

economic trends 2023 spring forecast of

Spring Forecast of Economic Trends 2023 (Pomladanska napoved gospodarskih gibanj 2023)

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Summary

Economic growth is expected to weaken significantly this year (1.8%), but will still be higher than expected in the autumn (1.4%). At the beginning of this year, confidence indicators were still at a low level, while signals from the international environment point to significantly lower uncertainty about energy supply and energy prices, and a gradual improvement in the outlook compared to the autumn forecasts. Data on GDP growth in the fourth quarter of last year is also encouraging. In Slovenia and the euro area, it was slightly above expectations, mainly due to the resilience of the energy crisis on confidence indicators, along with the moderation in energy prices. In addition to the international economic environment, fiscal stimulus will also have an impact on economic activity in Slovenia this year.

We expect investment growth to remain moderate, supported by public and EU funds, and private consumption and exports to show weak growth before picking up in the second half of the year. Growth in external trade and the export sector will slow this year in line with the slowdown in economic growth in our main trading partners and continued cost pressures, which, however, have been easing in the international environment. Growth in exports of goods and services (2.7%) will be slightly lower than growth in external demand, which we attribute to the structure of Slovenian exports and the impact of the deterioration in the cost competitiveness of manufacturing that already occurred last year. In manufacturing, high-technology industries will continue to be the main driver of growth, while we expect output to decline, especially in the more energy-intensive industries. After a strong recovery from the epidemic, we expect a slowdown in services trade growth, especially in tourism-related segments. Growth in imports of goods is expected to weaken more than growth in exports this year, mainly due to a sharper slowdown in domestic (especially private) consumption. Growth in gross fixed capital formation will be moderate this year (2.8%), supported mainly by government investment. We expect continued growth in investment in buildings and constructions, supported by a further increase in government investment, also related to the absorption of EU funds, and a further increase in housing investment. Private investment activity will be lower in 2023 as a whole than last year due to lower capacity utilisation in manufacturing, rising interest rates and continued uncertainty. The growth in private consumption will be much slower this year (1.2%) than last year, which was still marked by a strong recovery from the epidemic. Relatively high inflation, especially in the first half of the year, and tighter credit conditions will continue to weaken household purchasing power and hamper faster consumption growth. Private consumption growth, which will be modest, will be supported by high employment and moderate wage growth, a somewhat lower (albeit still high) current savings rate, and government measures to mitigate the rise in energy prices. Government consumption growth (1.2%) will again be subdued in 2023, similar to 2022. The relatively low growth will be due to a further reduction in expenditure for measures to mitigate the impact of the epidemic and subdued employment growth, while health expenditure will increase.

In the next two years, GDP growth is expected to return to slightly higher levels (2.5% in 2024 and 2.6% in 2025). Higher growth in total exports (slightly above 4%) and related activities will follow higher growth in external demand, and investment in machinery and equipment will also recover. In 2024, the volume of government investment is expected to decline, mainly related to the absorption cycle of EU funds. Total gross fixed capital formation growth will therefore weaken in 2024 (to 2.2%) before picking up again as government investment increases (5.0%). Private consumption growth will strengthen to 1.8% amid higher real disposable income growth and a slightly higher propensity to save, which will, however, remain lower than before the epidemic. Government consumption growth will strengthen to 1.8% or 1.9%, mainly due to continued growth in health expenditure, also related to the planned implementation of the long-term care system.

This year, employment growth (1.0%) and the decline in unemployment will continue to weaken, more markedly in the first half of the year; however, severe labour shortages will not allow for stronger employment growth in the next two years. Demographic trends, i.e. the long-term decline in the population aged 15–64, will also be a factor limiting growth in value added. Labour market participation will continue to increase gradually, especially in the 55–64 age group, and slightly also in the 20–24 age group, where it is below average.

Growth in the average real gross wage will be positive again this year (1.1%) and will strengthen towards the end of the forecast horizon. In the private sector, average wage growth (0.8% in nominal terms and 0.9% in real terms) will be affected by continued labour market pressure in the face of labour shortages and, to a considerable extent, by the minimum wage increase in January. The relatively high wage growth in the public sector (8.7% in nominal terms and 1.5% in real terms) will also be influenced by the implementation of last year's agreement with the public sector unions. Over the next two years, total nominal wage growth will weaken somewhat, while real wage growth will be slightly above its long-term average. The forecast for gross wage growth is subject to significant risks related to labour market pressures and the announced reform of the public sector wage system after 2023, the impact of which on wage growth cannot be accurately assessed at this stage.

We expect inflation to ease gradually this year, but to remain relatively high on average; we estimate that it could only gradually decline towards 2% after 2024. Higher service prices will still contribute significantly to inflation, and the contribution of food prices will also remain relatively high, although growth in food prices is expected to ease gradually. The contribution of energy prices is expected to be smaller this year in the absence of external shocks, and the increase in non-energy industrial goods prices is also expected to be 5.1% at the end of 2023 and average 7.1% in the year as a whole, mainly due to the high level at the beginning of the year. For next year, we expect inflation to weaken further in the absence of external shocks, falling below 3% by the end of the year, supported by monetary policy measures.

Uncertainty in the international environment is lower than in the autumn, but remains high and is related mainly to the course of the war in Ukraine and the energy market conditions. Risks to the forecast are therefore less pronounced and more balanced than a few months ago. The downside risk to economic growth is also related to a possible persistence of high inflation, which could lead to an acceleration of monetary tightening. Other downside risks to economic activity at the global level are related to economic activity in China, the impact of climate change, social unrest amid high energy and food prices, and the geopolitical and pandemic situation. However, there are also some upside risks to the baseline projections of economic growth at global, EU and national level. A faster-than-expected decline in inflation would lead to less severe tightening of monetary policy, which would have a positive impact on economic activity. International institutions also cite higher private consumption, boosted by the unwinding of savings accumulated during the pandemic, as a possible reason for the higher growth. A more effective absorption of the full package of EU funds and effects of reform measures on public finances, both in Slovenia and in its main trading partners, would also have a positive impact on economic growth, providing an opportunity to strengthen the development dimension.

Slovenia's main macroeconomic aggregates

| | | Spring | orecast (February 2023) | |
|---|-------|--------|-------------------------|-------|
| | 2022 | 2023 | 2024 | 2025 |
| GDP | | | | |
| GDP, real growth in % | 5.4 | 1.8 | 2.5 | 2.6 |
| GDP, nominal growth in % | 13.0 | 9.7 | 6.4 | 5.2 |
| GDP in EUR billion, current prices | 59.0 | 64.7 | 68.9 | 72.5 |
| Exports of goods and services, real growth in % | 6.5 | 2.7 | 4.1 | 4.2 |
| Imports of goods and services, real growth in % | 9.8 | 1.8 | 3.6 | 4.3 |
| External balance of goods and services (contribution to growth in p.p.) | -2.1 | 0.8 | 0.6 | 0.1 |
| Private consumption, real growth in % | 8.9 | 1.2 | 1.8 | 1.8 |
| Government consumption, real growth in % | 0.9 | 1.2 | 1.8 | 1.9 |
| Gross fixed capital formation, real growth in % | 7.8 | 2.8 | 2.2 | 5.0 |
| Change in inventories and valuables (contribution to growth in p.p.) | 1.1 | -0.5 | 0.0 | 0.0 |
| EMPLOYMENT, WAGES AND PRODUCTIVITY | | | | |
| Employment according to the National Accounts Statistics, growth in % | 2.4 | 1.0 | 0.7 | 0.4 |
| Number of registered unemployed, annual average in '000 | 56.7 | 49.6 | 47.8 | 46.1 |
| Registered unemployment rate in % | 5.8 | 5.1 | 4.9 | 4.7 |
| ILO unemployment rate in % | 4.2 | 4.0 | 3.8 | 3.7 |
| Gross wages per employee, nominal growth in % | 2.8 | 8.3 | 6.0 | 5.1 |
| Gross wages per employee, real growth in % | -5.5 | 1.1 | 1.8 | 2.7 |
| - private sector | -2.4 | 0.9 | 2.2 | 3.0 |
| - public sector | -10.4 | 1.5 | 0.9 | 2.0 |
| Labour productivity (GDP per employee), real growth in % | 2.9 | 0.8 | 1.8 | 2.2 |
| BALANCE OF PAYMENTS STATISTICS | | | | |
| Current account BALANCE, in EUR billion | -0.4 | 0.2 | 0.5 | 0.6 |
| - as a % of GDP | -0.8 | 0.3 | 0.7 | 0.9 |
| PRICES AND EFFECTIVE EXCHANGE RATE | | | | |
| Inflation (Dec/Dec), in % | 10.3 | 5.1 | 2.8 | 2.0 |
| Inflation (annual average), in % | 8.8 | 7.1 | 4.2 | 2.4 |
| Real effective exchange rate deflated by unit labour costs | -4.0 | 1.9 | 1.0 | 0.6 |
| ASSUMPTIONS | | | | |
| Foreign demand (imports of trading partners), real growth in % | 8.6 | 2.9 | 3.4 | 3.5 |
| GDP in the euro area, real growth in % | 3.5 | 0.9 | 1.5 | 1.6 |
| Brent Crude oil price in USD/barrel | 100.8 | 85.2 | 80.3 | 75.9 |
| Non-energy commodity prices in USD, growth | 5.5 | -5.5 | -0.5 | 0.5 |
| USD/EUR exchange rate | 1.054 | 1.087 | 1.087 | 1.087 |

Source: For 2022 SURS (2023), BoS (2023), ECB (2023), EIA (2023), Eurostat (2023a); for 2023-2025 forecasts by IMAD.

The Spring Forecast of Economic Trends is based on statistical data, information and adopted measures known at the cut-off date of 22 February 2023.

spring forecast of economic trends 2023

Assumptions of the Spring Forecast of Economic Trends 2023

Economic growth in the euro area and in Slovenia's main economic partners slowed significantly in the second half of 2022, but less than expected by international institutions. Euro area GDP growth in 2022 as a whole was 3.5% (seasonally adjusted), according to Eurostat's preliminary estimate, and stemmed mostly from the first half of the year (4.9% year-on-year and 0.6% and 0.9% guarter-on-guarter in Q1 and Q2, respectively, both seasonally adjusted), when it was mainly driven by higher post-COVID-19 consumption, supported also by the unwinding of accumulated household savings. GDP growth slowed markedly in the second half of the year, to 0.3% in Q3 (2.4% year-on-year, seasonally adjusted) and 0.1% in Q4 (1.9% year-onyear, seasonally adjusted). In the context of high geopolitical uncertainty, high energy prices and rising inflation, confidence indicators and household purchasing power started to decline, and financing conditions started to tighten due to monetary policy normalisation. Despite a marked slowdown in growth, euro area economies have proved more resilient than expected by international institutions and are likely to avoid a technical recession early this year as supply chain problems gradually ease, energy prices have returned to pre-Ukraine war levels due to a more stable supply, companies still have a large order backlog, and confidence indicators are improving. At the beginning of the year, the composite PMI for the euro area was above 50 for the first time since June last year, indicating a possible pick-up in activity, especially in the services sector. The ESI also rose for the third month in a row and approached its long-term average, and confidence has improved in most activities.

According to the latest forecasts of international institutions, the economic growth of Slovenia's trading partners will gradually strengthen. Real GDP growth in the euro area is expected to slowly recover thanks to more stable energy market conditions, a further recovery in confidence and lower uncertainty, but compared to last year, it will be significantly lower this year and especially in the next two years. As inflationary pressures are expected to ease, real disposable income will slowly recover, boosting private consumption, while a gradual increase in external demand and further easing of supply chain problems, which are still present at the beginning of the year, will also contribute to the economic recovery. Based on the forecasts of foreign institutions, we expect economic growth of 0.9% for the euro area this year, to a large extent due to the carry-over from last year and favourable development in the second half of this year. Growth is expected to rise in 2024 and 2025, to 1.5% and 1.6% respectively as headwinds ease. The forecasts are subject to high uncertainty, arising in particular from a possible aggravation of the war in Ukraine, and the availability and prices of energy.

| | | 20 | 23 | 20 | 2025 | |
|-------------------------|------|-------------------|------------------|-------------------|------------------|------------------|
| Real growth rates, in % | 2022 | September 2022 | February 2023 | September 2022 | February 2023 | February 2023 |
| EU | 3.6 | 0.5 | 0.8 | 1.9 | 1.6 | 1.8 |
| Euro area | 3.5 | 0.4 | 0.9 | 1.8 | 1.5 | 1.6 |
| Germany | 1.8 | 0.0 | 0.2 | 1.4 | 1.3 | 1.6 |
| Italy | 3.9 | 0.4 | 0.8 | 1.3 | 1.0 | 1.3 |
| Austria | 4.8 | 0.5 | 0.5 | 1.5 | 1.4 | 1.7 |
| France | 2.6 | 0.5 | 0.6 | 1.4 | 1.4 | 1.5 |
| Croatia | 6.3 | 1.5 | 1.2 | 2.5 | 1.9 | 2.8 |
| Russia | -2.2 | -3.0 | 0.3 | 2.5 | 2.1 | 1.5 |

Table 1: Assumptions of the forecast for economic growth in Slovenia's main trading partners

Source: For 2022 Eurostat (2023a); for other years IMAD assumptions based on Consensus Economics (2023), ECB (2022), EC (2023b), FocusEconomics (2023), IMF (2023); WIIW (2023); estimate by IMAD.

Figure 1: Euro area composite PMI suggests economic activity increased at the beginning of the year



Source: S&P Global. Note: A reading above 50 signals an expansion, while a figure below 50 indicates a contraction.

Figure 2: Commodity prices declined to the levels recorded before the war in Ukraine but are still well above the 2019 levels



Figure 3: In 2023, euro area GDP growth will be significantly lower than in the period of post-COVID-19 recovery



Figure 4: Growth in demand for Slovenian exports will be significantly lower in 2023 than in the previous two years



The technical assumption for energy prices is lower than last year. At the end of last year, energy prices on the international markets fell to the level they were at before the outbreak of the war in Ukraine. Based on market expectations on futures markets in the period between 20 and 27 January 2023, the technical assumption for the average Brent Crude price underlying the forecast for 2023 was USD 85.2 per barrel (16% lower than in 2022), followed by a further slight decline in 2024 and 2025. Taking into account the technical assumption for the EUR/USD exchange rate, euro prices of oil are expected to fall slightly more than dollar prices this year. We assume a 5.5% decrease in the prices of non-energy commodities in 2023, with prices expected to remain broadly unchanged in the next two years. As gas storage levels for this winter were sufficient due to agreements and measures taken at EU level and the mild weather, TTF¹ gas prices fell significantly at the end of 2022, as did electricity prices, which follow a similar dynamic to gas prices.²

¹ Title Transfer Facility (TTF) is a virtual trading point for natural gas in the Netherlands.

² The exchange price of electricity is determined by the production costs of the most expensive unit in the system, which is currently gas-fired power plants.

240 Non-energy commodities in USD Brent crude oil in USD (right axis) 220 200 200 200 180 180 180 160 160 160 140 140 Index 2010=100 barre 140 In EUR/MWh 120 120 120 100 100 per 100 80 80 DSL 80 60 60 60 40 40 40 20 20 20 0 0 13 4 15 9 17 ø б 0 20 21 22 23 24 Jan Jan Jan Jan Jan Jan Jan Jan 20 Jan 21 Jan Jan Jan Jan Jan Source: Barchart, ECB, EIA, calculations by IMAD Note: The line indicates the annual average taking into Source: ICE account the assumption of the forecast for 2023 and 2024.

Figure 5: At the beginning of this year, oil and non-

energy commodity prices were significantly lower year-

Figure 6: TTF gas prices fell significantly at the beginning of this year amid relatively high gas storage levels



Table 2: Assumptions for oil and non-energy commodity prices and the USD/EUR exchange rate

| | 2022 | 2023 | | | 2024 | |
|--|-------|-------------------|------------------|-------------------|------------------|------------------|
| | | September 2022 | February 2023 | September 2022 | February 2023 | February 2023 |
| Brent Crude prices, in USD | 100.8 | 89.5 | 85.2 | 83.9 | 80.3 | 75.9 |
| Brent Crude prices, in EUR | 95.8 | 87.6 | 78.4 | 82.1 | 73.8 | 69.8 |
| Non-energy commodity prices, in USD, growth* | 5.5 | -4.0 | -5.5 | -3.5 | -0.5 | 0.5 |
| USD/EUR exchange rate | 1.054 | 1.022 | 1.087 | 1.022 | 1.087 | 1.087 |

Source: Barchart (2023), ECB (2023), EIA (2023), IMAD estimate. Note: The assumptions are based on the futures prices between 20 and 27 January 2023. *The structure of the euro area with regard to commodity consumption.

In response to persistently high inflation, the ECB is continuing the process of monetary policy normalisation. At the end of the first quarter of 2022, it decided to discontinue purchasing securities under the Pandemic Emergency Purchase Programme (PEPP).³ In July last year, it raised all three key interest rates for the first time in more than a decade, and made four more increases⁴ by February this year inclusive (interest rate on main refinancing operations thus reached 3% in February). Since 1 July, it decided to discontinue net asset purchases under the Asset Purchase Programme (APP), which it had temporarily increased after discontinuing net purchases under the PEPP. The ECB intends to reinvest the principal payments from maturing securities purchased under the APP only until the end of February 2023. Thereafter, the APP portfolio is set to fall by EUR 15 billion per month on average until the end

on-year

³ The principal payments from maturing securities purchased under the programme, totalling almost EUR 1,700 billion. i.e. almost 15% of euro area GDP from 2019, will be reinvested at least until the end of 2024, meaning that the size of the ECB's balance sheet and the amount of money in circulation will not decrease significantly until then.

⁴ The pace of rate hikes has accelerated, with rates being raised by at least 50 basis points each time, most notably at the September and November Governing Council meetings when the increase was 75 basis points.

of June 2023. The subsequent pace of portfolio reduction will be determined over time. Inflation in the euro area as a whole has moderated slightly in recent months amid a significant fall in energy prices, but core inflation (excluding the impact of food and energy prices) remains high, which is why the ECB already announced further interest rate hikes that will further tighten borrowing conditions. The increase in credit activity in the euro area and in Slovenia has already slowed in recent months.

Figure 7: Fixed rate on the main refinancing operations was 3% in February 2023 and the ECB expects further rate hikes



Figure 8: Corporate credit growth in Slovenia and the euro area has already slowed as borrowing conditions tightened



EU Member States are taking various measures to mitigate the effects of rising energy prices and ensure sufficient energy supply. Since October 2021, a number of measures have been taken to protect households and businesses from energy price increases, first in response to rising energy prices when global demand picked up after the COVID-19 epidemic, and then when the geopolitical situation changed due to the war in Ukraine.⁵ The most common financial support measures are: tax cuts on energy, transfers to vulnerable groups, and subsidies and liquidity support to businesses.⁶ Countries have also responded to the reduced availability of Russian energy products by diversifying their natural gas supply and increasing their storage capacities, and by reducing their natural gas and electricity consumption (Council Regulation (EU) 2022/1369, 2022; Council Regulation (EU) 2022/1854, 2022) to ensure sufficient energy supply for the winter of 2022/2023; medium-term measures are also being taken to increase renewable energy generation. At the end of December 2022, a Regulation establishing a temporary market correction mechanism for orders placed for trading TTF derivatives was adopted by the EU (Council Regulation (EU) 2022/2578, 2022) to limit episodes of excessively high gas prices in the EU which do not reflect world market prices. Slovenia has also

⁵ The European Commission first responded to rising energy prices in October 2021 with a toolbox for action and support and again in May 2022, when it presented the REPowerEU plan, proposing an additional set of actions, as the geopolitical situation changed due to the war in Ukraine, leading to a further rise in energy prices.

⁶ For more, see: https://www.bruegel.org/dataset/national-policies-shield-consumers-rising-energy-prices.

adopted a number of support measures, totalling around 1.2% of GDP in 2022,7 of which around 1% of GDP with an impact on the general government balance. This includes, in particular, expenditure to mitigate the impact of rising prices on households (one-off solidarity bonus, energy subsidies for the most vulnerable population groups, dearness allowance for recipients of child benefits, etc.), measures to reduce energy taxes (excise duties, VAT and CO_2 emission taxes) and subsidies for businesses and the agricultural sector.⁸ We estimate that the measures adopted so far, which for 2023 mainly include the extension of certain tax cuts, continued payment of certain dearness allowances, disbursement of aid to enterprises and especially to energy-intensive enterprises, measures to support the labour market, allowances for electricity and gas suppliers due to caps on prices (public sector, households, SMEs), will amount to about 1.5% of GDP this year (with an impact on the general government sector of 1.4% of GDP). A small part of the aid disbursements to enterprises is to continue in 2024, according to the legal timetable. In addition to these measures with a direct impact on public finances, guarantee laws for electricity companies and other liquidity measures for the transmission system operator in the Republic of Slovenia were adopted and liquidity loans were made available to companies.

Direct expenditure on measures to mitigate the consequences of the epidemic from national sources is gradually decreasing, while expenditure on post-epidemic recovery from RRP funds is expected to increase. Expenditure to mitigate the consequences of the COVID-19 epidemic peaked at 5.2% in 2020, falling to 4.5% of GDP in 2021 and 1.4% of GDP last year. A further decline is expected also in 2023. The absorption of funds under the Recovery and Resilience Plan will gradually gain momentum. This year, investment and subsidy expenditure will reach the highest level in recent years, mainly due to the overlapping with the end of the 2014–2020 Financial Perspective (including React-EU).

⁷ Assessment of measures on the side of revenue losses and increased expenditure by the government and the private sector, excluding the impact of guarantees and measures to provide liquidity to firms.
⁸ For a more detailed evention of measures and http://www.gov.gi/op/creioti/measures to

⁸ For a more detailed overview of measures, see https://www.gov.si/en/registries/projects/measures-tomitigate-price-increases/.

Figure 9: Slovenia's direct expenditure on measures to mitigate the consequences of the epidemic gradually declines



Figure 11: Electricity consumption in Slovenia has been lower year-on-year for almost a year



Source: ENTSO-E and Bruegel.org.

Notes: Only consumption on working days (between 8.00 and 18.00) is considered. The percentages are adjusted for temperature differences. 3-month moving averages are shown until August 2022.

Figure 10: Slovenia adopted support measures to mitigate the consequences of rising energy prices for households and businesses



Figure 12: Gas consumption between August 2022 and January 2023 compared to the comparable average of the last five years



2022 and January 2023 is preliminary.

Box 1

The consequences of the war in Ukraine and the sanctions against Russia for Slovenia's trade with both countries

Several packages of comprehensive sanctions were adopted after the start of Russia's military attack on Ukraine in February 2022.⁹ The trade sanctions affected about 36% of EU exports to Russia in 2021 (luxury goods, certain high-technology products, aviation and space industry goods, maritime navigation goods, dual-use goods, etc.) and 57% of EU imports of goods from Russia (oil and petroleum products, coal, gold and silver, steel and other materials, seafood, alcohol, etc.; EC, 2023). Trade in medical and pharmaceutical products and certain chemical products, which account for a significant share of Slovenia's exports to Russia, is not subject to sanctions. The EU also set transition periods for most of the restrictive measures to allow countries and businesses to adjust. Therefore, the full impact of sanctions will be felt with a delay.

The shares of Russia and Ukraine in Slovenia's total exports were already relatively small before the war in Ukraine. In 2021, Russia accounted for around 2.4% of Slovenian total goods exports and both countries together for 3.1%.¹⁰ Trade in services was even lower (Russia accounts for about 1% of Slovenia's total trade in services and Ukraine 0.3%). The largest share of exports to Russia and Ukraine is accounted for by the manufacture of organic chemical compounds and pharmaceutical products,¹¹ followed by the manufacture of electrical machinery and equipment. Russia is also Slovenia's major trading partner for these products. On the import side, the most important products from Russia are mineral fuels, especially natural gas and petroleum products, and from Ukraine mainly various materials (steel, wood), whose import has almost come to a standstill due to the war.

Since the start of the war in Ukraine, Slovenia's trade in goods with Russia has increased significantly, while trade with Ukraine has decreased; in the EU as a whole, trade with Russia has slumped. The nominal value of Slovenian goods exports to Russia increased by 43% yearon-year in the period March-November 2022, while it decreased by almost 50% in the EU as a whole.¹² This difference is to some extent due to the structure of Slovenian exports to Russia, as the export share of non-sanctioned products is much larger in Slovenia than in the EU as a whole. Exports of medical and pharmaceutical products and organic chemical products, which have increased by almost 100% in value,¹³ accounted for 51% of Slovenia's goods exports to Russia in 2021 (compared to 11% in the EU). Exports of electrical equipment, which accounted for 13% (EU: 6.7%) before the war, rose by 27.5% (in the EU as a whole it fell by 67%).¹⁴ During this period, imports from Russia increased even more than exports in nominal terms, by more than 260% year-on-year (by 29% in the EU). In particular, the value of petroleum product imports increased significantly (by 586%). The prices of petroleum products surged¹⁵ (by more than 60%) due to high oil prices on international markets and the volume of these products (also) increased. The high import growth compared to the EU was also influenced by the low base in 2021. In this context, it is worth noting that Slovenia's trade in petroleum products¹⁶ also increased in this period last year, as Slovenian exports of these products also

increased significantly (or even more significantly). Most of the imports of petroleum products were imported from Russia between April and July and the volume of imports has fallen sharply since August. Since the beginning of the war, the value of imports of some other important product groups (e.g. medical and pharmaceutical products, organic chemical products and fertilisers) has also increased year-on-year, but their share in imports has decreased significantly. The sanctions have led to a sharp decline in the value of imports of metals and metal products (by 87%), which had been among the most important imports from Russia before the war. The value of foreign trade with Ukraine, which was already low before the war (0.5% of merchandise exports and 0.2% of imports), has fallen by about a tenth year-on-year since the start of the Russian aggression (the EU average remained at a similar level to the previous year), and during this period Slovenian exports to Ukraine mainly included pharmaceuticals and wooden products.

⁹ The EU adopted several packages of sanctions, including restrictive measures against individuals and state-related companies, visa measures, diplomatic measures (suspension of negotiations on Russia's accession to the OECD and the IEA, exclusion of Russia from the Council of Europe) and economic sanctions. Economic sanctions focus on financial, transport, energy, trade, technology and defence sectors (Council of the EU, 2023).

¹⁰ Adapted for the re-export of medical and pharmaceutical products to Switzerland. IMAD estimate based on foreign trade data published by SURS. Detailed data will be available after the publication of the current account balance of payments by country in April 2023.

¹¹ Slovenian direct investment in Russia, which amounted to EUR 468 million at the end of 2021, accounting for 6% of total Slovenian foreign investment, is focused on pharmaceutical industry.

¹² The data for Slovenia are based on foreign trade data published by SURS (2023) and data for the EU on Eurostat Comext data (2023b).

¹³ In addition to the strengthening of the rouble, the high year-on-year growth was mainly due to the strong increase in prices on the Russian market. The rouble is estimated to have strengthened after the shock at the beginning of the aggression (there is no official data on the RUB/EUR exchange rate), and its exchange rate since May 2022 has been similar to the year before the war. In the same period, imports of medical and pharmaceutical products to Slovenia from other countries also increased markedly.

¹⁴ Export restrictions to Russia apply to all electronic items for domestic use of a value exceeding EUR 750 and apparatus for the reproduction of sound and images of a value exceeding EUR 1,000 (Council Regulation (EU) 2022/428, 2022).

¹⁵ Petrol prices on the Slovenian market rose by an average of 23% year-on-year (EU: 21.7%) from the beginning of the war (March–November), and diesel prices by 30.2% (EU: 37.7%). Due to measures taken by individual countries, the increase in petroleum product prices was less pronounced than the increase in crude oil prices on world markets.

¹⁶ Activity of Slovenian oil traders increased as the lifting of COVID-19 containment measures triggered increased demand for petroleum products (Petrol, 2022). In addition to demand, the regulation of prices for petroleum products and the capping of the profit margin in Slovenia could also contribute to an increase in exports. Oil exports have increased sharply, especially to Austria, Italy and Croatia. In terms of mass, Slovenia's trade in petroleum products, including imports of petroleum products from Russia, has been at a very high level since June 2022, reaching an all-time high, but not significantly different from or exceeding that of some previous years (e.g. 2019).

Figure 13: The value of Slovenian goods exports to Russia increased significantly after the start of the war, while it declined in the EU as a whole



Figure 15: Non- sanctioned products account for more than half of exports to Russia





Figure 14: The increase in goods imports from Russia







Spring Forecast of Economic Trends in Slovenia

2.1 GDP in 2022

In 2022, GDP grew by 5.4% in real terms; growth was mainly due to the post-COVID-19 recovery and peaked in the first half of the year (9.4% year-on-year). In the second half of the year, year-on-year growth weakened significantly (to 1.7%) against the backdrop of increased uncertainty in the international environment due to the energy crisis and the fallout from the war in Ukraine. However, the dynamics of current GDP growth, with a sharp decline in the summer months followed by positive growth in the last quarter of last year, point to some resilience in the economy and the impact of the agreements and measures to mitigate the energy crisis on confidence indicators and easing of energy prices.

The situation in the export-oriented part of the economy deteriorated towards the end of 2022, as already indicated by the weakening of export expectations in the preceding months. Exports of goods declined in the last guarter and have shown strong fluctuations since the start of the war in Ukraine due to high uncertainty. Growth in services exports, driven since spring mainly by the post-COVID-19 recovery in tourism, also slowed. In 2022 as a whole, overall export growth (6.5%) was significantly lower than in 2021, due to a slowdown in the growth of goods exports. It was also lower than import growth (9.8%), which contributed to the negative contribution of the external trade balance to GDP growth in 2022 (-2.1 p.p.). Value added in manufacturing was lower in the fourth quarter than a year ago, especially in energy-intensive sectors. This was due to the high level of uncertainty among companies regarding energy prices - especially in the run-up to the agreement on measures at national and EU level. As in previous guarters, production volume in the automotive industry continued to decline. Manufacturing growth in 2022 as a whole was mainly driven by the pharmaceutical industry, the manufacture of ICT equipment and the manufacture of electrical equipment. Growth in value added in market services weakened in the fourth quarter, particularly in international goods trade,¹⁷ especially in road freight transport, with growth in turnover from consultancy services also stagnating.

Investment activity was relatively strong last year (7.8% growth), mainly due to an increase in investment in buildings and structures, boosted by higher government and housing investment. Value added in construction grew by 10.4%. Growth of investment in machinery and equipment slowed significantly up to the end of the year under the impact of uncertainty and lower capacity utilisation in manufacturing, and was below the previous year's level at the end of the year. With a relatively high contribution of changes in inventories to GDP growth (1.1 p.p.), gross investment growth was 12.4% last year.

¹⁷ Among business services, which also target the domestic market, the strongest performers last year were computer and architectural and engineering services and wholesale trade, especially related to construction and commodity trading.

The high growth in private consumption (8.9%), especially in services, continued last year, while the savings rate further declined slightly. The still high growth is mainly related to the easing of containment measures at the beginning of the year and continued employment growth; in addition, consumers set aside a smaller share of their current income for savings than in the previous year. After consumer confidence began to decline in the spring due to uncertainty about the energy and food crises and the loss of purchasing power due to rising inflation, household consumption weakened up to the end of the year. In this context, the government measures to mitigate the effects of the epidemic in the spring and of rising prices in the autumn prevented an even greater decline in average disposable income in real terms. Consumption of services, ¹⁸ including travel abroad (after two years marked by containment measures), increased throughout the year. On the other hand, consumption of some durable goods (cars, furniture) and food and beverages was lower year-on-year.

Government consumption growth slackened sharply last year. After a period of strong growth in 2020 and 2021, it was 0.9%, mainly due to lower expenditure on containment measures. Lower growth was also influenced by a slowdown in employment growth (from 1.7% to 0.9%) related to the improvement of the epidemic situation and the end of the Slovenian Presidency of the Council of the EU, leading to a decline in the number of civil servants. Employment continued to increase, albeit at a slower pace, in education and especially in health and social work activities, where significant labour shortages remain.

Figure 17: GDP growth weakened significantly year-onyear in the second half of last year



Figure 18: The situation in the export-oriented part of the economy deteriorated towards the end of last year



¹⁸ Growth in value added in tourism- and leisure-related services accelerated sharply. Turnover in accommodation and food services increased by 56% year-on-year in real terms (in 11 months), while value added in creative, arts, entertainment and sports activities and personal services increased by 12%.





Figure 20: Investment activity was relatively strong last

2.2

GDP forecast for 2023–2025

Economic growth is expected to ease off considerably this year (1.8%), but will still be higher than expected in the autumn (1.4%). At the beginning of this year, confidence indicators were still at low levels, while signals from the international environment point to significantly lower uncertainty about energy supply and energy prices and a gradual improvement in the outlook compared to the autumn forecasts. In the fourth quarter of last year, economic trends in Slovenia and the euro area were already slightly above expectations, mainly due to the resilience of the economies and the impact of the agreements, along with measures to mitigate the energy crisis on confidence indicators and energy prices. In addition to the international economic environment, fiscal stimulus will have an impact on economic activity in Slovenia also this year. Economic growth will weaken this year, albeit at a slower pace than we projected in our autumn forecast. We expect investment growth to remain moderate, supported by public and EU funds, and private consumption and exports to show weak growth before picking up in the second half of the year.

Growth in external trade and the export sector will slow this year,¹⁹ related to the slowdown in economic growth in our main trading partners and continued cost pressures, which, however, have been easing in the international environment. Growth in goods exports will be significantly lower than last year. After a strong recovery from the epidemic, we expect a slowdown in services trade growth, especially in tourism-related segments. Growth in exports of goods and services (2.7%) will be slightly lower than growth in external demand, which we attribute to the structure of Slovenian exports²⁰ and the impact of the deterioration in the cost competitiveness of manufacturing that

¹⁹ The fact that 2023 has three working days less 2022 was taken into account.

²⁰ Private consumption will be the key driver of growth in Slovenia's trading partners and Slovenia largely exports intermediate goods, which are important for export activity in these countries.

already occurred last year (see also Subsection 2.4). External cost pressures remain, but the rise in producer prices for raw materials, energy and goods is slowing, and supply chain disruptions are easing. The high-technology industries will continue to be the main driver of growth in manufacturing, while we expect output to decline in the more energy-intensive industries in particular, most markedly in the wood, paper, rubber and metal industries, and to a lesser extent in the chemical and non-metallic mineral products industries. Growth in transportation and storage and consultancy services will slow. The manufacture and export of motor vehicles will remain at a similar level to last year, as the restructuring of the automotive industry will continue to have a (negative) impact also on suppliers from other sectors despite the easing of supply chain problems. Growth in imports of goods will weaken more than that of exports this year, mainly due to a sharper slowdown in domestic (especially private) consumption.

Investment growth will be moderate this year (2.8%); growth will be mainly supported by government investment. We expect continued growth in investment in buildings and structures, supported by a further increase in government investment, including in connection with the absorption of EU funds. Building permits issued also point to continued growth in housing investment.²¹ Government investment activity will be lower in 2023 as a whole than last year. Especially at the beginning of the year, the trends from the second half of 2022, when investment in machinery and equipment declined, continue under the impact of lower capacity utilisation in manufacturing, rising interest rates and continued uncertainty.

Compared to last year, which was still marked by a strong recovery from the epidemic, growth in private consumption will slow markedly this year (to 1.2%). Relatively high inflation, especially in the first half of the year, and tighter credit conditions will continue to weaken household purchasing power and hamper faster consumption growth. The consumer confidence indicator, which deteriorated in January after improving at the end of last year, does not point to a significant improvement in the intentions to make major purchases over the next 12 months. We also expect rational consumption of food and beverages and a slowdown in the increase in consumption of services as the effects of the reopening of the economy after the epidemic subside. Private consumption growth, which will be modest, will be supported by high employment and moderate wage growth, a somewhat lower (but still high) current savings rate and government measures to mitigate the rise in energy prices. Growth in value added in tourism- and leisure-related services will weaken significantly, also due to the high base from last year. Turnover growth in trade is also expected to be lower than last year. In addition to lower growth in retail trade due to the slowdown in household spending, this will also be affected by lower growth in wholesale trade (due to the projected slowdown in business growth in most sectors).

²¹ The number of building permits issued for dwellings increased by 11% last year, reaching 4,800, the highest level since 2010, although this is still more than 50% below the 2007 level.

Growth in government consumption will again be subdued in 2023 (1.2%), similar to 2022. Growth will be relatively low due to a further decline in expenditure on measures to mitigate the impact of the epidemic and subdued employment growth (0.8%),²² while health expenditure will increase due to measures to stabilise the situation in the health sector and reduce waiting times.

In the next two years, GDP growth is expected to return to slightly higher levels (2.5% in 2024 and 2.6% in 2025). Higher growth in exports (slightly above 4%) and related activities will keep pace with higher growth in external demand, and investment in machinery and equipment will also recover. In 2024, the volume of government investment is expected to decline, mainly related to the absorption cycle of EU funds (see Section 1), and therefore we also expect construction activity to decline. Total gross fixed capital formation growth will therefore weaken in 2024 (to 2.2%) before picking up again as government investment increases (5.0%). Private consumption growth will strengthen to 1.8%, with higher real disposable income growth and a slightly higher propensity to save, which will, however, remain lower than before the epidemic. Government consumption growth will strengthen to 1.8% or 1.9%, mainly due to continued growth in health expenditure, also related to the planned implementation of the long-term care system.

| | | 20 | 23 | 20 | 2025 | |
|---|------|-------------------|------------------|-------------------|------------------|------------------|
| Real growth rates, in % | 2022 | September 2022 | February 2023 | September 2022 | February 2023 | February 2023 |
| Gross domestic product | 5.4 | 1.4 | 1.8 | 2.6 | 2.5 | 2.6 |
| Exports | 6.5 | 2.5 | 2.7 | 4.7 | 4.1 | 4.2 |
| Imports | 9.8 | 2.2 | 1.8 | 3.8 | 3.6 | 4.3 |
| External balance of goods and services (contribution to growth in p.p.) | -2.1 | 0.3 | 0.8 | 1.0 | 0.6 | 0.1 |
| Private consumption | 8.9 | 0.3 | 1.2 | 1.9 | 1.8 | 1.8 |
| Government consumption | 0.9 | 1.7 | 1.2 | 1.9 | 1.8 | 1.9 |
| Gross fixed capital formation | 7.8 | 2.5 | 2.8 | 2.0 | 2.2 | 5.0 |
| Change in inventories and valuables (contribution to growth in p.p.) | 1.1 | 0.1 | -0.5 | 0.0 | 0.0 | 0.0 |

Table 3: Forecast of economic growth

Source: For 2022 SURS (2023), for 2022-2025 forecast by IMAD.

²⁵

²² It will continue to be supported mainly by employment in health and social work activities, with increased resources to strengthen health care.

Figure 21: Confidence indicators are slowly improving but remain at low levels



Figure 23: Contributions of value added growth to GDP growth, by activity



Figure 22: Contributions of consumption aggregates to GDP growth



Figure 24: Growth in exports of goods and services will slow this year, mainly due to slower growth in external demand



for foreign demand based on sources under Table 1. Note: *Real imports of goods and services of the trading partners



Figure 26: Private consumption growth will weaken significantly this year



Note: for households and NPISH's, *deflated by private consumption deflator.

2.3

Employment and unemployment

Employment growth slowed in the second half of 2022 as economic activity cooled and labour shortages eased, but it was still strong, while unemployment reached its lowest level in 30 years. Last year, employment growth was recorded in all activities, especially in construction, which is also an activity facing a major labour shortage. Given that most activities are faced with labour shortages, employment of foreign nationals has recently increasingly contributed to total employment growth, already two-thirds in December. Despite the slowdown in economic activity, the number of registered unemployed continued to fall last year. It stood at 53,181 at the end of December, down 19.4% from a year earlier and 29.4% from the pre-epidemic period (December 2019); at the end of January 2023, 55,386 people were unemployed (-18.4 % year-on-year).²³ The number of long-term unemployed was also lower (by -31.8 % year-on-year in January), reflecting a serious labour shortage.

The severe labour shortage is affecting business performance. The shortage of labour supply is reflected in the job-vacancy rate,²⁴ which is highest in labour-intensive activities (manufacturing, construction and accommodation and food service activities), but is also high in all other activities. Long-term staff shortages²⁵ affect business performance, as reported by more than half of all

²³ In January 2023, their number was 4.1% higher than at the end of December. This largely reflects seasonal trends related to a higher inflow into unemployment due to expiry of fixed-term employment contracts. However, the seasonally adjusted data show that their number continued to fall in January (by 1.5%).

²⁴ The job-vacancy rate is the ratio of vacant job positions to all jobs (vacant plus filled).

²⁵ Cyclical and structural factors have an impact on severe labour shortage, both in Slovenia and in other developed countries. Structural factors include the ageing of the labour force with large numbers of workers retiring, changes in the structure of demand for certain skills (especially in the face of technological progress, green and digital transformation), changes in migration flows and less favourable working conditions in certain sectors/occupations.

companies in construction and one-third in manufacturing. About 50% of companies solve their labour shortage problems by scheduling overtime, and one-fifth by retraining existing employees, outsourcing work or turning down new orders (ESS, 2022). The size of the domestic labour force that could potentially be available for employment (both unemployed and inactive persons) is measured by the non-employment index;²⁶ its record low value, similar to the unemployment rate, indicates an extremely small domestic labour potential.

Figure 27: Employment and unemployment are at record high and low levels respectively, but their dynamics moderated in the second half of last year



Figure 29: Employment increased last year in most activities



Figure 28²⁷: The contribution of foreign nationals to yearon-year employment growth is high and their share in the total number of persons in employment is increasing



Figure 30: Unmet demand for labour (job-vacancy rate) remains high



²⁶ The non-employment index is a broader measure of labour market slack than the unemployment rate, as it also covers certain other categories of inactive persons and accounts for differences in each group's likelihood of transitioning into employment. For a detailed description of the methodology, see Perko and Rogan (2023).

²⁷ In the figure, the blank period for the contribution of foreigners to employment growth is the period in which the contribution was negative. The high contribution in March 2020 (over 100%) is due to a decrease in the number of employed Slovenian citizens compared to the previous year and an increase in the number of employed foreign nationals, which was therefore higher than the increase in the total number of persons in employment.

This year, employment will continue to grow and unemployment will decline, although this will be more pronounced in the first half of the year; however, severe labour shortages will not allow for a substantial growth in employment in the next two years. Given the slackening of economic activity and labour shortages, we expect employment intensity to be significantly lower this year, especially in the first half of the year. The short-term employment expectations indicator also suggests that firms are somewhat less optimistic about hiring in the coming months compared to last year. In 2023 as a whole, however, employment will increase by 1.0%, with most of the growth coming from high growth at the beginning of this year (carry-over from last year) and the expected gradual increase in the second half of the year. The number of registered unemployed will fall to about 50,000 on average in 2023. Despite the projected recovery in economic activity, employment will not increase significantly over the next two years, due to already high levels and labour supply bottlenecks, and the decline in unemployment will also weaken. Labour market participation will further increase gradually, especially in the 55-64 age group, and slightly in the 20-24 age group, where it is below average. The demographic trends, i.e. long-term decline of the population aged 15-64, will become an even greater obstacle to the growth of value added.

| | 2022 | 2023 | | 2024 | | 2025 |
|--|-------|-------------------|------------------|-------------------|------------------|------------------|
| In % | | September 2022 | February 2023 | September 2022 | February 2023 | February 2023 |
| Employment according to the SNA, growth | 2.4 | 0.8 | 1.0 | 0.7 | 0.7 | 0.4 |
| Number of registered unemployed*, annual average | 56.7 | 54.4 | 49.6 | 52.8 | 47.8 | 46.1 |
| Registered unemployment rate | 5.8 | 5.5 | 5.1 | 5.3 | 4.9 | 4.7 |
| ILO unemployment rate | 4.2** | 4.1 | 4.0 | 3.9 | 3.8 | 3.7 |

Source: For 2022 SURS (2023), for 2022–2025 forecast by IMAD. Note: *in thousands. **The 2022 figure is IMAD estimate as the Q4 2022 figure was not available at the time the forecast was finalised.

2.4

Wages

The moderate nominal growth in the average gross wage (2.8%) last year was mainly due to wage cuts in the public sector due to the cessation of the payment of most COVID-19 bonuses, while the private sector experienced similar growth to 2021 under labour market pressure; in real terms, the average gross wage was lower (by 5.5%) due to high inflation. During the epidemic, the high volatility of wage growth in the private sector (especially in 2020) was mainly due to job-retention measures,²⁸ while in the public sector, the payment of COVID-19 bonuses initially led to strong wage growth, but after payments stopped in the second half of 2021, to a sharp decline (Figure 31), which affected public sector wage dynamics up until autumn 2022. In 2022, overall nominal wage growth accelerated. In the private sector, the

²⁸ This was affected by the method of calculating wages in connection with the intervention measures adopted to retain jobs, especially temporary layoff and short-time work measures, given that wage statistics consider as wages only the part of the wage compensation paid by the employer and not also the part paid by the government. For more, see Autumn Forecast of Economic Trends (IMAD, 2021).

average gross wage rose by 6.2% in nominal terms as labour market pressures increased in the face of labour shortages and the increase in the minimum wage, but fell in real terms (-2.4%) due to high inflation.²⁹ In the public sector, the average gross wage had been lower year-on-year in nominal terms until July last year (due to the year-on-year impact of cessation of the payment of most bonuses), but then started to rise again, also as a result of the October agreement with the public sector unions.³⁰ Due to the strong base effect, it was lower on average by 2.5% in nominal terms in 2022 as a whole and by 10.4% in real terms. The average gross wage in 2022 was 4.3% higher in real terms than in 2019.

Figure 31: Average gross wage growth strengthened in the final months of last year in both the private and public sectors



Figure 32: Estimate and forecast of nominal contribution base growth



Growth in the average real gross wage will be slightly positive this year (1.1%) and will strengthen towards the end of the forecast horizon. The average wage growth in the private sector is expected to be higher this year than last year (8.0% in nominal terms and 0.9% in real terms), reflecting continued pressures in the labour market in the face of labour shortages and increased efforts to maintain purchasing power in the context of high inflation, as well as the January increase in the minimum wage, which was the highest since 2010 (see Box 2). Wage growth will also be high in the public sector (8.7% in nominal terms and 1.5% in real terms) due to the implementation of last year's agreement with public sector unions. Nominal wage growth will weaken somewhat over the next two years as price pressures ease, but wage growth will remain above the long-term (pre-COVID-19) average given the labour shortage. The forecast for gross wage growth is again subject to significant risks. Upside risks arise from pressure for higher wages in the event of a prolonged period of high inflation, and a rise and possibly stronger spillover of minimum wage growth to other wages. Wage growth in the public sector, especially after

²⁹ In general, the highest increases were seen in those sectors where labour shortages were more acute, namely in accommodation and food service activities (8.9%), transportation (8.7%), administrative and support service activities (7.8%), construction (7.0%) and manufacturing (6.3%).

³⁰ The October Agreement regulating measures relating to salaries and other labour costs in the public sector for 2022 and 2023 (2022) resulted in higher meals allowance since September, a 4.5% increase in the value of salary grades in October, the payment of an additional annual leave allowance for 2022 in November, which will be followed by a further increase in public sector wages by one salary grade in April 2023, and a payment as part of the implementation of agreements concluded during the terms of past governments. The timing of the payment of the last item of the Agreement was not known at the time this forecast was prepared.

2023, will be affected by the announced reform of the wage system, the impact of which on wage growth cannot be accurately assessed at this stage.

The growth in the estimated nominal contribution base, which forms the basis for the estimate of social security contributions, will be high this year before easing off in the next two years. Growth in the nominal contribution base was lower last year (6.5 %) than in 2021 (9.6%) due to the cessation of COVID-19 bonuses. Growth is expected be strong this year in both the private and public sectors (9.4% overall) before slackening next year.

| Fable 5: Forecast f | or growth in the | average wage | per employe | e |
|---------------------|------------------|--------------|-------------|---|
|---------------------|------------------|--------------|-------------|---|

| | 2022 | 2023 | | 2024 | | 2025 | |
|-----------------------------------|-------|-------------------|------------------|-------------------|------------------|------------------|--|
| Growth rates, in % | | September 2022 | February 2023 | September 2022 | February 2023 | February 2023 | |
| Gross wage per employee – nominal | 2.8 | 6.0 | 8.3 | 4.5 | 6.0 | 5.1 | |
| - private sector | 6.2 | 5.1 | 8.0 | 5.0 | 6.5 | 5.5 | |
| - public sector | -2.5 | 7.6 | 8.7 | 3.4 | 5.1 | 4.5 | |
| Gross wage per employee – real | -5.5 | 0.0 | 1.1 | 1.5 | 1.8 | 2.7 | |
| - private sector | -2.4 | -0.8 | 0.9 | 2.1 | 2.2 | 3.0 | |
| - public sector | -10.4 | 1.5 | 1.5 | 0.5 | 0.9 | 2.0 | |

Source: For 2022 SURS (2023), for 2022-2025 forecast by IMAD.

Box 2

Estimating the number of minimum-wage earners

The minimum wage increased by 12% this year, which is the highest increase since 2010. In January 2023, the gross minimum wage was raised from EUR 1,074.43 to EUR 1,203.36 (net from EUR 778.48 to EUR 878.48).³¹ The increase took into account the new calculation of the minimum cost of living from October last year and year-on-year inflation in December.³² According to the new calculation, which was made for the first time since 2017 and includes price increases up to September 2022,³³ the minimum cost of living increased by 9.2%, while inflation in December stood at 10.3%. The increase in the minimum wage was higher than in previous years and is the highest since 2010.

The minimum wage has risen faster than the average wage over the last **10 years.** The much faster growth was particularly pronounced during the global financial crisis that coincided with the introduction of the new Minimum Wage Act, which raised the minimum wage significantly (by 20% in 2010 alone); over the period 2013–2022, its cumulative growth was only slightly higher than that of the average wage (37.1% versus 32.2%). The minimum to-average wage ratio was over 50% in 2012 and, according to our estimates,

³¹ The net amount is calculated for a single person without children and takes into account the effects of the change in income tax legislation.

³² The Minimum Wage Act stipulates that the minimum wage is set in the amount of the minimum cost of living plus 20% to 40%. At the same time, the gross minimum wage increases once a year, every January, by at least the annual inflation rate of the previous December, which this time was 10.3%.

³³ The minimum cost of living was estimated at EUR 669.83 in October 2022; given the new minimum cost of living, the net minimum wage should be at least EUR 803.80.

rose to 53.1% in 2022. According to the latest available data on wage distribution in EU Member States with a statutory minimum wage, Slovenia was the only country with a ratio above 50% in 2021.

Figure 33: Growth in the minimum wage mostly exceeded growth in the average wage...



Figure 34: ... which contributed to their high ratio



We estimate that the share of persons in employment earning close to the minimum wage gradually declined over the period 2010-2021. The distribution of wages by level shows that a large number of workers in Slovenia are employed at low wages, mostly around the minimum wage, while a relatively small proportion of workers receive higher wages (Figure 35). When assessing the number of minimum wage earners, it must be taken into account that only a small number of workers receive the exact amount of the minimum wage at any given time, therefore using a range around the level of the minimum wage is more appropriate. If the range around the minimum wage widens, the number of workers receiving such a wage increases sharply due to the high wage density. If we use a range of $\pm 10\%$ around the minimum wage, we estimate that about 11% of all workers, or about 85,000 people, received a wage within this range in 2021.³⁴ We estimate that the share of these recipients has declined slightly over the years (Figure 36), reflecting a gradual increase in the lowest wages and in the share of employees earning around the minimum wage. By activities, the share of minimum wage earners in 2021 was highest in accommodation and food service activities (25%), construction (22%) and administrative and support service activities, including employment activities (20%) (Figure 37).

³⁴ The estimate of the share of minimum wage earners is based on linking of micro data from the Statistical Register of Employment (SRDAP) and income tax returns. Data refer to the period 2010–2021, with income tax data for 2021 being provisional. For the purpose of our calculation, a person in employment was considered as a person who was employed for a full year by a legal or natural person, with the same employer, in the same occupation, in a full-time permanent or temporary employment, was not on maternity leave or long-term sick leave and received at least 90% of the minimum wage. The sample comprised an average of about 570,000 people per year. The estimate of the number and proportion of workers close to the minimum wage in the sample was then applied to all persons employed by legal and natural persons, i.e. about 804,000 persons in 2021 according to SURS data. Estimate of the share of minimum wage earners may differ from estimates based on other sources, such as the Structure of Eurnings Survey (SES), which is internationally comparable, or the Statistics on Income and Living Conditions (EU-SILC). The differences may be due to the different inclusion of the observation units. Estimates of minimum wage earners were also made based on these two additional sources and are comparable to the estimates based on the first source.



Figure 35: The density of gross wages is highest at the bottom of the wage distribution (2021)

Figure 36: The share of minimum-wage recipients (+/-10% of the minimum wage) decreased gradually in the period observed



Figure 37: The largest share of minimum wage earners comes from accommodation and food service activities



A sharp increase in the minimum wage may increase the share of minimum wage earners in the short term, while other wages follow gradually. When the minimum wage rises, the number of workers paid near or at the new minimum wage also rises in the short term until the wages of workers now near the new minimum wage rise. A simple simulation shows that a 12% increase in the minimum wage (based on the latest available data for 2021) leads to an immediate increase in the share of minimum wage earners in the above-mentioned range to about 20%. At the same time, any increase in the minimum wage also affects other wages via upward spillover effects, which may result from, among other things, wage policies in companies and the maintenance of an appropriate relationship between wages of employees. As a result, the share of minimum wage earners then falls again. According to Laporšek et al. (2017), the increase in the minimum wage can have an effect on wages of up to 50% above the minimum wage, with the effect being stronger for wages close to the minimum wage and correspondingly smaller for higher wages.

2.5 Inflation

Consumer price growth strengthened considerably in 2022. Inflation reached its highest level in almost 30 years in mid-2022,35 before declining slightly but still exceeding 10% at the end of 2022 (4.9% at the end of 2021). In 2022 as a whole, inflation averaged 8.8% (1.9% in 2021). Last year, the largest upward impact on inflation came from higher prices of food and non-alcoholic beverages (3.1 p.p.), and energy prices were also significantly higher (2 p.p.). Inflation had already picked up at the beginning of last year, mainly due to higher energy prices (although energy prices on world markets had already started to rise in autumn 2021), higher processed and non-processed food prices due to a poor harvest and higher input prices, and the contribution of non-energy industrial goods prices was also stronger, mainly due to supply chain problems related to the epidemic. Since the outbreak of war in Ukraine, external shocks have intensified and inflation has become more broad-based. In addition to goods prices, service prices have also started to rise, which - apart from a probable partial spillover of energy prices - is mainly related to a post-COVID-19 recovery in demand and wage increases in activities facing labour shortages. The contribution of service prices to inflation increased towards the end of last year, as did that of food prices. Energy price growth slowed (amid a high base, weakening economic activity and government measures to mitigate rising energy prices³⁶) but was still strong,³⁷ and price growth in non-energy industrial goods also slowed somewhat as supply chain problems eased and the commodity market situation stabilised. In line with these developments, core inflation (excluding food and energy prices) was significantly higher at the end of 2022 (7.4%) than at the end of 2021 (3.1%). The rising inflation last year marked the beginning of an accelerated monetary policy normalisation, which tightens credit conditions by raising interest rates and phasing out non-standard measures, thereby dampening demand, upward pressure on prices³⁸ and inflation expectations. While the latter are elevated in the short term, they remain anchored near the inflation target in the longer term.

We expect inflation to ease off gradually this year, but to remain relatively high on average; we estimate that it could only gradually decline towards 2% after 2024. In January 2023, year-on-year inflation remained at 10%, the rise in food and service prices strengthened slightly and the increase in energy prices weakened further (9.2%). In our assessment, higher service prices will make a significant contribution to inflation throughout the year, while the contribution of food prices will also remain relatively high, but we expect it to ease gradually (see also Box 3). The contribution of energy prices is expected to be smaller this year in the absence of shocks (although we expect significant year-on-year fluctuations due to the base effect related to past government

³⁵ It stood at 11% in July and August, the highest level since August 1995.

³⁶ To mitigate the impact of high energy prices, the government has taken a number of measures that we estimate pushed inflation down by about 2 p.p.

³⁷ In December, it was 15.9%; it peaked in July 2022 when it was almost 40%.

³⁸ The ECB estimates that inflation was around 1.2 p.p. lower in 2022 as a result of the euro area monetary policy, but that the effect will be much larger this year and next, 1.2 and 1.8 p.p. respectively (Lane, 2023).
measures³⁹ and the expiry of certain government measures still in place⁴⁰), and the increase in non-energy industrial goods prices is also expected to moderate gradually amid more stable commodity market conditions, further easing of supply chain bottlenecks and low consumption growth. As price growth gradually weakens, inflation at the end of the year is expected to be 5.1% and average 7.1% in 2023 as a whole, mainly due to the high level at the beginning of the year. For next year, we expect inflation to weaken further in the absence of external shocks, falling below 3% by the end of the year, supported by monetary policy measures. Upside risks to inflation are also associated with weather and labour market conditions and a more robust growth in service prices.

Table 6: Inflation forecast

| | | 20: | 23 | 20 | 2025 | |
|----------------------------|------|-------------------|------------------|-------------------|------------------|------------------|
| In % | 2022 | September 2022 | February 2023 | September 2022 | February 2023 | February 2023 |
| Inflation – Dec/Dec | 10.3 | 3.9 | 5.1 | 2.2 | 2.8 | 2.0 |
| Inflation – annual average | 8.8 | 6.0 | 7.1 | 2.9 | 4.2 | 2.4 |

Source: For 2022 SURS (2023), for 2022-2025 forecast by IMAD.





Figure 39: Inflation will gradually decline this year but remain relatively high on average; core inflation will ease at a slower pace



³⁹ In the first quarter of last year, the Government temporarily exempted households from paying certain levies under the Act on Emergency Measures to Mitigate the Consequences of High Energy Prices. Consequently, electricity prices fell significantly (by almost 40% per month).

⁴⁰ The measure introducing the price cap on district heating expires on 30 April and the reduced VAT rate on certain energy products used for heating purposes expires on 31 May.

Box 3 Effects of food commodity price shocks on food prices

A longer period of tight conditions in the energy and food commodity markets, exacerbated by the war in Ukraine, and adverse weather conditions are contributing to a sharp rise in food prices. Prices for agricultural inputs began to rise in 2021, with the increase accelerating in the first half of 2022. Price increases were exceptionally high in the mineral fertiliser group (which follow fossil fuel prices) and in the animal feed group (which largely follow grain prices). Agricultural producer prices followed input prices. Food import prices and producer prices also rose significantly in 2022. After a sharp drop at the outbreak of the epidemic, energy prices started to rise again in the middle of 2021 as economic activity recovered and the situation in the energy market was further aggravated by the war in Ukraine. In addition to higher fertiliser and energy prices, food production was also affected by adverse weather conditions (drought) in the summer of 2022. To some extent, the higher costs of food production were passed on along the entire chain from production to retail food prices. Together with energy prices, these contributed most to the acceleration of inflation last year in Slovenia, the euro area and the EU. The highest price increases were recorded for oils and fats and dairy products at all levels, while higher prices for dairy products, cereals and meat accounted for almost two-thirds of the increase in food prices. In all euro area countries and EU Member States, food prices in 2022 were at least 10% higher year-on-year, outpacing the general price increase, with significant differences between countries. The growth in HICP food prices in Slovenia was 19.2% last year, slightly above the euro area average.

Figure 40: Differences in food price growth among EU Member States



Figure 41: Prices for food commodities on the EU internal market surged in 2021 and 2022



Based on Ferrucci et al. (2012), we estimated the pass-through of a commodity price shock along the food price chain in the internal EU market on consumer food prices in Slovenia by means of a vector autoregression model (VAR). To identify structural shocks, we used the Cholesky decomposition, which suggests an ordering of variables based on their degree of exogeneity, from the most exogenous to the most endogenous. Three variables were included in the model in the following order: the key variable was food commodity prices in the EU internal market⁴¹ (Figure 41), followed by the producer food price index and the CPI food price index (hereinafter: consumer food prices) in Slovenia. Fruit and vegetable prices were excluded from the latter as they do not show a strong correlation with commodity shocks. This arrangement of variables is consistent with the assumption that prices are set along the distribution chain. The model was estimated at a monthly time frequency using differentiated logarithmic values of the variables for the period from January 2007 to December 2022.

The model estimates suggest that the pass-through of the commodity shock to consumer food prices in Slovenia is quite protracted. According to the model estimates, the pass-through of the shock lasts a little more than a year, after which the response becomes statistically insignificant (Figure 42). These estimates suggest that the shocks that occurred at the end of 2021 and in March and April last year were almost completely passed through. Based on the model estimates, consumer food prices in Slovenia rise cumulatively by 1.3% and food commodity prices (in response to their own shock) by 4.5% within a little more than a year after the shock, implying a pass-through of almost one-third of the commodity shock to consumer food prices in Slovenia.

Figure 42: Impulse reaction of the monthly growth rate of consumer food prices in Slovenia to a shock in food commodities on the EU internal market



Figure 43: Global food and agricultural input prices point to a possible slowdown in food price increases



⁴¹ Prices refer to four groups of food commodities: cereals, dairy products, meat and fats. More precisely, it is a combination of farm-gate prices and wholesale prices on the EU internal market, which means that the prices implicitly also reflect CAP measures, making them more relevant than international prices. **Food price growth in Slovenia remains high in early 2023.** In recent months, the increase in agricultural input prices has slowed significantly, which will gradually lead to an easing of price pressures along the entire price/cost chain. The rise in food prices on world markets has also slowed significantly recently, mainly due to a high base and lower prices for energy and other inputs. However, risks of persistently elevated food price inflation or its slow easing remain, related to labour market cost pressures, the unstable geopolitical situation and possible renewed energy price increases, with the impact of adverse weather conditions also playing a role.

2.6

Current account of the balance of payments

In 2022, the current account turned into a deficit for the first time in 10 years. The main reason for the significant decline in the current account balance was goods trade balance, as imports of goods grew faster than exports in the face of relatively strong domestic consumption. The terms of trade also deteriorated (by 2.8%⁴²) and contributed about one third to the change in the nominal trade balance (EUR 1 billion). The services surplus increased and was higher in all segments of trade in services, especially in travel services, as receipts from foreign tourists who visited Slovenia increased much more (by EUR 1.2 billion) than expenditure of Slovenian tourists abroad (by EUR 0.5 billion). Growth in the services surplus was also driven by trade in transportation and other higher value-added services (financial services, telecommunications, computer and information services, and research and development services). Net outflows of primary and secondary income were higher than a year ago. The primary income deficit was higher because more customs duties were paid into the EU budget (import of electric vehicles for the EU market via the port of Koper), while subsidies received from the EU budget were lower. The higher secondary income deficit arose from higher government and private sector transfers abroad. From the perspective of the savings/investment gap, the decline in the current account balance was mainly due to lower gross saving, especially by households, while investment activity also picked up.

The current account balance will again show a small surplus in the period 2023–2025. This will be mainly driven by an increase in the services surplus, especially in trade in travel, but also by a reduction in the goods trade deficit this year due to a slight improvement in the terms of trade.⁴³ From 2024, the trade deficit will widen again as growth in exports will be slightly lower than growth in imports. The deficits in the primary and secondary income balances will also be higher in the forecast horizon. The growth of the former will be affected by higher net outflows of income from direct investment equity (dividends and profits), higher debt servicing costs and more customs duties paid into the EU budget

⁴² Since energy, raw materials and food have a higher share in imports than in exports, their rising prices lead to a deterioration in the terms of trade.

⁴³ Assuming that prices for energy and other commodities weaken (after last year's high growth), import price growth (3.9%) will be slightly lower than export price growth (4.6%) this year, leading to a 0.7% improvement in the terms of trade.

(import of electric vehicles for the EU market via the port of Koper).⁴⁴ The deficit in secondary income will increase particularly due to higher GNI- and VAT-based payments into the EU budget.

Table 7: Forecast for the current account balance - balance of payments statistics

| | | 20 | 23 | 20 | 2025 | |
|---------------------------------|------|-------------------|------------------|-------------------|------------------|------------------|
| | 2022 | September 2022 | February 2023 | September 2022 | February 2023 | February 2023 |
| Current account, in EUR million | -450 | -324 | 196 | 64 | 492 | 622 |
| Current account, as a % of GDP | -0.8 | -0.5 | 0.3 | 0.1 | 0.7 | 0.9 |

Source: For 2022 BoS (2023), for 2022–2025 forecast by IMAD.

Figure 44: Last year, for the first time in 10 years, the current account surplus turned into a deficit mainly due to a large deficit in trade in goods...



Figure 45: ... under the impact of price developments (terms of trade) and quantity fluctuations



⁴⁴ The increase in the primary income deficit will partly be cushioned by subsidies from the EU budget: most of them for the implementation of the Common Agricultural and Fisheries Policies and part from the Recovery and Resilience Facility. The bulk of receipts from the EU budget are investment transfers, which, in terms of the balance of payments statistics, are recorded in the capital account of the balance of payments.

3

Risks to the forecast

Uncertainty in the international environment is lower than in the autumn, but remains high and is related mainly to the course of the war in Ukraine and the energy market conditions; the related risks to the forecast are therefore less pronounced and more balanced than a few months ago. The biggest downside risk is a possible escalation of the war in Ukraine, which would increase uncertainty and give commodity prices a new boost. In recent months, uncertainty in the international environment regarding energy supply and a possible recession has decreased, although it remains high. The lower risk of a major energy crisis in Europe is related to the agreements and emergency measures at EU level and the relatively mild weather, which is why European gas storage facilities will be fuller at the end of winter than expected in the autumn. The picture for next winter is less clear, however, as replenishing storage with greatly reduced inflows through Russian pipelines will still be a challenge, especially if Chinese gas demand increases. The negative scenarios of the international institutions continue to point to the possibility of significantly lower economic growth compared to the baseline scenarios if Russian gas supplies are completely halted and substitution by alternative sources is lower than expected in the baseline projections, especially if the coming winter is colder than average. In December, the ECB estimated that in this case, economic growth in the euro area in 2024 would have been around 2 p.p. lower than in the baseline scenario. Due to the dependence of the Slovenian economy on external factors, the prospects for Slovenia would also deteriorate in the event of a worsening of the economic and energy situation. A stronger slowdown in growth in Slovenia's main trading partners would reduce foreign demand and Slovenian exports. Amid high energy prices, energy-intensive activities would be more affected and business investment would decline in an uncertain environment.

The downside risk to economic growth is also related to a possible persistence of high inflation, which could lead to an acceleration of monetary tightening. Besides higher-than-assumed energy prices, higher food prices in particular could contribute to the persistence of high inflation. A renewed closure of the Black Sea shipping corridor and further disruptions to Ukrainian exports of wheat and maize, as well as spillovers from rising energy costs and fertiliser prices to other prices, would significantly push up international food commodity prices. Food prices are also strongly affected by extreme weather events due to climate change, such as extreme and prolonged droughts. If inflation remains at a high level, inflation expectations will also increase, which in a situation of labour shortage would also increase demands for wage increases and could lead to a wage inflation spiral. If this were to happen at the euro area level, it could lead to a faster tightening of monetary policy with negative effects on lending and investment activities.

There are also other downside risks to economic activity at the global level related to economic activity in China, the impact of climate change, social unrest amid high energy and food prices, and the geopolitical and pandemic situation. China's real estate crisis has worsened recently, which could weigh on global growth, especially through lower demand. At the same time, the reopening of the Chinese economy after the abandonment of the zero-

COVID policy also poses a significant risk to the baseline forecasts. While this has a positive impact on demand for European exports, a stronger-thanexpected upswing in China could lead to upward pressure on commodity prices, higher inflation and thus further tightening of monetary policy. The global geopolitical situation also remains an important risk factor. Deepening geopolitical divisions could reduce the effectiveness of international cooperation, including in addressing food crises and the rising negative impacts of climate change. Rising temperatures and the increasing number of extreme weather events are already having an impact on climate-sensitive activities such as agriculture, forestry, energy, transport and tourism. Other geopolitical tensions (in China and Taiwan) could also weaken the economic outlook if they escalate. A possible renewed escalation of the pandemic also remains a risk.

However, there are also some upside risks to the baseline projections of economic growth at the global, EU and national level. A faster-thanexpected decline in inflation would lead to less severe tightening of monetary policy, which would have a positive impact on economic activity. International institutions also cite higher private consumption, boosted by the unwinding of savings accumulated during the pandemic, as a possible reason for the higher growth. A more effective absorption of the full package of EU funds and effects of reform measures on public finances, both in Slovenia and in its main trading partners, would also have a positive impact on economic growth, providing an opportunity to strengthen the development content, the most important of which are: increased support for research, innovation and digitalisation to boost productivity; green transformation with the transition to more sustainable economic development; and systemic adjustments to social protection systems, driven mainly by demographic trends. This could increase the long-term potential of EU Member States through the reallocation of resources, which has already been accelerated by the pandemic, with significant positive crosssectoral and transnational impacts. In this context, the realisation of planned public and private investment projects will play a significant role. The limited availability of fossil fuels and their high prices after the start of the war in Ukraine are strengthening the incentives for a faster transition to renewable energy sources and an increase in energy efficiency, which can further boost investment in the medium term, for which, in addition to securing additional public and private funding, faster siting procedures are needed.

Potential GDP growth

Under the current conditions of domestic and international risks, the estimate of potential GDP⁴⁵ and consequently the output gap is particularly subject to high uncertainties and risks of subsequent changes. As potential GDP cannot be measured directly, estimates of it can change depending on input data or the methodology used. Input data often change due to revisions of GDP growth in previous years, changes in the forecasts of GDP growth or other input categories, and changes in the length of the time series included. As a result of these factors, ex-post estimates for the same period can lead to changes in the level of potential GDP and the output gap. In the present uncertain environment, the current estimates of potential GDP and the output gap should be considered only in the context of the assumptions and broader economic picture at the time when they were made.

According to the current estimate, potential GDP growth is likely to remain solid this year and over the next two years, supported by the expected strengthening of investment and thus of capital, and to some extent also by high employment. Growth of potential GDP strengthened gradually between 2012 and 2019, when it exceeded 3%, before temporarily declining in 2020 due to the impact of the health crisis and recovering slightly to almost 3% in 2021 and 2022. We estimate that the impact of the COVID-19 crisis on production factors was limited due to the intervention measures taken. In the coming years, growth of potential GDP is expected to remain largely unchanged (2.9% on average in 2023–2025). The greatest contribution will still be made by total factor productivity (1.4 p.p.), whose growth is expected to be similar to that before the global financial crisis. With the expected rise in investment, the contribution of capital should increase significantly. However, it will remain lower on average (at 0.7 p.p.) than in the long period of time before the previous crisis.⁴⁶ This is a consequence of the relatively low level of investment in the several-year period following the beginning of the global financial crisis. Labour is expected to contribute 0.8 p.p. on average to potential growth in 2023–2025, but its contribution will gradually become more modest due to the already high employment and activity rates, especially in the 30-54 age group, and the trend of decline in hours worked.

⁴⁵ Potential GDP is a macroeconomic indicator which shows the output an economy can achieve without creating inflationary pressure (i.e. by overheating). If the actual output of an economy (actual GDP) is greater than the potential output (potential GDP), this causes an increase in inflation (and vice versa). The difference between actual GDP and potential GDP expressed as a percentage of potential GDP is referred to as a country's output gap. IMAD's calculation of potential GDP is based on a production function method, which does not significantly differ from the European Commission's method. The method assumes that potential GDP can be represented by a combination of the production factors labour (this is dependent on demographic factors, the activity rate, number of hours worked and the natural unemployment rate), capital and total factor productivity. The disparities between potential GDP or output gap calculations by IMAD and the EC are largely due to the differences in i) the lengths of the forecast periods, ii) the forecasts of macroeconomic indicators and iii) certain input data (IMAD uses the August revision of SURS data and updated own demographic projections calculated by a microsimulation model by the IER (based on SURS data); in the series of data on employment according to national accounts statistics, IMAD's calculations also take into account a correction for the break in the data series in 2002).

⁴⁶ The contribution of capital to potential GDP growth in 2000–2008, when it was relatively stable, averaged 1.7 p.p.

Figure 46: Potential GDP change: a comparison of IMAD and EC calculations



Figure 48: Contributions of individual components to potential GDP growth



Figure 47: GDP and potential GDP



Figure 49: Output gap: a comparison of IMAD and EC calculations



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1

1.1

Appendix: Assessing forecasting performance

Introduction

The preparation of the macroeconomic forecasts for 2022 was surrounded by high uncertainty. It was subject to a number of downside risks, such as the unfolding of the war in Ukraine, suspension of oil and gas supply from Russia to Europe, increased disruptions in global supply chains and inflationary pressures, and rapid changes in monetary policy. Despite these high risks, Slovenia still recorded relatively high economic growth in 2022 (5.4% according to preliminary estimates; see Subsection 2.1), following a rapid post-COVID-19 recovery in economic activity in 2021 (8.2%). At the same time, average annual inflation was elevated at 8.8% (CPI) and 9.3% (HICP): see Subsection 0. The 2020 forecasting performance assessment only took into account projections made after the epidemic was declared in Slovenia on 12 March 2020. In the case of IMAD, instead of the regular Spring Forecast of March 2020, we took into account the Summer Forecast of June 2020, which was the first comprehensive forecast prepared for the needs of outlining a revised state budget for 2020. In addition, we excluded the forecasts for 2020, which were prepared by domestic and foreign forecasting institutions in 2019, when the epidemic was not vet to be expected. The outbreak of the war in Ukraine in February 2022 was also unexpected and this had a significant impact on price developments. Below we therefore focus on the forecasts made after the outbreak of the war in order to assess the performance of the forecasts (especially regarding inflation).

1.2 Methodology

IMAD's assessment of the accuracy of its forecasts is based on comparison with other domestic and foreign institutions⁴⁷ **that publish forecasts of economic trends for Slovenia.** The analysis, which captures the latest data for 2022, covers the forecasts for two key macroeconomic variables,⁴⁸ economic growth and average annual inflation measured by CPI and HICP. The movement of the actual values of these variables over time is shown in Figure 50. The assessment of forecasting performance is based on a

⁴⁷ In addition to the forecasts made by the Institute of Macroeconomic Analysis and Development (IMAD, 2020, several years-a, several years-b, several years-c, several years-d), the analysis covers forecasts for Slovenia by the Bank of Slovenia (BoS, several years-a, several years-b, several years-c, several years-d, several years-e), the Chamber of Commerce and Industry of Slovenia (CCIS Analytics, 2021a, 2021b, 2022, 2023, several years) and, among international institutions, the European Commission (EC, several years), the International Monetary Fund (IMF, several years), Wiener Institut für Internationale Wirtschaftsvergleiche (Gligorov and Podkaminer, 2006, 2007; Gligorov, et al., 2004; Gligorov and Richter, 2007; Havlik, 2002, 2003; Havlik et al., 2005; Podkaminer and Gligorov, 2006; Podkaminer, 2003, 2004; Podkaminer and Hunya, 2005; Pöschl, 2002; WIIW, several years-a, several years-b), and, for the last few years, the Organisation for Economic Co-operation and Development (OECD, several years) and Consensus Economics (Consensus Economics, 2021a, 2021b, 2022a, 2022b). Hereinafter institutions.

⁴⁸ Spring forecasts for the year ahead (SF_{t+1}), autumn forecasts for the year ahead (AF_{t+1}), spring forecasts for the current year (SF_t) and autumn forecasts for the current year (AF_t).



comparison of the forecast values with the first statistical annual estimates using various statistical measures.⁴⁹

To make a less biased comparison of institutions' forecasting performance, the impact of the timing of the forecast release should be eliminated from the comparison. As shown in Figure 51, most institutions publish their forecasts later than IMAD. Institutions that release their forecasts later have an advantage in terms of access to more information, which can result in smaller forecasting errors and vice versa. To address this issue, we compared the forecasting accuracy of institutions using a new, less biased method⁵⁰ based on the calculation of an adjusted mean absolute error (the adjusted MAE statistic) which eliminates the timing effect. The adjusted MAE statistic is calculated using an econometric model which assumes that the absolute forecast error is dependent on the amount of information available to the forecasting ability (i.e. individual or fixed effects), and the fact that some years are more difficult to forecast. The estimated individual (fixed) effects can then be interpreted as adjusted absolute forecast errors.

⁴⁹ The arithmetic mean error $(ME = \frac{1}{T}\sum_{t=1}^{T}(P_t - R_t))$, mean absolute error $(MAE = \frac{1}{T}\sum_{t=1}^{T}(|P_t - R_t|))$, root mean square error $(RMSE = \sqrt{\frac{1}{T}\sum_{t=1}^{T}(P_t - R_t)^2})$, standardised mean absolute error $(stdMAE = \frac{MAE}{sd(R_t)})$ and standardised root mean square error $(stdRMSE = \frac{RMSE}{sd(R_t)})$, where the designations of variables and symbols have the following meanings: *R* actual value, *P* forecast, *sd* standard deviation and *T* number of forecasts. For detailed results see the Statistical Appendix.

⁵⁰ This method was used for the first time in the Autumn Forecast of Economic Trends 2018 (IMAD, 2018), see Section 5. For a more detailed description of the method, see Andersson et al. (2017).

| Figui | e 51. The usual till | enne of forecasts published by h | | 5 | |
|-------|----------------------|----------------------------------|------|---------------------|--|
| Jan | | | | | |
| Feb | | | | | |
| Mar | IMAD | WIIW | CCIS | Consensus Economics | |
| Apr | IMF | | | | |
| May | EC | OECD | | | |
| Jun | BoS | | | | |
| Jul | | | | | |
| Aug | | | | | |
| Sep | IMAD | Consensus Economics | | | |
| Oct | IMF | | | | |
| Nov | EC | OECD | WIIW | | |
| Dec | BoS | CCIS | | | |

Figure 51: The usual timeline of forecasts published by individual institutions

Source: Forecasts of individual institutions

1.3

Assessing forecasting performance

In the following paragraphs we first present an overview of errors made by individual institutions in their forecasts for 2022, followed by an assessment of the performance of IMAD forecasts for the period after 1997. The last part includes a comparative analysis of the forecasting performance of six institutions. The period analysed is from 2002 to 2022, as this is the longest period for which forecasts of most institutions are available.⁵¹

Economic growth in 2022 was mostly in line with the latest forecasts of international institutions. In their 2021 forecasts, the institutions expected economic growth of between 4% and 5% in 2022, assuming a gradual easing of containment measures and an improvement in the health situation. The biggest risk to the forecasts was still a possible deterioration of the epidemic situation. The outbreak of war in Ukraine has brought additional risks to the fore, particularly related to the possible severe energy supply disruptions and escalating price pressures. Against the backdrop of elevated uncertainty, the spring 2022 forecasts were revised slightly downwards, while the autumn 2022 forecasts were revised slightly upwards, mainly due to more favourable than expected developments in the first half of the year. According to the preliminary statistical estimate, GDP increased by 5.4% in real terms in 2022, with positive contributions from final consumption and gross investment, while the contribution from the external balance was negative. In 2022, the smallest error in the spring forecast was made by the BoS (0.4 p.p.), which is one of the last institutions to publish its forecasts (in the middle of June). IMAD, which is among the first to publish its forecasts (in the middle of March in 2022), showed an error of -1.2 p.p. in the Spring Forecast 2022. The errors made by other institutions were larger (with the exception of the OECD error of -0.8 p.p.) and ranged between -1.3 and -1.7 p.p. In the Autumn Forecast 2022, IMAD's error was -0.4 p.p., which corresponds to the absolute value of the errors made by the BoS, CCIS and OECD. Errors made by the IMF (0.3 p.p.), WIIW (0.3 p.p.) and

⁵¹ Excluding the OECD and Consensus Economics, as their forecasts for Slovenia have only been available since 2009.

Consensus Economics (0.2 p.p.) were slightly smaller. The greatest error was made by the EC (0.8 p.p.).

| | Spring 202 (SF | 1 forecast | Autumn 202 (AF | 21 Forecast _{t+1}) | Spring 202 (S | 2 forecast F _t) | Autumn 2022 Forecast (AF _t) | | |
|------------------------|-------------------|------------------|-------------------|---------------------------------|------------------|--------------------------------|--|------------------|--|
| Actual: 5.4% | Forecast | Error in p.p. | Forecast | Error in p.p. | Forecast | Error in p.p. | Forecast | Error in p.p. | |
| IMAD | 4.4 | -1.0 | 4.7 | -0.7 | 4.2 | -1.2 | 5.0 | -0.4 | |
| BoS | 4.8 | -0.6 | 4.0 | -1.4 | 5.8 | 0.4 | 5.0 | -0.4 | |
| CCIS | 4.2 | -1.2 | 4.4 | -1.0 | 3.7 | -1.7 | 5.8 | 0.4 | |
| EC | 5.1 | -0.3 | 4.2 | -1.2 | 3.7 | -1.7 | 6.2 | 0.8 | |
| IMF | 4.5 | -0.9 | 4.6 | -0.8 | 3.7 | -1.7 | 5.7 | 0.3 | |
| WIIW | 4.0 | -1.4 | 4.1 | -1.3 | 4.1 | -1.3 | 5.7 | 0.3 | |
| OECD | 4.6 | -0.8 | 5.4 | 0 | 4.6 | -0.8 | 5.0 | -0.4 | |
| Consensus Economics | 4.3 | -1.1 | 4.2 | -1.2 | 4.0 | -1.4 | 5.6 | 0.2 | |

Table 8: Overview of GDP growth forecasts for 2022, by forecasting institution

Source: Forecasts by individual institutions; calculations by IMAD. Notes: Positive (negative) values mean that the forecast value was higher (lower) than the actual value.

The forecasts for inflation for 2022 were revised upwards by all institutions during the forecast horizon. With the average annual increase in consumer prices close to 2% in 2021, the institutions expected similar growth in their preliminary forecasts. As the price increase was more pronounced than expected, initially mainly due to food and energy price rises, which were further fuelled by the war in Ukraine, and later due to rising core inflation, forecasts were revised upwards. The average annual inflation rate in 2022 was 8.8% (CPI) and 9.3% (HICP), close to the latest forecasts by institutions. In the spring of 2022, the smallest error in its CPI inflation forecast was made by the IMF (-2.1 p.p.), while IMAD's error was slightly larger (-2.4 p.p.). The smallest error in the HICP inflation forecast of HICP inflation was made by the BoS, which is the last institution to publish its forecast (in mid-December). IMAD's error in the CPI inflation forecast was negligible (0.1 p.p.) and comparable to the errors made by other institutions that forecast this type of inflation.

| Table 9: Average annual inflatior | forecasts (CPI and | d HICP) for 2022, b | y forecasting institution |
|-----------------------------------|--------------------|---------------------|---------------------------|
|-----------------------------------|--------------------|---------------------|---------------------------|

| Actual: CPI: | Spring 202 (SF | 1 forecast t+1) | Autumn 202 (AF | 21 Forecast F _{t+1}) | Spring 202 (S | 2 forecast F _t) | Autumn 2022 Forecast (AF _t) | | |
|------------------------|-------------------|--------------------|-------------------|-----------------------------------|------------------|--------------------------------|--|------------------|--|
| 8.8% HICP: 9.3% | Forecast | Error in p.p. | Forecast | Error in p.p. | Forecast | Error in p.p. | Forecast | Error in p.p. | |
| IMAD | 1.2 | -7.6 | 2.0 | -6.8 | 6.4 | -2.4 | 8.9 | 0.1 | |
| BoS | 1.6 | -7.7 | 3.8 | -5.5 | 9.0 | -0.3 | 9.3 | 0 | |
| CCIS | 1.8 | -7.0 | 2.1 | -6.7 | 5.2 | -3.6 | 8.8 | 0 | |
| EC | 1.7 | -7.6 | 2.1 | -7.2 | 6.1 | -3.2 | 9.2 | -0.1 | |
| IMF | 1.5 | -7.3 | 1.8 | -7.0 | 6.7 | -2.1 | 8.9 | 0.1 | |
| WIIW | 1.7 | -7.6 | 1.6 | -7.7 | 4.8 | -4.5 | 9.4 | 0.1 | |
| OECD | 1.1 | -8.2 | 2.8 | -6.5 | 7.6 | -1.7 | 9.2 | -0.1 | |
| Consensus Economics | 1.7 | -7.1 | 1.9 | -6.9 | 5.4 | -3.4 | 9.0 | 0.2 | |

Source: Forecasts by individual institutions; calculations by IMAD. Notes: IMAD, CCIS, IMF and Consensus Economics forecasts refer to CPI inflation, while BoS, EC, WIW and OECD forecast HICP inflation. Positive (negative) values mean that the forecast value was higher (lower) than the actual value.

IMAD's forecasts have not exhibited any significant systematic deviations from actual values over a longer time horizon. The first characteristic used to assess the forecasting performance is the forecast bias, which refers to when a forecast systematically under- or over-estimates the actual value of the projected variable. The forecast bias is determined by the sign in front of the mean error of the forecast. The calculations show that in the 1997–2022 period, IMAD overestimated GDP growth in SF_{t+1} and AF_{t+1}, which is evident from the positive values of mean forecast errors, but these values are small (0.37 p.p. and 0.22 p.p., respectively). The values of mean errors for GDP growth in SF_t and AF_t are negligible (-0.19 p.p.), indicating that the forecasts are not biased. The forecasts for average annual inflation are not biased either, since the mean error of all forecasts is small (-0.21 p.p.). With the exception of the 2022 inflation forecasts, which were made in 2021, the mean error is negligible (-0.06 p.p.).

The accuracy of IMAD forecasts increases with the shortening of the forecast horizon. Another important factor in assessing forecasting performance is accuracy, which is determined by calculating the mean absolute error (MAE) of the forecast. MAE should be as small as possible over a longer time horizon. Between 1997 and 2022, the mean absolute error in IMAD forecasts⁵² for GDP growth (Figure 52 left) was 1.96 p.p. in SF_{t+1} and 1.65 p.p. in AFt+1; in SFt and AFt it amounted to 1.18 p.p. and 0.60 p.p., respectively. Somewhat larger errors are observed in the forecasts over a shorter time horizon (for example, in 2002-2022), mainly due to larger shocks leading to larger errors in the forecasts made during the global financial crisis and more recently during the COVID-19 epidemic due to significantly higher uncertainty. The mean absolute errors in the inflation forecast (Figure 52 right) for the period 1997–2022 are slightly smaller than in the economic growth forecast (0.95 p.p. in SF_{t+1}, 0.85 p.p. in AF_{t+1}⁵³, 0.53 p.p. in SF_t and 0.20 p.p. in AF_t); however, the error in SFt increases slightly when the forecast for 2022 is included, which is due to the higher uncertainty in the preparation of the forecast. A detailed examination of errors in IMAD forecasts also shows that absolute errors in both economic growth and average annual inflation decline with the shortening of the forecast horizon, meaning that IMAD forecasts effectively take into account all new information available at the time of the preparation of each new forecast. The uncertainty in the forecasts for economic growth and average annual inflation is also shown by the uncertainty indicator (Figure 53), which was prepared based on Grzegorczyk and Papadia (2022). It shows by how much the most recent forecasts for a given year deviate on average from the previous forecasts for the same year.54

⁵² For other institutions' results and statistics see the Statistical Appendix.

 $^{^{53}}$ The inflation forecasts for 2022 from 2021 (SF_{t+1} and AF_{t+1}) are not included in the calculation because the war in Ukraine, which had a significant impact on price developments, could not have been foreseen at that time. If they were taken into account, the errors for SF_{t+1} and AF_{t+1} would be 1.21 and 1.09 p.p. respectively.

⁵⁴ The movement of the indicator is similar for the other institutions included in the assessment of the forecast performance.



Figure 52: Mean absolute errors in IMAD forecasts for GDP growth (left) and average annual inflation, measured by CPI (right)

Source: IMAD forecasts. Notes: * The forecasts from 2019 for 2020 are not taken into account. In 2020, we took into account the Summer Forecast, which was published in June 2020, instead of the Spring Forecast.



Source: IMAD forecasts. Notes: * The forecasts from 2019 (2021) for 2020 (2021) are not taken into account. In 2020, we took into account the Summer Forecast, which was published in June 2020, instead of the Spring Forecast.





Source: calculations by IMAD based on Grzegorczyk and Papadia (2022).

When comparing the forecasting accuracy of institutions, it is necessary to consider the time when the forecast was released. The time of release can have a significant impact on accuracy, as a forecast made later in the year may include new information, which can be manifested in smaller forecast errors and vice versa. This new information may involve not just new data on indicator movements, and revisions of already released data, but also changes in the assumptions about developments in the international environment, which are a major factor of uncertainty for an open economy such as Slovenia's. In recent years, fiscal policy orientations and consolidation measures have also become a significant factor to consider when preparing forecasts (they are usually specified only after the completion of IMAD's forecasts). With the introduction of the fiscal rule in 2015, the forecasting process became somewhat more predictable in terms of the set goals (particularly regarding the four general government accounts). However, the uncertainty about the revenue and expenditure structure, which is determined in detail only after IMAD's forecasts are completed, remains. The exceptional economic circumstances resulting from the COVID-19 crisis, which led to the activation of the escape clause, and

the Russian military aggression against Ukraine, have again led to increased uncertainty in the preparation of the forecasts. The comparative assessment of the institutions' forecasting performance was based on the calculation of the adjusted MAE statistics, which allows for less biased evaluations as it eliminates the timing effect.

The evaluations of the adjusted MAE statistics for a longer time period show a high reliability of IMAD's forecasts for economic growth and average annual inflation. Figures 54 and 55 present the rankings of the institutions with regard to the value of the adjusted MAE statistics in the forecasts for economic growth and average annual inflation (a negative/positive value of the statistic indicates above/below-average forecast ability of the forecaster). According to the values of the adjusted MAE statistics, IMAD, the EC and the BoS showed above-average forecasting ability in predicting GDP growth in 2002–2022, and particularly IMAD and the BoS, CCIS and IMF in predicting average annual inflation.⁵⁵

Figure 54: (Adjusted) mean absolute errors in GDP growth forecasts for 2002–2022, by forecasting institution Adjusted MAE statistic
MAE statistic



Source: Forecasts by individual institutions; IMAD estimates according to the methodology of Andersson, Aranki and Reslow (2017). Note: A neg./pos. value of the statistic means that the forecast ability of the forecasting institution is above/below avg.

⁵⁵ By using the CPI and HICP inflation together, we implicitly assume that the ability to forecast CPI inflation is equal to the ability to forecast HICP inflation. Since the two series have similar variance and persistence, this assumption can be fully acceptable. We also assume an equal expected forecast error in CPI inflation and HICP inflation in each time period. Since the time paths of the two inflation measures are very similar, this assumption is not especially problematic. Both inflation measures are indicated in Figure 50.



Figure 55: (Adjusted) mean absolute errors in average annual inflation forecasts for 2002–2022, by forecasting institution

Source: Forecasts by individual institutions; IMAD estimates according to the methodology of Andersson, Aranki and Reslow (2017). Note: A neg./pos. value of the statistic means that the forecast ability of the forecasting institution is above/below avg.

statistical appendix

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Table 1: Main macroeconomic indicators of Slovenia

| Real growth | rates in | %. | unless | otherwise | indicated |
|--------------|----------|----|--------|------------|-----------|
| riour groman | 10100 | , | | 0410111100 | manoaroa |

| | 2045 | 2046 | 2017 | 2049 | 2010 | 2020 | 2024 | 2022 | 2023 | 2024 | 2025 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|--------|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | | forecast | |
| GROSS DOMESTIC PRODUCT | 2.2 | 3.2 | 4.8 | 4.5 | 3.5 | -4.3 | 8.2 | 5.4 | 1.8 | 2.5 | 2.6 |
| GDP in EUR m (at current prices and at fixed exchange rate 2007) | 38,853 | 40,443 | 43,011 | 45,876 | 48,533 | 47,021 | 52,208 | 58,989 | 64,723 | 68,896 | 72,462 |
| GDP per capita in EUR (at current prices and at current exchange rate) | 18,830 | 19,589 | 20,820 | 22,142 | 23,233 | 22,361 | 24,770 | 27,937 | 30,584 | 32,482 | 34,095 |
| GDP per capita in USD (at current prices and at current exchange rate) | 20,892 | 21,683 | 23,521 | 26,149 | 26,009 | 25,541 | 29,295 | 29,458 | 33,245 | 35,308 | 37,061 |
| GDP per capita (PPS) ¹ | 22,700 | 23,600 | 25,100 | 26,500 | 27,800 | 26,800 | 29,200 | | | | |
| GDP per capita (PPS EU28=100) ¹ | 83 | 84 | 86 | 87 | 89 | 89 | 90 | | | | |
| | | | | | | | | | | | |
| Employment according to National Accounts | 1.3 | 1.8 | 2.9 | 3.2 | 2.5 | -0.7 | 1.3 | 2.4 | 1.0 | 0.7 | 0.4 |
| Registered unemployed (annual average in thousand) | 112.7 | 103.2 | 88.6 | 78.5 | 74.2 | 85.0 | 74.3 | 56.7 | 49.6 | 47.8 | 46.1 |
| Rate of registered unemployment in % | 12.3 | 11.2 | 9.5 | 8.2 | 7.7 | 8.7 | 7.6 | 5.8 | 5.1 | 4.9 | 4.7 |
| Rate of unemployment by ILO in % | 9.0 | 8.0 | 6.6 | 5.1 | 4.5 | 5.0 | 4.7 | 4.2 | 4.0 | 3.8 | 3.7 |
| Labour productivity (GDP per employee) | 0.9 | 1.3 | 1.8 | 1.3 | 1.0 | -3.7 | 6.8 | 2.9 | 0.8 | 1.8 | 2.2 |
| WAGES | | | | | | | | | | | |
| Gross wage per employee - nominal growth in % | 1.0 | 1.8 | 2.7 | 3.4 | 4.3 | 5.8 | 6.1 | 2.8 | 8.3 | 6.0 | 5.1 |
| Private sector activities | 0.5 | 1.7 | 2.9 | 4.0 | 3.9 | 4.4 | 6.1 | 6.2 | 8.0 | 6.5 | 5.5 |
| Public service activities | 2.1 | 2.3 | 2.9 | 3.0 | 5.4 | 7.8 | 6.5 | -2.5 | 8.7 | 5.1 | 4.5 |
| Gross wage per employee - real growth in % | 1.5 | 2.0 | 1.3 | 1.6 | 2.7 | 5.9 | 4.1 | -5.5 | 1.1 | 1.8 | 2.7 |
| Private sector activities | 1.0 | 1.8 | 1.5 | 2.3 | 2.2 | 4.5 | 4.1 | -2.4 | 0.9 | 2.2 | 3.0 |
| Public service activities | 2.6 | 2.4 | 1.5 | 1.3 | 3.7 | 7.9 | 4.5 | -10.4 | 1.5 | 0.9 | 2.0 |
| INTERNATIONAL TRADE | | | | | | | | | | | |
| Exports of goods and services | 4.7 | 6.2 | 11.1 | 6.2 | 4.5 | -8.6 | 14.5 | 6.5 | 2.7 | 4.1 | 4.2 |
| Exports of goods | 5.3 | 5.7 | 11.0 | 5.7 | 4.5 | -5.5 | 13.4 | 2.4 | 1.2 | 3.2 | 3.8 |
| Exports of services | 2.4 | 8.0 | 11.2 | 7.7 | 4.6 | -20.0 | 19.3 | 23.8 | 8.1 | 7.5 | 5.6 |
| Imports of goods and services | 4.3 | 6.3 | 10.7 | 7.1 | 4.7 | -9.6 | 17.6 | 9.8 | 1.8 | 3.6 | 4.3 |
| Imports of goods | 5.1 | 6.6 | 10.7 | 7.4 | 5.0 | -8.6 | 17.2 | 8.2 | 1.1 | 3.2 | 4.1 |
| Imports of services | 0.1 | 4.7 | 10.5 | 5.4 | 3.0 | -15.0 | 19.5 | 19.0 | 6.0 | 6.1 | 5.2 |

| Table 1: Main macroeconomic ind | icators o | f Sloven | ia - conti | inue | | | Real | growth rates | s in %, unle | ss otherwis | e indicated |
|--|-----------|----------|------------|-------|-------|-------|-------|--------------|--------------|-------------|-------------|
| | 2015 | 2016 | 2017 | 2019 | 2010 | 2020 | 2024 | 2022 | 2023 | 2024 | 2025 |
| | 2015 | 2016 | 2017 | 2010 | 2019 | 2020 | 2021 | 2022 | | forecast | |
| BALANCE OF PAYMENTS STATISTICS | | | | | | | | | | | |
| Current account balance in EUR m | 1,483 | 1,932 | 2,674 | 2,731 | 2,884 | 3,552 | 1,985 | -450 | 196 | 492 | 622 |
| - As a per cent share relative to GDP | 3.8 | 4.8 | 6.2 | 6.0 | 5.9 | 7.6 | 3.8 | -0.8 | 0.3 | 0.7 | 0.9 |
| External balance of goods and services in EUR m | 3,122 | 3,465 | 3,870 | 3,896 | 4,205 | 4,390 | 3,337 | 993 | 1,800 | 2,258 | 2,445 |
| - As a per cent share relative to GDP | 8.0 | 8.6 | 9.0 | 8.5 | 8.7 | 9.3 | 6.4 | 1.7 | 2.8 | 3.3 | 3.4 |
| FINAL DOMESTIC DEMAND | | | | | | | | | | | |
| Final consumption | 2.1 | 3.9 | 1.5 | 3.3 | 4.4 | -4.1 | 8.4 | 6.6 | 1.2 | 1.8 | 1.9 |
| As a % of GDP | 72.8 | 73.0 | 71.0 | 70.2 | 70.8 | 70.7 | 71.8 | 73.8 | 73.1 | 73.0 | 72.5 |
| in which: | | | | | | | | | | | |
| Private consumption | 2.0 | 4.4 | 1.9 | 3.5 | 5.3 | -6.9 | 9.5 | 8.9 | 1.2 | 1.8 | 1.8 |
| As a % of GDP | 54.0 | 54.0 | 52.5 | 52.0 | 52.4 | 50.1 | 51.1 | 55.0 | 54.4 | 54.2 | 53.8 |
| Government consumption | 2.3 | 2.4 | 0.4 | 2.9 | 1.8 | 4.1 | 5.8 | 0.9 | 1.2 | 1.8 | 1.9 |
| As a % of GDP | 18.8 | 19.0 | 18.5 | 18.2 | 18.3 | 20.6 | 20.6 | 18.8 | 18.8 | 18.7 | 18.8 |
| Gross fixed capital formation | -1.2 | -3.6 | 10.2 | 10.2 | 5.1 | -7.9 | 13.7 | 7.8 | 2.8 | 2.2 | 5.0 |
| As a % of GDP | 18.7 | 17.4 | 18.3 | 19.3 | 19.6 | 18.9 | 20.3 | 22.0 | 22.1 | 21.9 | 22.3 |
| EXCHANGE RATE AND PRICES | | | | | | | | | | | |
| Ratio of USD to EUR | 1.110 | 1.107 | 1.129 | 1.181 | 1.120 | 1.141 | 1.184 | 1.054 | 1.087 | 1.087 | 1.087 |
| Real effective exchange rate - deflated by CPI ² | -4.1 | 0.2 | 0.4 | 0.8 | -0.3 | -0.4 | -0.7 | -0.3 | 1.7 | 1.5 | 0.4 |
| Inflation (end of the year), % ³ | -0.4 | 0.5 | 1.7 | 1.4 | 1.8 | -1.1 | 4.9 | 10.3 | 5.1 | 2.8 | 2.0 |
| Inflation (year average), %3 | -0.5 | -0.1 | 1.4 | 1.7 | 1.6 | -0.1 | 1.9 | 8.8 | 7.1 | 4.2 | 2.4 |
| Brent Crude Oil Price USD / barrel | 52.4 | 44.8 | 54.3 | 71.0 | 64.3 | 41.8 | 70.7 | 100.8 | 85.2 | 80.3 | 75.9 |
| Source: SLIPS, DeS, Furgetet, coloulations and | | | | 1 | | | | | | | |

Source: SURS, BoS, Eurostat, calculations and forecasts by IMAD. ¹ Measured in purchasing power standard. ² Growth in value denotes real appreciation of national currency and vice versa. ³ Consumer price index.

EUR million, current prices

| | • | | • | | • | | • | | | | | |
|----------------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| | | 2010 | 2010 | 2017 | 2010 | 2013 | 2020 | 2021 | 2022 | | forecast | |
| А | Agriculture, forestry and fishing | 814.6 | 800.8 | 791.3 | 1,030.1 | 975.4 | 984.5 | 882.0 | 1,010.9 | 1,095.8 | 1,102.3 | 1,123.9 |
| BCDE | Mining and quarrying, manufacturing, electricity and water supply, waste management | 9,080.9 | 9,492.3 | 10,187.9 | 10,696.7 | 11,495.3 | 11,240.7 | 12,045.5 | 13,429.1 | 14,692.1 | 15,536.7 | 16,268.5 |
| | of which: C Manufacturing | 7,747.0 | 8,156.2 | 8,848.8 | 9,316.7 | 10,009.8 | 9,658.0 | 10,455.7 | 11,295.6 | 12,556.2 | 13,503.6 | 14,202.6 |
| F | Construction | 1,808.3 | 1,817.8 | 2,002.5 | 2,287.7 | 2,530.9 | 2,504.4 | 2,824.3 | 3,683.4 | 4,207.0 | 4,375.6 | 4,674.5 |
| GHI | Trade, transportation and storage, accommodation and food service activities | 6,852.4 | 7,251.2 | 7,815.4 | 8,417.3 | 8,843.2 | 8,015.3 | 9,137.0 | 11,228.2 | 12,297.3 | 13,228.0 | 13,949.7 |
| J | Information and communication | 1,357.4 | 1,388.2 | 1,488.1 | 1,545.4 | 1,701.8 | 1,768.3 | 2,016.8 | 2,203.3 | 2,588.9 | 2,893.6 | 3,115.9 |
| к | Financial and insurance activities | 1,362.2 | 1,337.5 | 1,407.7 | 1,514.9 | 1,605.6 | 1,631.2 | 1,955.2 | 2,049.7 | 2,265.3 | 2,411.4 | 2,536.2 |
| L | Real estate activities | 2,652.9 | 2,771.4 | 2,853.3 | 2,975.0 | 3,054.1 | 3,066.5 | 3,256.3 | 3,838.3 | 4,142.3 | 4,340.4 | 4,492.7 |
| MN | Professional, scientific, technical, administrative and support services | 3,346.6 | 3,459.3 | 3,795.0 | 4,091.0 | 4,213.7 | 3,914.6 | 4,452.9 | 5,160.1 | 5,695.6 | 6,131.7 | 6,521.6 |
| OPQ | Public administration, education, human health and social work | 5,469.2 | 5,805.9 | 6,087.1 | 6,420.2 | 6,907.7 | 7,556.7 | 8,335.0 | 8,468.6 | 9,320.2 | 9,840.0 | 10,340.9 |
| RST | Other service activities | 847.2 | 905.0 | 941.6 | 983.1 | 1,058.6 | 886.3 | 974.9 | 1,129.0 | 1,224.7 | 1,343.5 | 1,449.2 |
| | | | | | | | | | | | | |
| 1. TO | TAL VALUE ADDED | 33,591.7 | 35,029.6 | 37,370.0 | 39,961.4 | 42,386.2 | 41,568.7 | 45,880.0 | 52,200.6 | 57,529.1 | 61,203.3 | 64,473.1 |
| | | | | | | | | | | | | |
| 2. CC | DRRECTIONS | 5,260.9 | 5,413.7 | 5,641.4 | 5,915.0 | 6,146.9 | 5,451.9 | 6,328.0 | 6,788.0 | 7,193.8 | 7,692.7 | 7,989.1 |
| | | | | | | | | | | | | |
| 3. GR (3=1+ | 2) | 38,852.6 | 40,443.2 | 43,011.3 | 45,876.3 | 48,533.1 | 47,020.6 | 52,208.1 | 58,988.6 | 64,722.9 | 68,896.0 | 72,462.3 |
| | | | | | | | | | | | | |

I Table 2a: Gross value added by activity at basic prices and gross domestic product

| | | - | _ | - | | - | | | | | | |
|-------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|
| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| | | 2010 | 2010 | | 2010 | | | | | | forecast | |
| А | Agriculture, forestry and fishing | 2.1 | 2.0 | 1.8 | 2.2 | 2.0 | 2.1 | 1.7 | 1.7 | 1.7 | 1.6 | 1.6 |
| BCDE | E Mining and quarrying, manufacturing, electricity and water supply, waste management | 23.4 | 23.5 | 23.7 | 23.3 | 23.7 | 23.9 | 23.1 | 22.8 | 22.7 | 22.6 | 22.5 |
| | of which: C Manufacturing | 19.9 | 20.2 | 20.6 | 20.3 | 20.6 | 20.5 | 20.0 | 19.1 | 19.4 | 19.6 | 19.6 |
| F | Construction | 4.7 | 4.5 | 4.7 | 5.0 | 5.2 | 5.3 | 5.4 | 6.2 | 6.5 | 6.4 | 6.5 |
| GHI | Trade, transportation and storage, accommodation and food service activities | 17.6 | 17.9 | 18.2 | 18.3 | 18.2 | 17.0 | 17.5 | 19.0 | 19.0 | 19.2 | 19.3 |
| J | Information and communication | 3.5 | 3.4 | 3.5 | 3.4 | 3.5 | 3.8 | 3.9 | 3.7 | 4.0 | 4.2 | 4.3 |
| ĸ | Financial and insurance activities | 3.5 | 3.3 | 3.3 | 3.3 | 3.3 | 3.5 | 3.7 | 3.5 | 3.5 | 3.5 | 3.5 |
| L | Real estate activities | 6.8 | 6.9 | 6.6 | 6.5 | 6.3 | 6.5 | 6.2 | 6.5 | 6.4 | 6.3 | 6.2 |
| MN | Professional, scientific, technical, administrative and support services | 8.6 | 8.6 | 8.8 | 8.9 | 8.7 | 8.3 | 8.5 | 8.7 | 8.8 | 8.9 | 9.0 |
| OPQ | Public administration, education, human health and social work | 14.1 | 14.4 | 14.2 | 14.0 | 14.2 | 16.1 | 16.0 | 14.4 | 14.4 | 14.3 | 14.3 |
| RST | Other service activities | 2.2 | 2.2 | 2.2 | 2.1 | 2.2 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 |
| | | | | | | | | | | | | |
| 1. TO | TAL VALUE ADDED | 86.5 | 86.6 | 86.9 | 87.1 | 87.3 | 88.4 | 87.9 | 88.5 | 88.9 | 88.8 | 89.0 |
| | | | | | | | | | | | | |
| 2. CC | DRRECTIONS | 13.5 | 13.4 | 13.1 | 12.9 | 12.7 | 11.6 | 12.1 | 11.5 | 11.1 | 11.2 | 11.0 |
| | | | | | | | | | | | | |
| 3. GR | ROSS DOMESTIC PRODUCT (3=1+2) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| | | - | | | | | | | | | | |

I Table 2b: Gross value added by activity at basic prices and gross domestic product

Structure in %, current prices

EUR million

| | | constant previous year prices | | | | | | | const | tant 2022 | prices | |
|----------------|---|-------------------------------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|
| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| | | 2013 | 2010 | 2017 | 2010 | 2013 | 2020 | 2021 | 2022 | | forecast | |
| А | Agriculture, forestry and fishing | 858.7 | 803.3 | 760.6 | 957.2 | 981.7 | 1,016.7 | 887.3 | 901.6 | 1,031.1 | 1,040.9 | 1,050.8 |
| BCDE | Mining and quarrying, manufacturing, electricity and water supply, waste management | 8,891.7 | 9,543.7 | 10,148.1 | 10,518.9 | 11,431.4 | 11,087.5 | 12,288.1 | 12,098.5 | 13,523.1 | 13,800.5 | 14,111.1 |
| | of which: C Manufacturing | 7,593.1 | 8,177.8 | 8,788.3 | 9,137.9 | 10,081.2 | 9,699.1 | 10,759.9 | 10,643.5 | 11,340.8 | 11,590.3 | 11,868.4 |
| F | Construction | 1,792.9 | 1,748.8 | 1,953.9 | 2,156.8 | 2,469.9 | 2,482.6 | 2,754.2 | 3,118.9 | 3,904.4 | 3,884.9 | 4,057.8 |
| GHI | Trade, transportation and storage, accommodation and food service activities | 6,858.4 | 7,235.4 | 7,800.7 | 8,294.0 | 8,703.0 | 8,226.3 | 8,538.2 | 10,359.4 | 11,368.7 | 11,692.8 | 12,002.8 |
| J | Information and communication | 1,419.0 | 1,351.6 | 1,458.3 | 1,571.9 | 1,653.5 | 1,764.0 | 2,026.9 | 2,162.5 | 2,364.1 | 2,516.7 | 2,666.4 |
| к | Financial and insurance activities | 1,261.4 | 1,397.8 | 1,331.9 | 1,418.5 | 1,587.6 | 1,625.3 | 1,976.3 | 2,071.9 | 2,070.2 | 2,131.3 | 2,183.5 |
| L | Real estate activities | 2,534.5 | 2,651.8 | 2,811.9 | 2,907.1 | 3,008.1 | 3,040.3 | 3,131.7 | 3,278.1 | 3,857.5 | 3,894.2 | 3,931.2 |
| MN | Professional, scientific, technical, administrative and support services | 3,373.6 | 3,453.2 | 3,724.3 | 4,044.6 | 3,997.1 | 3,785.6 | 4,284.4 | 4,938.5 | 5,366.5 | 5,605.4 | 5,843.7 |
| OPQ | Public administration, education, human health and social work | 5,400.5 | 5,603.0 | 5,917.1 | 6,206.2 | 6,530.5 | 7,074.5 | 7,850.7 | 8,554.0 | 8,587.2 | 8,720.3 | 8,864.3 |
| RST | Other service activities | 842.5 | 891.0 | 922.5 | 959.4 | 1,023.6 | 885.3 | 947.5 | 1,091.7 | 1,161.7 | 1,207.6 | 1,231.2 |
| | | | | | | | | | | | | |
| 1. TO | TAL VALUE ADDED | 33,233.0 | 34,679.6 | 36,829.0 | 39,034.3 | 41,386.4 | 40,988.2 | 44,684.9 | 48,575.0 | 53,234.5 | 54,494.5 | 55,942.8 |
| | | | | | | | | | | | | |
| 2. CC | DRRECTIONS | 5,233.0 | 5,413.1 | 5,561.7 | 5,892.9 | 6,073.2 | 5,447.6 | 6,196.7 | 6,439.0 | 6,839.4 | 7,062.6 | 7,207.8 |
| | | | | | | | | | | | | |
| 3. GR (3=1+ | OSS DOMESTIC PRODUCT 2) | 38,466.0 | 40,092.8 | 42,390.7 | 44,927.2 | 47,459.6 | 46,435.8 | 50,881.6 | 55,014.1 | 60,073.9 | 61,557.1 | 63,150.6 |
| | | | | | | | | | | | | |

I Table 3a: Gross value added by activity at basic prices and gross domestic product

Real growth rates in %

| | | 2015 | 2046 | 2017 | 2019 | 2040 | 2020 | 2024 | 2022 | 2023 | 2024 | 2025 |
|-------|---|------|------|------|------|------|-------|------|------|------|----------|------|
| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | | forecast | |
| A | Agriculture, forestry and fishing | 13.1 | -1.4 | -5.0 | 21.0 | -4.7 | 4.2 | -9.9 | 2.2 | 2.0 | 1.0 | 1.0 |
| BCDE | Mining and quarrying, manufacturing, electricity and water supply, waste management | 1.8 | 5.1 | 6.9 | 3.2 | 6.9 | -3.5 | 9.3 | 0.4 | 0.7 | 2.1 | 2.3 |
| | of which: C Manufacturing | 2.8 | 5.6 | 7.7 | 3.3 | 8.2 | -3.1 | 11.4 | 1.8 | 0.4 | 2.2 | 2.4 |
| F | Construction | -3.2 | -3.3 | 7.5 | 7.7 | 8.0 | -1.9 | 10.0 | 10.4 | 6.0 | -0.5 | 4.5 |
| GHI | Trade, transportation and storage, accommodation and food service activities | 5.6 | 5.6 | 7.6 | 6.1 | 3.4 | -7.0 | 6.5 | 13.4 | 1.3 | 2.9 | 2.7 |
| J | Information and communication | 2.0 | -0.4 | 5.0 | 5.6 | 7.0 | 3.7 | 14.6 | 7.2 | 7.3 | 6.5 | 6.0 |
| к | Financial and insurance activities | -3.3 | 2.6 | -0.4 | 0.8 | 4.8 | 1.2 | 21.2 | 6.0 | 1.0 | 3.0 | 2.5 |
| L | Real estate activities | 0.2 | 0.0 | 1.5 | 1.9 | 1.1 | -0.5 | 2.1 | 0.7 | 0.5 | 1.0 | 1.0 |
| MN | Professional, scientific, technical, administrative and support services | 4.7 | 3.2 | 7.7 | 6.6 | -2.3 | -10.2 | 9.4 | 10.9 | 4.0 | 4.5 | 4.3 |
| OPQ | Public administration, education, human health and social work | 0.2 | 2.4 | 1.9 | 2.0 | 1.7 | 2.4 | 3.9 | 2.6 | 1.4 | 1.6 | 1.7 |
| RST | Other service activities | -0.8 | 5.2 | 1.8 | 1.9 | 4.1 | -16.4 | 6.9 | 12.0 | 2.9 | 4.0 | 2.0 |
| | | | | | | | | | | | | |
| 1. TO | TAL VALUE ADDED | 2.2 | 3.2 | 5.1 | 4.5 | 3.6 | -3.3 | 7.5 | 5.9 | 2.0 | 2.4 | 2.7 |
| | | | | | | | | | | | | |
| 2. CC | DRRECTIONS | 2.6 | 2.9 | 2.7 | 4.5 | 2.7 | -11.4 | 13.7 | 1.8 | 0.8 | 3.3 | 2.1 |
| | | | | | | | | | | | | |
| 3. GR | OSS DOMESTIC PRODUCT (3=1+2) | 2.2 | 3.2 | 4.8 | 4.5 | 3.5 | -4.3 | 8.2 | 5.4 | 1.8 | 2.5 | 2.6 |

Table 3b: Gross value added by activity at basic prices and gross domestic product

EUR million, current prices

| | | 2015 | 2016 | 2017 | 2018 | 2019 2020 2021 | | 2021 2022 | | 2024 | 2025 | |
|----|---|----------|----------|----------|----------|----------------|----------|-----------|----------|----------|----------|----------|
| | | 2013 | 2010 | 2017 | 2010 | 2013 | 2020 | 2021 | 2022 | | forecast | |
| 1 | GROSS DOMESTIC PRODUCT (1=4+5) | 38,852.6 | 40,443.2 | 43,011.3 | 45,876.3 | 48,533.1 | 47,020.6 | 52,208.1 | 58,988.6 | 64,722.9 | 68,896.0 | 72,462.3 |
| 2 | EXPORTS OF GOODS AND SERVICES | 29,974.3 | 31,383.2 | 35,753.4 | 38,899.8 | 40,621.9 | 36,554.1 | 43,661.6 | 53,313.9 | 57,025.0 | 59,180.7 | 62,256.7 |
| 3 | IMPORTS OF GOODS AND SERVICES | 26,865.5 | 27,929.9 | 31,892.4 | 35,026.5 | 36,448.3 | 32,206.7 | 40,351.8 | 52,353.3 | 55,262.1 | 56,962.5 | 59,855.3 |
| 4 | EXTERNAL BALANCE OF GOODS AND SERVICES (4=2-3) | 3,108.8 | 3,453.3 | 3,860.9 | 3,873.3 | 4,173.7 | 4,347.5 | 3,309.8 | 960.6 | 1,762.9 | 2,218.2 | 2,401.5 |
| 5 | TOTAL DOMESTIC CONSUMPTION (5=6+9) | 35,743.8 | 36,989.9 | 39,150.4 | 42,003.0 | 44,359.5 | 42,673.2 | 48,898.3 | 58,027.9 | 62,960.0 | 66,677.8 | 70,060.8 |
| 6 | FINAL CONSUMPTION (6=7+8) | 28,298.3 | 29,537.5 | 30,535.2 | 32,227.4 | 34,351.0 | 33,257.3 | 37,467.8 | 43,553.4 | 47,340.7 | 50,265.7 | 52,550.2 |
| 7 | PRIVATE CONSUMPTION | 20,985.0 | 21,838.9 | 22,598.4 | 23,856.5 | 25,453.2 | 23,558.4 | 26,689.6 | 32,462.7 | 35,192.4 | 37,348.1 | 38,951.1 |
| | - Households | 20,640.2 | 21,475.4 | 22,218.6 | 23,449.8 | 25,021.7 | 23,145.1 | 26,205.6 | 31,966.0 | 34,649.8 | 36,773.1 | 38,352.3 |
| | - NPISH's | 344.8 | 363.5 | 379.8 | 406.7 | 431.5 | 413.3 | 484.0 | 496.7 | 542.6 | 575.0 | 598.8 |
| 8 | GOVERNMENT CONSUMPTION | 7,313.3 | 7,698.6 | 7,936.7 | 8,371.0 | 8,897.9 | 9,698.9 | 10,778.2 | 11,090.7 | 12,148.3 | 12,917.6 | 13,599.1 |
| 9 | GROSS CAPITAL FORMATION (9=10+11) | 7,445.6 | 7,452.4 | 8,615.2 | 9,775.6 | 10,008.4 | 9,415.9 | 11,430.4 | 14,474.6 | 15,619.2 | 16,412.1 | 17,510.6 |
| 10 | GROSS FIXED CAPITAL FORMATION | 7,247.8 | 7,028.7 | 7,879.8 | 8,869.3 | 9,495.6 | 8,870.0 | 10,618.5 | 12,960.9 | 14,330.1 | 15,077.4 | 16,155.6 |
| 11 | CHANGES IN INVENTORIES AND VALUABLES | 197.8 | 423.8 | 735.4 | 906.3 | 512.8 | 545.8 | 811.9 | 1,513.7 | 1,289.2 | 1,334.7 | 1,355.0 |

Table 4a: Gross domestic product by expenditures

Source: SURS, forecasts by IMAD.

Table 4b: Gross domestic product by expenditures

| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|----|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|-------|
| | | 2013 | 2010 | 2017 | 2010 | 2013 | 2020 | 2021 | 2022 | | forecast | |
| 1 | GROSS DOMESTIC PRODUCT (1=4+5) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 | EXPORTS OF GOODS AND SERVICES | 77.1 | 77.6 | 83.1 | 84.8 | 83.7 | 77.7 | 83.6 | 90.4 | 88.1 | 85.9 | 85.9 |
| 3 | IMPORTS OF GOODS AND SERVICES | 69.1 | 69.1 | 74.1 | 76.3 | 75.1 | 68.5 | 77.3 | 88.8 | 85.4 | 82.7 | 82.6 |
| 4 | EXTERNAL BALANCE OF GOODS AND SERVICES (4=2-3) | 8.0 | 8.5 | 9.0 | 8.4 | 8.6 | 9.2 | 6.3 | 1.6 | 2.7 | 3.2 | 3.3 |
| 5 | TOTAL DOMESTIC CONSUMPTION (5=6+9) | 92.0 | 91.5 | 91.0 | 91.6 | 91.4 | 90.8 | 93.7 | 98.4 | 97.3 | 96.8 | 96.7 |
| 6 | FINAL CONSUMPTION (6=7+8) | 72.8 | 73.0 | 71.0 | 70.2 | 70.8 | 70.7 | 71.8 | 73.8 | 73.1 | 73.0 | 72.5 |
| 7 | PRIVATE CONSUMPTION | 54.0 | 54.0 | 52.5 | 52.0 | 52.4 | 50.1 | 51.1 | 55.0 | 54.4 | 54.2 | 53.8 |
| | - Households | 53.1 | 53.1 | 51.7 | 51.1 | 51.6 | 49.2 | 50.2 | 54.2 | 53.5 | 53.4 | 52.9 |
| | - NPISH's | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 |
| 8 | GOVERNMENT CONSUMPTION | 18.8 | 19.0 | 18.5 | 18.2 | 18.3 | 20.6 | 20.6 | 18.8 | 18.8 | 18.7 | 18.8 |
| 9 | GROSS CAPITAL FORMATION (9=10+11) | 19.2 | 18.4 | 20.0 | 21.3 | 20.6 | 20.0 | 21.9 | 24.5 | 24.1 | 23.8 | 24.2 |
| 10 | GROSS FIXED CAPITAL FORMATION | 18.7 | 17.4 | 18.3 | 19.3 | 19.6 | 18.9 | 20.3 | 22.0 | 22.1 | 21.9 | 22.3 |
| 11 | CHANGES IN INVENTORIES AND VALUABLES | 0.5 | 1.0 | 1.7 | 2.0 | 1.1 | 1.2 | 1.6 | 2.6 | 2.0 | 1.9 | 1.9 |

Source: SURS, forecasts by IMAD.

Structure in %, current prices

EUR million

| | | constant previous year prices | | | | | | | | | constant 2022 pri | | | |
|----|---|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|-------------------|----------|--|--|
| | | 2015 | 2016 | 2017 | 2019 | 2010 | 2020 | 2024 | 2022 | 2023 | 2024 | 2025 | | |
| | | 2015 | 2010 | 2017 | 2010 | 2019 | 2020 | 2021 | 2022 | | forecast | | | |
| 1 | GROSS DOMESTIC PRODUCT (1=4+5) | 38,466.0 | 40,092.8 | 42,390.7 | 44,927.2 | 47,459.6 | 46,435.8 | 50,881.6 | 55,014.1 | 60,073.9 | 61,557.1 | 63,150.6 | | |
| 2 | EXPORTS OF GOODS AND SERVICES | 30,018.0 | 31,821.7 | 34,857.7 | 37,954.1 | 40,643.2 | 37,128.3 | 41,854.5 | 46,504.4 | 54,732.6 | 57,002.2 | 59,424.7 | | |
| 3 | IMPORTS OF GOODS AND SERVICES | 27,245.3 | 28,555.1 | 30,910.5 | 34,152.6 | 36,661.8 | 32,951.2 | 37,870.2 | 44,288.9 | 53,271.5 | 55,179.9 | 57,526.5 | | |
| 4 | EXTERNAL BALANCE OF GOODS AND SERVICES (4=2-3) | 2,772.6 | 3,266.7 | 3,947.2 | 3,801.6 | 3,981.4 | 4,177.0 | 3,984.3 | 2,215.7 | 1,461.1 | 1,822.3 | 1,898.2 | | |
| 5 | TOTAL DOMESTIC CONSUMPTION (5=6+9) | 35,693.4 | 36,826.1 | 38,443.5 | 41,125.7 | 43,478.2 | 42,258.8 | 46,897.2 | 52,798.5 | 58,612.7 | 59,734.8 | 61,252.5 | | |
| 6 | FINAL CONSUMPTION (6=7+8) | 28,387.8 | 29,408.8 | 29,984.9 | 31,557.6 | 33,642.1 | 32,958.3 | 36,056.7 | 39,951.5 | 44,083.2 | 44,898.0 | 45,733.0 | | |
| 7 | PRIVATE CONSUMPTION | 21,112.7 | 21,918.4 | 22,254.5 | 23,394.2 | 25,118.5 | 23,693.4 | 25,797.9 | 29,071.1 | 32,859.4 | 33,466.6 | 34,084.9 | | |
| | - Households | 20,769.2 | 21,559.8 | 21,882.1 | 22,995.6 | 24,701.1 | 23,275.6 | 25,324.2 | 28,603.4 | 32,352.8 | 32,951.3 | 33,560.9 | | |
| | - NPISH's | 343.5 | 358.6 | 372.4 | 398.6 | 417.4 | 417.8 | 473.7 | 467.7 | 506.6 | 515.2 | 524.0 | | |
| 8 | GOVERNMENT CONSUMPTION | 7,275.1 | 7,490.4 | 7,730.3 | 8,163.3 | 8,523.5 | 9,264.9 | 10,258.8 | 10,880.6 | 11,223.8 | 11,431.4 | 11,648.1 | | |
| 9 | GROSS CAPITAL FORMATION (9=10+11) | 7,305.6 | 7,417.3 | 8,458.6 | 9,568.1 | 9,836.1 | 9,300.5 | 10,840.6 | 12,846.9 | 14,529.5 | 14,836.8 | 15,519.5 | | |
| 10 | GROSS FIXED CAPITAL FORMATION | 7,103.8 | 6,987.6 | 7,744.3 | 8,679.8 | 9,319.8 | 8,744.8 | 10,084.0 | 11,443.8 | 13,330.3 | 13,630.2 | 14,318.5 | | |
| 11 | CHANGES IN INVENTORIES AND VALUABLES | 201.8 | 429.7 | 714.4 | 888.2 | 516.4 | 555.7 | 756.6 | 1,403.0 | 1,199.2 | 1,206.6 | 1,200.9 | | |
| | | | | | | | | | | | | | | |

Table 5a: Gross domestic product by expenditures

Source: SURS, forecasts by IMAD.

Table 5b: Gross domestic product by expenditures

| | | 0045 | 0040 | 0047 | 0040 | 0040 | | 0004 | | 2023 | 2024 | 2025 |
|----|--|------|------|------|------|------|------|------|------|------|----------|------|
| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | | forecast | |
| 1 | GROSS DOMESTIC PRODUCT (1=4+5) | 2.2 | 3.2 | 4.8 | 4.5 | 3.5 | -4.3 | 8.2 | 5.4 | 1.8 | 2.5 | 2.6 |
| 2 | EXPORTS OF GOODS AND SERVICES | 4.7 | 6.2 | 11.1 | 6.2 | 4.5 | -8.6 | 14.5 | 6.5 | 2.7 | 4.1 | 4.2 |
| 3 | IMPORTS OF GOODS AND SERVICES | 4.3 | 6.3 | 10.7 | 7.1 | 4.7 | -9.6 | 17.6 | 9.8 | 1.8 | 3.6 | 4.3 |
| 4 | EXTERNAL BALANCE OF GOODS AND SERVICES ¹ | 0.6 | 0.4 | 1.2 | -0.1 | 0.2 | 0.0 | -0.8 | -2.1 | 0.8 | 0.6 | 0.1 |
| 5 | TOTAL DOMESTIC CONSUMPTION (5=6+9) | 1.7 | 3.0 | 3.9 | 5.0 | 3.5 | -4.7 | 9.9 | 8.0 | 1.0 | 1.9 | 2.5 |
| 6 | FINAL CONSUMPTION (6=7+8) | 2.1 | 3.9 | 1.5 | 3.3 | 4.4 | -4.1 | 8.4 | 6.6 | 1.2 | 1.8 | 1.9 |
| 7 | PRIVATE CONSUMPTION | 2.0 | 4.4 | 1.9 | 3.5 | 5.3 | -6.9 | 9.5 | 8.9 | 1.2 | 1.8 | 1.8 |
| | - Households | 2.1 | 4.5 | 1.9 | 3.5 | 5.3 | -7.0 | 9.4 | 9.1 | 1.2 | 1.8 | 1.8 |
| | - NPISH's | -2.9 | 4.0 | 2.5 | 5.0 | 2.6 | -3.2 | 14.6 | -3.4 | 2.0 | 1.7 | 1.7 |
| 8 | GOVERNMENT CONSUMPTION | 2.3 | 2.4 | 0.4 | 2.9 | 1.8 | 4.1 | 5.8 | 0.9 | 1.2 | 1.8 | 1.9 |
| 9 | GROSS CAPITAL FORMATION (9=10+11) | 0.2 | -0.4 | 13.5 | 11.1 | 0.6 | -7.1 | 15.1 | 12.4 | 0.4 | 2.1 | 4.6 |
| 10 | GROSS FIXED CAPITAL FORMATION | -1.2 | -3.6 | 10.2 | 10.2 | 5.1 | -7.9 | 13.7 | 7.8 | 2.8 | 2.2 | 5.0 |
| 11 | CHANGES IN INVENTORIES AND VALUABLES ¹ | 0.3 | 0.6 | 0.7 | 0.4 | -0.8 | 0.1 | 0.4 | 1.1 | -0.5 | 0.0 | 0.0 |

Source: SURS, forecasts by IMAD. Note: 1 Contribution to real GDP growth (percentage points).

Real growth rates in %

Table 6: Balance of payments - balance of payments statistics

| Iable 6: Balance of paymen | its - balan | ce of pay | ments st | atistics | | | | | | | UR million |
|--|-------------|-----------|----------|----------|--------|--------|---------|--------|--------|----------|------------|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| | | | | | | | | | | forecast | |
| I. CURRENT ACCOUNT | 1,483 | 1,932 | 2,674 | 2,731 | 2,884 | 3,552 | 1,985 | -450 | 196 | 492 | 622 |
| 1. GOODS | 1,476 | 1,524 | 1,617 | 1,272 | 1,298 | 2,333 | 882 | -2,539 | -2,282 | -2,300 | -2,474 |
| 1.1. Exports of goods | 23,948 | 24,883 | 28,372 | 30,808 | 31,999 | 29,622 | 35,255 | 42,350 | 44,847 | 45,925 | 48,070 |
| 1.2. Imports of goods | 22,471 | 23,360 | 26,756 | 29,535 | 30,701 | 27,289 | 34,373 | 44,889 | 47,130 | 48,226 | 50,545 |
| 2. SERVICES | 1,646 | 1,941 | 2,254 | 2,624 | 2,907 | 2,057 | 2,455 | 3,532 | 4,082 | 4,559 | 4,919 |
| 2.1. Exports | 5,952 | 6,517 | 7,394 | 8,124 | 8,659 | 6,956 | 8,447 | 11,006 | 12,224 | 13,306 | 14,240 |
| - Transport | 1,654 | 1,839 | 2,164 | 2,431 | 2,512 | 2,316 | 2,658 | 3,407 | 3,586 | 3,796 | 4,019 |
| - Travel | 2,162 | 2,271 | 2,523 | 2,704 | 2,843 | 1,237 | 1,685 | 2,912 | 3,404 | 3,862 | 4,115 |
| - Other | 2,136 | 2,407 | 2,706 | 2,989 | 3,303 | 3,404 | 4,105 | 4,687 | 5,234 | 5,648 | 6,107 |
| 2.2. Imports | 4,306 | 4,575 | 5,140 | 5,500 | 5,751 | 4,899 | 5,992 | 7,473 | 8,142 | 8,747 | 9,321 |
| - Transport | 846 | 917 | 1,098 | 1,107 | 1,185 | 1,129 | 1,553 | 1,928 | 2,052 | 2,172 | 2,299 |
| - Travel | 1,109 | 1,176 | 1,322 | 1,483 | 1,500 | 720 | 1,020 | 1,569 | 1,726 | 1,923 | 2,041 |
| - Other | 2,351 | 2,482 | 2,720 | 2,911 | 3,066 | 3,051 | 3,419 | 3,976 | 4,364 | 4,652 | 4,981 |
| 1., 2. EXTERNAL BALANCE OF GOODS AND SERVICES | 3,122 | 3,465 | 3,870 | 3,896 | 4,205 | 4,390 | 3,337 | 993 | 1,800 | 2,258 | 2,445 |
| Exports of goods and services | 29,900 | 31,400 | 35,766 | 38,931 | 40,658 | 36,579 | 43,702 | 53,355 | 57,071 | 59,231 | 62,311 |
| Imports of goods and services | 26,778 | 27,935 | 31,896 | 35,036 | 36,453 | 32,188 | 40,365 | 52,362 | 55,272 | 56,973 | 59,866 |
| 3. PRIMARY INCOME | -1,256 | -1,139 | -879 | -769 | -821 | -386 | -863 | -920 | -955 | -1,053 | -1,080 |
| 3.1. Receipts | 1,070 | 1,259 | 1,381 | 1,633 | 1,749 | 1,653 | 1,960 | 1,928 | 2,055 | 2,124 | 2,242 |
| - Compensation of employees | 302 | 355 | 385 | 486 | 526 | 498 | 554 | 575 | 580 | 585 | 595 |
| - Investment | 511 | 637 | 703 | 802 | 845 | 716 | 953 | 904 | 929 | 971 | 1,009 |
| - Other primary income | 258 | 267 | 293 | 345 | 378 | 439 | 454 | 450 | 546 | 568 | 638 |
| 3.2. Expenditure | 2,326 | 2,398 | 2,260 | 2,401 | 2,569 | 2,039 | 2,823 | 2,848 | 3,010 | 3,177 | 3,322 |
| - Compensation of employees | 126 | 132 | 149 | 173 | 195 | 178 | 205 | 233 | 237 | 247 | 256 |
| - Investment | 2,057 | 2,081 | 1,929 | 2,024 | 2,164 | 1,669 | 2,354 | 2,251 | 2,358 | 2,502 | 2,627 |
| - Other primary income | 143 | 184 | 182 | 204 | 211 | 192 | 264 | 364 | 415 | 428 | 440 |
| 4. SECONDARY INCOME | -384 | -394 | -317 | -396 | -500 | -452 | -489 | -523 | -649 | -713 | -743 |
| 4.1. Receipts | 730 | 713 | 828 | 873 | 934 | 995 | 1,124 | 1,226 | 1,212 | 1,190 | 1,213 |
| 4.2. Expenditure | 1,114 | 1,107 | 1,145 | 1,270 | 1,434 | 1,447 | 1,614 | 1,749 | 1,860 | 1,903 | 1,956 |
| | 412 | -307 | -324 | -203 | -222 | -259 | 55 | -488 | | | |
| 1. Non-produced non-financial assets | -37 | -45 | -76 | -24 | -59 | -96 | -86 | -181 | | | |
| 2. Capital transfers | 449 | -262 | -248 | -178 | -163 | -163 | 140 | -307 | | | |
| | 1 779 | 1 184 | 2 112 | 2 548 | 2 068 | 2 984 | 2 254 | -1 0/8 |] | | |
| 1 Direct investment | -1 269 | -864 | _495 | _934 | -762 | 2,304 | -398 | -1,040 | | | |
| | 292 | 434 | 570 | 373 | 1 157 | 708 | 1 397 | 437 | | | |
| - Liabilities | 1 560 | 1 298 | 1 065 | 1 307 | 1 919 | 446 | 1 795 | 1 602 | | | |
| 2 Portfolio invostment | 3,030 | 5.024 | 2 000 | 744 | 734 | -1 826 | 3 203 | -23 | | | |
| 2. Financial derivativos | 3,039 | .270 | 2,990 | Q1 | -162 | -1,020 | 3,203 | -23 | | | |
| I manual uenvalives Other investment | -90 | -210 | -100 | 2 76.9 | 2 222 | 4 320 | -1 406 | -20 | | | |
| | 642 | -2,010 | -207 | 2,100 | 2,222 | 4,329 | - 1,400 | 3 250 | | | |
| 4.1. ASSELS | -043 | -2,210 | 1.005 | 2,004 | 1.055 | 4,032 | 4 220 | 3,300 | | | |
| 4.2. Liapiliues | -802 | 395 | - 1,085 | -/ 13 | 1,000 | 502 | 4,339 | 3,350 | | | |
| J. Reserve assets | -113 | -97 | 89 | 52 | 31 | 167 | 824 | 108 | | | |
| IV. NET ERRORS AND OMISSIONS | -116 | -441 | -239 | 20 | -595 | -310 | 214 | -110 | | | |

Source: BoS, forecasts by IMAD. Note: The Slovenian Balance of Payments and International Investment Position conforms to the methodology of the the IMF's 'Balance of Payments and International Investment Position Manual'.

Table 7: Labour market

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|-------|-------|-------|---------|---------|---------|---------|---------|---------|----------|---------|
| | 2013 | 2010 | 2017 | 2010 | 2013 | 2020 | 2021 | 2022 | | forecast | |
| LABOUR SUPPLY | | | | | | | | | | | |
| Activity rate (20-64 years, in %) | 76.0 | 76.2 | 78.6 | 79.5 | 79.9 | 79.5 | 78.7 | 80.0 | 81.0 | 81.6 | 82.1 |
| Active population (ILO definition - in thousands) | 1,008 | 995 | 1,027 | 1,033 | 1,028 | 1,029 | 1,020 | 1,031 | 1,039 | 1,044 | 1,047 |
| - yearly growth (in %) | -0.7 | -1.3 | 3.2 | 0.7 | -0.5 | 0.1 | -0.9 | 1.1 | 0.8 | 0.4 | 0.3 |
| EMPLOYMENT AND UNEMPLOYMENT | | | | | | | | | | | |
| Employment (National accounts concept, in thousands) | 943.9 | 961.2 | 989.2 | 1,020.8 | 1,045.9 | 1,039.0 | 1,052.9 | 1,078.6 | 1,089.8 | 1,097.0 | 1,100.9 |
| - yearly growth (in %) | 1.3 | 1.8 | 2.9 | 3.2 | 2.5 | -0.7 | 1.3 | 2.4 | 1.0 | 0.7 | 0.4 |
| Employment (ILO concept, in thousands) | 917.6 | 915.1 | 959.0 | 980.5 | 982.3 | 978.1 | 971.7 | 988.2 | 998.5 | 1005.1 | 1008.7 |
| - yearly growth (in %) | 0.1 | -0.3 | 4.8 | 2.2 | 0.2 | -0.4 | -0.7 | 1.7 | 1.0 | 0.7 | 0.4 |
| Employment rate (20-64 yeras, in %) | 69.1 | 70.1 | 73.4 | 75.4 | 76.4 | 75.6 | 75.0 | 76.7 | 77.9 | 78.7 | 79.2 |
| Formal employment (statistical register, in thousands) ** | 804.6 | 817.2 | 845.5 | 872.8 | 894.2 | 888.9 | 900.3 | 922.0 | 933.1 | 938.0 | 942.0 |
| - yearly growth (in %) | 0.9 | 1.6 | 3.5 | 3.2 | 2.5 | -0.6 | 1.3 | 2.4 | 1.2 | 0.5 | 0.4 |
| Paid employment (in thousands) | 713.1 | 730.5 | 755.3 | 780.2 | 801.9 | 794.6 | 804.4 | 824.1 | 834.0 | 838.8 | 842.9 |
| - yearly growth (in %) | 1.4 | 2.4 | 3.4 | 3.3 | 2.8 | -0.9 | 1.2 | 2.4 | 1.2 | 0.6 | 0.5 |
| Self employed (in thousands) | 91.6 | 86.7 | 90.2 | 92.6 | 92.3 | 94.3 | 95.8 | 97.9 | 99.1 | 99.2 | 99.2 |
| - yearly growth (in %) | -3.4 | -5.3 | 4.0 | 2.7 | -0.3 | 2.1 | 1.6 | 2.1 | 1.3 | 0.1 | 0.0 |
| Unemployment (ILO concept, in thousands) | 90.5 | 79.7 | 67.5 | 52.8 | 45.7 | 51.1 | 47.8 | 42,8* | 40.9 | 39.0 | 38.0 |
| - yearly growth (in %) | -7.7 | -11.9 | -15.3 | -21.8 | -13.4 | 11.8 | -6.5 | -10.5 | -4.4 | -4.7 | -2.5 |
| Unemployment (registered, in thousands) | 112.7 | 103.2 | 88.6 | 78.5 | 74.2 | 85.0 | 74.3 | 56.7 | 49.6 | 47.8 | 46.1 |
| - yearly growth (in %) | -6.1 | -8.5 | -14.1 | -11.5 | -5.5 | 14.6 | -12.6 | -23.8 | -12.4 | -3.7 | -3.5 |
| Unemployment rate (ILO concept, in %) | 9.0 | 8.0 | 6.6 | 5.1 | 4.5 | 5.0 | 4.7 | 4,2* | 4.0 | 3.8 | 3.7 |
| Unemployment rate (registered, in %) | 12.3 | 11.2 | 9.5 | 8.2 | 7.7 | 8.7 | 7.6 | 5.8 | 5.1 | 4.9 | 4.7 |

Sources of data: SURS, ESS, forecasts by IMAD and Eurostat. Note: *IMAD estimate (Q4 2022 figure was not available at the time the forecast was finalised). ** According to the Statistical Register of Employment, including the estimate of self employed farmers.

| Table 8: Indicators of international cor | npetitive | eness | | | | | | | anr | ual growth | rates in % |
|---|-----------|-------|------|------|------|------|------|------|------|------------|------------|
| | 2015 | 2016 | 2017 | 2019 | 2010 | 2020 | 2024 | 2022 | 2023 | 2024 | 2025 |
| | 2015 | 2010 | 2017 | 2010 | 2019 | 2020 | 2021 | 2022 | | | |
| Effective exchange rate ¹ | | | | | | | | | | | |
| Nominal | -3.0 | 0.9 | 0.5 | 0.8 | -0.4 | 0.8 | 0.0 | -1.1 | 0.4 | 0.0 | 0.0 |
| Real - based on consumer prices | -4.1 | 0.2 | 0.4 | 0.8 | -0.3 | -0.4 | -0.7 | -0.3 | 1.7 | 1.5 | 0.4 |
| Real - based on ULC in economy as a whole | -3.4 | 1.1 | 0.0 | 0.7 | 0.7 | 3.7 | 0.0 | -4.0 | 1.9 | 1.0 | 0.6 |
| Unit labour costs components | | | | | | | | | | | |
| Nominal unit labour costs | 0.6 | 1.8 | 1.2 | 2.7 | 3.9 | 7.3 | 1.1 | 1.4 | 6.5 | 3.9 | 3.1 |
| Compensation of employees per employee | 1.5 | 3.1 | 3.0 | 3.9 | 5.0 | 3.4 | 7.9 | 4.3 | 7.3 | 5.8 | 5.4 |
| Labour productivity, real ² | 0.9 | 1.3 | 1.9 | 1.2 | 1.0 | -3.7 | 6.8 | 2.9 | 0.8 | 1.8 | 2.2 |
| Real unit labour costs | -0.4 | 0.9 | -0.3 | 0.5 | 1.7 | 6.0 | -1.5 | -5.5 | -1.1 | 0.0 | 0.6 |
| Labour productivity, nominal ³ | 1.9 | 2.2 | 3.3 | 3.4 | 3.3 | -2.5 | 9.6 | 10.3 | 8.6 | 5.8 | 4.8 |

Sources of data: SURS national accounts statistics, ECB, Consensus Forecasts, European Comision, Reiffeisen Research, calculations and forecasts by IMAD.

Notes: 1 Harmonised fective exchange rate - 37 group of trading partners; 18 extra Euro area and 19 Euro area countries; a rise in the value indicates appreciation and of national currency and vice versa. ² GDP per employee (in constant prices); ³ GDP per employee (in current prices).
EUR million, current prices

| C(G(| ONSOLIDATED GENERAL OVERNMENT REVENUES | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 previous |
|----------|--|--------|--------|--------|--------|--------|--------|--------|------------------|
| Ι. | TOTAL GENERAL GOVERNMENT REVENUES | 15,714 | 15,842 | 16,803 | 18,594 | 19,232 | 18,529 | 21,383 | 23,313 |
| _ | TAX REVENUES | 13,746 | 14,241 | 15,162 | 16,225 | 17,179 | 16,460 | 18,786 | 20,552 |
| | TAXES ON INCOME AND PROFIT | 2,585 | 2,681 | 2,967 | 3,296 | 3,614 | 3,262 | 3,981 | 4,518 |
| | Personal income tax | 1,986 | 2,079 | 2,197 | 2,447 | 2,592 | 2,488 | 2,845 | 2,944 |
| | Corporate income tax | 595 | 600 | 766 | 846 | 997 | 773 | 1,115 | 1,553 |
| | SOCIAL SECURITY CONTRIBUTIONS | 5,474 | 5,721 | 6,092 | 6,550 | 7,021 | 7,290 | 7,928 | 8,502 |
| | TAXSES ON PAYROLL AND WORKFORCE | 20 | 20 | 21 | 22 | 23 | 22 | 24 | 27 |
| | TAXES ON PROPERTY | 238 | 256 | 274 | 278 | 296 | 287 | 317 | 336 |
| | DOMESTIC TAXES ON GOODS AND SERVICES | 5,347 | 5,433 | 5,723 | 5,989 | 6,127 | 5,493 | 6,359 | 6,884 |
| | Value added tax | 3,229 | 3,272 | 3,504 | 3,757 | 3,872 | 3,528 | 4,231 | 4,747 |
| | Excise duties | 1,515 | 1,551 | 1,586 | 1,560 | 1,543 | 1,314 | 1,470 | 1,446 |
| | TAXES ON INTERN. TRADE AND TRANSACTIONS | 83 | 82 | 83 | 90 | 99 | 102 | 177 | 289 |
| | OTHER TAXES | 1 | 48 | 1 | 0 | -1 | 4 | -1 | -3 |
| | NON-TAX REVENUES | 956 | 963 | 1,089 | 1,351 | 1,114 | 1,118 | 1,338 | 1,415 |
| | CAPITAL REVENUES | 96 | 96 | 91 | 153 | 136 | 147 | 228 | 268 |
| | DONATIONS RECEIVED | 12 | 10 | 10 | 12 | 14 | 18 | 22 | 57 |
| | TRANSFERED REVENUES | 21 | 51 | 52 | 56 | 58 | 55 | 57 | 59 |
| | RECEIPTS FROM THE EU BUDGET | 882 | 481 | 399 | 797 | 731 | 731 | 951 | 962 |

Table 9a: Consolidated general government revenues; GFS - IMF Methodology

Source: MF, Consolidated balance of public financing

Table 9b: Consolidated general government revenues; GFS - IMF Methodology

per cent share relative to GDP CONSOLIDATED GENERAL 2022 2015 2016 2017 2018 2019 2020 2021 GOVERNMENT REVENUES previous TOTAL GENERAL I. 40.4 39.2 39.1 40.5 39.6 39.4 41.0 39.5 GOVERNMENT REVENUES TAX REVENUES 35.4 35.2 35.3 35.4 35.4 35.0 36.0 34.8 7.2 TAXES ON INCOME AND PROFIT 6.7 6.6 6.9 7.4 6.9 7.6 7.7 Personal income tax 5.1 5.1 5 1 53 53 5.3 54 50 Corporate income tax 1.5 1.5 1.8 1.8 2.1 1.6 2.1 2.6 SOCIAL SECURITY CONTRIBUTIONS 14 1 14 1 14 2 14.3 14 5 15.5 15.2 14 4 TAXSES ON PAYROLL AND WORKFORCE 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 TAXES ON PROPERTY 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 DOMESTIC TAXES ON GOODS AND 13.8 13.1 12.6 12.2 11.7 13.4 13.3 11.7 SERVICES Value added tax 8.3 8.1 8.1 8.2 8.0 7.5 8.1 8.0 Excise duties 3.8 3.7 3.2 2.8 2.8 2.5 3.9 3.4 TAXES ON INTERN. TRADE AND 0.2 0.2 0.2 0.2 0.2 0.2 0.3 0.5 TRANSACTIONS OTHER TAXES 0.0 0.1 0.0 0.0 0.0 0.0 0.0 0.0 NON-TAX REVENUES 2.5 2.4 2.5 2.9 2.3 2.4 2.6 2.4 CAPITAL REVENUES 0.2 02 02 0.3 0.3 0.3 04 05 DONATIONS RECEIVED 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 TRANSFERED REVENUES 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 RECEIPTS FROM THE EU BUDGET 1.2 0.9 1.6 1.7 1.5 1.8 1.6 2.3

Source: MF, Consolidated balance of public financing, SURS, National Accounts.

EUR million, current prices

| C (G (| DNSOLIDATED GENERAL DVERNMENT EXPENDITURE | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 previous |
|------------|---|--------|--------|--------|--------|--------|--------|--------|------------------|
| П. | TOTAL EXPENDITURES | 16,956 | 16,497 | 17,102 | 18,067 | 18,969 | 22,071 | 24,300 | 24,911 |
| | CURRENT EXPENDITURE | 7,168 | 7,407 | 7,733 | 7,967 | 8,228 | 9,128 | 10,394 | 10,201 |
| | WAGES AND OTHER PERSONNEL EXPENDITURE | 3,124 | 3,278 | 3,406 | 3,583 | 3,837 | 4,285 | 5,020 | 4,656 |
| | EMPLOYER'S SOCIAL SECURITY CONTRIBUTIONS | 486 | 508 | 533 | 585 | 634 | 681 | 730 | 755 |
| | PURCHASES OF GOODS AND SERVICES | 2,311 | 2,371 | 2,627 | 2,634 | 2,728 | 3,021 | 3,351 | 3,544 |
| | INTEREST PAYMENTS | 1,043 | 1,074 | 985 | 868 | 792 | 778 | 732 | 661 |
| | RESERVES | 204 | 176 | 183 | 298 | 238 | 364 | 559 | 584 |
| | CURRENT TRANSFERS | 7,540 | 7,700 | 7,913 | 8,237 | 8,704 | 10,868 | 11,319 | 11,365 |
| | SUBSIDIES | 399 | 397 | 425 | 444 | 468 | 1,449 | 867 | 690 |
| | TRANSFERS TO INDIVIDUALS AND HOUSEHOLDS | 6,371 | 6,496 | 6,665 | 6,926 | 7,324 | 8,251 | 9,168 | 9,319 |
| | OTHER CURRENT TRANSFERS | 770 | 808 | 822 | 867 | 913 | 1,168 | 1,284 | 1,356 |
| | CAPITAL EXPENDITURE AND TRANSFERS - TOTAL | 1,815 | 962 | 1,078 | 1,432 | 1,527 | 1,549 | 1,959 | 2,616 |
| | CAPITAL EXPENDITURE | 1,520 | 784 | 891 | 1,160 | 1,253 | 1,231 | 1,545 | 2,054 |
| | CAPITAL TRANSFERS | 295 | 178 | 187 | 272 | 274 | 319 | 414 | 562 |
| _ | PAYMENTS TO THE EU BUDGET | 433 | 427 | 379 | 433 | 510 | 526 | 629 | 730 |
| III. | GENERAL GOVERNMENT SURPLUS / DEFICIT (I II.) | -1,242 | -655 | -299 | 526 | 264 | -3,542 | -2,917 | -1,598 |

/ Table 10a: Consolidated general government expenditure; GFS - IMF Methodology

| Table 10b: Consolidated general gov | vernment ex | penditure; | GFS - IMF N | /lethodolog | у | I | Per cent share r | elative to GDP |
|--|-------------|------------|-------------|-------------|------|------|------------------|------------------|
| CONSOLIDATED GENERAL GOVERNMENT EXPENDITURE | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 previous |
| II. TOTAL EXPENDITURES | 43.6 | 40.8 | 39.8 | 39.4 | 39.1 | 46.9 | 46.5 | 42.2 |
| CURRENT EXPENDITURE | 18.5 | 18.3 | 18.0 | 17.4 | 17.0 | 19.4 | 19.9 | 17.3 |
| WAGES AND OTHER PERSONNEL EXPENDITURE | 8.0 | 8.1 | 7.9 | 7.8 | 7.9 | 9.1 | 9.6 | 7.9 |
| EMPLOYER'S SOCIAL SECURITY CONTRIBUTIONS | 1.3 | 1.3 | 1.2 | 1.3 | 1.3 | 1.4 | 1.4 | 1.3 |
| PURCHASES OF GOODS AND SERVICES | 5.9 | 5.9 | 6.1 | 5.7 | 5.6 | 6.4 | 6.4 | 6.0 |
| INTEREST PAYMENTS | 2.7 | 2.7 | 2.3 | 1.9 | 1.6 | 1.7 | 1.4 | 1.1 |
| RESERVES | 0.5 | 0.4 | 0.4 | 0.6 | 0.5 | 0.8 | 1.1 | 1.0 |
| CURRENT TRANSFERS | 19.4 | 19.0 | 18.4 | 18.0 | 17.9 | 23.1 | 21.7 | 19.3 |
| SUBSIDIES | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 3.1 | 1.7 | 1.2 |
| TRANSFERS TO INDIVIDUALS AND HOUSEHOLDS | 16.4 | 16.1 | 15.5 | 15.1 | 15.1 | 17.5 | 17.6 | 15.8 |
| OTHER CURRENT TRANSFERS | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 2.5 | 2.5 | 2.3 |
| CAPITAL EXPENDITURE AND TRANSFERS - TOTAL | 4.7 | 2.4 | 2.5 | 3.1 | 3.1 | 3.3 | 3.8 | 4.4 |
| CAPITAL EXPENDITURE | 3.9 | 1.9 | 2.1 | 2.5 | 2.6 | 2.6 | 3.0 | 3.5 |
| CAPITAL TRANSFERS | 0.8 | 0.4 | 0.4 | 0.6 | 0.6 | 0.7 | 0.8 | 1.0 |
| PAYMENTS TO THE EU BUDGET | 1.1 | 1.1 | 0.9 | 0.9 | 1.1 | 1.1 | 1.2 | 1.2 |
| III. GENERAL GOVERNMENT SURPLUS / DEFICIT (I II.) | -3.2 | -1.6 | -0.7 | 1.1 | 0.5 | -7.5 | -5.6 | -2.7 |

Source: MF, Consolidated balance of public financing, SURS, National Accounts.

| 1. | | Gro | ss domestic p | roduct, real gro | owth | Inflation, annual average | | | | |
|--------|-----------|-------|---------------|------------------|-------|---------------------------|-------|-------|-------|--|
| Mean E | rror, ME | SFt+1 | AFt+1 | SFt | AFt | SFt+1 | AFt+1 | SFt | AFt | |
| | 2002-2015 | 1.19 | 0.81 | 0.14 | 0.02 | 0.02 | 0.27 | -0.25 | 0.13 | |
| | 2002-2016 | 1.08 | 0.75 | 0.07 | 0.01 | 0.09 | 0.31 | -0.25 | 0.13 | |
| | 2002-2017 | 0.85 | 0.57 | -0.02 | -0.03 | 0.07 | 0.29 | -0.21 | 0.13 | |
| | 2002-2018 | 0.72 | 0.50 | 0.02 | -0.04 | 0.06 | 0.26 | -0.22 | 0.13 | |
| IMAD | 2002-2019 | 0.76 | 0.54 | 0.07 | -0.01 | 0.07 | 0.27 | -0.21 | 0.13 | |
| | 2002-2020 | 0.76 | 0.54 | -0.04 | -0.07 | 0.07 | 0.27 | -0.17 | 0.14 | |
| | 2002-2021 | 0.53 | 0.36 | -0.22 | -0.17 | 0.06 | 0.24 | -0.21 | 0.11 | |
| | 2002-2022 | 0.46 | 0.31 | -0.26 | -0.18 | -0.32 | -0.11 | -0.32 | 0.11 | |
| | 2002-2015 | 1.15 | 0.74 | 0.20 | -0.04 | -0.09 | -0.03 | -0.14 | 0.09 | |
| | 2002-2016 | 1.03 | 0.65 | 0.15 | -0.05 | 0.00 | 0.05 | -0.13 | 0.08 | |
| | 2002-2017 | 0.81 | 0.45 | 0.04 | -0.07 | -0.01 | 0.04 | -0.11 | 0.07 | |
| | 2002-2018 | 0.68 | 0.41 | 0.05 | -0.08 | -0.03 | 0.00 | -0.10 | 0.07 | |
| BoS | 2002-2019 | 0.72 | 0.44 | 0.09 | -0.07 | 0.00 | 0.03 | -0.10 | 0.07 | |
| | 2002-2020 | 0.72 | 0.44 | 0.03 | -0.17 | 0.00 | 0.03 | -0.08 | 0.07 | |
| | 2002-2021 | 0.52 | 0.15 | -0.12 | -0.24 | -0.04 | -0.03 | -0.11 | 0.06 | |
| | 2002-2022 | 0.47 | 0.08 | -0.09 | -0.24 | -0.44 | -0.31 | -0.12 | 0.06 | |
| | 2002-2015 | 1.14 | 0.57 | 0.06 | -0.09 | 0.15 | 0.24 | 0.06 | 0.08 | |
| CCIS | 2002-2016 | 1.01 | 0.49 | 0.03 | -0.09 | 0.15 | 0.32 | 0.05 | 0.07 | |
| | 2002-2017 | 0.78 | 0.29 | N/A | N/A | 0.13 | 0.29 | N/A | N/A | |
| | 2002-2018 | N/A | N/A | -0.01 | -0.11 | N/A | N/A | 0.06 | 0.08 | |
| | 2002-2019 | 0.78 | 0.29 | 0.02 | -0.07 | 0.13 | 0.29 | 0.08 | 0.08 | |
| | 2002-2020 | 0.78 | 0.29 | 0.06 | -0.12 | 0.13 | 0.29 | 0.17 | 0.10 | |
| | 2002-2021 | 0.48 | 0.14 | -0.13 | -0.21 | 0.20 | 0.35 | 0.15 | 0.08 | |
| | 2002-2022 | 0.18 | -0.14 | -0.39 | -0.47 | -0.18 | -0.02 | -0.03 | 0.07 | |
| | 2002-2015 | 0.99 | 0.61 | 0.11 | -0.11 | 0.12 | 0.26 | -0.01 | 0.09 | |
| | 2002-2016 | 0.90 | 0.53 | 0.05 | -0.13 | 0.24 | 0.30 | -0.01 | 0.10 | |
| | 2002-2017 | 0.68 | 0.34 | -0.06 | -0.14 | 0.22 | 0.28 | -0.01 | 0.10 | |
| | 2002-2018 | 0.55 | 0.29 | -0.05 | -0.14 | 0.20 | 0.24 | -0.01 | 0.10 | |
| EC | 2002-2019 | 0.59 | 0.33 | -0.01 | -0.12 | 0.21 | 0.26 | -0.01 | 0.10 | |
| | 2002-2020 | 0.59 | 0.33 | -0.08 | -0.20 | 0.21 | 0.26 | 0.03 | 0.11 | |
| | 2002-2021 | 0.48 | 0.15 | -0.24 | -0.28 | 0.15 | 0.18 | -0.03 | 0.08 | |
| | 2002-2022 | 0.45 | 0.09 | -0.30 | -0.22 | -0.24 | -0.19 | -0.18 | 0.07 | |
| | 2002-2015 | 1.18 | 0.74 | 0.11 | -0.06 | 0.12 | 0.05 | -0.22 | 0.04 | |
| | 2002-2016 | 1.06 | 0.64 | 0.06 | -0.07 | 0.16 | 0.10 | -0.19 | 0.02 | |
| | 2002-2017 | 0.81 | 0.40 | -0.10 | -0.13 | 0.12 | 0.07 | -0.18 | 0.03 | |
| | 2002-2018 | 0.61 | 0.26 | -0.12 | -0.12 | 0.13 | 0.07 | -0.17 | 0.05 | |
| IMF | 2002-2019 | 0.62 | 0.30 | -0.06 | -0.08 | 0.15 | 0.08 | -0.17 | 0.06 | |
| | 2002-2020 | 0.62 | 0.30 | -0.19 | -0.14 | 0.15 | 0.08 | -0.14 | 0.08 | |
| | 2002-2021 | 0.45 | 0.13 | -0.40 | -0.23 | 0.11 | 0.07 | -0.18 | 0.06 | |
| | 2002-2022 | 0.39 | 0.09 | -0.45 | -0.20 | -0.26 | -0.28 | -0.28 | 0.06 | |
| | 2002-2015 | 1.04 | 1.05 | 0.34 | -0.04 | 0.16 | 0.19 | 0.08 | 0.01 | |
| | 2002-2016 | 0.93 | 0.96 | 0.29 | -0.04 | 0.19 | 0.22 | 0.12 | -0.01 | |
| | 2002-2017 | 0.70 | 0.75 | 0.14 | -0.10 | 0.14 | 0.17 | 0.09 | -0.01 | |
| | 2002-2018 | 0.56 | 0.67 | 0.09 | -0.09 | 0.10 | 0.16 | 0.08 | -0.02 | |
| WIIW | 2002-2019 | 0.59 | 0.70 | 0.13 | -0.06 | 0.10 | 0.17 | 0.08 | -0.01 | |
| | 2002-2020 | 0.59 | 0.70 | -0.08 | -0.12 | 0.10 | 0.17 | 0.12 | 0.02 | |
| | 2002-2021 | 0.35 | 0.10 | -0.31 | -0.26 | 0.10 | 0.11 | 0.12 | 0.02 | |
| | 2002-2022 | 0.00 | 0.30 | -0.35 | -0.23 | -0.34 | _0.28 | -0.15 | 0.01 | |
| | 2002 2022 | 0.21 | 0.00 | 0.00 | 0.20 | 0.04 | 0.20 | 0.10 | 0.01 | |

| Main Strip MArt Strip Mart Strip Mart Mart 2002015 2.46 2.40 0.40 0.40 0.40 0.40 2002017 2.43 2.40 0.10 0.40 0.40 0.40 0.40 2002017 2.40 0.10 0.40 0.40 0.40 0.40 2002017 2.40 0.10 0.40 0.40 0.40 0.40 2002020 2.42 0.10 0.40 0.40 0.40 0.40 2002020 2.40 0.10 0.40 0.40 0.40 0.40 2002020 2.40 0.20 0.40 0.40 0.40 0.40 2002020 2.40 0.40 0.40 0.40 0.40 0.40 2002020 2.40 0.40 0.40 0.40 0.40 0.40 2002021 2.40 0.40 0.40 0.40 0.40 0.40 2002010 2.40 | 2. | | Gros | s domestic pr | oduct, real gro | owth | Inflation, annual average | | | | |
|--|----------|--------------------|-------|---------------|-----------------|------|---------------------------|-------|------|------|--|
| AMAD 2002-2015 2.46 2.18 1.21 0.95 1.03 0.43 0.22 MAD 2002-2016 2.33 2.03 1.18 0.54 1.00 1.02 0.44 0.01 2002-2017 2.23 2.03 1.18 0.05 0.09 0.06 0.44 0.01 2002-2019 2.24 1.91 1.16 0.55 0.06 0.08 0.08 0.01 2002-2020 2.24 1.91 1.32 0.65 0.08 0.08 0.04 0.01 2002-2017 2.25 1.91 1.32 0.65 1.11 1.16 1.15 0.15 0.05 0.03 0.011 2002-2016 2.17 2.09 1.28 0.66 1.11 1.00 0.04 0.03 0.015 2002-2018 2.12 1.99 1.18 0.61 1.00 0.03 0.035 0.161 2002-2019 2.09 1.25 0.06 1.01 0.03 < | Mean A | bsolute Error, MAE | SFt+1 | AFt+1 | SFt | AFt | SFt+1 | AFt+1 | SFt | AFt | |
| NADE 2002-2016 2.33 2.03 1.16 0.54 0.00 1.02 0.44 0.11 2002-2016 2.23 1.15 0.54 0.08 0.08 0.08 0.01 0.01 2002-2010 2.24 1.19 1.15 0.51 0.86 0.89 0.38 0.19 2002-2021 2.24 1.19 1.15 0.61 0.86 0.88 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 | | 2002-2015 | 2.46 | 2.16 | 1.21 | 0.56 | 0.99 | 1.03 | 0.43 | 0.20 | |
| NAD2002:0172.362.031.190.050.040.040.410.192002:0192.241.0151.160.520.000.090.030.0192002:0202.241.0171.120.650.860.980.030.0192002:0212.251.0171.130.661.161.150.120.222002:0272.251.0191.200.661.101.100.040.0192002:0172.252.161.200.661.111.100.030.030.162002:0172.172.061.280.661.111.000.030.030.162002:0172.172.091.131.160.670.970.910.030.162002:0212.091.131.160.670.970.910.030.162002:0212.091.201.100.661.091.010.030.052002:0212.091.201.200.070.910.030.162002:0212.022.021.100.100.040.110.102002:0212.022.061.200.070.091.030.162002:0212.022.061.200.070.030.010.042002:0212.041.101.060.081.000.400.102002:0212.022.061.180.130.040.01< | | 2002-2016 | 2.33 | 2.03 | 1.18 | 0.54 | 1.00 | 1.02 | 0.41 | 0.19 | |
| MMD0002-20192.221.151.160.520.690.910.400.1182002-20202.241.911.150.650.680.380.380.182002-20212.241.911.320.650.680.380.420.222002-20212.241.911.320.650.680.380.420.222002-20152.252.761.280.661.101.000.410.980.380.182002-20162.152.061.240.651.111.010.030.810.182002-20172.172.091.381.170.550.070.910.330.162002-20202.091.131.170.550.070.910.330.162002-20212.091.250.710.380.480.440.162002-20222.082.021.250.710.380.430.152002-20212.082.021.200.661.131.130.430.152002-20212.082.021.200.661.031.130.440.162002-20152.222.061.210.661.031.110.460.400.172002-20152.242.261.080.470.931.080.410.162002-20152.242.261.090.710.831.080.410.162002-2016 <td></td> <td>2002-2017</td> <td>2.35</td> <td>2.03</td> <td>1.19</td> <td>0.54</td> <td>0.94</td> <td>0.96</td> <td>0.41</td> <td>0.19</td> | | 2002-2017 | 2.35 | 2.03 | 1.19 | 0.54 | 0.94 | 0.96 | 0.41 | 0.19 | |
| MAD 2022219 2.24 1.11 1.15 0.51 0.66 0.89 0.33 0.11 20222021 2.24 1.17 1.32 0.62 0.83 0.68 0.42 0.23 2022021 2.24 1.17 1.32 0.62 0.83 0.68 0.42 0.23 2022015 2.25 2.16 1.20 0.68 1.10 1.00 0.41 0.10 2022016 2.15 2.06 1.24 0.63 1.16 0.43 0.63 0.41 0.10 2022018 2.09 1.18 0.41 0.00 0.43 0.35 0.61 2022019 2.09 1.25 0.07 0.91 0.33 0.61 2022016 2.22 2.06 1.25 0.65 1.30 1.13 0.43 0.41 2022017 2.25 2.06 1.18 0.46 0.41 0.16 2022019 2.25 2.06 1.18 0.46 | | 2002-2018 | 2.29 | 1.95 | 1.16 | 0.52 | 0.90 | 0.91 | 0.40 | 0.18 | |
| j002-2020 2.24 1.91 1.20 0.05 0.06 0.080 0.030 0.019 2002-2021 2.24 1.97 1.32 0.65 0.08 0.08 0.042 0.22 2002-2015 2.25 1.21 1.31 0.66 1.16 1.15 0.52 0.23 2002-2016 2.15 2.06 1.24 0.66 1.11 1.00 0.41 0.19 2002-2017 2.17 2.09 1.28 0.19 0.03 0.03 0.16 2002-2017 2.09 1.13 1.17 0.05 0.07 0.91 0.03 0.16 2002-2021 2.09 1.13 1.16 0.07 0.91 0.03 0.15 2002-2015 2.22 2.12 0.06 1.12 0.11 0.43 0.15 2002-2016 2.22 1.20 0.65 1.03 1.13 0.43 0.15 2002-2017 2.25 2.06 1.12 0.65 | IMAD | 2002-2019 | 2.24 | 1.91 | 1.15 | 0.51 | 0.86 | 0.89 | 0.38 | 0.18 | |
| 2002-2021 2.2.4 1.9.7 1.3.2 0.62 0.8.3 0.68 0.4.2 0.2.1 2002-2016 2.2.5 2.1.6 1.2.9 0.6.8 1.10 1.10 0.0.4 0.1.8 2002-2016 2.1.5 2.0.6 1.2.4 0.6.8 1.11 1.0.0 0.0.4 0.1.8 2002-2016 2.1.2 1.3.8 0.1.7 0.6.8 1.11 1.0.0 0.0.3 0.0.17 2002-2018 2.1.2 1.3.8 0.1.7 0.5.9 0.9.7 0.9.1 0.3.3 0.1.6 2002-2021 2.09 1.2.5 0.71 0.96 0.92 0.3.3 0.1.6 2002-2017 2.2.3 2.1.1 1.3.3 0.69 1.0.8 0.1.1 0.4.4 0.1.6 2002-2016 2.2.1 0.2.2 1.3.2 0.65 1.0.8 1.1.8 0.4.4 0.4.1 2002-2017 2.2.5 2.0.6 1.1.8 0.4.4 0.4.1 0.1.6 0.1.6 0.1.6 0.1.7< | | 2002-2020 | 2.24 | 1.91 | 1.20 | 0.55 | 0.86 | 0.89 | 0.39 | 0.19 | |
| 2002-2022 2.25 1.91 1.31 0.64 1.16 1.16 0.62 0.202 2002-2016 2.25 2.16 1.22 0.65 1.11 1.00 0.41 0.18 2002-2017 2.17 2.09 1.26 0.65 1.11 1.00 0.93 0.03 0.16 2002-2018 2.12 1.98 1.17 0.69 0.97 0.91 0.03 0.16 2002-2020 2.09 1.93 1.16 0.67 0.97 0.91 0.03 0.16 2002-2021 2.09 1.25 0.71 0.96 0.92 0.35 0.115 2002-2016 2.22 2.08 1.20 0.89 1.08 1.04 0.46 2002-2017 2.25 2.06 1.18 0.46 0.41 0.16 2002-2017 2.25 2.06 1.21 0.62 0.98 1.08 0.44 0.41 2002-2017 2.25 2.06 1.18 | | 2002-2021 | 2.24 | 1.97 | 1.32 | 0.62 | 0.83 | 0.86 | 0.42 | 0.21 | |
| B05 202-2016 2.25 2.16 1.29 0.68 1.10 1.00 0.41 0.19 B05 2002-2016 2.17 2.09 1.26 0.63 1.06 0.55 0.37 0.17 2002-2018 2.17 2.09 1.28 0.01 0.05 0.37 0.17 2002-2019 2.09 1.93 1.17 0.59 0.97 0.91 0.33 0.15 2002-2021 2.09 1.28 0.71 0.66 0.97 0.91 0.33 0.15 2002-2021 2.09 1.28 0.71 0.66 0.92 0.03 0.16 2002-2016 2.21 2.02 1.29 0.65 1.33 1.13 0.43 0.16 2002-2017 2.25 2.06 1.21 0.62 0.88 1.08 0.44 0.41 0.46 2002-2018 2.42 2.05 1.60 0.44 0.41 0.41 0.41 2002-2015 2 | | 2002-2022 | 2.25 | 1.91 | 1.31 | 0.61 | 1.16 | 1.15 | 0.52 | 0.20 | |
| 2002-20162.152.061.240.051.111.010.030.182002-20172.172.091.280.631.060.650.070.172002-20192.091.031.170.590.070.910.330.162002-20202.091.031.160.670.970.910.330.162002-20212.091.280.110.661.321.150.350.152002-20222.082.011.350.661.321.150.350.152002-20162.212.021.280.661.321.150.350.152002-20172.252.061.210.661.031.130.430.152002-2018NANA1.250.63NANANA0.961.060.472002-20172.252.061.210.691.081.080.470.162002-20162.272.061.210.691.081.080.470.162002-20152.422.261.500.941.151.080.170.180.172002-20152.492.061.210.461.161.080.470.182002-20162.171.971.180.471.130.380.172002-20162.191.191.160.451.061.000.310.162002-20162.191.191.18< | | 2002-2015 | 2.25 | 2.16 | 1.29 | 0.68 | 1.10 | 1.00 | 0.41 | 0.19 | |
| Bos 2002-2017 2.17 2.09 1.28 0.03 1.05 0.95 0.37 0.17 2002-2019 2.10 1.93 1.17 0.05 0.97 0.91 0.33 0.16 2002-2020 2.09 1.93 1.16 0.67 0.97 0.91 0.33 0.15 2002-2021 2.09 2.02 1.25 0.071 0.96 0.92 0.35 0.15 2002-2016 2.21 2.02 1.29 0.65 1.03 1.13 0.43 0.15 2002-2016 2.21 2.02 1.29 0.65 1.03 1.13 0.43 0.15 2002-2019 2.25 2.06 1.21 0.62 0.98 1.08 0.44 0.16 2002-2019 2.24 2.07 1.29 0.71 0.93 1.03 0.47 0.17 2002-2012 2.44 2.07 1.29 0.71 0.93 1.03 0.47 0.17 200 | | 2002-2016 | 2.15 | 2.06 | 1.24 | 0.65 | 1.11 | 1.01 | 0.38 | 0.18 | |
| Bos 2002-2018 2.12 1.98 1.19 0.61 1.00 0.93 0.33 0.16 2002-2019 2.00 1.93 1.17 0.96 0.97 0.91 0.33 0.16 2002-2021 2.00 2.02 2.00 1.25 0.71 0.96 0.92 0.93 0.16 0.33 0.16 2002-2021 2.00 2.02 1.20 0.96 0.92 0.93 0.13 0.11 0.46 0.16 2002-2015 2.23 2.01 1.9 0.14 0.16 0.11 0.46 0.16 2002-2017 2.25 2.06 1.11 0.46 0.41 0.16 2002-2019 2.25 2.06 1.11 0.46 0.49 0.41 0.16 2002-2016 2.24 2.06 1.21 0.64 0.99 1.03 0.43 0.47 2002-2015 2.29 1.99 1.12 0.64 0.113 0.43 0.17 | | 2002-2017 | 2.17 | 2.09 | 1.26 | 0.63 | 1.05 | 0.95 | 0.37 | 0.17 | |
| BOS 2002-2019 2.09 1.93 1.17 0.59 0.97 0.91 0.33 0.16 2002-2020 2.09 1.93 1.16 0.067 0.97 0.91 0.33 0.16 2002-2022 2.06 2.09 1.25 0.71 0.96 0.92 0.35 0.15 2002-2015 2.32 2.11 1.35 0.66 1.03 1.11 0.46 0.16 2002-2016 2.21 2.02 N/A N/A 0.98 1.08 N/A 0.16 2002-2017 2.25 2.06 1.21 0.62 0.98 1.08 0.41 0.16 2002-2019 2.25 2.06 1.21 0.62 0.98 1.08 0.41 0.16 2002-2010 2.14 2.00 1.29 0.011 0.93 1.03 0.47 0.17 2002-2017 2.20 1.99 1.21 0.46 1.18 1.13 0.43 0.17 2002- | | 2002-2018 | 2.12 | 1.98 | 1.19 | 0.61 | 1.00 | 0.93 | 0.35 | 0.16 | |
| 2002-2020 2.09 1.93 1.16 0.67 0.97 0.91 0.33 0.15 2002-2021 2.09 2.09 1.25 0.71 0.96 0.92 0.33 0.15 2002-2015 2.22 2.08 2.03 1.13 0.046 0.92 0.33 0.14 2002-2016 2.21 2.02 1.29 0.66 1.32 1.13 0.43 0.15 2002-2017 2.25 2.06 N/A N/A 0.98 1.08 N/A N/A 2002-2019 2.25 2.06 1.14 0.64 0.98 1.08 0.41 0.16 2002-2019 2.25 2.06 1.14 0.64 0.98 1.08 0.41 0.16 2002-2012 2.44 2.07 1.29 0.71 0.33 0.63 0.71 2002-2015 2.29 2.26 1.21 0.04 1.15 0.49 1.02 0.31 0.33 0.63 2002-2 | BoS | 2002-2019 | 2.09 | 1.93 | 1.17 | 0.59 | 0.97 | 0.91 | 0.33 | 0.16 | |
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| 2002-20162.212.021.290.651.031.130.430.152002-20172.252.06N/AN/A0.981.08N/AN/A2002-2018N/AN/A1.250.63N/AN/A0.410.162002-20202.252.061.210.620.981.080.410.162002-20212.242.251.500.941.080.410.172002-20152.292.422.251.500.941.181.130.630.172002-20152.292.422.251.500.941.181.130.360.172002-20152.292.491.191.160.441.181.130.360.172002-20162.171.991.210.461.151.060.320.162002-20172.201.991.210.461.151.060.320.162002-20192.101.851.150.461.051.000.320.162002-20202.101.911.250.661.971.320.030.142002-20152.212.311.360.931.111.100.460.252002-20172.101.911.250.661.971.130.400.252002-20162.102.261.320.841.111.100.460.252002-20172.162.102.2 | | 2002-2015 | 2.32 | 2.11 | 1.35 | 0.69 | 1.09 | 1.11 | 0.46 | 0.16 | |
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| CCIS 2002-2019 2.25 2.06 1.21 0.62 0.98 1.08 0.41 0.16 2002-2020 2.25 2.06 1.18 0.64 0.98 1.08 0.44 0.17 2002-2021 2.14 2.07 1.29 0.71 0.93 1.03 0.47 0.17 2002-2022 2.42 2.25 1.50 0.94 1.18 1.13 0.63 0.17 2002-2015 2.29 2.06 1.21 0.49 1.18 0.13 0.47 0.17 2002-2016 2.17 1.97 1.18 0.47 0.18 0.16 1.15 1.06 0.32 0.17 2002-2018 2.15 1.91 1.15 0.46 1.16 1.00 0.32 0.16 2002-2019 2.10 1.85 1.15 0.49 1.65 1.00 0.30 0.16 2002-2012 2.10 1.85 1.15 0.49 1.01 0.37 0.16 | | 2002-2018 | N/A | N/A | 1.25 | 0.63 | N/A | N/A | 0.41 | 0.16 | |
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| 2002-2022 1.98 1.88 1.28 0.56 1.37 1.32 0.50 0.17 2002-2015 2.21 2.31 1.35 0.93 1.14 1.13 0.48 0.25 2002-2016 2.10 2.20 1.30 0.88 1.11 1.10 0.46 0.25 2002-2017 2.16 2.26 1.37 0.89 1.07 1.06 0.43 0.25 2002-2019 2.10 2.18 1.30 0.82 0.98 0.97 0.40 0.25 2002-2020 2.10 2.18 1.37 0.84 0.98 0.97 0.40 0.25 2002-2021 2.10 2.22 1.52 0.89 0.96 0.92 0.44 0.28 2002-2022 2.08 2.15 1.52 0.85 1.28 1.23 0.52 0.27 2002-2015 2.39 2.48 1.63 1.15 1.34 1.16 0.92 0.48 2002-2016 <t< td=""><td></td><td>2002-2021</td><td>2.10</td><td>1.91</td><td>1.25</td><td>0.56</td><td>1.04</td><td>1.01</td><td>0.37</td><td>0.18</td></t<> | | 2002-2021 | 2.10 | 1.91 | 1.25 | 0.56 | 1.04 | 1.01 | 0.37 | 0.18 | |
| IMF 2002-2015 2.21 2.31 1.35 0.93 1.14 1.13 0.48 0.25 2002-2016 2.10 2.20 1.30 0.88 1.11 1.10 0.46 0.25 2002-2017 2.16 2.26 1.37 0.89 1.11 1.10 0.46 0.25 2002-2018 2.18 2.25 1.32 0.84 1.07 1.06 0.43 0.25 2002-2019 2.10 2.18 1.30 0.82 0.98 0.97 0.40 0.25 2002-2020 2.10 2.18 1.37 0.84 0.98 0.97 0.40 0.27 2002-2021 2.10 2.22 1.52 0.89 0.96 0.92 0.44 0.28 2002-2015 2.39 2.48 1.63 1.15 1.34 1.16 0.92 0.48 2002-2016 2.27 2.33 1.55 1.08 1.25 1.09 0.86 0.44 2002 | | 2002-2022 | 1.98 | 1.88 | 1.28 | 0.56 | 1.37 | 1.32 | 0.50 | 0.17 | |
| IMF 2002-2016 2.10 2.20 1.30 0.88 1.11 1.10 0.46 0.25 2002-2017 2.16 2.26 1.37 0.89 1.07 1.06 0.43 0.25 2002-2018 2.18 2.25 1.32 0.84 1.02 1.00 0.41 0.25 2002-2019 2.10 2.18 1.30 0.82 0.98 0.97 0.40 0.25 2002-2021 2.10 2.18 1.37 0.84 0.98 0.97 0.40 0.27 2002-2021 2.10 2.22 1.52 0.89 0.96 0.92 0.44 0.28 2002-2022 2.08 2.15 1.52 0.85 1.28 1.23 0.52 0.27 2002-2015 2.39 2.48 1.63 1.15 1.34 1.16 0.92 0.48 2002-2016 2.27 2.33 1.55 1.08 1.30 1.13 0.90 0.47 2002 | | 2002-2015 | 2.21 | 2.31 | 1.35 | 0.93 | 1.14 | 1.13 | 0.48 | 0.25 | |
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| IMP 2002-2019 2.10 2.18 1.30 0.82 0.98 0.97 0.40 0.25 2002-2020 2.10 2.18 1.37 0.84 0.98 0.97 0.40 0.27 2002-2021 2.10 2.22 1.52 0.89 0.96 0.92 0.44 0.28 2002-2022 2.08 2.15 1.52 0.85 1.28 1.23 0.52 0.27 2002-2015 2.39 2.48 1.63 1.15 1.34 1.16 0.92 0.44 0.28 2002-2016 2.27 2.33 1.55 1.08 1.30 1.13 0.90 0.47 2002-2017 2.30 2.34 1.59 1.08 1.25 1.09 0.86 0.44 2002-2018 2.26 2.24 1.53 1.01 1.21 1.04 0.82 0.42 2002-2019 2.19 2.18 1.62 0.99 1.15 1.00 0.78 0.41 | | 2002-2018 | 2.18 | 2.25 | 1.32 | 0.84 | 1.02 | 1.00 | 0.41 | 0.25 | |
| 2002-2020 2.10 2.18 1.37 0.84 0.98 0.97 0.40 0.27 2002-2021 2.10 2.22 1.52 0.89 0.96 0.92 0.44 0.28 2002-2022 2.08 2.15 1.52 0.85 1.28 1.23 0.52 0.27 2002-2015 2.39 2.48 1.63 1.15 1.34 1.16 0.92 0.44 0.28 2002-2016 2.27 2.33 1.55 1.08 1.30 1.13 0.90 0.47 2002-2017 2.30 2.34 1.59 1.08 1.25 1.09 0.86 0.44 2002-2018 2.26 2.24 1.53 1.01 1.21 1.04 0.82 0.42 2002-2019 2.19 2.18 1.49 0.98 1.15 1.00 0.78 0.41 2002-2021 2.19 2.18 1.62 0.99 1.15 1.00 0.78 0.41 200 | | 2002-2019 | 2.10 | 2.18 | 1.30 | 0.82 | 0.98 | 0.97 | 0.40 | 0.25 | |
| 2002-2021 2.10 2.22 1.52 0.89 0.96 0.92 0.44 0.28 2002-2022 2.08 2.15 1.52 0.85 1.28 1.23 0.52 0.27 2002-2015 2.39 2.48 1.63 1.15 1.34 1.16 0.92 0.44 0.28 2002-2016 2.27 2.33 1.55 1.08 1.30 1.13 0.90 0.47 2002-2017 2.30 2.34 1.59 1.08 1.25 1.09 0.86 0.44 2002-2018 2.26 2.24 1.53 1.01 1.21 1.04 0.82 0.42 2002-2019 2.19 2.18 1.49 0.98 1.15 1.00 0.78 0.41 2002-2020 2.19 2.18 1.62 0.99 1.15 1.00 0.78 0.41 2002-2021 2.19 2.25 1.77 1.09 1.44 0.99 0.78 0.41 200 | | 2002-2020 | 2.10 | 2.18 | 1.37 | 0.84 | 0.98 | 0.97 | 0.40 | 0.27 | |
| 2002-2022 2.08 2.15 1.52 0.85 1.28 1.23 0.52 0.27 2002-2015 2.39 2.48 1.63 1.15 1.34 1.16 0.92 0.48 2002-2016 2.27 2.33 1.55 1.08 1.30 1.13 0.90 0.47 2002-2017 2.30 2.34 1.59 1.08 1.25 1.09 0.86 0.44 2002-2018 2.26 2.24 1.53 1.01 1.21 1.04 0.82 0.42 2002-2019 2.19 2.18 1.49 0.98 1.15 1.00 0.78 0.41 2002-2021 2.19 2.18 1.62 0.99 1.15 1.00 0.78 0.41 2002-2021 2.19 2.25 1.77 1.09 1.14 0.99 0.78 0.41 2002-2022 2.26 2.21 1.75 1.05 1.47 1.32 0.95 0.39 | | 2002-2021 | 2.10 | 2.22 | 1.52 | 0.89 | 0.96 | 0.92 | 0.44 | 0.28 | |
| 2002-2015 2.39 2.48 1.63 1.15 1.34 1.16 0.92 0.48 2002-2016 2.27 2.33 1.55 1.08 1.30 1.13 0.90 0.47 2002-2017 2.30 2.34 1.59 1.08 1.25 1.09 0.86 0.44 2002-2018 2.26 2.24 1.53 1.01 1.21 1.04 0.82 0.42 2002-2019 2.19 2.18 1.49 0.98 1.15 1.00 0.78 0.41 2002-2021 2.19 2.25 1.77 1.09 1.14 0.99 0.78 0.41 2002-2022 2.26 2.21 1.75 1.05 1.47 1.32 0.95 0.39 | | 2002-2022 | 2.08 | 2.15 | 1.52 | 0.85 | 1.28 | 1.23 | 0.52 | 0.27 | |
| 2002-2016 2.27 2.33 1.55 1.08 1.30 1.13 0.90 0.47 2002-2017 2.30 2.34 1.59 1.08 1.25 1.09 0.86 0.44 2002-2018 2.26 2.24 1.53 1.01 1.21 1.04 0.82 0.42 2002-2019 2.19 2.18 1.49 0.98 1.15 1.00 0.78 0.41 2002-2020 2.19 2.18 1.62 0.99 1.15 1.00 0.78 0.41 2002-2021 2.19 2.25 1.77 1.09 1.14 0.99 0.78 0.41 2002-2022 2.26 2.21 1.75 1.05 1.47 1.32 0.95 0.39 | | 2002-2015 | 2.39 | 2.48 | 1.63 | 1.15 | 1.34 | 1.16 | 0.92 | 0.48 | |
| 2002-2017 2.30 2.34 1.59 1.08 1.25 1.09 0.86 0.44 2002-2018 2.26 2.24 1.53 1.01 1.21 1.04 0.82 0.42 2002-2019 2.19 2.18 1.49 0.98 1.15 1.00 0.78 0.41 2002-2020 2.19 2.18 1.62 0.99 1.15 1.00 0.78 0.41 2002-2021 2.19 2.25 1.77 1.09 1.14 0.99 0.78 0.41 2002-2022 2.26 2.21 1.75 1.05 1.47 1.32 0.95 0.39 | | 2002-2016 | 2.27 | 2.33 | 1.55 | 1.08 | 1.30 | 1.13 | 0.90 | 0.47 | |
| 2002-2018 2.26 2.24 1.53 1.01 1.21 1.04 0.82 0.42 2002-2019 2.19 2.18 1.49 0.98 1.15 1.00 0.78 0.41 2002-2020 2.19 2.18 1.62 0.99 1.15 1.00 0.78 0.41 2002-2021 2.19 2.25 1.77 1.09 1.14 0.99 0.78 0.41 2002-2022 2.26 2.21 1.75 1.05 1.47 1.32 0.95 0.39 | | 2002-2017 | 2.30 | 2.34 | 1.59 | 1.08 | 1.25 | 1.09 | 0.86 | 0.44 | |
| 2002-2019 2.19 2.18 1.49 0.98 1.15 1.00 0.78 0.41 2002-2020 2.19 2.18 1.62 0.99 1.15 1.00 0.78 0.41 2002-2021 2.19 2.25 1.77 1.09 1.14 0.99 0.78 0.41 2002-2022 2.26 2.21 1.75 1.05 1.47 1.32 0.95 0.39 | 14/1114- | 2002-2018 | 2.26 | 2.24 | 1.53 | 1.01 | 1.21 | 1.04 | 0.82 | 0.42 | |
| 2002-20202.192.181.620.991.151.000.780.412002-20212.192.251.771.091.140.990.780.412002-20222.262.211.751.051.471.320.950.39 | WIW | 2002-2019 | 2.19 | 2.18 | 1.49 | 0.98 | 1.15 | 1.00 | 0.78 | 0.41 | |
| 2002-2021 2.19 2.25 1.77 1.09 1.14 0.99 0.78 0.41 2002-2022 2.26 2.21 1.75 1.05 1.47 1.32 0.95 0.39 | | 2002-2020 | 2.19 | 2.18 | 1.62 | 0.99 | 1.15 | 1.00 | 0.78 | 0.41 | |
| 2002-2022 2.26 2.21 1.75 1.05 1.47 1.32 0.95 0.39 | | 2002-2021 | 2.19 | 2.25 | 1.77 | 1.09 | 1.14 | 0.99 | 0.78 | 0.41 | |
| | | 2002-2022 | 2.26 | 2.21 | 1.75 | 1.05 | 1.47 | 1.32 | 0.95 | 0.39 | |

| ReadSPr4APr4SP7APr4SP7APr4CP72002-0153.783.441.540.773.331.330.650.222002-0163.663.441.500.771.281.210.630.222002-0173.603.271.560.771.281.210.610.222002-0193.423.111.460.071.221.180.460.222002-0213.423.111.460.021.181.460.422002-0213.433.101.660.831.181.160.460.222002-0213.433.101.660.621.661.670.420.222002-0213.453.501.600.621.161.120.470.242002-0153.411.730.761.331.160.430.222002-0213.303.161.700.761.331.160.440.222002-0213.303.161.700.761.331.160.450.222002-0213.303.161.700.761.331.160.450.222002-0213.353.301.760.761.331.160.450.222002-0213.553.301.760.761.331.160.450.222002-0213.553.301.760.761.331.160.450.22 | 3. | | Gros | ss domestic pr | oduct, real gro | owth | Inflation, annual average | | | |
|--|---------|------------------|-------|----------------|-----------------|------|---------------------------|-------|------|------|
| 2002.2015 3.7.6 3.45 1.5.4 0.7.7 1.3.4 1.31 0.5.4 0.2.2 MAD 2002.2016 3.66 3.34 1.50 0.7.7 1.32 1.2.8 0.2.4 0.0.2 2002.2017 3.60 3.37 1.50 0.7.7 1.32 1.2.8 0.2.4 0.0.2 2002.2018 3.51 3.18 1.4.6 0.70 1.2.8 1.2.4 0.6.9 0.2.2 2002.2021 3.42 3.11 1.4.6 0.70 1.2.1 1.1.8 0.49 0.2.2 2002.2017 3.43 3.50 1.50 0.82 1.41 1.27 0.46 0.22 2002.2016 3.54 3.70 1.80 0.80 1.40 1.35 1.22 0.46 0.22 2002.2019 3.30 3.14 1.70 0.86 1.28 1.16 0.42 0.22 2002.2016 3.71 3.45 1.78 0.76 1.33 1.22 0.46 | ROOT ME | an Square Error, | SFt+1 | AFt+1 | SFt | AFt | SFt+1 | AFt+1 | SFt | AFt |
| NADE 2022-016 3.06 3.34 1.00 0.73 1.32 1.28 0.03 0.22 2022-017 3.06 3.27 1.06 0.72 1.28 1.24 1.24 0.23 0.22 2002-2019 3.42 3.11 1.44 0.06 0.72 1.12 1.16 0.49 0.22 2002-2021 3.48 3.10 1.64 0.72 1.16 1.16 0.49 0.22 2002-2021 3.35 3.00 1.62 0.82 1.64 1.16 0.45 0.22 2002-2016 3.84 3.70 1.82 0.80 1.44 1.22 0.46 0.22 2002-2016 3.38 3.24 1.77 0.76 1.33 1.12 0.46 0.22 2002-2016 3.30 3.16 1.70 0.88 1.28 1.16 0.43 0.22 2002-2016 3.31 1.32 1.33 1.32 1.33 1.32 0.35 0. | | 2002-2015 | 3.78 | 3.45 | 1.54 | 0.75 | 1.34 | 1.31 | 0.54 | 0.23 |
| NAOD2002-0173.003.271.500.771.281.240.920.022002-20193.423.111.460.701.241.211.180.040.212002-20193.423.111.460.061.211.180.040.222002-20213.433.101.160.081.181.160.040.222002-20173.423.501.600.682.051.181.170.490.222002-20163.623.301.840.801.411.270.040.222002-20163.623.301.840.801.401.280.470.242002-20183.303.161.770.761.311.190.440.222002-20193.303.161.770.761.311.190.440.222002-2013.303.361.780.601.201.170.450.222002-2013.303.341.780.761.411.350.660.222002-2013.371.341.840.661.471.381.320.472002-2013.371.341.780.671.381.120.610.222002-2013.353.300.650.751.381.320.670.222002-2013.463.300.650.671.381.320.670.222002-20153.333. | | 2002-2016 | 3.66 | 3.34 | 1.50 | 0.73 | 1.32 | 1.28 | 0.53 | 0.23 |
| MAD 002-2019 3.51 3.16 1.46 0.70 1.24 1.21 0.51 0.21 2002-2019 3.42 3.11 1.44 0.60 1.21 1.16 0.40 0.21 2002-2020 3.42 3.11 1.44 0.63 1.18 0.16 0.22 2002-2021 3.43 3.10 1.64 0.83 1.18 1.15 0.04 0.22 2002-2015 3.44 3.50 1.62 0.68 1.41 1.27 0.44 0.22 2002-2016 3.32 3.16 1.73 0.74 1.33 1.22 0.46 0.22 2002-2017 3.47 1.78 0.74 1.38 1.18 0.44 0.22 2002-2015 3.71 3.45 1.73 0.74 1.28 1.16 0.44 0.22 2002-2015 3.71 3.45 1.74 0.86 1.28 1.17 0.45 0.22 2002-2015 3.74 | | 2002-2017 | 3.60 | 3.27 | 1.50 | 0.72 | 1.28 | 1.24 | 0.52 | 0.22 |
| MMD 2002-2019 3.42 3.11 1.44 0.09 1.21 1.18 0.49 0.21 2002-2021 3.42 3.11 1.44 0.77 1.21 1.18 0.49 0.23 2002-2021 3.45 3.30 1.62 0.82 2.05 1.88 0.74 0.24 2002-2015 3.64 3.60 1.90 0.82 1.44 1.22 0.49 0.22 2002-2016 3.52 3.33 1.84 0.80 1.44 1.22 0.44 0.22 2002-2018 3.33 3.24 1.77 0.76 1.31 1.16 0.44 0.22 2002-2019 3.30 3.46 1.70 0.86 1.28 1.17 0.45 0.20 2002-2016 3.71 3.45 1.84 0.81 1.48 1.38 0.56 0.22 2002-2017 3.45 3.30 1.69 0.76 1.38 1.32 0.51 0.22 2002 | | 2002-2018 | 3.51 | 3.18 | 1.46 | 0.70 | 1.24 | 1.21 | 0.51 | 0.21 |
| b022202 3.42 3.11 1.48 0.72 1.12 1.18 0.49 0.22 2002-2021 3.43 3.10 1.64 0.83 1.18 0.14 0.25 2002-2015 3.64 3.50 1.80 0.82 1.41 1.27 0.49 0.25 2002-2016 3.52 3.64 3.50 1.80 0.68 1.41 1.27 0.49 0.25 2002-2017 3.47 3.34 1.82 0.76 1.33 1.19 0.44 0.22 2002-2017 3.30 3.66 1.77 0.76 1.33 1.19 0.44 0.22 2002-2017 3.30 3.66 1.77 0.76 1.38 1.18 0.43 0.22 2002-2015 3.71 1.74 0.86 2.18 1.17 0.45 0.22 2002-2016 3.59 3.30 1.65 0.75 1.48 1.32 0.45 0.22 2002-2016 3.55 | IMAD | 2002-2019 | 3.42 | 3.11 | 1.44 | 0.69 | 1.21 | 1.18 | 0.49 | 0.21 |
| 2002-0021 3.43 3.10 1.64 0.03 1.18 1.15 0.64 0.28 2002-2022 3.35 3.03 1.62 0.06 2.05 1.84 0.74 0.24 2002-2016 3.34 2.35 1.84 0.06 1.40 1.22 0.44 0.22 2002-2018 3.34 2.4 1.77 0.76 1.31 1.22 0.44 0.22 2002-2019 3.30 3.16 1.77 0.76 1.31 1.12 0.44 0.22 2002-2012 3.30 3.16 1.77 0.76 1.41 1.45 0.44 0.22 2002-2016 3.30 3.46 1.79 0.78 1.43 1.38 0.66 0.23 2002-2016 3.59 3.30 1.69 0.75 1.43 1.38 0.64 0.22 2002-2017 3.45 3.30 1.69 0.76 1.38 1.32 0.65 0.23 2002-2019 <th< td=""><td></td><td>2002-2020</td><td>3.42</td><td>3.11</td><td>1.48</td><td>0.72</td><td>1.21</td><td>1.18</td><td>0.49</td><td>0.23</td></th<> | | 2002-2020 | 3.42 | 3.11 | 1.48 | 0.72 | 1.21 | 1.18 | 0.49 | 0.23 |
| 2022-022 3.35 3.03 1.62 0.82 2.06 1.69 0.24 2022-2016 3.84 3.50 1.90 0.82 1.41 1.27 0.49 0.25 2022-2016 3.82 3.83 1.84 0.076 1.35 1.22 0.46 0.23 202-2017 3.47 3.34 1.82 0.76 1.31 1.19 0.44 0.22 202-2020 3.30 3.16 1.73 0.74 1.28 1.16 0.42 0.21 202-2020 3.30 3.16 1.73 0.74 0.88 2.15 1.67 0.45 0.22 202-2015 3.71 3.45 1.14 0.81 1.48 1.38 0.56 0.23 202-2016 3.55 3.30 N/A N/A 1.43 1.38 0.56 0.22 202-2017 3.55 3.30 1.65 0.75 1.38 1.32 0.66 0.23 202-2020 3.55 <td></td> <td>2002-2021</td> <td>3.43</td> <td>3.10</td> <td>1.64</td> <td>0.83</td> <td>1.18</td> <td>1.15</td> <td>0.54</td> <td>0.25</td> | | 2002-2021 | 3.43 | 3.10 | 1.64 | 0.83 | 1.18 | 1.15 | 0.54 | 0.25 |
| Bos 202-2015 3.64 3.50 1.90 0.82 1.41 1.27 0.49 0.25 Bos 2002-2016 3.52 3.39 1.84 0.60 1.44 1.28 0.74 2002-2017 3.47 3.34 1.82 0.78 1.31 1.19 0.44 0.22 2002-2019 3.30 3.16 1.73 0.74 1.28 1.16 0.43 0.22 2002-2020 3.30 3.16 1.77 0.76 1.31 1.19 0.44 0.22 2002-2021 3.30 3.28 1.77 0.76 1.48 1.35 0.56 0.23 2002-2015 3.71 3.45 1.84 0.81 1.38 1.32 N/A N/A 2002-2016 N/A N/A 1.74 0.75 1.44 1.38 0.51 0.22 2002-2017 3.55 3.30 1.68 0.75 1.38 1.32 0.67 0.23 2002-2018< | | 2002-2022 | 3.35 | 3.03 | 1.62 | 0.82 | 2.05 | 1.89 | 0.74 | 0.24 |
| 2002-0163.623.381.840.801.401.200.470.242002-0173.473.341.820.781.351.220.460.232002-0193.303.161.730.741.811.1281.160.420.222002-0203.303.161.770.761.281.160.420.222002-0213.303.161.770.061.281.160.420.222002-0213.323.241.740.082.151.670.450.232002-0163.593.301.780.761.381.320.560.232002-0173.553.301.690.761.381.320.560.222002-0173.553.301.690.761.381.320.650.222002-0173.563.301.690.761.381.320.650.232002-0173.563.301.690.761.381.320.650.232002-0213.643.211.780.651.321.260.670.232002-0213.633.321.620.671.441.300.450.222002-0213.643.711.590.641.471.300.440.232002-0213.633.321.620.671.441.430.670.232002-0213.643.511.510.69< | | 2002-2015 | 3.64 | 3.50 | 1.90 | 0.82 | 1.41 | 1.27 | 0.49 | 0.25 |
| Bos 2002-2017 3.47 3.34 1.82 0.78 1.35 1.22 0.46 0.23 2002-2018 3.30 3.16 1.77 0.76 1.31 1.119 0.44 0.22 2002-2020 3.30 3.16 1.73 0.74 1.28 1.16 0.43 0.22 2002-2021 3.30 3.26 1.77 0.66 1.28 1.16 0.44 0.22 2002-2021 3.31 3.74 3.74 0.86 2.15 1.67 0.45 0.22 2002-2016 3.71 3.34 1.79 0.78 1.43 1.38 0.54 0.22 2002-2017 3.55 3.30 1.69 0.75 1.38 1.32 0.67 0.22 2002-2021 3.48 3.21 1.78 0.85 1.32 1.32 0.67 0.23 2002-2021 3.48 3.21 1.78 0.85 1.32 1.32 0.47 0.23 200 | | 2002-2016 | 3.52 | 3.39 | 1.84 | 0.80 | 1.40 | 1.26 | 0.47 | 0.24 |
| BOS 2002-2016 3.38 3.24 1.77 0.76 1.31 1.19 0.44 0.22 2002-2010 3.30 3.16 1.73 0.74 1.28 1.16 0.42 0.22 2002-2021 3.30 3.16 1.76 0.86 1.28 1.16 0.42 0.21 2002-2021 3.32 3.21 1.74 0.86 1.26 1.17 0.45 0.22 2002-2015 3.71 3.44 1.84 0.81 1.48 1.35 0.66 0.22 2002-2017 3.55 3.30 N/A N/A 1.38 1.32 N/A N/A 2002-2019 3.55 3.30 1.69 0.76 1.38 1.32 0.67 0.38 1.32 0.67 0.38 0.32 0.65 0.23 0.22 0.22 0.22 0.22 0.22 0.22 0.23 0.23 0.23 0.23 0.23 0.23 0.22 0.22 0.22 0.22 | | 2002-2017 | 3.47 | 3.34 | 1.82 | 0.78 | 1.35 | 1.22 | 0.46 | 0.23 |
| BOS 2002-2019 3.30 3.16 1.73 0.74 1.28 1.16 0.43 0.22 2002-2020 3.30 3.16 1.70 0.66 1.28 1.17 0.42 0.21 2002-2021 3.30 3.28 1.78 0.06 1.26 1.17 0.45 0.22 2002-2012 3.22 3.21 1.74 0.68 2.15 1.67 0.45 0.23 2002-2016 3.59 3.34 1.79 0.76 1.43 1.35 0.66 0.23 2002-2017 3.55 3.30 1.79 0.76 1.43 1.32 0.61 0.22 2002-2018 N/A N/A 1.76 0.65 1.32 1.61 0.65 0.23 2002-2012 3.61 3.32 1.62 0.67 1.38 1.32 0.61 0.22 2002-2017 3.64 3.17 1.59 0.64 1.47 1.30 0.44 0.22 2002-2 | | 2002-2018 | 3.38 | 3.24 | 1.77 | 0.76 | 1.31 | 1.19 | 0.44 | 0.22 |
| 2002-2020 3.30 3.16 1.70 0.86 1.28 1.16 0.42 0.21 2002-2021 3.20 3.28 1.76 0.90 1.26 1.17 0.45 0.21 2002-2015 3.71 3.45 1.84 0.88 2.15 1.67 0.45 0.22 2002-2016 3.59 3.34 1.79 0.76 1.48 1.38 0.56 0.22 2002-2017 3.55 3.30 N/A N/A N/A 2002-2019 3.55 3.30 1.66 0.76 1.38 1.32 0.51 0.22 2002-2019 3.55 3.30 1.66 0.76 1.38 1.32 0.67 0.23 2002-2016 3.61 3.32 1.62 0.74 1.38 0.32 0.65 0.33 2002-2015 3.63 3.60 1.54 0.66 1.32 1.44 0.46 0.22 2002-2016 3.51 3.22 1.58 0 | BoS | 2002-2019 | 3.30 | 3.16 | 1.73 | 0.74 | 1.28 | 1.16 | 0.43 | 0.22 |
| 2002-2021 3.30 3.28 1.78 0.90 1.26 1.17 0.45 0.21 2002-2015 3.71 3.46 1.84 0.81 1.48 1.48 0.81 2002-2016 3.91 3.45 1.84 0.81 1.48 1.36 0.56 0.22 2002-2017 3.55 3.30 N/A N/A 1.38 1.32 N/A N/A 2002-2018 N/A N/A N/A 1.88 1.32 0.65 0.22 2002-2021 3.65 3.30 1.69 0.75 1.38 1.32 0.65 0.23 2002-2021 3.64 3.21 1.78 0.65 1.32 1.62 0.65 0.23 2002-2015 3.63 3.22 1.62 0.66 1.43 1.03 0.23 2002-2016 3.63 3.22 1.62 0.64 1.47 1.30 0.45 0.23 2002-2016 3.43 3.60 1.51 0.66< | | 2002-2020 | 3.30 | 3.16 | 1.70 | 0.86 | 1.28 | 1.16 | 0.42 | 0.21 |
| 2002-2022 3.22 3.21 1.74 0.88 2.15 1.67 0.45 0.20 2002-2015 3.71 3.45 1.84 0.81 1.48 1.35 0.56 0.23 2002-2016 3.59 3.34 1.79 0.78 1.43 1.36 0.54 0.22 2002-2017 3.55 3.30 N/A N/A 0.76 N/A N/A 0.52 0.22 2002-2019 3.55 3.30 1.66 0.76 1.38 1.32 0.67 0.23 2002-2021 3.48 3.21 1.76 0.65 1.32 1.32 0.66 0.23 2002-2021 3.48 3.32 1.62 0.66 1.32 1.36 0.43 0.63 2002-2015 3.63 3.32 1.62 0.66 1.32 1.36 0.44 0.22 2002-2017 3.46 3.71 1.59 0.64 1.47 1.30 0.45 0.23 2002-201 | | 2002-2021 | 3.30 | 3.28 | 1.78 | 0.90 | 1.26 | 1.17 | 0.45 | 0.21 |
| CCIS 2002-2015 3.71 3.45 1.84 0.81 1.48 1.33 0.56 0.23 2002-2016 3.59 3.34 1.79 0.78 1.43 1.36 0.54 0.22 2002-2017 3.55 3.30 N/A N/A N/A 1.38 1.32 N/A N/A 2002-2019 3.55 3.30 1.66 0.76 1.38 1.32 0.67 0.23 2002-2021 3.48 3.21 1.76 0.85 1.32 1.26 0.66 0.23 2002-2015 3.63 3.32 1.62 0.67 1.38 1.32 0.67 0.23 2002-2016 3.51 3.22 1.58 0.65 1.52 1.34 0.47 0.24 2002-2017 3.46 3.17 1.59 0.64 1.47 1.30 0.45 0.22 2002-2019 3.29 3.00 1.51 0.69 1.39 1.24 0.44 0.22 <tr< td=""><td></td><td>2002-2022</td><td>3.22</td><td>3.21</td><td>1.74</td><td>0.88</td><td>2.15</td><td>1.67</td><td>0.45</td><td>0.20</td></tr<> | | 2002-2022 | 3.22 | 3.21 | 1.74 | 0.88 | 2.15 | 1.67 | 0.45 | 0.20 |
| 2002-2016 3.58 3.34 1.79 0.78 1.43 1.38 0.54 0.22 2002-2017 3.55 3.30 N/A N/A 1.38 1.32 N/A N/A 2002-2018 N/A N/A 1.74 0.76 N/A N/A N/A 2002-2021 3.55 3.30 1.66 0.76 N/A N/A N/A 0.52 0.22 2002-2021 3.48 3.21 1.78 0.65 1.32 1.65 0.23 2002-2015 3.63 3.32 1.62 0.44 0.47 0.24 2002-2016 3.61 3.22 1.52 0.44 0.47 0.23 2002-2016 3.61 3.22 1.52 0.44 0.47 0.24 2002-2017 3.46 3.17 1.59 0.64 1.47 1.30 0.45 0.23 2002-2017 3.48 3.68 1.64 0.67 1.33 1.42 0.44 0.22 | | 2002-2015 | 3.71 | 3.45 | 1.84 | 0.81 | 1.48 | 1.35 | 0.56 | 0.23 |
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| 2002-2021 3.48 3.21 1.78 0.85 1.32 1.26 0.65 0.23 2002-2022 3.61 3.36 2.12 1.46 2.06 1.97 1.03 0.23 2002-2015 3.63 3.32 1.62 0.67 1.49 1.36 0.48 0.23 2002-2016 3.51 3.22 1.58 0.65 1.52 1.34 0.47 0.24 2002-2017 3.46 3.17 1.59 0.64 1.47 1.30 0.45 0.23 2002-2019 3.29 3.00 1.51 0.69 1.39 1.24 0.43 0.22 2002-202 3.14 2.94 1.64 0.77 2.16 2.01 0.87 0.23 2002-2015 3.44 3.51 1.82 1.18 1.44 0.65 0.29 2002-2015 3.44 3.51 1.82 1.18 1.34 1.36 0.63 0.29 2002-2017 3.40 <td< td=""><td>2002-2020</td><td>3.55</td><td>3.30</td><td>1.65</td><td>0.76</td><td>1.38</td><td>1.32</td><td>0.67</td><td>0.23</td></td<> | | 2002-2020 | 3.55 | 3.30 | 1.65 | 0.76 | 1.38 | 1.32 | 0.67 | 0.23 |
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| EC 2002-2019 3.29 3.00 1.51 0.66 1.39 1.24 0.43 0.22 2002-2020 3.29 3.00 1.51 0.66 1.39 1.24 0.43 0.22 2002-2021 3.22 3.00 1.63 0.77 1.37 1.24 0.63 0.23 2002-2022 3.14 2.94 1.64 0.77 2.16 2.01 0.87 0.23 2002-2015 3.54 3.66 1.81 1.24 1.41 1.43 0.67 0.30 2002-2016 3.42 3.53 1.76 1.19 1.38 1.40 0.65 0.29 2002-2017 3.40 3.51 1.82 1.18 1.34 1.36 0.63 0.29 2002-2018 3.35 1.73 1.12 1.27 1.28 0.59 0.31 2002-2021 3.28 3.36 1.78 1.13 1.27 1.28 0.59 0.32 2002-2017 | | 2002-2018 | 3.38 | 3.08 | 1.54 | 0.62 | 1.43 | 1.26 | 0.44 | 0.22 |
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| 2002-2021 3.22 3.00 1.63 0.77 1.37 1.24 0.53 0.23 2002-2022 3.14 2.94 1.64 0.77 2.16 2.01 0.87 0.23 2002-2015 3.54 3.65 1.81 1.24 1.41 1.43 0.67 0.30 2002-2016 3.42 3.53 1.76 1.19 1.38 1.40 0.65 0.29 2002-2017 3.40 3.51 1.82 1.18 1.34 1.36 0.63 0.29 2002-2018 3.35 3.44 1.77 1.15 1.30 1.32 0.61 0.29 2002-2019 3.26 3.35 1.73 1.12 1.27 1.28 0.59 0.29 2002-2021 3.23 3.33 1.99 1.17 1.24 1.25 0.63 0.32 2002-2012 3.16 3.25 1.98 1.44 2.03 1.98 0.76 0.31 2002-2015 <t< td=""><td></td><td>2002-2020</td><td>3.29</td><td>3.00</td><td>1.51</td><td>0.69</td><td>1.39</td><td>1.24</td><td>0.45</td><td>0.22</td></t<> | | 2002-2020 | 3.29 | 3.00 | 1.51 | 0.69 | 1.39 | 1.24 | 0.45 | 0.22 |
| 2002-2022 3.14 2.94 1.64 0.77 2.16 2.01 0.87 0.23 2002-2015 3.54 3.65 1.81 1.24 1.41 1.43 0.67 0.30 2002-2016 3.42 3.53 1.76 1.19 1.38 1.40 0.65 0.29 2002-2017 3.40 3.51 1.82 1.18 1.34 1.36 0.63 0.29 2002-2018 3.35 3.44 1.77 1.15 1.30 1.32 0.61 0.29 2002-2019 3.26 3.35 1.78 1.13 1.27 1.28 0.59 0.29 2002-2021 3.23 3.33 1.99 1.17 1.24 1.25 0.63 0.32 2002-2022 3.16 3.25 1.98 1.14 2.03 1.98 0.76 0.31 2002-2015 3.80 3.61 2.39 1.42 1.61 1.59 1.00 0.52 2002-2016 <t< td=""><td></td><td>2002-2021</td><td>3.22</td><td>3.00</td><td>1.63</td><td>0.77</td><td>1.37</td><td>1.24</td><td>0.53</td><td>0.23</td></t<> | | 2002-2021 | 3.22 | 3.00 | 1.63 | 0.77 | 1.37 | 1.24 | 0.53 | 0.23 |
| IMF 2002-2015 3.54 3.65 1.81 1.24 1.41 1.43 0.67 0.30 2002-2016 3.42 3.53 1.76 1.19 1.38 1.40 0.65 0.29 2002-2017 3.40 3.51 1.82 1.18 1.34 1.36 0.63 0.29 2002-2018 3.35 3.44 1.77 1.15 1.30 1.32 0.61 0.29 2002-2019 3.26 3.35 1.73 1.12 1.27 1.28 0.59 0.29 2002-2021 3.23 3.33 1.99 1.17 1.24 1.25 0.63 0.32 2002-2022 3.16 3.25 1.98 1.14 2.03 1.98 0.76 0.31 2002-2015 3.80 3.80 2.49 1.49 1.71 1.68 1.05 0.55 2002-2016 3.68 3.67 2.41 1.44 1.66 1.63 1.03 0.54 2002 | | 2002-2022 | 3.14 | 2.94 | 1.64 | 0.77 | 2.16 | 2.01 | 0.87 | 0.23 |
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| IMF 2002-2019 3.26 3.35 1.73 1.12 1.27 1.28 0.59 0.29 2002-2020 3.26 3.35 1.78 1.13 1.27 1.28 0.59 0.31 2002-2021 3.23 3.33 1.99 1.17 1.24 1.25 0.63 0.32 2002-2022 3.16 3.25 1.98 1.14 2.03 1.98 0.76 0.31 2002-2015 3.80 3.80 2.49 1.49 1.71 1.68 1.05 0.55 2002-2016 3.68 3.67 2.41 1.44 1.66 1.63 1.03 0.54 2002-2017 3.63 3.61 2.39 1.42 1.51 1.60 0.55 2002-2018 3.54 3.50 2.32 1.37 1.57 1.54 0.97 0.51 2002-2019 3.45 3.41 2.27 1.34 1.53 1.50 0.93 0.50 2002-2021 <td< td=""><td></td><td>2002-2018</td><td>3.35</td><td>3.44</td><td>1.77</td><td>1.15</td><td>1.30</td><td>1.32</td><td>0.61</td><td>0.29</td></td<> | | 2002-2018 | 3.35 | 3.44 | 1.77 | 1.15 | 1.30 | 1.32 | 0.61 | 0.29 |
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| 2002-2021 3.23 3.33 1.99 1.17 1.24 1.25 0.63 0.32 2002-2022 3.16 3.25 1.98 1.14 2.03 1.98 0.76 0.31 2002-2015 3.80 3.80 2.49 1.49 1.71 1.68 1.05 0.55 2002-2016 3.68 3.67 2.41 1.44 1.66 1.63 1.03 0.54 2002-2017 3.63 3.61 2.39 1.42 1.57 1.54 0.97 0.51 2002-2019 3.45 3.41 2.27 1.34 1.53 1.50 0.93 0.50 2002-2021 3.49 3.42 2.54 1.45 1.51 1.47 0.93 0.49 2002-2021 3.41 3.35 2.49 1.42 2.25 2.24 1.33 0.48 | | 2002-2020 | 3.26 | 3.35 | 1.78 | 1.13 | 1.27 | 1.28 | 0.59 | 0.31 |
| 2002-2022 3.16 3.25 1.98 1.14 2.03 1.98 0.76 0.31 2002-2015 3.80 3.80 2.49 1.49 1.71 1.68 1.05 0.55 2002-2016 3.68 3.67 2.41 1.44 1.66 1.63 1.03 0.54 2002-2017 3.63 3.61 2.39 1.42 1.61 1.59 1.00 0.52 2002-2018 3.54 3.50 2.32 1.37 1.57 1.54 0.97 0.51 2002-2019 3.45 3.41 2.29 1.33 1.53 1.50 0.94 0.49 2002-2021 3.49 3.42 2.54 1.45 1.51 1.47 0.93 0.50 2002-2022 3.41 3.35 2.49 1.42 2.25 2.24 1.33 0.48 | | 2002-2021 | 3.23 | 3.33 | 1.99 | 1.17 | 1.24 | 1.25 | 0.63 | 0.32 |
| 2002-2015 3.80 3.80 2.49 1.49 1.71 1.68 1.05 0.55 2002-2016 3.68 3.67 2.41 1.44 1.66 1.63 1.03 0.54 2002-2017 3.63 3.61 2.39 1.42 1.61 1.59 1.00 0.52 2002-2018 3.54 3.50 2.32 1.37 1.54 0.97 0.51 2002-2019 3.45 3.41 2.27 1.34 1.53 1.50 0.94 0.49 2002-2021 3.49 3.42 2.54 1.45 1.51 1.47 0.93 0.50 2002-2022 3.41 3.35 2.49 1.42 2.25 2.24 1.33 0.48 | | 2002-2022 | 3.16 | 3.25 | 1.98 | 1.14 | 2.03 | 1.98 | 0.76 | 0.31 |
| 2002-2016 3.68 3.67 2.41 1.44 1.66 1.63 1.03 0.54 2002-2017 3.63 3.61 2.39 1.42 1.61 1.59 1.00 0.52 2002-2018 3.54 3.50 2.32 1.37 1.57 1.54 0.97 0.51 2002-2019 3.45 3.41 2.27 1.34 1.53 1.50 0.94 0.49 2002-2021 3.49 3.42 2.54 1.45 1.51 1.47 0.93 0.50 2002-2022 3.41 3.35 2.49 1.42 2.25 2.24 1.33 0.48 | | 2002-2015 | 3.80 | 3.80 | 2.49 | 1.49 | 1.71 | 1.68 | 1.05 | 0.55 |
| 2002-2017 3.63 3.61 2.39 1.42 2002-2018 3.54 3.50 2.32 1.37 1.57 1.54 0.97 0.51 2002-2019 3.45 3.41 2.27 1.34 1.53 1.50 0.94 0.49 2002-2020 3.45 3.41 2.39 1.33 1.53 1.50 0.93 0.50 2002-2021 3.49 3.42 2.54 1.45 1.51 1.47 0.93 0.49 2002-2022 3.41 3.35 2.49 1.42 2.25 2.24 1.33 0.48 | | 2002-2016 | 3.68 | 3.67 | 2.41 | 1.44 | 1.66 | 1.63 | 1.03 | 0.54 |
| 2002-2018 3.54 3.50 2.32 1.37 1.57 1.54 0.97 0.51 2002-2019 3.45 3.41 2.27 1.34 1.53 1.50 0.94 0.49 2002-2020 3.45 3.41 2.39 1.33 1.53 1.50 0.93 0.50 2002-2021 3.49 3.42 2.54 1.45 1.51 1.47 0.93 0.49 2002-2022 3.41 3.35 2.49 1.42 2.25 2.24 1.33 0.48 | | 2002-2017 | 3.63 | 3.61 | 2.39 | 1.42 | 1.61 | 1.59 | 1.00 | 0.52 |
| WIIW 2002-2019 3.45 3.41 2.27 1.34 1.53 1.50 0.94 0.49 2002-2020 3.45 3.41 2.39 1.33 1.53 1.50 0.94 0.49 2002-2021 3.49 3.42 2.54 1.45 1.51 1.47 0.93 0.49 2002-2022 3.41 3.35 2.49 1.42 2.25 2.24 1.33 0.48 | | 2002-2018 | 3.54 | 3.50 | 2.32 | 1.37 | 1.57 | 1.54 | 0.97 | 0.51 |
| 2002-20203.453.412.391.331.531.500.930.502002-20213.493.422.541.451.511.470.930.492002-20223.413.352.491.422.252.241.330.48 | WIW | 2002-2019 | 3.45 | 3.41 | 2.27 | 1.34 | 1.53 | 1.50 | 0.94 | 0.49 |
| 2002-2021 3.49 3.42 2.54 1.45 1.51 1.47 0.93 0.49 2002-2022 3.41 3.35 2.49 1.42 2.25 2.24 1.33 0.48 | | 2002-2020 | 3.45 | 3.41 | 2.39 | 1.33 | 1.53 | 1.50 | 0.93 | 0.50 |
| 2002-2022 3.41 3.35 2.49 1.42 2.25 2.24 1.33 0.48 | | 2002-2021 | 3.49 | 3.42 | 2.54 | 1.45 | 1.51 | 1.47 | 0.93 | 0.49 |
| | | 2002-2022 | 3.41 | 3.35 | 2.49 | 1.42 | 2.25 | 2.24 | 1.33 | 0.48 |

| 4. Standardized Mean | | Gro | ss domestic pr | oduct, real gro | owth | | Inflation, annual average | | | |
|-------------------------|-------------------------------|-------|----------------|-----------------|------|-------|---------------------------|------|------|--|
| Absolut | dised Mean e Error, stdMAE | SFt+1 | AFt+1 | SFt | AFt | SFt+1 | AFt+1 | SFt | AFt | |
| | 2002-2015 | 0.68 | 0.59 | 0.33 | 0.16 | 0.45 | 0.47 | 0.19 | 0.09 | |
| | 2002-2016 | 0.67 | 0.58 | 0.34 | 0.15 | 0.44 | 0.45 | 0.18 | 0.09 | |
| | 2002-2017 | 0.68 | 0.58 | 0.34 | 0.16 | 0.43 | 0.43 | 0.19 | 0.08 | |
| | 2002-2018 | 0.67 | 0.57 | 0.34 | 0.15 | 0.42 | 0.42 | 0.19 | 0.08 | |
| IMAD | 2002-2019 | 0.67 | 0.58 | 0.35 | 0.15 | 0.41 | 0.42 | 0.18 | 0.09 | |
| | 2002-2020 | 0.67 | 0.58 | 0.33 | 0.15 | 0.41 | 0.42 | 0.18 | 0.09 | |
| | 2002-2021 | 0.64 | 0.56 | 0.34 | 0.16 | 0.41 | 0.42 | 0.20 | 0.10 | |
| | 2002-2022 | 0.65 | 0.55 | 0.34 | 0.16 | 0.48 | 0.47 | 0.21 | 0.08 | |
| | 2002-2015 | 0.62 | 0.60 | 0.35 | 0.19 | 0.60 | 0.45 | 0.18 | 0.08 | |
| | 2002-2016 | 0.61 | 0.59 | 0.35 | 0.19 | 0.58 | 0.44 | 0.17 | 0.08 | |
| | 2002-2017 | 0.62 | 0.60 | 0.36 | 0.18 | 0.56 | 0.43 | 0.17 | 0.08 | |
| Dec | 2002-2018 | 0.62 | 0.58 | 0.35 | 0.18 | 0.56 | 0.43 | 0.16 | 0.08 | |
| 805 | 2002-2019 | 0.63 | 0.58 | 0.35 | 0.18 | 0.56 | 0.43 | 0.16 | 0.07 | |
| | 2002-2020 | 0.63 | 0.58 | 0.32 | 0.18 | 0.56 | 0.43 | 0.15 | 0.07 | |
| | 2002-2021 | 0.60 | 0.60 | 0.32 | 0.18 | 0.57 | 0.45 | 0.17 | 0.07 | |
| | 2002-2022 | 0.60 | 0.59 | 0.31 | 0.18 | 0.57 | 0.46 | 0.14 | 0.06 | |
| CCIS | 2002-2015 | 0.64 | 0.58 | 0.37 | 0.19 | 0.49 | 0.50 | 0.21 | 0.07 | |
| | 2002-2016 | 0.63 | 0.58 | 0.37 | 0.19 | 0.46 | 0.50 | 0.19 | 0.07 | |
| | 2002-2017 | 0.65 | 0.59 | N/A | N/A | 0.45 | 0.49 | N/A | N/A | |
| | 2002-2018 | N/A | N/A | 0.36 | 0.18 | N/A | N/A | 0.19 | 0.07 | |
| | 2002-2019 | 0.67 | 0.61 | 0.36 | 0.19 | 0.46 | 0.50 | 0.19 | 0.07 | |
| | 2002-2020 | 0.67 | 0.61 | 0.32 | 0.17 | 0.46 | 0.50 | 0.22 | 0.08 | |
| | 2002-2021 | 0.60 | 0.58 | 0.33 | 0.18 | 0.44 | 0.49 | 0.22 | 0.08 | |
| | 2002-2022 | 0.68 | 0.64 | 0.39 | 0.24 | 0.50 | 0.53 | 0.25 | 0.07 | |
| | 2002-2015 | 0.63 | 0.57 | 0.33 | 0.13 | 0.53 | 0.51 | 0.16 | 0.08 | |
| | 2002-2016 | 0.62 | 0.56 | 0.34 | 0.14 | 0.54 | 0.49 | 0.15 | 0.08 | |
| | 2002-2017 | 0.63 | 0.57 | 0.35 | 0.13 | 0.52 | 0.48 | 0.15 | 0.08 | |
| | 2002-2018 | 0.63 | 0.56 | 0.34 | 0.13 | 0.51 | 0.47 | 0.14 | 0.07 | |
| EC | 2002-2019 | 0.63 | 0.56 | 0.34 | 0.13 | 0.50 | 0.47 | 0.14 | 0.08 | |
| | 2002-2020 | 0.63 | 0.56 | 0.31 | 0.13 | 0.50 | 0.47 | 0.15 | 0.08 | |
| | 2002-2021 | 0.60 | 0.55 | 0.33 | 0.14 | 0.51 | 0.49 | 0.18 | 0.08 | |
| | 2002-2022 | 0.57 | 0.54 | 0.33 | 0.15 | 0.55 | 0.53 | 0.20 | 0.07 | |
| | 2002-2015 | 0.61 | 0.64 | 0.37 | 0.26 | 0.51 | 0.51 | 0.22 | 0.11 | |
| | 2002-2016 | 0.60 | 0.63 | 0.37 | 0.25 | 0.49 | 0.49 | 0.20 | 0.11 | |
| | 2002-2017 | 0.62 | 0.65 | 0.39 | 0.26 | 0.48 | 0.48 | 0.20 | 0.11 | |
| | 2002-2018 | 0.64 | 0.66 | 0.39 | 0.24 | 0.48 | 0.47 | 0.19 | 0.12 | |
| IMF | 2002-2019 | 0.63 | 0.66 | 0.39 | 0.25 | 0.47 | 0.46 | 0.19 | 0.12 | |
| | 2002-2020 | 0.63 | 0.66 | 0.37 | 0.23 | 0.47 | 0.46 | 0.19 | 0.13 | |
| | 2002-2021 | 0.60 | 0.63 | 0.39 | 0.23 | 0.47 | 0.45 | 0.21 | 0.14 | |
| | 2002-2022 | 0.60 | 0.62 | 0.40 | 0.22 | 0.52 | 0.50 | 0.21 | 0.11 | |
| | 2002-2015 | 0.66 | 0.68 | 0.45 | 0.32 | 0.61 | 0.53 | 0.41 | 0.21 | |
| | 2002-2016 | 0.65 | 0.67 | 0.44 | 0.31 | 0.57 | 0.50 | 0.39 | 0.21 | |
| | 2002-2017 | 0.66 | 0.67 | 0.46 | 0.31 | 0.56 | 0.49 | 0.39 | 0.20 | |
| | 2002-2018 | 0.66 | 0.65 | 0.45 | 0.30 | 0.56 | 0.48 | 0.38 | 0.20 | |
| WIIW | 2002-2019 | 0.66 | 0.66 | 0.45 | 0.30 | 0.55 | 0.48 | 0.37 | 0.19 | |
| | 2002-2020 | 0.66 | 0.66 | 0.44 | 0.27 | 0.55 | 0.48 | 0.36 | 0.19 | |
| | 2002-2021 | 0.63 | 0.64 | 0.46 | 0.28 | 0.56 | 0.48 | 0.37 | 0.20 | |
| | 2002-2022 | 0.65 | 0.64 | 0.46 | 0.27 | 0.59 | 0.53 | 0.38 | 0.16 | |

| Standardised Root Mean Square Error, stdRMSE SFt+1 AFt+1 SFt AFt SFt+1 AFt+1 SFt 2002-2015 1.04 0.95 0.43 0.21 0.60 0.59 0.24 2002-2016 1.04 0.95 0.43 0.21 0.58 0.57 0.23 2002-2017 1.04 0.94 0.43 0.21 0.58 0.56 0.23 2002-2018 1.02 0.93 0.43 0.21 0.58 0.56 0.23 2002-2019 1.03 0.94 0.43 0.21 0.58 0.56 0.23 2002-2020 1.03 0.94 0.43 0.21 0.58 0.56 0.23 2002-2021 0.98 0.88 0.43 0.21 0.58 0.56 0.23 2002-2021 0.97 0.87 0.43 0.21 0.58 0.56 0.22 2002-2017 1.00 0.97 0.52 0.23 0.76 0.57 0.22 | Inflation, annual average | | | |
|--|---------------------------|--|--|--|
| IMAD 2002-2015 1.04 0.95 0.43 0.21 0.60 0.59 0.24 2002-2016 1.04 0.95 0.43 0.21 0.58 0.57 0.23 2002-2017 1.04 0.94 0.43 0.21 0.58 0.56 0.23 2002-2018 1.02 0.93 0.43 0.20 0.58 0.56 0.23 2002-2019 1.03 0.94 0.43 0.20 0.58 0.56 0.23 2002-2020 1.03 0.94 0.43 0.21 0.58 0.56 0.23 2002-2021 0.98 0.88 0.43 0.22 0.58 0.56 0.23 2002-2012 0.97 0.87 0.43 0.21 0.58 0.56 0.23 2002-2015 1.00 0.97 0.52 0.23 0.76 0.57 0.22 2002-2016 1.01 0.97 0.53 0.23 0.73 0.55 0.21 2 | AFt | | | |
| IMAD 2002-2016 1.04 0.95 0.43 0.21 0.58 0.57 0.23 2002-2017 1.04 0.94 0.43 0.21 0.58 0.56 0.23 2002-2018 1.02 0.93 0.43 0.20 0.58 0.56 0.23 2002-2019 1.03 0.94 0.43 0.21 0.58 0.56 0.23 2002-2020 1.03 0.94 0.43 0.21 0.58 0.56 0.23 2002-2021 0.98 0.88 0.43 0.22 0.58 0.56 0.23 2002-2022 0.97 0.87 0.43 0.21 0.58 0.56 0.23 2002-2022 0.97 0.87 0.43 0.21 0.58 0.56 0.23 2002-2015 1.00 0.97 0.52 0.23 0.76 0.57 0.22 2002-2017 1.00 0.96 0.52 0.22 0.73 0.55 0.21 2 | 0.10 | | | |
| IMAD 2002-2017 1.04 0.94 0.43 0.21 0.58 0.56 0.23 2002-2018 1.02 0.93 0.43 0.20 0.58 0.56 0.23 2002-2019 1.03 0.94 0.43 0.21 0.58 0.56 0.23 2002-2020 1.03 0.94 0.43 0.20 0.58 0.56 0.23 2002-2021 0.98 0.88 0.43 0.22 0.58 0.56 0.23 2002-2022 0.97 0.87 0.43 0.21 0.58 0.56 0.23 2002-2022 0.97 0.87 0.43 0.21 0.58 0.56 0.23 2002-2015 1.00 0.97 0.52 0.23 0.76 0.57 0.22 2002-2016 1.01 0.97 0.52 0.22 0.73 0.55 0.21 2002-2018 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2 | 0.10 | | | |
| IMAD 2002-2018 1.02 0.93 0.43 0.20 0.58 0.56 0.24 2002-2019 1.03 0.94 0.43 0.21 0.58 0.56 0.23 2002-2020 1.03 0.94 0.40 0.20 0.58 0.56 0.23 2002-2021 0.98 0.88 0.43 0.22 0.58 0.56 0.23 2002-2022 0.97 0.87 0.43 0.21 0.58 0.56 0.23 2002-2015 1.00 0.97 0.52 0.23 0.56 0.26 2002-2016 1.01 0.97 0.52 0.23 0.76 0.57 0.22 2002-2017 1.00 0.96 0.52 0.22 0.73 0.55 0.21 2002-2018 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2021 0.99 0.95 0.46 0.24 0.73 0.55 0.21 2002-2021 | 0.10 | | | |
| MAD 2002-2019 1.03 0.94 0.43 0.21 0.58 0.56 0.23 2002-2020 1.03 0.94 0.40 0.20 0.58 0.56 0.23 2002-2021 0.98 0.88 0.43 0.22 0.58 0.56 0.23 2002-2022 0.97 0.87 0.43 0.21 0.84 0.77 0.30 2002-2015 1.00 0.97 0.52 0.23 0.76 0.57 0.22 2002-2016 1.01 0.97 0.53 0.23 0.73 0.55 0.21 2002-2017 1.00 0.96 0.52 0.22 0.73 0.55 0.21 2002-2018 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2021 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2021 0.99 0.95 0.46 0.24 0.73 0.55 0.20 20 | 0.10 | | | |
| 2002-2020 1.03 0.94 0.40 0.20 0.58 0.56 0.23 2002-2021 0.98 0.88 0.43 0.22 0.58 0.56 0.26 2002-2022 0.97 0.87 0.43 0.21 0.84 0.77 0.30 2002-2015 1.00 0.97 0.52 0.23 0.76 0.57 0.22 2002-2016 1.01 0.97 0.53 0.23 0.73 0.55 0.21 2002-2017 1.00 0.96 0.52 0.22 0.73 0.55 0.21 2002-2018 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2019 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2021 0.99 0.95 0.62 0.23 0.73 0.55 0.20 2002-2021 0.99 0.95 0.46 0.23 0.74 0.57 0.22 2002-2021 | 0.10 | | | |
| 2002-2021 0.98 0.88 0.43 0.22 0.58 0.56 0.26 2002-2022 0.97 0.87 0.43 0.21 0.84 0.77 0.30 2002-2015 1.00 0.97 0.52 0.23 0.76 0.57 0.22 2002-2016 1.01 0.97 0.53 0.23 0.73 0.55 0.21 2002-2017 1.00 0.96 0.52 0.22 0.73 0.55 0.21 2002-2018 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2019 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2020 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2021 0.94 0.94 0.46 0.23 0.74 0.57 0.22 2002-2022 0.93 0.93 0.45 0.23 0.93 0.67 0.18 2002-2015 | 0.11 | | | |
| 2002-2022 0.97 0.87 0.43 0.21 0.84 0.77 0.30 2002-2015 1.00 0.97 0.52 0.23 0.76 0.57 0.22 0.73 0.55 0.21 0.21 0.21 0.73 0.55 0.21 0.21 0.21 0.22 0.73 0.55 0.21 | 0.12 | | | |
| 2002-2015 1.00 0.97 0.52 0.23 0.76 0.57 0.22 2002-2016 1.01 0.97 0.53 0.23 0.73 0.55 0.21 2002-2017 1.00 0.96 0.52 0.22 0.73 0.55 0.21 2002-2018 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2019 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2020 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2021 0.99 0.95 0.46 0.24 0.73 0.55 0.20 2002-2021 0.94 0.94 0.46 0.23 0.74 0.57 0.22 2002-2021 0.93 0.93 0.45 0.23 0.93 0.67 0.18 2002-2015 1.02 0.95 0.51 0.22 0.66 0.61 0.25 | 0.10 | | | |
| BOS 2002-2016 1.01 0.97 0.53 0.23 0.73 0.55 0.21 2002-2017 1.00 0.96 0.52 0.22 0.73 0.55 0.21 2002-2018 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2019 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2020 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2021 0.99 0.95 0.46 0.24 0.73 0.55 0.20 2002-2021 0.94 0.94 0.46 0.23 0.74 0.57 0.22 2002-2022 0.93 0.93 0.45 0.23 0.93 0.67 0.18 2002-2015 1.02 0.95 0.51 0.22 0.66 0.61 0.25 | 0.11 | | | |
| BOS 2002-2017 1.00 0.96 0.52 0.22 0.73 0.55 0.21 2002-2018 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2019 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2019 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2020 0.99 0.95 0.46 0.24 0.73 0.55 0.20 2002-2021 0.94 0.94 0.46 0.23 0.74 0.57 0.22 2002-2022 0.93 0.93 0.45 0.23 0.93 0.67 0.18 2002-2015 1.02 0.95 0.51 0.22 0.66 0.61 0.25 | 0.10 | | | |
| BoS 2002-2018 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2019 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2020 0.99 0.95 0.46 0.24 0.73 0.55 0.21 2002-2021 0.94 0.94 0.46 0.23 0.74 0.57 0.22 2002-2022 0.93 0.93 0.45 0.23 0.93 0.67 0.18 2002-2015 1.02 0.95 0.51 0.22 0.66 0.61 0.25 | 0.10 | | | |
| 2002-2019 0.99 0.95 0.52 0.22 0.73 0.55 0.21 2002-2020 0.99 0.95 0.46 0.24 0.73 0.55 0.20 2002-2021 0.94 0.94 0.46 0.23 0.74 0.57 0.22 2002-2022 0.93 0.93 0.45 0.23 0.93 0.67 0.18 2002-2015 1.02 0.95 0.51 0.22 0.66 0.61 0.25 | 0.10 | | | |
| 2002-2020 0.99 0.95 0.46 0.24 0.73 0.55 0.20 2002-2021 0.94 0.94 0.46 0.23 0.74 0.57 0.22 2002-2022 0.93 0.93 0.45 0.23 0.93 0.67 0.18 2002-2015 1.02 0.95 0.51 0.22 0.66 0.61 0.25 | 0.10 | | | |
| 2002-2021 0.94 0.94 0.46 0.23 0.74 0.57 0.22 2002-2022 0.93 0.93 0.45 0.23 0.93 0.67 0.18 2002-2015 1.02 0.95 0.51 0.22 0.66 0.61 0.25 | 0.10 | | | |
| 2002-2022 0.93 0.93 0.45 0.23 0.93 0.67 0.18 2002-2015 1.02 0.95 0.51 0.22 0.66 0.61 0.25 | 0.10 | | | |
| 2002-2015 1.02 0.95 0.51 0.22 0.66 0.61 0.25 | 0.08 | | | |
| | 0.10 | | | |
| 2002-2016 1.03 0.95 0.51 0.22 0.63 0.60 0.24 | 0.10 | | | |
| 2002-2017 1.02 0.95 N/A N/A 0.63 0.60 N/A | N/A | | | |
| 2002-2018 N/A N/A 0.50 0.22 N/A N/A 0.24 | 0.10 | | | |
| CCIS 2002-2019 1.05 0.98 0.51 0.22 0.65 0.62 0.24 | 0.10 | | | |
| 2002-2020 1.05 0.98 0.45 0.21 0.65 0.62 0.31 | 0.11 | | | |
| 2002-2021 0.98 0.90 0.46 0.22 0.63 0.60 0.31 | 0.11 | | | |
| 2002-2022 1.02 0.95 0.55 0.38 0.82 0.79 0.41 | 0.09 | | | |
| 2002-2015 1.00 0.92 0.45 0.19 0.67 0.62 0.22 | 0.11 | | | |
| 2002-2016 1.00 0.92 0.45 0.19 0.67 0.59 0.21 | 0.10 | | | |
| 2002-2017 1.00 0.91 0.46 0.18 0.66 0.59 0.20 | 0.10 | | | |
| 2002-2018 0.99 0.90 0.45 0.18 0.66 0.59 0.20 | 0.10 | | | |
| EC 2002-2019 0.99 0.90 0.45 0.18 0.66 0.59 0.20 | 0.10 | | | |
| 2002-2020 0.99 0.90 0.41 0.19 0.66 0.59 0.21 | 0.10 | | | |
| 2002-2021 0.92 0.86 0.42 0.20 0.67 0.61 0.25 | 0.11 | | | |
| 2002-2022 0.90 0.85 0.43 0.20 0.86 0.80 0.34 | 0.09 | | | |
| 2002-2015 0.98 1.01 0.50 0.34 0.64 0.65 0.30 | 0.13 | | | |
| 2002-2016 0.98 1.01 0.50 0.34 0.61 0.62 0.29 | 0.13 | | | |
| 2002-2017 0.98 1.01 0.52 0.34 0.61 0.61 0.28 | 0.13 | | | |
| 2002-2018 0.98 1.01 0.52 0.34 0.61 0.61 0.28 | 0.14 | | | |
| IMF 2002-2019 0.98 1.01 0.52 0.34 0.60 0.61 0.28 | 0.14 | | | |
| 2002-2020 0.98 1.01 0.48 0.31 0.60 0.61 0.28 | 0.15 | | | |
| 2002-2021 0.92 0.95 0.52 0.30 0.61 0.61 0.30 | 0.16 | | | |
| 2002-2022 0.91 0.94 0.52 0.30 0.83 0.81 0.31 | 0.13 | | | |
| 2002-2015 1.05 1.05 0.69 0.41 0.77 0.76 0.47 | 0.25 | | | |
| 2002-2016 1.05 1.05 0.69 0.41 0.73 0.72 0.45 | 0.24 | | | |
| 2002-2017 1.04 1.04 0.69 0.41 0.73 0.72 0.45 | 0.24 | | | |
| 2002-2018 1.03 1.02 0.68 0.40 0.73 0.72 0.45 | 0.24 | | | |
| WIIW 2002-2019 1.04 1.03 0.68 0.40 0.73 0.71 0.45 | 0.24 | | | |
| 2002-2020 1.04 1.03 0.65 0.36 0.73 0.71 0.44 | 0.23 | | | |
| 2002-2021 1.00 0.98 0.66 0.38 0.74 0.72 0.44 | 0.24 | | | |
| 2002-2022 0.98 0.97 0.65 0.37 0.90 0.90 0.53 | 0.19 | | | |

Source:

forecasts by institutions.

Notes:

Negative values of mean error (ME) indicate an underestimation, while positive values indicate an overestimation of actual trends.

Average annual inflation forecasts by IMAD, CCIS and IMF refer to CPI inflation, while forecasts by BoS, EC and WIIW refer to HICP inflation.

The 2019 forecasts for 2020 are not taken into account as COVID-19 epidemic could not be predicted at that time.

For 2020, all institutions took into account only the forecasts made after the epidemic was declared in Slovenia on 12 March 2020. IMAD took into account the Summer Forecast of June 2020 instead of the regular Spring Forecast of March 2020.

Abbreviations:

SFt+1 – Spring forecast for the year ahead; AFt+1 – Autumn forecast for the year ahead; SFt – Spring forecast for the current year; AFt – Autumn Forecast for the current year; ME – Mean Error; MAE – Mean Absolute Error; RMSE – Root Mean Square Error; stdMAE – Standardised Mean Absolute Error; stdRMSE - Standardised Root Mean Square Error.

Acronyms

Acronyms in the text

| AF | autumn forecast |
|----------|---|
| APP | Asset Purchase Programme |
| BIS | Bank for International Settlements |
| BoS | Bank of Slovenia |
| CCIS | Chamber of Commerce and Industry of Slovenia |
| CO2 | carbon dioxide |
| СРІ | Consumer Price Index |
| СҮ | Cyprus |
| EC | European Commission |
| ECB | European Central Bank |
| EIA | U.S. Energy Information Administration |
| ENTSO-E | European Network of Transmission System Operators for Electricity |
| ESI | economic sentiment indicator |
| ESS | Employment Service of Slovenia |
| EU | European Union |
| EUR | Euro |
| EUROSTAT | The Statistical Office of the European Union |
| EU-SILC | European Union Statistics on Income and Living Conditions |
| FAO | Food and Agriculture Organization of the United Nations |
| GDP | Gross domestic product |
| GR | Greece |
| HICP | Harmonised Index of Consumer Prices |
| HIIS | Health Insurance Institute of Slovenia |
| HR | Croatia |
| HU | Hungary |
| ICT | Information and communication technologies |
| IE | Ireland |
| IER | Institute for Economic Research |
| IMAD | Institute of Macroeconomic Analysis and Development |
| IMF | International Monetary Fund |
| IT | Italy |
| LU | Luxembourg |
| LT | Lithuania |
| MAE | Mean Absolute Error |
| ME | Mean Error |
| NEIG | Non-energy industrial goods |
| OECD | Organisation for Economic Co-operation and Development |
| PEEP | Pandemic emergency purchase programme |
| PMI | Purchasing Managers' Index |
| REACT-EU | Recovery Assistance for Cohesion and the Territories of Europe |
| RMSE | Root Mean Square Error |
| RRP | Recovery and Resilience Plan |
| RS | Republic of Slovenia |

| RUB | Russian rouble |
|-------|--|
| SES | Structure of Earnings Survey |
| SF | spring forecast |
| SI | Slovenia |
| SK | Slovakia |
| SNA | System of National Accounts |
| SRDAP | Statistical Register of Employment |
| SURS | Statistical Office of the Republic of Slovenia |
| TTF | Title Transfer Facility |
| USD | US dollar |
| VAR | vector autoregression |
| VAT | value added tax |
| WIIW | Wiener Institut für Internationale Wirtschaftsvergleiche |

Abbreviations of the Standard Classification of Activities (SKD 2008)

A - agriculture, forestry and fishing, B - mining and quarrying, C - manufacturing, 10 - manufacture of food products, 11 manufacture of beverages, 12 - manufacture of tobacco products, 13 - manufacture of textiles, 14 - manufacture of wearing apparel, 15 - manufacture of leather and related products, 16 - manufacture of wood and of products of wood and cork, except furniture, manufacture of articles of straw and plaiting materials, 17 - manufacture of paper and paper products, 18 - printing and reproduction of recorded media, 19 - manufacture of coke and refined petroleum products, 20 - manufacture of chemicals and chemical products, 21 - manufacture of basic pharmaceutical products and pharmaceutical preparations, 22 - manufacture of rubber and plastic products, 23 - manufacture of other non-metallic mineral products, 24 - manufacture of basic metals, 25 manufacture of fabricated metal products, except machinery and equipment, 26 - manufacture of computer, electronic and optical products, 27 - manufacture of electrical equipment, 28 - manufacture of machinery and equipment n.e.c., 29 - manufacture of motor vehicles, trailers and semi-trailers, 30 - manufacture of other transport equipment, 31 - manufacture of furniture, 32 other manufacturing, 33 - Repair and installation of machinery and equipment, 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, 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 organisations and bodies

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