users.
Source: SORS, Banka Slovenije calculations.

Source: SORS, Banka Slovenije projections.

Among the labour market projection, the risks are more pronounced for wage developments.

In line with the downside risks from the external environment, increased disruption to supply chains, falling foreign demand and the resulting decline in domestic economic growth might reduce demand for labour. This would reduce the upward pressure on wages. Employment growth would also be reduced by greater structural imbalances on the labour market caused by faster emptying of the pool of available labour, both at home and across the wider region. Conversely, the majority of domestic inflation expectations are on the upside, which could strengthen the pass-through of inflation into wage growth and raise the demands for higher wages from workers and trade unions.

2.3 Inflation

Inflation will remain elevated for the remainder of this year, averaging 9.0% over the year.

Consumer prices as measured by the HICP were up 8.7% in year-on-year terms in May. The high inflation is being driven by all price categories, although energy price inflation remained the key factor. While energy price inflation was mainly driven last year and in the early part of this year by imbalances between supply and demand as economies were gradually opened and pandemic measures were lifted, the current high level of energy prices will be maintained over the remainder of the year by geopolitical tensions and uncertainty with regard to supply.

High energy prices will remain the main factor this year, but inflation is also expected to become more broadly based. This is attributable to the pass-through of high energy prices into other price categories, and more pronounced domestic price pressures. The latter relate to the strong economy, rising labour costs, and the increasing pass-through of current inflation into long-term inflation expectations. Our projection is that inflation will average 9.0% this year (see Figure 9).

Table 3: **Inflation projections**

	2017	2018	2019	2020	2021	**2022** June	**2022** Δ	**2023** June	**2023** Δ	**2024** June	**2024** Δ
			average y-o-y growth in %								
Consumer prices (HICP)	1.6	1.9	1.7	-0.3	2.0	**9.0**	5.2	**4.5**	2.7	**2.3**	0.3
food	2.2	2.4	1.6	2.8	0.7	**9.3**	5.7	**5.4**	2.7	**3.1**	0.4
energy	4.7	6.0	0.8	-10.8	11.3	**30.2**	20.4	**9.5**	10.3	**-0.8**	-0.3
non-energy industrial goods	-0.7	-0.8	0.3	-0.5	1.3	**5.1**	3.0	**1.6**	1.2	**0.8**	0.3
services	1.8	2.4	3.1	1.8	0.6	**4.4**	1.3	**4.0**	0.7	**4.5**	0.8
Core inflation indicators (HICP)											
excluding energy	1.1	1.4	1.8	1.3	0.8	**5.9**	3.0	**3.5**	1.4	**2.8**	0.5
excluding energy and unprocessed food	0.9	1.1	1.8	1.0	1.0	**5.5**	2.8	**3.2**	1.3	**2.7**	0.5
excluding energy and food	0.7	1.0	1.9	0.8	0.9	**4.7**	2.1	**2.8**	0.9	**2.7**	0.5

Note: Δ: difference between the current projections and the projections from the December 2021 issue of Macroeconomic Projections for Slovenia.
Sources: SORS, Eurostat, Banka Slovenije projections.

Inflation is expected to gradually slow over the remainder of the projection horizon, primarily as a result of declines in the contributions by energy prices and prices of non-energy industrial goods. Inflation will nevertheless exceed its 2% target at the end of the projection horizon.

The current state of energy futures markets, on which the technical assumptions are based, suggests a gradual fall in oil, gas and electricity prices in 2023 (see Figure 9). The projections rely to a great extent on expectations of the gradual stabilisation of the international situation. Despite the projected gradual slowdown in energy prices, their contribution to headline inflation is expected to be significantly smaller next year but to remain positive, thanks to a base effect from last year's government measures to mitigate energy price inflation for households.[13]

In addition to the smaller contribution to headline inflation by energy prices, next year there will also be a decline in the contribution by prices of non-energy industrial goods as a result of the anticipated waning of bottlenecks in global supply chains. At the same time the expectation is for a gradual slowdown in demand for durables and semi-durables in line with the projection developments in economic activity.

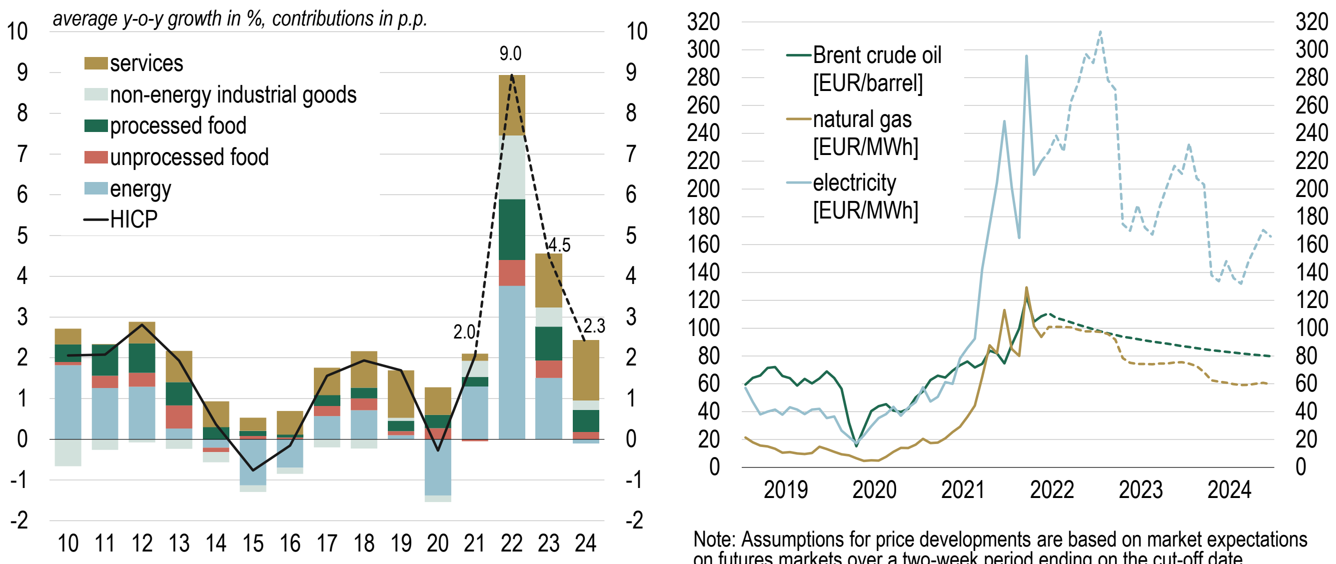
In the wake of the anticipated decline in growth in energy prices and prices of non-energy industrial goods, the dominant factors in inflation in 2023 will be services prices and food prices. Their growth will be driven by the projected wage growth, and will keep headline inflation at 4.5% (see Figure 9). Services price inflation will remain the main driver of inflation in 2024, when it is projected to gradually slow and stabilise at 2.3%. The anticipated slowdown is attributable to base effects and the gradual slowdown in the economy.

[13] As the inflation is measured as the year-on-year rate of growth in prices, temporary fiscal measures during a given period affect measured inflation 12 months later. This year's government measures are reducing the current level of energy prices, and will hence contribute to higher measured inflation in 12 months' time because of a low base effect.

Figure 9: **Inflation projections and assumptions for energy prices**

Projection of contributions to inflation by components

Wholesale energy prices



Source: SORS, Eurostat, Banka Slovenije projections.

Note: Assumptions for price developments are based on market expectations on futures markets over a two-week period ending on the cut-off date.
Source: ECB.

The projected developments in this year's inflation capture the effect of the government measures to mitigate energy price inflation.

The government measures, which in previous months included cuts in excise duties, exemption from certain contributions for electricity, and regulation of fuel prices,[14] had prevented an additional rise in headline inflation in the amount of approximately 2 percentage points by May. As these measures are gradually lifted, the expectation is that year-on-year energy price inflation will rise, before slowing slightly towards the end of the year on the basis of the projected developments in oil prices, which should stabilise at around USD 100 per barrel by the end of the year. Energy prices will nevertheless remain elevated, particularly on account of rises in gas and electricity prices. The aforementioned base effect will also contribute to higher energy price inflation in the first half of next year. Energy prices will rise by 9.5% in 2023, before falling by 0.8% in 2024.

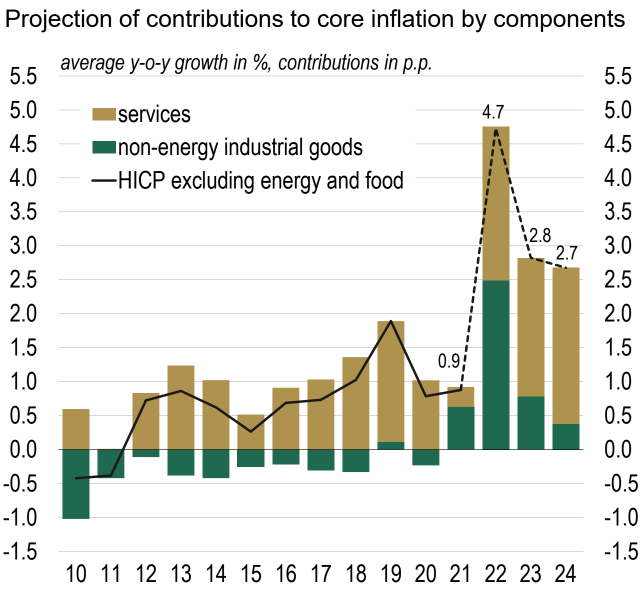
Inflation excluding energy and food will reach 4.7% this year, before slowing to below 3.0% over the remainder of the projection horizon.

This year's core inflation (see Figure 10) is being strengthened in particular by supply-side factors, in particular a shortage of primary goods and intermediate products, and shortages of qualified labour. Core inflation is being driven by growth in services prices as well as prices of non-energy industrial goods. The latter are projected to exceed 5% this year, before slowing to 1.6% next year as the bottlenecks in global supply chains gradually ease and amid downward base effects. Core inflation will nevertheless stand at 2.8%, driven primarily by services price inflation. Our expectation is that the latter

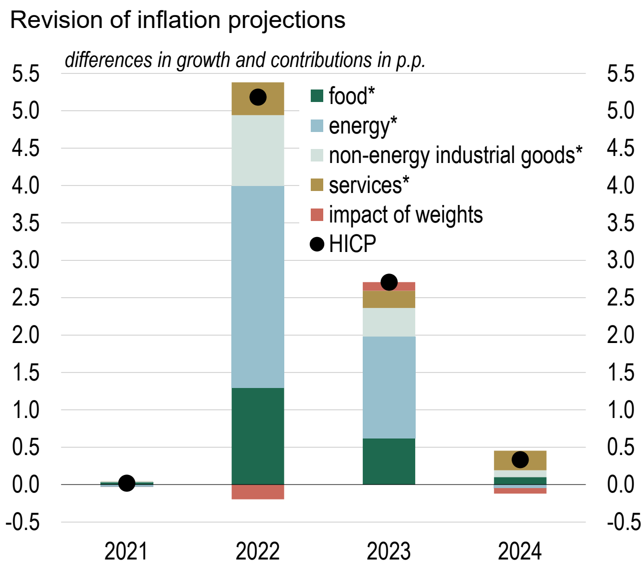
[14] As part of its emergency measures and under the Act on Emergency Measures to Mitigate the Impact of Rising Energy Prices, the government cut excise duties on electricity, heating energy products and motor fuels for the period from 1 February to 30 April 2022. It also put measures in place over the same period to exempt household consumers from paying the contribution for CHP and renewables, and also the network charges for the electricity system. The measure cutting excise duties was extended to 31 July 2022. In addition, the government regulated prices of diesel and petrol between 15 March and 30 April 2022, and opted to do so again on 10 May 2022. The new maximum selling prices are EUR 1.668 for a litre of diesel and EUR 1.560 for a litre of 95-octane petrol.

will average more than 4.0% over the projection horizon, and will be driven above all by the projected wage growth and the strengthened demand for contact-intensive services in the absence of containment measures, which had previously curtailed service activity.

Figure 10: **Core inflation projections and revision to inflation projection**



Source: SORS, Eurostat, Banka Slovenije projections.



Note: * Contribution excluding the impact of updated HICP weights.
Source: SORS, Eurostat, Banka Slovenije projections.

Food price inflation will also be a major driver of headline inflation throughout the projection horizon.

Our expectation is that food price inflation will strengthen further this year, before gradually slowing over the remainder of the projection horizon. This year's high rate is primarily attributable to the pass-through of high energy prices and commodity prices into costs along food production chains. Furthermore, prices of cereals and oil seeds have also been driven up on primary food commodity markets by the war in Ukraine, where the uncertainty related to the size of future Ukrainian harvests and the anticipated logistical issues are further increasing price pressures. Food price inflation will exceed 9% this year, before gradually slowing amid the expected easing of external inflation factors to average 5.4% next year and 3.1% in 2024.

The upward revision to the inflation projection is primarily attributable to higher energy price inflation and food price inflation.

Compared with the December projections, the inflation projections for this year and next year are now higher, on account of stronger energy price inflation and food price inflation than previously envisaged (see Figure 10). This is attributable to the situation on global commodity markets, which has been exacerbated by the war in Ukraine. The revisions to energy price inflation and food price inflation account for 2.7 percentage points and 1.3 percentage points respectively of the change in the headline inflation projection for 2022. As a result of the disruptions to supply chains, which are being deteriorated not only by China's response to the pandemic but also by geopolitical instability, the contribution of non-energy industrial goods' prices is also 0.9 percentage points higher. The remainder of the revision is attributable to an increase of 0.4 percentage points in the services price inflation projection, and a minor downward revision on the basis of changes in weights.

This year's headline inflation projection is thus 5.2 percentage points higher, although it was mitigated by 0.2 percentage points by January's annual change in weights,[15] which affects the comparison between December's and June's projections. The revisions to the projection for 2023 and 2024 are in line with the longer than expected disruptions to supply chains and the higher wage projection. The headline inflation projections for next year and 2024 are 2.7 percentage points and 0.3 percentage points higher than the December projections.

The majority of the risk factors accompanying the current inflation projections are on the upside.

The most notable external risks that might strengthen inflation is the potential for the war in Ukraine to worsen and last longer, along with the deepening of political tensions between Russia and the EU.[16] The expansion of EU sanctions against Russia would further raise wholesale energy prices on global markets and increase the disruption to supply chains, which would hit production processes and contribute to further price rises. Although exposure to Ukraine is low,[17] the impact on the Slovenian economy from the conflict between Russia and Ukraine could increase significantly, as before the outbreak of the war Ukraine was a major supplier on global food markets, cereals in particular, and any decline in its harvests would significantly raise wholesale cereal prices. Major disruption to supply chains could also be caused by a resurgence of the pandemic, which would be reflected in particular in higher growth in prices of non-energy industrial goods.

The main domestic factor relate to the potentially stronger pass-through of wage growth into inflation. Rising imbalances between supply and demand on the labour market might strengthen wage pressures, where in the case of real wage growth significantly outpacing productivity growth could lead to a wage-price spiral.

[15] The impact of change in weights for calculating the HICP on the inflation forecast was examined in Box 3 of the June 2021 Macroeconomic Projections for Slovenia.

[16] The impact of the severe scenario resulting from a longer and more damaging war in Ukraine is examined in Section 3.

[17] Detailed analysis of the Slovenian economy's exposure is presented in the March 2022 issue of the Review of Macroeconomic Developments.

3 Severe Scenario of Economic Projections

The severe scenario, which envisages the intensification of sanctions against Russia, including a total ban on imports of gas and oil, would be reflected in on average 2.4% lower GDP and 1 percentage point higher inflation over the projection horizon compared with the baseline projection.

In light of the pronounced downside risks and significant uncertainty in the international environment, the baseline economic projection is accompanied by an alternative scenario. Compared with the baseline projection, this scenario envisages a prolonged war in Ukraine and additional sanctions against Russia, including a total embargo on Russian energy imports into the EU. The realisation of this scenario would have an adverse impact on the Slovenian and euro area economies, largely as a result of an additional rise in energy and commodity prices, reduced growth in foreign demand, and production cuts amid shortages of intermediate goods and bottlenecks in supply chains. Table 4 summarises the main assumptions of the severe scenario.

A ban on energy imports from Russia would have a pronounced impact on wholesale commodity prices.

A total embargo on Russian energy imports is in the severe scenario expected to manifest in a total disruption of the supply of Russian gas to EU Member States with little opportunity to substitute for it in the first year of the shock, mostly on account of the heightened competition on global markets and the technical limits in connection with alternative supplies, such as LNG. The limited ability to substitute for Russian gas imports could push wholesale gas prices to approximately EUR 300 per MWh by the end of this year, a rise of approximately 200% compared to the assumption in the baseline projections. A gradual rise in capacity for substituting for Russian gas is assumed as of the third quarter of 2023, with a shift to other sources and suppliers, which is expected to lead to a gradual decline in gas prices. These would stabilise over 2024 at close to EUR 130 per MWh, or 120% above the projection price at the end of the projection horizon under the baseline projection.

In contrast to gas, oil imports are envisaged to exhibit higher capacity for substitution with imports from other countries. In this regard, in the severe scenario it is assumed that 10% of the current oil imports from Russia would still reach the EU via non-sanctioning countries outside the EU. The severe scenario envisages a rise in oil prices to USD 170 per barrel by the end of this year, 90% higher than under the baseline projection. Amid a faster switch to other suppliers and sources, oil prices are expected to gradually moderate over the projection horizon, and to stabilise at USD 110 per barrel. In addition to rises in gas and oil prices, export restrictions on cereals and fertilisers also mean that the severe scenario envisages food prices that are approximately 10% higher than in the baseline projection throughout the projection horizon.

Additional sanctions and an embargo on Russian energy imports would also reduce foreign demand for Slovenian exports. Furthermore, the realisation of the severe scenario would not only cause a sharp decline in Russian energy exports, but also a sharp decline in exports of non-energy goods and services, which would exacerbate the disruptions to supply chains. All of this would curtail trade in goods and services not only directly with Russia, but also with other trading partners.

The loss of energy supplies and the worsening disruption to supply chains could also have an adverse impact on import demand from EU trading partners. Exports to EU trading partners and Russia account for more than two-thirds of total foreign demand for Slovenian exports. Under the severe scenario foreign demand would see growth slow to 0.25% this year, and would then fall by 2% in 2023, which represents declines of 2.5 percentage points and 4.5 percentage points in growth relative to the baseline projection.

The severe scenario also envisages a partial decline in output caused by a ban on Russian energy imports.

The estimated impact of the unavailability of Russian energy on produced output in Slovenia follows the analytical frameworks given in Borin et al. (2022)[18] and Bachmann et al. (2022).[19] The two aforementioned studies define output as a function of two classes of input production factors, energy and non-energy, with a constant elasticity of substitution between them (CES).[20] As illustrated in Borin et al. (2022), the impact of a change in the availability of energy products on output can be given an approximation of the second-order CES production function:

$$\Delta logY \approx \alpha \Delta logE + 0.5\left(1-\frac{1}{\sigma}\right)\alpha(1-\alpha)\Delta logE^2$$

In the above equation Δ*logE* represents the change in the quantity (loss) of energy products in output caused by a ban on Russian imports, and reflects the Slovenian economy's exposure to Russian energy imports, which is estimated on the basis of OECD input-output tables. The *α* parameter represents the share of energy production factors in total output, and is also estimated on the basis of OECD input-output tables as the ratio of energy imports to total output.[21] The *σ* parameter reflects the rate of substitution of Russian energy import, where the ability of its substation is assumed to gradually rise over the projection horizon in line with the calibrations following Bachmann et al. (2022).[22]

Alongside the estimated loss of produced output, caused by a ban on Russian energy imports, there is also an assumption of a simultaneous decline in aggregate demand as a result of the unavailability of consumption goods. The rationing of demand is assumed to account for around two-thirds of the decline in production activity. The impact on inflation is estimated by means of Banka Slovenije's quarterly macroeconomic model, and points to two main transmission channels. The first relates to the traditional relationship between inflation and the output gap, which arises as a result of a relatively

[18] Borin, A., Conteduca, F.P., Di Stefano, E., Gunnella, V., Mancini, M. and Panon, L. (2022). *Quantitative assessment of sanctions and related trade disruptions following the Russian invasion of Ukraine*.

[19] Bachmann, R., Baqaee, D., Bayer, C., Kuhn, M., Löschel, A., Moll, B., Peich, A., Pittel, K. and Schularick, M. (2022), *What if? The Economic Effects for Germany of a Stop of Energy Imports from Russia*.

[20]In formal terms, a production function of this type can be described as:

$$Y=\left[\alpha^{\frac{1}{\sigma}}E^{\frac{\sigma-1}{\sigma}}+(1-\alpha)^{\frac{1}{\sigma}}X^{\frac{\sigma-1}{\sigma}}\right]^{\frac{\sigma}{\sigma-1}};$$

where *α* represents the share of energy products in output, and *σ* the rate of substitution between two production factors.

[21] Energy imports refers to total imports in the categories of *hard coal*, *brown coal*, *crude oil* and *natural gas*, *coke* and *refined petroleum products*.

[22] The parameter takes a value of 0.035 between the third quarter of 2022 and the second quarter of 2023, before gradually rising from the third quarter of 2023 to reach 0.125 by the end of projection horizon.

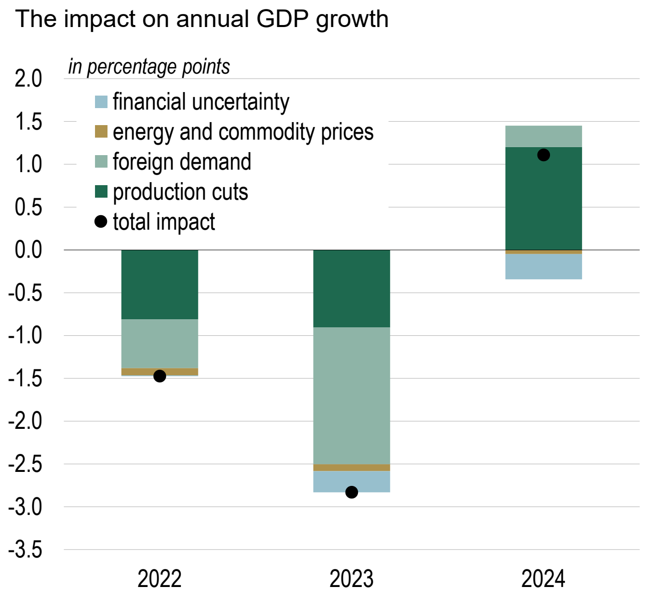
stronger decline in produced output relative to the decline in aggregate demand. The second transmission channel, associated with nominal impact of production cuts, relates to wage pressures that come from the decline in productivity, causing production cuts, that outpaces decline in wages, whose downward adjustment is rigid.[23]

Compared to the baseline projections, under the severe scenario, economic growth in next year would be approximately 3 percentage points lower, while inflation would stand 2 percentage points higher.

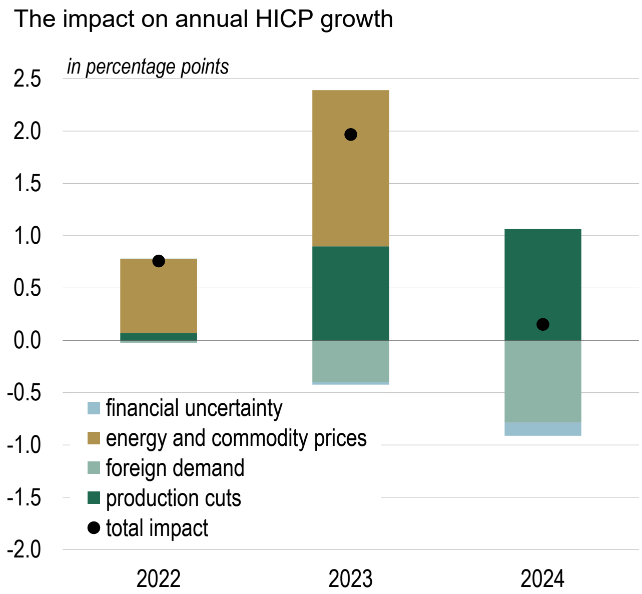
In line with the assumptions and the projected dynamics of the impact on output from the ban of Russian energy imports, the strongest impact on economic activity and consumer price inflation in Slovenia would be expected in the first half of 2023. Despite the assumption of a gradual recovery in the economy in the second half of the projection horizon on account of greater capacity to substitute for Russian energy products, GDP under the severe scenario would remain approximately 2.4% lower in 2024 relative to the baseline projection. Economic growth would be most markedly curtailed in the initial period by production cuts, while the decline in foreign demand would prevent GDP to fully recover the in the remainder of the projection horizon.

Together with the direct impact of higher wholesale energy and commodity prices, the decline in output would also be a factor in driving up headline inflation, which relative to the baseline projection would be 1 percentage point higher this year and 2 percentage points higher in 2023. Gradual stabilization of wholesale energy prices and lower activity are expected to reduce the inflationary pressures in the final year of the horizon. Given the estimated impact, the economic growth projections under the severe scenario are 4.3% for this year, -0.4% for 2023 and 3.6% for 2024. The inflation projections are 9.8% for this year, 6.6% for 2023 and 2.5% for 2024.

Figure 11: **Impact of the severe scenario on baseline macroeconomic projections**



Source: Banka Slovenije projections.



Source: Banka Slovenije projections.

[23] The quarterly macroeconomic model will be presented in a Banka Slovenije Working Paper.

Table 4: **Main factors and assumptions of the severe scenario**

Factor	Assumption
• Additional sanctions against Russia, escalation of political pressures and total ban on Russian energy imports in the EU.	• 100% loss of Russian gas supplies to the EU. • 10% of current imports of Russian oil reach EU markets indirectly via countries that have not imposed sanctions. • 30% loss of food commodity imports from Russia and Ukraine.
• Additional pressure on global wholesale prices of energy and other commodities.	• Wholesale gas prices exceed EUR 300 per MWh in the final quarter of 2022, before gradually falling to EUR 130 per MWh towards the end of the projection horizon (or 120% above the assumption under the baseline projection). • Wholesale oil prices exceed USD 170 per barrel in the final quarter of 2022, before gradually falling to USD 115 per barrel towards the end of the projection horizon (or 40% above the assumption under the baseline projection). • Wholesale prices of commodities used in food production up 12% on the baseline scenario.
• Decline in foreign demand.	• Growth in foreign demand is down 2 percentage points on the baseline projection in 2022 and 4.5 percentage points in 2023, but up 0.5 percentage points in 2024.
• Uncertainty on the financial markets and less favourable financing conditions for banks and the private sector.	• Interest rates on bank loans to non-financial corporations are approximately 80 basis points higher than under the baseline projection in 2023 and 2024, while interest rates on bank loans to households are approximately 70 basis points higher.
• Loss of output caused by the embargo on Russian energy imports.	• Shock to domestic output peaks in the final quarter of 2022 and the first quarter of 2023 with a 3.5% decline in output. • Output gradually adjusts from the second quarter of 2023, and substitution for Russian energy products increases. • Two-thirds of the decline in output over the projection horizon is caused by limited demand as a result of the unavailability of goods.

4 Comparison Between Institutions

Compared to Banka Slovenije projections, other institutions are projecting much lower economic growth and inflation for Slovenia this year.

Following the Slovenian economy's strong recovery in 2021, the latest GDP growth projections for the 2022 to 2024 period point to a swifter slowdown in the economic activity this year, in particular due to the persistent disruption to supply chains and high energy prices, much of which is attributable to the war in Ukraine. All the institutions are expecting the international economic situation to gradually stabilise over the remainder of the projection horizon, which is also reflected in the GDP growth projections. According to the latest available projections, Banka Slovenije is projecting the highest economic growth in 2022, at 5.8%. This is followed by the OECD and Consensus (4.6% and 4.3% respectively), while the lowest projection for 2022 comes from the EBRD (3.5%). Banka Slovenije's projection is thus 1.7 percentage points higher than the median of all projections for the current year, and is above the upper bound of the other institutions' projection range (see Figure 12).

The highest economic growth projection for next year comes from WIIW, at 3.3%, followed by the CCI (3.2%) and the European Commission (3.1%). Banka Slovenije's projection of 2.4% is below the lower bound of the projection range of other institutions, and 0.6 percentage points lower than the median of all projections for the year in question. Projections for 2024 are available from three institutions only. The IMF is projecting economic growth of 2.9%, the IMAD growth of 2.8% and Banka Slovenije growth of 2.5%.

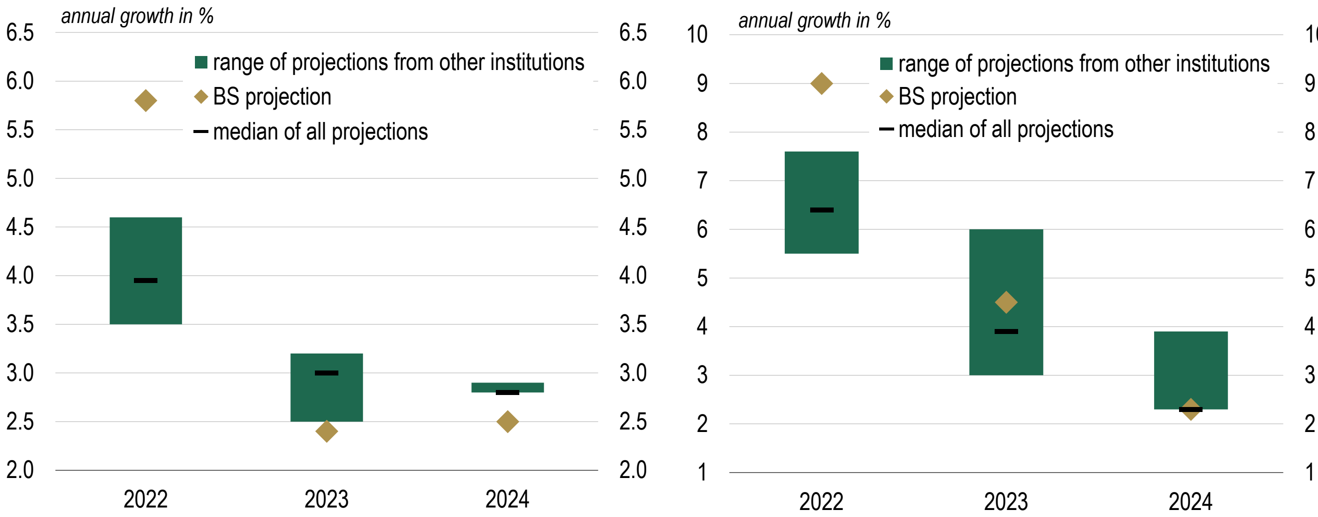
The uncertainty in the international environment is strongly reflected in this year high consumer price inflation. All the institutions are predicting inflation to fall in 2023 and 2024, where annual growth in consumer prices in 2024 is in line with the ECB's updated medium-term strategy. The highest inflation projection for 2022 is 9.0% from Banka Slovenije, while the lowest figure of 4.8% comes from WIIW. Banka Slovenije's projection is thus 2.6 percentage points higher than the median of all projections for the current year, and is above the upper bound of other institutions' projection range (see Figure 12).

The highest inflation projection for the next year of 6.0% was issued by the OECD, 2.4 percentage points above the median of all projections. This is followed by projections of 5.1% by the IMF and 4.5% by Banka Slovenije, while the lowest inflation projection of 1.7% was given by WIIW. Again only three institutions have inflation projections for 2024 available: 3.9% from the IMF, and 2.3% from Banka Slovenije and the IMAD.

Figure 12: **Comparison of GDP and inflation projections between institutions**

Comparison of GDP projections

Comparison of inflation projections



Source: Consensus (May), EBRD (May), European Commission (May), IMF (April), OECD (June), CCIS (May), IMAD (April), WIIW (April), BS (June).

Source: Consensus (May), European Commission (May), IMF (April), OECD (June), CCIS (May), IMAD (April), WIIW (April), BS (June).

A comparison of projection accuracy between the institutions reveals that in all of the observation periods (2001 to 2021, excluding 2008 and 2009, and 2009 to 2021) Banka Slovenije was among the most accurate in projecting growth in economic activity and consumer price inflation.[24]

The accuracy of the real GDP growth and consumer price inflation projections over the 2001 to 2021 period is measured by comparing the observed value with the projections for the variables obtained in past periods.[25] To assess projection accuracy, the following indicators are computed: the mean error (ME), the mean absolute error (MAE), the standard deviation (STDEV), the root mean square error (RMSE) and the standardised root mean square error (SRMSE).[26]

Only four of the institutions in question (Banka Slovenije, the European Commission, the IMF and the IMAD) released projections for the entire observation period, while the majority of the institutions have projections available from 2004 (WIIW since 2008, the OECD since 2009, and the EBRD since 2011). Given the great uncertainty during the early part of the previous economic crisis, the entire observation period excluding 2008 and 2009 and the period of 2009 to 2021 have been additionally included in the analysis. Furthermore, in light of the impact of the outbreak of the pandemic in 2020 and the

[24] Nine institutions that draw up macroeconomic projections for Slovenia are included in the comparative analysis of current projections of real GDP growth and consumer price inflation (eight institutions in the case of the latter), namely Consensus Economics, the European Bank for Reconstruction and Development (EBRD), the European Commission, the analysis unit at the Chamber of Commerce and Industry of Slovenia (CCI), the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), the Institute of Macroeconomic Analysis and Development (IMAD), the Vienna Institute for International Economic Studies (WIIW) and Banka Slovenije. The consumer price inflation projections by the European Commission, the OECD, WIIW and Banka Slovenije relate to inflation as measured by the HICP, while the projections by Consensus, the IMF, the CCI and the IMAD relate to inflation as measured by the CPI.

[25] In the examination of projection accuracy between institutions in the 2001 to 2021 period and in the various sub-periods, the first observed values and projections of variables are compared, whereby the projections selected are those that correspond most closely in terms of time to Banka Slovenije's projections.

[26] For a detailed description of the statistical methods (in Slovene), see Cimperman and Savšek (2014): Accuracy of projections of macroeconomic aggregates for Slovenia.

resulting strong economic recovery in 2021, a paragraph comparing the projection accuracy between institutions in all of the periods in question up to 2020 and including 2020 and 2021 has been included at the end of the current analysis.[27]

In terms of the MAE and RMSE, the most accurate economic growth projections for the 2001 to 2021 period were from Banka Slovenije, the European Commission and the IMAD, while the most accurate inflation projections were provided by Banka Slovenije, the IMAD and the CCI. In the economic growth projecting, MAE ranged from 0.6 to 2.8 over the entire period, while RMSE ranged from 0.8 to 4.1.[28] The institutions were slightly more accurate in their inflation projecting: the aforementioned indicators had narrower ranges, namely 0.2 to 1.1 for MAE and 0.3 to 1.5 for RMSE.

According to the MAE and the RMSE, the most accurate economic growth projections over the entire period excluding 2008 and 2009 were those of the European Commission, Banka Slovenije and the IMAD, while the best inflation projections were by Banka Slovenije, the IMAD and the CCI. Compared to the entire observation period, the economic growth projections during the period in question were slightly more accurate, the exclusion of 2008 and 2009 removed the impact of the major volatility during the previous economic crisis. In the economic growth projecting, MAE ranged from 0.6 to 2.4 over the period in question, while RMSE ranged from 0.8 to 3.0. The inflation projection accuracy remained relatively unchanged.

According to the MAE and RMSE, the European Commission and the CCI produced the most accurate economic growth projections over the 2009 to 2021 period, followed by the OECD, Banka Slovenije and the IMAD, while Banka Slovenije, the European Commission and the IMAD produced the most accurate inflation projections. The accuracy of the economic growth projecting was better than over the entire observation period (2001 to 2021): the intervals in MAE and RMSE narrowed to range from 0.7 to 2.9 for MAE and 0.9 to 3.7 for RMSE. It was a similar case in the assessment of inflation projection accuracy: the intervals in the indicators were narrower than in the entire observation period, at 0.1 to 0.9 for MAE and 0.1 to 1.2 for RMSE.

The errors in the real GDP growth projections increased significantly in 2020 and 2021, while the accuracy of the inflation projections remained relatively unchanged.

A review of the projection accuracy for all the periods in question including 2020 and 2021 reveals the errors in the economic growth projections to be more pronounced as a result of the increased volatility following the outbreak of the pandemic and the resulting strength of the economic recovery in 2021. While the lower bound of the interval for MAE and RMSE was broadly unchanged in the case of the economic growth projection (between 0.1 and 0.3 percentage points, taking into account both indicators and all of the aforementioned periods of comparison of projections between institutions), the upper bound of the aforementioned indicators including 2020 and 2021 was significantly higher (between 0.4 and 0.9 percentage points, taking into account both indicators and all of the aforementioned periods of comparison of projections between institutions). By contrast, the accuracy of the consumer price inflation projections remained similar to that before 2020: the interval for MAE and RMSE was practically unchanged.

[27] Tables of the indicators comparing projection accuracy between the institutions are given in the statistical appendix to the publication.

[28] The spring and autumn projections of the institutions for the current year and next year are taken into account in the values given.

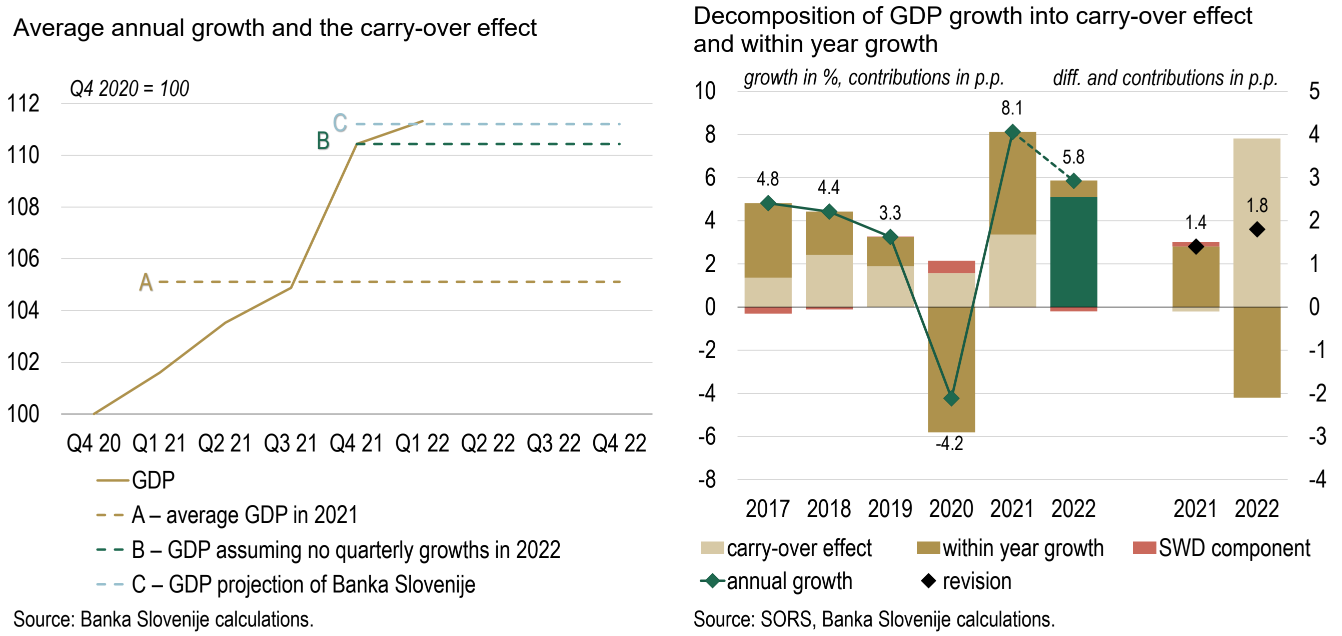
5 Special Topics

5.1 Decomposition of the annual growth projection into the carry-over effect and growth within the current year

The economic projections at the majority of institutions refer to average annual GDP growth. The projection of annual GDP growth, however, relies importantly on information provided by within year quarterly developments in economic activity. The link between average annual GDP growth and the quarterly developments can be defined on the basis of the statistical carry-over of growth from the previous year and growth within the current year (also referred to as within-year growth). The concept of a statistical carry-over can be understood as the annual GDP growth that would prevail at zero quarterly growth rates in this year and at the level of GDP attained at the end of the previous year. Conversely, the within-year growth reflects the contribution of quarterly growth dynamics in the current year to this year's annual GDP growth.

Figure 13 illustrates the decomposition of the GDP growth projection for this year into the carry-over effect and growth within the current year. The solid curve denotes the level of GDP on the basis of currently available seasonally adjusted real quarterly growth rates during the respective year,[29] while line A shows last year's average GDP level. Line B illustrates the average GDP level in 2022 that would apply under the assumption of zero quarterly growth this year, while line C reflects average GDP level consistent with Banka Slovenije's projection of GDP growth in this year. The statistical carry-over effect is defined as the percentage change between the levels shown by lines A and B, while the within-year growth projection is given by the percentage change between the levels shown by lines B and C. The total average annual GDP growth is thus expressed as the percentage change between the levels shown by lines A and C.

Figure 13: **Decomposition of the annual GDP growth projection into a carry-over effect and growth during the current year**



[29] Data for quarterly growth in the first quarter of 2022 was available at the time of writing. The rate stood at 0.8%.

On the basis of Figure 13, the average annual GDP growth in 2022 can be expressed as the following approximation:[30]

$$\Delta GDP_{y,2022} = \underbrace{0.25\Delta GDP_{q2.21} + 0.5\Delta GDP_{q3.21} + 0.75\Delta GDP_{q4.21}}_{Carry-over\ effect} + \cdots$$

$$\underbrace{1\Delta GDP_{q1.22} + 0.75\Delta GDP_{q2.22} + 0.5\Delta GDP_{q3.22} + 0.25\Delta GDP_{q4.22}}_{Growth\ during\ current\ year}$$

As the above equation makes evident, it is growth in the final quarter of the previous year that has the largest impact on the statistical carry-over effect. Intuitively this can be explained by the direct and strongest impact that growth in the final quarter of the previous year has on the initial level of GDP in the current year. The record-high quarterly GDP growth of 5.3% in the final quarter of last year is thus reflected in the current projections in an extremely high carry-over effect in excess of 5 percentage points, which accounts for the majority of the GDP growth projected for this year (see Figure 13). Conversely, the growth within 2022 almost entirely reflects the quarterly growth realised in the first quarter alone, while a slowdown in current economic growth is expected for the remainder of the year.

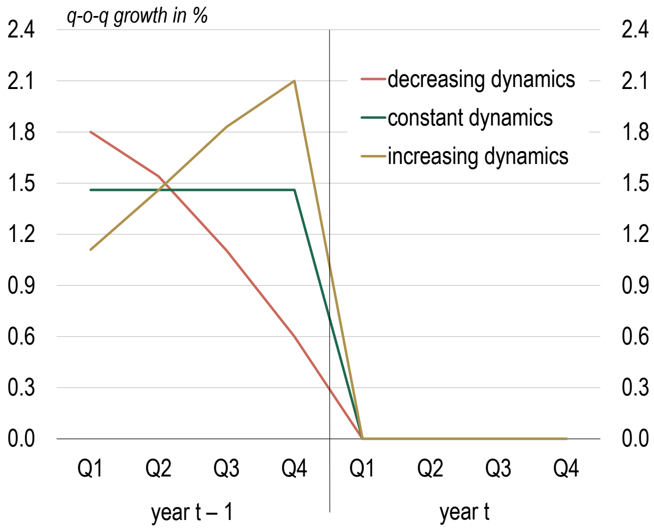
Given the powerful impact that quarterly growth in the final quarter of last year has on this year's economic growth, it is worth highlighting the potential risks for the current projections related to possible subsequent revisions to the data. Revisions to the data for the previous year within the framework of the national accounts statistics are made by the Statistical Office of the Republic of Slovenia in September of the current year. For easier illustration of the impact that potential revisions to the seasonally adjusted quarterly GDP growth figures in the previous year might have on GDP growth in the current year, Figure 14 shows three different hypothetical cases of developments in quarterly growth in the previous year: declining, unchanged and increasing. Here it should be noted that annual GDP growth remains the same in all three cases, but the different developments in quarterly growth in the previous year are reflected in different levels of GDP in the current year. Thus the carry-over effect on growth in economic activity in the current year is lowest under the declining dynamic, and highest under the increasing dynamic.[31]

[30] The formal expression follows the derivation given in Todter, K.H. (2010) How useful is the carry-over effect for short-term economic forecasting? Deutsche Bundesbank Discussion Paper.

[31] More detailed analysis of the carry-over effect on average annual real GDP growth was presented in Box 1 (page 12) of the December 2018 issue of Macroeconomic Projections for Slovenia.

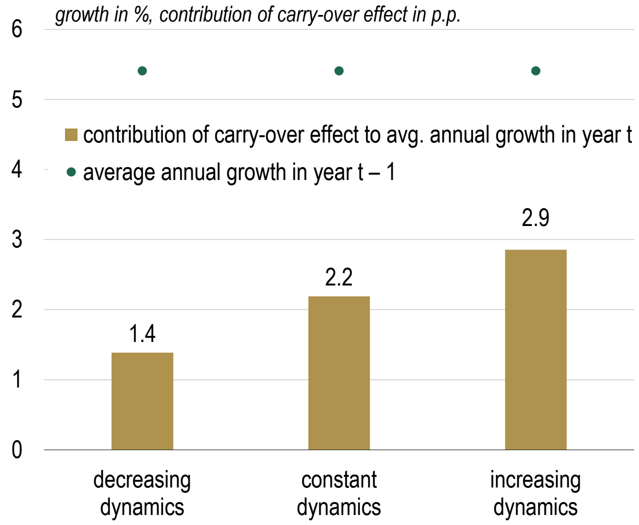
Figure 14: **Decomposition of annual GDP growth into a carry-over effect and growth during the current year**

Hypothetical GDP growth dynamics in the previous year



Source: Banka Slovenije calculations.

Implications of different dynamics of GDP in the previous year on the size of carry-over effect



Source: Banka Slovenije calculations.

5.2 Projections of general government position and debt

The general government deficit will narrow further this year to close to 3.0% of GDP, which is also the projection at the end of the projection horizon.[32] The narrowing of the deficit relative to last year will primarily be driven by a decline in the cost of temporary measures related to the pandemic, and the favourable cyclical conditions. Growth in household consumption most notably remains high this year, and the labour market is seeing continuing growth in employment and wages, as a result of which growth in tax revenues is expected to be high this year. There have also been changes in interest payments, which as a ratio to GDP will rise slightly by the end of the projection horizon, having declined consistently over the last few years.[33] Interest payments are expected to average 1.1% of GDP each year.

The projection for the general government deficit is smaller than under the previous projections for this year, and larger for 2024. There are two key factors in the improvement in this year's position: a better starting point, given that the last year's deficit was 1.1 GDP percentage points smaller than expected under the previous projections on account of stronger economic developments, and stronger growth this year, which together with high inflation is strengthening growth in revenues. Fading out of pandemic-related payments will be a major factor in the reduction of the deficit this year, but because the estimated cost remained unchanged from the December projections, they have no impact on the changes in the projection position as compered to December projection round (see Figure 15). The general government position is being worsened by the measures illustrated in Figure 15, which have been put in place since the December projections were completed and have a significant permanent or structural impact on the public finances. The position will be slightly better than under the previous projections in 2023, however in 2024 the prevailing effect will be that of the new

[32] The projections for the general government deficit and debt are usually made under the assumption of no change to the policies in place at the time of forecasting. In line with the guidance (A guide to the Eurosystem/ECB staff macroeconomic projection exercises (europa.eu)), the fiscal projections solely include measures that have been passed by parliament, or have been defined in sufficient detail and are highly likely to be adopted in legislative procedure. The current fiscal projections therefore do not include the measures set out in the new government's coalition agreement, which was confirmed on 1 June 2022.

[33] See also the special topic entitled *Impact of a rise in interest rates on government interest expenditure* in the April 2022 issue of the Semi-Annual Overview of Economic and Financial Developments.

measures put in place in the last six months, which are increasing the deficit projection. The ratio of debt to GDP is also lower than in the previous projections over the entire projection horizon as a result of the higher economic growth.

Table 5: **General government position and debt**

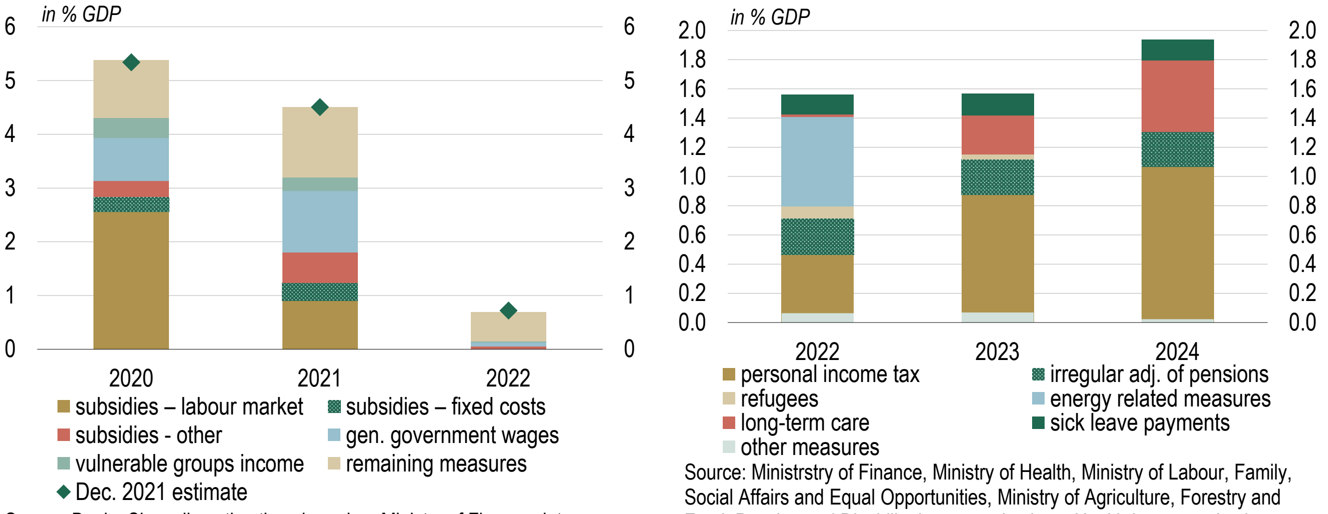
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	as % GDP									
Surplus/deficit	-2.8	-1.9	-0.1	0.7	0.4	-7.8	-5.2	-3.1	-2.6	-3.0
Debt	82.6	78.5	74.2	70.3	65.6	79.8	74.7	69.8	67.9	67.8

Sources: SORS, Banka Slovenije projections.

Figure 15: **Impact of Covid-related expenditures and discretionary measures on the public finances**

Estimate of government expenditure to mitigate consequences of the Covid-19 epidemic

Discretionary measures with impact on budget balance, adopted after December 2021 projections



Source: Banke Slovenije estimations based on Ministry of Finance data, Financial Administration of the Republic of Slovenia.

Source: Ministrstry of Finance, Ministry of Health, Ministry of Labour, Family, Social Affairs and Equal Opportunities, Ministry of Agriculture, Forestry and Food, Pension and Disability Insurance Institute, Health Insurance Institute, own estimates.

The discretionary stimulus measures put in place since Banka Slovenije's December projections have been costed at more than 1.5% of GDP, and are mostly of permanent duration (see Figure 15). The exception is this year, when approximately half of the measures are temporary, and relate primarily to the government's response to higher energy prices and the war in Ukraine. They are currently costed at around 0.7% of GDP. The largest long-term or structural financial impact comes from changes in the area of personal income tax, irregular pension increase and the implementation of long-term care.

General government debt as a ratio to GDP will decline further, and will be close to but just under 70% of GDP during the projection horizon. The decline will largely be driven by economic growth and inflation, which will result in a large increase in nominal GDP. The impact of interest rates will no longer be as favourable as in previous years, particularly at the end of the projection horizon, when interest payments will begin to rise as a ratio to GDP. The debt will also be increased by primary deficits.

The projections of the general government position are more favourable than those given in April's Stability Programme, and projections by other institutions (European

Commission, OECD and IMF). The differences are attributable to better economic growth projections.[34] The projections of general government debt are also lower than those in the Stability Programme, and follow the improvement in the deficit projections. The improvement in the projections as a ratio to GDP is also due to the higher projections for nominal economic growth. According to the June projections of the Eurosystem/ECB, the general government deficit in the euro area overall will decline to 3.8%, higher than in Slovenia. General government debt in the euro area is also projected to remain higher, at 93.0% of GDP.

On this occasion the projections for the general government deficit and debt are more exposed than usual to numerous risks, mostly on the downside. The uncertainties relate to the war in Ukraine, and to high energy prices and food prices, which might require a government response. There are demands for wage rises from public-sector unions, and risks related to the pandemic. The government will also have to address the challenges in connection with the ageing population, and the digital and green transformation of the country. The uncertainties in connection with investment caused by high energy price inflation and disruptions to supply chains deepened, and the funding available from the Recovery and Resilience Facility is likely to decline. In the event of the realisation of the downside risks to economic growth, the public finance indicators could deteriorate significantly. Conversely, EU fiscal rules (probably modified) might be reapplied at the end of the projection horizon, which will most likely entail the need for fiscal consolidation. The utilisation of funds in government accounts could also have a potential positive impact on the debt, the government having borrowed more than needed to cover its financing in the recent past, partly on precautionary grounds.

[34] The available public finance data under the cash flow methodology (e.g. current realisation of the state budget and the consolidated general government position) also suggests a significant year-on-year improvement, which is attributable to the smaller size of pandemic-related payments and to the favourable economic developments.

6 Statistical Appendix

Table 6: **Basic measures of projection accuracy for real GDP growth measured on the basis of first observed value**

Real GDP	2001–2021			2001–2008			2009–2021			2008 and 2009			excluding 2008–2009			2004–2021		
	ME	MAE	STDEV	ME	MAE	STDEV	ME	MAE	STDEV	ME	MAE	STDEV	ME	MAE	STDEV	ME	MAE	STDEV
									spring projections									
current year																		
BS	0.1	1.3	1.9	0.4	0.9	1.1	0.0	1.5	2.2	-3.4	3.4	3.8	0.5	1.0	1.2	0.2	1.4	2.0
Consensus	0.2	1.5	2.1	0.4	1.1	1.3	0.1	1.8	2.4	-3.5	3.5	3.3	0.6	1.3	1.6	0.3	1.6	2.2
EBRD							0.7	1.4	1.6									
EC	0.2	1.3	1.7	0.3	1.1	1.3	0.2	1.5	2.0	-2.7	2.7	2.8	0.5	1.2	1.4	0.4	1.4	1.8
CCIS	0.3	1.5	2.0	0.8	1.0	1.1	0.2	1.7	2.3	-3.1	3.1	3.6	0.8	1.3	1.4	0.3	1.5	2.0
IMF	0.3	1.6	2.1	0.3	1.0	1.3	0.4	1.9	2.5	-3.0	3.0	3.4	0.7	1.4	1.7	0.5	1.7	2.2
OECD							0.6	1.5	1.9									
IMAD	0.2	1.4	1.7	0.2	1.0	1.2	0.2	1.7	2.1	-2.5	2.5	2.3	0.5	1.3	1.5	0.3	1.5	1.8
WIIW							-0.6	2.6	3.8									
next year																		
BS	-0.9	2.5	3.8	-1.2	2.5	4.6	-0.6	2.5	3.4	-6.3	6.3	8.1	-0.3	2.1	2.9	-0.9	2.8	4.1
Consensus	-0.8	2.8	4.1	-1.4	2.9	5.1	-0.5	2.7	3.5	-6.0	6.6	9.3	-0.2	2.3	3.1	-0.9	3.0	4.3
EBRD							0.0	2.7	3.7									
EC	-0.9	2.5	3.7	-1.4	2.6	4.5	-0.6	2.4	3.3	-5.6	6.3	8.9	-0.4	2.0	2.8	-0.9	2.7	4.0
CCIS	-0.7	2.8	4.2	-1.7	3.6	6.1	-0.3	2.5	3.4	-6.3	6.3	8.6	0.0	2.4	3.1	-0.7	2.8	4.2
IMF	-0.8	2.5	3.7	-1.2	2.4	4.4	-0.6	2.5	3.4	-5.8	5.8	8.2	-0.2	2.1	2.9	-0.8	2.8	4.1
OECD							-0.4	2.6	3.5									
IMAD	-0.9	2.7	3.9	-1.4	2.6	4.6	-0.6	2.7	3.6	-5.9	6.3	8.9	-0.3	2.3	3.1	-0.9	3.0	4.3
WIIW							-0.4	2.9	3.8									
									autumn projections									
current year																		
BS	0.3	0.7	0.9	0.2	0.6	0.7	0.3	0.9	1.1	-1.2	1.2	0.3	0.4	0.7	0.8	0.3	0.8	1.0
Consensus	0.2	0.8	1.0	0.0	0.7	0.9	0.2	0.9	1.1	-1.6	1.6	0.5	0.3	0.7	0.9	0.3	0.9	1.1
EBRD							0.7	1.0	1.1									
EC	0.3	0.6	0.8	0.2	0.6	0.7	0.3	0.7	0.9	-0.8	0.8	0.1	0.4	0.6	0.7	0.3	0.7	0.8
CCIS	0.3	0.8	0.9	0.0	0.8	1.0	0.4	0.8	0.9	-1.3	1.3	0.2	0.5	0.7	0.8	0.3	0.8	0.9
IMF	0.2	1.0	1.3	0.2	0.8	1.0	0.2	1.1	1.5	-2.1	2.1	1.8	0.4	0.9	1.0	0.3	1.0	1.3
OECD							0.4	0.7	1.0									
IMAD	0.2	0.7	0.9	0.0	0.6	0.8	0.3	0.8	1.0	-1.1	1.1	0.4	0.3	0.6	0.8	0.2	0.7	0.9
WIIW							0.1	1.3	1.8									
next year																		
BS	-0.5	2.4	3.8	-1.0	2.5	4.5	-0.2	2.4	3.4	-5.9	5.9	8.1	0.1	2.1	2.9	-0.6	2.7	4.1
Consensus	-0.7	2.5	3.7	-1.3	2.6	4.4	-0.3	2.4	3.3	-5.5	6.2	8.7	-0.2	2.1	2.8	-0.7	2.7	4.0
EBRD							0.5	2.9	3.9									
EC	-0.5	2.3	3.6	-1.0	2.4	4.3	-0.2	2.2	3.2	-5.5	5.6	7.8	0.0	1.9	2.7	-0.6	2.5	3.9
CCIS	-0.5	2.6	3.9	-1.3	3.0	5.2	-0.1	2.4	3.3	-5.5	6.2	8.7	0.2	2.1	2.9	-0.5	2.7	4.0
IMF	-0.5	2.6	3.9	-1.0	2.5	4.5	-0.2	2.7	3.6	-5.5	6.3	8.9	0.1	2.2	3.0	-0.6	2.9	4.2
OECD							-0.1	2.5	3.5									
IMAD	-0.7	2.4	3.7	-1.1	2.4	4.3	-0.4	2.4	3.4	-5.4	5.9	8.3	-0.2	2.0	2.9	-0.7	2.7	4.0
WIIW							-0.5	2.5	3.4									

Sources: Banka Slovenije, Consensus Economics, EBRD, European Commission, CCI, IMF, OECD, IMAD, WIIW.

Table 7: **RMSE and SRMSE for real GDP growth projections measured on the basis of first observed value**

Real GDP	RMSE						SRMSE					
	2001–2021	2001–2008	2009–2021	2008–2009	w/o 08–09	2004–2021	2001–2021	2001–2008	2009–2021	2008–2009	w/o 08–09	2004–2021
						spring projections						
current year												
BS	1.8	1.1	2.2	4.3	1.3	2.0	0.5	0.7	0.5	0.5	0.4	0.5
Consensus	2.0	1.3	2.3	4.2	1.6	2.1	0.5	0.9	0.5	0.5	0.5	0.5
EBRD			1.7						0.4			
EC	1.7	1.3	1.9	3.4	1.4	1.8	0.4	0.8	0.4	0.4	0.4	0.4
CCIS	2.0	1.3	2.2	4.0	1.6	2.0	0.5	0.9	0.5	0.5	0.5	0.5
IMF	2.1	1.2	2.4	3.8	1.8	2.2	0.5	0.8	0.6	0.5	0.5	0.5
OECD			1.9						0.4			
IMAD	1.7	1.1	2.0	3.0	1.5	1.8	0.4	0.8	0.5	0.4	0.5	0.4
WIIW			3.7						0.8			
next year												
BS	3.8	4.4	3.3	8.5	2.8	4.1	1.0	3.0	0.8	1.0	0.9	1.0
Consensus	4.0	5.0	3.4	8.8	3.0	4.3	1.1	3.3	0.8	1.1	0.9	1.0
EBRD			3.6						0.8			
EC	3.7	4.4	3.2	8.4	2.8	4.0	1.0	3.0	0.7	1.0	0.9	1.0
CCIS	4.1	5.7	3.3	8.7	3.0	4.1	1.1	3.8	0.7	1.1	0.9	1.0
IMF	3.7	4.3	3.3	8.2	2.8	4.0	1.0	2.9	0.8	1.0	0.9	1.0
OECD			3.4						0.8			
IMAD	3.9	4.5	3.5	8.6	3.0	4.2	1.0	3.1	0.8	1.1	0.9	1.0
WIIW			3.6						0.8			
						autumn projections						
current year												
BS	0.9	0.7	1.1	1.2	0.9	1.0	0.2	0.5	0.2	0.1	0.3	0.2
Consensus	1.0	0.8	1.1	1.6	0.9	1.1	0.3	0.6	0.3	0.2	0.3	0.3
EBRD			1.2						0.3			
EC	0.8	0.6	0.9	0.8	0.8	0.9	0.2	0.4	0.2	0.1	0.3	0.2
CCIS	0.9	0.9	0.9	1.3	0.9	0.9	0.2	0.6	0.2	0.2	0.3	0.2
IMF	1.3	1.0	1.4	2.5	1.1	1.3	0.3	0.7	0.3	0.3	0.3	0.3
OECD			1.0						0.2			
IMAD	0.9	0.7	1.0	1.1	0.9	0.9	0.2	0.5	0.2	0.1	0.3	0.2
WIIW			1.7						0.4			
next year												
BS	3.7	4.3	3.3	8.2	2.8	4.0	1.0	2.9	0.8	1.0	0.9	1.0
Consensus	3.7	4.3	3.2	8.2	2.7	4.0	1.0	2.9	0.7	1.0	0.9	1.0
EBRD			3.7						0.9			
EC	3.5	4.1	3.1	7.8	2.7	3.8	0.9	2.8	0.7	0.9	0.8	0.9
CCIS	3.8	4.9	3.2	8.2	2.8	3.9	1.0	3.3	0.7	1.0	0.9	0.9
IMF	3.8	4.4	3.4	8.4	2.9	4.1	1.0	2.9	0.8	1.0	0.9	1.0
OECD			3.3						0.8			
IMAD	3.7	4.2	3.3	7.9	2.8	4.0	1.0	2.8	0.8	1.0	0.9	1.0
WIIW			3.3						0.8			

Sources: Banka Slovenije, Consensus Economics, EBRD, European Commission, CCI, IMF, OECD, IMAD, WIIW.

Table 8: **Basic measures of projection accuracy for inflation measured on the basis of first observed value**

HICP/CPI	2001–2021			2001–2008			2009–2021			2008 and 2009			excluding 2008–2009			2004–2021		
	ME	MAE	STDEV	ME	MAE	STDEV	ME	MAE	STDEV	ME	MAE	STDEV	ME	MAE	STDEV	ME	MAE	STDEV
									spring projections									
current year																		
BS	0.1	0.4	0.5	0.3	0.5	0.6	0.0	0.3	0.4	0.2	0.3	0.4	0.1	0.4	0.5	0.1	0.3	0.4
Consensus	-0.1	0.6	0.7	0.0	0.6	0.8	-0.2	0.5	0.6	-0.1	0.7	1.0	-0.1	0.5	0.7	-0.1	0.6	0.7
EC	0.0	0.4	0.6	0.0	0.4	0.7	0.0	0.4	0.6	0.2	0.2	0.1	0.0	0.4	0.6	0.0	0.4	0.5
CCIS	-0.1	0.4	0.6	0.2	0.5	0.6	-0.2	0.4	0.5	0.1	0.2	0.3	-0.1	0.5	0.6	-0.1	0.4	0.6
IMF	0.2	0.6	0.7	0.4	0.7	0.9	0.1	0.4	0.6	1.0	1.0	0.8	0.1	0.5	0.7	0.3	0.6	0.7
OECD							-0.1	0.5	0.6									
IMAD	0.1	0.5	0.6	0.1	0.6	0.8	0.2	0.4	0.6	0.4	0.4	0.1	0.1	0.5	0.7	0.3	0.5	0.6
WIIW							-0.5	0.9	1.0									
next year																		
BS	0.0	1.1	1.4	0.5	1.4	1.8	-0.3	0.8	1.0	-1.2	1.5	2.1	0.1	1.0	1.4	-0.2	1.0	1.4
Consensus	-0.4	1.1	1.4	0.0	1.5	2.0	-0.7	0.9	1.1	-1.6	1.6	1.3	-0.3	1.0	1.4	-0.4	1.1	1.5
EC	-0.4	1.1	1.4	-0.4	1.5	1.9	-0.5	0.8	1.1	-1.2	1.3	1.8	-0.4	1.1	1.4	-0.3	1.0	1.4
CCIS	-0.4	1.0	1.4	0.2	1.5	2.0	-0.7	0.8	1.0	-1.2	1.5	2.1	-0.3	1.0	1.3	-0.4	1.0	1.4
IMF	-0.2	1.1	1.4	0.3	1.5	1.8	-0.5	0.8	1.0	-0.5	1.1	1.5	-0.1	1.1	1.4	-0.2	1.0	1.3
OECD							-0.4	0.9	1.1									
IMAD	-0.2	0.9	1.3	0.2	1.2	1.6	-0.4	0.7	1.0	-0.9	1.4	2.0	-0.1	0.9	1.2	-0.2	1.0	1.3
WIIW							-0.5	0.8	1.1									
									autumn projections									
current year																		
BS	-0.1	0.2	0.2	-0.2	0.3	0.4	-0.1	0.1	0.1	-0.4	0.4	0.3	-0.1	0.2	0.2	-0.1	0.2	0.2
Consensus	-0.1	0.3	0.3	-0.2	0.4	0.5	0.0	0.2	0.2	-0.4	0.4	0.2	0.0	0.2	0.3	0.0	0.2	0.3
EC	-0.2	0.3	0.4	-0.5	0.5	0.6	-0.1	0.1	0.2	-0.4	0.4	0.5	-0.2	0.3	0.4	-0.1	0.2	0.2
CCIS	-0.1	0.3	0.4	-0.2	0.3	0.4	0.0	0.3	0.3	-0.2	0.3	0.4	-0.1	0.3	0.4	0.0	0.2	0.3
IMF	0.0	0.4	0.5	-0.1	0.5	0.6	0.0	0.4	0.4	0.0	0.4	0.6	0.0	0.4	0.5	0.0	0.3	0.4
OECD							0.0	0.1	0.2									
IMAD	-0.2	0.3	0.4	-0.4	0.5	0.5	0.0	0.2	0.3	-0.4	0.4	0.4	-0.1	0.3	0.4	0.0	0.2	0.3
WIIW							-0.1	0.4	0.5									
next year																		
BS	-0.2	1.0	1.2	0.0	1.1	1.5	-0.3	0.9	1.1	-1.0	1.6	2.3	-0.1	0.9	1.1	-0.2	1.0	1.3
Consensus	-0.3	1.0	1.4	-0.2	1.5	2.0	-0.4	0.8	1.0	-1.6	1.6	2.2	-0.2	1.0	1.3	-0.3	1.0	1.4
EC	-0.3	1.1	1.3	-0.4	1.4	1.8	-0.3	0.9	1.1	-1.2	1.6	2.3	-0.2	1.0	1.2	-0.3	1.0	1.3
CCIS	-0.4	1.1	1.3	-0.1	1.3	1.7	-0.6	0.9	1.1	-1.0	1.8	2.5	-0.4	1.0	1.2	-0.4	1.0	1.3
IMF	-0.2	1.0	1.2	-0.1	1.3	1.6	-0.4	0.8	1.0	-0.9	1.5	2.1	-0.2	0.9	1.2	-0.2	1.0	1.3
OECD							-0.2	0.9	1.2									
IMAD	-0.3	1.0	1.3	-0.2	1.2	1.6	-0.3	0.9	1.1	-1.2	1.8	2.5	-0.2	0.9	1.1	-0.3	1.0	1.3
WIIW							-0.4	0.7	1.0									

Sources: Banka Slovenije, Consensus Economics, European Commission, CCI, IMF, OECD, IMAD, WIIW.

Table 9: **RMSE and SRMSE for inflation projections measured on the basis of first observed value**

HICP/CPI	RMSE						SRMSE					
	2001–2021	2001–2008	2009–2021	2008–2009	w/o 08–09	2004–2021	2001–2021	2001–2008	2009–2021	2008–2009	w/o 08–09	2004–2021
						spring projections						
current year												
BS	0.5	0.6	0.4	0.4	0.5	0.4	0.2	0.3	0.4	0.1	0.2	0.3
Consensus	0.7	0.7	0.7	0.7	0.7	0.7	0.3	0.4	0.6	0.2	0.3	0.4
EC	0.6	0.6	0.5	0.2	0.6	0.5	0.3	0.3	0.5	0.0	0.3	0.3
CCIS	0.6	0.6	0.6	0.2	0.6	0.6	0.3	0.3	0.5	0.1	0.3	0.4
IMF	0.7	1.0	0.5	1.1	0.7	0.7	0.3	0.5	0.5	0.3	0.3	0.5
OECD			0.6						0.6			
IMAD	0.6	0.7	0.6	0.4	0.7	0.6	0.3	0.4	0.5	0.1	0.3	0.4
WIIW			1.0						0.9			
next year												
BS	1.4	1.8	1.1	1.9	1.3	1.3	0.6	0.9	0.9	0.6	0.6	0.9
Consensus	1.5	1.8	1.2	1.8	1.4	1.5	0.7	1.0	1.1	0.6	0.6	1.0
EC	1.4	1.8	1.1	1.7	1.4	1.4	0.6	0.9	1.0	0.5	0.6	0.9
CCIS	1.4	1.8	1.2	1.9	1.3	1.4	0.6	1.0	1.1	0.6	0.6	0.9
IMF	1.3	1.7	1.1	1.1	1.4	1.3	0.6	0.9	1.0	0.4	0.6	0.8
OECD			1.1						1.0			
IMAD	1.2	1.5	1.0	1.7	1.2	1.3	0.6	0.8	0.9	0.5	0.5	0.9
WIIW			1.1						1.0			
						autumn projections						
current year												
BS	0.3	0.4	0.1	0.4	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1
Consensus	0.3	0.5	0.2	0.4	0.3	0.3	0.2	0.3	0.2	0.1	0.1	0.2
EC	0.4	0.7	0.2	0.5	0.4	0.3	0.2	0.4	0.2	0.2	0.2	0.2
CCIS	0.4	0.4	0.3	0.3	0.4	0.3	0.2	0.2	0.3	0.1	0.2	0.2
IMF	0.5	0.6	0.4	0.4	0.5	0.4	0.2	0.3	0.4	0.1	0.2	0.3
OECD			0.2						0.2			
IMAD	0.5	0.6	0.3	0.5	0.5	0.3	0.2	0.3	0.2	0.2	0.2	0.2
WIIW			0.5						0.4			
next year												
BS	1.2	1.4	1.1	1.9	1.1	1.3	0.6	0.7	1.0	0.6	0.5	0.8
Consensus	1.4	1.8	1.1	2.2	1.2	1.4	0.6	1.0	0.9	0.7	0.6	0.9
EC	1.3	1.7	1.1	2.0	1.2	1.3	0.6	0.9	1.0	0.6	0.6	0.8
CCIS	1.3	1.6	1.2	2.0	1.2	1.4	0.6	0.8	1.1	0.6	0.6	0.9
IMF	1.2	1.5	1.0	1.7	1.2	1.2	0.6	0.8	0.9	0.5	0.5	0.8
OECD			1.2						1.0			
IMAD	1.3	1.5	1.1	2.2	1.1	1.3	0.6	0.8	1.0	0.7	0.5	0.8
WIIW			1.0						0.9			

Sources: Banka Slovenije, Consensus Economics, European Commission, CCI, IMF, OECD, IMAD, WIIW.