TESOURONACIONAL

2020

Nº 2

Brazilian Public Debt Forecasts:

Four-monthly Report

Ministry of Economy
Special Secretariat of Finance
National Treasury of Brazil

TESOURONACIONAL SECRETARIA ESPECIAL DE FAZENDA MINISTÉRIO DA ECONOMIA PÁTRIA AMADA BRASIL GOVERNO FEDERAL

Brazilian Public Debt Forecasts: Four-monthly Report – N. 2

2020

Art
Press Office (ASCOM/National Treasury)
Graphic Design and Layout: Viviane Barros and Hugo Pullen

Information
Phone: (+55 61) 3412-1843
E-mail: ascom@tesouro.gov.br
Available at: www.tesourotransparente.gov.br

Brazilian Public Debt Forecasts: Four-monthly Report – N. 2

Ministry of Economy, Special Secretariat of Finance, National Treasury Secretariat, Brasilia. July, 2020, n. 2.

Disclaimer: *The National Treasury publishes an English version of the report with the intention to disseminate the document to a broader audience. However, in case of divergence of interpretation, the text in Portuguese shall prevail.*

Summary

Executive Summary

This report presents the outlook for public debt over a 10-year horizon (2020 to 2029), as well as a set of complementary analyses. Compared to the report published in February 2020, the figures have changed significantly as a result of the impacts of the coronavirus pandemic on public finances and the economy.

The General Government Gross Debt (GGGD) is expected to reach 98.2% of GDP by the end of 2020, an increase of 22.4% of GDP compared to the end of 2019 (75.8%). In the following years, GGGD would be virtually stable, reaching 98.6% of GDP in 2024 and then going down on a downward trend, ending 2029 at 92.2% of GDP.

The relative stability of the GGGD/GDP ratio between 2021 and 2024, even in the face of significant primary deficits, is explained by the expectation of low real interest rates and recovery of real GDP growth. There is a short window of opportunity to the dynamics of indebtedness, within which advances in fiscal adjustment are presupposed. Without these, the GGGD/GDP ratio stability may not materialize, with significant risks to the entire trajectory.

In turn, the Public Sector Net Debt (PSND) is expected to reach 69.9% of GDP in 2020, thus 14.2 percentage points higher than at the end of 2019 (55.7%). The impact of the crisis on the PSND is mitigated by the appreciation of international reserves, due to exchange rate variation. But in the medium-term, PSND/GDP presents a persistent growth trend until 2027, reaching 81.7% in 2029.

In 2020, the debt increase is partly explained by fiscal measures that increase the primary deficit and, in part, by the effects of the crisis on the macroeconomic scenario, especially on GDP. This change in the level of indebtedness and in the fiscal figures in 2020 involves repercussions that will persist throughout the debt trajectory in the medium term.

The combination of simultaneous shocks in the primary balance, interest rates and economic growth would have a great impact on the debt/GDP trajectory, both for GGGD and PSND. Negative shocks in those variables could result in high-risk trajectories to the debt.

In fact, it is plausible that an adverse shock in one of these variables may come together with negative impacts on the others. That is, a scenario with a higher primary deficit tends to be followed by higher real interest rates and lower GDP growth. Therefore, lower debt/GDP levels in the medium term, both GGGD and PSND, necessarily go through the continuity of reforms that favor the business

environment and higher GDP growth, as well as through the process of fiscal consolidation.

Finally, the report estimates what fiscal effort would be required to bring debt/GDP ratio down to the pre-crisis levels. With GGGD/GDP growth in 2020 reaching 98.2% in the post-COVID baseline scenario, the annual average primary balance required to close 2029 at the same level as that of the end of 2019, would be 1.73% of GDP in the 2021-2029 horizon (instead of 0.26% of GDP, as calculated in the pre-crisis period). This would require an average increase of 1.76% of GDP in the primary outcome of the current baseline scenario, in order to generate surpluses of more than 2.0% of GDP from 2026.

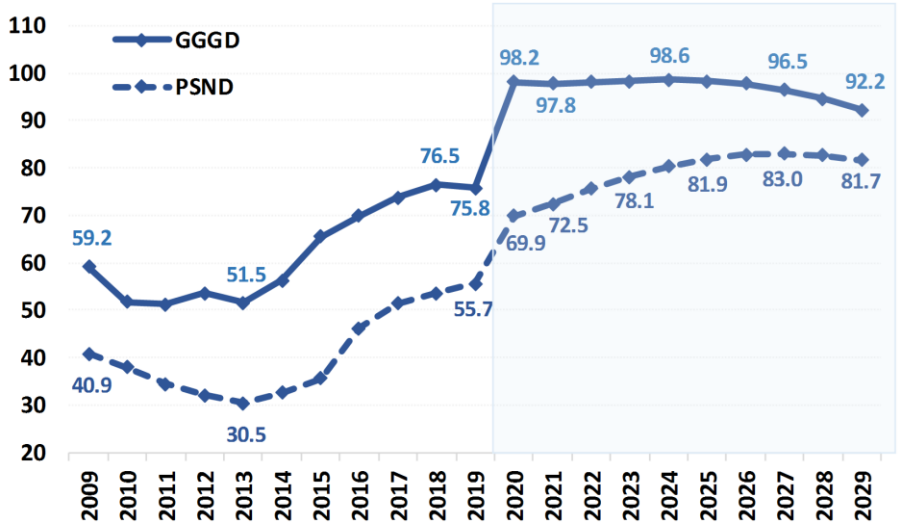
In the case of PSND, the required effort would be substantially greater, suggesting that it would be unlikely to return to the pre-crisis level over the 10-year horizon.

The required primary simulations are hypothetical, but reveal the real challenge imposed on fiscal management. It clearly exposes the need to follow up with reforms in favor of fiscal adjustment and sustained growth. The benefits of reforms would be two-fold: higher growth and better conditions to maintain a lower interest rate and controlled inflation.

1. Perspectives for the Brazilian Public Debt

The baseline scenario of this report (Figure 1) indicates that GGGD and PSND will end 2020 at 98.2% and 69.9% of GDP, respectively. The growth of these indicators in relation to the previous year, of 22.4 p.p. and 14.2 p.p. of GDP, are the largest of this century and stem mainly from the effects of the crisis caused by the outbreak of the new coronavirus.

Figure 1 – Public debt forecasts (% GDP)



Source: Actual data, Brazilian Central Bank. Forecasts: National Treasury Secretariat/ Special Secretary of Finance/Ministry of Economy[1].

The Brazilian public indebtedness will reach a new level, which will require an even greater fiscal effort in the medium term than was sought before the crisis.

In this scenario, GGGD would be virtually stable over the next 4 years, reaching 98.6% of GDP in 2024 and then going down on a downward trend, ending 2029 at 92.2% of GDP. The PSND, in turn, would continue on a growth path until 2027, reaching 83.0% of GDP, and then would present yearly marginal decreases, ending the forecast period at 81.7% of GDP.

The relative stability of GGGD in the period 2021-2024 occurs even in the face of a fiscal context characterized by significant primary deficits in public finances. This evolution of debt is based, however, on the expectation of low real interest rates and recovery of real GDP growth. It is a short window, during which the differential between interest and growth is favorable to the dynamics of indebtedness[2].

[1] Hereafter, the Brazilian Central Bank will be referred as BCB and the National Treasury Secretariat/ Special Secretariat of Finance/Ministry of Economy will be referred as NT/SSF/ME.

[2] In the baseline scenario, comparing the average nominal Selic rate and the GDP deflator (important for the Debt/GDP ratio), a real interest rate of -1.0%, 0.6%, 1.4% and 1.9% per year for 2021, 2022, 2023 and 2024, respectively, is calculated. The real GDP growth rate would be 3.5% in 2021 and 2.5% in the following years.

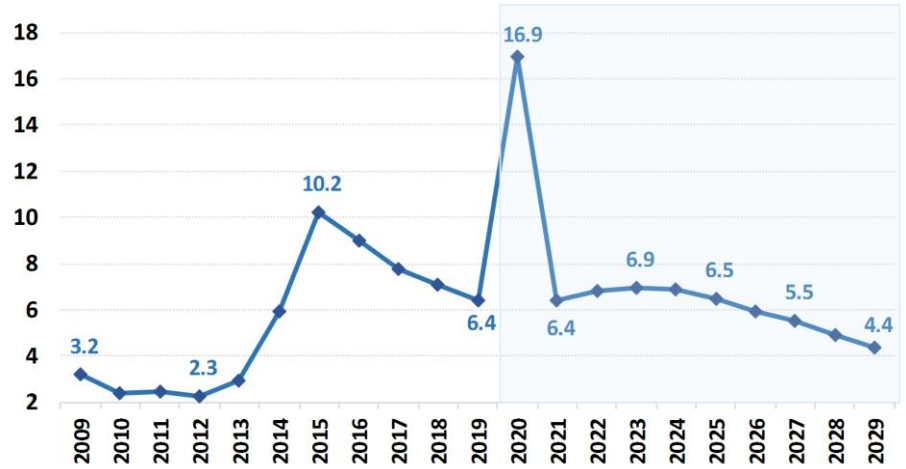
However, if there is no progress in fiscal adjustment, this scenario may not materialize, with significant risks to the entire trajectory.

The macroeconomic scenario of these forecasts is compatible with the Market Expectations (Focus survey) of June 19, 2020. The Selic interest rate starts at historically low levels but converges to 6.0% per year on the medium-term horizon. Real GDP, which is another key variable for debt developments, is expected to fall by 6.5% in 2020, then to grow above 3.0% in 2021 and converges to 2.5% in the medium term. Finally, the baseline fiscal scenario presents an extraordinarily high primary deficit forecast for 2020 (about 12.0% of GDP, according to current information from the Special Secretariat of Finance). The deficit falls to 2.3% of GDP in 2021 and continues with reductions in the following years until 2024. From 2025 and beyond the primary balance is no longer in deficit, growing until 2029, when it would reach 2.0% of GDP[3]. The table in Appendix I summarizes the other parameters underlying the forecasts.

The change in the debt level in 2020 reflects the borrowing requirements (Figure 2) which will be high due to the extraordinarily high primary deficit arising from additional expenses in response to the COVID-19 crisis and its effect on revenue, due to its impact on economic activity.

[3] In this report the primary balance for 2020 includes potential impact of recently COVID-19 measures, but which are still being assessed. However, there is great uncertainty regarding the final impact. The Special Secretariat of Finance of the Ministry of Economy has made frequent updates of this number whenever a new measure is announced. For the period 2021 to 2024, we used market parameters released by the Central Bank (resulting from the Focus survey, in line with the other macroeconomic parameters in the report) for the baseline primary balance scenario, as they are a more up-to-date reference relative to the medium-term data presented in official documents, which refer to the month of April, when the Budgetary Guidelines Bill 2021 was sent (with primary balance projections for 2021 to 2023). However, the projected trajectories for GGGD and PSND are not significantly different when comparing the scenarios based on the primary balance of either Focus survey or Budgetary Guidelines Bill. Between 2025 and 2029, for which there are no market expectations, marginal improvements of 0.5% of GDP per year are assumed in the primary balance, closing 2029 with a surplus of 2.0%.

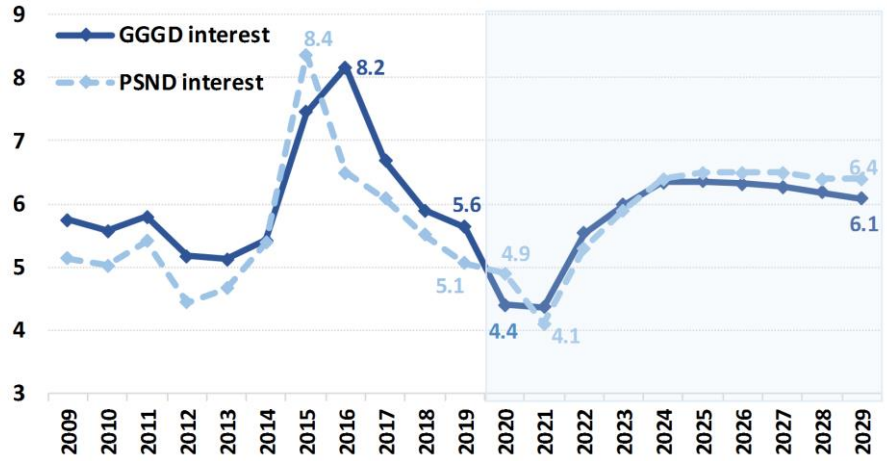
Figure 2 – Nonfinancial public sector borrowing requirements (% GDP)



Source: Actual data, BCB. Forecasts: NT/SSF/ME.

The context of low interest rates mitigates the impact of the crisis by allowing interest expenditure as a proportion of GDP (Figure 3) to be lower than in previous years.

Figure 3 – Interest expenditures (% GDP)



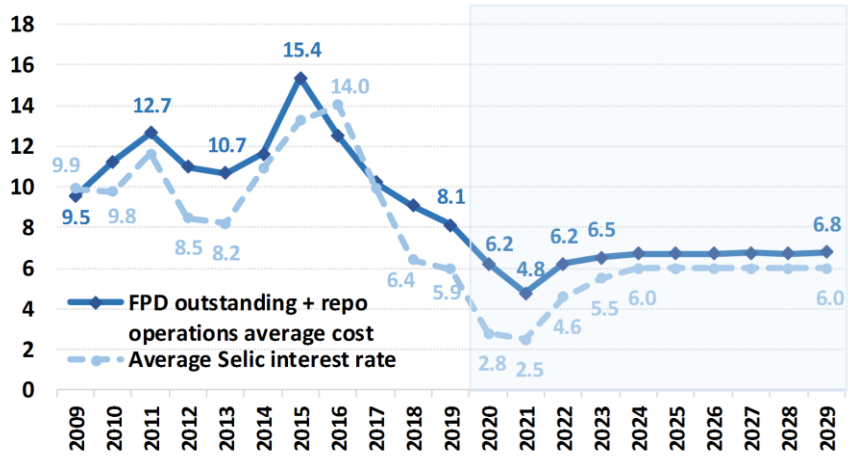
Source: Actual data, BCB. Forecasts: NT/SSF/ME.

Given that approximately two-thirds of the GGGD is indexed to the Selic rate or matures in the next 12 months[4], the average cost of debt and, consequently, the contribution of interest burden to public debt increase, should qualitatively follow the trajectory of the Selic rate forecasted in the baseline scenario. That average cost follows a downward trend until 2021, which reverts in 2022 up to a stabilization from 2024. Figure 4 shows the average Selic rate for each year and the trajectory of the average cost of a measure of indebtedness

[4] As a proxy for this information, the aggregate composed by FPD plus the Central Bank´s repo operations, which at the end of 2019 accounted for 94.4% of GGGD, is considered. It is estimated that 68.5% of this aggregate (forecast for December/2020, against 61.8% in December/2019) represents the share exposed to changes in short-term interest rates. This percentage includes the FPD indexed directly to the Selic rate, plus the portion of other FPD components maturing in up to 12 months (avoiding double counting), plus repo operations.

formed by the Federal Public Debt (FPD) plus the Central Bank's repo operations, which together represented 94.4% of GGGD in 2019[5].

Figure 4 – FPD outstanding + repo operations average cost and average Selic interest rate (% p.a.)



Source: Actual data, BCB. Forecasts: NT/SSF/ME.

While it favors the dynamics of public debt when interest rates are falling, as in the present context, the high portion of debt indexed to the Selic rate should be seen as a risk, as any increase in this rate would result in an immediate increase in debt services.

[5] In calculating this average cost, the average Selic rate for each year is considered to be a simplified estimate for the average cost of repo operations.

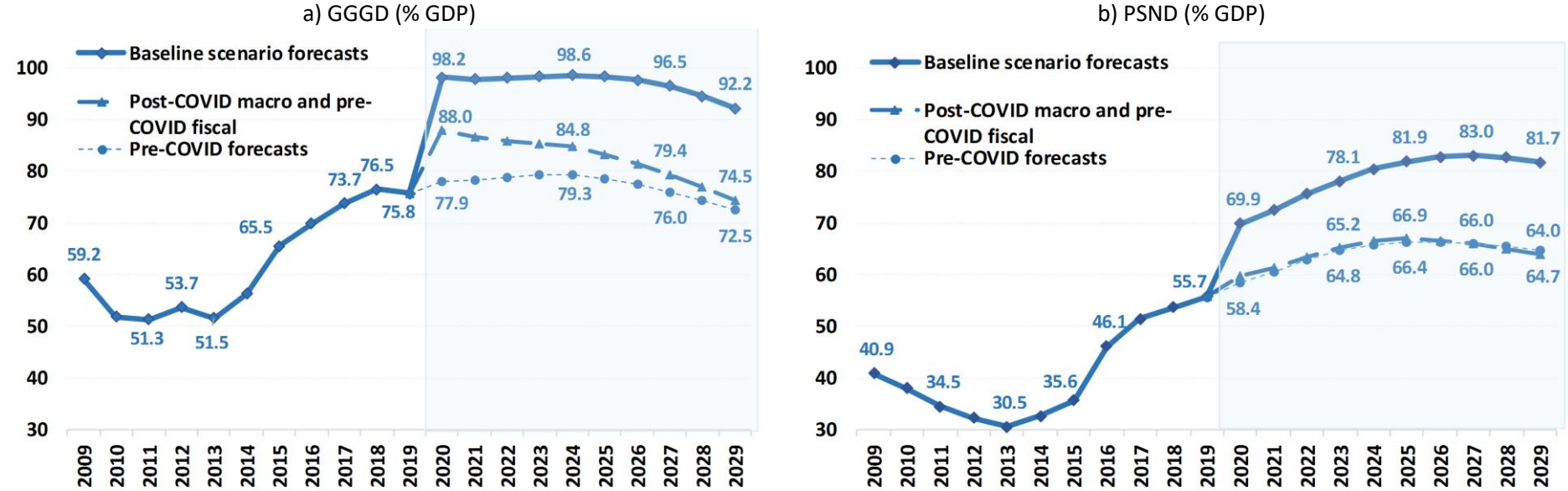
2. Macroeconomic and fiscal effects of COVID-19 on public debt

This section highlights the impact of the coronavirus crisis on the debt trajectory, which will cause an unprecedented reduction in GDP and will imply a sharp increase in the primary deficit. Macroeconomic and fiscal parameters are taken as references before and after the clearest reflections of the pandemic on the economic and fiscal environment

Figure 5 compares the current baseline scenario with two alternative forecasts for debt / GDP. The first reference shows the debt path published in the Brazilian Public Debt Forecasts: Four-monthly Report (available only in Portuguese). In the baseline forecasts published in February, that are going to be called "Pre-COVID forecasts", the expectation of fiscal primary balances was compatible with the 2020 Budgetary Guidelines Law and the other macroeconomic variables had not yet reflected the effects of the pandemic. The comparison of the current baseline scenario with this pre-COVID trajectory gives an idea of the total impact of the crisis on public debt.

Part of the debt deterioration is explained by changes in the primary deficit, while another part is consequence of variations in other macroeconomic parameters, notably GDP. To separate these effects, another benchmark was simulated to assess what would be the debt/GDP trend if the expected fiscal scenario before the crisis was

Figure 5 –COVID-19 impact on public debt forecasts (% GDP)



Source: Actual data, BCB. Forecasts: NT/SSF/ME.

maintained, considering the considering the Market Expectations (Focus Survey) of June 19, 2020 for the other variables. The difference between this trajectory (called "Post-COVID macro and pre-COVID fiscal") and the current baseline trajectory can be interpreted as the purely fiscal effect resulting from the pandemic[6].

In the case of GGGD (Panel a), this effect represents, in 2020, 50.2% of the total impact of the crisis, equivalent to 10.2 percentage points of GDP. The remaining 49.8% (or 10.1 percentage points of GDP) can be attributed to macroeconomic effects. The total effect of the crisis in 2020 reaches 20.3 percentage points of GDP. In the following years, updating primary balance forecasts has a predominant effect to explain the change in the projections. Since most of the macroeconomic effects of the crisis tend to dissipate from 2021, the update of the macroeconomic scenario explains only a small change in the level of the trajectory from this year, mainly due to the lower level of GDP prevailing at the outset. The new fiscal forecasts, however, cause GGGD to show a practically stable trajectory until 2024, only then to follow a downward trend.

In the case of PSND (Panel b), the updating of the baseline forecasts is almost exclusively due to changes in the fiscal scenario. Despite the drop in GDP causing an increase in this indicator, net international reserves practically neutralize this increase, since the exchange rate devaluation makes the value of this public sector asset appreciate in BRL.

[6] This analysis provides a sensitivity of the contribution of the variables being studied to the debt trajectory. This is a simplified analysis, as it does not estimate the effect which the changing in the general macroeconomic framework would have on the primary fiscal result itself. Modeling this endogenous effect is far beyond the scope of this debt forecasts report.

3. Debt sensitivity analysis

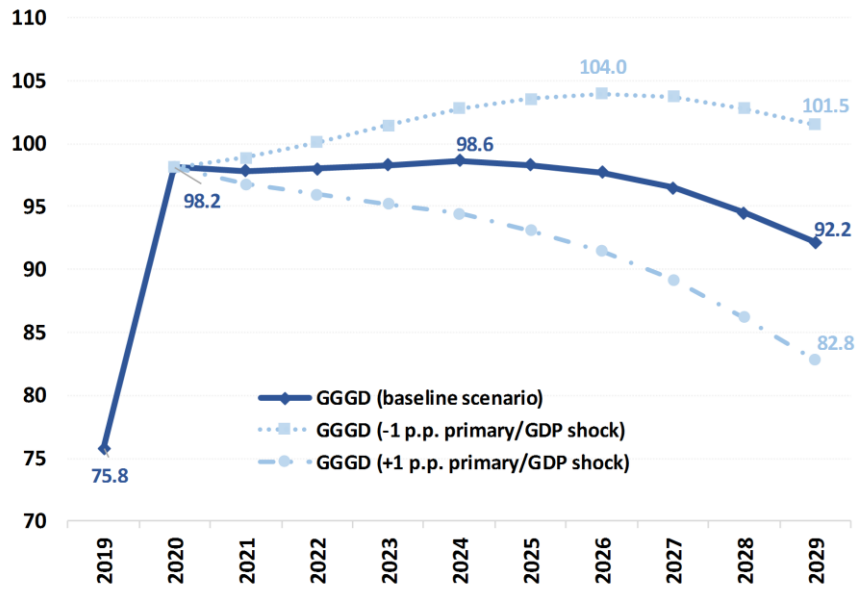
The public indebtedness outlook crucially depends on the economic growth, the primary balance of public finances and interest rates, among other factors. The distancing of these variables from what was forecast in the baseline scenario can translate into significant improvements or higher risks to the debt trajectory.

This section presents comparative statics, in which one or more variables in the scenario are changed, keeping constant other variables. It is a simplified analysis, but with an intuitive appeal to show the consequences for the debt path that may result from political choices.

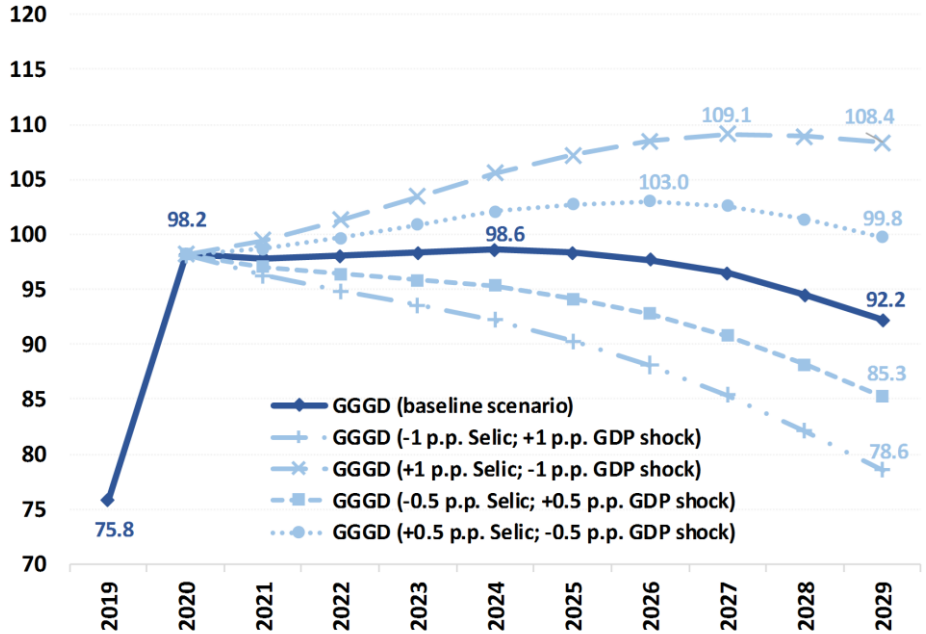
Figure 6 (Panel a) illustrates the impact of shocks in the fiscal trajectory amounting to one percentage point of GDP annually over the period 2021-2029. As a result of a negative primary balance shock, expectations about the GGGD would be raised by 9.3% of GDP at the end of 2029, which includes the effect of interest payments on the additional debt

Figure 6 – Sensitivity analysis of GGGD (% GDP)

a) GGGD (primary balance-to-GDP shock - 2021-2029)



b) GGGD (Selic and GDP aggregate shock - 2021-2029)



Source: Actual data, BCB. Forecasts: NT/SSF/ME.

resulting from the shock. In contrast, in the case of a positive shock of the same magnitude, the GGGD would be 9.4% of GDP lower in the medium term, compared to the baseline scenario.

Besides the primary balance, the analysis of the differential between the real interest rate and the real GDP variation helps to understand the public debt dynamics. A higher GDP would imply less relative weight of the GGGD. Shocks that compromise the resumption of economic activity would make it difficult for debt to converge to lower levels in the medium term. Changes in the interest rate, in turn, raise the cost of debt. For the GGGD, the transmission of changes in the Selic rate to the cost of debt tends to be rapid, since there is a meaningful share of financing instruments exposed to changes in the short-term interest rate (Selic), as commented in Section 1. Thus, a negative shock on the Selic rate would have the potential to raise the GGGD.

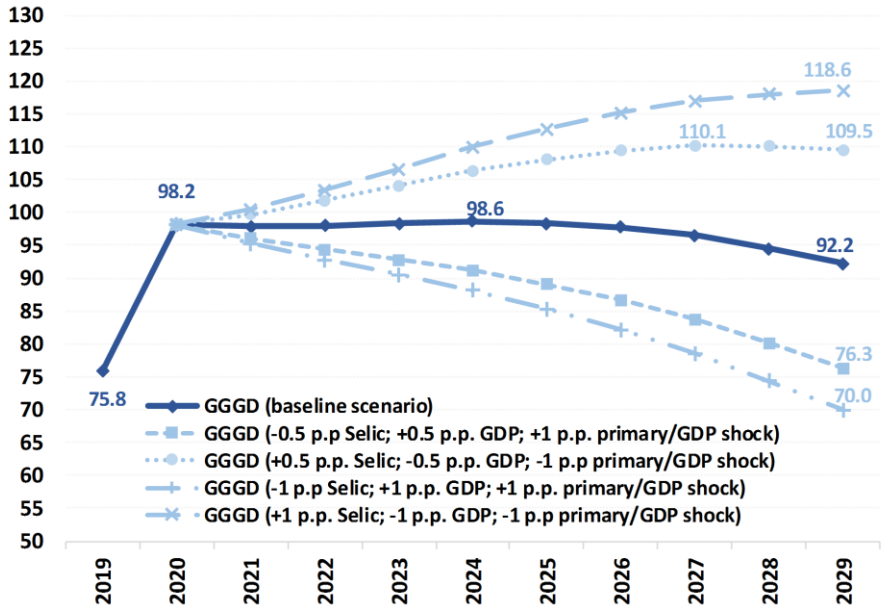
A shock that combines a lower GDP growth and a higher Selic interest rate – a negative shock that increases the differential between these variables – would potentially lead the public debt to a risky trajectory, preventing its stability over the forecast horizon, as shown in Figure 6 (Panel b). A 0.5 percentage point (p.p.) negative shock in the Selic rate (converging to 6.5% instead of 6.0%) together with a 0.5 p.p. lower GDP annual growth (converging to 2% instead of 2.5%) over the period 2021-2029 would be enough to keep the GGGD on an increasing trend until 2026, reaching 99.8% of GDP at the end of 2029. If the shock involved a 1 p.p. increase in the Selic rate and a 1 p.p. lower GDP annual growth over the period 2021-2029 (increasing by 2 percentage points the differential), compared to the baseline scenario, the GGGD would reach 108.4% of GDP at the end of the forecast horizon.

Nevertheless, in the opposite direction, the adoption of policies that contribute to reducing the differential between the real interest rate and the real GDP growth, favoring a sustainable economic growth and the maintenance of low-interest rates for a longer time, would decisively contribute to bringing the debt back to lower risk levels. For example, a positive shock that combines a 1 p.p. higher GDP growth and a 1 p.p. lower interest rate would allow the GGGD to return to a level closer to the pre-COVID outbreak in the forecast horizon – a level considered high yet. As previously stated, an increase in the GDP contributes to a decline in the debt-to-GDP ratio. The economic expansion also tends to be followed by an increase in the government primary revenue, positively impacting the primary balance. Without the necessary economic reforms and adjustments, this dynamic is hampered. Indeed, the interest rate could be pushed upwards in a background of frustrated reforms and adjustment in public finances.

Following this rationale, some exercises are carried out combining simultaneous shocks in those variables: a negative shock over the period 2021-2029 that combines a 1 p.p. higher primary deficit, a 0.5 p.p. higher

Selic rate, and a 0.5 p.p. lower GDP growth would imply a GGGD/GDP ratio of 109.5% at the end of the forecast period. Whether the shock in Selic and GDP growth are 1 p.p. and -1 p.p., respectively, the GGGD could reach 118.6% of GDP at the end of 2029.

Figure 7 – Sensitivity analysis of GGGD: Selic, GDP and primary balance aggregate shock (% GDP) - 2021-2029



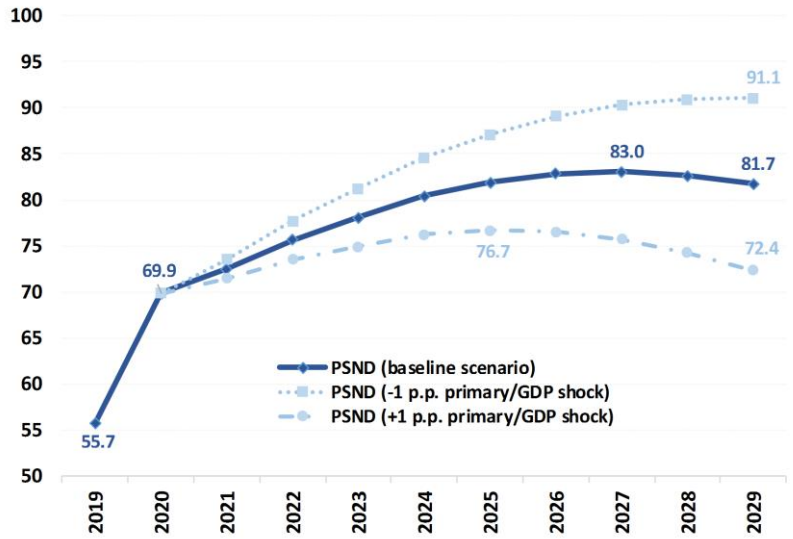
Source: Actual data, BCB. Forecasts: NT/SSF/ME

Similarly, the PSND can potentially present a more favorable trajectory once government improves its capacity to generate more robust primary balances. While in the baseline scenario the nonfinancial public sector would operate with a primary deficit until 2024, in a scenario of a positive shock of 1 p.p. in the primary balance after 2021, there would be a positive primary balance from 2024. With this, the PSND would start a downward trend after 2025. In the baseline scenario, an inflection in the trajectory could only be seen in 2027, the peak of the projection (83.0%).

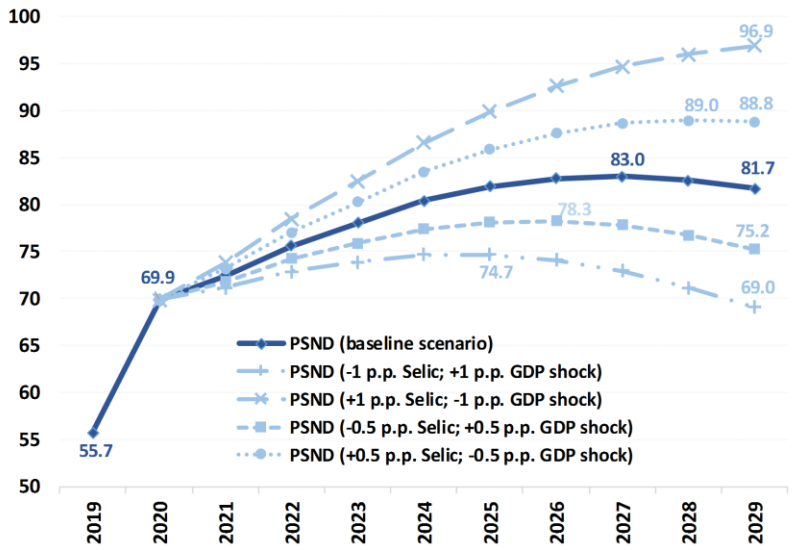
Maintaining the primary balance in the baseline scenario and aggregating shocks on the GDP growth and interest rates, there would be an even greater distance from the baseline trajectory of the PSND. A negative shock on the GDP growth (-1 p.p. per year) and interest rate (+1 p.p. per year) would put the PSND on a strong upward trend, reaching 96.9% of GDP at the end of 2029.

Figure 8 –Sensitivity analysis of PSND (% GDP)

a) PSND (primary balance/GDP shock - 2021-2029)



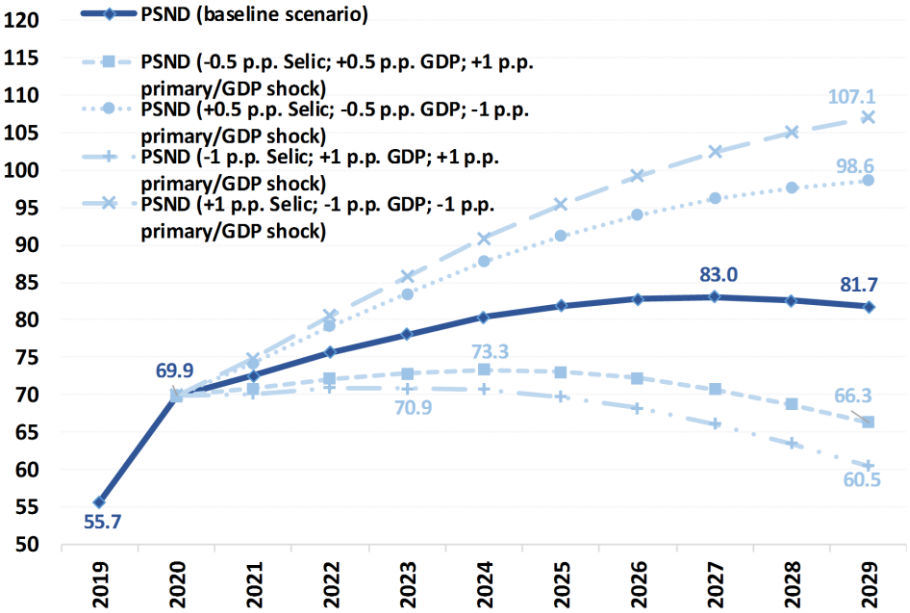
b) PSND (Selic and GDP aggregate shock - 2021-2029)



Source: Actual data, BCB. Forecasts: NT/SSF/ME

The combination of simultaneous shocks in the primary balance, interest rate, and growth would have great repercussions on the PSND, as seen for the GGGD. In the riskiest scenario, the PSND/GDP ratio would end 2029 at 107.1% of GDP, even considering the weight of international reserves, which represents the main financial asset of the public sector.

Figure 9 – Sensitivity analysis of PSND: Selic, GDP and primary balance aggregate shock (% GDP) - 2021-2029



Source: Actual data, BCB. Forecasts: NT/SSF/ME

In fact, it is plausible that an adverse shock in one of these variables may come together with negative impacts on the others. That is, a scenario with a higher primary deficit tends to be followed by higher real interest rates and lower GDP growth. Therefore, lower levels of debt/GDP in the medium term, both GGGD and PSND, depend on the continuity of reforms that favor the business environment and greater GDP growth, as well as the process of fiscal consolidation.

4. Effects of the crisis on the required fiscal adjustment

The effects of the pandemic on the fiscal situation have implications to public indebtedness that extend to the medium term, according to baseline forecasts presented in the first section. This is also linked to the analysis of the fiscal adjustment required to reach a certain level of debt within a specific time horizon.

In this section, a comparative analysis is made between numbers before and after the impact of the COVID-19 pandemic. In the pre-crisis scenario, attention was focused on the fiscal effort required to conduct the public debt, which was 75.8% at the end of 2019, to levels more compatible with the average of emerging countries (with gross debt of 50.8% of GDP[7]) and similar risk perception.

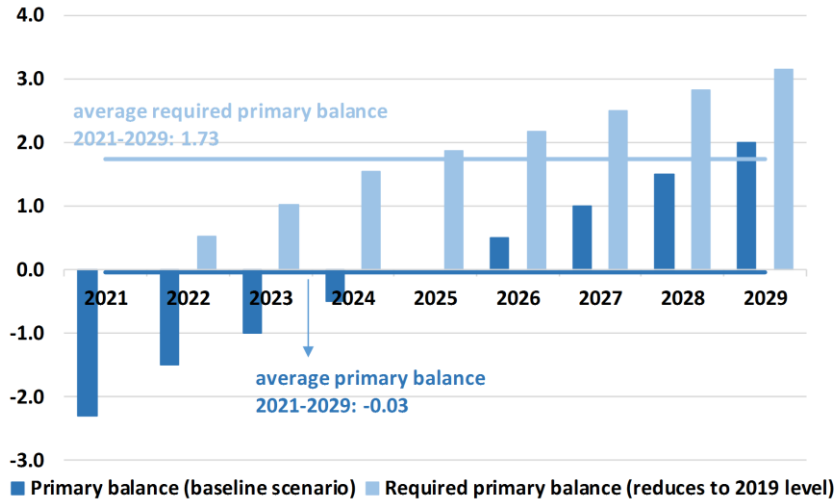
The change in the level of debt caused by the crisis poses a greater challenge. Returning to the level observed at the end of 2019 would require a substantial fiscal adjustment, which would not be possible without deep reforms to restore the means to generate primary surplus in the amounts necessary to ensure a reliable debt trajectory.

In the first Brazilian Public Debt Forecasts: Four-monthly Report (only in Portuguese), published in February, 2020, the average required primary balance to stabilize the GGGD at the 2019 level was 0.26% of GDP between 2020 and 2029. Therefore, the government should achieve an average fiscal adjustment value of 1.11% in relation to the deficit observed in 2019, which would be compatible with primary balance that would vary between a deficit of 0.5% of GDP in 2021 and a surplus of 0.5% in 2026. The pre-COVID baseline scenario itself forecasts an average primary balance higher than required, around 0.55% of GDP between 2020 and 2029. Appendix II contains figures from the pre-COVID required primary balance exercise similar to Figures 10 and 11 of this section.

With the growth of GGGD/GDP in 2020, reaching 98.2% in the post-COVID baseline scenario, the average required primary balance to close 2029 at the same level of 2019 would be 1.73% of GDP in the 2021-2029 horizon (far above from the 0.26% of GDP under the pre-crisis scenario). This would require an increase in the primary balance trajectory of the current baseline scenario, in order to generate surpluses exceeding 2.0% of GDP as of 2026.

[7] Average for 2018, according with the Fiscal Monitor of October, 2019.

Figure 10 – Required primary balance: 2029 GGGD at the same level as 2019 (% GDP)

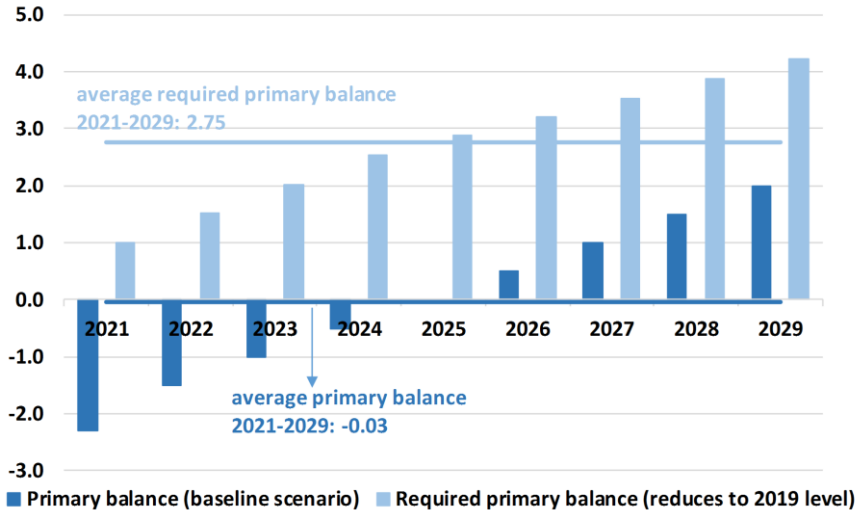


Source: NT/SSF/ME.

Figure 11 shows similar analysis for the PSND. In this case, the average annual required primary balance, in general, is higher than that of the GGGD. Assuming as a policy objective to reach the end of 2029 with the PSND/GDP indicator at the 2019 level (55.7%), the pre-COVID scenario would imply an average annual required primary balance for the 2020-2029 horizon of 1.41% of the GDP. This figure would rise to 2.75% in the 2021-2029 horizon in the post-COVID scenario, which would require reaching primary surpluses above 2% as of 2023.

Compared to a baseline scenario that forecasts the DBGG/GDP at 92.2% and PSND/GDP at 81.7% at the end of 2029, this exercise reinforces that using the primary balance instrument alone, to resume a debt level compatible with that of 2019 seems extremely unlikely. It would require a strong fiscal adjustment, involving a combination of reduced spending, mainly mandatory, review of tax expenditures (which ended 2018 at 4.3% of GDP, against 2.0% in 2003[8]) and increase in primary revenues.

Figure 11 – Required primary balance: 2029 PSND at the same level as 2019 (% GDP)



Source: NT/SSF/ME.

[8] 3º Federal Government Grants Budget 2019 (only in Portuguese).

Appendix I – Macroeconomic parameters: baseline scenario

Table 1 presents the macroeconomic and fiscal parameters for the 2020-2029 horizon, which form the baseline scenario for the purposes of preparing the public debt forecasts disclosed in this report.

Table 1: Macroeconomic parameters

Macroeconomic Parameters	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Average 2021-2029
Year-end Exchange Rate (BRL/USD)	5.20	5.00	4.80	4.80	4.78	4.86	4.95	5.04	5.12	5.21	4.95
Real GDP growth (% YoY)	-6.5	3.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6
Deflator (% YoY)	2.1	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.9
Inflation - IGP-DI (% YoY)	5.3	4.0	4.0	3.8	3.5	3.5	3.5	3.5	3.5	3.5	3.6
Inflation - IPCA (% YoY)	1.6	3.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.4
Average Selic interest rate (% p.a.)	2.8	2.5	4.6	5.5	6.0	6.0	6.0	6.0	6.0	6.0	5.4
Primary Fiscal Balance (% GDP)	-12.0	-2.3	-1.5	-1.0	-0.5	0.0	0.5	1.0	1.5	2.0	-0.03
FPD outstanding average cost (% p.a.)	7.4	5.8	6.9	7.0	7.0	7.0	6.9	6.9	6.9	6.9	6.8
GGGD (% GDP)	98.2	97.8	98.0	98.3	98.6	98.3	97.7	96.5	94.5	92.2	96.9
Public Sector Net Debt (% GDP)	69.9	72.5	75.6	78.1	80.4	81.9	82.8	83.0	82.6	81.7	79.8

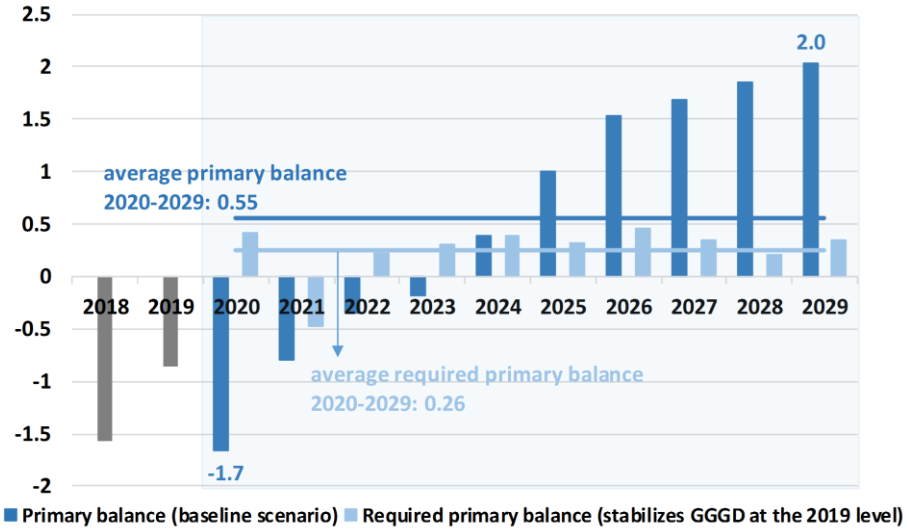
Source: 2020-2024: median of Market Expectations – Focus Survey of June 19, 2020, except deflator (NT/SSF/ME) and primary balance 2020 (Special Secretariat of Finance).
2025-2029: NT/SSF/ME, extrapolation of Focus Survey parameters, based on information up to 2024.

Appendix II – Pre-COVID required primary balance

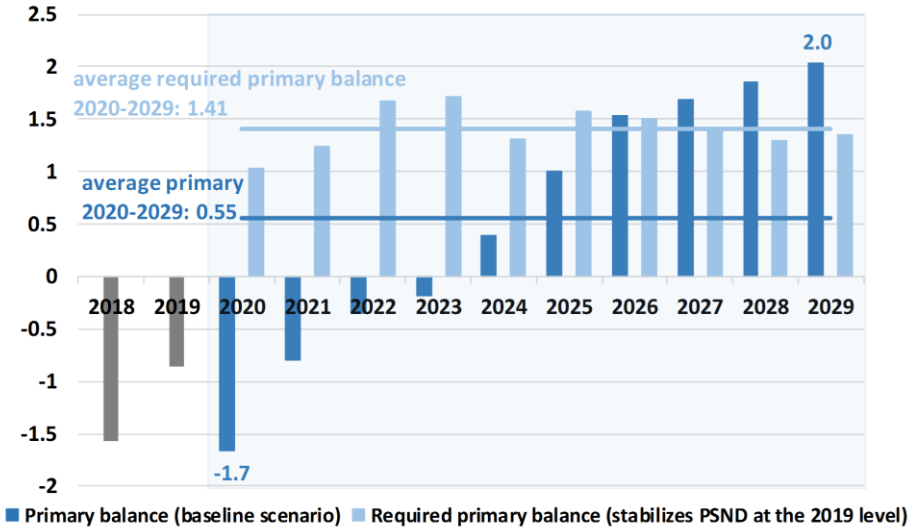
This appendix presents the figures concerning the exercise on the required primary balance to stabilize the debt at the 2019 level (75.8% for GGGD and 55.7% for PSND) in a perspective prior to the coronavirus pandemic. These figures are consistent with the macroeconomic and fiscal scenarios used in the Brazilian Public Debt Forecasts: Four-monthly Report Debt of February 2020 (only in Portuguese).

Pre-COVID required primary balance analysis (% GDP)

a) GGGD: stable at 2019 level (75.8%)



b) PSND: stable at 2019 level 2019 (55.7%)



Source: Actual data, BCB. Forecasts: NT/SSF/ME.