# THE FURMAN-SUMMERS FISCAL SUSTAINABILITY METRIC:
# A NOTE ON THE CASE OF BRAZIL[1]

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Furman and Summers (2020)[2] propose to substitute the ratio of real interest payments to GDP for the debt to GDP ratio as a metric to measure fiscal sustainability. Their point is that what matters for fiscal sustainability is debt cost not debt volume.

Instead of $d = D/Y$, they suggest using $v = r.d$ to evaluate fiscal sustainability, where r is the real interest rate, D is debt and Y, GDP. Indeed, the well-know formula for (small) changes ($\Delta$) in the debt to GDP ratio is:

$$\Delta d = r.d - g.d + m$$

where g is the growth rate of GDP and m is the primary deficit ratio to GDP. As made clear by the first term in the right-hand side, what matters to maintain the debt ratio growth under control is debt cost, r.d. Actually, what really matters is excess debt cost, (r-g).d, but this note does not deal with the behavior of g.

Clearly, $v' = r' + d'$, where primes indicate log rates of change. If $r' < 0$ it follows that $v' < d'$, that is, the growth rate of real debt service will be lower than the debt ratio growth rate. Reductions in real interest rates may more than compensate for debt ratios increases, thus generating lower real debt service (and hence, lower debt ratio growth) under higher debt ratios.

The point is relevant for industrial countries, where real interest rates are not only much lower than in the past but also forecast to stay at current low levels for long. Thus, nowadays industrial countries' governments can carry much higher debt levels withouth worring about debt sustainability. This is part of the reason why Olivier Blanchard tweets that "we may be on the verge of a shift in fiscal paradigm"[3], as exemplified by the Furman-Summers paper. The other part is that, in industrial countries, $r < g$, a condition that, if

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[1] With the usual caveats, thanks to Felipe Salto and Mario Mesquita for discussion and help with the statistical series.

[2] Jason Furman and Lawrence Summers, A Reconsideration of Fiscal Policy in the Era of Low Interest Rates. Discussion Draft. 1 November 30, 2020. Available at: furman-summers-fiscal-reconsideration-discussion-draft.pdf (brookings.edu).

[3] Cf. @ojblanchard1 tweet on Dec. 2, 2020.

sustained, would allow these countries to entertain primary deficits without worrying about future costs[4]. But see Cochrane (2020)[5] for a skeptical view.

A new fiscal paradigm may apply to industrial countries. What can be said about the case of Brazil?

The relevant data for the 2010-23 period is collected in Table 1 in the appendix. Observed values for debt and interest rates are from the Central Bank; for inflation, from IBGE. Forecasts are as explained below.

Graph 1 shows the behavior of three interest rates in the 2010-23 period. These are interest rates accumulated over the year. In blue, the Selic rate. In orange, the nominal implicit interest rate on general government gross debt (GGGD). In gray, the (real) implicit interest rate on GGGD deflated by the IPCA.



Graph 1: Nominal and real interest rates, 2010-23
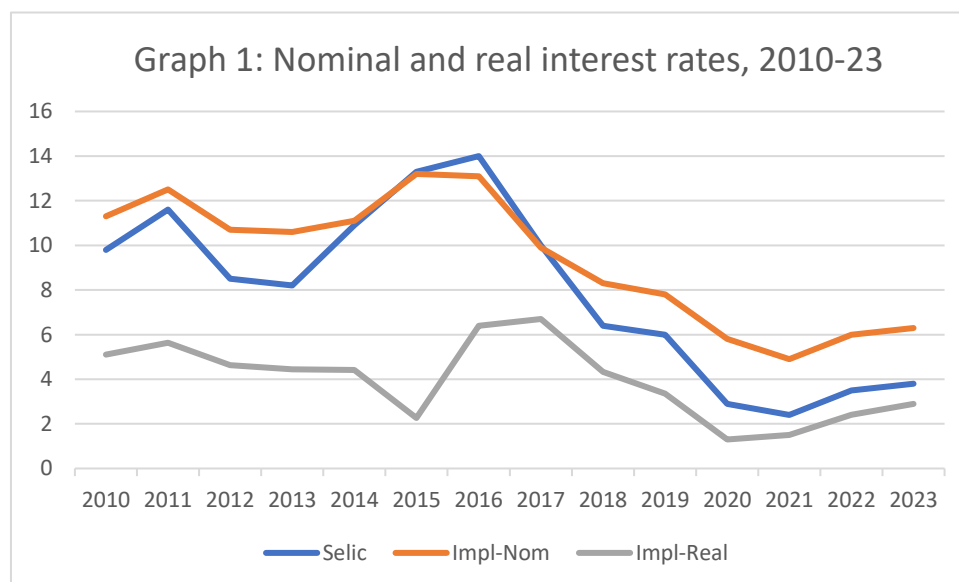
Starting with the 12-month accumulated Selic rate (blue line). After touching an extremely high value of 14% in 2016 it plunges down to reach an anticipated minimum value of 2.4% in 2021. The nominal implicit interest rate on GGGD (orange line) follows a similar if less dramatic path: it reaches a

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[4] Cf. Markus Brunnermeier, Sebastian Merkel e Yuliy Sanikov. 2020. "The Fiscal Theory of Price Level with a Bubble". NBER Working Paper 27116; e Ricardo Reis, "The constraint on public debt when r < g but g < m". November 16, 2020. Disponível em: personal.lse.ac.uk > reisr.

[5] Cf. John H. Cochrane, "Our national debt denial". National Review. December 7, 2020. Available at: https://www.nationalreview.com/2020/12/our-national-debt-denial/.

maximum value of 13.2% in 2015 and falls continuously to reach a projected value of 4.9% in 2021.

For the 2021-23 Selic forecasts, I averaged out the end-of-year values projected by the Itaú economic research team. *Faute de mieux*, for the projections of the implicit rate I simply added up 2.5pp to the Selic rate. This sum is based on the rates of National Treasury's debt placements in October and November 2020, which were around 4.5%.

In Graph 1, real implicit interest rates on GGGD (gray line) reach a maximum value of 6.7% in 2017 and then follow a downward path to land at a minimum value of 1.3% in 2020. Such rates are obtained by deflating the nominal rate by the IPCA for the year. IPCA forecasts are from the Itaú economic research team.

After hitting a minimum value of 2.4% in 2021, the accumulated Selic rate is expected to follow an upward course, to reach 3.8% in 2023. This upward movement is accompanied by both nominal and real implicit rates on government debt.

In summary, there was a very significant reduction in real interest rates after 2016 (starting from extremely high levels, it must be said). Improvements in the fiscal regime (spending ceiling, TLP/BNDES, social security reform, etc) and a strong drop in the growth rate of public spending through 2019 must have contributed to this. The Covid-19 induced recession explains the low levels of interest rates in 2020.

Unfortunately, the current 2% Selic rate does not seem sufficiently high to maintain inflation under control once the economy recovers from the Covid-19 crisis. This rate is anticipated to follow an upward course reaching 3.8% in 2023. Looking ahead, Brazil's case would seem to differ from the industrial countries' cases. To establish this point, the behavior of debt ratios and debt costs need to be considered.

Graph 2 uses the implicit interest rates in Graph 1 to address the Furman-Summers point about such debt-related variables. This graph depicts the paths of the debt to GDP ratio and of the ratios to GDP of nominal and real debt costs. Debt to GDP forecasts are from the IFI team. The blue line is the mid-year debt to GDP ratio (divided by 10 to facilitate visual comparison with interest cost ratios). The orange line (i.debt/GDP) shows the ratio to GDP of nominal debt cost. The gray line (r.debt/GDP) is the ratio to GDP of real debt cost.

**Graph 2: Debt ratios and costs, 2010-23**
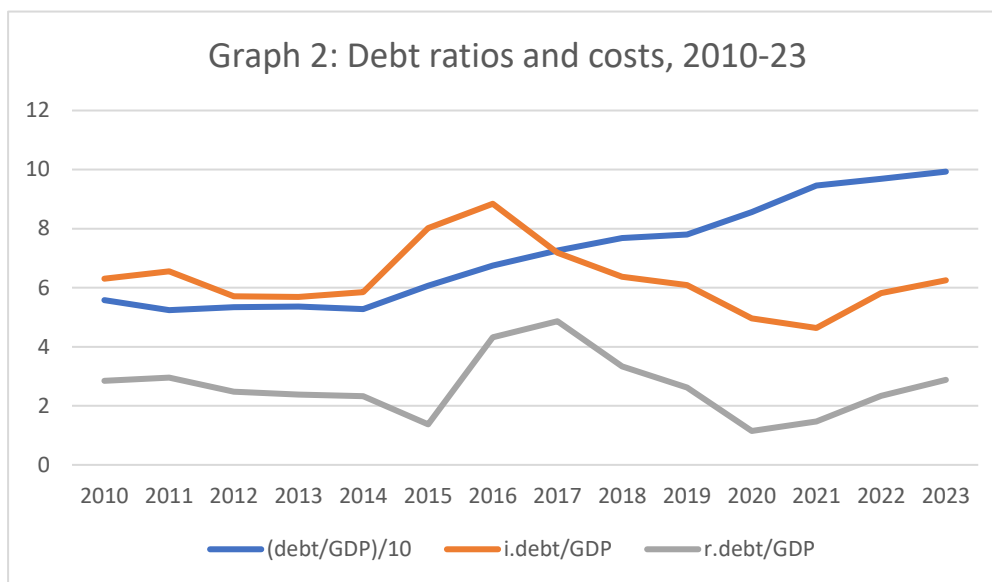
From 2010 to 2014, the three series are relatively invariant. Starting in 2014 debt/GDP grows continuously. From 52.7% of GDP in 2014, it reaches 78% in 2019, before shooting up to 85.6% in mid-2020 and to 94.6% in mid-2021. In contrast, the ratio of nominal interest payments to GDP grows in 2015 and 2016, but from then on it follows a declining trend. In 2019 its value is lower than in 2014. It is projected to continue falling to reach the minimum value in the series in 2021. Similarly, real interest payments over GDP trend up until 2017, but fall abruptly to reach the minimum value of the series in 2020.

This is the first point. The sharp debt ratio increase that ocurred after 2014 was eventually more than compensated for by even sharper interest rates drops. In 2020 both nominal and real debt service ratios are lower than they were in 2014, even though the debt-to-GDP ratio is 62% higher. From the point of view of debt costs, Brazil's current fiscal position is less worrisome than suggested by debt ratios. This is the good part of the story.

Looking forward, however, the picture isn't pretty. The fiscal space provided by lower interest rates are coming to a close. In the next few years, interest rates, both nominal and real, are expected to increase. Hence, as shown in

Graph 2 the growth rate of debt costs will tend to surpass that of debt ratios. And the latter, as far as one can tell, will continue to be positive, because not only of the difficulty of replicating the benevolent behavior of primary deficits from 2016 to 2019, but also of the country's letargic GDP growth rates.

This means that the respite that the above calculations give to policy makers is temporary. They'd better ready themselves to fix the fiscal accounts before time is up.

## Appendix

Table 1 display the relevant series for the 2010-23 period: 12-month accumulated Selic rates, general government (mid-year) gross debt over GDP ratios (d), inflation rates calculated by the consumer price index (IPCA), nominal implicit interest rates on general government gross debt (i), real (i.e., IPCA adjusted) implicit interest rates on general government debt (r), and nominal (i.d) and real (r.d) interest payments as a share of GDP.

### TABLE 1: INTEREST RATES, PRICES, DEBT RATIOS AND COSTS, 2010-2023

| YEAR | SELIC ACC 12M % | GGGD/GDP (mid-year) (d) % | IPCA ACC 12M % | IMPL INT RATE ON GGGD % (NOM,i) | IMPL INT RATE ON GGGD % (REAL, r) | i.d % | r.d % |
|------|------|------|------|------|------|------|------|
| 2010 | 9,8 | 55,8 | 5,9 | 11,3 | 5,1 | 6,3 | 2,8 |
| 2011 | 11,6 | 52,4 | 6,5 | 12,5 | 5,6 | 6,6 | 3,0 |
| 2012 | 8,5 | 53,4 | 5,8 | 10,7 | 4,6 | 5,7 | 2,5 |
| 2013 | 8,2 | 53,6 | 5,9 | 10,6 | 4,4 | 5,7 | 2,4 |
| 2014 | 10,9 | 52,7 | 6,4 | 11,1 | 4,4 | 5,8 | 2,3 |
| 2015 | 13,3 | 60,7 | 10,7 | 13,2 | 2,3 | 8,0 | 1,4 |
| 2016 | 14,0 | 67,5 | 6,3 | 13,1 | 6,4 | 8,8 | 4,3 |
| 2017 | 10,0 | 72,6 | 3,0 | 9,9 | 6,7 | 7,2 | 4,9 |
| 2018 | 6,4 | 76,8 | 3,8 | 8,3 | 4,3 | 6,4 | 3,3 |
| 2019 | 6,0 | 78,0 | 4,3 | 7,8 | 3,4 | 6,1 | 2,6 |
| 2020 | 2,9 | 85,6 | 4,4 | 5,8 | 1,3 | 5,0 | 1,1 |
| 2021 | 2,4 | 94,6 | 3,3 | 4,9 | 1,5 | 4,6 | 1,5 |
| 2022 | 3,5 | 96,9 | 3,5 | 6,0 | 2,4 | 5,8 | 2,3 |
| 2023 | 3,8 | 99,3 | 3,3 | 6,3 | 2,9 | 6,3 | 2,9 |