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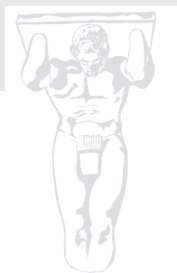
BANK OF SLOVENIA
EUROSYSTEM

MACROECONOMIC PROJECTIONS FOR SLOVENIA

The Macroeconomic Projections for Slovenia are based on figures and information available on 28 November 2018.

This publication is also available in Slovene.

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Executive Summary

The projections of economic growth for Slovenia remain favourable. Real GDP growth is expected to be 4.2% this year, 3.4% in 2019, and around 3% in 2020 and 2021. The moderating pace of economic growth during the projection horizon will primarily result from a gradual shift into a more mature phase of the business cycle in both the Slovenian economy and the economies of major trading partners.

Economic growth in Slovenia will be broadly based over the medium term, and underpinned by both domestic demand and continued encouraging export activity. Private consumption growth will remain supported by favourable labour market developments and slightly higher wage growth, which will not outpace productivity growth significantly and as such, will not result in a notable deterioration of the external competitiveness of the Slovenian export sector. Given the relatively favourable assumption pertaining to foreign demand growth, the export sector will continue increasing its market shares, and growth in total exports will remain solid over the entire projection horizon. Alongside the substantial internal resources, further credit growth and relatively favourable bank financing terms will allow the corporate investment cycle to continue. In addition to investment in machinery and equipment, housing investment is also expected to grow. This growth will be stimulated by the situation in the residential real estate market, where a shortage of housing is currently being reflected in a rapid increase of house prices. Final government consumption growth will be slightly higher this year, mainly due to a faster growth in intermediate consumption and government sector employment, and will moderate as the pace of employment growth slows in the rest of projection horizon. Government investment activity is expected to strengthen this year and next year, primarily on account of the electoral cycle and certain major investment projects. Faster growth in imports, which will primarily be attributable to domestic demand factors, will lead to a gradual reduction in the current account surplus. The surplus will narrow from 7.2% of GDP in 2017 to 6.6% of GDP in 2021. A slight deterioration in the terms of trade will also be a factor for the narrowing.

Developments on the labour market are expected to remain favourable, and will be reflected in slightly higher wage growth, and in continuing, albeit more moderate, employment growth. The latter will again contribute to a reduction in the unemployment rate, which will approach its pre-crisis level towards the end of the projection horizon. Employers are expected to continue mitigating the domestic limiting factors related to the skilled labour shortages by recruiting foreign workers. Evidence shows that the limiting factors are more pronounced in sectors with below-average wages and lower productivity levels, which supports the necessity for a restructuring of the Slovenian economy. Here the key role belongs to economic policy, which must provide for an attractive and predictable business environment for domestic and foreign investors, and for increased investment in research and development.

The inflation projections are in line with previous expectations. Over the medium term, inflation as measured by the HICP will be slightly above the rate targeted by the ECB, and will increasingly be driven by domestic factors. Headline inflation will reach 2% this year, and will largely be driven by external factors. The domestic inflationary pressures coming from higher wage growth and above potential economic activity will gradually strengthen over the projection horizon and will be reflected in rising core inflation, in particular services prices and prices of non-energy industrial goods.

The risks related to the economic growth projections for Slovenia are on the downside. They stem primarily from the external environment, and are related to the deterioration of the global geopolitical situation and the escalation in protec-

tionism, which could sharply reduce foreign demand growth with adverse consequences for the Slovenian export sector, which remains a key pillar of economic growth. A sharp deterioration of the external environment situation would also be reflected in a decline of consumer and firm confidence, which would slow both investment activity and private consumption. By contrast, the risks stemming from the domestic environment remain mostly on the upside. They are related to government investment activity, which, in the wake of faster disbursement of EU funds and the intensified execution of major infrastructure projects and other investment projects, could outperform its current growth projections. Private consumption growth could also be slightly higher, primarily as a result of faster wage growth, which could be encouraged by an even more pronounced shortage of qualified labour and/or a stronger pass-through of agreed wage increases in the public sector into wage increases in the private sector. The risks accompanying the inflation projection are slightly on the upside, and primarily relate to developments in global oil prices and the potentially faster growth of labour costs.

Table 1: Macroeconomic projections for Slovenia, 2018–2021

| | | | | | | 2017 | | Projections | | | | | | | |
| | | | | | | | | **2018** | | **2019** | | **2020** | | **2021** | |
	2012	2013	2014	2015	2016		Δ	Dec.	Δ	Dec.	Δ	Dec.	Δ	Dec.	Δ
Prices	*annual average % changes*														
HICP	2.8	1.9	0.4	-0.8	-0.2	1.6	0.0	**2.0**	0.0	**2.2**	0.0	**2.3**	0.0	**2.2**	…
HICP excluding energy	1.8	2.0	0.7	0.4	0.6	1.1	0.0	**1.4**	-0.2	**2.3**	-0.1	**2.6**	0.0	**2.5**	…
HICP energy	9.0	1.8	-1.4	-7.8	-5.2	4.7	0.0	**5.8**	0.9	**1.4**	1.2	**-0.1**	0.1	**-0.1**	…
Economic activity	*y-o-y growth rates in % (unless stated otherwise)*														
GDP (real)	-2.7	-1.1	3.0	2.3	3.1	4.9	-0.1	**4.2**	-0.4	**3.4**	-0.5	**3.0**	-0.4	**2.9**	…
Private consumption	-2.4	-4.1	1.9	2.3	3.9	1.9	-1.3	**2.5**	-1.0	**2.4**	-0.7	**2.2**	-0.7	**2.1**	…
Government consumption	-2.2	-2.1	-1.2	2.4	2.7	0.5	-1.8	**2.6**	0.8	**1.8**	0.0	**1.7**	0.0	**1.6**	…
Gross fixed capital formation	-8.8	3.2	1.0	-1.6	-3.7	10.7	0.4	**9.1**	-1.7	**7.8**	-1.7	**6.4**	-1.3	**5.7**	…
Exports (goods and services)	0.6	3.1	5.7	5.0	6.4	10.7	0.1	**8.2**	0.6	**6.6**	-0.6	**6.5**	0.0	**5.9**	…
Imports (goods and services)	-3.7	2.1	4.1	4.7	6.6	10.3	0.2	**8.2**	0.1	**7.0**	-0.7	**6.8**	-0.3	**6.1**	…
Contributions to real GDP growth	*in GDP percentage points*														
Domestic demand (excluding inventories)	-3.6	-2.1	1.0	1.4	1.9	3.0	-1.0	**3.5**	-0.7	**3.1**	-0.7	**2.7**	-0.7	**2.5**	…
Net exports	2.8	0.8	1.4	0.6	0.4	1.2	0.0	**0.7**	0.4	**0.3**	0.1	**0.4**	0.3	**0.4**	…
Changes in inventories	-2.0	0.2	0.5	0.3	0.7	0.6	0.8	**0.0**	-0.2	**0.0**	0.0	**0.0**	0.0	**0.0**	…
Labour market	*y-o-y growth rates in % (unless stated otherwise)*														
Unemployment growth (% of labour force)	8.9	10.1	9.8	9.0	8.0	6.6	0.0	**5.3**	0.0	**4.9**	0.1	**4.6**	0.1	**4.5**	…
Total employment	-0.9	-1.1	0.4	1.3	1.8	2.9	0.1	**2.8**	0.3	**1.2**	0.0	**0.7**	0.0	**0.4**	…
Compensation per employee	-1.0	0.5	1.3	1.3	3.0	3.2	0.4	**4.2**	0.2	**4.8**	0.1	**4.7**	0.0	**4.7**	…
…Productivity	-1.8	0.0	2.5	1.0	1.2	1.9	-0.3	**1.3**	-0.8	**2.1**	-0.6	**2.3**	-0.5	**2.5**	…
…Unit labour costs (ULC)	0.8	0.5	-1.2	0.3	1.8	1.3	0.7	**2.8**	0.9	**2.6**	0.7	**2.3**	0.5	**2.2**	…
Balance of payments	*y-o-y growth rates in % (unless stated otherwise)*														
Current account: in bn EUR	0.8	1.6	2.2	1.8	2.2	3.1	0.3	**3.1**	0.5	**3.3**	0.6	**3.4**	0.8	**3.5**	…
in % GDP	2.1	4.4	5.8	4.5	5.5	7.2	0.8	**6.8**	1.2	**6.8**	1.4	**6.7**	1.7	**6.6**	…
Terms of trade*	-1.1	0.8	1.0	1.3	0.9	-0.5	0.0	**-0.4**	0.2	**-0.1**	0.3	**-0.1**	0.0	**-0.1**	…

* Based on deflators from National Accounts data.
Δ: Difference between current projections and projections in Macroeconomic Projections for Slovenia, June 2018.
Source: Bank of Slovenia, Consensus Economics, Eurostat, JP Morgan, OECD Economic Outlook, SORS, ECB.

1 | International Environment and External Assumptions

Economic growth in the euro area is expected to gradually slow down over the projection horizon, although according to the latest ECB projections the rate should remain slightly above the potential growth, thus reflecting the favourable impact of the monetary policy stimulus, the improvement in the situation on the labour market and the strengthening of corporate balance sheets. The technical assumptions reflect a slight rise in the euro and an increase in US dollar prices of Brent crude oil this year, and are based on information available by the cut-off date of 21 November 2018.

Economic growth in the euro area is expected to gradually slow down over the projection horizon. According to the latest ECB projections, growth should remain slightly above the potential growth as a result of the favourable impact of the monetary policy stimulus, the improvement in the situation on the labour market and the strengthening of corporate balance sheets. By the end of the projection horizon, real growth is expected to slow down (it is projected to average around 1.8%), primarily as a result of a decline in the encouraging factors from the international environment. The assumption of

growth in foreign demand for Slovenia remains around 4.1%, which supports the favourable projection of growth in Slovenian exports.

The technical assumptions suggest a slight rise in the euro, and an increase in US dollar prices of Brent crude oil this year, while a slight decline in both is indicated over the remainder of the projection horizon. The assumptions for developments in primary commodity prices are based on market expectations (average developments) on futures markets over a two-week peri-

Table 2: Assumptions for factors from the international environment

	2013	2014	2015	2016	2017	Assumptions 2018	2019	2020	2021
growth rates, % (if not specified otherwise)									
World (excluding euro area) real GDP	3.9	3.8	3.5	3.3	3.7	**3.8**	**3.5**	**3.6**	**3.6**
Real GDP growth in Euro Area	-0.2	1.4	2.1	1.9	2.4	**1.9**	**1.7**	**1.7**	**1.5**
Foreign demand for Slovenia	2.0	2.9	2.6	3.2	6.1	**4.0**	**4.2**	**4.2**	**3.9**
Oil price (in USD/barrel)	108.8	98.9	52.4	44.0	54.4	**71.8**	**67.5**	**66.8**	**65.9**
Oil price (in EUR/barrel)	82.0	74.5	47.2	39.8	48.2	**60.8**	**59.5**	**58.8**	**58.1**
Oil price (in USD/barrel, annual percentage change)	-2.8	-9.1	-47.0	-15.9	23.5	**32.0**	**-6.0**	**-1.1**	**-1.3**
Exchange rate (EUR/USD)	1.33	1.33	1.11	1.11	1.13	**1.18**	**1.14**	**1.14**	**1.14**
Non-energy commodity prices	-6.9	-3.3	-16.5	-3.9	7.9	**3.0**	**-1.4**	**4.4**	**4.3**

Source: ECB, European Commission, Bank of Slovenia.

od ending on the cut-off date.[1] The price of a barrel of Brent crude oil, which stood at USD 54.4 in 2017, is projected to rise to an average of USD 71.8 in 2018, before falling to USD 65.9 by the end of the projection horizon. Based on the path implied by futures prices until the third quarter of 2019, the prices of other non-energy primary commodities are projected to fall significantly by the end of 2018, and thenceforth to evolve in line with global economic activity. The technical assumption for the euro exchange rate against the US dollar during the projection horizon is set at the average level prevailing in the two-week period ending on the cut-off date. This means that the euro is assumed to average USD 1.18 in 2018, and USD 1.14 in the following years.

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[1] The technical assumptions, such as oil prices, exchange rate, commodity prices, are based on information available by the cut-off date of 21 November 2018. The assumptions for foreign demand in Slovenia and the external technical assumptions of medium-term projections of macroeconomic developments in Slovenia prepared 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 (https://www.ecb.europa.eu/pub/projections/html/index.en.html), which are also available in Slovene.

2 | Projections

Economic activity in Slovenia remains favourable. According to projections, GDP growth will average 3.4% over the medium term. Economic growth will be broadly based and underpinned by both domestic demand and continued growth in exports of goods and services. The moderating pace of the economic growth during the projection horizon will primarily result from a gradual shift into a more mature phase of the business cycle in both the Slovenian economy and the economies of major trading partners. Private consumption growth will remain supported by favourable developments on the labour market and slightly higher wage growth. Final government consumption growth will be slightly higher this year, supported by faster growth in intermediate consumption and government sector employment, before moderating as the increase in the latter slows. Investment growth remains high and will strengthen further this year and next year due to stronger growth in government investment. Given the relatively favourable assumption pertaining to foreign demand growth, continued access to favourable sources of financing, and the high capacity utilization, private-sector investment will continue and will in turn strengthen the productivity growth of the Slovenian economy. At the same time, the real estate market is expected to see solid growth in housing investment in response to the high demand for new housing. Domestic demand components will strengthen growth in imports, which will slightly outpace growth in exports of goods and services over the entire projection horizon. As a result, the contribution to economic growth made by net exports will be smaller over the entire projection horizon compared with previous years. The faster growth in imports will lead to a gradual reduction in the current account surplus, which will narrow from 7.2% of GDP in 2017 to 6.6% of GDP in 2021.

Employment growth will slow over the projection horizon, while wage growth will be slightly higher than in previous years. Continuing employment growth will again contribute to a reduction in the unemployment rate, which will approach its low pre-crisis levels towards the end of the projection horizon. Wage growth is expected to be higher in the wake of the continuing solid economic growth, but will not bring a significant deterioration in the nominal cost competitiveness of the economy.

Inflation, as measured by the HICP, will reach 2.0% this year, and will largely be the product of external factors, but later domestic inflation factors will prevail. Rises in oil prices on the global market mean that growth in energy prices will make a significant contribution to inflation this year. Their contribution will decline over the projection horizon in line with the assumed developments in oil prices. Inflation will nevertheless slightly exceed the ECB monetary policy target over the medium term. The inflationary pressures will stem primarily from the domestic environment, as a result of higher wage growth, and will be reflected in rising core inflation, which will slightly exceed headline inflation over the medium term.

2.1 Economic activity

The growth projections for the Slovenian economy remain favourable. Economic growth will be broadly based and driven by both domestic demand and continued growth in exports of goods and services. Given the favourable situation in the labour market, further growth is expected in private consumption and investment, while the contribution made by the government is also expected to be slightly higher this year, primarily on account of the impact of the electoral cycle. In light of the relatively favourable assumption pertaining to foreign demand growth, export growth is expected to continue, while import growth will be slightly higher in the wake of solid domestic demand. Consequently, the contribution of net trade to overall GDP growth will decline slightly in the coming years. The moderating pace of economic growth during the projection horizon will primarily result from a gradual shift into a more mature phase of the business cycle. Economic growth is expected to stabilize at around 3% towards the end of the projection horizon.

Private consumption growth will be encouraged by the favourable developments on the labour market. Growth in final household consumption will be solid over the projection horizon, and underpinned by growth in gross disposable income, which will primarily be attributable to slightly higher wage growth.[2] Consumption will also

be driven by continuing growth in consumer loans and the favourable situation on the labour market, where demand for labour in certain sectors is already exceeding supply, while unemployment is approaching its low pre-crisis levels.[3] Given the gradual shift into a more mature phase of the business cycle during the projection horizon, growth in household consumption is expected to decline slightly which will conversely increase the saving rate. Growth in private consumption will nevertheless remain solid over the projection horizon, and will average 2.3%.

After acceleration this year, final government consumption will grow at a more moderate pace in the

Figure 2: Real private consumption, disposable income and savings dynamics projections

growth in %

- savings rate in % (rhs)
- private consumption
- gross disposable income
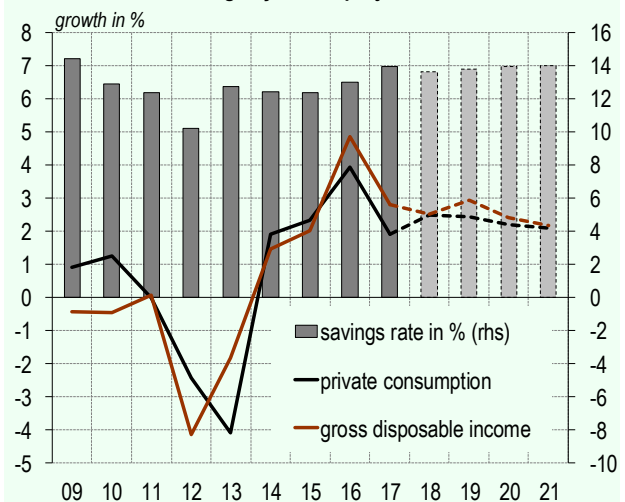
Source: SORS, Bank of Slovenia projections.

Figure 1: Projection of expenditure contributions to GDP growth rate
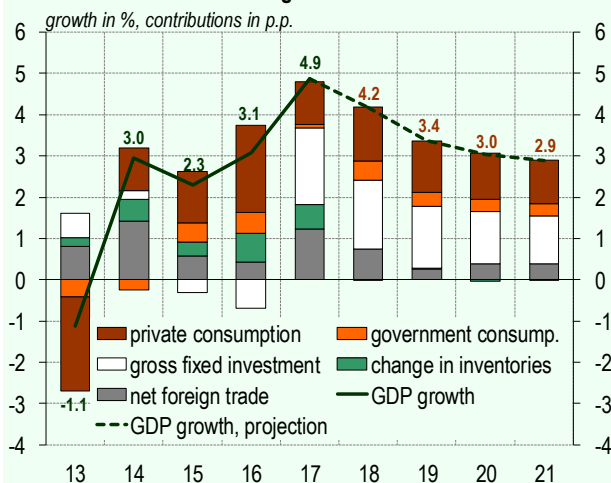
growth in %, contributions in p.p.

- private consumption
- government consump.
- gross fixed investment
- change in inventories
- net foreign trade
- GDP growth
- GDP growth, projection

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

Figure 3: Decomposition of private consumption growth

deviations from long-term average (1.73%) in annual growth terms; percentage point contributions

- other factors*
- unemployment rate
- interest rate
- compensation per employee
- private consumption
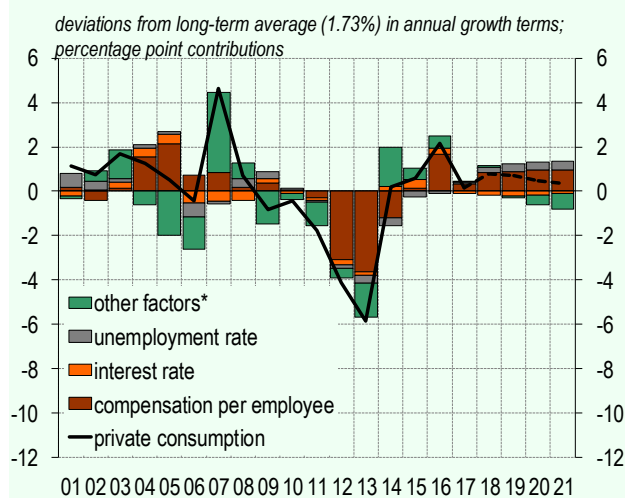
Note: *Other factors refer to variables not included in the estimation.
Source: SORS, Bank of Slovenia calculations.

[2] The average wage in the projections is measured by compensation of employees per employee according to the national accounts.
[3] The impact of unemployment rate on nominal average wage growth is analysed in the October 2018 Economic and Financial Developments (Selected theme 8.1).

Methodological note: Figure 3: Decomposition of private consumption growth

The decomposition of real private consumption growth is based on the calculation of contributions to growth using the methodology of Yellen (2015).[1] The method of least squares is used to estimate an equation in which annual growth in aggregate real private consumption (C_t) is explained by (i) its first lag (C_{t-1}), (ii) annual growth in real compensation per employee (W_t), (iii) the unemployment rate (UR_t) and (iv) the real interest rate (r_t). The unemployment rate included in the regression captures the effects of income uncertainty, while the real interest rate captures the effects of liquidity constraints. The following equation was estimated on the basis of quarterly figures for the period of 2001 Q1 to 2018 Q2:

$$C_t = \beta_0 + \beta_1 C_{t-1} + \beta_2 W_t + \beta_3 UR_t + \beta_4 r_t + \epsilon_t$$

The contributions made to aggregate real private consumption growth by the various factors are calculated by means of a dynamic simulation for each explanatory variable separately. A value of zero is ascribed to each explanatory variable, and the difference between the observed growth in aggregate real private consumption and the simulated figure estimated without the explanatory variable in question is then calculated. The difference represents the contribution made by the explanatory variable that is set at zero in the simulation. Annual aggregate real private consumption growth is presented graphically in the form of deviations, in average year-on-year growth terms, from the corresponding long-term average. It is a similar case for the illustration of the contributions.

[1] Yellen, J.L. (2015). Inflation Dynamics and Monetary Policy. Speech at the Philip Gamble Memorial Lecture. Amherst: University of Massachusetts.

coming years. The revision in this year's real growth in government consumption to 2.6% is the result of growth in intermediate consumption and in employment in the government sector being higher than previously projected. Government consumption is projected to grow more moderately over the next three years, at an annual average of 1.7%, as growth in the number of employees slows. Growth in compensation of employees has been at or above 5% this year for the third consecutive year.[4] Growth in the number of employees strengthened slightly relative to last year. Employment grew most in the sectors of human health and social work activities, and education. Wage growth in the first half of this year was similar to last year. As a result of the agreement with the public sector trade unions,[5] wage growth is projected to rise to around 5% in the next two years, and to remain relatively high in 2021, when it is assumed to be similar to the rate in the private sector.

Solid private-sector investment growth is expected to continue over the projection horizon. Given the relatively favourable assumption pertaining to foreign demand growth and the high utilisation of production capacity, the corporate investment cycle is expected to continue, which will also be facilitated by the ongoing accessibility to favourable financing. Based on projections, alongside significant internal resources, which are the result of the high operating surpluses in the recent period, there will be a continuation of growth in loans to the non-banking sector at relatively favourable interest rates. In addition to investment in machinery and equipment, housing investment is also expected to grow. This growth will be encouraged by the situation in the residential real

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[4] Compensation of employees in the government sector increased by 5.1% in the first half of this year, according to quarterly account's figures. As the number of employees increased by 2.1%, there was an increase of 3% in average compensation of employees per employee. The low realisation of growth in average compensation of employees per employee in the first half of the year resulted in a downward revision in this year's projected growth. By contrast, the number of employees in the government sector increased by more than initially projected, as a result of which the projection for employment growth was revised upwards.

[5] The government and some of the public sector trade unions initialled agreements on the resolution of strike demands in November. The agreements covered rises in wages (with exemptions of physicians, officials and directors) and allowances, and certain other areas. The following measures will have an impact on wage growth in 2019: (i) a general rise in wages by one wage grade for all civil servants (with the aforementioned exemptions) from January, (ii) an additional rise in November by one wage grade for employees in positions higher than the 26th wage grade (other than the exemptions), (iii) a rise in wages by one wage grade for individual positions (e.g. in September for class teachers, in November for nurses in intensive care and midwives in maternity wards), and (iv) a rise in certain allowances (e.g. for night work, for work on Sundays, for work on holidays and for split shift) from September. Another wage rise of a further wage grade will be carried out in 2020 for positions that require a doctorate, a master's degree or a specialisation (other than the aforementioned exemptions), while the constraints with regard to payments for ordinary on-the-job performance and for increased workload will be removed from the middle of the year. In all years wage growth will also be affected by civil service promotions, which will be permanently switched from April to December. Other measures include the expansion of the career range for individual positions, the preparation of standards and norms in the area of healthcare and social work, jubilee benefits and termination benefits.

Box 1: Analysis of the state of the business cycle in Slovenia and in the euro area

This box presents an analysis of the business cycle for Slovenia and for the euro area. The analysis of business cycles and the synchronisation of cyclical fluctuations between economies is important for the process of formulating economic policy and is key to the process of preparing medium-term projections.
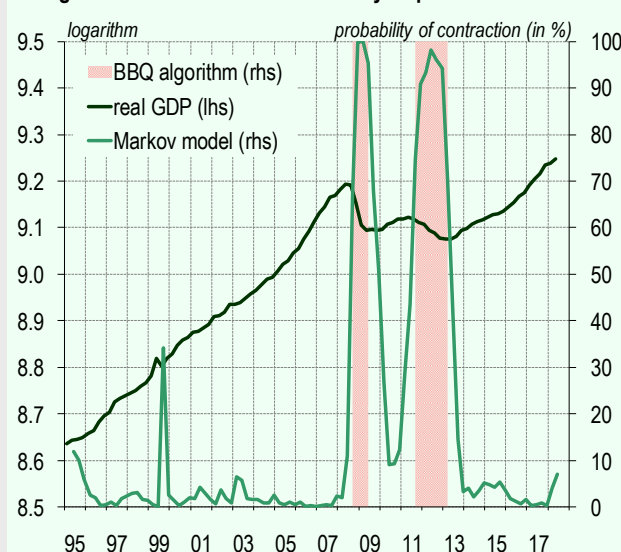
In the period between the first quarter of 1995 and the second quarter of 2018 (or the third quarter in the case of the euro area), a BBQ algorithm (see methodological note) identified, both in Slovenia and in the euro area, two periods of contraction in economic activity, the so-called double-dip recession. The first period in Slovenia begins after the third quarter of 2008 and lasts until the second quarter of 2009. The results for the euro area are similar, except that the first crisis period begins one quarter earlier. As far as the second crisis period is concerned, the contractions in economic activity are of the same length in both economies, and last from the third quarter of 2011 all the way until the first quarter of 2013. Two periods are also identified when it comes to expansions in the two observed economies. The first period lasts at least from the first available figure in the observed sample (the first quarter of 1995) until the first identified peak (the second quarter of 2008 in the case of Slovenia, and the first quarter of 2008 in the case of the euro area), while the second period in both cases begins in the third quarter of 2009 and lasts until the second quarter of 2011. The robustness of the BBQ results is additionally tested with a Markov model. The alternative model confirms the results of the base analysis: it identifies the maximum probability of the occurrence of a contraction in the periods identified also by the BBQ algorithm. The results of the two methods indicate a high synchronisation of business cycles in Slovenia and the euro area, which can be explained by the strong integration of the Slovenian economy in the euro area economy. In addition, the results of the Markov model reveal slightly higher volatility at the end of the observation period in the case of both economies, which illustrates the impact of the uncertain situation in the global economic environment. The results obtained nevertheless need to be taken with a measure of caution, as the model assessment is sensitive to values at the end of the observation period.

Figure 1: Identification of business cycle phases in Slovenia

Figure 2: Identification of business cycle phases in the euro area
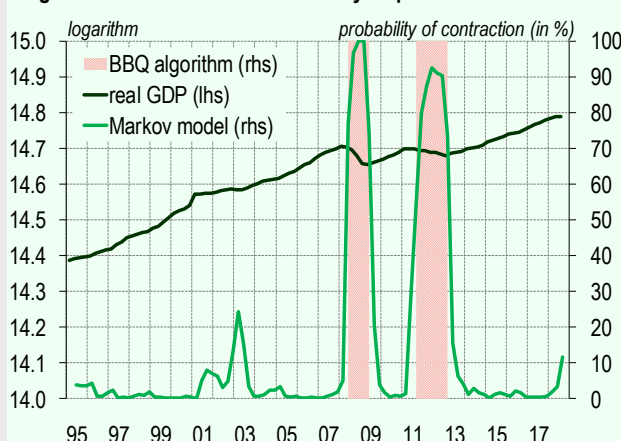
Note: Figures show two methods for detection of business cycle phases, basic BBQ algorithm, developed by Harding and Pagan (2002), and alternative Markov model, first presented by Hamilton (1989). Red bars show detected recessions, while bars' width reflect the duration of particular contraction. Source: Eurostat, Bank of Slovenia calculations.

Additional indicators of business cycle analysis conducted by a BBQ algorithm (Table 1) reveal that there is practically no difference between the average lengths of the two phases of the cycle in Slovenia and in the euro area.[1] Greater heterogeneity between the two economies is illustrated by the average amplitude of individual phases of the cycle,[2] where it is evident that the Slovenian economy contracts faster during a

Table 1: Business cycle features

|	Slovenia		Euro area	
	Contraction	Expansion	Contraction	Expansion
Average duration of particular phase of the cycle (number of quarters)	5.5	30.5	6.0	30
Average amplitude in particular phase of the cycle (%)	-7.4	29.4	-3.4	18.2

Source: Eurostat, Bank of Slovenia calculations.

Figure 3: Duration of expansions

number of quarters

- average duration of expansions
- duration of current expansion

Source: Bank of Slovenia calculations.

time of declining economic activity. The reasons for this can be found in the different sizes of the two economies, in the difference in the level of economic development, and in Slovenia's greater dependence on the situation in the global macroeconomic environment. It is generally the case that small, open economies are more subject to the adverse effects of a decline in economic activity.

The correlation of business cycles can be also illustrated by the use of basic measures of correlation such as the Pearson correlation coefficient between the log values of real GDP in Slovenia and in the euro area, and the concordance index[3] between the dummy variables obtained using the BBQ algorithm. Both measures of correlation have a value of 0.99, which confirms the high level of integration of the two economies. It means that Slovenia and the euro area are in the same phase of the business cycle for 99% of the time.

The final data shows that the duration of the current expansion of economic activity in Slovenia and in the euro area (as measured by the difference between the trough of the last cycle identified using the BBQ algorithm and the second or third quarter of 2018) is already relatively close to the average duration of past expansions, which indicates that both Slovenia and the euro area are most likely in a more mature phase of the business cycle, and growth in the two is expected to be in a phase of gradual slowdown.

Methodological note

The BBQ algorithm for identifying turning points in business cycles (the peaks and troughs of the business cycle) uses a method of local minima and maxima in the observed series y_t (the log value of real GDP in this case). This means that a dummy variable can be defined for determining the phase of the business cycle by means of the following equations:

$$V_t = 1(y_t < y_{t \pm j}, 1 \le j \le k)$$

$$\Lambda_t = 1(y_t > y_{t \pm j}, 1 \le j \le k)$$

The parameter k sets an upper limit (number of quarters) at which the occurrence of contraction or expansion is verified; meaning that its value is set to 2 in the case of quarterly data. There are also censoring rules to set the minimum length of an individual phase and the minimum duration of a business cycle which are set in accordance with Harding and Pagan (2002), and add up to two and five quarters respectively.[4]

As an alternative to the BBQ algorithm, the current analysis also presents a Markov model, which is defined by the following equations:

$$y_t - \mu_{S_t} = \sum_{i=1}^{4} \phi_i (y_{t-i} - \mu_{S_{t-i}}) + \varepsilon_t$$

$$\varepsilon_t \sim GED(0, \sigma^2, K_{S_t})$$

$$S_t = 1,2$$

As is evident, an economy is allowed to switch between two states (between expansion and contraction in this case), whereby each is identified by specific values in parameters. The transition from one state to another is endogenous (depending on the transition matrix), which means that the regimes cannot be identified in advance, but can only be determined once the model has been estimated and the filtered probability for the identification of one state is known. The distribution of regression error terms follows the generalised error distribution (*GED*), where all the parameters that define its shape are stated inside the parentheses.[5]

---

[1] The length of the expansion (measured by the number of quarters) in the case of the BBQ algorithm is equal to the distance between the trough of the current cycle and the peak of the next cycle, while for the length of the contraction (measured by the number of quarters) the reverse is the case (the distance between the peak of the current cycle and the trough of the next cycle).

[2] The amplitude of an individual phase of the cycle is measured by the average difference between the log value of real GDP at the beginning and at the end of the individual phase in question.

[3] Details are given in Miteski and Georgievska (2016).
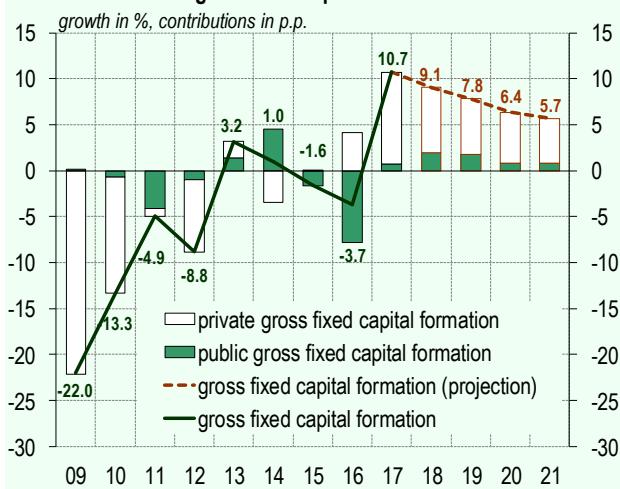
[4] Details are given in Hardin and Pagan (2002).

[5] Details are given in Hamilton (1989) and Perlin (2009).

estate market, where a shortage of housing is currently being reflected in a rapid increase of house prices.[6] Given the favourable situation on the labour market and the favourable terms of financing, demand for residential real estate has strongly exceeded the supply of housing in recent periods. These developments are expected to translate into solid housing investment growth in the coming years.

The government investment to GDP ratio will increase during the projection horizon. The preceding

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

growth in %, contributions in p.p.

private gross fixed capital formation
public gross fixed capital formation
gross fixed capital formation (projection)
gross fixed capital formation

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

two years have seen the lowest government investment to GDP ratio during the period in which figures according to the ESA 2010 have been available (as of 1995). While government investment recorded nominal growth last year, the rate of growth strengthened further this year, partly under the influence of the electoral cycle. The faster disbursement of EU funds and major government investment projects are also expected to contribute to growth over the projection horizon. About 70% of the total available funds from the new financial framework 2014-2020 had already been earmarked by the end of November 2018. Real growth in government investment is projected at approximately 8% annually over the projection horizon, which will strengthen its ratio to GDP from 3.1% in 2017 to 3.7% of GDP in 2021.

Exports remain a major driver of economic activity throughout the projection horizon.[7] Given the still-favourable assumption pertaining to foreign demand growth, there will be a continuation of growth in exports of goods and services, albeit at a slightly slower pace compared with 2017. Despite the slightly faster wage growth, the external competitiveness of the Slovenian export sector will remain favourable in the following years, and will allow for further gains in market shares.[8] Simultaneously, growth in domestic demand will strengthen imports, which

Figure 5: Government investment

in % of GDP

general government investment
projection
previous projection
euro area (EC)
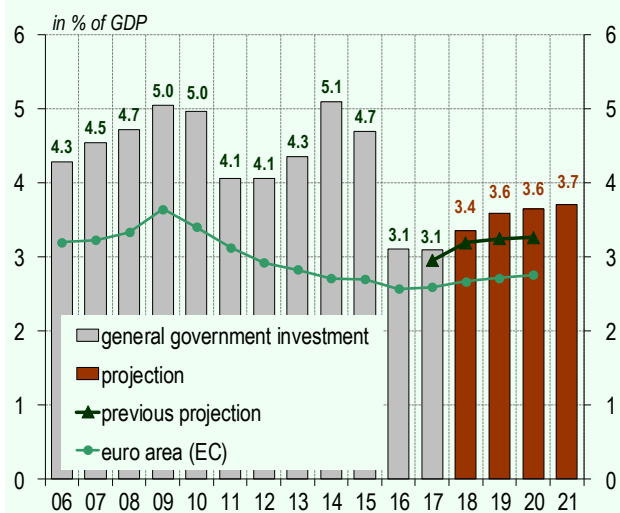
Source: SORS, EC – Ameco database, Bank of Slovenia projections.

Figure 6: Current account, real exports and imports projections

growth in %

current account (in % of GDP)
real exports
real imports

Source: SORS, Bank of Slovenia projections.

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[6] Detailed analysis on growth of residential real estate prices is published in the July 2018 Economic and Financial Developments (Box 2.1).
[7] Nominal exports of goods and services currently amount to around 85% of nominal GDP, and the figure is projected to increase further over the projection horizon. The corresponding figure in 2008 was approximately 65% of GDP.
[8] See the selected theme entitled *Changes in Slovenia's external competitiveness indicators in the last decade* published in the April 2018 Economic and Financial Developments.

are projected to slightly outpace the solid growth in exports over the entire projection horizon. Alongside the slightly negative terms of trade, the current account surplus will narrow from just over 7% of GDP last year to 6.6% of GDP by the end of the projection horizon. The contribution made to aggregate economic growth by net exports will remain positive throughout the projection horizon, albeit significantly less than in recent years. It will average 0.4 percentage points.

Compared with June, the economic growth projection was revised downwards and its structure changed. The main reason for the downward revision is that the slowdown in global and regional economic activity is sharper than previously projected. This could be attributable to a slightly faster shift into a more mature phase of the business cycle and the uncertainty pertaining to international trade. This year's slowdown in domestic private consumption growth is also being reflected in the slightly slower projection of economic growth in the coming years. A decisive factor in the change of the projected structure of GDP growth in 2018 was the initial estimate of annual GDP for 2017, in which the contribution made by private consumption growth and government consumption growth was significantly reduced.[9]

2.2 Labour market

Employment growth is expected to gradually slow over the projection horizon. Due to the favourable economic environment, employment growth has remained relatively high this year, and employment has already exceeded its pre-crisis peak from 2008. In the wake of the high demand for labour, the employment rate is also increasing, while employers are increasingly hiring foreign citizens as unemployment falls further and the shortage of qualified labour becomes evident. Employment growth is expected to gradually slow down over the projection horizon, in the wake of increasing structural imbalances on the labour market, which are evidenced in a shortage of qualified labour, and in the wake of more moderate economic growth. The ageing population will also be a significant limiting factor in hiring over the medium term. Employers are expected to continue mitigating the domestic limiting factors in the future, at least in part, by recruiting foreign workers. Finally, active employment policy measures will also target a reduction in the structural imbalances on the labour market in the future.

Wage growth is expected to be at its highest since 2008 throughout the projection horizon, but will not lead to a significant deterioration in the nominal cost competitiveness of the economy. Year-on-year nominal average wage growth in the first three quarters of this year was higher than in the same period of the previous

Figure 7: Revision of GDP projection by components

changes in growth rate and contributions in p.p.

- private consumption
- government consumption
- gross fixed investment
- net foreign trade
- changes in inventories
- GDP

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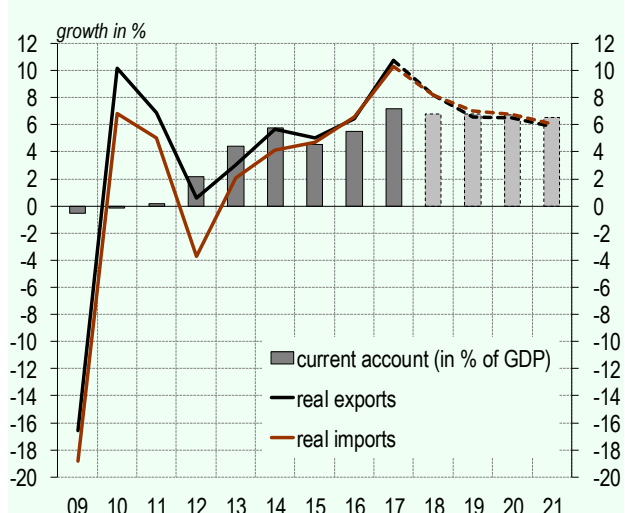*Source: SORS, Bank of Slovenia projections.*

Figure 8: Employment and unemployment

in %

- employment growth, y-o-y (private sector)
- employment growth, y-o-y (public sector)
- employment growth, y-o-y (total)
- ILO unemployment rate

Source: SORS, Bank of Slovenia projections.

[9] A detailed illustration of the changes in the structure of economic growth brought by the initial estimate of GDP for 2017 is published in the October 2018 Economic and Financial Developments (Box 2.1).

Box 2: Employment trends and structure of the economy

This year employment growth has been higher in activities with below-average wages.[1] Activities with below-average wages accounted for more than 70% of the aggregate growth in the workforce in employment over the first nine months of the year (Figure 1). The data shows (Figures 3 and 4) that the activities with a lower level of productivity have higher labour shortages, measured by the vacancy rate, and a lower average wage. Firms are addressing the qualified labour shortage by hiring foreign citizens.

The proportion of the workforce in employment[2] accounted for by foreign citizens has been gradually increasing since the end of 2013, but has recently picked up pace. The figure stood at 10% in September, while they accounted for 55% of the aggregate increase in the workforce in employment. The largest numbers of foreign citizens are employed in construction, manufacturing, and transportation and storage (Figure 2).

According to the figures of the Employment Service of the Republic of Slovenia, the greatest demand from employers in the first half of next year will again be for occupations for which lower skills are required (levels 1 and 2 according to the ISCO-08 classification of occupations), most notably non-industrial occupations and service occupations.

Developments on the labour market are in line with the Bank of Slovenia's previous analyses, which addressed low growth in labour productivity in recent years[3] and Slovenia's integration into global production chains.[4] The conclusions of these analyses show that the backbone of the Slovenian economy

Figure 1: Average contribution to year-on-year growth of persons in employment and the level of nominal gross wages by activities
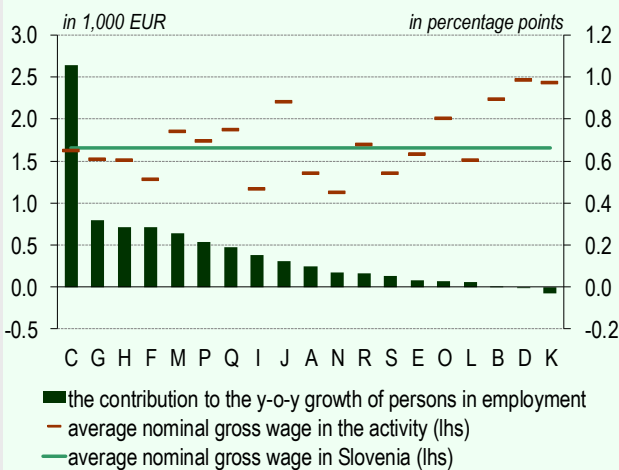
Note: The analysis was done for the average of the first nine months of the year 2018 on the basis of monthly data.
Source: SORS, Bank of Slovenia calculations.

Figure 3: Average wages and labour productivity
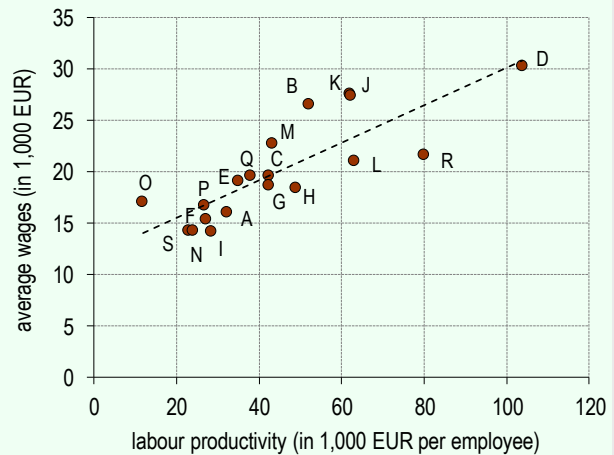
Note: Average wages were calculated as the wage cost per employee, while labour productivity as firm's value added per employee. The calculations refer to the year 2017.
Source: AJPES, Bank of Slovenia calculations.

Figure 2: Employment of foreign citizens by activities for the average of the first nine months of 2018

Note: The figure represents the share of foreign citizens (excluding farmers) in each activity according to the total number of foreign citizens, calculated as the average of the first nine months of 2018. For some activities, data is not available because of confidentiality, so the share does not sum up to 100%.
Source: SORS, Bank of Slovenia calculations.

Figure 4: Vacancy rate and labour productivity

Note: Labour productivity has been calculated as the value added per employee. The calculations refer to the year 2017.
Source: SORS, AJPES, Bank of Slovenia calculations.

consists of technological structures that rely on medium-skilled labour, and that Slovenia's exports are concentrated in labour-intensive activities with relatively low labour costs. Because an economy structured in this way has limited potential for growth in GDP per employee, it would be sensible to focus economic policy on restructuring towards activities with higher value-added.

[1] The impact of employment structure on growth in the average wage was analysed for past years in the April 2018 Economic and Financial Developments (Box 3.1).
[2] The analysis of the employment of foreign citizens by activities encompasses the workforce in employment excluding self-employed farmers.
[3] The analysis is available in the October 2018 Economic and Financial Developments (Box 2.2).
[4] The analysis is available in the January 2018 Economic and Financial Developments (Box 4.1).

NOTE:

The letters in the graphs refer to the activities in the SKD 2008 classification. A: Agriculture, forestry and fishing; B: Mining and quarrying; C: Manufacturing; D: Electricity, gas, steam and air conditioning supply; E: Water supply, sewerage, waste management and remediation activities; F: Construction; G: Wholesale and retail trade, repair of motor vehicles and motorcycles; H: Transportation and storage; I: Accommodation and food service activities; J: Information and communication; K: Financial and insurance activities; L: Real estate activities; M: Professional, scientific and technical activities; N: Administrative and support service activities; O: Public administration and defence, compulsory social security; P: Education; Q: Human health and social work activities; R: Arts, entertainment and recreation; S: Other service activities; T: Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use; U: Activities of extraterritorial organizations and bodies

year, as growth in the private sector in the first half of the year outpaced growth in the government sector. Wage growth is expected to exceed 4% over the entire projection horizon. The main factors influencing wage growth in the private sector will be the shortage of qualified labour and the ongoing fall in unemployment, while the contributions made by inflation and labour productivity growth will also increase. By contrast, wage growth will largely be held down by (1) further hiring in activities with below-average wages, (2) uncertainty in the international environment, and (3) efforts to maintain cost competitiveness. According to the current agreements between the government and the public sector trade unions, wage growth

in the government sector this year will be comparable to last year, and will exceed growth in the private sector in 2019 and 2020.[10] Compared with the June projections, this year's wage growth has been revised upwards on the basis of higher realisation. The wage growth projection for 2019 is also slightly higher.

2.3 Inflation

Inflation, as measured by the HICP, will reach 2.0% this year, primarily driven by external factors, and is projected to exceed this level in the following years, mostly due to pressures stemming from the domestic environment. The rise in inflation in Slovenia as well as in the euro area in the second and third quarters of this year was largely attributable to rises in oil prices on the global market, which led to higher growth in energy prices. Consequently, the prices of energy and food are expected to contribute a total of 1.3 percentage points, while service prices will contribute 0.9 percentage points to this year's average inflation. On the other side, the contribution made by prices of non-energy industrial goods will remain negative with an average of 0.2 percentage points. Over the remainder of the projection horizon, headline inflation is expected to exceed 2%, primarily as a result of growth in domestic demand, which will be supported by the favourable labour market conditions, but also as a result of higher cost pressures.

Figure 9: Projection of compensation per employee growth

nominal growth in %
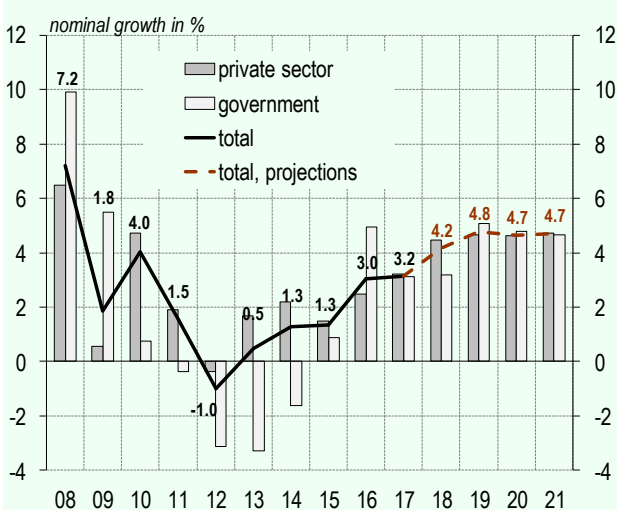
Source: SORS, Bank of Slovenia projections.

[10] A detailed description of the impact of the agreement between the government and the public sector trade unions is given in Footnote 5 on page 11.

The contribution to headline inflation by energy prices is projected to decline over the projection horizon in line with the ECB's assumption for developments in oil prices. Although year-on-year growth in energy prices is still expected to be high this year, at an average of 5.8%, in the wake of November's sharp fall in the price of Brent crude and the consequent downward revision in the assumption for developments in global oil prices, we expect a slowdown in growth over the remainder of the projection horizon. Prices of motor fuels, which account for half of the energy prices basket, are expected to make a positive contribution to growth in energy prices only until the second quarter of 2019, as a result of the direct impact of growth in global oil prices. Despite the continued negative dynamic in prices of motor fuels in 2019, the year-on-year growth in energy prices is expected to be positive, primarily due to growth in other energy prices. The contribution made by prices of motor fuels and other energy prices is expected to become negligible in 2020, and the aggregate growth in energy prices is projected to decline to -0.1% in 2020 and 2021, which is in line with the technical assumption for developments in global oil prices.

Core inflation will gradually strengthen over the projection horizon. Growth in the core inflation indicator excluding energy prices is projected to average 1.4% this year, after which it will gradually rise to reach 2.5% in 2021. The growth will be driven by demand for goods and services, but also by cost pressures on the supply side.

Favourable labour market conditions will continue to support a strong domestic demand, whereby growth in private consumption is expected to be driven primarily by higher wage growth. The latter will however result in higher production costs, which will increase in the near-term also as a result of higher energy prices. Over the projection horizon the firms can be expected to pass, to a certain extent, the increased cost pressures through into final prices of goods and services. The largest contribution to core inflation over the next three years is expected to come from growth in services prices; smaller contributions will stem from growth in food prices and prices of non-energy industrial goods.

Figure 10: Projection of contributions to inflation by components
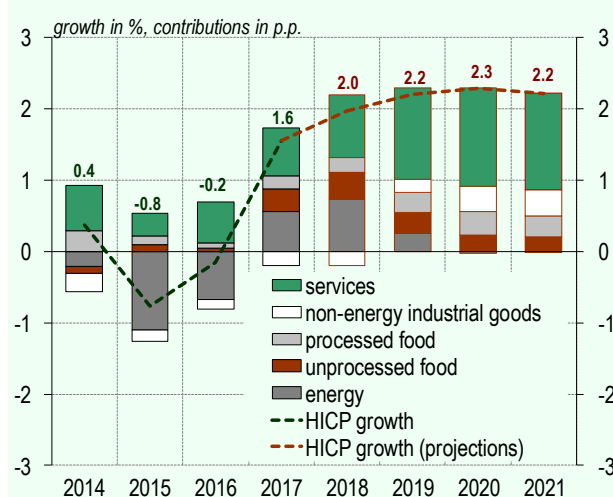
growth in %, contributions in p.p.

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

Table 3: Inflation projections

	2013	2014	2015	2016	2017	2018 Dec.	Δ	2019 Dec.	Δ	2020 Dec.	Δ	2021 Dec.	Δ
						average annual growth, %							
Consumer prices (HICP)	1.9	0.4	-0.8	-0.2	1.6	**2.0**	0.0	**2.2**	0.0	**2.3**	0.0	**2.2**	...
food	4.9	0.8	0.9	0.5	2.2	**2.5**	-0.1	**2.5**	0.0	**2.4**	0.1	**2.2**	...
energy	1.8	-1.4	-7.8	-5.2	4.7	**5.8**	0.9	**1.4**	1.2	**-0.1**	0.1	**-0.1**	...
other goods	-0.8	-1.0	-0.6	-0.5	-0.7	**-0.7**	-0.3	**0.6**	-0.2	**1.3**	-0.1	**1.3**	...
services	2.3	1.8	0.9	1.6	1.8	**2.4**	0.0	**3.5**	-0.1	**3.8**	0.0	**3.7**	...
Core inflation indicators (HICP)													
excluding energy	2.0	0.7	0.4	0.6	1.1	**1.4**	-0.2	**2.3**	-0.1	**2.6**	0.0	**2.5**	...
excl. energy and unprocessed food	1.4	0.9	0.4	0.6	0.8	**1.1**	-0.1	**2.2**	-0.1	**2.6**	0.0	**2.5**	...
excl. energy, food, alcohol and tobacco	0.9	0.6	0.3	0.7	0.7	**1.1**	-0.1	**2.2**	-0.2	**2.7**	0.0	**2.6**	...

Δ: difference between current projections and projections in Macroeconomic Projections for Slovenia, June 2018.
Source: SORS, Bank of Slovenia.

Compared to the June projection round, the headline inflation projection remains unchanged for the entire projection horizon. While the inflation projection has remained unchanged, the dynamic in individual price categories has been revised slightly, most notably in energy prices and prices of non-energy industrial goods. Growth in energy prices was revised upwards for 2018 and 2019, primarily due to a higher outcome than previously projected, as prices of motor fuels and other energy prices (mainly electricity and solid fuels) were unexpectedly higher. The revisions to the projection for growth in energy prices were 0.9 percentage points for 2018, 1.2 percentage points for 2019, and 0.1 percentage points for 2020. By contrast, the projections for growth in prices of non-energy industrial goods were revised downwards for all three years, namely by 0.3 percentage points for this year, 0.2 percentage points for 2019 and 0.1 percentage points for 2020. The lower growth in prices of non-energy industrial goods also reduced core inflation expectations: the core inflation projection was revised downwards by 0.2 percentage points for this year, and 0.1 percentage points for next year.[11]

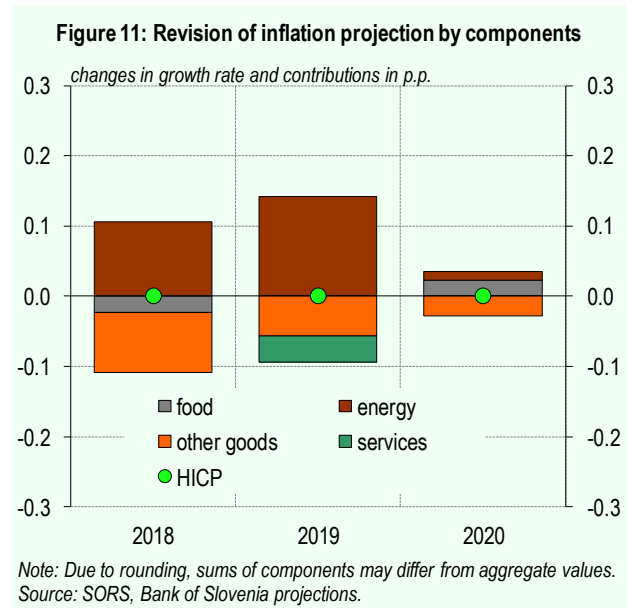Figure 11: Revision of inflation projection by components

changes in growth rate and contributions in p.p.

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

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[11] Detailed analysis of developments in prices of non-energy industrial goods is published in the July 2018 Economic and Financial Developments (Box 7.1).

3 | Risks and Uncertainties

The main risks surrounding the current projections for economic growth and inflation remain substantively un-changed. The downside external risks remain pronounced and related to the deterioration in the geopolitical situation and the escalation of protectionist measures, which could worsen the global economic climate and reduce growth in foreign demand with adverse consequences for Slovenia's exports and investment. The main risks stemming from the domestic environment are related to a higher domestic demand which could have a positive impact on economic growth, and could increase upward pressures on prices. The increased domestic demand could stem from faster growth in government investment, and from faster growth in private consumption in the wake of increased upward pressures on wages.

The risks related to the economic growth projections remain on the downside. Similarly to the June projections, the pronounced downside risks from the external environment remain related to the escalation in protectionism in international trade. The potential impact of protectionist measures is discussed in detail in Box 3. Risks of potentially lower growth in foreign demand also come from the worsening of geopolitical tensions. Since exports

remain one of the main drivers of economic growth in Slovenia, the economic outlook could deteriorate significantly in the event of weaker growth in foreign demand. Economic activity could also be adversely impacted by potentially higher growth in oil prices and a sharper tightening of monetary policy in the US resulting in a deterioration in global financing conditions. By contrast, the risks from the domestic environment mainly remain on the upside, and are related to potentially higher domestic demand. A stronger growth in private consumption could be stimulated by further wage growth, which could be stronger than projected, especially in light of the faster labour market tightening, the potential spillover effects from the agreed wage rise in the public sector on wages in the private sector, and the potential adoption of the minimum wage law amendment.[12] In addition, with more effective disbursement of EU funds and major infrastructure projects growth in government investment could be stronger than currently projected. On the other side, government spending could be lower owing to the adoption of structural reforms and further structural adjustments in the public finances in order to meet a fiscal target.

Figure 12: Risks to the projections

Note: Circle size indicates probability of risk realisation.
Source: Bank of Slovenia estimate.

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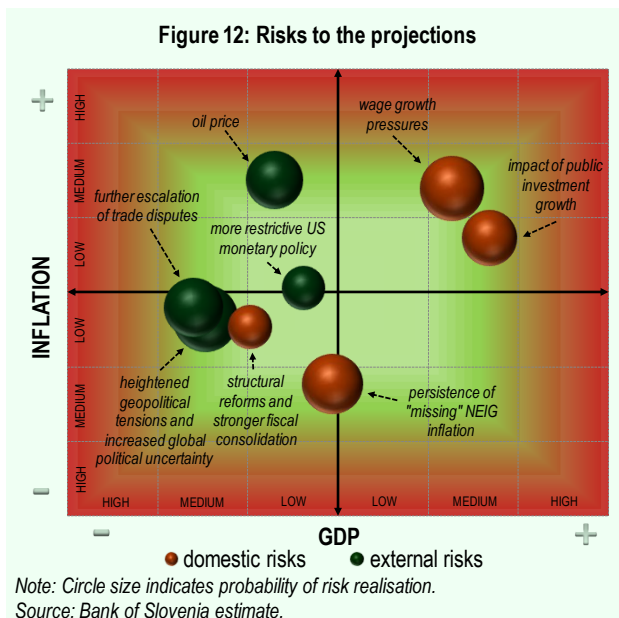
[12] The proposal of the Act Amending the Minimum Wage Act envisages rises in the minimum gross wage of 5.2% on 1 January 2019 and 6.1% on 1 January 2020. Under the bill, a formula would be introduced in 2021 according to which the minimum wage would be adjusted to ensure that the net minimum wage is 20% higher than the minimum cost of living. At the same time all other allowances and payments for on-the-job performance and for business performance would be excluded from the minimum wage. While the adoption of the bill could have a positive impact on economic growth via a rise in the wage bill and increased domestic demand, there is a downside risk related to higher unit labour costs and a deterioration in external competitiveness, which could slow employment growth and GDP growth.

Box 3: Assessment of the Slovenian economy's exposure to protectionist measures in international trade

This box addresses the risk related to the tightening of protectionist policies in international trade. After raising import duties on steel and aluminium from the EU, the US government additionally discussed the possibility of introducing a tariff of 25% on imports of automotive industry products. Although Slovenia's direct exports to the US in the two sectors account for less than 1% of its gross exports, any assessment of the Slovenian economy's exposure to protectionist measures needs to take into account the increasingly changing nature of international trade. This consists less and less of the exchange of final products between countries, and more and more of integration into global production chains, within the framework of which individual countries specialise in specific segments of the manufacturing of final products. An assessment of the overall effects of the introduction of customs duties by the US thus needs to take account of exports to other EU partners via which the Slovenian economy is indirectly exposed to the US measures.

Figure 1 illustrates the decomposition of Slovenia's gross exports to the US in relation to the automotive industry and the production of aluminium and steel. On the basis of the figures from the world input-output tables,[1] gross exports are divided into direct exports of value-added of the sector in question to the US, indirect exports of value-added via partners from the EU, exports of intermediate goods used to manufacture final products in the US, and foreign value-added in Slovenia's gross exports to the US. Taking account of all of these components, Slovenia's total gross exports related to imports by the automotive industry in the US account for approximately 1.2% of Slovenia's total exports. Direct exports of value-added amount to 0.01% of total exports, value-added exported indirectly via other EU Member States amounts to 0.3% of total exports, while the share of Slovenia's value-added that relates to automotive parts and components used for automotive manufacturing in the US stands at 0.2%. The difference between gross exports and the aforementioned components of value-added represents the foreign share of

Figure 1: Exposure of the Slovenian economy to higher United States' import tariffs

share of Slovenia's gross exports, in %

☐ export of intermediates for final production in the USA
■ indirect export of value added through the EU
■ direct export of value added
■ foreign share in exports

Source: WIOD, Bank of Slovenia calculations.
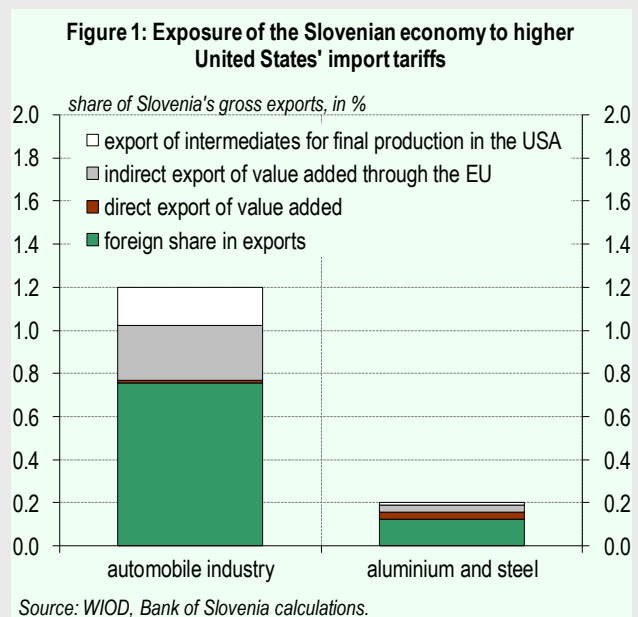
Slovenia's exports to the automotive sector in the US. The relatively high share of foreign content compared with the components of domestic value-added is an indication of the traditionally high fragmentation of the automotive production chain. Compared with the automotive industry, Slovenia's total exports to the US related to the aluminium and steel industry are even lower, and account for approximately 0.2% of total exports.[2] From the perspective of Slovenia's export activities and the macroeconomic projections, the risk from the recent deterioration in international trade is relatively low in this respect, but a greater impact could come from the increased uncertainty in the international environment, which could significantly reduce confidence in the economy and consequently could also reduce firms' output and investment activities.

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[1] http://www.wiod.org

[2] The results are based on analysis presented in the Bank of Slovenia working paper entitled *Structure and Competitiveness of the Slovenian Economy in the World of Increasing Production Fragmentation* (M Damjanović and B Banerjee, May 2018). Similar findings were also made by the IMAD (*Autumn forecast of economic trends 2018*, Box 3).

The inflation projections are subject to similar risks as in the June projections and remain slightly on the upside. The most notable external risks are related to higher oil prices owing to the worsening of geopolitical tensions in oil exporter countries. An additional risk of higher growth in energy prices comes from the domestic environment, and is related to the possibility of the full liberalisation of price setting for motor fuels. By contrast,

slower growth in foreign demand could have a negative impact on inflation. The risks from the domestic environment are largely related to potentially higher wage growth, which in the wake of faster growth in private consumption could be reflected in higher growth in prices of services and goods, while the projections for growth in prices of non-energy industrial goods remain subject to downside risks. Growth in the latter has remained nega-

tive for almost a decade, despite growth in wages and commodity prices on global markets. At the same time, the pass-through of cost pressures into prices of non-energy industrial goods is still not evident to the extent that would be expected. The expectation of greater pass-through than that realised has led to an overestimation of developments in this price category in the last few projections.

4 | Comparison Between Institutions

Comparison of the latest economic growth projections for Slovenia for the 2018 to 2021 period shows that all institutions expect a gradual slowdown in economic growth, with projections for 2018 concentrated at around 4.3%. Domestic institutions are, between 2019 and 2021, on average projecting slightly higher growth than foreign institutions. Over the observation period, the Bank of Slovenia projections are around the middle of the projection range for the individual year. In the projections of consumer price inflation, the institutions' average projection is around 1.9%, which is in line with the ECB's medium-term target, while both the domestic and foreign institutions on average expect higher inflation in 2019, 2020 and 2021 (with the exception of the OECD projection profile). A comparison of projecting accuracy between the institutions[13] reveals that in all of the observation periods (2001 to 2017, the entire period excluding 2008 and 2009, and 2009 to 2017) the Bank of Slovenia was among the most accurate in projecting real GDP growth and consumer price inflation.

4.1 Comparison of projections between institutions

Comparison of the latest economic growth projections for Slovenia for the 2018 to 2021 period shows that all institutions expect a gradual slowdown in economic growth, with projections for 2018 concentrated at around 4.3%, and with the domestic institutions on average projecting slightly higher growth than foreign institutions for 2019 and 2021. According to the most recent projections available, the highest economic growth projection for 2018 is 4.5% by the IMF, which is 0.2 percentage points above the average of all projections for the current year. The lowest projections for 2018 are by the Bank of Slovenia and the EBRD, at 4.2%. The highest economic growth projection for the next year is 3.8% by the EIPF, which is 0.3 percentage points above the average projection for the year in question, followed by projections from the IMAD and the OECD. The lowest economic growth projection for 2019

is 3.3%, by the EBRD and the European Commission. The Bank of Slovenia projection of 3.4% is 0.1 percentage points below the average projection for 2019. Projections for 2020 are available from five institutions, the highest of which is by the IMAD, at 3.4%, while the OECD has the lowest projection of just 2.7%. The Bank of Slovenia projection is the same as the average projection for the year in question. Only two institutions have economic growth projections for 2021 available: 2.9% from the Bank of Slovenia, and 2.6% from the IMF.

The institutions' average inflation projection for 2018 is around 1.9%, while in 2019, 2020 and 2021 both domestic and foreign institutions on average expect a gradual rise in inflation (with the exception of the OECD projection profile). The highest inflation rate for 2018 of 2.1% is expected by the IMF, while the lowest rates are projected by the EIPF and the IMAD, each at 1.8%. The Bank of Slovenia projection is 0.1 percentage points above the average projection for the current year, at 2.0%. The highest inflation projection for the next year

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[13] Eight institutions that produce macroeconomic projections for Slovenia are included in the comparative analysis of current projections of real GDP growth and consumer price inflation (seven institutions in the case of the latter): Consensus Economics, the European Bank for Reconstruction and Development (EBRD), the Economics Institute of the Faculty of Law (EIPF), the European Commission, the International Monetary Fund (IMF), the Organisation for Economic Cooperation and Development (OECD), the Institute of Macroeconomic Analysis and Development (IMAD) and the Bank of Slovenia.

Figure 13: Comparison of GDP projections for Slovenia

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

Figure 14: Comparison of inflation projections for Slovenia

Source: Consensus Economics, EIPF, European Commission (EC), IMF, OECD, IMAD, Bank of Slovenia (BS).
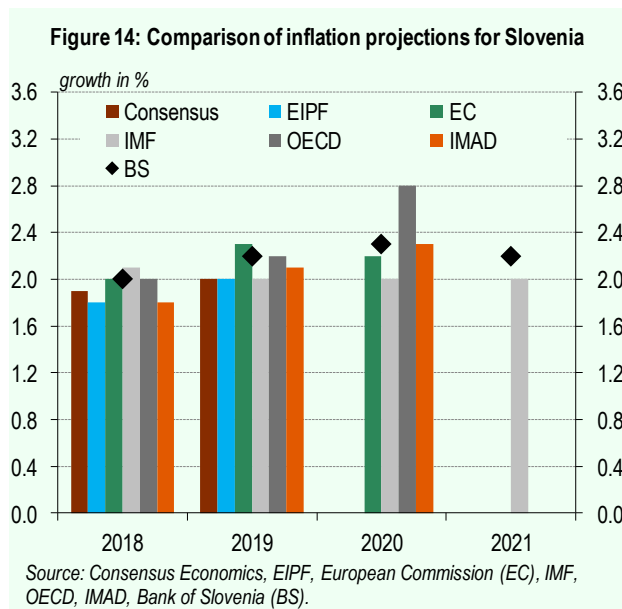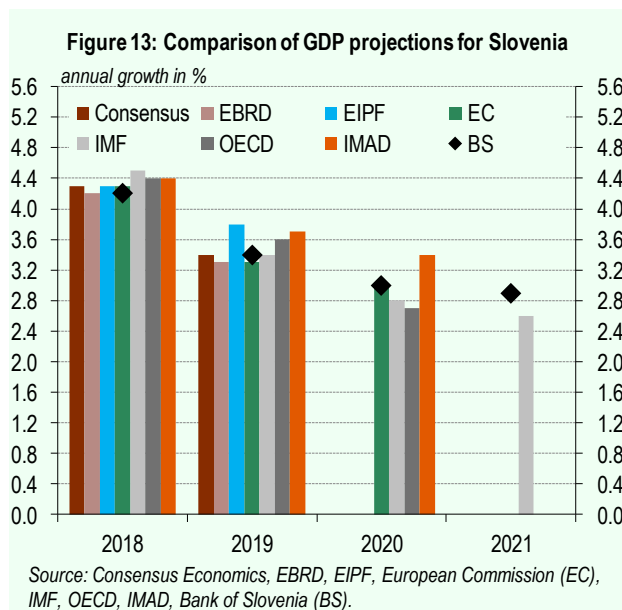
is that of the European Commission, at 2.3%, which is 0.2 percentage points above the average projection for the year in question. This is followed by the projection of 2.2% from the Bank of Slovenia and the OECD, while the lowest projections for 2019 are given by the EIPF, Consensus and the IMF, at 2.0%. There are also five inflation projections available for 2020: the most notable is that of the OECD, which is predicting consumer price inflation to rise to 2.8%, while the projections by all other institutions are lower. The highest inflation rates are projected by the

Bank of Slovenia and the IMAD (2.3%), followed by 2.2% by the European Commission. The lowest rate is the 2.0% projected by the IMF. Again, only two institutions have projections for 2021 available: 2.2% from the Bank of Slovenia, and 2.0% from the IMF.

4.2   Comparison of projection accuracy between institutions

The accuracy of the real GDP growth and consumer price inflation projections over the 2001 to 2017 period is measured by comparing the statistical estimate or the observed value with the projections for the variables obtained in past periods.[14] 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).[15] Only three of the institutions in question (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). Given the impact of high volatility during the crisis, the entire observation period excluding 2008 and 2009 and the period of 2009 to 2017 have been additionally included in the analysis.

In terms of the MAE and RMSE, the most accurate economic growth projections for the 2001 to 2017 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 SKEP unit. In the economic growth projections, MAE ranged from 0.6 to 3.1 over the observation period, while RMSE ranged from 0.7 to 4.5.[16] The institutions were slightly more accurate in projecting inflation: the aforementioned indicators had narrower ranges, namely 0.2 to 1.6 for MAE and 0.3 to 2.0 for RMSE.

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[14] In the examination of projection accuracy between institutions in the 2001 to 2017 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.

[15] For a detailed description of the statistical methods (in Slovene), see Cimperman and Savšek (2014): https:// bankaslovenije.blob.core.windows.net/publication-files/PA_1_2014_Natančnost_napovedi_makroekonomskih_spremenljivk.pdf.

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

According to the MSE and the RMSE, the most accurate economic growth projections over the entire period excluding 2008 and 2009 were those of the Bank of Slovenia, the European Commission and the IMAD, while the best inflation projections were again by the Bank of Slovenia, the IMAD and the SKEP unit. Compared with the entire observation period, the economic growth projections and the inflation projections during the period in question were slightly more accurate, as the exclusion of 2008 and 2009 have eliminated the impact of the crisis-related volatility. In the economic growth projections, MAE ranged from 0.6 to 2.5 over the period in question, while RMSE ranged from 0.7 to 3.1. The institutions were again slightly more accurate in their inflation projections: the aforementioned indicators had narrower ranges than over the entire observation period (2001 to 2017), namely 0.2 to 1.5 for MAE and 0.3 to 2.0 for RMSE.

The OECD and the European Commission produced the most accurate economic growth projections over the post-crisis period (2009 to 2017), while the Bank of Slovenia, the IMAD and the OECD produced the most accurate inflation projections. The accuracy of the economic growth projections improved in comparison to the entire observation period (2001 to 2017): the intervals in MAE and RMSE narrowed markedly to range from 0.5 to 2.4 for MAE and 0.7 to 2.9 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 1.2 for MAE and 0.2 to 1.5 for RMSE.

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

Real GDP	2001–2017			2001–2008			2009–2017			2008 and 2009			excl. 2008–2009			2004–2017		
	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	0.6	0.9	1.1	-0.3	1.6	2.5	-3.3	3.3	3.9	0.6	1.0	1.1	0.2	1.5	2.1
Consensus	0.1	1.5	2.1	0.6	1.1	1.3	-0.3	1.8	2.6	-3.3	3.3	3.4	0.6	1.2	1.5	0.2	1.6	2.2
EBRD							0.9	1.5	1.6									
EIPF	-0.2	1.6	2.4	0.9	1.2	1.2	-0.8	1.7	2.7	-4.0	4.0	4.5	0.4	1.2	1.4	-0.2	1.6	2.4
EC	0.2	1.3	1.7	0.4	1.1	1.3	-0.1	1.5	2.1	-2.6	2.6	2.9	0.5	1.1	1.3	0.3	1.4	1.8
IMF	0.2	1.4	1.9	0.4	1.1	1.3	-0.1	1.8	2.4	-2.9	2.9	3.5	0.6	1.2	1.4	0.3	1.5	2.1
OECD							0.3	1.2	1.5									
SKEP	0.4	1.5	2.1	1.0	1.1	1.1	0.0	1.8	2.5	-2.9	2.9	3.7	0.9	1.3	1.3	0.4	1.5	2.1
IMAD	0.1	1.3	1.6	0.3	1.0	1.2	-0.1	1.6	2.0	-2.4	2.4	2.3	0.4	1.1	1.3	0.3	1.4	1.7
next year																		
BS	-0.6	2.2	3.6	-1.0	2.4	4.6	-0.2	2.0	2.6	-6.3	6.3	7.9	0.2	1.6	2.1	-0.7	2.6	4.0
Consensus	-0.6	2.5	3.9	-1.2	2.9	5.1	-0.2	2.2	2.7	-6.0	6.4	9.1	0.2	1.9	2.3	-0.7	2.8	4.2
EBRD							0.7	2.2	2.9									
EIPF	-0.8	3.1	4.6	-1.0	4.4	7.0	-0.7	2.2	2.8	-6.5	6.5	8.3	0.3	2.5	3.3	-0.8	3.1	4.6
EC	-0.6	2.2	3.6	-1.2	2.5	4.5	0.0	2.0	2.6	-5.7	6.2	8.7	0.2	1.7	2.2	-0.5	2.6	4.0
IMF	-0.6	2.2	3.5	-1.0	2.3	4.4	-0.2	2.0	2.5	-5.9	5.9	8.0	0.1	1.6	2.1	-0.7	2.5	3.9
OECD							0.1	2.0	2.6									
SKEP	-0.6	2.6	4.1	-1.5	3.6	6.1	-0.1	2.1	2.6	-6.3	6.3	8.3	0.4	2.0	2.4	-0.6	2.6	4.1
IMAD	-0.7	2.4	3.7	-1.2	2.6	4.6	-0.1	2.2	2.7	-6.0	6.2	8.7	0.1	1.8	2.3	-0.7	2.7	4.1
autumn projections																		
current year																		
BS	0.2	0.7	0.9	0.3	0.6	0.7	0.1	0.8	1.0	-1.1	1.1	0.4	0.4	0.7	0.8	0.3	0.8	0.9
Consensus	0.1	0.8	1.0	0.2	0.7	0.9	0.1	0.9	1.1	-1.4	1.4	0.6	0.3	0.7	0.8	0.2	0.9	1.0
EBRD							0.7	0.8	0.9									
EIPF	0.0	0.9	1.2	0.4	0.9	1.1	-0.2	0.9	1.2	-2.0	2.0	0.9	0.4	0.8	0.9	0.0	0.9	1.2
EC	0.3	0.6	0.7	0.3	0.7	0.7	0.2	0.6	0.7	-0.7	0.7	0.1	0.4	0.6	0.7	0.3	0.6	0.7
IMF	0.2	1.0	1.3	0.4	0.9	1.1	0.0	1.1	1.6	-2.0	2.0	1.9	0.5	0.9	1.0	0.3	1.0	1.4
OECD							0.3	0.5	0.6									
SKEP	0.4	0.8	0.9	0.2	0.7	0.9	0.5	0.9	1.0	-1.1	1.1	0.1	0.6	0.8	0.8	0.4	0.9	1.0
IMAD	0.2	0.7	0.8	0.2	0.6	0.8	0.2	0.7	0.8	-0.9	0.9	0.3	0.3	0.6	0.7	0.2	0.7	0.8
next year																		
BS	-0.3	2.1	3.5	-0.8	2.5	4.5	0.3	1.8	2.4	-6.0	6.0	7.8	0.6	1.6	2.0	-0.4	2.4	3.9
Consensus	-0.4	2.2	3.5	-1.2	2.5	4.4	0.3	1.9	2.4	-5.5	6.0	8.5	0.3	1.7	2.0	-0.4	2.5	3.9
EBRD							1.4	2.4	2.8									
EIPF	-0.7	2.6	4.0	-1.8	3.5	5.9	0.0	2.0	2.6	-5.9	6.1	8.6	0.2	1.9	2.4	-0.7	2.6	4.0
EC	-0.2	2.0	3.4	-0.8	2.4	4.3	0.5	1.7	2.3	-5.5	5.5	7.6	0.6	1.6	1.9	-0.2	2.3	3.7
IMF	-0.2	2.3	3.7	-0.9	2.4	4.6	0.4	2.2	2.8	-5.6	6.2	8.7	0.6	1.7	2.2	-0.3	2.6	4.1
OECD							0.5	1.9	2.2									
SKEP	-0.1	2.4	3.8	-1.1	3.0	5.2	0.7	1.9	2.3	-5.5	6.0	8.4	0.8	1.8	2.0	-0.1	2.5	3.9
IMAD	-0.4	2.1	3.4	-1.0	2.3	4.3	0.2	1.8	2.5	-5.4	5.7	8.1	0.3	1.6	2.0	-0.4	2.4	3.8

Source: 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					
	01-17	01-08	09-17	08 and 09	excl. 08-09	04-17	01-17	01-08	09-17	08 and 09	excl. 08-09	04-17
spring projections												
current year												
BS	1.9	1.1	2.3	4.3	1.2	2.0	0.5	0.8	0.6	0.5	0.5	0.5
Consensus	2.0	1.3	2.4	4.1	1.5	2.2	0.6	0.9	0.6	0.5	0.6	0.6
EBRD			1.7						0.4			
EIPF	2.3	1.4	2.7	5.1	1.4	2.3	0.7	1.0	0.7	0.6	0.6	0.6
EC	1.7	1.3	2.0	3.3	1.3	1.8	0.5	0.9	0.5	0.4	0.5	0.5
IMF	1.9	1.3	2.3	3.8	1.5	2.0	0.5	0.9	0.6	0.5	0.6	0.5
OECD			1.5						0.4			
SKEP	2.0	1.4	2.3	3.9	1.5	2.0	0.6	1.0	0.6	0.5	0.6	0.5
IMAD	1.6	1.2	1.9	2.9	1.3	1.7	0.5	0.8	0.5	0.3	0.5	0.4
next year												
BS	3.5	4.4	2.4	8.4	2.0	3.9	1.0	3.1	0.6	1.0	0.8	1.0
Consensus	3.8	4.9	2.5	8.8	2.3	4.1	1.1	3.4	0.7	1.1	0.9	1.1
EBRD			2.7						0.7			
EIPF	4.5	6.4	2.7	8.8	3.1	4.5	1.3	4.4	0.7	1.1	1.3	1.2
EC	3.5	4.4	2.4	8.4	2.1	3.9	1.0	3.0	0.6	1.0	0.8	1.0
IMF	3.5	4.3	2.4	8.1	2.1	3.8	1.0	3.0	0.6	1.0	0.8	1.0
OECD			2.4						0.6			
SKEP	4.0	5.7	2.4	8.6	2.3	4.0	1.1	3.9	0.6	1.0	0.9	1.0
IMAD	3.7	4.5	2.5	8.6	2.2	4.0	1.0	3.1	0.7	1.0	0.9	1.0
autumn projections												
current year												
BS	0.9	0.7	1.0	1.1	0.8	0.9	0.2	0.5	0.2	0.1	0.3	0.2
Consensus	1.0	0.9	1.1	1.5	0.9	1.0	0.3	0.6	0.3	0.2	0.4	0.3
EBRD			1.1						0.3			
EIPF	1.1	1.1	1.2	2.1	0.9	1.1	0.3	0.8	0.3	0.2	0.4	0.3
EC	0.7	0.7	0.7	0.7	0.7	0.7	0.2	0.5	0.2	0.1	0.3	0.2
IMF	1.3	1.1	1.5	2.4	1.1	1.3	0.4	0.7	0.4	0.3	0.4	0.3
OECD			0.7						0.2			
SKEP	1.0	0.9	1.1	1.1	1.0	1.0	0.3	0.6	0.3	0.1	0.4	0.3
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	3.4	4.3	2.3	8.1	2.0	3.8	1.0	3.0	0.6	1.0	0.8	1.0
Consensus	3.4	4.3	2.2	8.1	2.0	3.8	1.0	3.0	0.6	1.0	0.8	1.0
EBRD			2.9						0.7			
EIPF	3.9	5.6	2.4	8.5	2.3	3.9	1.1	3.9	0.6	1.0	0.9	1.0
EC	3.3	4.1	2.2	7.7	1.9	3.6	0.9	2.8	0.6	0.9	0.8	0.9
IMF	3.6	4.3	2.6	8.3	2.2	4.0	1.0	3.0	0.7	1.0	0.9	1.0
OECD			2.1						0.6			
SKEP	3.6	4.9	2.3	8.1	2.1	3.7	1.0	3.4	0.6	1.0	0.9	1.0
IMAD	3.3	4.1	2.3	7.9	2.0	3.7	1.0	2.9	0.6	0.9	0.8	1.0

Source: 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	2001–2017			2001–2008			2009–2017			2008 and 2009			excl. 2008–2009			2004–2017		
	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	0.6	0.3	0.5	0.6	0.0	0.4	0.5	0.2	0.3	0.4	0.1	0.4	0.6	0.1	0.4	0.5
Consensus	-0.2	0.6	0.7	0.1	0.7	0.8	-0.3	0.6	0.7	-0.1	0.7	1.0	-0.2	0.6	0.7	-0.1	0.6	0.7
EIPF	0.1	0.7	0.9	0.4	0.5	0.7	-0.1	0.8	1.0	0.7	0.7	0.4	0.0	0.7	0.9	0.1	0.7	0.9
EC	0.0	0.4	0.6	0.0	0.5	0.7	-0.1	0.4	0.5	0.2	0.2	0.1	-0.1	0.4	0.6	0.0	0.3	0.5
IMF	0.2	0.5	0.7	0.5	0.7	0.9	0.0	0.4	0.5	1.0	1.0	0.8	0.1	0.5	0.7	0.3	0.5	0.7
OECD							-0.1	0.4	0.4									
SKEP	-0.1	0.5	0.6	0.2	0.5	0.7	-0.2	0.4	0.5	0.1	0.2	0.3	-0.1	0.5	0.6	-0.1	0.5	0.6
IMAD	0.1	0.5	0.6	0.1	0.6	0.8	0.1	0.4	0.5	0.4	0.4	0.1	0.1	0.5	0.7	0.3	0.4	0.5
next year																		
BS	0.1	1.1	1.5	0.5	1.4	1.8	-0.3	0.8	1.0	-1.2	1.5	2.1	0.3	1.1	1.4	-0.1	1.0	1.4
Consensus	-0.4	1.2	1.5	0.0	1.6	2.0	-0.8	1.0	1.1	-1.6	1.6	1.3	-0.2	1.1	1.6	-0.4	1.2	1.6
EIPF	-0.1	1.6	2.1	0.9	2.3	2.8	-0.7	1.2	1.4	-2.1	2.1	0.0	0.3	1.5	2.1	-0.1	1.6	2.1
EC	-0.4	1.1	1.4	-0.4	1.6	1.9	-0.5	0.8	1.0	-1.2	1.3	1.8	-0.3	1.1	1.4	-0.2	1.0	1.4
IMF	-0.1	1.2	1.5	0.3	1.5	1.8	-0.5	0.8	1.0	-0.5	1.1	1.5	0.0	1.2	1.5	-0.1	1.1	1.4
OECD							0.0	0.8	1.0									
SKEP	-0.3	1.1	1.5	0.2	1.5	2.1	-0.6	0.8	1.0	-1.2	1.5	2.1	-0.1	1.0	1.4	-0.3	1.1	1.5
IMAD	-0.1	1.0	1.3	0.2	1.2	1.6	-0.4	0.7	0.9	-0.9	1.4	2.0	0.0	0.9	1.3	-0.1	1.0	1.4
autumn projections																		
current year																		
BS	-0.2	0.2	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	0.2
Consensus	-0.1	0.3	0.4	-0.2	0.4	0.5	0.0	0.2	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	0.4	-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	0.3
IMF	0.0	0.4	0.5	-0.1	0.5	0.6	0.1	0.3	0.4	0.0	0.4	0.6	0.0	0.4	0.5	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	0.0	0.3	0.3	-0.2	0.3	0.4	-0.1	0.3	0.4	0.0	0.2	0.3
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	-0.2	0.3	0.5	-0.1	0.2	0.3
next year																		
BS	-0.1	1.0	1.2	0.1	1.1	1.5	-0.3	0.8	1.0	-1.0	1.6	2.3	0.0	0.9	1.1	-0.2	1.0	1.3
Consensus	-0.3	1.1	1.5	-0.2	1.5	2.0	-0.5	0.8	1.0	-1.6	1.6	2.2	-0.1	1.0	1.3	-0.3	1.1	1.5
EIPF	0.1	1.3	1.7	0.3	1.8	2.4	0.0	1.0	1.2	-1.2	2.0	2.8	0.3	1.2	1.5	0.1	1.3	1.7
EC	-0.3	1.1	1.4	-0.4	1.4	1.8	-0.3	0.8	1.1	-1.2	1.6	2.3	-0.2	1.0	1.2	-0.2	1.0	1.3
IMF	-0.1	1.1	1.3	0.0	1.3	1.6	-0.3	0.8	1.0	-0.9	1.5	2.1	0.0	1.0	1.2	-0.1	1.0	1.3
OECD							0.0	0.9	1.1									
SKEP	-0.3	1.1	1.4	-0.1	1.3	1.7	-0.6	1.0	1.2	-1.0	1.8	2.5	-0.2	1.0	1.3	-0.3	1.2	1.5
IMAD	-0.3	1.0	1.2	-0.2	1.2	1.6	-0.4	0.8	0.9	-1.2	1.8	2.5	-0.2	0.9	1.1	-0.3	1.0	1.3

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

MACROECONOMIC PROJECTIONS FOR SLOVENIA

December 2018

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

HICP/CPI	RMSE						SRMSE					
	01-17	01-08	09-17	08 and 09	ex cl. 08-09	04-17	01-17	01-08	09-17	08 and 09	ex cl. 08-09	04-17
spring projections												
current year												
BS	0.6	0.7	0.4	0.4	0.6	0.5	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
EIPF	0.8	0.7	0.9	0.8	0.9	0.8	0.4	0.4	0.8	0.2	0.4	0.5
EC	0.5	0.7	0.4	0.2	0.6	0.5	0.2	0.4	0.4	0.0	0.2	0.3
IMF	0.7	1.0	0.4	1.1	0.7	0.8	0.3	0.5	0.4	0.3	0.3	0.5
OECD			0.4						0.4			
SKEP	0.6	0.6	0.5	0.2	0.6	0.6	0.2	0.3	0.4	0.1	0.3	0.3
IMAD	0.6	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	1.4	1.8	0.9	1.9	1.4	1.4	0.6	0.9	0.8	0.6	0.6	0.8
Consensus	1.6	1.8	1.3	1.8	1.5	1.6	0.7	1.0	1.1	0.6	0.6	1.0
EIPF	2.0	2.7	1.5	2.1	2.0	2.0	0.9	1.4	1.2	0.6	0.9	1.2
EC	1.4	1.8	1.1	1.7	1.4	1.4	0.6	0.9	0.9	0.5	0.6	0.8
IMF	1.4	1.7	1.1	1.1	1.5	1.4	0.6	0.9	0.9	0.4	0.6	0.8
OECD			0.9						0.8			
SKEP	1.5	1.9	1.1	1.9	1.4	1.5	0.6	1.0	0.9	0.6	0.6	0.9
IMAD	1.3	1.5	0.9	1.7	1.2	1.4	0.5	0.8	0.8	0.5	0.5	0.8
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	0.2	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	0.2	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	0.2	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	0.2	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	1.0	2.2	1.3	1.5	0.6	1.0	0.9	0.7	0.6	0.9
EIPF	1.6	2.2	1.2	2.3	1.5	1.6	0.7	1.1	1.0	0.7	0.6	1.0
EC	1.3	1.7	1.1	2.0	1.2	1.3	0.6	0.9	0.9	0.6	0.5	0.8
IMF	1.3	1.5	1.0	1.7	1.2	1.3	0.5	0.8	0.8	0.5	0.5	0.8
OECD			1.0						0.8			
SKEP	1.4	1.6	1.3	2.0	1.3	1.4	0.6	0.8	1.0	0.6	0.5	0.9
IMAD	1.2	1.5	0.9	2.2	1.0	1.3	0.5	0.8	0.8	0.7	0.4	0.8

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