Independent Fiscal Institution

FFR

Fiscal Follow-Up Report

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HIGHLIGHTS

- GDP growth is expected to decelerate from 4.6% in 2021 to 2.6% in 2022, slowing to 0.9% in 2023.
- In the medium term, the volume GDP growth forecast is 2.0%.
- IPI reduction and tax exemptions will remove R$ 64.8 billion from the Union's primary revenue in 2023.
- Central government net revenue is expected to reach 18.5% of GDP in 2022, falling back to 17.7% in 2023.
- Transition PEC softens the spending ceiling and expands expenditures not subject to the ceiling by R$ 200.3 billion.
- In the baseline scenario, primary expenditures should reach 19.2% of GDP in 2023, 0.6 p.p. above 2022.
- IFI projection for gross debt in 2022 was revised to 76.6% of GDP.
- Primary surplus required to stabilize the debt at 76.6% is 1.5% of GDP.
- Prospect of increasing primary deficit may raise the debt in the coming years.
- The probability that public debt will exceed 90% of GDP by 2026 has been estimated at 22%.

FEDERAL SENATE
President of the Federal Senate
Senator Rodrigo Pacheco (PSD-MG)

INDEPENDENT FISCAL INSTITUTION
Executive Director
Daniel Veloso Couri

Director
Vilma da Conceição Pinto

Analysts
Alessandro Ribeiro de Carvalho Casalecchi
Alexandre Augusto Seijas de Andrade
Pedro Henrique Oliveira de Souza
Rafael da Rocha Mendonça Bacciotti

Public Relations Executive
Carla Cristina Osorio Caldas

Interns
Allanda Martins Dias
Pedro Ribeiro de Santana Gonzaga

REPORT LAYOUT
COMAP/SECOM and SEFPRO/SEGRAF

Covering letter

The Fiscal Follow-up Report (RAF) is the IFI's monthly economic analysis and serves the purposes in art. 1 of Senate Resolution No. 42 of 2016. In this issue, as in May and November, the RAF reviews the medium-term fiscal scenario (2022 to 2031) in addition to the conjuncture analysis.

With the elections over, the scenario for the coming years is becoming more apparent. The proposal of the elected government, represented at this moment by the so-called Transition PEC, motivates concern. In summary, the PEC removes from the spending ceiling the expenses with the Auxílio Brasil – Brazil Aid (which should be called Bolsa Família – Family Allowance again) and investments (up to a specific limit), as well as more minor expenses funded with own resources, from agreements and donations. The withdrawal does not imply a recalculation of the ceiling, opening a space of R$ 103.3 billion within the limit to be filled by new expenses. In addition, the promise to expand the current Brazil Aid will cost R$ 69.8 billion in 2023.

In the end, the bill could be very high. If all the space left in the ceiling is filled, the fiscal impact of the Transition PEC's budgetary impact will reach R$ 173.1 billion next year. This is a potential impact that, therefore, will not necessarily occur. In our baseline scenario, we assume that, in addition to the increase in Brazil Aid and the minimum wage readjustment based on the average economic growth over the past five years, discretionary spending will be gradually recomposed, reaching 2024 the level before the pandemic (1.8% of GDP). Combined with the other macro-fiscal projections, this scenario would lead us to a deficit that would last throughout the forecast horizon (until 2031). The gross debt, which should close in 2022 at 76.6% of GDP, would rise to 79.5% in 2023 and reach 95.3% of GDP in 2031. This is not a good prognosis.

In the optimistic scenario, the main difference, on the expenditure side, is that the recomposition of discretionary expenses would occur even more gradually, reaching 1.8% of GDP only in 2026. Combined with more favorable macroeconomic hypotheses, this scenario could lead to primary surpluses as early as 2024 and gross debt at 65.5% of GDP in 2031. In the pessimistic scenario, we assume that discretionary spending would return to the 2014–2016 average level (2.3% of GDP) starting in 2024. This case would be compatible with increasing primary deficits and debt of 147.6% of GDP in 2031.

The Transition PEC makes it possible to implement campaign commitments but does not show how this relates to the account's sustainability in the medium term. In this context of high uncertainty, we elaborated stochastic projections for the debt with the simulation of thousands of possible scenarios from 2022 to 2026. The analysis allows us to conclude that, based on the assumptions adopted in the baseline scenario, the probability of the debt going over 90% in 2026 is 22%. Still, the likelihood of the debt simply being higher in 2026 than in 2022 is 86.3%.

The discussion around funding sources for the proposed spending expansion must begin. When this happens, we will face tight spending, a high tax burden, and a debt level above the average for emerging countries. The macroeconomic context is not likely to be favorable. The world will grow less with rapid and synchronized monetary tightening in most advanced economies, while commodities and domestic inflation will no longer contribute to tax collection. The approval of next year's Budget is being discussed at the moment. But we must look beyond 2023.

Daniel Veloso Couri
IFI Executive Director

Vilma da Conceição Pinto
IFI Director

Summary

- The Brazilian economy grew above expected during the year's first half. However, recent data suggest a slower consumption and GDP expansion in the third and fourth quarters, despite the recovery of the labor market and the ongoing fiscal stimulus. The lagged effects of tightening monetary policy and slowing growth in the global economy reinforce the prospect of slowing GDP in 2023. In the medium term, with the output gap narrowing, it is assumed that real GDP growth would converge to the potential rate (estimated at 2.0%) and the real interest rate to its natural level (4.0%). **(Page 6)**
- The surprise in tax collection over 2022 and the economic activity on the rise, with the recovery of the services sector, have led to revisions in the central government's primary revenue forecasts in recent months. Total and net primary revenues are expected to decline in 2023 due to the anticipated slowdown in economic activity and the continuing exemption of federal taxes, estimated at R$ 52.9 billion in the 2023 PLOA. In the following years, revenues should recover, driven by economic growth and revenues from oil exploration. **(Page 16)**
- The uncertainty regarding the fiscal rules brings additional risk to the primary expenditure scenario. The current revision considers this risk and the measures that make up the Transition PEC, such as the substantial increase in the Bolsa Família program and the recovery of public investments. The result would be a permanent increase in spending without, as yet, discussing how to finance this fiscal expansion. **(Page 25)**
- The worsening of the central government's primary balance prospect after the announcement of the Transition PEC could continuously increase indebtedness in the medium term. Without a practical constraint on expenditure growth and with no counterpart on the revenue side, the general government gross debt would reach 95.3% of GDP by 2031 in the new IFI baseline scenario. Stabilizing the debt at 76.6% over the medium term would require an average primary surplus of 1.5% of GDP, far from the 1% GDP deficit projected by the IFI for 2023 to 2031. **(Page 36)**
- Stochastic scenarios simulated around our deterministic baseline scenario allowed us to estimate that the probability of the DBGG exceeding 90% of GDP by 2026 is 22%. Even if this threshold is not exceeded, the likelihood that the DBGG will resume its growth trajectory in the coming years is high. The simulation of stochastic scenarios allows us to communicate the uncertainty about the future of the DBGG and complements the information contained in the deterministic scenarios (baseline, optimistic, and pessimistic). **(Page 42)**

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1. MACROECONOMIC CONTEXT

The November RAF presents the update of the IFI's forecasts for macro-fiscal variables in the short (2022-2023) and medium term (2024–2031). The realized data and the reassessment of the assumptions behind the scenarios (baseline, optimistic, and pessimistic) allow the forecasts to reflect the current state of the economy. The three scenarios' purpose is to highlight the degree of uncertainty and their dependence on different configurations. An overview of how the macroeconomic forecasts that underpin the IFI's fiscal scenarios are elaborated was presented in Special Study No. 13[1].

Compared to the scenario presented in May 2022[2], the challenges concerning the external environment have intensified. The rapid and synchronized monetary tightening in most advanced economies to moderate persistent inflationary pressures, the prolongation of the war in Ukraine, with progressive reduction of energy supply to Europe, and the maintenance of mobility-restricting measures to contain the transmission of Covid-19 in China reinforce a perspective of decelerating global growth in the coming quarters. In a recent report, the International Monetary Fund (IMF) revised its estimates downward for the global economy.

The Brazilian economy grew above expected during the first half of the year and benefited partly from the consolidation of the process of reopening the economy, the normalization of on-site activities, and the effect on household consumption of measures to stimulate disposable income. Recent data on economic activity suggest a dynamic of lower growth in consumption and GDP in the third and fourth quarters, despite the recovery in the labor market (seen in the drop in the unemployment rate and the wage decline interruption) and the fiscal stimulus underway.

Although the core inflation measures remain at a high level, well above the interval compatible with compliance with the target, the IPCA surprised us favorably under the effect of tax measures on fuel, energy, and communication services (adopted in July) and the pass-through of the drop in international commodity prices to domestic prices. In the case of administered prices, it is worth noting that the accumulated variation over the last 12 months, which stood at 11.7% in June, dropped to -2.8% in October, reflecting, above all, the behavior of gasoline (+26.9% to -22.3%) and electricity (+2.2% to -18.2%). In September, Copom ended the monetary tightening cycle reinforcing the strategy of maintaining the Selic rate at 13.75% p.a. for a prolonged period to ensure the convergence of inflation expectations to the target.

The economic outlook carries a higher-than-usual degree of volatility and uncertainty, both due to the adverse external environment and to the challenge of the newly elected government coordinating expectations regarding public accounts, given the need to reconcile the expansion of the primary deficit and the restoration of fiscal rules. In the baseline, the IFI predicts a deceleration in real GDP growth to 2.6% in 2022 and 0.9% in 2023 (from 4.6% in 2021). The forecast for real GDP growth is 2.0% in the medium term. Consumer inflation is also forecast to decelerate from 10.1% in 2021 to 5.6% in 2022 and 4.6% in 2023, with gradual convergence to the target (3.0%).

1.1 Short-term forecasts

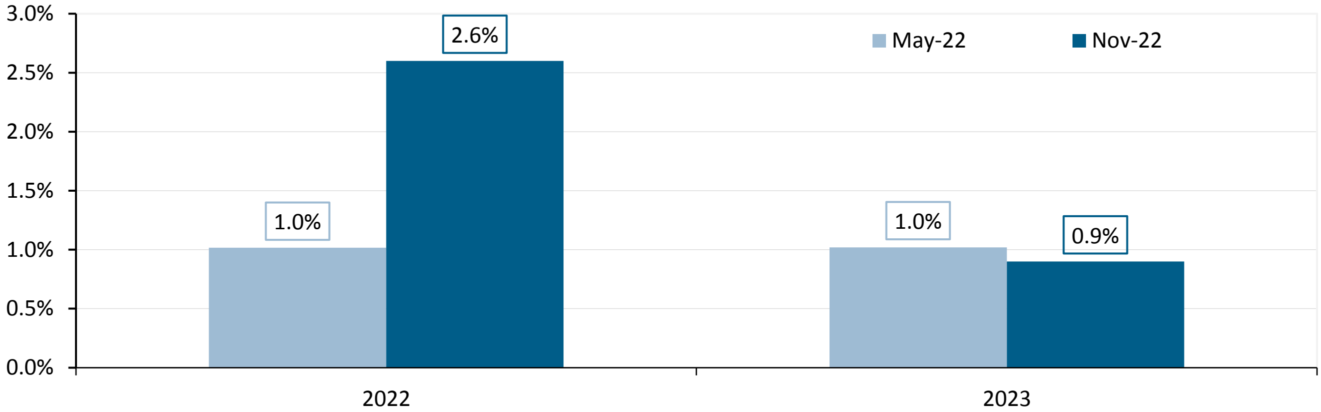
GDP should grow by 2.6% in 2022. The IFI estimates that GDP will advance 0.4% in the third quarter and drop 0.3% in the fourth quarter compared to the immediately previous period, after seasonal adjustment, which would represent a moderation in the pace of expansion seen in the first (1.1%) and second quarters (1.2%). With this quarterly dynamic, the GDP real change in 2022 is estimated at 2.6%, an increase of 1.6 percentage points (p.p.) compared to the projection

[1] Available at: https://www2.senado.leg.br/bdsf/bitstream/handle/id/577405/EE13.pdf.

[2] Available at: https://www2.senado.leg.br/bdsf/bitstream/handle/id/597893/RAF64_MAI2022.pdf

presented in May 2022 (1.0%), when the last broad revision of the main macroeconomic and fiscal variables took place for the medium term. The change to the previous forecast, mainly due to the acceleration in activity during the year's first half, can be attributed primarily to the expectation of more robust growth in household consumption, driven by measures such as the increase in the benefit of the Brazil Aid Program (PAB) from R$ 224 to R$ 400 and the release of about R$ 30 billion of FGTS funds.

FIGURE 1. GROWTH OUTLOOK BY RAF EDITION

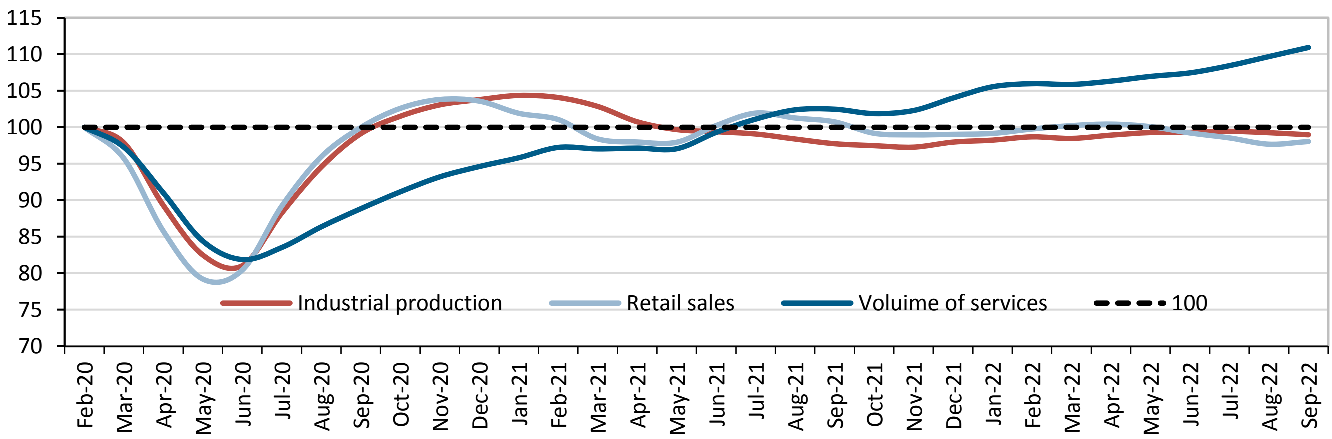


Source: IBGE and IFI. Prepared by: IFI.

Weakening of economic activity in the third and fourth quarters. Recent economic activity data suggest a lower GDP growth dynamic in the year's second half. According to the IBGE's sectorial surveys, industrial production and the consumption of goods (volume of retail sales) registered variations of -0.3% and -1.2%, while the consumption of services (volume of service sector revenues) advanced 3.2% in comparison with the previous quarter, after seasonal adjustment.

The services sector (Figure 2) continues to be the primary growth vector of economic activity, benefiting from the consolidation of the reopening process and the normalization of on-site activities. At the same time, retail and industry evolve below the pre-pandemic period. Data available for the fourth quarter show a reduction in business and consumer confidence, pointing in the direction of a weakening economy also in the fourth quarter.

FIGURE 2. ECONOMIC ACTIVITY INDICATORS (INDEX NUMBER - FEB/20=100)



Fonte: IBGE. Elaboração: IFI.

For 2023, a growth of 0.9% is projected. The baseline scenario considers the maintenance of the Brazil Aid extra benefit, promoting some resilience to consumption. However, the restrictive monetary policy effects on demand and the global economy moderation (especially of trade partners such as China, the United States, and the Euro Zone) contribute to the expected GDP deceleration.

The GDP growth forecast in the short term is obtained by adding up the components of the expenditure perspective, detailed in Table 1. The contribution of domestic demand to economic growth this and the following year is estimated at 2.0 p.p. and 1.1 p.p., respectively. The lower impact of domestic demand from 2022 to 2023 reflects the perspective of household consumption deceleration. In turn, net exports (external demand) should present contributions of 0.6 p.p. and -0.2 p.p., reflecting the slowdown expectation in exports of goods and services, given the lesser demand for imports from commercial partners.

TABLE 1. GDP VOLUME GROWTH FORECASTS

	2021	2022	2023
Volume GDP and demand-side components (% growth)	**4.6%**	**2.6%**	**0.9%**
Household consumption	3.6%	3.5%	1.0%
Government consumption	2.0%	1.1%	1.0%
Gross fixed capital formation	17.2%	-0.5%	1.5%
Exports	5.8%	3.0%	1.8%
Imports	12.4%	0.0%	3.0%
Contributions to the GDP volume growth (p.p.)			
Domestic demand	**5.6**	**2.0**	**1.1**
Household consumption	2.3	2.3	0.6
Government consumption	0.5	0.2	0.2
Investment (GFCF and changes in inventories)	2.9	-0.5	0.3
Net exports	**-1.0**	**0.6**	**-0.2**

Source: IBGE. Prepared by: IFI.

Global growth slowdown. In the October edition of the World Economic Outlook (WEO)[3], the IMF assesses that the prospects for the global economy next year have worsened since the last update, which took place in July. The broad-based slowdown in economic activity reflects the destabilization caused by Russia's invasion of Ukraine, the rapid and synchronized monetary tightening in most advanced economies to moderate persistent inflationary pressures, and the slowdown in economic growth in China, reflecting the zero-tolerance policy for covid-19 and the crisis in the real estate sector. The IMF estimates that global GDP will decelerate from 6.0% in 2021 to 3.2% in 2022 and 2.7% in 2023. Global inflation is forecast to rise from 6.4% in 2021 to 9.1% in 2022, declining to 5.1% in 2023 (Table 2).

[3] Available at: https://www.imf.org/en/Publications/WEO/Issues/2022/10/11/world-economic-outlook-october-2022

TABLE 2. REAL GDP AND CONSUMER PRICES – IMF'S WORLD ECONOMIC OUTLOOK FORECASTS (OCTOBER)

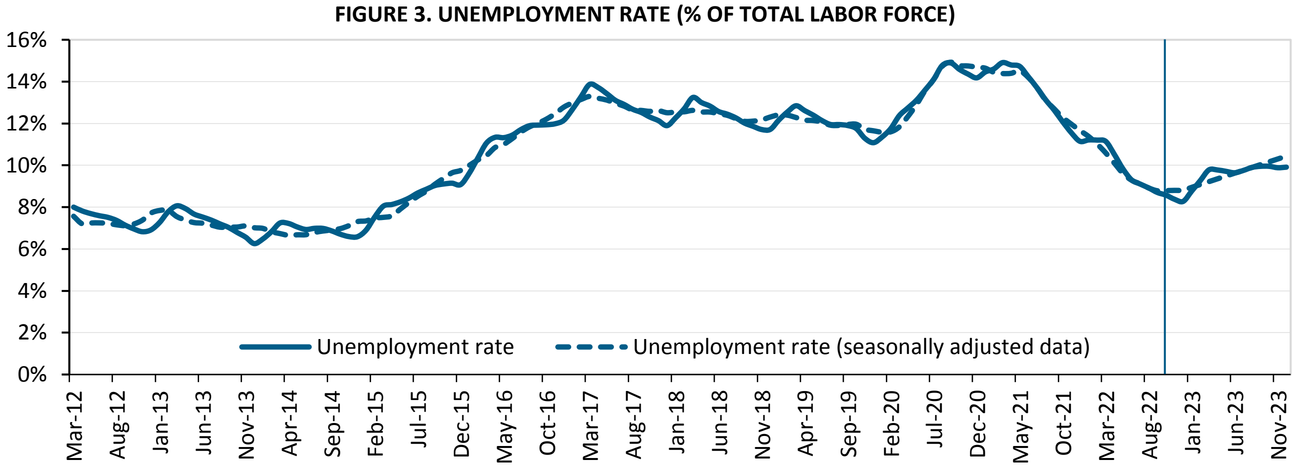
	Real GDP (annual percent change)			Consumer prices (year-end to year-end changes)		
	2021	2022	2023	2021	2022	2023
World output	**6.0**	**3.2**	**2.7**	**6.4**	**9.1**	**5.1**
Advanced Economies	**5.2**	**2.4**	**1.1**	**5.2**	**7.0**	**3.2**
United States	5.7	1.6	1.0	7.4	6.4	2.3
Euro Area	5.2	3.1	0.5	5.0	8.8	4.5
United Kingdom	7.4	3.6	0.3	5.4	11.3	6.3
Emerging and Developing Economies	**6.6**	**3.7**	**3.7**	**7.3**	**10.6**	**6.4**
China	8.1	3.2	4.4	1.8	2.7	1.8
Brazil	4.6	2.8	1.0	10.1	6.0	4.7

Source: IMF (World Economic Outlook Database). Prepared by IFI.

The labor market continues to heat up. Labor market data for the quarter that ended in September maintain a positive dynamic. However, the occupation increase and the unemployment rate drop are occurring at a slower pace when compared with previous quarters. The unemployment rate reached 8.7% of the labor force in the quarter that ended in September, 3.9 p.p. below the rate recorded in the same period a year earlier (12.6%). In August, the reduction had been 4.2 p.p. The population employed in the informal segments of the economy (39.1 million people) grew by 3.8% compared to the same period a year earlier. At the same time, formal employment (60.1 million) rose 8.8% in the period – albeit less than in the previous quarter (9.5%). According to the General Registry of Employed and Unemployed Persons (Caged), the stock of formal workers in September rose 6.0% to the same period in 2021, with a highlight to the performance of the civil construction sector (10.8%) and services (7.2%), with higher variations compared to agriculture (3.9%) and the manufacturing industry (3.8%).

Concerning income, the real wages in the quarter that ended in September advanced 2.5% in comparison to the same period a year earlier (the first positive variation in a year and a half), reflecting the magnitude of the nominal adjustment above inflation. Influenced positively by the recent dynamics of real wages and, mainly, by the increase in the employed population, the overall real labor income advanced 9.9% in the same comparison. However, the pace of job creation should continue to decelerate over the coming months in line with the prospect of cooling economic activity. In the base scenario, the average unemployment rate would reach 9.4% in 2022, rising to 9.8% in 2023.

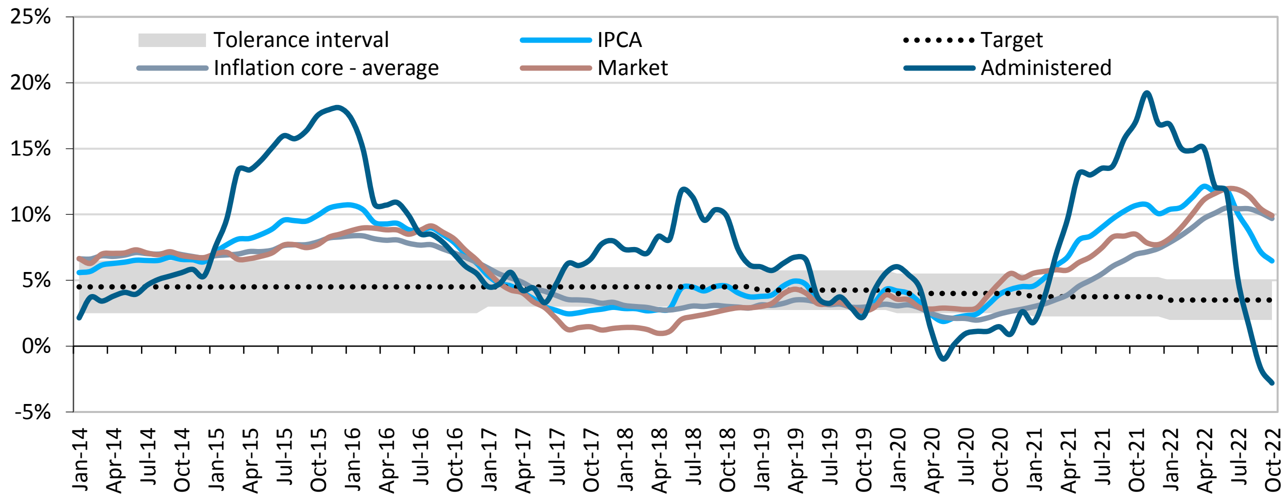
FIGURE 3. UNEMPLOYMENT RATE (% OF TOTAL LABOR FORCE)



Source: IBGE. Prepared by: IFI.

Consumer inflation reached 6.47% in the last twelve months ended in October. The IPCA in October increased by 0.59%, with an accumulated high of 6.47% in the previous 12 months (compared to 7.17% in September). After registering deflation in the last three months, the IPCA rose again in October. The change in administered prices, which account for approximately 25% of the total IPCA, went from -1.21% to +0.18%, partly reflecting the less intense drop in gasoline prices (-1.56% in October, compared to -8.33% in September). Market prices rose 0.73%, accelerating against August (0.02%), pressured by services (0.67%), food-at-home (0.80%), and industrial goods inflation (0.75%). The average of the inflation cores monitored by the Central Bank – measures that seek to remove the influence of more volatile items from total inflation – rose from 0.41% in September to 0.55% in August. In the 12 months that ended in September, the average decelerated from 10.12% to 9.69%, remaining at a high level, well above the interval compatible with compliance with the 2022 inflation target.

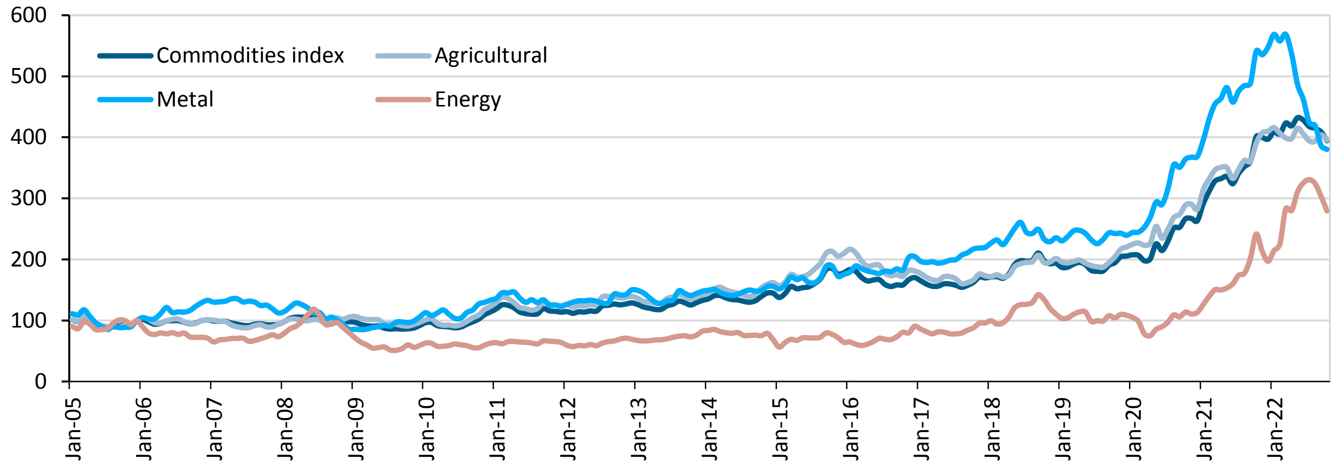
FIGURE 4. IPCA, INFLATION TARGET, AND TOLERANCE INTERVAL (% 12 MONTHS)



Source: IBGE and Central Bank. Prepared by: IFI.

Commodity prices in reais continue their downward trend. The Commodities Index - Brazil (IC-Br) calculated by the Central Bank retreated 3.5% between September and October after falling 1.4% in the previous month. In twelve months, the IC-Br has accumulated a 1.7% contraction, decelerating substantially to September (+13.4%). The index's breakdown shows that the retreat has been disseminated among the following components: agricultural commodities (-2.1%), metals (-1.6%), and energy (-7.8%). This performance reflects, in part, the reduction in international market prices with the prospect of weakening demand for raw materials. While supply constraints linked to the war in Ukraine support commodity prices, the challenging external environment (in a context of synchronized interest rate tightening in the United States and Europe and the slowing Chinese economy) is a restraining factor by reducing the demand for raw materials.

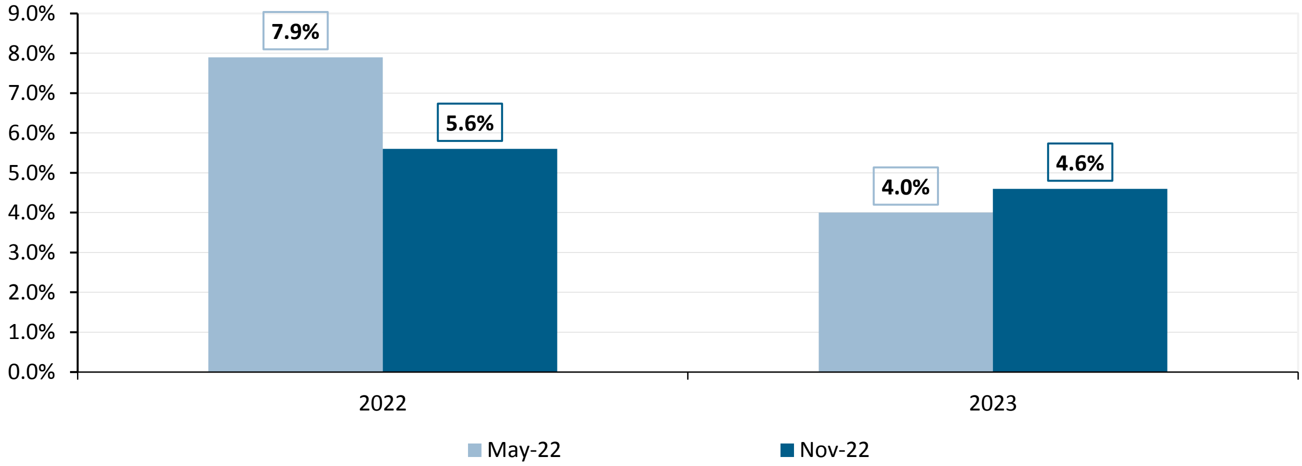
FIGURE 5. COMMODITIES INDEX (IN R$)



Source: Central Bank. Prepared by: IFI.

The IPCA is expected to end 2022 at 5.6%, slowing down to 4.6% in 2023. The recent data corroborate the perspective for the IPCA in 2022 at 5.6%, a lower variation than the projection presented in May (7.9%), reflecting, in part, the effect of the tax cut measures authorized in July (fuels, residential electricity, and telecommunications) and the reduction in fuel prices motivated by the drop in oil prices. For 2023, the projected inflation would slow down to 4.6% (still above the target of 3.25%) under the hypotheses of maintenance of the federal tax exemptions (PIS/Cofins and Cide) on fuels, the relative stability of the nominal exchange rate (R$/US$ 5.10 in 2022 and R$/US$ 5.17 in 2023), the continued fall in commodity prices, with a gradual return to the historical average, and the weakening of domestic economic activity.

FIGURE 6. IPCA OUTLOOK BY RAF EDITION

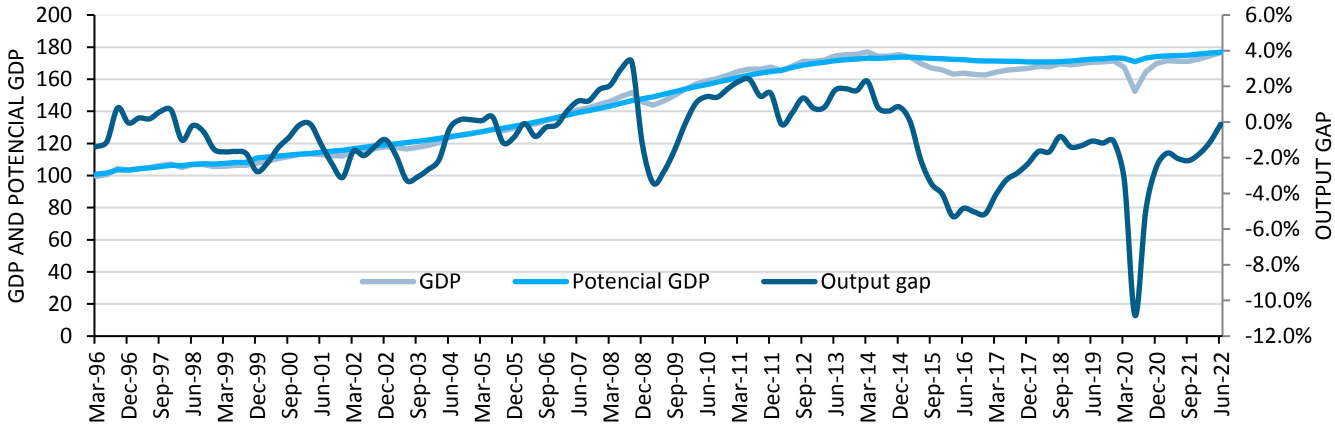


Source: IBGE and IFI. Prepared by: IFI.

Output gap approaches zero in Q2 2022. After the substantial increase in the 2020 recession caused by the pandemic, in the recent period, we observe a gradual narrowing of the output gap, estimated at -0.1% in the second quarter of 2022. Figure 7 shows the output gap dynamics, calculated as the difference (percentage) between the actual and potential output (medium or long-term trend) between the first quarter of 1996 and the second quarter of 2022.

We evaluate the economy's cyclical position (the size of the output gap) using several approaches due to the high uncertainty in extracting the potential output. In practical terms, as every method has advantages and limitations, the output gap central estimate comes from comparing and evaluating a set of methodologies[4]. Throughout 2023, the output gap is expected to remain negative, reflecting, to a large extent, the contractionary stance of monetary policy and the prospect of a global economic slowdown.

FIGURE 7. GDP AND OUTPUT GAP (% POTENTIAL GDP)



Source: IBGE and IFI. Prepared by: IFI.

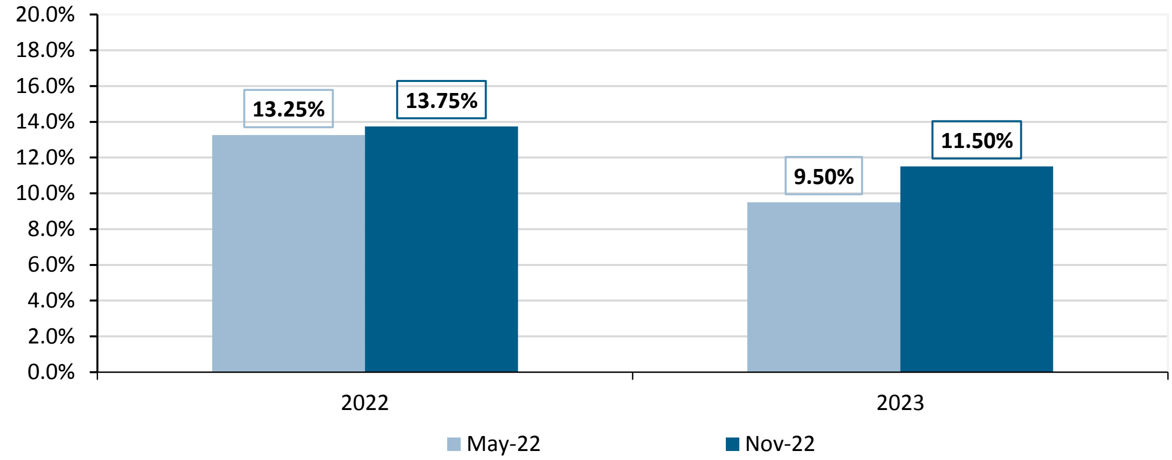
Copom maintains the Selic rate at 13.75% per year. In October, the Monetary Policy Committee (Copom) decided to hold the base interest rate at 13.75% p.a. In the communication released after the meeting, the Committee stated that it would evaluate if the strategy of maintaining the base interest rate at the current level for an extended period will be sufficient to bring inflation to the target within the relevant horizon (first quarter of 2024).

Copom expects inflation to converge to the target in 2024. Copom's inflation forecasts in the reference scenario, with the interest rate trajectory extracted from the Focus Survey, are 5.8% for 2022, 4.8% for 2023, and 2.8% for 2024. According to the Committee, the uncertainty surrounding the projections is high, and the variance of the balance of risks for future inflation is higher than usual. Among the upside factors, it mentions the more remarkable persistence of global inflationary pressures, uncertainty about the future of the country's fiscal framework, additional fiscal stimuli that imply sustaining aggregate demand, and the narrower output gap due to the resilient activity in the short term. Among the downside risks, it highlights a further drop in commodity prices in local currency, a sharper-than-projected slowdown in economic activity, and the maintenance of tax cuts projected to be reversed in 2023.

The Selic rate is projected at 13.75% p.a. in 2022 and 11.50% p.a. in 2023. The IFI's baseline scenario contemplates that the Selic rate will remain at 13.75% p.a. until mid-2023, dropping to 11.50% p.a. at the end of next year. The IFI assesses that the maintenance of expectations for the IPCA of 2024 (relevant horizon) above the target – reflecting uncertainties about fiscal policy sustainability – would limit interest rate reduction over the next year.

[4] Hodrick-Prescott (HP) filter; multivariate HP filter, following Areosa (2008); Hamilton filter, following Quast and Wolters (2019), and production functions that make use of the HP filter/multivariate HP filter/Hamilton filter and state space format models, following Orair and Bacciotti (2018), to extract the unemployment rate, NUCI, and total factor productivity trends. Trend estimates were obtained from extended historical series to minimize end-of-sample bias.

FIGURE 8. SELIC OUTLOOK BY RAF EDITION



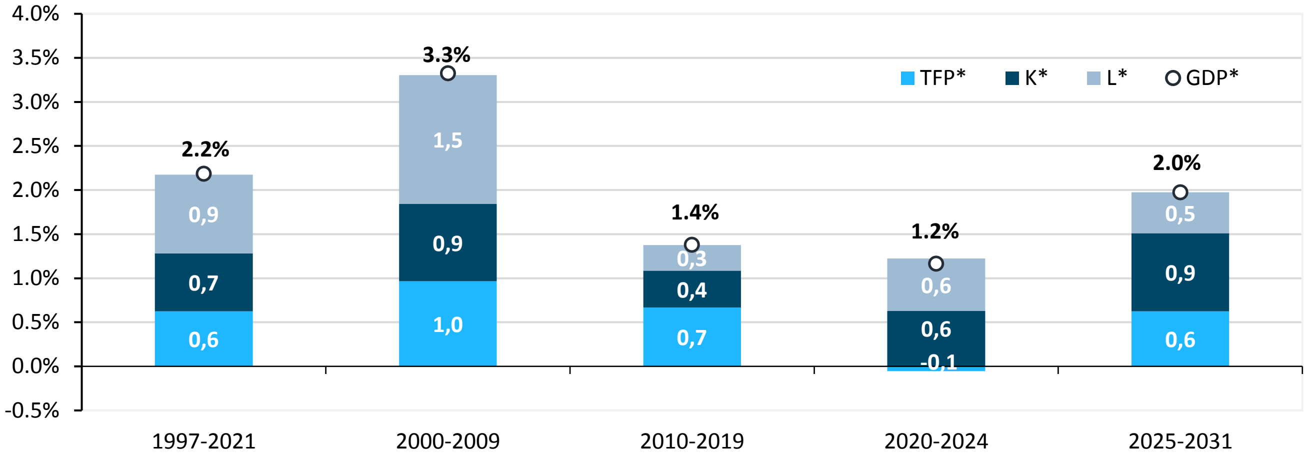
Source: IBGE and IFI. Prepared by: IFI.

1.2 Medium-term forecasts

The projection for real GDP growth in the medium term is 2.0%. In the baseline scenario, it is expected that the slack in the economy (measured by the output gap) will be eliminated by mid-2024 when GDP evolves in line with its potential growth, simulated by the IFI using the production function approach[5]. In the 2024–2031 horizon, it is assumed that the GDP growth will stabilize around 2.0%, slightly below the historical average (1997–2021) of 2.2% (Figure 9). This value is composed of the following contributions: +0.6 p.p. of the total factor productivity (close to the historical average), +0.9 p.p. of the capital stock (higher than the historical average of 0.7 p.p.), and +0.5 p.p. of the labor stock (below the historical average of 0.9 p.p., since the labor force is expected to grow more slowly due to the population aging).

[5] According to this methodology, the output level reflects the capital stock's size, the number of hours worked offered by the employed population, and the total factor productivity (combined capital and labor inputs productivity). For more information, access Special Study (SE) No. 4, available at: https://www2.senado.leg.br/bdsf/bitstream/handle/id/536764/EE_04_2018.pdf.

FIGURE 9. POTENTIAL GDP GROWTH RATE DECOMPOSITION (P.P.)



Source: IFI.

The inflation rate moves towards the target (3.0%), while the Selic rate converges to 7.0%. Once actual GDP equals potential GDP, and the inflation rate is anchored to the target (3.0%), the estimated value for the Selic rate moves towards the value of the natural nominal interest rate (natural real interest rate plus the inflation target). In the projection horizon, the real interest rate (around 4.0%) is assumed to follow a parity relationship, whereby the domestic interest rate is equal to the international interest rate[6] plus the country risk premium[7] and the expected depreciation of the exchange rate[8]. In the baseline scenario, the risk premium is maintained at 300 points, and the exchange rate would reach R$/US$ 5.36 between 2024 and 2031 (rate of change in the period around 0.8% per year).

The average difference between the GDP price deflator and the IPCA assumed in the medium term is 0.7 p.p. For 2022 the GDP price deflator projection (9.4%) is defined by a weighted average between the IPCA (9.2%) and IGP-DI (10.3%) average changes. From 2023 on, the deflator forecast (5.0%) follows the hypotheses: (i) the average difference between the household consumption deflator and the IPCA will remain in the coming years, (ii) the government consumption and gross fixed capital formation (GFCF) deflators will grow in line with the IPCA, and (iii) the exports deflator will grow in line with the imports deflator (which implies a neutral scenario for the terms of trade dynamics). Thus, the GDP price deflator evolves 0.7 p.p. above the IPCA in the medium term.

Table 3 compares the IFI's macroeconomic forecasts for the baseline and alternative scenarios with those presented in the May 2022 RAF.

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[6] As a measure of the international interest rate, the effective interest rate practiced by the Federal Reserve Bank (Fed) is considered, discounting the US inflation. The assumptions are derived from the scenarios presented by the IMF and the Congressional Budget Office (CBO) in their publications.

[7] The country risk trajectory (represented by the Embi-Br variable) is defined arbitrarily based on the evaluation and judgment of assumptions about the domestic and international environment.

[8] We assume that the difference between domestic and external inflation gives the exchange rate variation in the medium term.

TABLE 3. IFI'S BASELINE, OPTIMISTIC AND PESSIMISTIC SCENARIOS – CURRENT AND PAST RELEASE

	Baseline			Optimistic			Pessimistic		
a. Current release	**2022**	**2023**	**2024-2031**	**2022**	**2023**	**2024-2031**	**2022**	**2023**	**2024-2031**
GDP at current prices (R$ bi)	9,741	10,323	13,526	9,753	10,325	14,090	9,737	10,352	13,967
GDP at current prices (%)	12.2	6.0	5.9	12.4	5.9	6.9	12.2	6.3	6.6
GDP at constant prices (%)	2.6	0.9	2.0	2.8	1.4	3.0	2.5	0.3	1.0
GDP price deflator (%)	9.4	5.0	3.8	9.3	4.4	3.8	9.5	6.0	5.5
IPCA (%)	5.6	4.6	3.1	5.5	3.9	3.0	5.7	5.5	4.7
Unemployment rate (%)	9.4	9.8	9.8	9.0	9.2	9.2	9.7	10.4	11.6
Working pop. (%)	7.6	0.4	1.0	8.0	0.7	1.4	7.0	0.1	0.5
Embi (end)	260	300	300	210	250	250	310	400	400
Exchange rate R$/US$ (end)	5.10	5.17	5.36	5.00	4.99	5.15	5.30	5.60	6.25
Real interest rate (%)	7.0	5.5	4.0	6.7	5.3	3.0	8.2	9.1	6.1
Selic (%)	13.75	11.50	7.19	13.75	10.50	6.31	13.75	13.00	10.50
b. Past release	**2022**	**2023**	**2023-2030**	**2022**	**2023**	**2023-2030**	**2022**	**2023**	**2023-2030**
GDP at current prices (R$ bi)	9,697	10,369	13,602	9,739	10,434	14,356	9,694	10,452	13,917
GDP at current prices (%)	11.7	6.9	6.0	12.2	7.1	7.1	11.7	7.8	6.3
GDP at constant prices (%)	1.0	1.0	2.1	1.8	1.6	3.2	0.3	0.3	1.2
GDP price deflator (%)	10.6	5.9	3.8	10.3	5.4	3.8	11.3	7.5	5.0
IPCA (%)	7.9	4.0	3.0	7.3	3.7	3.0	9.5	5.1	4.2
Unemployment rate (%)	11.2	11.5	11.5	10.8	10.9	10.9	11.6	12.3	13.1
Working pop. (%)	5.0	0.5	1.0	5.5	0.8	1.5	4.5	0.1	0.6
Embi (end)	350	300	300	250	250	250	450	400	400
Exchange rate R$/US$ (end)	5.10	5.15	5.30	4.70	4.67	4.79	5.57	5.52	5.96
Real interest rate (%)	5.7	4.5	3.9	5.7	3.9	2.9	6.9	5.1	5.3
Selic (%)	13.25	9.50	7.06	13.00	9.00	6.12	14.50	11.50	9.50

Source: IFI.

Pessimistic. The baseline uncertainties intensification – the military conflict aggravation, further global growth deceleration, and increased fiscal risks at the domestic level – would affect the economic agents' confidence, financial asset prices, and inflation expectations, requiring a more intense adjustment of interest rates. In this environment, the risk premium is higher, and the exchange rate level is more depreciated. The pessimistic scenario is marked by a much slower reaction of output and the labor market. The nominal interest rate is higher because inflation expectations are positioned above the inflation target over the projection horizon. Between 2024 and 2031, the average GDP growth rate is 1.0%, and the real interest rate converges to a higher level, around 6%.

Optimistic. In the optimistic scenario, a more favorable environment for economic growth is assumed, with additional steam for the cyclical recovery of activity (output gap narrowing by the end of 2023) and the convergence of the risk premium to a more comfortable level (250 points). Between 2024 and 2031, the average GDP growth rate outlook is 3.0% (with productivity improvement), and the real interest rate would converge to the 3.0% level.

2. FISCAL SCENARIO

2.1 Total revenue, transfers, and net revenues scenario

The updated IFI macroeconomic forecasts in the previous section subsidized the revision of the central government's primary revenue projections for 2022 to 2031. Compared to May 2022[9], there was a slight change in the nominal GDP outlook.

The main reasons underlying the revision in the collection estimates were: (i) the surprise upward revision in revenues in 2022; (ii) the tax exemptions foreseen in the Annual Budget Bill (PLOA 2023), especially in the federal taxes levied on fuels; and (iii) the revenues coming from oil and natural gas exploration activities, incorporating the production projection until 2031 provided by the Energy Research Office (EPE).

The primary revenue projections are based on the results presented by the IFI in the Special Study (EE) No. 16[10] of November 2021. In the short term, the revenue-GDP elasticities may oscillate around 1; in the long run, however, the elasticities tend to revert to 1 so that the collection evolves in line with the economy's growth.

In 2022, primary revenues have performed above the forecast in May, influenced mainly by the better behavior of economic activity, the ongoing recovery in labor market conditions, inflation, and the dynamics of commodity prices, even though prices have shown a cooling off as of the second half of the year.

As an illustration, in May 2022, the IFI projected R$ 1,744.0 billion for the central government's primary revenue from January to October. Data from the National Treasury Secretariat (STN) and the Federal Senate's Siga Brasil portal, updated to October, indicate an amount of R$ 1,855.0 billion for the period, a difference of R$ 111.0 billion more. The surprise in the collection occurred in the three main revenue groups (collected by the RFB, RGPS, and not collected by the RFB). However, the most significant difference was observed in unmanaged revenues (R$ 61.3 billion more).

The second relevant aspect in the current revenues scenario lies in the tax cuts undertaken throughout 2022. In May, the IFI calculated the impact of the permanent 35% reduction in IPI rates. Now, the forecast contained in PLOA 2023 has been added to maintain the zero rates next year for the Contribution to the Social Integration Program (PIS), the Civil Service Asset Formation Program (Pasep), the Contribution to Social Security Financing (Cofins), and the Contribution on Intervention in the Economic Domain (Cide) on gasoline, ethanol, vehicular natural gas (VNG), diesel, aviation kerosene, and liquefied petroleum gas (LPG). According to the budget proposal sent by the Executive to Congress, these tax cuts correspond to a tax collection loss of R$ 52.9 billion in 2023.

Only in the optimistic scenario will the fuel tax exemption be fully reverted in 2024. The IFI considered this tax exemption would not become permanent despite being included in the PLOA 2023. Thus, the following assumptions were made: (i) in the baseline scenario, the tax exemption (R$ 52.9 billion) will be reverted over two years, in 2024 and 2025, half in each year; (ii) in the optimistic scenario, the reversion will occur entirely in 2024; and (iii) in the pessimistic scenario, the recomposition of the federal tax rates mentioned in the previous paragraph will occur in a staggered manner between 2024 and 2026.

Table 4 displays the impacts on total primary revenue from the IPI tax reduction and the tax cuts on fuels for the 2023 to 2031 time horizon.

[9] Available at: https://www12.senado.leg.br/ifi/publicacoes-1/relatorio/2022/maio.

[10] Available at: https://www12.senado.leg.br/ifi/publicacoes-1/estudos-especiais/2021/novembro.

TABLE 4. IMPACTS OF THE FUEL EXONERATIONS ON THE CENTRAL GOVERNMENT'S PRIMARY REVENUE (R$ BILLION)

Year	Baseline			Optimistic			Pessimistic		
	IPI reduction	PIS-PASEP/Cofins and Cide exoneration on fuels	Effect on total primary revenue	IPI reduction	PIS-PASEP/Cofins and Cide exoneration on fuels	Effect on total primary revenue	IPI reduction	PIS-PASEP/Cofins and Cide exoneration on fuels	Effect on total primary revenue
2023	-11.9	-52.9	-64.8	-11.9	-52.9	-64.8	-11.7	-52.9	-64.6
2024	-12.7	-28.0	-40.7	-12.7	56.0	43.3	-12.5	-37.5	-50.0
2025	-13.4		-13.4	-13.6		-13.6	-13.3	-20.1	-33.4
2026	-14.2		-14.2	-14.5		-14.5	-14.2		-14.2
2027	-15.0		-15.0	-15.5		-15.5	-15.1		-15.1
2028	-15.9		-15.9	-16.6		-16.6	-16.1		-16.1
2029	-16.8		-16.8	-17.7		-17.7	-17.1		-17.1
2030	-17.8		-17.8	-19.0		-19.0	-18.2		-18.2
2031	-18.8		-18.8	-20.3		-20.3	-19.4		-19.4

** For the recomposition of the reduced tax rates over 2022, the IFI considered the correction of the values by the nominal GDP estimate. Source: IFI.*

The increase in oil production will benefit the Union's tax collection in the coming years. The third and last important aspect in the current revision consists of the oil exploration collections, incorporating the information regarding the production forecast by the Energy Research Office (EPE) in the document entitled Ten Year Energy Expansion Plan 2031[11]. Besides the exchange rate and the international price of oil, the IFI started to consider the projection of Brazilian oil production until 2031 in the scenario of revenues from oil and natural gas exploration activities. According to the EPE, there will be a significant increase in Brazilian oil production throughout this decade, especially in the second half, driven by the pre-salt exploration fields. This, in turn, will affect the Federal Government revenues not collected by the RFB, such as dividends (from Petrobras) and exploration of natural resources.

Table 5 presents the oil price estimates (Brent – US$), the exchange rate (obtained from the macroeconomic scenario discussed in the previous section), and the national oil production (projected by the EPE and converted to m^3 to harmonize with the historical series made available by the ANP[12]). For oil prices, the IFI used projections from the ANP until 2025, and from 2026 on, it considered the reversion to historical averages. Higher oil prices in the next three years are based on the Ukraine conflict's impacts.

[11] Available at: https://www.epe.gov.br/sites-pt/publicacoes-dados-abertos/publicacoes/Documents/PDE%202031_RevisaoPosCP_rvFinal_v2.pdf.

[12] National Agency of Petroleum, Natural Gas and Biofuels.

TABLE 5. ASSUMPTIONS MADE FOR VARIABLES THAT AFFECT REVENUES FROM OIL AND NATURAL GAS EXPLORATION (2022-2031)

Year	Brent (US$)			Average exchange rate			Total oil production (m^3)
	Baseline	Optimistic	Pessimistic	Baseline	Optimistic	Pessimistic	
2022	105.22	112.59	94.70	5.10	5.00	5.30	193,771,200
2023	88.98	97.88	75.63	5.17	4.99	5.60	201,268,300
2024	88.98	97.88	75.63	5.23	5.02	5.76	221,452,800
2025	88.98	97.88	75.63	5.27	5.06	5.89	228,373,200
2026	80.00	88.00	68.00	5.30	5.09	6.02	245,674,200
2027	75.00	82.50	63.75	5.34	5.13	6.16	271,049,000
2028	70.00	77.00	59.50	5.38	5.17	6.31	290,656,800
2029	65.00	71.50	55.25	5.41	5.20	6.47	298,153,900
2030	65.00	71.50	55.25	5.45	5.24	6.62	302,190,800
2031	65.00	71.50	55.25	5.49	5.28	6.79	298,153,900

Source: ANP, EPE, and Central Bank. Prepared by: IFI.

It is essential to emphasize that the hypothesis underlying the revenues scenarios is maintaining the tax burden at current levels without profound changes in tax rates or tax calculation bases. Naturally, this is an instrument that the government can use at some point to improve the primary balance trajectory.

2.1.1 Short-term forecasts

Table 6 displays the new IFI's central government primary revenue updated forecasts in 2022 and 2023, comparing them to the May edition. In the May scenarios, information was available until March, while in the current revision, the data are up to October (with details from Siga Brasil).

TABLE 6. CENTRAL GOVERNMENT´S REVENUE IN 2022 AND 2023

Baseline (R$ million)	May/22		Nov/22		Dif. Nov/22-May/22	
	2022	2023	2022	2023	2022	2023
1. Total Revenue	**2,151.8**	**2,289.0**	**2,337.9**	**2,318.2**	**186.1**	**29.2**
Revenues Collected by RFB, except RGPS and fiscal incentives	1,338.9	1,461.4	1,410.8	1,442.3	71.9	-19.2
RGPS Revenues	511.3	541.2	536.6	568.4	25.3	27.2
Revenues not Collected by RFB	301.6	286.3	390.5	307.6	88.9	21.3
Fiscal Incentives	0.0	0.0	-0.1	0.0	-0.1	0.0
2. Transfers by revenue sharing	**406.5**	**437.3**	**454.0**	**433.7**	**47.6**	**-3.6**
3. Net revenue [(1)-(2)]	**1,745.3**	**1,851.7**	**1,883.8**	**1,884.5**	**138.5**	**32.8**

Source: National Treasury Secretariat. Prepared by: IFI.

The federal government's primary revenue forecast in 2022 increased significantly compared to May. For the central government's total primary revenue in 2022, the IFI is now forecasting R$ 2,337.9 billion, R$ 186.1 billion higher than the May projection. For 2023, primary revenue is expected to reach R$ 2,318.2 billion, against R$ 2,289.0 billion projected in May.

Between May and November, the increase in the projection for 2022 of managed revenues was R$ 71.9 billion. Of the R$ 186.1 billion increase foreseen in total revenue in 2022, R$ 71.9 billion will come from an increase in the revenues collected by the Federal Revenue Office (RFB). The revision was motivated by the behavior of tax collections in recent months and the economic activity scenario.

The projection for the net collection of the RGPS grew by R$25.3 billion compared to the May outlook. For 2022, the new IFI projection is R$ 536.6 billion, R$ 25.3 billion more than expected in May (Table 6). The update reflected the higher nominal GDP and the improvement in the occupation conditions in the labor market. The drop in the unemployment rate was more substantial than expected in the first year's half, mainly due to the recovery of the services sector. For 2023, even with the deceleration in activity and the consequent increase in unemployment, RGPS revenues are expected to grow in line with nominal GDP and reach R$ 568.4 billion. It is worth remembering that, according to current legislation, 2023 will be the last year of payroll tax exemption [13].

The projection for non-managed revenues grew R$ 88.9 billion to May. The IFI's forecast for revenues not collected by the RFB in 2022 was raised from R$ 301.6 billion to R$ 390.5 billion. The increase of R$ 88.9 billion is mainly due to a higher expectation of collections from the exploration of natural resources (oil), Petrobras dividends, and concessions. For 2023, the projection increased by R$ 21.3 billion, going from R$ 286.3 billion to R$ 307.6 billion (Table 6).

Regarding the revenues from the exploration of natural resources in 2022, the revision reflected the extra collections made during 2022. In May, the IFI highlighted the premise of higher oil prices in the international market in the short term due to the conflict in Ukraine. This revision considered that the economic sanctions applied to Russia would last for a few years, causing prices to remain higher due to supply constraints. From the decade's second half, prices should revert to the historical averages of the last few years.

Substantial income tax collection raised the projection for transfers to sub-national entities in 2022. The IFI's new projection for transfers from the central government by revenue sharing in 2022 is R$ 454.0 billion, against the R$ 406.5 billion forecasted in May. The revision occurred due to the behavior of shared tax collections (IPI and IR) and Law No. 14337 of 2022, which provides for an additional transfer of R$ 7.7 billion by the Union. For 2023, the expectation is for transfers of R$ 433.7 billion, R$ 3.6 billion more than projected in May (Table 6).

As explained in previous editions of this scenario revision report, the IFI projects transfer based on percentages of revenues collected by the RFB. Starting with the December 2021 revision, it was necessary to consider the enactment of Constitutional Amendment (EC) No. 112, which increased by another percentage point the sharing of IPI and IR collections with the FPM, to be implemented gradually between 2022 and 2024.

The new projection of transfers for 2023 considers a lower amount than that projected for 2022 (R$ 433.7 billion against R$ 454.0 billion). The explanation lies in the expectation of lower average commodity price levels in 2023 compared to 2022, which would affect IRPJ collections. In addition, the reduction in the IPI rates is permanent and will affect transfers to the subnational entities throughout the projection horizon.

Based on the new projections for total primary revenue and transfers, the expectation for the central government's net revenue[14] in 2022 is now R$ 1,883.8 billion, an increase of R$ 138.5 billion to the May projection. For 2023, the IFI's

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[13] Law 14,288, of December 31, 2021, extends until December 31, 2023, the payroll exemption for companies in 17 sectors of the economy. Available at: https://legis.senado.leg.br/norma/35395664/publicacao/35402280.

[14] The Union's net revenue corresponds to total revenues minus the transfers by revenue sharing destined for subnational entities. An example of this deduction is the Municipalities and States Participation Funds (FPE and FPM), which consist of the apportionment of the Income Tax and the Tax on Industrialized Products (IR and IPI) collection.

expectation is for net revenue of R$ 1,884.5 billion, against R$ 1,851.7 billion expected in May, a difference explained, in part, by the federal taxes exemption on fuels in the amount of R$ 52.9 billion (Table 6).

2.1.2 Medium-term forecasts

The continued growth of the economy positively affects the evolution of collected revenues. On the managed revenue side, the scenarios consider a continued increase in the collection from 2022 on, with economic growth converging to rates around 2.0% (baseline scenario), 3.0% (optimistic), and 1.0% (pessimistic). Economic activity also impacts the net collection for the RGPS and some subgroups of not-collected revenues, such as dividends, exploration of natural resources, and educational salary contributions.

The volume growth projection of the pessimistic scenario also improved for 2022 and remained the same for 2023. The increase in nominal GDP values in the pessimistic scenario over the projection horizon influences the path of collected revenues, making the nominal values higher in the years ahead.

Maintaining the economy's growth favors both collected and not-collected revenues. The maintenance of continued real growth of the GDP over time can also favor not-collected revenues, such as concessions and permissions, by attracting the interest of foreign capital for infrastructure assets in Brazil. The economy's growth also allows for a recomposition of the tax bases of various taxes, possibly increasing the elasticities of government revenues for some time. The IFI's EE No. 16, already referenced in this text, estimated tax collection elasticities to GDP considering short and long-term horizons and situations in which the output gap [15] is positive or negative.

Table 7 displays the projections for total gross revenues and their components (revenues collected by the RFB, RGPS, and not-collected revenues), as well as projections for transfers to subnational entities and net revenues in the baseline, optimistic and pessimistic scenarios for the period 2022 to 2031.

[15] The output gap is an unobservable variable that attempts to measure the deviations of the GDP from the potential growth of an economy. If this difference is positive, the gap is said to be positive; if negative, the gap is negative. And if the difference is close to zero, GDP is considered to be growing at the potential level.

TABLE 7. PRIMARY CENTRAL GOVERNMENT REVENUES FORECASTS - R$ BILLION

BASELINE	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Total revenue	**2,337.9**	**2,318.2**	**2,540.8**	**2,708.9**	**2,868.1**	**3,041.5**	**3,221.7**	**3,398.3**	**3,583.5**	**3,767.6**
Revenues Collected by RFB, except RGPS	1,410.8	1,442.3	1,545.0	1,656.7	1,747.8	1,843.1	1,945.8	2,055.5	2,173.8	2,298.2
RGPS Revenues	536.6	568.4	628.3	666.3	705.3	745.6	788.9	834.5	882.8	933.4
Revenues not Collected by RFB	390.5	307.6	367.6	386.0	415.0	452.7	487.0	508.3	526.9	536.0
Transfers by revenue sharing	**454.0**	**433.7**	**461.1**	**498.9**	**528.3**	**559.2**	**591.7**	**626.0**	**662.2**	**700.3**
Net revenue	**1,883.8**	**1,884.5**	**2,079.7**	**2,210.0**	**2,339.8**	**2,482.3**	**2,630.0**	**2,772.3**	**2,921.3**	**3,067.4**
OPTIMISTIC	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**
Total revenue	**2,340.2**	**2,336.8**	**2,613.7**	**2,772.1**	**2,955.4**	**3,158.0**	**3,372.2**	**3,587.4**	**3,816.9**	**4,050.8**
Revenues Collected by RFB, except RGPS	1,412.4	1,442.5	1,584.3	1,680.9	1,787.8	1,902.1	2,027.2	2,163.1	2,311.8	2,470.9
RGPS Revenues	537.2	568.5	632.9	676.1	721.6	769.6	822.0	878.3	938.9	1,003.7
Revenues not Collected by RFB	390.5	325.8	396.4	415.0	445.9	486.3	523.0	546.0	566.2	576.2
Transfers by revenue sharing	**454.6**	**433.8**	**464.5**	**506.3**	**540.5**	**577.2**	**616.6**	**658.9**	**704.4**	**753.0**
Net revenue	**1,885.6**	**1,903.0**	**2,149.1**	**2,265.8**	**2,414.9**	**2,580.8**	**2,755.6**	**2,928.5**	**3,112.6**	**3,297.8**
PESSIMISTIC	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**
Total revenue	**2,333.9**	**2,278.2**	**2,447.7**	**2,575.3**	**2,739.7**	**2,897.0**	**3,062.6**	**3,226.7**	**3,397.5**	**3,577.3**
Revenues Collected by RFB, except RGPS	1,410.3	1,431.9	1,518.2	1,610.6	1,713.1	1,799.6	1,893.3	1,993.1	2,099.8	2,211.8
RGPS Revenues	536.4	564.3	621.5	656.0	691.6	728.3	768.1	809.8	853.4	908.2
Revenues not Collected by RFB	387.3	282.1	308.0	308.7	335.0	369.0	401.3	423.7	444.4	457.2
Transfers by revenue sharing	**452.4**	**430.6**	**455.9**	**490.9**	**517.7**	**545.9**	**575.7**	**607.0**	**639.6**	**673.9**
Net revenue	**1,881.5**	**1,847.6**	**1,991.7**	**2,084.3**	**2,222.0**	**2,351.1**	**2,486.9**	**2,619.7**	**2,757.9**	**2,903.4**

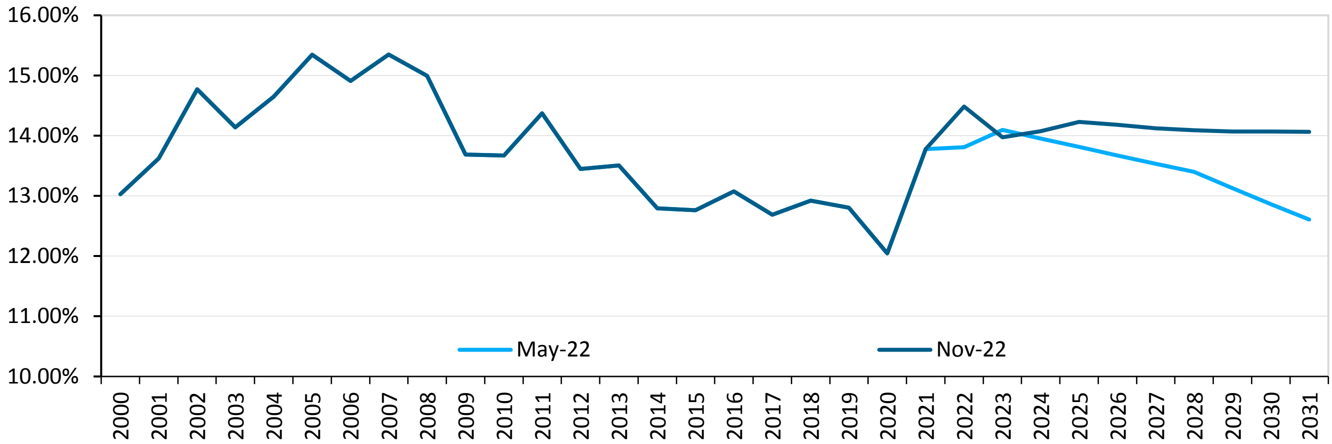
Source: National Treasury Secretariat. Prepared by: IFI.

Figure 10 shows the trajectories forecast by the IFI for the central government's collected revenues in the baseline scenario, excluding RGPS revenues, as a proportion of GDP, from 2022 to 2031. On average, the collected revenues would correspond to 14% of GDP in the current revision of the projections.

Collected revenues as a proportion of GDP should converge to 14.1% of GDP. After the drop observed in 2020 due to the effects of the pandemic on economic activity, the collected revenues registered a vigorous recovery in 2021, when they reached 13.8% of GDP. This percentage should increase in 2022, reaching 14.5% of GDP. In 2023, they would fall to 14.0% of GDP due to the maintenance of fuel federal taxes exemption and the slowdown in economic activity. In 2024 and 2025, net revenues would rise to 14.1% of GDP and 14.2% of GDP, respectively, with the gradual end of these tax cuts stabilizing at 14.1% of GDP by the end of the projection horizon.

According to EE 16, the revenues collected by RFB elasticity to GDP was 1.02 in the short term (for both the positive and negative output gap). In the long term, the estimated elasticities were 0.98 for a positive output gap and 0.90 for a negative output gap. The projections of collected revenues presented here consider that the revenue-GDP elasticity is equal to 1 in the long term.

FIGURE 10. REVENUES COLLECTED BY THE RFB (% OF GDP): MAY/22 AND NOV/22 UPDATES (BASELINE)

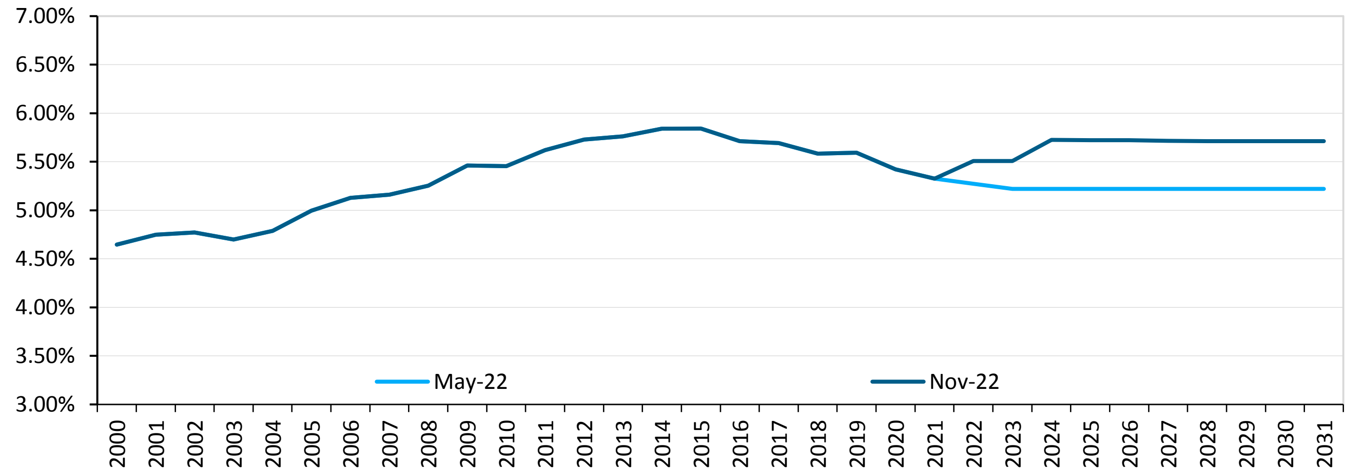


Source: National Treasury and Central Bank. Prepared by: IFI.

It is important to note that for the revenue projections, the 2022–2023 biennium was considered short term and the 2024 to 2031 period as medium term. This is also true for the other primary revenue subgroups, as presented below.

The results for the elasticity of the net revenue of the RGPS to GDP found in the EE No.16 were: 0.90 (positive gap) and 0.60 (negative gap) in the short run and 1.06 (positive and negative gap) in the long run. The projections presented in this report contemplate the following values for this elasticity: 1.03 in 2022, 1.00 in 2023, 1.04 in 2024, and 1.00 from 2025 onwards to consider the end of the exemption of social security contributions on the payroll of 17 sectors in December 2023[16].

FIGURE 11. RGPS REVENUES (% OF GDP): MAY/22 AND NOV/22 UPDATES (BASELINE)



Source: National Treasury and Central Bank. Prepared by: IFI.

[16] The extension of this exemption until 2023 was made through Law No. 14,288 of December 31, 2021. Available at: http://www.planalto.gov.br/ccivil_03/_ato2019-2022/2021/lei/L14288.htm.

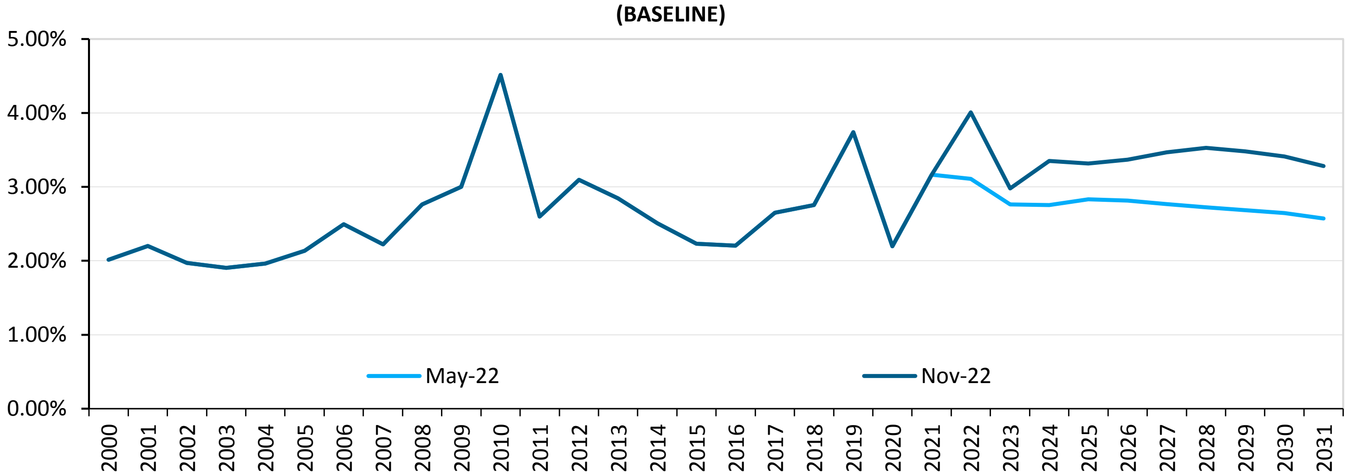
The end of the tax exemption will make the RGPS revenues increase its share in the GDP in the coming years. In the long run, an elasticity of 1.06 would configure a situation in which the RGPS revenues would gradually increase their share in the GDP. In recent years, however, this proportion has decreased due to the exemption of companies' payrolls. By way of illustration, in 2014, net collection for the RGPS accounted for 5.8% of GDP. In 2019, before the pandemic, this share had fallen to 5.6% of GDP. In 2022, the IFI projects that this proportion will be 5.5%. As of 2024, with the end of the payroll tax exemption, the RGPS net collection should stabilize at 5.7% of GDP (Figure 11).

Collections from oil exploration tend to boost not-collected revenues. For the scenario of not-collected revenues, the most critical change occurred, as mentioned above, in the expectation of collections from natural resource exploration. In the coming years, a considerable increase in oil production in Brazil is expected as the production from the pre-salt fields gains relevance. This tends to translate into increased revenues for the central government and the sub-national entities.

In this scenario revision, in addition to the variables of international oil price and exchange rate (R$/US$), the IFI started to consider the production forecast by the Ministry of Mines and Energy in a document already referenced and entitled "Ten Year Energy Expansion Plan 2031".

The projections updated by the IFI indicate the possibility of not-collected revenues, driven by Petrobras' natural resource exploration revenues and dividends, reaching the level of 3.5% of the GDP over the decade. However, this is revenue raised from finite resources, presenting an essential discussion about the application of these collections in the future.

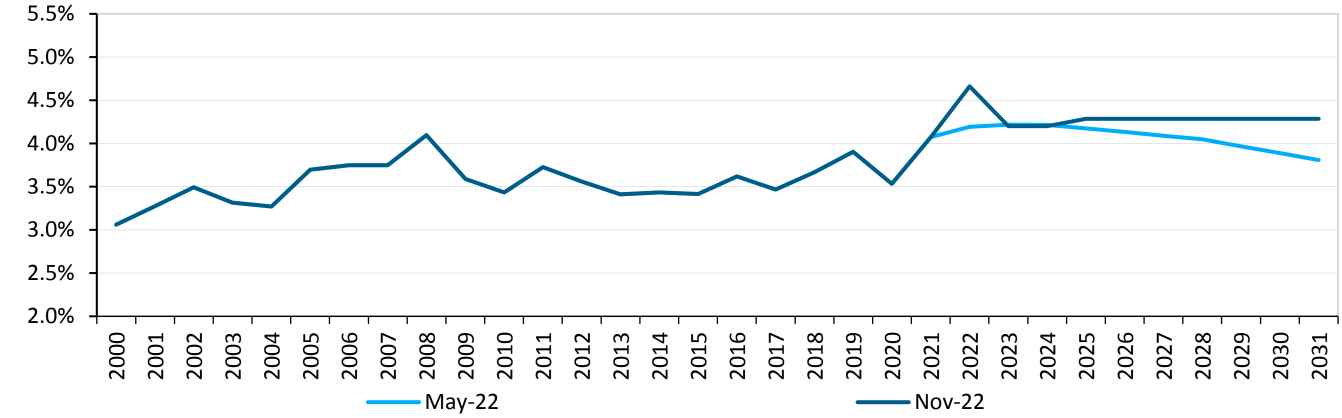
FIGURE 12. REVENUES NOT COLLECTED BY THE RFB (% OF GDP): MAY/21 AND NOV/22 UPDATES (BASELINE)



Source: National Treasury and Central Bank. Prepared by: IFI.

Not-collected revenues may stabilize at around 3.5% of GDP in the coming years. Figure 12 compares the projections' trajectories for not-collected revenues as a proportion of GDP, referring to the current (November 2022) and May 2022 revisions in the baseline scenario. The increase between 2021 (3.2%) and 2022 (4.0%) was due to relatively higher oil prices as a result of the conflict in Ukraine. The gradual growth of revenues up to 3.5% of GDP in 2028, on the other hand, occurs due to the expected oil production in Brazil, even with an average barrel price converging to US$ 65 by the end of the projection horizon and the exchange rate practically stable in the period (base scenario).

FIGURE 13. TRANSFERS (% OF GDP): MAY/21 AND NOV/22 UPDATES (BASELINE)

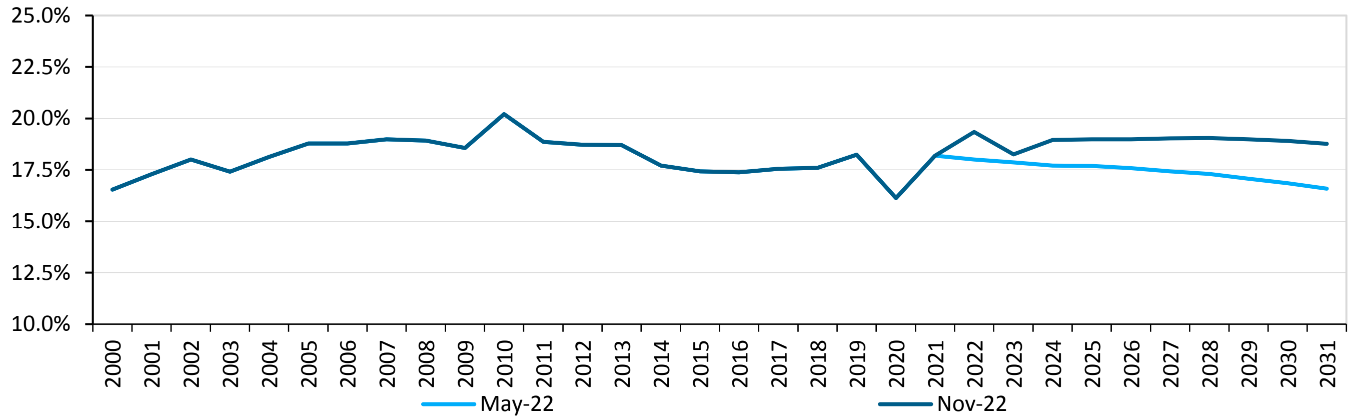


Source: National Treasury Secretariat and Central Bank. Prepared by: IFI.

Figure 13 shows the projections for central government revenue-sharing transfers until 2031. After the retraction is verified in 2020 (as a proportion of GDP), transfers will increase in the coming years due mainly to the expected increase in collected revenues.

Given the lack of projections for the taxes on which the percentage of transfers is levied (IPI and IR), the transfers forecasts relate to the collected revenues scenario. Given this premise, the new projection has acquired a format similar to the collected revenues curve.

FIGURE 14. NET REVENUE (% OF GDP): MAY/21 AND NOV/22 UPDATES (BASELINE)

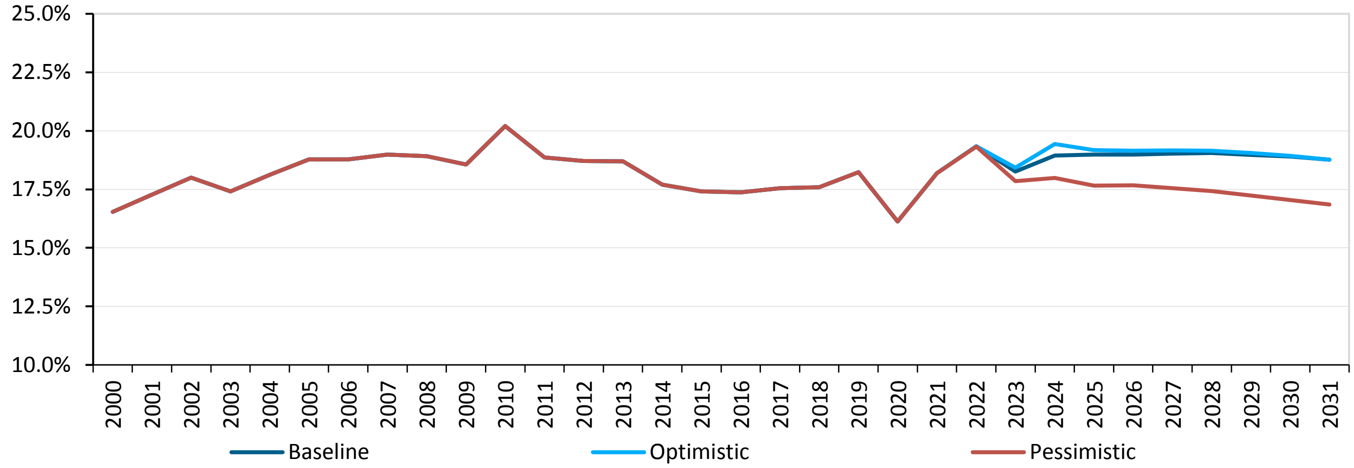


Source: National Treasury Secretariat and Central Bank. Prepared by: IFI.

The IFI scenario indicates the central government's net revenue converging to 18.8% of GDP. Finally, Figure 14 presents the net revenues projection for 2022 to 2031. In 2022, the IFI projects that the variable will reach 19.3% of GDP. In the following years, this share will fluctuate due to the schedule for the removal of tax exemptions on federal taxes levied on fuels, and the evolution of collected and not-collected revenues, which will reach 3.5% of GDP in 2028. The net revenue is expected to reach 18.8% of GDP in 2031.

To conclude this section, Figure 15 shows the different trajectories assumed by net revenues as a proportion of GDP in the three reference scenarios. While in the base and optimistic scenarios, the net revenue remains around 19% of GDP, in the pessimistic scenario, the indicator's trajectory is declining, reaching 16.9% of GDP in 2031. In the pessimistic scenario, the economy's average growth is 1.0% between 2024 and 2031, which indicates the importance of economic growth to maintain the dynamics of the Federal Government's primary revenues.

FIGURE 15. NET REVENUE - IFI SCENARIOS (% OF PIB)



Source: National Treasury Secretariat and Central Bank. Prepared by: IFI.

2.2 Primary expenditure and primary balance scenario

The new central government's primary surplus projection for 2022 is R$ 74.1 billion or 0.8% of GDP. The surplus is higher than the R$ 50.9 billion projected by the IFI in October. The main factor is the expected growth in tax collection, as discussed in the previous section. On the expenditure side, the projection decreased by R$ 2.8 billion. After the first ten months of the year, the scenario for 2022 is becoming more evident. For 2023, however, doubts remain about spending on Brazil Aid (which will probably be called Bolsa Família – Family Allowance again)[17] and other expenses that may make up the so-called Transition PEC [18]. Both the magnitude of these expenses and the impact on compliance with fiscal rules are still uncertain.

On November 16th, the elected government announced the strategy for the expansion of the Family Allowance (or Bolsa Família), the appreciation of the minimum wage, the resumption of public investments, and the budgetary recomposition of other programs (such as Farmácia Popular and Merenda Escolar). Given the fiscal relevance of the measure in question, in this RAF, the IFI evaluates the budgetary impacts of the proposal presented.

With these considerations in mind, the scenario for this year has improved, with revenue growth and nominal GDP playing a predominant role. However, the evolution of inflation throughout 2022 will result, for 2023, in a spending ceiling lower than the one foreseen in the PLOA sent to Congress in August. Reducing the spending limit represents an

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[17] The Brazil Aid Program replaced the Family Allowance Program (Bolsa Família). The transition PEC draft suggests that the program can be replaced again – it will probably be called Family Allowance Program (Bolsa Família). To wit, Article 1 of the Transition PEC states that "(...) Art. 121. The expenses related to the program dealt with in Law No. 14,284, of December 29, 2021, or the one that comes to replace it, as of the fiscal year 2023: (...)".

[18] After the elections, the president-elect began the government transition. Bolsonaro and Lula intended to continue the benefits scheduled to end in December this year. Given the existing restrictions in the fiscal rules, a PEC (named Transition PEC) would enable the execution of such expenditures. Subsection 2.2.2 will detail the content and possible measures that should compose the Transition PEC.

additional challenge in approving the 2023 Budget, even considering that lower inflation positively affects spending via the indexation mechanism.

The medium-term scenario is also worse. In the context of fiscal expansion, without a well-defined anchor for the future fiscal path, in the baseline scenario, the primary balance is expected to remain in deficit throughout the IFI's projection horizon. We analyze these and other issues in the following topics. The so-called Transition PEC may open space for the expansion of primary expenditures via the exclusion from the spending ceiling of the Brazil Aid program, investments (when there is an excess of current revenue collection), expenses with socio-environmental projects funded with donations, and expenditures of federal educational institutions financed with their resources, donations or agreements.

2.2.1 Short-term forecasts

In the baseline scenario, the primary expenditure should reach R$ 1,809.7 billion or 18.6% of the GDP in 2022. To produce the new scenarios, we used values realized until October 2022. This last month, the data were collected by the IFI in the system Siga Brasil of the Federal Senate. We can see stability as a proportion of the GDP compared to the 2021 result. In nominal terms, the Federal Government's primary expenditures should grow by R$ 196.3 billion to last year.

Primary expenditure is expected to end in 2022, lower than the pre-pandemic level. The primary expenditure forecast indicates a 0.9 p.p. reduction from that observed at the pre-pandemic level (2019) and -0.7 p.p. from the end of the past management (2018). When assessing the composition of the 0.7 p.p. reduction between 2018 and 2022, a negative contribution of 0.8 p.p. is observed in the expenses with payroll and benefits to public servants and 0.3 p.p. in discretionary spending [19]. On the opposite side, income transfers [20] and other expenditures[21] contributed 0.1 p.p. and 0.3 p.p., respectively, to the increase in expenses in the period. As the data are expressed as a proportion of the GDP, it is worth evaluating the denominator contribution (nominal GDP) on the primary expenditures change in the period analyzed. Thus, a -5.4 p.p. [22]contribution of nominal GDP growth on primary expenses is observed. Figure 16 details the Federal Government's primary expenses by main expense components in 2018 and 2022, the latter estimated by the IFI.

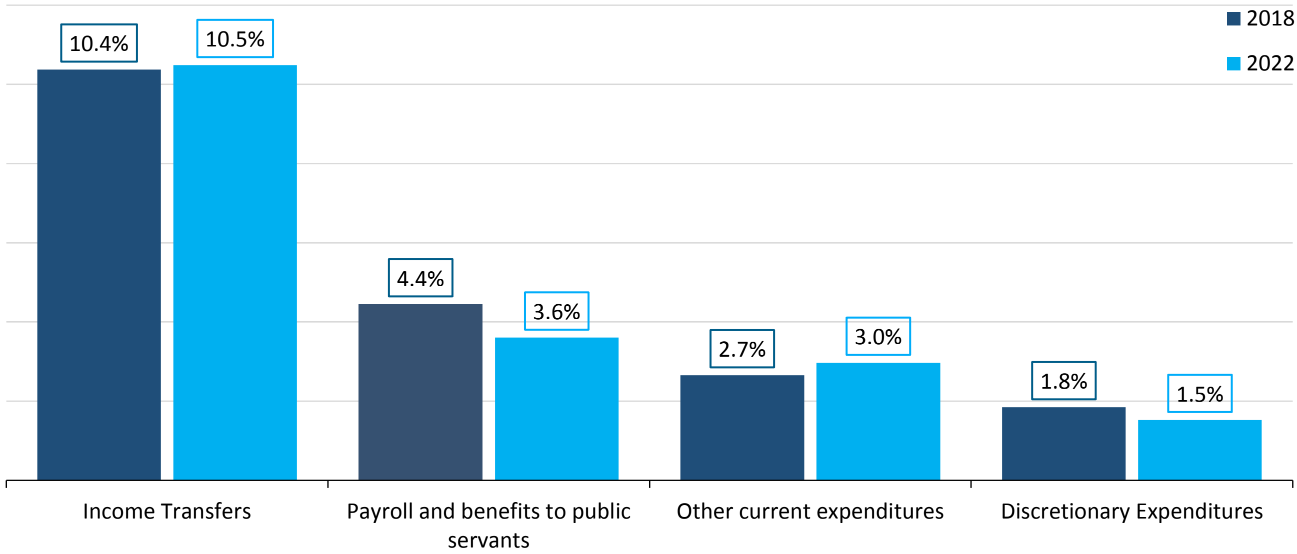
[19] Investments are included in this item.

[20] This item is composed of expenses with social security benefits, salary allowance and unemployment benefits, BPC, and the Bolsa Família program and its substitute, the Brazil Aid.

[21] It includes cash transfers paid via extraordinary credit.

[22] The result is derived from the following equation: $[Desp_{t-4} \, / \, \frac{PIB_t}{PIB_{t-4}}] - Desp_{t-1}$

FIGURE 16. UNION'S PRIMARY EXPENDITURES 2018-2022 (% OF GDP)



Source: STN and IFI. Prepared by: IFI.

TABLE 8. NOVEMBER VERSUS OCTOBER PRIMARY EXPENDITURE FORECASTS – 2022 BASELINE SCENARIO

Breakdown	Actual 2021	2022 FORECASTS			Difference (% nominal)		
		Government (Sep/22)	IFI (Oct/22)	IFI (Nov/22)	IFI Nov x Actual 2021	IFI Nov x Gov Sept	IFI Nov x IFI Oct
Primary Expenditure	**1,613**	**1,820**	**1,813**	**1,810**	**12.2%**	**-0.6%**	**-0.2%**
Mandatory	1,489	1,677	1,659	1,661	**11.5%**	**-1.0%**	**0.2%**
Social Security	710	795	792	792	**11.6%**	**-0.4%**	**0.0%**
Payroll	328	339	337	337	**2.7%**	**-0.7%**	**-0.2%**
Salary Allowance and Unemployment Benefit	46	66	63	65	**41.0%**	**-1.8%**	**2.3%**
BPC	68	80	79	78	**14.9%**	**-2.6%**	**-1.2%**
Family Allowance / Brazil Aid	26	90	98	87	**236.4%**	**-3.4%**	**-11.1%**
Court-ordered debt (current and capital)	19	18	18	18	**-3.1%**	**1.8%**	**1.8%**
Supplementation to FUNDEB	22	34	34	34	**55.7%**	**0.0%**	**0.0%**
Subsidies and Grants	7	19	19	19	**158.4%**	**0.0%**	**0.0%**
Legislative, Judiciary, MPU and DPU	11	18	15	15	**39.0%**	**-14.4%**	**1.5%**
Payroll tax reduction	7	3	3	3	**-57.4%**	**0.0%**	**0.0%**
Extraordinary credits	117	57	57	57	**-51.6%**	**-0.7%**	**0.0%**
Other Compulsory Expenses	128.4	158	143.4	156	**21.9%**	**-1.1%**	**9.1%**
Discretionary	124	143	154	148	**19.7%**	**3.8%**	**-3.5%**

Source: National Treasury, Primary Revenue and Expenditure Evaluation Report, and IFI. Prepared by: IFI.

The new IFI projection for the RGPS is slightly lower than the government's September projection. Excluding the expenses with judgments and court-ordered debts, the nominal growth of social security expenses from January to October is 11.8% compared to the same period in 2021. With data for a good part of the fiscal year, we now adopt this percentage for the growth of social security expenses (excluding judgments and court-ordered debts). Considering judgments and court-ordered debts, the increase was 11.5%, and now it has become 11.6%. With this, the projection for RGPS expenditures is now R$ 792.2 billion for 2022, compared to the R$ 795.3 billion estimated by the Executive in the last bimonthly evaluation[23]. To 2021, the R$ 792.2 billion would represent a nominal growth of 11.6%, showing an acceleration in contrast to what has been observed in recent years.

Payroll expenditures forecasts showed a slight decrease between the last two revisions. From January to October, the nominal growth in payroll expenditures, excluding judgments and court-ordered debts, is 2.1%. With little time left until the end of the year and no announcement of significant readjustments or hiring yet in 2022, in this revision, we adopted this percentage to project the growth for the year. By adding the expenses with judgments and court-ordered debts, the payroll expense would rise from R$ 327.9 billion in 2021 to R$ 336.7 billion in 2022, an increase of 2.7%. The IFI's estimate is slightly lower than the R$ 339.1 billion forecast by the government in September.

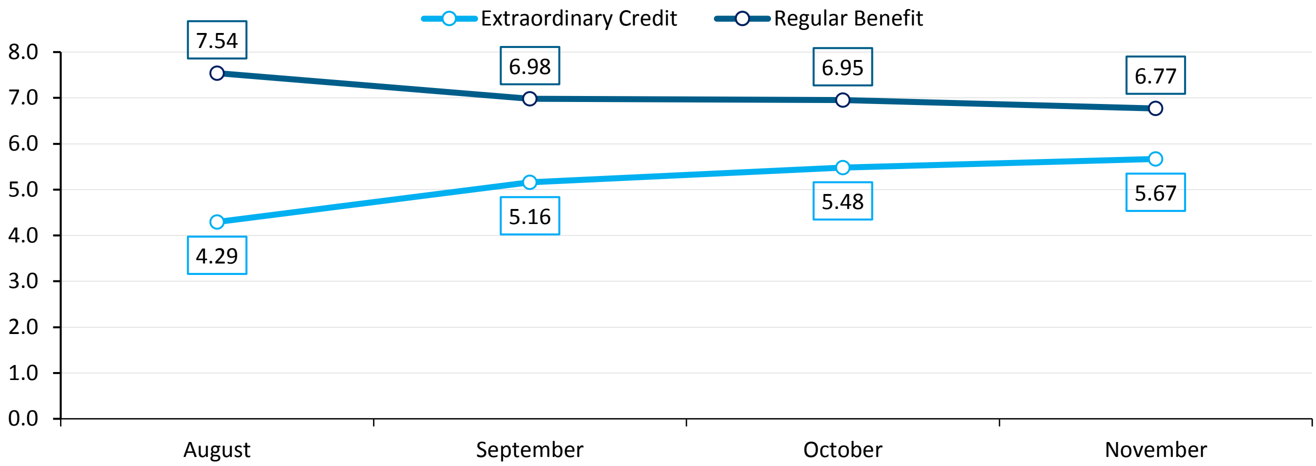
Recent execution data have also led to a reduction in the forecast for spending on BPC. Without considering judgments and court-ordered debts, BPC expenditure showed a nominal growth of 15.4% from January to October. Our estimate for spending in the year sets the maintenance of this rate in the last bimester. In 2022, the increase in expenditure, excluding judgments and court-ordered debts, would be 15.4%, and the expense would reach R$ 76.2 billion. By incorporating the projection for judgments and court-ordered debts, the estimate for 2022 reaches R$ 77.8 billion, below the R$ 78.7 billion estimated in October. The current Executive Branch projection is slightly higher at R$ 79.8 billion.

Expenditure with the Brazil Aid (PAB) should be R$ 86.8 billion, not counting extraordinary credits. The premise adopted by the IFI is that the Brazil Aid will be in effect with a minimum monthly amount per family of R$ 400 until December of this year[24] , and, as of 2023, the Brazil Aid will begin to be paid with a minimum monthly amount of R$ 600 per family. With the enactment of Constitutional Amendment 123 of 2022, the additional R$ 200 of the Brazil Aid and the expansion of the target public is being paid through extraordinary credits, detached from the analyzed item. We have revised the PAB expenditures projection to contemplate the current dynamics between the expenditures via extraordinary credits and regular benefits. Figure 17 shows the current dynamics of these expenditures. Despite a downward revision in the PAB expenditures (R$ 97.6 billion to R$ 86.8 billion between October and November), this does not mean a reduction in the forecast but a readjustment between extraordinary resources or not.

[23] Available at: https://sisweb.tesouro.gov.br/apex/f?p=2501:9::::9:P9_ID_PUBLICACAO:44770

[24] The PAB beneficiaries are receiving R$ 200 in addition to the regular benefit of at least R$ 400. However, these resources are being paid via extraordinary credit.

FIGURE 17. BRAZIL AID EXPENSES (R$ BILLION, CURRENT)



Source: LOA 2022, Decree 10,961 and modifications. Prepared by: IFI

For 2023, the hypothesis is that the additional R$ 200 will be incorporated into the regular benefit, besides adding a new benefit, that is, an additional R$ 150 per child up to 6 years old that belongs to a PAB beneficiary family. By hypothesis, the program's expansion will lead to a monthly expenditure of R$ 14.7 billion, about 18% above the R$ 12.4 billion spent today, with the regular benefit of at least R$ 400 and the additional R$ 200 per family. The increase simulates the expansion of the average benefit to R$ 600, paid to 21.6 million families and 10 million children up to 6 years old.[25]

Spending on benefits authorized by EC 123 should stay relatively below the maximum limit. EC 123 of 2022 approved the payment of several benefits to mitigate the effects of inflation on the most vulnerable population. The main benefit was the temporary payment of an additional R$ 200 per family from the PAB. When analyzing the expenditures until October, it can be observed that the low budget execution for some benefits, such as the aid for independent truck drivers and family farmers (Table 9). The IFI scenario considers this low execution, so the projections for this item were reduced by R$ 2.0 billion to the October scenario.

TABLE 9. BUDGETARY EXECUTION OF EC BENEFITS 123

Expenditure	Authorized	Accum. Aug-Nov	% of Execution
Additional Brazil Aid	25.5	20.6	80.9
Aid to Truck Drivers	5.1	2.1	42.0
Gas aid	1.0	0.7	66.0
Taxi drivers aid	2.0	1.6	79.4
"Alimenta Brasil" Program	0.5	0.0	2.2
Compensation to states (ICMS)	3.8	2.9	76.1
Transf. to subnational entities (public transportation)	2.5	2.5	98.4
Total	**40.4**	**30.4**	**75.2**

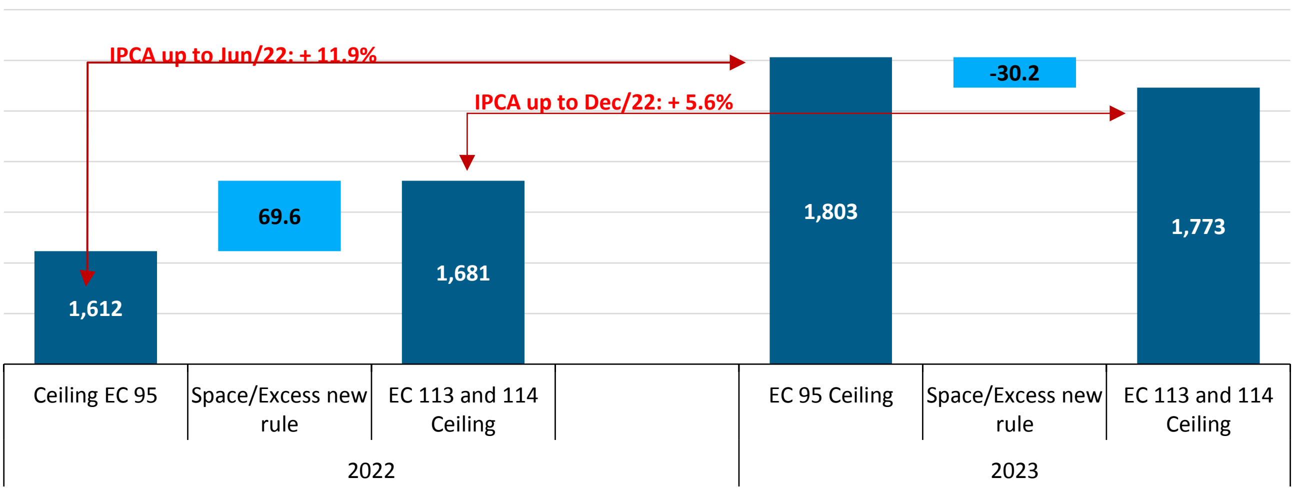
Source: SIGA Brasil. Prepared by IFI.

[25] This measure's effects for 2023 and beyond will be detailed in the following subsection.

2.2.2 Medium-term forecasts

The change in the spending ceiling through ECs 113 and 114 should be restrictive by R$ 30.2 billion in 2023. ECs 113 and 114 changed the system to correct the spending ceiling. Before, it corresponded to the previous year's limit, adjusted by the accumulated inflation over 12 months until June of the last year. Now, the year's limit corresponds to the previous year's limit, changed by the accumulated inflation over the 12 months ending in December of the last year. The change opened a gap of R$ 69.9 billion for 2022 since the inflation observed in June 2021 (IPCA of 8.4%) was lower than the December 2021 inflation result (10.1%). The fact that the rule was changed retroactively also contributed to this result. For 2023, the opposite is observed; inflation in June was 11.9% but should end the year at 5.6%, according to the IFI's base scenario. Thus, if the old rule corrected the ceiling, it would create an expenditure limit for 2023 of R$ 1,803 billion, but with the current one, this limit should be R$ 1,773 billion.[26] Figure 18 shows the primary expenditure limits considering the two alteration systems (IPCA of June and December) for the expenditure ceiling and the difference between the two for 2022 and 2023.

FIGURE 18. FISCAL SPACE / EXCESS UNDER THE SPENDING CEILING - COMPARISON BETWEEN METHODOLOGIES - R$ BILLION, CURRENT



Source: STN, IBGE and IFI. Prepared by: IFI.

Near the end of the year, the risks regarding the 2023 Budget and the spending ceiling have increased. To accommodate the demands for new spending, the largest of which is the Brazil Aid, the elected government is betting its chips on the approval of the Transition PEC.[27] Among the measures is the extension of the additional payment of R$ 200 per month per family in the social income transfer program (currently Programa Auxílio Brasil – Brazil Aid). Also being evaluated is the additional R$ 150 per month per child up to 6 years of age who belongs to a beneficiary family in the social cash transfer program. Tables 10.A and 10.B detail the changes proposed by the Transition PEC in the 2023 Budget. Below, we comment on the main results.

[26] The 2022 ceiling was corrected based on estimated inflation of 10.18%. The difference between the inflation used to adjust the ceiling, and that realized should be offset in the following year's ceiling setting.

[27] The new administration's transition team presented a suggested (draft) wording to the Federal Senate on November 16. Available at: https://static.poder360.com.br/2022/11/pec-transicao-16nov2022.pdf

TABLE 10.A. TRANSITION PEC: SPACE IN THE SPENDING CEILING IN THE 2023 PLOA

Breakdown	R$ billion or %
Spending Ceiling in 2022 (the basis for calculating the 2023 ceiling) [A]	1,681.20
Inflation 2022 - 2023 PLOA forecast [A.1]	7.20%
Spending ceiling in 2023 (forecast in PLOA 2023) [B] = [A] * (1+ [A.1] + 0.12%)	1,800.30
Inflation 2022 - IFI Scenario [A.2] 5.6% [A.3]	5.60%
Spending ceiling in 2023 (IFI Scenario) [C] = [A] * (1+ [A.2] + 0.12%)	1,773.10
Diff. PLOA Ceiling x IFI Ceiling [D] = [B] - [C]	27.2
Primary Expenditure + Transfers (PLOA 2023) [E]	2,321.10
Expenditure Ceiling Exclusions (PLOA 2023) [E.1]	520.8
Expenses subject to the Expenditure Ceiling (PLOA 2023) [F] = [E] - [E.1]	1,800.30
Exclusions from the Expenditure Ceiling (Transition PEC) [E.2]	130.5
Expenditures subject to the ceiling (Transition PEC + PLOA 2023) [G] = [E] - [E.1] - [E.2]	1,669.80
Ceiling space (Without Transition PEC) [H.1] = [C] - [F]	-27.2
Ceiling Space (With Transition PEC) [H.2] = [C] - [G]	103.3

TABLE 10.B. TRANSITION PEC: IMPACT OF THE TRANSITION PEC IN PLOA 2023

Exclusions to the ceiling foreseen in the PLOA and the Transition PEC	R$ billion
Transition PEC [E.2]	130.5
Removal of the Brazil Aid (PAB) from the spending ceiling	106.6
Investments (6.5% of the 2021 excess revenues)	23.0
Environment with resources from donations	0.0
Federal educational institutions with their resources, donations, or agreements	0.9
Exclusions that are already foreseen in the ceiling (PLOA 2023) [E.1]	520.8
Transfers by revenue sharing	444.9
Other primary expenditures	75.9
Extra-ceiling expenditures not foreseen in the PLOA but authorized by the Transition PEC	**R$ billion**
Complementary authorization for PAB [I]	**69.8**
Additional R$ 200	51.8
The benefit of R$ 150 per child up to 6 years old	18.0
Potential impact of the Transition PEC [J] = [H.2] + [I]	**173.1**
Increase in expenses not subject to the spending ceiling [K] = [E.2] + [I]	**200.3**

Source: PLOA 2023 and IFI. Prepared by: IFI.

The spending ceiling will be lower than the one foreseen in the 2023 PLOA due to the decrease in inflation. The 2023 Annual Budget Bill (PLOA) was submitted at the end of August, considering a forecast for 2022 inflation of 7.2%. Since inflation measured by IPCA corrects the spending ceiling, the 2023 spending limit corresponds to the 2022 limit (R$ 1,681.2 billion) updated by the 2022 IPCA (7.2% estimated by the Executive in the PLOA).

According to the spending ceiling rule (§§ 12 to 14 of art. 107 of the ADCT), the Executive Branch must revise the estimate for inflation monthly and forward it to the Joint Committee. The inflation to correct the spending ceiling should be realized until the available month and the Executive's estimate for December. The difference between the inflation used in the correction and that observed should be compensated for in the following year's ceiling definition. As in 2022, the inflation utilized to correct the ceiling was 10.18%, but the actual IPCA was 10.06%. The difference (0.12%) should be considered in the ceiling definition for 2023.

According to the parameters grid sent by the Executive Branch to the Joint Committee, the IPCA of 2022 should be 5.7%[28] and no longer 7.2%, as shown in the PLOA 2023. Thus, the spending ceiling for 2023 should also be lower than the one considered for preparing the PLOA. Using the inflation estimated by the IFI (very similar to the most recent scenario of the Executive Branch), the expenditure ceiling for 2023 should be R$ 1,773.1 billion instead of R$ 1,800.3 billion (item [B] of Table 10) compatible with the 2023 PLOA.

Thus, the very realization of lower inflation than projected in the PLOA should reduce the expenditure ceiling by R$ 27.2 billion. Since expenses were projected at R$ 1,800.3 billion, there will be a need to reduce appropriations to readjust the budget to a lower spending ceiling without other changes. A good part of the Union's primary expenses are indexed to inflation, so the appropriations for such costs, all else being equal, may also be reduced.

Returning to the PLOA, primary expenses and transfers to subnational entities, carried out by revenue sharing, were forecast at R$ 2,321.1 billion. Expenses not subject to the spending ceiling amount to R$ 520.8 billion; by residue, expenses subject to the spending ceiling limitation were foreseen in R$ 1,800.3 billion for 2023. The Transition PEC proposes to remove expenses from the spending ceiling without changing the limit provided in the rule, i.e., the ceiling would still be R$ 1,773.1 billion, but the expenses subject to the spending ceiling would be reduced, and expenses not subject to the ceiling would be increased in the same proportion.

The Transition PEC excludes R$ 130.5 billion from the spending ceiling and opens a space of R$ 103.3 billion for 2023. This change proposed by the Transition PEC would open a room in the spending ceiling of R$ 103.3 billion for 2023. If the PEC is filed and approved as submitted, the expenses that will be excluded from the ceiling will be up to R$ 130.5 billion for 2023. These expenses correspond to the following:

- R$ 105.7 billion refers to the budget for the Brazil Aid Program. This value is compatible with the average payment of R$ 405 per month per family for a public of 21.6 million families. In addition, the amount of R$ 0.85 billion was considered for support to the subnational entities through the decentralized management index and for the program's management, administration, and operationalization. Together, they add up to R$ 106.6 billion to be excluded from the spending ceiling.
- R$ 23.0 billion refers to the execution of investments. The Transition PEC explicitly states that investment expenses will be excluded from the spending ceiling in an amount corresponding to the excess of current revenue collection in 2022, limited to 6.5% of the current revenue collection excess in 2021.[29] Although the appropriation for investments (group of nature of expenditure (GND) 4) in the PLOA 2023 is relatively lower than this amount (R$ 22.4 billion), the Budget Rapporteur may change the appropriation so that up to the limit of R$ 23.0 billion, the amount will appear neither in the ceiling nor in the primary balance target.
- R$ 12 million for environmental expenses funded with donations. This is the value that appears in the 2023 PLOA.
- R$ 909 million for expenses of the Federal Education Institutions funded with their resources, donations, or agreements. This is the value that appears in the 2023 PLOA.

Besides excluding expenses from the spending ceiling, the Transition PEC allows the expansion of the Brazil Aid Program (or Bolsa Família – Family Allowance) without the need for compensation. It is exempt from the Golden Rule (Item III of the Caput of Article 167 of the Constitution). In the justification of the Transition PEC, it is stated that "the provision will enable the maintenance of the R$ 600.00 benefit" and that "the article will ensure the conditions for

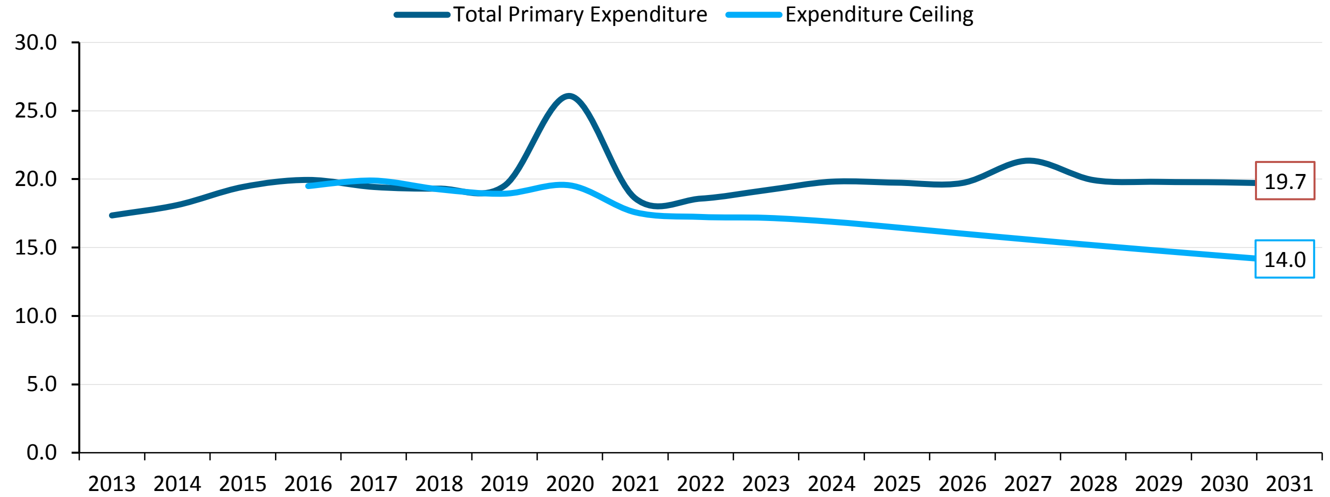
[28] Available at: https://legis.senado.leg.br/sdleg-getter/documento?dm=9205781&ts=1668632564221&disposition=inline

[29] In 2021, the current revenue was R$ 1,986 billion, but the updated forecast was R$ 1,633 billion. Thus, the excess concerning the forecast was R$ 353 billion. Applying the percentage proposed by the Transition PEC (6.5%), we reached the R$ 23 billion limit.

granting an additional benefit to families with children up to 6 years old". Soon after, the text explains that R$ 70 billion additionals to what is foreseen in the PLOA are necessary to meet these demands.

The Transition PEC increases by R$ 200.3 billion in expenses excluded from the spending ceiling. The exclusion of R$ 130.5 billion from the spending ceiling and the expansion of the conditional cash transfer program in the amount of R$ 69.8 billion increases the volume of expenses not subject to the spending ceiling rule by R$ 200.3 billion for 2023. It should be noted that the expenses subject to the spending ceiling, excluding transfers to states and municipalities, followed the total primary expenditure until 2018. From 2019 on, excluding additional expenditures from the spending ceiling rule deviated the trajectory of total primary expenses from the trajectory proposed by the spending ceiling of the expenditures subject to the rule. Figure 19 shows the course of total primary spending (realized until 2021 and IFI base case starting in 2022) and the spending ceiling proposed by the fiscal rule. It is possible to observe the decoupling of the two series starting in 2019 when new exclusions to the fiscal rule began to appear.[30]

FIGURE 19. PRIMARY EXPENDITURES AND SPENDING LIMITS (% OF GDP)



Source: STN and IFI. Prepared by: IFI.

With the Transition PEC, the potential increase in the Union's primary expenditures is R$ 173.1 billion for 2023. Thus, besides opening a space in the spending ceiling for 2023 of R$ 103.3 billion, the Transition PEC also expands spending with conditional cash transfer programs estimated at R$ 69.8 billion. Adding these two items, the Union's primary expenditures have a potential increase of R$ 173.1 billion to the PLOA of 2023. However, achieving this possible fiscal expansion will depend on what the government does with the space that will be opened in the spending ceiling.

The Transition PEC does not specify the destination of the space opened in the spending ceiling but informs that it "will be exclusively destined to meet the transition team's requests." The intention to increase the minimum wage, recomposition of appropriations for the Popular Pharmacy and School Meal, and the resumption of interrupted projects has been reported. When considering these items, the amounts do not reach the space opened in the spending ceiling.

Another alternative would be to increase the flexibility of the spending ceiling and only use up some of the open space in the rule. It is worth remembering that when the court-ordered debts PEC was being processed, which resulted in ECs

[30] In 2019 EC 102 excluded R$ 46.1 billion referring to the revision of the onerous assignment contract; in 2020, the expenses related to the pandemic were not subject to the rule; in 2021 EC 109 excluded expenses with social programs (Emergency Aid) and other expenses related to the pandemic; 2022 the exception came through ECs 113 and 114; 2023 onwards the exclusion stems from the Transition PEC.

113 and 114, all the space opened in the spending ceiling for 2022 was used up while the budget was still being processed. Thus, during the budget execution, the government needed to make several blocks to adjust the budget to comply with the spending ceiling[31]. The flexibilization would cause the increase in expenses for 2023 to be below R$ 173.1 billion from the perspective of the PLOA.

The IFI's base scenario assumes the spending ceiling easing. That is, primary expenditures plus transfers to subnational entities through revenue sharing should be R$ 79.0 billion below the potential expenditure foreseen in the 2023 PLOA, already considering the effects of the Transition PEC.

The IFI scenario considers the following assumptions:

- The minimum wage of R$ 1,320 for 2023. This value corresponds to the minimum wage foreseen in the 2023 PLOA (R$ 1,300), corrected by the average economic growth of the last five years. For the following years, the minimum wage increases according to the average economic growth of the last five years plus the INPC of the previous year. The optimistic and pessimistic scenarios follow the same rule but have different GDP and inflation premises.
- Recomposition of discretionary spending. Discretionary spending was 2.3% of GDP on average between 2008 and 2014. With the economic and fiscal crisis of the 2014-2016 period, discretionary spending was reduced substantially so that during the spending ceiling and before the Covid-19 pandemic, discretionary spending averaged 1.8% of GDP and is now at 1.5% of GDP (2022 forecast). Our baseline scenario assumes a recomposition to the pre-pandemic level, i.e., 1.8% of GDP, with the expansion gradually stabilizing at this limit starting in 2024. The pessimistic scenario assumes the same trajectory as the base scenario, but the assumption is a recomposition compatible with the pre-crisis 2014/16 period, i.e., it reaches 2.3% of GDP starting in 2024. In the optimistic scenario, there is also a recomposition of discretionary spending to 1.8% (2026).
- In all scenarios, there is an increase in the conditional cash transfer program. The difference between the IFI scenarios consists of the macroeconomic assumptions and the hypotheses regarding the number of beneficiaries/average benefit value. In the baseline and optimistic scenarios, this program's spending decreases due to the gradual reduction in the number of families eligible. The pessimistic scenario assumes that spending remains constant as a proportion of GDP, showing the difficulty of reducing the number of families needing the benefit due to a more adverse macroeconomic context.
- Adjustment of public servants' remuneration. We assume there will be an adjustment in 2023 along the lines of what was proposed for the judiciary (18% in four installments)[32]. In addition, there are different assumptions for the vegetative growth of these expenses.[33]

In RAF No. 68 and 69, the IFI warned about the incompatibility with the fiscal rules of the extension of the stimulus conceded in 2022 to 2023. When considering the extension of the additional R$ 200 from the Brazil Aid Program and the temporary tax breaks for the fuel sector, the primary deficit could reach 1% of GDP. Without an extension of these stimuli, the deficit would be 0% of the GDP. In this new edition of the RAF, we have updated the projection incorporating the extension of these stimuli on aggregate demand in the baseline scenario and adding others currently

[31] The IFI explored this topic in the October RAF. Available at: https://www2.senado.leg.br/bdsf/bitstream/handle/id/601316/RAF69_OUT2022.pdf.

[32] More information: https://www.camara.leg.br/noticias/907921-projeto-preve-reajuste-de-18-em-subsidio-de-ministros-do-stf/

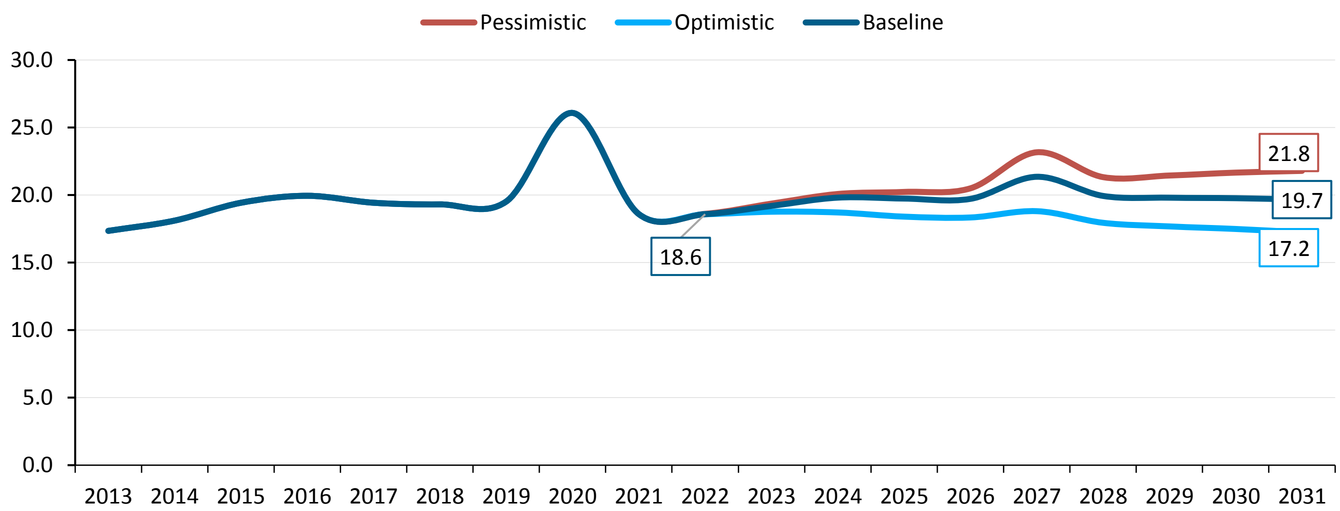
[33] In the baseline scenario, the vegetative growth is 0.8% (average from 2010 to 2019). The pessimistic, 1.4% (average from 2010 to 2014), and the optimistic, 0.3% (average from 2015 to 2019).

under discussion in the scope of the Transition PEC. With this, primary expenditures would reach, in the base scenario, 19.2% of GDP in 2023.

The uncertainty regarding the future of the fiscal rules brings additional risk to the short and medium-term scenario. Excluding the expenses with Brazil Aid from the spending ceiling, without adjusting the rule to the new structure in federal expenditures, may increase primary expenses until the end of 2031. The government transition team has proposed the exclusion of the Brazil Aid Program, investments paid for with excess revenues, environmental expenses, and federal educational institutions whose source of funds are donations, own resources, or agreements (the latter two sources of revenue only for educational institutions) from the spending ceiling. In this hypothesis, and assuming that the spending ceiling will no longer be changed after this exclusion from the calculation basis, as the spending ceiling excepted by the Transition PEC does not contemplate adjustments in the definition of the limit, the open space can be used for other actions. In this context, the valuation of the minimum wage and budgetary recomposition of the School Meal and Popular Pharmacy programs are being discussed.

The medium-term scenario for primary expenditures assumes that primary expenditures will grow above the current spending ceiling. The medium-term scenario for the Federal Government's primary expenditures assumes that they will follow their natural course of evolution with no restrictive measures. Since there is much uncertainty regarding the framework of fiscal rules, the current option is adequate to explain the fiscal risks associated with the trajectory of the expenditure structure that has been designed by the government (Figure 20).

FIGURE 20. UNION PRIMARY EXPENDITURE (% OF GDP)



Source: STN and IFI. Prepared by: IFI.

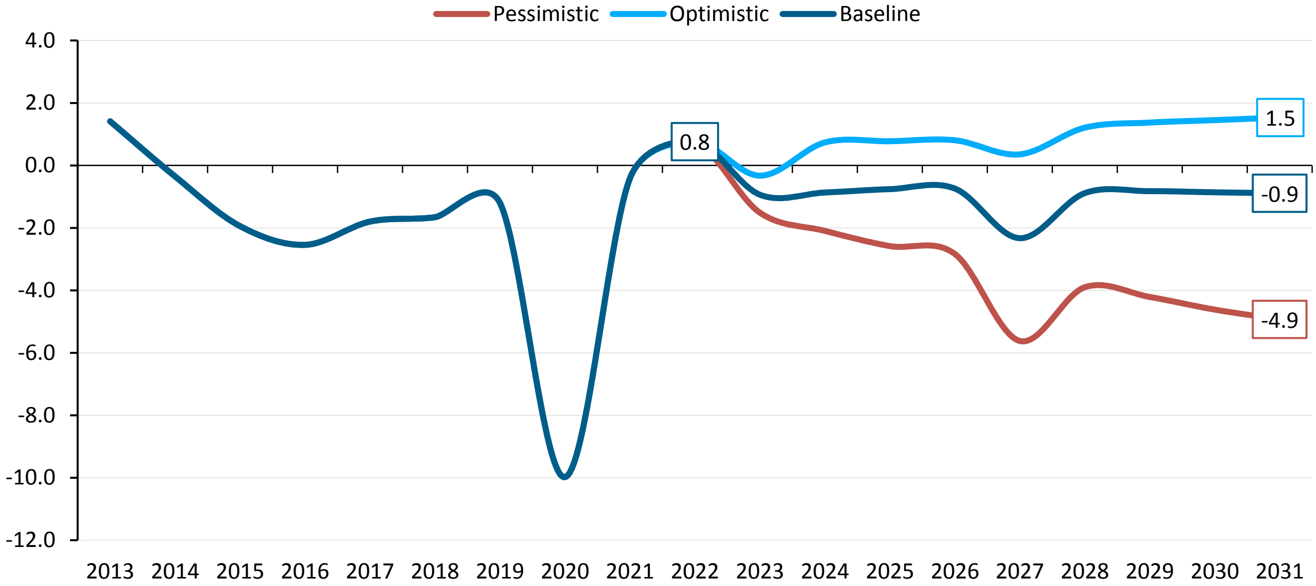
In the baseline scenario, spending is expected to reach 19.7% of GDP in 2031. In the alternative scenarios, primary expenditure varies as a function of macroeconomic parameters, such as inflation and GDP, and different hypotheses for investments and conditional cash transfer social programs.

The primary balance remains in deficit during the IFI projection horizon in the baseline scenario. The Transition PEC proposes the expansion of permanent expenses so that the impacts will be felt not only in 2023. With this, the future scenario is quite challenging. In the baseline and pessimistic scenarios, the primary balance would remain in deficit during the entire projection horizon, and in the optimistic scenario, there would be a primary surplus as of 2024. In this scenario, the debt-to-GDP ratio would fall to 65.5% of the GDP in 2031.

This scenario shows the need to discuss the expansion of expenditures aligned with the sources of financing. In these scenarios of fiscal growth, the government's primary spending differs from a sustainable trajectory for public debt.

Figure 21 compares the central government primary balance curves in the three current scenarios: baseline, optimistic and pessimistic, as a percentage of the GDP.

FIGURE 21. PRIMARY BALANCE - IFI SCENARIOS (% OF GDP)



Source: STN and IFI. Prepared by: IFI.

3. GROSS DEBT SCENARIO

Below are the updated scenarios for the General Government Gross Debt (DBGG) from 2022 to 2031, considering the projections presented in the previous sections for macroeconomic and fiscal variables.

According to the Central Bank, the DBGG as a proportion of the GDP shows a tendency to decrease throughout 2022. Until September, the reduction was determined by the increase in nominal GDP (-0.7 p.p. of GDP) and net debt redemptions (-0.4 p.p. of GDP). The new IFI projections indicate that the downward trajectory will continue into the last quarter of 2022.

The debt-to-GDP ratio reduction in 2022 should be reversed in 2023 due to the central government's primary balance worsening forecast, from a surplus of 0.8% in 2022 to a deficit of 0.9% of the GDP next year.

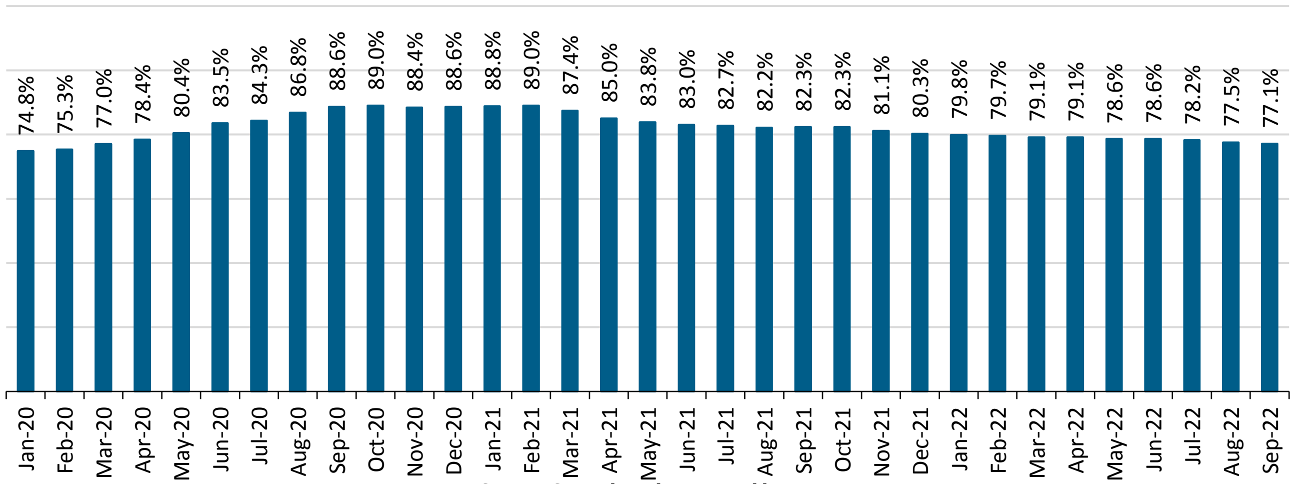
The absence of a framework that effectively limits expenditures could produce primary deficits by the end of the projection horizon, raising the DBGG to a level close to 100% of GDP. The fiscal risk would rise and translate into an increase in the cost of rolling over the debt over time, in addition to deepening the fiscal policy credibility loss.

The changes introduced in the spending ceiling and the expenses that may eventually be excluded from the rule after 2023 reinforce the need to discuss a new fiscal regime. The challenge will be to resume a credible budgetary framework that makes it possible to stabilize the debt/GDP ratio and, in a second stage, make it converge to levels closer to those of other emerging economies.

3.1 Interest and recent debt dynamics

The gross debt-to-GDP ratio took on a declining trajectory in 2021 and 2022. Figure 22 shows the evolution of debt-to-GDP since January 2020. As can be seen, there was a reduction in indebtedness starting in February 2021, and in September 2022, the DBGG reached 77.1% of GDP, recovering from March 2020. By the end of 2022, as presented later in this text, the DBGG should fall to 76.6% of GDP.

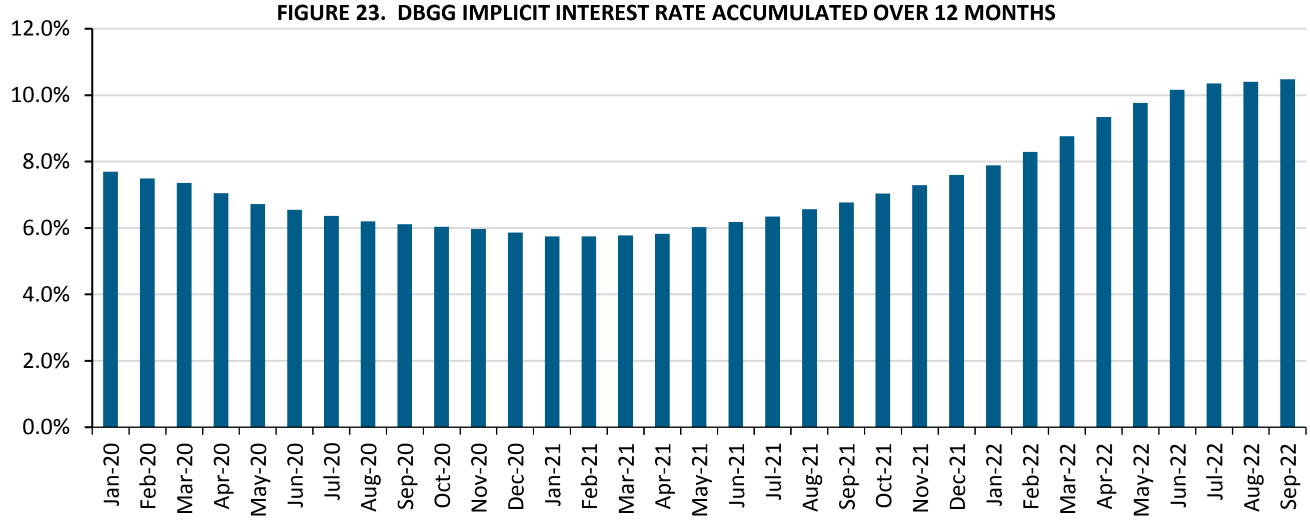
FIGURE 22. DEBT-TO-GDP RATIO



Source: Central Bank. Prepared by: IFI.

The implicit interest rate on the debt has stabilized at 10.5% p.a. The decrease in the debt/GDP ratio, caused by a period of high inflation, with effects on the nominal GDP, is temporary. This occurs because, in a second moment, the increase in interest rates to contain the rise in prices by the Central Bank affects the average cost of the debt and makes the issue of new bonds more expensive. This movement can be observed between the beginning of 2021 and the third quarter of 2022, when the implicit rate of the DBGG began to stabilize at a relatively higher level (Figure 23).

FIGURE 23. DBGG IMPLICIT INTEREST RATE ACCUMULATED OVER 12 MONTHS



Source: Central Bank. Prepared by: IFI.

The increase in the implicit rate accumulated over 12 months, from 5.7% p.a. in February 2021 to 10.5% p.a. in September 2022, produced effects on the public sector interest account, which may affect the debt dynamics, especially if there is a reversal in the consolidated public sector primary balance. As will be presented below, the Federal Government's primary spending dynamics, in the absence of an effective rule, will produce primary deficits for the central government and the public sector in the years ahead, which, in turn, will potentiate the effects on the dynamics of the public debt.

The increase in the Selic rate and the worsening of the exchange rate swap operations took interest expenses to 6.3% of the GDP in 12 months. By illustration, in a 12-month comparison, the net payment of interest by the public sector rose from R$ 284.2 billion (3.5% of GDP) in June 2021 to R$ 592.0 billion (6.3% of GDP) in September of this year. According to the Central Bank, in addition to the Selic rate hike, the growth in interest expenses for the public sector in the last few months occurred because of the worsening in the currency swap operations (a loss of R$ 24.7 billion in September 2022 and R$ 16.8 billion in September 2021).

The increase in interest expenses offsets part of the gains in the public sector primary surplus, explained mainly by the performance of revenues at all levels of government, which in turn was influenced by inflation and commodities.

The subnational entities' primary surplus started to decline in the middle of the year. As mentioned, the state and municipal balance dynamics also reflect higher tax revenues influenced by inflation. Data from the Central Bank referring to the state's and municipalities' primary balances indicate a primary surplus of R$ 91.1 billion for the nine months in 2022. In the 12 months through September, the surplus reached R$ 96.7 billion (1.0% of GDP), compared to R$ 106.8 billion (1.1% of GDP) in the 12 months through August. Under this basis of comparison, the primary balance of the subnational entities began to worsen as of June, impacted by reductions in the ICMS rates on some services (telecommunications, fuels, and electricity) resulting from Supplementary Laws No. 192 and 194. The civil service wage recomposition and the permanent loss of ICMS collection pose a risk to the subnational accounts over the next few years.

Table 14, at the end of the section, presents the consolidated public sector nominal balance projections. Besides the central government's primary balance, already discussed in the previous section, the trajectories for the states, municipalities, and state-owned companies, as well as interest payments, are considered.

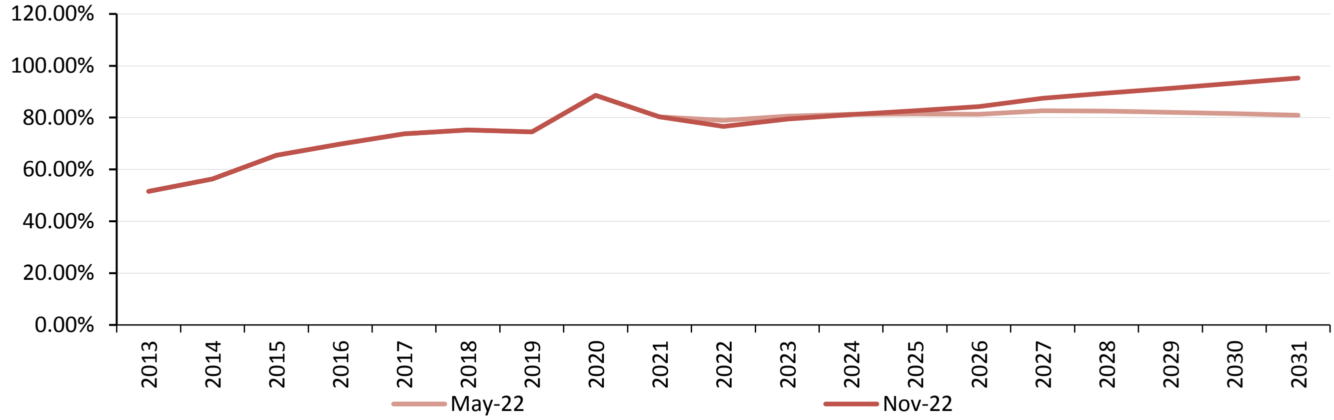
3.2 Forecasts

In the scenario update in May 2022, the IFI projected gross debt at 78.9% of GDP in 2022. The IFI predicts the indicator at 76.6% of GDP in December. The nominal GDP growth well above the debt and the public sector's primary surplus throughout 2022 (Figure 24) contributed to this revision.

Primary deficits and lower GDP growth will cause gross debt to rise in the coming years. The projected increase in the DBGG as a proportion of GDP starting in 2023 is explained by the reversal, as early as next year, of the public sector primary surplus, as well as lower nominal GDP growth expected in the coming years (an average of 5.9% between 2024 and 2031). The primary deficits projected for the consolidated public sector result from solid growth in primary expenditures in the absence of compensatory measures and a clear fiscal framework.

Court-ordered debt payments starting in 2027 will represent an additional worsening of the debt trajectory. It is also worth mentioning the introduction of a limit for spending on court-ordered debts in the Constitution in 2021, which alleviates the budget execution in the short term, favoring the central government's primary balance until 2026. The constitutional rule foresees, however, that the accumulated liability will be fully paid off in 2027, which will further worsen the central government's primary balance (and consequently in the public sector).

FIGURE 24. DBGG (% OF GDP) - PREVIOUS AND CURRENT FORECASTS (BASELINE)



Source: Central Bank. Prepared by: IFI.

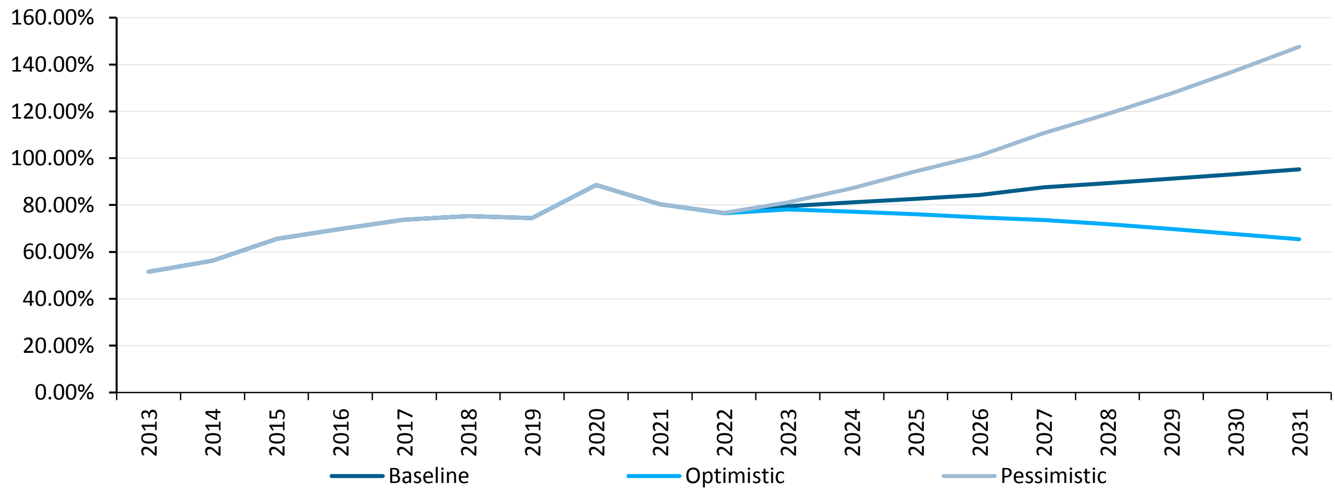
The court-ordered debt payments in 2027 would influence the DBGG trajectory as of that year, generating a jump of 3.2 p.p. in the baseline scenario, rising from 84.3% in 2026 to 87.5% of GDP in 2027.

For 2023, in the optimistic and pessimistic scenarios, the IFI estimates the debt/GDP ratio at 78.2% and 81.2%, in that order. The baseline scenario predicts the DBGG to reach 95.3% of GDP in 2031, while in the optimistic and pessimistic scenarios, the debt would reach 65.5% and 147.6%, respectively.

An increase in expenses and debt could compromise confidence in the sustainability of public accounts. Still, concerning the trajectory of the DBGG in the 2022 to 2031 horizon, the perspective is of increase, considering the macroeconomic parameters presented in the first section, and given the trend considered for the public sector primary balance. This trajectory of the DBGG highlights the risks embedded in the context of primary expenditure growth in the absence of the limitation represented by the spending ceiling. It is important to note additional threats that may compromise the growth projected for the economy and the confidence in the sustainability of public accounts.

Figure 25 consolidates the expected trajectories in the three IFI scenarios.

FIGURE 25. DBGG FORECASTS (% OF GDP)



Source: Central Bank. Prepared by: IFI.

Table 11 displays the average values of the leading debt assumptions from 2022 to 2031. Table 12, in turn, shows the projections for the DBGG as a percentage of the GDP in the three IFI medium-term scenarios.

TABLE 11. MAIN MACRO-FISCAL ASSUMPTIONS FOR THE DEBT SCENARIOS – AVERAGE 2022 TO 2031

	Nov-19	Nov-20	Feb-21	May-21	Jun-21	Oct-21	Dec-21	May-22	Nov-22
Baseline									
Primary balance (R$ billion)	63.2	-135.8	-85.2	-51.7	37.4	0.4	34.2	45.1	-112.4
GDP at current prices (R$ billion)	11,238	10,569	10,865	11,145	11,604	11,997	12,200	12,852	12,827
GDP at constant prices (%)	2.3%	2.4%	2.3%	2.3%	2.3%	2.2%	2.0%	1.9%	1.9%
Real interest rate (%)	3.0%	2.7%	3.1%	3.2%	3.2%	3.4%	3.6%	4.1%	4.6%
Optimistic									
	Nov-19	**Nov-20**	**Feb-21**	**May-21**	**Jun-21**	**Oct-21**	**Dec-21**	**May-22**	**Nov-22**
Primary balance (R$ billion)	236.2	46.89	150.4	124.5	181.4	140.6	168.83	269.4	125.4
GDP at current prices (R$ billion)	11,856	11,289	11,428	11,747	12,313	12,533	12,702	13,413	13,280
GDP at constant prices (%)	3.4%	3.5%	3.4%	3.5%	3.5%	3.3%	3.1%	2.8%	2.8%
Real interest rate (%)	2.2%	2.2%	2.6%	2.6%	2.6%	2.6%	2.7%	3.3%	4.0%
Pessimistic									
	Nov-19	**Nov-20**	**Feb-21**	**May-21**	**Jun-21**	**Oct-21**	**Dec-21**	**May-22**	**Nov-22**
Primary balance (R$ billion)	43.03	-305.2	-300.6	-252.2	-83.5	-135.4	-242	-336.2	-452.7
GDP at current prices (R$ billion)	11,519	10,521	10,744	11,170	11,549	12,099	12,171	13,110	13,183
GDP at constant prices (%)	1.2%	1.4%	1.3%	1.3%	1.3%	1.2%	1.1%	1.0%	1.1%
Real interest rate (%)	4.6%	4.8%	4.6%	4.7%	4.7%	5.2%	5.0%	5.4%	5.9%

*** In the Nov/19 to Dec/21 updates, the average considers the period from 2022 to 2030. As of May/22, we take the end of the projection horizon in 2031.*
Source: IFI.

TABLE 12. DEBT-TO-GDP RATIO FORECASTS UNTIL 2031

Year	Baseline		Optimistic		Pessimistic	
	May/22	Nov/22	May/22	Nov/22	May/22	Nov/22
2017	73.7%	73.7%	73.7%	73.7%	73.7%	73.7%
2018	75.3%	75.3%	75.3%	75.3%	75.3%	75.3%
2019	74.4%	74.4%	74.4%	74.4%	74.4%	74.4%
2020	88.6%	88.6%	88.6%	88.6%	88.6%	88.6%
2021	80.3%	80.3%	80.3%	80.3%	80.3%	80.3%
2022	78.9%	76.6%	78.0%	76.5%	80.4%	76.7%
2023	80.6%	79.5%	78.3%	78.2%	84.3%	81.2%
2024	81.3%	81.2%	77.0%	77.2%	88.1%	87.2%
2025	81.4%	82.7%	74.8%	76.1%	92.0%	94.4%
2026	81.3%	84.3%	72.1%	74.7%	96.4%	101.1%
2027	82.6%	87.5%	69.9%	73.6%	103.5%	110.6%
2028	82.5%	89.4%	66.5%	71.8%	109.2%	118.9%
2029	82.1%	91.3%	62.8%	69.8%	115.3%	127.7%
2030	81.5%	93.2%	58.7%	67.7%	121.8%	137.3%
2031	80.9%	95.3%	54.5%	65.5%	128.6%	147.6%

Source: IFI.

Primary surpluses of the sub-national entities and the central government have motivated a revision in the debt projection for this year. The current debt/GDP projection for 2022 in the baseline scenario is affected by the primary surplus of the consolidated public sector. The May projection of R$ 71.5 billion was revised to R$ 142.3 billion due mainly to the primary balance of the regional governments, for which the IFI estimates R$ 68.2 billion this year, and to the surplus of the central government, forecasted to reach R$ 7.1 billion in 2022.

Table 13 presents an exercise that illustrates the primary balance required to stabilize the DBGG at 76.6%, the 2022 baseline scenario forecast.

TABLE 13. PRIMARY BALANCE REQUIRED TO STABILIZE GROSS DEBT AT 76.6% OF GDP

DBGG at 76,6%		Real Implicit DBGG Interest							
		2.0%	3.9%	4.4%	4.9%	5.4%	5.9%	6.4%	6.9%
Real GDP growth (% p.a.)	1.0%	0.8%	2.2%	2.6%	3.0%	3.4%	3.7%	4.1%	4.5%
	1.9%	0.1%	1.5%	1.9%	2.3%	2.7%	3.0%	3.4%	3.8%
	2.4%	-0.3%	1.2%	1.5%	1.9%	2.3%	2.7%	3.0%	3.4%
	2.9%	-0.7%	0.8%	1.2%	1.5%	1.9%	2.3%	2.6%	3.0%
	3.4%	-1.0%	0.4%	0.8%	1.1%	1.5%	1.9%	2.3%	2.6%
	3.9%	-1.4%	0.0%	0.4%	0.8%	1.1%	1.5%	1.9%	2.2%
	4.4%	-1.7%	-0.3%	0.0%	0.4%	0.8%	1.1%	1.5%	1.9%

Source: IFI.

Higher growth of the economy reduces the government's effort to stabilize the debt as a proportion of GDP. For example, with an implicit interest rate on gross debt at 3.9% p.a. (average IFI projection for the period 2023 to 2031 in the baseline scenario) and GDP growth of 1.9% (average forecast between 2023 and 2031 in the baseline scenario), the primary surplus required to stabilize the DBGG at 76.6% of GDP is 1.5%, 2.5 p.p. of GDP above the average deficit of 1% of GDP projected by the IFI for the period.

Table 13 indicates that the higher the interest rate, the higher the primary required to stabilize the debt. On the other hand, higher economic growth decreases the primary balance values necessary to do so. Under the hypothesis of real interest rates at 2.0% p.a. and GDP growth of 4.4%, even a primary deficit of 1.7% of GDP would stabilize the gross debt at the level projected by the IFI for December 2022 (76.6% of GDP).

Interest expenditure hinders the reduction of the nominal deficit in the projection horizon. Finally, Table 14 presents the projections for the primary and nominal balances and interest expenditures in the three reference scenarios. The figures reveal the persistence of significant nominal deficits due to relatively high-interest expenses. Only in the optimistic scenario, in which the public sector achieves primary surpluses from 2024, does the nominal result assume a declining trend, though still in deficit.

TABLE 14. NOMINAL RESULT OF THE CONSOLIDATED PUBLIC SECTOR (% OF GDP)

	Baseline			Optimistic			Pessimistic		
	Nominal result	Primary balance	Interest	Nominal result	Primary balance	Interest	Nominal result	Primary balance	Interest
2018	-7.0%	-1.5%	5.4%	-7.0%	-1.5%	5.4%	-7.0%	-1.5%	5.4%
2019	-5.8%	-0.8%	5.0%	-5.8%	-0.8%	5.0%	-5.8%	-0.8%	5.0%
2020	-13.6%	-9.4%	4.2%	-13.6%	-9.4%	4.2%	-13.6%	-9.4%	4.2%
2021	-4.4%	0.7%	5.2%	-4.4%	0.7%	5.2%	-4.4%	0.7%	5.2%
2022	-4.6%	1.5%	6.1%	-4.6%	1.5%	6.1%	-4.7%	1.4%	6.1%
2023	-6.8%	-0.9%	5.9%	-5.4%	-0.3%	5.1%	-8.7%	-1.7%	6.9%
2024	-6.5%	-0.9%	5.6%	-4.2%	0.8%	5.1%	-11.4%	-2.6%	8.8%
2025	-6.1%	-0.8%	5.4%	-3.8%	0.9%	4.7%	-12.9%	-3.3%	9.6%
2026	-6.2%	-0.8%	5.5%	-3.4%	0.9%	4.3%	-12.6%	-3.5%	9.0%
2027	-7.9%	-2.3%	5.7%	-3.7%	0.5%	4.2%	-16.1%	-6.3%	9.8%
2028	-6.7%	-0.9%	5.8%	-2.8%	1.3%	4.1%	-15.2%	-4.6%	10.6%
2029	-6.8%	-0.9%	5.9%	-2.5%	1.4%	4.0%	-16.3%	-4.9%	11.4%
2030	-7.0%	-0.9%	6.1%	-2.4%	1.5%	3.9%	-17.6%	-5.3%	12.2%
2031	-7.1%	-0.9%	6.2%	-2.2%	1.6%	3.8%	-18.8%	-5.7%	13.2%

Source: IFI.

3.3 Stochastic debt scenarios

The probability of the DBGG exceeding 90% of GDP by 2026 is 22%. In addition to the three deterministic scenarios (baseline, optimistic and pessimistic), we simulate 1,500 DBGG stochastic[34] scenarios and combine them with our baseline, using methodology inspired by work done by the European Commission[35], the IMF[36], and the *Office for*

[34] That is, scenarios that have random components to represent uncertain economic events.

[35] Berti, Katia (2013). *Stochastic public debt projections using the historical variance-covariance matrix approach for EU countries*. Economic papers, n. 480, p. 1-25, 2013. Available at: https://ec.europa.eu/economy_finance/publications/economic_paper/2013/ecp480_en.htm.

Budget Responsibility[37] (OBR, the UK's IFI). The stochastic scenarios enable the estimation of probabilities concerning the trajectory of public debt in the coming years. Given the baseline scenario assumptions, we estimate a 22% likelihood of the DBGG crossing the 90% of GDP threshold by 2026.

It is important to note that the stochastic scenarios are not directly comparable to the other two deterministic ones (optimistic and pessimistic) because they are based on different assumptions. To construct the deterministic trajectories, we use assumptions that well-defined economic events, not necessarily those that occurred in the past, will happen in the future. Thus, unlike the stochastic scenarios, they incorporate indispensable qualitative evaluations about relevant fiscal events that the IFI envisions as possible for the coming years.

On the other hand, the construction of the stochastic scenarios is made from a successive drawing of random deviations from the base scenario. These deviations are drawn from a sample of historical variations of the debt determinants. There is also a difference in purpose between the approaches: the deterministic scenarios seek to show the path of the DBGG in case a sequence of alternative but known, and well-defined economic events materialize; the stochastic procedures seek to communicate the uncertainty about the future course of the DBGG.

In Figure 26, the percentages on the left-hand axis indicate the rate that the DBGG represents of GDP. The ratios at the end of the curves on the right indicate which percentile of the 1,500 simulated trajectories the dashed curve represents. For example, 80% of the simulated trajectories[38] fall below the "80% Percentile" curve. In other words, 20% lies above this curve, indicating the position of the 80% percentile of the DBGG distribution each year. In 2026, the percentile will be almost equal to 90% of GDP.

Figure 26 also suggests that it is unlikely that the DBGG will continue on a downward path in the coming years since practically all of the percentile curves point to a resumption of the growth of indebtedness as a proportion of GDP. In particular, we estimate at 86.3% the probability that gross debt in 2026 would be higher than the 2022 level.

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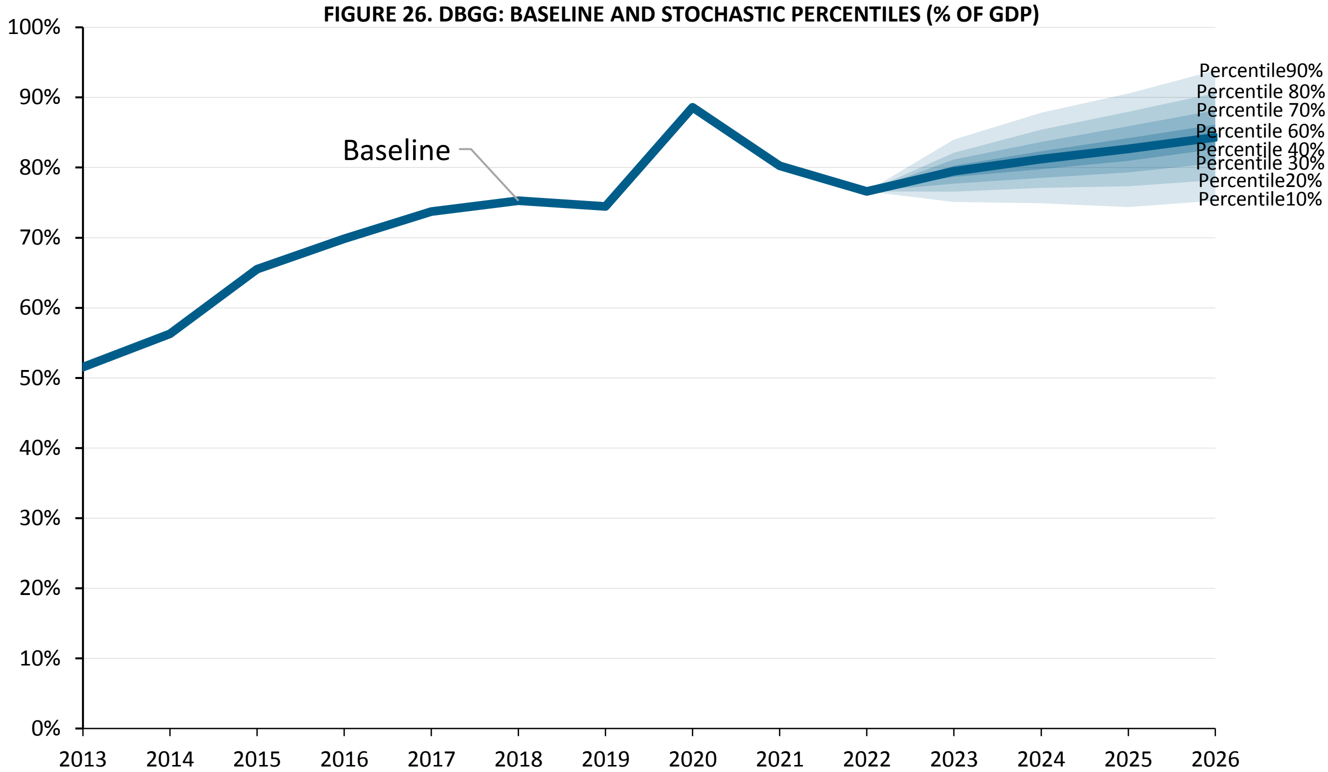
[36] di Giovanni, J. e Gardner, E. H. (2008). *A Simple Stochastic Approach to Debt Sustainability Applied to Lebanon*. IMF Working Paper No. 2008/097. Available at: https://www.imf.org/en/Publications/WP/Issues/2016/12/31/A-Simple-Stochastic-Approach-to-Debt-Sustainability-Applied-to-Lebanon-21891.

[37] Steel, Daniel (2021). *Evaluating forecast uncertainty with stochastic simulations*. OBR Working Paper No. 17. December 2021. Available at:

https://obr.uk/docs/dlm_uploads/working_paper_no17_uncertainty.pdf.

[38] The 1,500 trajectories have not been included in Figure 26 to facilitate visualization of the essential elements.

FIGURE 26. DBGG: BASELINE AND STOCHASTIC PERCENTILES (% OF GDP)



Prepared by: IFI.

The IFI will soon publish a technical note with more details on the methodology. Below is a brief explanation of the procedure.

All the stochastic scenarios were generated using the public debt evolution equation.[39] The difference between them is that different hypothetical temporary shocks were applied to the variables that determine the debt: real interest rate implicit in the DBGG, real GDP growth, and primary balance.

To generate the hypothetical shocks, we adopted Berti's (2013) procedure, in which the shocks are drawn to reproduce the volatility and historical correlation between the variables. To avoid atypical pandemic years distorting the results, we restricted the draw of shocks to years before 2020.

In the simulation, we did not apply shocks directly to the DBGG. It was calculated exclusively from the debt evolution equation. However, as expected, the shocks used to the debt determinants indirectly impact the DBGG, allowing the influence of the determinants' volatility on the debt volatility to become apparent.

Based on the OBR methodology, Figure 26 was constructed so that the baseline scenario was precisely equal to the median (50% percentile) each year (2022 to 2026). Thus, there is a 50% chance that the DBGG will be below the base case and a 50% chance that it will be above. Such a procedure purposely gives great weight to the deterministic baseline.

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[39] The equation is given by: $d_t = \frac{1+r_t}{1+g_t} \cdot d_{t-1} - rp_t$, where d_t is the DBGG in percent of GDP; r_t is the DBGG implicit real interest rate; g_t is the real GDP growth rate, and rp_t is the primary balance in percent of GDP. The variables should be interpreted as the values in effect "at the end of year t" (or $t - 1$, c depending on the variable subscript).

The simulated trajectories end in 2026, as opposed to 2031, which is the reference year for the other simulations in this report. The explanation for restricting the simulation to a five-year horizon is that stochastic scenarios cease to be realistic at longer horizons, as indicated by Berti (2013). In other words, the range of possibilities becomes extensive to the point of losing analytical utility.

Fiscal tables

TABLE 15. IFI FORECASTS FOR THE CENTRAL GOVERNMENT PRIMARY BALANCE – BASELINE SCENARIO (% OF GDP)

Breakdown	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Gross Revenue	22.3	24.0	22.5	23.1	23.3	23.3	23.3	23.3	23.3	23.2	23.1
Transfers to States and Municipalities by Revenue Sharing	4.1	4.7	4.2	4.2	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Net Revenue	18.2	19.3	18.3	18.9	19.0	19.0	19.0	19.0	19.0	18.9	18.8
Primary Expenditure	18.6	18.6	19.2	19.8	19.7	19.7	21.4	19.9	19.8	19.8	19.7
Mandatory Expenditure	17.2	17.1	17.7	18.0	18.0	17.9	19.6	18.2	18.0	18.0	17.9
Social security benefits	8.2	8.1	8.5	8.8	8.9	8.9	9.7	9.1	9.1	9.1	9.1
Personnel expenses and social contribution	3.8	3.5	3.4	3.4	3.3	3.3	3.5	3.2	3.1	3.1	3.0
Salary allowance and unemployment insurance	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6
Salary Allowance	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Unemployment Insurance	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
BPC [Continuous Cash Benefit Program]	0.8	0.8	0.9	1.0	1.0	1.0	1.2	1.2	1.2	1.3	1.4
Compensation to RGPS for Exemption of Payroll Taxes	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Supplementation by the Federal Government to Fundeb	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Legislative, Judiciary, Prosecutor's Office and Public Defender's Office	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Court Rulings and Court-Ordered Debt (current and capital expenditure)	0.2	0.2	0.2	0.2	0.2	0.2	0.7	0.3	0.3	0.3	0.3
Subsidies and Grants	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other Mandatory Spending	3.1	3.1	3.2	3.2	3.1	3.0	2.9	2.9	2.7	2.7	2.6
without Flow Control	1.5	0.8	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1
with Flow Control	1.7	2.2	3.0	3.0	2.9	2.8	2.8	2.7	2.6	2.5	2.5
Of which Bolsa Família [Family Grant]	0.3	0.9	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4
Discretionary of the Executive Branch	1.4	1.5	1.5	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Primary Balance	-0.4	0.8	-0.9	-0.9	-0.8	-0.7	-2.3	-0.9	-0.8	-0.9	-0.9
Note:											
Spending on Covid-19	1.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nominal GDP (R$ billion)	8,679.5	9,741.1	10,323.3	10,975.9	11,641.9	12,327.3	13,048.9	13,807.8	14,608.1	15,453.0	16,341.3

TABLE 16. IFI FORECASTS FOR THE CENTRAL GOVERNMENT PRIMARY BALANCE – OPTIMISTIC SCENARIO (% OF GDP)

Breakdown	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Gross Revenue	22.3	24.0	22.6	23.6	23.5	23.4	23.4	23.4	23.3	23.2	23.1
Transfers to States and Municipalities by Revenue Sharing	4.1	4.7	4.2	4.2	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Net Revenue	18.2	19.3	18.4	19.4	19.2	19.1	19.2	19.2	19.0	18.9	18.8
Primary Expenditure	18.6	18.6	18.8	18.7	18.4	18.3	18.8	17.9	17.7	17.5	17.2
Mandatory Expenditure	17.2	17.1	17.4	17.2	16.7	16.6	17.0	16.2	15.9	15.7	15.5
Social security benefits	8.2	8.1	8.3	8.2	8.1	8.0	8.4	8.0	8.0	8.0	7.9
Personnel expenses and social contribution	3.8	3.5	3.4	3.3	3.2	3.1	3.1	2.9	2.8	2.7	2.6
Salary allowance and unemployment insurance	0.5	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Salary Allowance	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Unemployment Insurance	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
BPC [Continuous Cash Benefit Program]	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.3
Compensation to RGPS for Exemption of Payroll Taxes	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Supplementation by the Federal Government to Fundeb	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Legislative, Judiciary, Prosecutor's Office and Public Defender's Office	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Court Rulings and Court-Ordered Debt (current and capital expenditure)	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.2	0.2	0.2	0.2
Subsidies and Grants	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Other Mandatory Spending	3.1	3.1	3.2	3.1	2.9	2.8	2.6	2.5	2.3	2.3	2.1
without Flow Control	1.5	0.8	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1
with Flow Control	1.7	2.2	3.0	2.9	2.7	2.6	2.5	2.3	2.2	2.1	2.0
Of which Bolsa Família [Family Grant]	0.3	0.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0
Discretionary of the Executive Branch	1.4	1.5	1.4	1.5	1.7	1.8	1.8	1.8	1.8	1.8	1.8
Primary Balance	-0.4	0.8	-0.3	0.7	0.8	0.8	0.4	1.2	1.4	1.4	1.5
Note:											
Spending on Covid-19	1.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nominal GDP (R$ billion)	8,679.5	9,752.7	10,325.0	11,056.9	11,814.9	12,612.6	13,469.1	14,387.6	15,374.7	16,436.4	17,571.4

TABLE 17. IFI FORECASTS FOR THE CENTRAL GOVERNMENT PRIMARY BALANCE – PESSIMISTIC SCENARIO (% OF GDP)

Breakdown	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Gross Revenue	22.3	24.0	22.0	22.1	21.8	21.8	21.6	21.5	21.2	21.0	20.8
Transfers to States and Municipalities by Revenue Sharing	4.1	4.6	4.2	4.1	4.2	4.1	4.1	4.0	4.0	4.0	3.9
Net Revenue	18.2	19.3	17.8	18.0	17.7	17.7	17.5	17.4	17.2	17.0	16.9
Primary Expenditure	18.6	18.6	19.4	20.1	20.2	20.5	23.2	21.3	21.4	21.7	21.8
Mandatory Expenditure	17.2	17.1	17.6	17.8	18.0	18.2	20.9	19.0	19.2	19.4	19.5
Social security benefits	8.2	8.1	8.5	8.6	8.7	8.8	10.1	9.3	9.4	9.5	9.6
Personnel expenses and social contribution	3.8	3.5	3.4	3.4	3.4	3.5	4.0	3.7	3.7	3.8	3.8
Salary allowance and unemployment insurance	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6
Salary Allowance	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Unemployment Insurance	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
BPC [Continuous Cash Benefit Program]	0.8	0.8	0.9	0.9	1.0	1.0	1.2	1.2	1.2	1.3	1.4
Compensation to RGPS for Exemption of Payroll Taxes	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Supplementation by the Federal Government to Fundeb	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Legislative, Judiciary, Prosecutor's Office and Public Defender's Office	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Court Rulings and Court-Ordered Debt (current and capital expenditure)	0.2	0.2	0.2	0.2	0.2	0.2	1.0	0.3	0.3	0.3	0.3
Subsidies and Grants	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other Mandatory Spending	3.1	3.1	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0
without Flow Control	1.5	0.8	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1
with Flow Control	1.7	2.2	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9
Of which Bolsa Família [Family Grant]	0.3	0.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Discretionary of the Executive Branch	1.4	1.5	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Primary Balance	-0.4	0.7	-1.5	-2.1	-2.6	-2.8	-5.6	-3.9	-4.2	-4.6	-4.9
Note:											
Spending on Covid-19	1.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nominal GDP (R$ billion)	8,679.5	9,737.3	10,351.6	11,072.5	11,807.8	12,577.2	13,398.5	14,272.9	15,202.3	16,182.8	17,224.2

IFI forecasts

SHORT-TERM

IFI forecasts	2022			2023		
	October	November	Comparison	October	November	Comparison
GDP – real growth (% per year)	2.61	2.60	▼	0.59	0.89	▲
Nominal GDP (R$ billion)	9,751.56	9,741.05	▼	10,339.82	10,323.26	▼
IPCA – accum. (% in the year)	5.78	5.58	▼	4.78	4.56	▼
Exchange rate – end-of-period (R$/US$)	5.21	5.10	▼	5.21	5.17	▼
Employment – growth (%)	7.30	7.60	▲	0.28	0.44	▲
Payroll – growth (%) (%)	4.62	5.45	▲	0.59	0.89	▲
Selic rate – end-of-period (% per year)	13.75	13.75	=	11.00	11.50	▲
Real Interest *ex-ante* (% per year)	6.53	7.03	▲	4.78	5.50	▲
Public Sector Consolidated Primary Balance (% of GDP)	1.12	1.46	▲	-0.04	-0.94	▼
of which Central Government	0.52	0.76	▲	-0.04	-0.94	▼
Net Nominal Interest (% of GDP)	6.17	6.07	▼	5.59	5.85	▲
Nominal Balance (% of GDP)	-5.05	-4.61	▲	-5.63	-6.79	▼
General Government Gross Debt (% of GDP)	77.33	76.60	▼	79.19	79.49	▲

MEDIUM-TERM

		Forecasts									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
GDP – real growth (% per year	**4.62**	2.60	0.89	1.70	2.13	2.10	2.06	2.03	2.01	2.00	1.96
Nominal GDP (R$ billion))	**8,679**	9,741	10,323	10,976	11,642	12,327	13,049	13,808	14,608	15,453	16,341
IPCA – accum. (% in the year)	**10.06**	5.58	4.56	3.44	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Exchange rate – end-of-period (R$/US$)	**5.58**	5.10	5.17	5.23	5.27	5.30	5.34	5.38	5.41	5.45	5.49
Employment – growth (%)	**4.99**	7.60	0.44	0.85	1.07	1.05	1.03	1.01	1.00	1.00	0.98
Payroll – growth (%)	**-2.38**	5.45	0.89	1.70	2.13	2.10	2.06	2.03	2.01	2.00	1.96
Selic rate – end-of-period (% per year)	**9.25**	13.75	11.50	8.50	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Real Interest *ex-ante* (% per year)	**6.39**	7.03	5.50	4.19	4.05	3.97	3.93	3.91	3.90	3.89	3.89
Public Sector Consolidated Primary Balance (% of GDP)	**0.75**	1.46	-0.94	-0.87	-0.76	-0.75	-2.29	-0.91	-0.85	-0.89	-0.93
of which Central Government	**-0.41**	0.76	-0.94	-0.87	-0.76	-0.74	-2.33	-0.89	-0.83	-0.86	-0.89
Net Nominal Interest (% of GDP)	**5.17**	6.07	5.85	5.61	5.39	5.49	5.65	5.82	5.94	6.07	6.20
Nominal Balance (% of GDP)	**-4.42**	-4.61	-6.79	-6.48	-6.15	-6.25	-7.94	-6.73	-6.80	-6.96	-7.13
General Government Gross Debt (% of GDP)	**80.3**	76.6	79.5	81.2	82.7	84.3	87.5	89.4	91.3	93.2	95.3

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ifi@senado.leg.br / +55 (61) 3303-2875