

BANKA

SLOVENIJE

BANK OF SLOVENIA
EUROSYSTEM

MACROECONOMIC
PROJECTIONS
FOR SLOVENIA

DECEMBER 2016

Title: Macroeconomic Projections for Slovenia
No.: December 2016

Published by: BANKA SLOVENIJE
Slovenska 35
1505 Ljubljana
tel.: +386 1 47 19 000
fax: +386 1 25 15 516
e-mail: bsl@bsi.si
<http://www.bsi.si/>

The projections of macroeconomic developments in Slovenia are based on data and information available up to 24 November 2016.
The figures and text herein may only be used or published if the source is cited.

This publication is also available in Slovene.

ISSN 2463-9990

Table of contents

| | |
|--|----|
| Executive Summary | 5 |
| 1 International Environment and External Assumptions | 7 |
| 2 Projections | 8 |
| 2.1 Economic Activity | 8 |
| 2.2 Labour Market | 11 |
| 2.3 Inflation | 12 |
| 3 Risks and Uncertainties | 15 |
| 4 Comparison Between Institutions | 17 |
| 4.1 Comparison of projections between institutions | 17 |
| 4.2 Comparison of projection accuracy between institutions | 18 |

Figures and tables:

Figures:

| | | |
|-----------|--|----|
| Figure 1 | Projection of expenditure contributions to GDP growth | 9 |
| Figure 2 | Private consumption, disposable income and dynamics of saving | 9 |
| Figure 3 | Government investment | 10 |
| Figure 4 | Projection of contributions of components to the growth of gross fixed capital formation | 10 |
| Figure 5 | Current account, real exports and imports projections | 10 |
| Figure 6 | Revision of GDP projection by components | 11 |
| Figure 7 | Unemployment rate projections | 11 |
| Figure 8 | Projections of growth in employment and compensation per employee | 12 |
| Figure 9 | Projections of contributions to inflation by components | 12 |
| Figure 10 | Revision of inflation projection by components | 13 |
| Figure 11 | Risks to the projections | 15 |
| Figure 12 | Comparison of GDP projections for Slovenia | 17 |
| Figure 13 | Comparison of inflation projections for Slovenia | 17 |

Tables

| | | |
|---------|---|----|
| Table 1 | Macroeconomic projections for Slovenia, 2016–2019 | 6 |
| Table 2 | Assumptions for factors from the international environment | 7 |
| Table 3 | Inflation projection | 13 |
| Table 4 | Basic accuracy measures of GDP growth projections, based on second available data | 19 |
| Table 5 | RMSE and SRMSE of GDP growth projections, based on second available data | 20 |
| Table 6 | Basic accuracy measures of inflation projections, based on second available data | 21 |
| Table 7 | RMSE and SRMSE of inflation projections, based on second available data | 22 |

Executive Summary

The situation in the international environment is improving. After slowing temporarily this year, global economic growth is expected to recover again towards 4% over the next three years. Accordingly, growth in foreign demand is expected to strengthen in Slovenia also, thereby maintaining a favourable conditions for the export sector to grow. With the strengthening of global economic activity and the OPEC agreement to cut oil production, growth in commodity prices is expected as early as next year, and is projected at around 6.5% as a result of the low basis. Commodity prices are projected to continue rising over the projection horizon, albeit at a slower rate.

In line with the developments in the international environment, the Slovenian economy has continued to grow in the second half of this year, at a slightly faster pace, and is becoming more balanced. According to the latest estimates, real GDP growth will be at least 2.2% this year, and is projected to rise to around 2.5% over the next three years. In addition to the successful export sector, domestic demand has also begun to strengthen, which will be the key factor in economic growth in the coming years. Despite the continuing favourable growth in exports, the contribution made by net trade will decline as a result of the projected faster growth in imports of consumer goods and capital goods. The improvement in the situation on the labour market is expected to bring a further strengthening of private consumption, while private-sector investment is also projected to grow as the financing conditions further improve. Private-sector investment has been increasing faster than expected this year, and is mitigating the sharp decline in government investment caused by the slow changeover to the disbursement of funds from the new European financial framework.

In line with favourable economic growth the situation on the labour market is also improving. The unemployment rate will gradually fall, and by the end of 2019 will reach its pre-crisis level of around 6%: given the favourable economic cycle and increased labour market flexibility, employment is expected to grow, at rates of more than 1%. Employment will increase particularly rapidly in the private sector, while employment growth in the government sector is projected to remain more moderate, at 0.5% to 1.0%. The reduced uncertainty on the labour market, the favourable financing conditions and the relaxation of wages in the public sector are expected to strengthen domestic demand, which will consequently increase profits at firms that primarily serve the domestic market. In the wake of the expected increase in productivity, this will also allow for wage rises in the private sector, and will further strengthen domestic demand.

Following this year's stagnation in prices, inflation is projected to rise to around 1.4% in 2017, and then to gradually increase to 1.6% by the end of the projection horizon. The rapid rise in inflation next year will primarily be the result of a stronger base effect in the wake of renewed growth in energy prices, and the gradual strengthening of domestic cost pressures and pressures from increased domestic demand. Core inflation will gradually rise to 1.7% by the end of the projection horizon, primarily under the influence of strengthening private consumption and faster wage growth, particularly in the public sector, but also partly in the private sector.

On this occasion the majority of the risks are on the upside, with regard to both the economic growth projections and the inflation projections. The largest risks to economic growth now come from the domestic environment, primarily on account of potential faster-than-expected growth in private-sector and government investment. The risks of the withdrawal of EU sanctions against Russia and the potential increase in growth in developing countries are also not negligible. Both could strengthen growth in foreign demand. An additional uncertainty in the inflation projections comes from the agreement reached between OPEC members and Russia to freeze oil production, and the potential impact of the full liberalisation of prices of refined petroleum products on the domestic market.

Table 1: Macroeconomic projections for Slovenia, 2016–2019

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Projections | | | | | | | | |
|---|--|-------|------|------|------|------|--------------|------|-------------|------|-------------|------|-------------|-----|--|
| | | | | | | | 2016 | | 2017 | | 2018 | | 2019 | | |
| | | | | | | | Dec. | Δ | Dec. | Δ | Dec. | Δ | Dec. | Δ | |
| Prices | <i>annual average % changes</i> | | | | | | | | | | | | | | |
| HICP | 2.1 | 2.1 | 2.8 | 1.9 | 0.4 | -0.8 | -0.1 | 0.1 | 1.4 | 0.0 | 1.4 | -0.1 | 1.6 | ... | |
| HICP excluding energy | 0.3 | 1.0 | 1.8 | 2.0 | 0.7 | 0.4 | 0.7 | 0.0 | 1.3 | -0.1 | 1.5 | -0.1 | 1.7 | ... | |
| HICP energy | 13.9 | 8.8 | 9.0 | 1.8 | -1.4 | -7.8 | -5.3 | 0.6 | 1.9 | 0.1 | 0.7 | -0.1 | 0.4 | ... | |
| Economic activity | <i>y-o-y growth rates in % (unless stated otherwise)</i> | | | | | | | | | | | | | | |
| GDP (real) | 1.2 | 0.6 | -2.7 | -1.1 | 3.1 | 2.3 | 2.2 | 0.3 | 2.5 | 0.0 | 2.6 | 0.0 | 2.5 | ... | |
| Private consumption | 1.3 | 0.0 | -2.5 | -4.0 | 2.0 | 0.5 | 2.0 | 0.1 | 2.2 | 0.1 | 2.3 | 0.0 | 2.3 | ... | |
| Government consumption | -0.5 | -0.7 | -2.2 | -2.1 | -1.2 | 2.5 | 2.5 | 0.9 | 1.2 | 0.5 | 1.2 | 0.4 | 1.4 | ... | |
| Gross fixed capital formation | -13.3 | -4.9 | -8.8 | 3.2 | 1.4 | 1.0 | -4.8 | 1.8 | 4.4 | 0.1 | 4.0 | -0.2 | 3.7 | ... | |
| of which Private sector | -16.0 | -1.0 | -9.9 | 2.2 | -3.8 | 3.4 | 5.4 | 0.8 | 4.0 | 0.1 | 4.0 | -0.3 | 3.8 | ... | |
| of which Government sector | -3.1 | -17.8 | -4.7 | 6.7 | 20.3 | -5.9 | -38.4 | -3.5 | 5.8 | -0.2 | 3.8 | 0.0 | 3.0 | ... | |
| Exports (goods and services) | 10.2 | 6.9 | 0.6 | 3.1 | 5.7 | 5.6 | 6.4 | 1.9 | 4.9 | 0.2 | 4.8 | 0.0 | 4.6 | ... | |
| Imports (goods and services) | 6.8 | 5.0 | -3.7 | 2.1 | 4.2 | 4.6 | 5.5 | 2.5 | 5.0 | 0.4 | 5.0 | 0.2 | 4.9 | ... | |
| <i>Contributions to real GDP growth</i> | <i>in GDP percentage points</i> | | | | | | | | | | | | | | |
| Domestic demand (excluding inventories) | -2.7 | -1.2 | -3.6 | -2.1 | 1.1 | 0.9 | 0.6 | 0.5 | 2.2 | 0.2 | 2.2 | 0.1 | 2.2 | ... | |
| Net exports | 1.9 | 1.3 | 2.8 | 0.8 | 1.4 | 1.1 | 1.2 | -0.3 | 0.4 | -0.1 | 0.3 | -0.2 | 0.2 | ... | |
| Changes in inventories | 1.9 | 0.6 | -2.0 | 0.2 | 0.6 | 0.4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | |
| Labour market | <i>y-o-y growth rates in % (unless stated otherwise)</i> | | | | | | | | | | | | | | |
| Unemployment growth (% of labour force) | 7.3 | 8.2 | 8.9 | 10.1 | 9.8 | 9.0 | 8.1 | -0.5 | 7.4 | -0.6 | 6.8 | -0.6 | 6.2 | ... | |
| Total employment | -2.1 | -1.7 | -0.9 | -1.1 | 0.4 | 1.1 | 1.7 | 0.8 | 1.4 | 0.3 | 1.2 | 0.1 | 0.9 | ... | |
| Compensation per employee | 4.0 | 1.5 | -1.0 | 0.5 | 1.3 | 1.4 | 2.1 | 0.1 | 2.8 | 0.1 | 2.5 | 0.0 | 2.4 | ... | |
| ... Productivity | 3.4 | 2.4 | -1.8 | 0.0 | 2.7 | 1.2 | 0.4 | -0.5 | 1.1 | -0.3 | 1.3 | -0.2 | 1.6 | ... | |
| ... Unit labour costs (ULC) | 0.6 | -0.8 | 0.8 | 0.4 | -1.3 | 0.3 | 1.7 | 0.7 | 1.7 | 0.4 | 1.1 | 0.1 | 0.9 | ... | |
| Balance of payments | <i>y-o-y growth rates in % (unless stated otherwise)</i> | | | | | | | | | | | | | | |
| Current account: in bn EUR | 0.0 | 0.1 | 0.9 | 1.7 | 2.3 | 2.0 | 3.0 | -0.4 | 2.9 | -0.5 | 2.9 | -0.6 | 2.8 | ... | |
| in % GDP | -0.1 | 0.2 | 2.6 | 4.8 | 6.2 | 5.2 | 7.6 | -1.1 | 7.0 | -1.2 | 6.7 | -1.5 | 6.2 | ... | |
| Terms of trade* | -4.0 | -1.4 | -1.1 | 0.8 | 1.0 | 1.3 | 1.3 | 0.3 | -1.4 | -0.5 | -0.6 | -0.2 | -0.6 | ... | |

* Based on deflators from National Accounts data.

Δ: Difference between current projections and projections in Macroeconomic Projections for Slovenia, June 2016.

Sources: Bank of Slovenia, SORS.

1 | International Environment and External Assumptions

Global economic growth remains encouraging. Further recovery is also expected in the euro area, with GDP growth of around 1.6%. The technical assumptions reflect slightly higher growth in prices of Brent crude oil and the additional depreciation of the euro in the recent period, and are based on information available by the cut-off date of 17 November 2016.

Global economic growth remains encouraging.

Growth in global GDP (excluding the euro area) is forecast to be slightly lower this year, but is expected to gradually strengthen in the coming years. According to the latest ECB assumptions, further recovery is also expected in the euro area, with GDP growth of around 1.6%. The assumption of growth in foreign demand for Slovenia is thus gradually strengthening, which will have a positive impact in the form of solid growth in Slovenian exports.

The technical assumptions reflect the slightly higher growth in prices of Brent crude oil and the additional fall in the euro against the US dollar since the elections in the US. The external technical assumptions¹ with regard to primary commodity prices were determined

on the basis of market expectations (developments) on futures markets over a two-week period ending on the cut-off date. The assumption is that the price of a barrel of Brent crude oil, which stood at USD 52.4 in 2015, will on average fall to USD 43.1 in 2016, before rising to USD 49.3 in 2017, USD 52.6 in 2018 and USD 54.6 in 2019. In accordance with ECB methodology, the prices of other non-energy primary commodities have been assumed to follow futures prices until the final quarter of 2017, and thereafter to evolve in line with global economic activity. The technical assumption regarding the euro exchange rate against the US dollar is that it will remain unchanged over the projection horizon at the average level recorded over the two-week period ending on the cut-off date. This implies an exchange rate of USD 1.11 to the euro in 2016, and USD 1.09 in 2017, 2018 and 2019.

Table 2: Assumptions for factors from the international environment

| | 2012 | 2013 | 2014 | 2015 | Assumptions | | | |
|---|---|-------|------|-------|-------------|------|------|------|
| | | | | | 2016 | 2017 | 2018 | 2019 |
| | <i>growth rates, % (if not specified otherwise)</i> | | | | | | | |
| World (excluding euro area) real GDP | 4.0 | 3.7 | 3.6 | 3.3 | 3.0 | 3.5 | 3.7 | 3.8 |
| Real GDP growth in Euro Area | -0.9 | -0.3 | 1.2 | 2.0 | 1.7 | 1.7 | 1.6 | 1.6 |
| Foreign demand for Slovenia | 0.8 | 2.1 | 2.9 | 1.7 | 2.6 | 3.6 | 4.0 | 4.0 |
| Oil price (in USD/barrel) | 112.0 | 108.8 | 98.9 | 52.4 | 43.1 | 49.3 | 52.6 | 54.6 |
| Oil price (in EUR/barrel) | 87.1 | 82.0 | 74.5 | 47.2 | 38.8 | 45.3 | 48.3 | 50.1 |
| Oil price (in USD/barrel, annual percentage change) | 0.9 | -2.8 | -9.1 | -47.0 | -17.7 | 14.3 | 6.7 | 3.7 |
| Non-energy commodity prices | -11.9 | -6.9 | -3.3 | -16.5 | -4.0 | 6.6 | 3.8 | 4.5 |
| Exchange rate (EUR/USD) | 1.29 | 1.33 | 1.33 | 1.11 | 1.11 | 1.09 | 1.09 | 1.09 |

Source: ECB.

¹ The technical assumptions are based on information available by the cut-off date of 17 November 2016. The assumptions for foreign demand for Slovenia and the external technical assumptions of medium-term projections of macroeconomic developments in Slovenia drawn up by the Bank of Slovenia within the framework of the ESCB are based on the harmonised projection assumptions within the framework of the ESCB. For more on the methodology, see the latest release of ESCB projections online (<https://www.ecb.europa.eu/pub/projections/html/index.en.html>), which are also available in Slovene.

2 | Projections

Economic growth in Slovenia is expected to be stable over the medium term, and notably above the euro area average. It will stand at around 2.5%, and will be based to a larger extent on domestic demand. Private consumption will strengthen as a result of further growth in disposable income. At the same time the private sector has already embarked on heavier investment in new production capacity, which is expected to continue given the positive signals from the foreign environment, while the non-tradable sector will also become more active in investment thanks to the strengthening of the domestic market. After a sharp fall in 2016, the government sector will also make a positive contribution to growth in investment as funding from the new European financial framework begins to strengthen. The projected growth in foreign demand promises solid growth in exports, although activity in the domestic market will be relatively stronger, which via imports will gradually reduce the positive contribution made by net trade, and the current account surplus.

The situation on the labour market will improve throughout the projection horizon as a result of the favourable economic environment. Employment will rise, albeit at a slowing rate, as the increase in economic growth will not be as pronounced as during the emergence from the crisis, while at the same time larger structural imbalances on the labour market will begin to appear. The unemployment rate will fall, dipping below 7% towards the end of the projection horizon. The favourable economic situation and inflationary pressures will have a positive impact on wage growth in the private sector, which will be lower than in the government sector throughout the projection horizon.

Prices will remain unchanged overall in 2016, and inflation will then stand at approximately 1.5% over the next three years. This year's stagnation in prices will primarily be the result of a fall in oil prices in the early part of the year, while later the contribution made to headline inflation by energy prices will be positive but small, in line with the projected growth in oil prices. Inflation will thus be raised to a greater extent by growth in domestic private consumption and labour costs. In this environment services prices will continue to rise most sharply, and will account for just over a half of headline inflation during the projection horizon. Inflation will be held down by increasing competition in wholesale and retail trade, including the ongoing rise of online merchants.

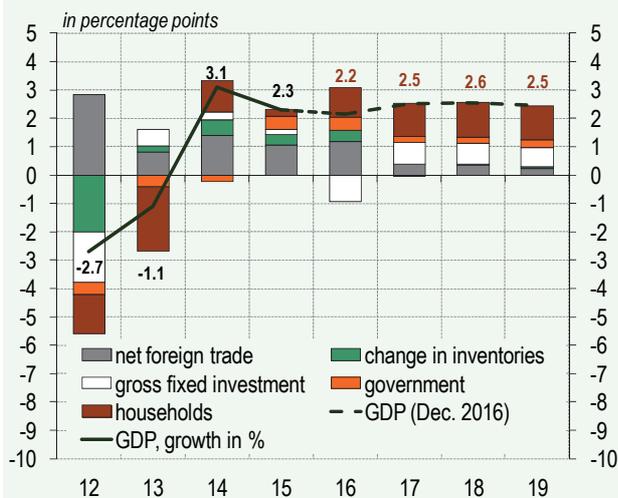
2.1 Economic activity

The economic growth projections for Slovenia remain favourable. GDP growth will remain around 2.5% over the projection horizon. Faster economic growth is mainly being held back this year by a fall in government investment in connection with the changeover to a new European financial framework, although other factors of activity are strengthening at the same time. While the export sector remains effective, the strengthening in final

household consumption and the pick-up in private-sector investment are the key factors in the balanced economic growth over the projection horizon. Positive effects are expected also from the increase in final government consumption. Given this growth projection, real GDP will exceed its pre-crisis level in 2018.

Final household consumption will gradually become the main factor of GDP growth, encouraged by the favourable situation on the labour market and wage

Figure 1: Projection of expenditure contributions to GDP growth

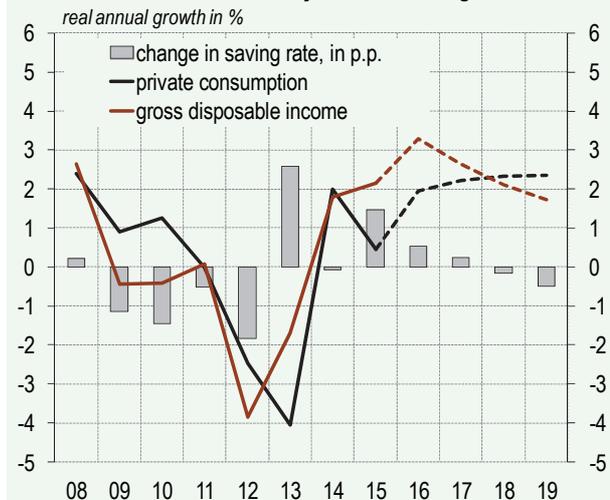


Note: Due to rounding, sums of components may differ from aggregate values.
Source: SORS, Bank of Slovenia projections.

risers in the government sector. The projected growth in private consumption will remain below growth in disposable income over the next two years. The projections of wage growth, employment and inflation suggest an increase in real disposable income of around 2.5% each year over the projection horizon. Additional growth in consumption will be supported by faster growth in household loans, primarily as a result of an improvement in financing conditions, both from the perspective of lower borrowing prices in the low interest rate environment, and as a result of a gradual reduction in credit standards. At the same time reduced risk propensity means that the banks are redirecting their business models towards household lending. Positive effects from changes in tax legislation are also anticipated. By contrast, growth in private consumption is mainly being limited by the uncertainty surrounding the nature of new jobs, which are generally merely temporary. This is resulting in a slightly lower propensity to consume on the part of households compared with the pre-crisis period. However, further improvements in the business environment are expected to bring a gradual reversion to more permanent forms of employment towards the end of projection horizon, which is expected to reduce the need for precautionary saving.

Final government consumption has increased sharply in real terms this year, but growth is projected to be more moderate in the remaining years of the projection horizon. Government consumption is projected to grow by 2.5% this year, but at rates of 1.2%

Figure 2: Projection private consumption, disposable income and dynamics of saving



Source: SORS, Banka of Slovenia projections.

to 1.4% over the next three years. The projection for government consumption over the entire projection horizon has been revised upwards, primarily in reflection of a change in the projection for employment in the government sector. The number of employees in the first half of the year rose by 1% in year-on-year terms, and growth is expected to be slightly faster over the entire year. Growth in employment in the government sector will slow to an annual rate of 0.7% in the following years, which is nevertheless up 0.5 percentage points on the previous projections. Another factor in this year's growth in government consumption has been growth in expenditure on intermediate consumption and on social transfers in kind. Similar factors will contribute to growth over the next three years.

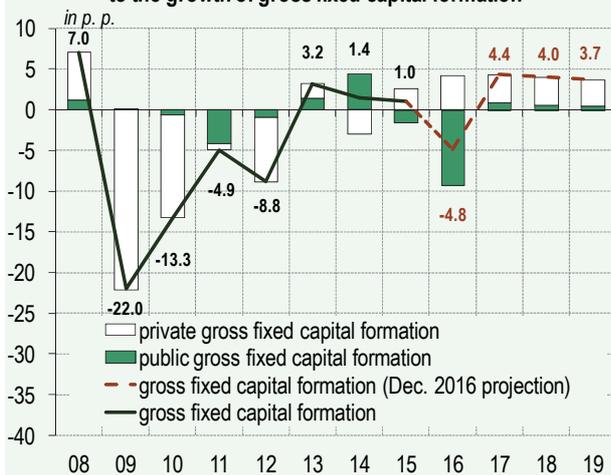
The rise of a new cycle of private-sector investment will partly compensate for the decline in government investment this year; robust annual growth of around 4% is then projected. The recovery in private-sector investment strengthened further in the first half of this year, and thus largely compensated for the decline in government investment compared with the June projections. The increased access to bank financing alongside the high levels of retained earnings in recent years, and the anticipated growth in domestic and foreign demand are an appropriate basis for firms to decide on the launch of new investment projects, particularly in machinery and equipment. The improvement in the business environment will also have a favourable impact on investment decisions. The latter has been evidenced in surveys re-

Figure 3: Government investment



Source: SORS, EC – Ameco database, Bank of Slovenia projections.

Figure 4: Projection of contributions of components to the growth of gross fixed capital formation



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

flecting reduced uncertainty in the corporate sector, a high level of new orders, and significant optimism on the part of entrepreneurs with regard to expected growth in exports. Because more secure forms of employment will strengthen as stable economic growth continues, the investment potential of households will also increase, in particular with easier access to housing loans.

This year government investment has been significantly lower than last year as expected, as a result of lower disbursement of funds from the new European financial framework. The decline follows a significant increase in government investment in the two previous

Figure 5: Current account, real exports and imports projections



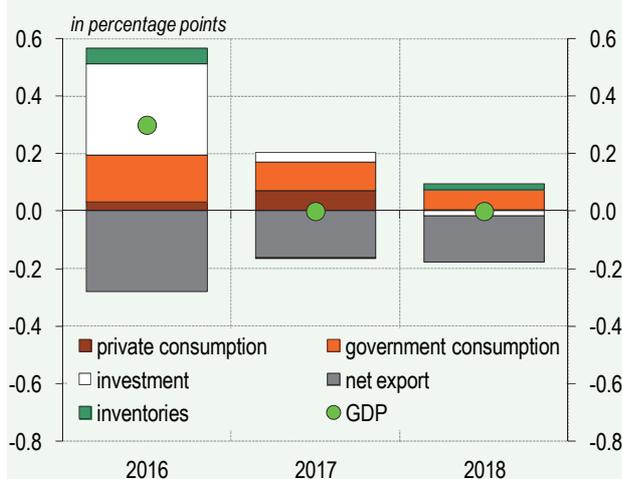
Source: SORS, Bank of Slovenia, Bank of Slovenia projections.

years, when funding on the basis of the European financial framework 2007-2013 came to an end. Government investment is projected to decline by almost 40% this year, which is indicated by the available quarterly data for the first half of the year. This represents an additional downward revision on the June projections, as a result of the slower start to the disbursement of funds from the new European financial framework 2014-2020.² Growth in government investment is expected to increase again over the 2017 to 2019 period, to average around 4% annually. Despite this year's sharp decline in government investment, over the projection horizon its ratio to GDP will remain higher in Slovenia than in the euro area, where government investment is projected to remain approximately unchanged in nominal terms this year.

Net exports will remain a significant factor in economic growth over the projection horizon. In the wake of the gradual strengthening of domestic demand, the contribution made to GDP growth by net exports declines over the projection horizon, primarily as a result of stronger growth in imports. Growth in exports in the wake of the gradual strengthening of foreign demand remains high over the projection horizon at just under 5%. Two major factors in the export dynamic will be the rise of a new cycle in the car industry in 2017, and the gradual recovery of economic growth in Russia. Exports of transport and travel services are also projected to continue

² The fifth amendment to the Ordinance on the implementation plan for the Operational Programme for the Implementation of the EU Cohesion Policy in the Period 2014-2020 was published in August of this year in the Official Gazette (No. 55/16).

Figure 6: Revision of GDP projection by components

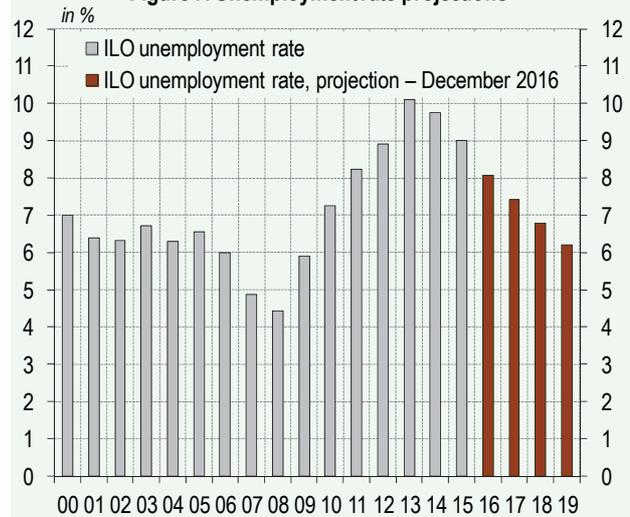


Note: Due to rounding, sums of components may differ from aggregate values.
Source: SORS, Bank of Slovenia.

growing, the latter primarily on account of geopolitical instability in the majority of non-European Mediterranean countries. Despite the continuing solid growth in exports, the impact of strengthening domestic demand on growth in imports will be stronger, which will initially stabilise and then gradually reduce the current account surplus. This will stand at 6.2% of GDP at the end of the projection horizon. The narrower surplus will also be significantly attributable to a deterioration in the terms of trade owing to growth in US dollar commodity prices and energy prices on the global market.

The economic growth projection for this year has been revised slightly upwards compared with the June projections, while the projections for the next two years remain unchanged. The rise in the economic growth projection for 2016 is the result of fiscal policy becoming less restrictive than under the previous projections, while the recovery in private-sector investment and private consumption was also faster. The resulting sharper growth in imports has reduced the contribution made to GDP growth by net exports relative to the previous projections, while the contribution made by components of domestic demand will increase. The projections for the next two years remain unchanged; as a result of the rise in the projection for 2016 and the change in the external assumptions, only the structure has been revised to a lesser extent.

Figure 7: Unemployment rate projections



Source: SORS, Bank of Slovenia projections.

2.2 Labour market

The situation and outlook on the labour market remain positive. According to national accounts figures, employment has been rising in year-on-year terms since the second quarter of 2014. Year-on-year growth reached 2% in the second quarter of 2016, the highest rate since 2008. The favourable situation on the labour market has also been reflected in falling unemployment, year-on-year growth in the number of vacancies, and positive survey indicators of employment expectations. At the same time the continuing implementation of measures aimed at more vulnerable groups in the labour market is envisaged, and will primarily focus on atypical forms of work, the encouragement of high-quality jobs, and the creation of a more effective relationship between flexibility and security. In addition to the active policy measures on the labour market, another factor in the creation of more permanent jobs is the increase in firms' confidence in sustained economic growth, which is perhaps already being reflected in a decline in the proportion of employment via staffing agencies in 2016.

Employment will rise over the projection horizon, albeit at a slowing rate. The current high employment growth is projected to slow towards the end of the projection horizon, as the economic growth impetus will no longer be as pronounced. The demographic effects of an aging population will also slowly begin to become evident, and deficits in certain professions will become more

Figure 8: Projections of growth in employment and compensation per employee



Note: * Employment based on national accounts figures.
Source: SORS, Bank of Slovenia projections.

pronounced. The elasticity of employment growth with regard to GDP growth over the projection horizon will nevertheless remain higher than in the pre-crisis period, an indication that the labour market is considerably more flexible than before. Employment growth will largely be the result of growth in the private sector, and will outpace growth in the government sector throughout the projection horizon. The unemployment rate will fall in line with the projected employment growth, and by the end of the projection horizon it will have reached the level seen in the period of stable economic growth between 2000 and 2006. The employment growth projections for this year and next year have been revised upwards from the previous projections, primarily as a result of stronger realisation in 2016, the faster recovery of the domestic market and increased employment in the government sector.

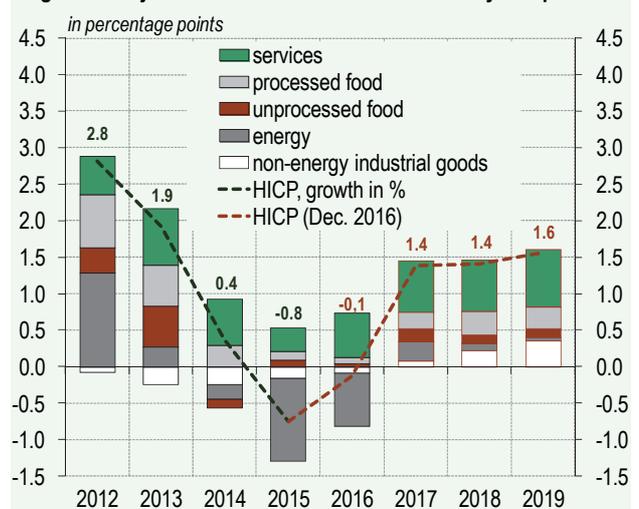
The projected growth in wages will be significantly higher over the projection horizon than in previous years, and will largely be the result of wage growth in the government sector.³ Wage growth in the government sector was high in the first half of 2016, and significantly higher than in the private sector owing to the relaxation of austerity measures in the area of promotions, rises in the value of wage grades and increases in leave allowance. Wage growth in the government sector will thus exceed 5% this year. The sole pronounced year-on-

year growth in wages in the private sector was recorded in the first quarter, as a result of payments on the basis of last year's performance, since which the rate has slowed. Wage growth in the government sector will remain high between 2017 and 2019, at around 4%, as a result of the further relaxation of austerity measures.⁴ This projection also takes into account the estimated financial consequences of the initialling of the agreement with the Fides trade union. The main factors in the rise in wage growth in the private sector will be increase in productivity, and rising inflation and structural imbalances in the labour market, but the rate will remain lower than in the government sector owing to the need to retain cost competitiveness and profitability.

2.3 Inflation

The average headline inflation in Slovenia, as measured by the HICP, will remain stagnant for 2016, after which it is expected to surpass 1% within the next year and to remain around 1.5% until the end of the projection horizon. The projected deflation of 0.1% for 2016 is a result of the negative trend in oil prices earlier this year, although the growth in service prices, which are more responsive to domestic demand, has already become more notable. In accordance with the assumptions

Figure 9: Projections of contributions to inflation by components



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

³ The analysis used national accounts figures, where the average wage is calculated as employee compensation per employee.

⁴ The assumption is for the gradual abolition of the measures still in force: frozen ordinary performance-related pay, reduced performance-related payments for workload, and reduced premiums for collective supplementary pension insurance.

Table 3: Inflation projection

| | Projections | | | | | | | | | | | | |
|---|-------------|------|------|------|------|------|------|------|------|------|------|------|-----|
| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | | 2017 | | 2018 | | 2019 | |
| | | | | | | Dec. | Δ | Dec. | Δ | Dec. | Δ | Dec. | Δ |
| <i>average annual growth, %</i> | | | | | | | | | | | | | |
| Consumer prices (HICP) | 2.1 | 2.8 | 1.9 | 0.4 | -0.8 | -0.1 | 0.1 | 1.4 | 0.0 | 1.4 | -0.1 | 1.6 | ... |
| food | 4.8 | 4.7 | 4.9 | 0.8 | 1.0 | 0.6 | 0.0 | 1.8 | 0.1 | 1.9 | 0.0 | 1.8 | ... |
| energy | 8.8 | 9.0 | 1.8 | -1.4 | -7.8 | -5.3 | 0.6 | 1.9 | 0.1 | 0.7 | -0.1 | 0.4 | ... |
| other goods | -0.9 | -0.2 | -0.9 | -1.0 | -0.6 | -0.5 | -0.4 | 0.1 | -0.6 | 0.6 | -0.5 | 1.1 | ... |
| services | 0.0 | 1.5 | 2.2 | 1.8 | 0.9 | 1.6 | 0.3 | 1.9 | 0.2 | 1.9 | 0.1 | 2.2 | ... |
| Core inflation indicators (HICP) | | | | | | | | | | | | | |
| excluding energy | 1.0 | 1.8 | 2.0 | 0.7 | 0.4 | 0.7 | 0.0 | 1.3 | -0.1 | 1.5 | -0.1 | 1.7 | ... |
| excl. energy and unprocessed food | 0.7 | 1.5 | 1.4 | 0.9 | 0.4 | 0.7 | 0.0 | 1.2 | -0.1 | 1.5 | -0.1 | 1.7 | ... |
| excl. energy, food, alcohol and tobacco | -0.4 | 0.7 | 0.9 | 0.6 | 0.3 | 0.7 | 0.0 | 1.1 | -0.2 | 1.4 | -0.1 | 1.7 | ... |

Δ: Difference between current projections and projections in Macroeconomic Projections for Slovenia, June 2016.

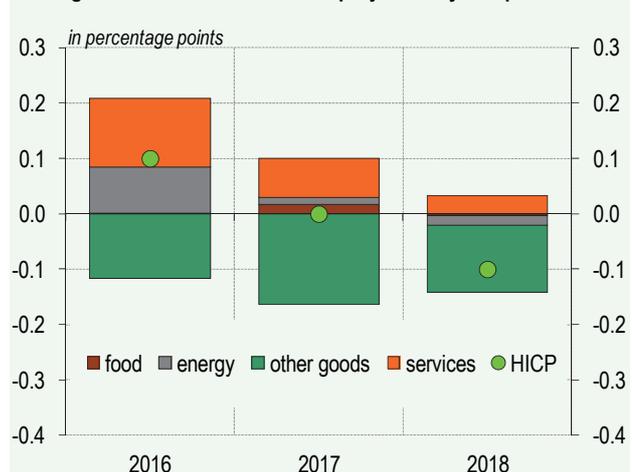
Source: SORS, Bank of Slovenia.

regarding the developments of commodity prices on the global market, next year will see a faster growth in energy prices and food prices, while growth in service prices will also remain relatively high, which is expected to boost annual inflation to 1.4%. As a result of a base effect in energy prices in 2017, inflation in 2018 will remain at the level of the previous year, despite the favourable economic situation. Inflation will then rise slightly averaging at 1.6% in 2019.

The contribution of energy prices to overall headline inflation this year will remain negative, but will turn positive from 2017 onwards. The negative drag that developments in oil prices exert on energy prices is easing more rapidly than expected in the previous projections, although the average growth in energy prices remains negative and will this year stand at -5.3%. In line with the assumptions about moderate growth in euro oil prices, growth in energy prices is projected to slowly turn positive and to average 1.9% in 2017. The year-on-year growth in 2017 will primarily be the result of the low basis from 2016, which is the reason for its slight deceleration in the final two years of the projection horizon when it is expected to average 0.7% in 2018 and 0.4% in 2019. The cumulative contribution made to inflation by energy prices after 2016 will be relatively small, at just 0.4 percentage points, which is in line with the assumption for the merely moderate growth in oil prices over the projection horizon.

In the wake of favourable economic developments in the domestic environment and the strengthening of

Figure 10: Revision of inflation projection by components



Note: Due to rounding, sums of components may differ from aggregate values.
Source: SORS, Bank of Slovenia.

cost pressures, core inflation will rise over the projection horizon. Growth in core inflation indicators will remain below 1% overall this year after which will gradually rise over the next three years to reach 1.7% in 2019. From the domestic environment, the main driver is expected to be the growth in private consumption, which in turn will be driven by the stable improvement in the economic conditions and the gradual growth in disposable income. The projected dynamics on the labour market will increase the cost pressures for the firms, as unit labour costs will rise over the projection horizon. At the same time firms will also face cost pressures from imports, as commodity prices will stabilise by the end of this year and gradually rise over the next three years. Growth in do-

mestic private consumption and labour costs will strengthen growth in services prices. This will be the main driving force behind inflation over the projection horizon, and is expected to account for approximately half of headline inflation. After falling for several years, prices of non-energy industrial goods will also start to gradually rise, as firms start incorporating some of the cost increases into final prices, although they will be constrained by the growing competition, including e-commerce. The contribution made to headline inflation by prices of non-energy industrial goods is not expected to become evident until the end of the projection horizon, when it is projected to stand at 0.4 percentage points.

The inflation projections for this year are slightly higher than the previous projections, while the projections for the next two years have been revised downwards. The upward revision of 0.1 percentage points in the projection for this year's inflation was the result of higher growth in service prices and a smaller fall in energy prices. Growth in service prices, which this year has been higher than expected, was revised upwards for

all three years. The slightly faster growth in oil prices compared with the previous projection round is the reason for the somewhat smaller year-on-year fall in energy prices. By contrast, the projection for growth in prices of non-energy industrial goods is lower over the entire projection horizon than in the previous projections. This will slow the emergence from deflation this year and will hold the projected inflation rate over the next two years slightly lower than under the June projections. The reason for the downward revision is a smaller pass-through of production costs into final prices. This is the result of a lower projection of corporate profit margins in the context of ever-increasing price competition in retail and an increase in online purchases. In line with the revised assumptions for food price developments on the global market, growth in food prices has been revised slightly upwards, although the revision has had negligible impact on headline inflation.

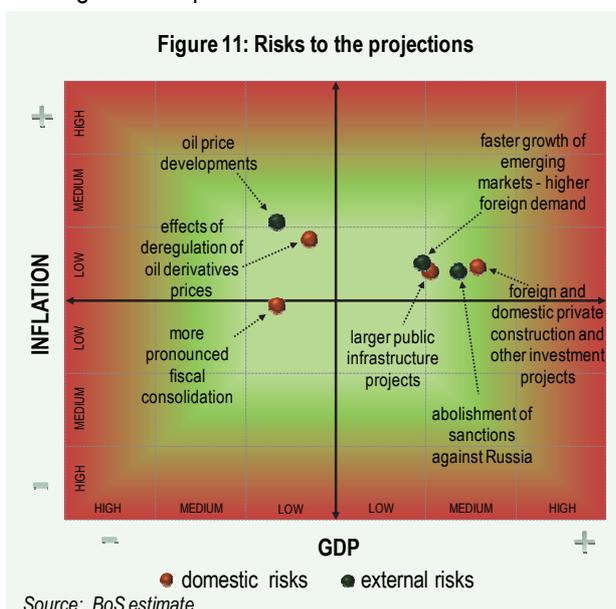
3 | Risks and Uncertainties

The risks related to the GDP growth projections are primarily on the upside. The domestic risks are primarily related to private-sector and government investment, while the main external risk is the withdrawal of EU sanctions against Russia. The risks to the inflation projections are also on the upside, and are primarily related to the uncertainties surrounding energy prices, which could rise more sharply owing to faster growth in oil prices on global markets and the potential full liberalisation of prices of refined petroleum products on the domestic market. Economic growth could be reduced by fiscal consolidation, as fiscal commitments could make it stronger than currently planned by the government.

The risks related to the economic growth projections are primarily on the upside. The largest such risk is investment, in particular investment by the private sector, which has embarked on a new investment cycle in the last year, which could be stronger than projected. This is suggested by both domestic investment projects (housing in Brdo, Tivoli and Nove Jarše, finishing work at Stožice, etc.) and foreign investment projects (Ikea, Magna Styer, Yaskawa, etc.) that are expected to begin in the coming years. Government investment could also have a larger impact than projected, primarily as a result of the execution of certain major infrastructure projects (a second track on the Divača-Koper railway, a second tunnel at the Karavanke crossing, a third development axis, etc.), if they were to be (co-)financed by public funds. There are also significant upside risks from the external environ-

ment, which include the potential withdrawal of EU sanctions against Russia and faster economic growth in developing countries. Economic growth could be reduced primarily by stronger fiscal consolidation caused by fiscal commitments, were these to be endangered by high wage growth in the government sector. The other risks are related to prices of refined petroleum products, particularly after the decision by Russia and OPEC to cut oil pumping. Higher oil prices could, via inflation, reduce growth in real disposable income and private consumption, although exports to the Russian market would strengthen at the same time thanks to the improvement in the economic situation there.

The risks to the current inflation projections are also on the upside. The main risk from the external environment is higher growth in oil prices on global markets, which could increase the growth rate of energy prices. Additional pressure on prices could come from changes in the price setting policy for refined petroleum products on the domestic market. For the moment the government has liberated the setting of prices of fuel oil and petrol with an octane number of 98 and above, while in November of this year it also allowed prices of 95-octane petrol and diesel sold on motorways and expressways to be set by the market. There is no expectation that the partial liberalisation will have a considerable impact on energy prices and consequently on headline inflation over the short term, as the percentage of fuel sold on motorways is relatively low for the moment, and would probably decline further in the event of any major price rises. In addi-



tion, the government will decide again in June 2017 on potential full liberalisation, which will keep retailers predominately merely watchful for the time being. In the event of full liberalisation, prices of refined petroleum products could see a sharper increase in the coming years, which would in turn raise domestic inflation.

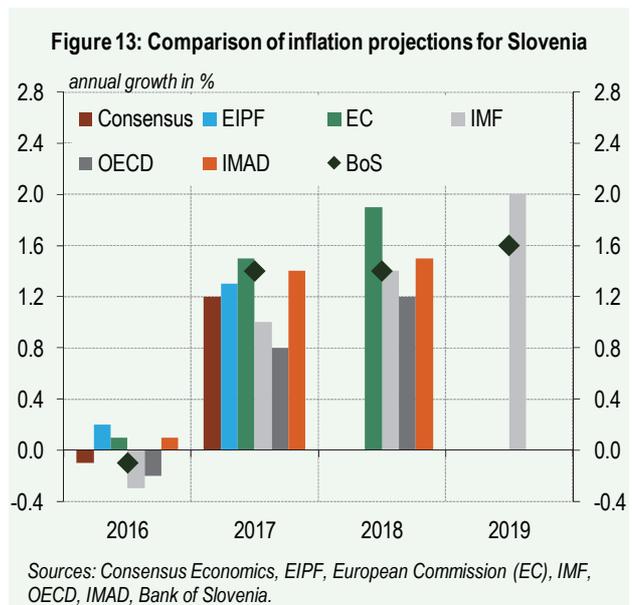
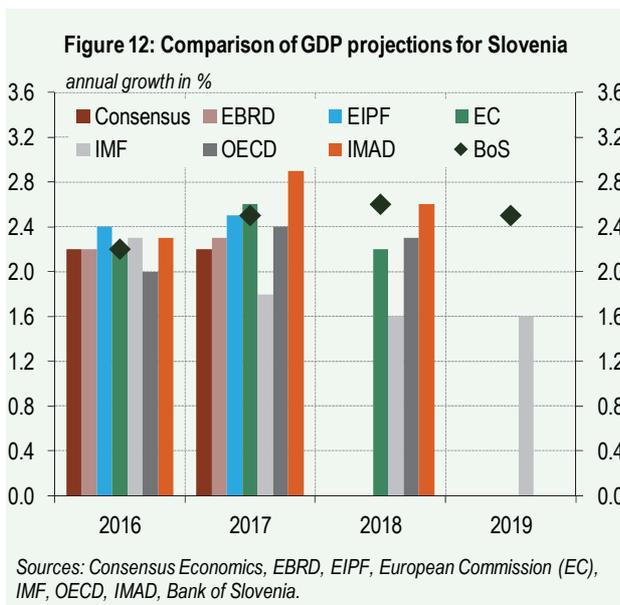
4 | Comparison Between Institutions

In the latest economic growth projections for Slovenia the expectations for the period 2016 to 2019 have been revised upwards, while domestic institutions have been significantly more optimistic than foreign institutions overall. The Bank of Slovenia projections mostly fall in the middle of the projection interval for the particular year. Four of the seven institutions are projecting deflation in 2016, while all the institutions are projecting a gradual recovery in price growth over the 2017 to 2019 period. A comparison of projection accuracy between institutions⁵ reveals that in all the periods examined (2001 to 2015, 2001 to 2008 and 2009 to 2015) the Bank of Slovenia was among the most accurate in projecting real GDP growth and inflation.

4.1 Comparison of projections between institutions

In the latest economic growth projections for the period 2016 to 2019, domestic institutions are significantly more optimistic than foreign institutions. According to the most recent projections available, the highest economic growth projection for 2016 is by EIPF (2.4%), while the lowest is by the OECD (2.0%). The

Bank of Slovenia projection is with 2.2%, in the middle of the range for the current year. The highest economic growth projection for the following year comes from the IMAD (2.9%), followed by the European Commission (2.6%). The lowest projection is the one of the IMF, at just 1.8%. The Bank of Slovenia projection is slightly above the average projection for 2017 at 2.5%. Projections for 2018 are available from five institutions. The highest projections are by the Bank of Slovenia and the IMAD (2.6%), while the IMF has the lowest projection of just



⁵ Eight institutions that prepare macroeconomic projections for Slovenia are included in the comparative analysis of current projections of real GDP growth and inflation (seven institutions in the case of the latter): Consensus Economics, the European Bank for Reconstruction and Development (EBRD), the Economic Institute of the Faculty of Law (EIPF), the European Commission, the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), the Institute of Macroeconomic Analysis and Development (IMAD) and the Bank of Slovenia. The differences between the projections are partly attributable to the differing assumptions resulting from the information available at the time of the preparation of particular institution's macroeconomic projections.

1.6%. Only two institutions have projections available for 2019: 2.5% from the Bank of Slovenia, and 1.6% from the IMF.

Four of the seven institutions are projecting deflation in 2016, while a moderate recovery in price growth is projected for the 2017 to 2019 period. The largest deflation rate in 2016 of 0.3% is projected by the IMF, while the highest growth in consumer prices is projected by EIPF, at 0.2%. The Bank of Slovenia projection is slightly below the average projection for the current year at -0.1%. The highest inflation projection for next year is 1.5% from the European Commission, followed by 1.4% from the Bank of Slovenia and the IMAD. The lowest inflation projection is the OECD's 0.8%. Inflation projections for 2018 are available from five institutions, and with the exception of the European Commission they all show similar expectations with regard to year-on-year price growth. The highest inflation projection is therefore 1.9% from the European Commission, while the lowest is the OECD's 1.2%. The Bank of Slovenia projection is close to the average for 2018 at 1.4%. Again, only two institutions have projections for 2019 available: 1.6% from the Bank of Slovenia, and 2.0% from the IMF.

4.2 Comparison of projection accuracy between institutions

The accuracy of the economic growth and inflation projections over the 2001 to 2015 period is measured by comparing the statistical estimate or the observed value with the projections for the variables obtained in past periods.⁶ The calculations cover the mean error (ME), the mean absolute error (MAE), the standard deviation (STDEV), the root mean square error (RMSE) and the standardised RMSE (SRMSE).⁷ Only three of the selected institutions (the Bank of Slovenia, the European Commission and the IMF) released projections for the

entire observation period. For the majority of the other institutions projections are only available from 2004 (from 2009 for the OECD, and from 2011 for the EBRD). The analysis also includes the periods of 2001 to 2008 and 2009 to 2015 because of the effect of the outbreak of the crisis.

In terms of the MAE and RMSE, the most accurate economic growth projections for the 2001 to 2015 period were from the European Commission, the IMAD and the Bank of Slovenia, while the most accurate inflation projections were provided by the Bank of Slovenia, the IMAD and the European Commission. In the economic growth projection MAE ranged from 0.6 to 3.3 over the observation period, while RMSE ranged from 0.7 to 4.8.⁸ The institutions were slightly more accurate in their inflation projections: the aforementioned indicators had narrower ranges, namely 0.3 to 1.7 for MAE and 0.3 to 2.1 for RMSE.

The most accurate economic growth projections over the 2001 to 2008 period were those of the Bank of Slovenia, the European Commission and the IMAD, while the Bank of Slovenia had the most accurate inflation projections. In the economic growth projection MAE ranged from 0.6 to 4.4 over the observation period, while RMSE ranged from 0.7 to 6.4. In the inflation projections the two indicators again ranged over narrower intervals: 0.3 to 2.3 for MAE and 0.4 to 2.7 for RMSE.

The OECD produced the most accurate economic growth projections over the 2009 to 2015 period, while the OECD, the Bank of Slovenia and the European Commission produced the most accurate inflation projections. The intervals in MAE and RMSE in economic growth projections narrowed significantly relative to the pre-crisis period, and ranged from 0.4 to 2.7 for MAE and 0.6 to 3.2 for RMSE. It was a similar case in the assessment of inflation projection accuracy: the intervals in the two indicators were narrower than in the pre-crisis period, at 0.1 to 1.3 for MAE and 0.1 to 1.5 for RMSE.

⁶ In the comparison of projection accuracy between institutions in the 2001 to 2015 period and in the various sub-periods, the second observed values and projections of variables are compared, whereby the projections selected are those that correspond most closely to the Bank of Slovenia's spring and autumn projections.

⁷ For a detailed description of the statistical measures (in Slovene), see Cimperman, Savšek (2014): <http://www.bsi.si/iskalniki/raziskave.asp?Mapald=339>.

⁸ The spring and autumn projections of all the institutions for the current and following year are taken into account in the values given.

Table 4: Basic accuracy measures of GDP growth projections, based on second available data

| Real GDP | 2001-2015 | | | 2001-2008 | | | 2009-2015 | | | 2008 and 2009 | | | excl. 2008-2009 | | | 2004-2015 | | |
|---------------------------|-----------|-----|-------|-----------|-----|---------------------------|-----------|-----|-------|---------------|-----|-------|-----------------|-----|-------|-----------|-----|-------|
| | ME | MAE | STDEV | ME | MAE | STDEV | ME | MAE | STDEV | ME | MAE | STDEV | ME | MAE | STDEV | ME | MAE | STDEV |
| spring projections | | | | | | spring projections | | | | | | | | | | | | |
| current year | | | | | | | | | | | | | | | | | | |
| BS | -0.1 | 1.3 | 2.0 | 0.6 | 0.9 | 1.1 | -0.7 | 1.7 | 2.6 | -3.3 | 3.3 | 3.9 | 0.4 | 1.0 | 1.2 | 0.0 | 1.5 | 2.2 |
| Consensus | -0.1 | 1.5 | 2.2 | 0.6 | 1.1 | 1.3 | -0.7 | 1.9 | 2.8 | -3.3 | 3.3 | 3.4 | 0.5 | 1.2 | 1.6 | 0.0 | 1.7 | 2.4 |
| EBRD | | | | | | | 0.6 | 1.3 | 1.7 | | | | | | | | | |
| EIPF | -0.4 | 1.7 | 2.5 | 0.9 | 1.2 | 1.2 | -1.3 | 2.0 | 2.9 | -4.0 | 4.0 | 4.5 | 0.3 | 1.2 | 1.5 | -0.4 | 1.7 | 2.5 |
| EC | 0.0 | 1.3 | 1.8 | 0.4 | 1.1 | 1.3 | -0.5 | 1.5 | 2.2 | -2.6 | 2.6 | 2.9 | 0.4 | 1.1 | 1.3 | 0.1 | 1.4 | 1.9 |
| MDS | 0.0 | 1.4 | 2.0 | 0.4 | 1.1 | 1.3 | -0.6 | 1.7 | 2.5 | -2.9 | 2.9 | 3.5 | 0.4 | 1.2 | 1.4 | 0.1 | 1.5 | 2.1 |
| IMF | | | | | | | 0.0 | 1.2 | 1.6 | | | | | | | | | |
| SKEP | 0.2 | 1.5 | 2.2 | 1.0 | 1.1 | 1.1 | -0.4 | 1.8 | 2.6 | -2.9 | 2.9 | 3.7 | 0.8 | 1.3 | 1.4 | 0.2 | 1.5 | 2.2 |
| IMAD | -0.1 | 1.3 | 1.7 | 0.3 | 1.0 | 1.2 | -0.5 | 1.6 | 2.1 | -2.4 | 2.4 | 2.3 | 0.3 | 1.1 | 1.4 | 0.1 | 1.4 | 1.8 |
| next year | | | | | | | | | | | | | | | | | | |
| BS | -1.0 | 2.3 | 3.7 | -1.0 | 2.4 | 4.6 | -0.9 | 2.0 | 2.6 | -6.3 | 6.3 | 7.9 | -0.1 | 1.6 | 2.1 | -1.2 | 2.7 | 4.2 |
| Consensus | -1.0 | 2.6 | 4.1 | -1.2 | 2.9 | 5.1 | -0.8 | 2.3 | 2.8 | -6.0 | 6.4 | 9.1 | -0.1 | 1.9 | 2.4 | -1.1 | 2.9 | 4.4 |
| EBRD | | | | | | | 0.2 | 2.5 | 3.5 | | | | | | | | | |
| EIPF | -1.2 | 3.3 | 4.9 | -1.0 | 4.4 | 7.0 | -1.4 | 2.5 | 2.8 | -6.5 | 6.5 | 8.3 | 0.0 | 2.6 | 3.6 | -1.2 | 3.3 | 4.9 |
| EC | -0.9 | 2.3 | 3.7 | -1.2 | 2.5 | 4.5 | -0.6 | 2.1 | 2.8 | -5.7 | 6.2 | 8.7 | -0.1 | 1.6 | 2.2 | -0.9 | 2.7 | 4.3 |
| MDS | -1.0 | 2.2 | 3.6 | -1.0 | 2.3 | 4.4 | -1.0 | 2.0 | 2.4 | -5.9 | 5.9 | 8.0 | -0.2 | 1.6 | 2.1 | -1.2 | 2.6 | 4.1 |
| IMF | | | | | | | -0.5 | 2.0 | 2.8 | | | | | | | | | |
| SKEP | -1.1 | 2.8 | 4.3 | -1.5 | 3.6 | 6.1 | -0.7 | 2.1 | 2.7 | -6.3 | 6.3 | 8.3 | 0.1 | 2.0 | 2.5 | -1.1 | 2.8 | 4.3 |
| IMAD | -1.0 | 2.5 | 3.8 | -1.2 | 2.6 | 4.6 | -0.8 | 2.3 | 2.9 | -6.0 | 6.2 | 8.7 | -0.2 | 1.8 | 2.3 | -1.1 | 2.9 | 4.3 |
| autumn projections | | | | | | autumn projections | | | | | | | | | | | | |
| current year | | | | | | | | | | | | | | | | | | |
| BS | 0.2 | 0.7 | 0.9 | 0.3 | 0.6 | 0.7 | 0.0 | 0.9 | 1.1 | -1.1 | 1.1 | 0.4 | 0.4 | 0.7 | 0.8 | 0.2 | 0.8 | 1.0 |
| Consensus | 0.1 | 0.8 | 1.0 | 0.2 | 0.7 | 0.9 | 0.0 | 1.0 | 1.3 | -1.4 | 1.4 | 0.6 | 0.3 | 0.7 | 0.9 | 0.2 | 0.9 | 1.1 |
| EBRD | | | | | | | 0.7 | 0.8 | 1.1 | | | | | | | | | |
| EIPF | 0.0 | 1.0 | 1.3 | 0.4 | 0.9 | 1.1 | -0.4 | 1.1 | 1.3 | -2.0 | 2.0 | 0.9 | 0.3 | 0.8 | 1.0 | 0.0 | 1.0 | 1.3 |
| EC | 0.2 | 0.6 | 0.7 | 0.3 | 0.7 | 0.7 | 0.1 | 0.6 | 0.8 | -0.7 | 0.7 | 0.1 | 0.4 | 0.6 | 0.7 | 0.2 | 0.6 | 0.7 |
| MDS | 0.1 | 1.1 | 1.4 | 0.4 | 0.9 | 1.1 | -0.2 | 1.2 | 1.7 | -2.0 | 2.0 | 1.9 | 0.4 | 0.9 | 1.1 | 0.2 | 1.1 | 1.5 |
| IMF | | | | | | | 0.2 | 0.4 | 0.6 | | | | | | | | | |
| SKEP | 0.2 | 0.7 | 0.9 | 0.2 | 0.7 | 0.9 | 0.3 | 0.7 | 1.0 | -1.1 | 1.1 | 0.1 | 0.5 | 0.6 | 0.7 | 0.3 | 0.8 | 0.9 |
| IMAD | 0.1 | 0.7 | 0.8 | 0.2 | 0.6 | 0.8 | 0.0 | 0.7 | 0.9 | -0.9 | 0.9 | 0.3 | 0.2 | 0.6 | 0.8 | 0.2 | 0.8 | 0.9 |
| next year | | | | | | | | | | | | | | | | | | |
| BS | -0.6 | 2.2 | 3.7 | -0.8 | 2.5 | 4.5 | -0.3 | 1.8 | 2.6 | -6.0 | 6.0 | 7.8 | 0.3 | 1.6 | 2.1 | -0.8 | 2.6 | 4.1 |
| Consensus | -0.8 | 2.3 | 3.6 | -1.2 | 2.5 | 4.4 | -0.2 | 1.9 | 2.5 | -5.5 | 6.0 | 8.5 | 0.0 | 1.6 | 2.1 | -0.8 | 2.6 | 4.1 |
| EBRD | | | | | | | 1.2 | 2.7 | 3.5 | | | | | | | | | |
| EIPF | -1.1 | 2.8 | 4.3 | -1.8 | 3.5 | 5.9 | -0.5 | 2.2 | 2.8 | -5.9 | 6.1 | 8.6 | 0.0 | 2.0 | 2.5 | -1.1 | 2.8 | 4.3 |
| EC | -0.4 | 2.1 | 3.5 | -0.8 | 2.4 | 4.3 | 0.0 | 1.7 | 2.5 | -5.5 | 5.5 | 7.6 | 0.4 | 1.5 | 2.0 | -0.6 | 2.4 | 4.0 |
| MDS | -0.6 | 2.3 | 3.8 | -0.9 | 2.4 | 4.6 | -0.2 | 2.1 | 3.0 | -5.6 | 6.2 | 8.7 | 0.3 | 1.6 | 2.3 | -0.7 | 2.7 | 4.3 |
| IMF | | | | | | | 0.0 | 1.9 | 2.4 | | | | | | | | | |
| SKEP | -0.4 | 2.4 | 4.0 | -1.1 | 3.0 | 5.2 | 0.3 | 1.9 | 2.5 | -5.5 | 6.0 | 8.4 | 0.6 | 1.7 | 2.1 | -0.5 | 2.6 | 4.1 |
| IMAD | -0.6 | 2.2 | 3.6 | -1.0 | 2.3 | 4.3 | -0.2 | 1.9 | 2.8 | -5.4 | 5.7 | 8.1 | 0.2 | 1.6 | 2.2 | -0.8 | 2.6 | 4.1 |

Sources: Bank of Slovenia, Consensus Economics, EBRD, EIPF, European Commission (EC), IMF, OECD, SKEP, IMAD.

Table 5: RMSE and SRMSE of GDP growth projections, based on second available data

| Real GDP | RMSE | | | | | | SRMSE | | | | | |
|---------------------------|-------|-------|-------|-----------|-------------|-------|-------|-------|-------|-----------|-------------|-------|
| | 01-15 | 01-08 | 09-15 | 08 and 09 | excl. 08-09 | 04-15 | 01-15 | 01-08 | 09-15 | 08 and 09 | excl. 08-09 | 04-15 |
| spring projections | | | | | | | | | | | | |
| current year | | | | | | | | | | | | |
| BS | 1.9 | 1.1 | 2.6 | 4.3 | 1.2 | 2.1 | 0.5 | 0.8 | 0.7 | 0.5 | 0.5 | 0.5 |
| Consensus | 2.1 | 1.3 | 2.7 | 4.1 | 1.6 | 2.3 | 0.6 | 0.9 | 0.7 | 0.5 | 0.6 | 0.6 |
| EBRD | | | 1.6 | | | | | | 0.4 | | | |
| EIPF | 2.5 | 1.4 | 3.0 | 5.1 | 1.5 | 2.5 | 0.7 | 1.0 | 0.8 | 0.6 | 0.6 | 0.6 |
| EC | 1.7 | 1.3 | 2.1 | 3.3 | 1.3 | 1.8 | 0.5 | 0.9 | 0.6 | 0.4 | 0.5 | 0.5 |
| IMF | 1.9 | 1.3 | 2.4 | 3.8 | 1.4 | 2.1 | 0.5 | 0.9 | 0.6 | 0.5 | 0.5 | 0.5 |
| OECD | | | 1.5 | | | | | | 0.4 | | | |
| SKEP | 2.1 | 1.4 | 2.5 | 3.9 | 1.5 | 2.1 | 0.6 | 1.0 | 0.7 | 0.5 | 0.6 | 0.5 |
| IMAD | 1.6 | 1.2 | 2.0 | 2.9 | 1.3 | 1.8 | 0.4 | 0.8 | 0.5 | 0.3 | 0.5 | 0.4 |
| next year | | | | | | | | | | | | |
| BS | 3.7 | 4.4 | 2.5 | 8.4 | 2.1 | 4.2 | 1.0 | 3.1 | 0.7 | 1.0 | 0.8 | 1.0 |
| Consensus | 4.0 | 4.9 | 2.7 | 8.8 | 2.3 | 4.4 | 1.1 | 3.4 | 0.7 | 1.1 | 0.9 | 1.1 |
| EBRD | | | 3.0 | | | | | | 0.8 | | | |
| EIPF | 4.8 | 6.4 | 2.9 | 8.8 | 3.3 | 4.8 | 1.3 | 4.4 | 0.8 | 1.1 | 1.3 | 1.2 |
| EC | 3.7 | 4.4 | 2.6 | 8.4 | 2.1 | 4.2 | 1.0 | 3.0 | 0.7 | 1.0 | 0.8 | 1.0 |
| IMF | 3.6 | 4.3 | 2.4 | 8.1 | 2.0 | 4.0 | 1.0 | 3.0 | 0.7 | 1.0 | 0.8 | 1.0 |
| OECD | | | 2.6 | | | | | | 0.7 | | | |
| SKEP | 4.3 | 5.7 | 2.5 | 8.6 | 2.4 | 4.3 | 1.2 | 3.9 | 0.7 | 1.0 | 0.9 | 1.0 |
| IMAD | 3.8 | 4.5 | 2.7 | 8.6 | 2.2 | 4.3 | 1.0 | 3.1 | 0.7 | 1.0 | 0.9 | 1.1 |
| autumn projections | | | | | | | | | | | | |
| current year | | | | | | | | | | | | |
| BS | 0.9 | 0.7 | 1.0 | 1.1 | 0.9 | 1.0 | 0.2 | 0.5 | 0.3 | 0.1 | 0.3 | 0.2 |
| Consensus | 1.0 | 0.9 | 1.2 | 1.5 | 0.9 | 1.1 | 0.3 | 0.6 | 0.3 | 0.2 | 0.4 | 0.3 |
| EBRD | | | 1.2 | | | | | | 0.3 | | | |
| EIPF | 1.2 | 1.1 | 1.3 | 2.1 | 1.0 | 1.2 | 0.3 | 0.8 | 0.3 | 0.2 | 0.4 | 0.3 |
| EC | 0.7 | 0.7 | 0.8 | 0.7 | 0.8 | 0.7 | 0.2 | 0.5 | 0.2 | 0.1 | 0.3 | 0.2 |
| IMF | 1.3 | 1.1 | 1.6 | 2.4 | 1.1 | 1.4 | 0.4 | 0.7 | 0.4 | 0.3 | 0.4 | 0.3 |
| OECD | | | 0.6 | | | | | | 0.2 | | | |
| SKEP | 0.9 | 0.9 | 0.9 | 1.1 | 0.8 | 0.9 | 0.2 | 0.6 | 0.2 | 0.1 | 0.3 | 0.2 |
| IMAD | 0.8 | 0.8 | 0.8 | 0.9 | 0.8 | 0.8 | 0.2 | 0.5 | 0.2 | 0.1 | 0.3 | 0.2 |
| next year | | | | | | | | | | | | |
| BS | 3.6 | 4.3 | 2.4 | 8.1 | 2.0 | 4.0 | 1.0 | 3.0 | 0.6 | 1.0 | 0.8 | 1.0 |
| Consensus | 3.6 | 4.3 | 2.3 | 8.1 | 2.0 | 4.0 | 1.0 | 3.0 | 0.6 | 1.0 | 0.8 | 1.0 |
| EBRD | | | 3.2 | | | | | | 0.9 | | | |
| EIPF | 4.2 | 5.6 | 2.6 | 8.5 | 2.4 | 4.2 | 1.2 | 3.9 | 0.7 | 1.0 | 0.9 | 1.0 |
| EC | 3.4 | 4.1 | 2.3 | 7.7 | 1.9 | 3.8 | 0.9 | 2.8 | 0.6 | 0.9 | 0.7 | 0.9 |
| IMF | 3.7 | 4.3 | 2.7 | 8.3 | 2.2 | 4.2 | 1.0 | 3.0 | 0.7 | 1.0 | 0.9 | 1.0 |
| OECD | | | 2.2 | | | | | | 0.6 | | | |
| SKEP | 3.8 | 4.9 | 2.3 | 8.1 | 2.1 | 4.0 | 1.0 | 3.4 | 0.6 | 1.0 | 0.8 | 1.0 |
| IMAD | 3.5 | 4.1 | 2.6 | 7.9 | 2.1 | 4.0 | 1.0 | 2.9 | 0.7 | 0.9 | 0.8 | 1.0 |

Sources: Bank of Slovenia, Consensus Economics, EBRD, EIPF, European Commission (EC), IMF, OECD, SKEP, IMAD.

Table 6: Basic accuracy measures of inflation projections, based on second available data

| HICP/CPI | 2001-2015 | | | 2001-2008 | | | 2009-2015 | | | 2008 and 2009 | | | excl. 2008-2009 | | | 2004-2015 | | |
|---------------------------|-----------|-----|-------|-----------|-----|-------|-----------|-----|-------|---------------|-----|-------|-----------------|-----|-------|-----------|-----|-------|
| | 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 | 0.5 | 0.6 | 0.3 | 0.5 | 0.6 | 0.0 | 0.5 | 0.5 | 0.2 | 0.3 | 0.4 | 0.1 | 0.5 | 0.6 | 0.1 | 0.4 | 0.5 |
| Consensus | -0.2 | 0.7 | 0.8 | 0.1 | 0.7 | 0.8 | -0.4 | 0.8 | 0.8 | -0.1 | 0.7 | 1.0 | -0.2 | 0.7 | 0.8 | -0.1 | 0.7 | 0.8 |
| EIPF | 0.1 | 0.8 | 0.9 | 0.4 | 0.5 | 0.7 | 0.0 | 0.9 | 1.1 | 0.7 | 0.7 | 0.4 | 0.0 | 0.8 | 1.0 | 0.1 | 0.8 | 0.9 |
| EC | -0.1 | 0.4 | 0.6 | 0.0 | 0.5 | 0.7 | -0.1 | 0.4 | 0.5 | 0.2 | 0.2 | 0.1 | -0.1 | 0.5 | 0.7 | 0.0 | 0.4 | 0.5 |
| IMF | 0.3 | 0.6 | 0.8 | 0.5 | 0.7 | 0.9 | 0.1 | 0.4 | 0.5 | 1.0 | 1.0 | 0.8 | 0.2 | 0.5 | 0.7 | 0.3 | 0.6 | 0.8 |
| OECD | | | | | | | -0.1 | 0.3 | 0.3 | | | | | | | | | |
| SKEP | 0.0 | 0.5 | 0.6 | 0.2 | 0.5 | 0.7 | -0.2 | 0.5 | 0.5 | 0.1 | 0.2 | 0.3 | -0.1 | 0.6 | 0.7 | 0.0 | 0.5 | 0.6 |
| IMAD | 0.1 | 0.5 | 0.7 | 0.1 | 0.6 | 0.8 | 0.2 | 0.4 | 0.5 | 0.4 | 0.4 | 0.1 | 0.1 | 0.5 | 0.7 | 0.3 | 0.5 | 0.6 |
| next year | | | | | | | | | | | | | | | | | | |
| BS | 0.2 | 1.2 | 1.5 | 0.5 | 1.4 | 1.8 | -0.2 | 0.8 | 1.0 | -1.2 | 1.5 | 2.1 | 0.4 | 1.1 | 1.4 | 0.0 | 1.1 | 1.5 |
| Consensus | -0.4 | 1.2 | 1.6 | 0.0 | 1.6 | 2.0 | -0.8 | 0.9 | 1.1 | -1.6 | 1.6 | 1.3 | -0.2 | 1.2 | 1.6 | -0.3 | 1.3 | 1.7 |
| EIPF | 0.1 | 1.7 | 2.2 | 0.9 | 2.3 | 2.8 | -0.7 | 1.3 | 1.5 | -2.1 | 2.1 | 0.0 | 0.6 | 1.6 | 2.2 | 0.1 | 1.7 | 2.2 |
| EC | -0.4 | 1.2 | 1.5 | -0.4 | 1.6 | 1.9 | -0.3 | 0.7 | 1.0 | -1.2 | 1.3 | 1.8 | -0.2 | 1.1 | 1.5 | -0.1 | 1.0 | 1.5 |
| IMF | -0.1 | 1.2 | 1.6 | 0.3 | 1.5 | 1.8 | -0.6 | 0.9 | 1.1 | -0.5 | 1.1 | 1.5 | 0.0 | 1.2 | 1.6 | -0.1 | 1.1 | 1.5 |
| OECD | | | | | | | 0.0 | 0.8 | 1.0 | | | | | | | | | |
| SKEP | -0.2 | 1.1 | 1.6 | 0.2 | 1.5 | 2.1 | -0.5 | 0.8 | 1.2 | -1.2 | 1.5 | 2.1 | 0.0 | 1.1 | 1.5 | -0.2 | 1.1 | 1.6 |
| IMAD | 0.0 | 1.0 | 1.4 | 0.2 | 1.2 | 1.6 | -0.4 | 0.7 | 1.0 | -0.9 | 1.4 | 2.0 | 0.1 | 0.9 | 1.3 | 0.0 | 1.1 | 1.5 |
| autumn projections | | | | | | | | | | | | | | | | | | |
| current year | | | | | | | | | | | | | | | | | | |
| BS | -0.2 | 0.3 | 0.3 | -0.2 | 0.3 | 0.4 | -0.1 | 0.2 | 0.1 | -0.4 | 0.4 | 0.3 | -0.1 | 0.2 | 0.3 | -0.1 | 0.2 | 0.3 |
| Consensus | -0.1 | 0.3 | 0.4 | -0.2 | 0.4 | 0.5 | 0.0 | 0.3 | 0.3 | -0.4 | 0.4 | 0.2 | 0.0 | 0.3 | 0.4 | 0.0 | 0.3 | 0.3 |
| EIPF | -0.1 | 0.3 | 0.4 | -0.1 | 0.4 | 0.5 | 0.0 | 0.3 | 0.3 | -0.3 | 0.4 | 0.5 | 0.0 | 0.3 | 0.4 | -0.1 | 0.3 | 0.4 |
| EC | -0.2 | 0.3 | 0.5 | -0.5 | 0.5 | 0.6 | 0.0 | 0.1 | 0.1 | -0.4 | 0.4 | 0.5 | -0.2 | 0.3 | 0.5 | -0.1 | 0.2 | 0.3 |
| IMF | 0.0 | 0.4 | 0.5 | -0.1 | 0.5 | 0.6 | 0.1 | 0.4 | 0.4 | 0.0 | 0.4 | 0.6 | 0.0 | 0.4 | 0.6 | 0.1 | 0.3 | 0.4 |
| OECD | | | | | | | 0.0 | 0.1 | 0.2 | | | | | | | | | |
| SKEP | -0.1 | 0.3 | 0.4 | -0.2 | 0.3 | 0.4 | 0.1 | 0.3 | 0.4 | -0.2 | 0.3 | 0.4 | -0.1 | 0.3 | 0.4 | 0.0 | 0.3 | 0.3 |
| IMAD | -0.2 | 0.3 | 0.5 | -0.4 | 0.5 | 0.5 | 0.0 | 0.2 | 0.3 | -0.4 | 0.4 | 0.4 | -0.2 | 0.3 | 0.5 | -0.1 | 0.2 | 0.3 |
| next year | | | | | | | | | | | | | | | | | | |
| BS | -0.1 | 1.0 | 1.3 | 0.1 | 1.1 | 1.5 | -0.2 | 0.8 | 1.1 | -1.0 | 1.6 | 2.3 | 0.1 | 0.9 | 1.1 | -0.1 | 1.0 | 1.4 |
| Consensus | -0.3 | 1.2 | 1.6 | -0.2 | 1.5 | 2.0 | -0.5 | 0.8 | 1.1 | -1.6 | 1.6 | 2.2 | -0.1 | 1.1 | 1.4 | -0.3 | 1.2 | 1.6 |
| EIPF | 0.2 | 1.4 | 1.8 | 0.3 | 1.8 | 2.4 | 0.1 | 1.1 | 1.3 | -1.2 | 2.0 | 2.8 | 0.5 | 1.3 | 1.6 | 0.2 | 1.4 | 1.8 |
| EC | -0.3 | 1.2 | 1.5 | -0.4 | 1.4 | 1.8 | -0.3 | 0.9 | 1.2 | -1.2 | 1.6 | 2.3 | -0.2 | 1.1 | 1.3 | -0.2 | 1.1 | 1.5 |
| IMF | -0.1 | 1.1 | 1.4 | 0.0 | 1.3 | 1.6 | -0.3 | 0.9 | 1.1 | -0.9 | 1.5 | 2.1 | 0.0 | 1.0 | 1.3 | -0.1 | 1.1 | 1.4 |
| OECD | | | | | | | -0.1 | 1.0 | 1.2 | | | | | | | | | |
| SKEP | -0.3 | 1.2 | 1.5 | -0.1 | 1.3 | 1.7 | -0.5 | 1.1 | 1.3 | -1.0 | 1.8 | 2.5 | -0.1 | 1.1 | 1.4 | -0.2 | 1.2 | 1.5 |
| IMAD | -0.3 | 1.1 | 1.3 | -0.2 | 1.2 | 1.6 | -0.4 | 0.9 | 1.0 | -1.2 | 1.8 | 2.5 | -0.1 | 0.9 | 1.1 | -0.2 | 1.1 | 1.4 |

Sources: Bank of Slovenia, Consensus Economics, EIPF, European Commission (EC), IMF, OECD, SKEP, IMAD.

Table 7: RMSE and SRMSE of inflation projections, based on second available data

| HICP/CPI | RMSE | | | | | | SRMSE | | | | | |
|---------------------------|-------|-------|-------|-----------|-------------|-------|-------|-------|-------|-----------|-------------|-------|
| | 01-15 | 01-08 | 09-15 | 08 and 09 | excl. 08-09 | 04-15 | 01-15 | 01-08 | 09-15 | 08 and 09 | excl. 08-09 | 04-15 |
| spring projections | | | | | | | | | | | | |
| current year | | | | | | | | | | | | |
| BS | 0.6 | 0.7 | 0.5 | 0.4 | 0.6 | 0.5 | 0.3 | 0.3 | 0.4 | 0.1 | 0.3 | 0.3 |
| Consensus | 0.8 | 0.7 | 0.8 | 0.7 | 0.8 | 0.8 | 0.3 | 0.4 | 0.7 | 0.2 | 0.4 | 0.5 |
| EIPF | 0.9 | 0.7 | 1.0 | 0.8 | 0.9 | 0.9 | 0.4 | 0.4 | 0.8 | 0.2 | 0.4 | 0.6 |
| EC | 0.6 | 0.7 | 0.5 | 0.2 | 0.6 | 0.5 | 0.3 | 0.4 | 0.4 | 0.0 | 0.3 | 0.3 |
| IMF | 0.8 | 1.0 | 0.5 | 1.1 | 0.7 | 0.8 | 0.3 | 0.5 | 0.4 | 0.3 | 0.4 | 0.5 |
| OECD | | | 0.3 | | | | | | 0.2 | | | |
| SKEP | 0.6 | 0.6 | 0.6 | 0.2 | 0.6 | 0.6 | 0.3 | 0.3 | 0.4 | 0.1 | 0.3 | 0.4 |
| IMAD | 0.7 | 0.8 | 0.5 | 0.4 | 0.7 | 0.6 | 0.3 | 0.4 | 0.4 | 0.1 | 0.3 | 0.4 |
| next year | | | | | | | | | | | | |
| BS | 1.5 | 1.8 | 1.0 | 1.9 | 1.4 | 1.4 | 0.6 | 0.9 | 0.8 | 0.6 | 0.7 | 0.9 |
| Consensus | 1.6 | 1.8 | 1.3 | 1.8 | 1.6 | 1.6 | 0.7 | 1.0 | 1.1 | 0.6 | 0.7 | 1.0 |
| EIPF | 2.1 | 2.7 | 1.5 | 2.1 | 2.1 | 2.1 | 0.9 | 1.4 | 1.2 | 0.6 | 1.0 | 1.3 |
| EC | 1.5 | 1.8 | 1.0 | 1.7 | 1.4 | 1.4 | 0.6 | 0.9 | 0.8 | 0.5 | 0.7 | 0.8 |
| IMF | 1.5 | 1.7 | 1.2 | 1.1 | 1.6 | 1.5 | 0.6 | 0.9 | 1.0 | 0.4 | 0.7 | 0.9 |
| OECD | | | 0.9 | | | | | | 0.7 | | | |
| SKEP | 1.5 | 1.9 | 1.2 | 1.9 | 1.4 | 1.5 | 0.7 | 1.0 | 0.9 | 0.6 | 0.7 | 0.9 |
| IMAD | 1.3 | 1.5 | 1.0 | 1.7 | 1.3 | 1.4 | 0.6 | 0.8 | 0.8 | 0.5 | 0.6 | 0.9 |
| autumn projections | | | | | | | | | | | | |
| current year | | | | | | | | | | | | |
| BS | 0.3 | 0.4 | 0.2 | 0.4 | 0.3 | 0.3 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 |
| Consensus | 0.4 | 0.5 | 0.3 | 0.4 | 0.4 | 0.3 | 0.2 | 0.3 | 0.2 | 0.1 | 0.2 | 0.2 |
| EIPF | 0.4 | 0.5 | 0.3 | 0.4 | 0.4 | 0.4 | 0.2 | 0.2 | 0.3 | 0.1 | 0.2 | 0.2 |
| EC | 0.5 | 0.7 | 0.1 | 0.5 | 0.5 | 0.3 | 0.2 | 0.4 | 0.1 | 0.2 | 0.2 | 0.2 |
| IMF | 0.5 | 0.6 | 0.4 | 0.4 | 0.5 | 0.4 | 0.2 | 0.3 | 0.3 | 0.1 | 0.3 | 0.2 |
| OECD | | | 0.2 | | | | | | 0.1 | | | |
| SKEP | 0.4 | 0.4 | 0.3 | 0.3 | 0.4 | 0.3 | 0.2 | 0.2 | 0.3 | 0.1 | 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 |
| next year | | | | | | | | | | | | |
| BS | 1.2 | 1.4 | 1.0 | 1.9 | 1.1 | 1.3 | 0.5 | 0.7 | 0.8 | 0.6 | 0.5 | 0.8 |
| Consensus | 1.5 | 1.9 | 1.1 | 2.2 | 1.4 | 1.6 | 0.7 | 1.0 | 0.9 | 0.7 | 0.7 | 1.0 |
| EIPF | 1.7 | 2.2 | 1.2 | 2.3 | 1.6 | 1.7 | 0.7 | 1.1 | 1.0 | 0.7 | 0.7 | 1.0 |
| EC | 1.4 | 1.7 | 1.2 | 2.0 | 1.3 | 1.4 | 0.6 | 0.9 | 0.9 | 0.6 | 0.6 | 0.9 |
| IMF | 1.3 | 1.5 | 1.0 | 1.7 | 1.2 | 1.4 | 0.6 | 0.8 | 0.8 | 0.5 | 0.6 | 0.8 |
| OECD | | | 1.1 | | | | | | 0.9 | | | |
| SKEP | 1.5 | 1.6 | 1.3 | 2.0 | 1.3 | 1.5 | 0.6 | 0.8 | 1.1 | 0.6 | 0.6 | 0.9 |
| IMAD | 1.3 | 1.5 | 1.0 | 2.2 | 1.1 | 1.4 | 0.6 | 0.8 | 0.8 | 0.7 | 0.5 | 0.8 |

Sources: Bank of Slovenia, Consensus Economics, EIPF, European Commission (EC), IMF, OECD, SKEP, IMAD.