Appendix

A Brazil's structural fiscal challenges

Since the reinstatement of a democratic regime in the late 1980s, both public spending and public debt have increased substantially, reaching levels above those of many emerging and developed economies. This deterioration can be somewhat attributed to features introduced with the new Constitution of 1988. The change in political regime, after 20 years of military government, left the central government in a weaker bargaining position relative to state and local governments. As a result, the new constitution failed to establish a coherent mechanism to protect the interests of the majority of the population against the multiple pressures and rent-seeking from an emerging democracy (Werneck, 2006).

At first, the increase in spending was hidden by the challenging hyperinflation accounting. Following the 1994 Real Plan and subsequent adoption of an inflation targeting regime, lower levels of inflation allowed a clearer view of the government's fiscal needs (see Bacha, 2003 for a detailed account of the Real Plan). In the first years after stabilization, the rise in public spending was accompanied by an increase in the tax burden, which increased by 10 percentage points between 1993 and 2006 (as a share of GDP). After that, spending continued to increase, but was typically financed with public debt. At first, the commodity boom of the 2000s helped hold back the overall debt increase. As the commodity cycle phased out, however, Brazil's public debt increased significantly, reaching levels close to 80% of GDP even before the pandemic.

Panels (a) and (b) in Figure A1 illustrate these dynamics by reporting primary public spending (total spending excluding interest payments) and gross public debt as a share of GDP, respectively. For reference, panel (c) reports gross debt for Brazil and other countries as of 2019 and 2022. The latter panel shows how debt in Brazil has reached levels closer to those of developed economies and further away from its Latin American peers.

The nearly continuous rise in public spending had a few main contributors. Spending on social programs and on benefits accrued to particular groups have increased substantially.[30,31] Moreover, many of these benefits are indexed to the national minimum wage, which increased by more than 100% in real terms between 1995 and 2019. Democracy also intensified the de-

[30]International comparisons show Brazil's spending on social protection networks, education and the health system are above the averages across both developed and emerging economies

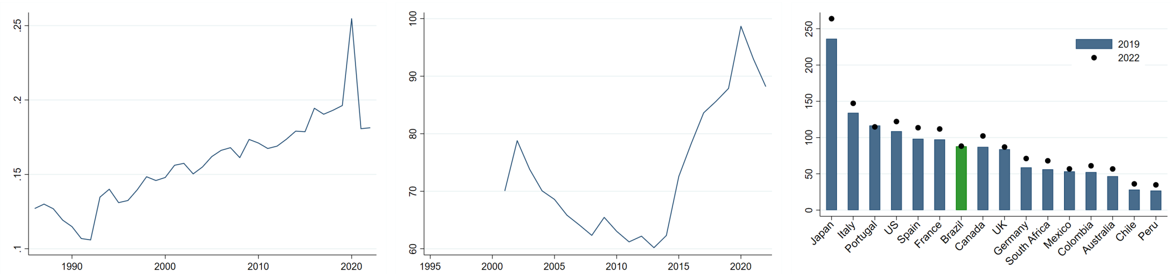
[31]Even though many of these policies target lower income households, there is limited effort in evaluating their efficacy and efficiency, with some of them targeting similar groups with overlapping benefits. Mendes (2022) (and references therein) analyze many of those programs and discuss their limited efficacy, despite the costs.

centralization of decisions regarding resource allocation. State and local governments increased spending significantly, later turning to the federal government for help financing their debt.

The reform agenda and the associated benefits were, unfortunately, interrupted by the COVID-19 pandemic. The panels on Figure A1 show Brazil started the pandemic with a weak fiscal position both historically and relative to its peers.[32] Nonetheless, the country responded strongly in trying to mitigate the effects of the pandemic on its economy. For a comparison, Figure A2 reports a summary of fiscal and monetary measures taken by various countries in response to the pandemic.

Figure A1: Public spending and gross debt (%GDP)

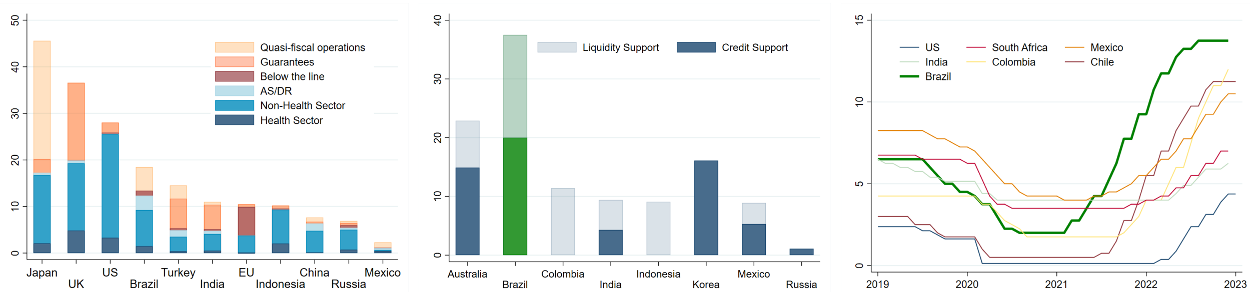
(a) Primary public spending **(b)** Gross debt/GDP **(c)** Gross debt/GDP, 2019-2022



Notes: Panel (a) reports primary public spending as a share of GDP. Panels (b) and (c) report central government gross debt as a share of GDP. Sources: FGV IBRE and IMF Fiscal Monitor.

Figure A2: Pandemic fiscal and monetary measures in emerging and advanced economies

(a) Fiscal measures **(b)** Liquidity and credit measures **(c)** Policy rates



Sources and Notes: Panel (a) shows fiscal measures as a share of 2019 GDP, where AS/DR stands for Accelerated spending/Deferred revenue, and below the line liquidity measures include equity injections, loans, asset purchase or debt assumptions. Panel (b) reports announcements of liquidity and credit measures as of December 2020 (as a share of 2019 GDP). Panel (c) shows main policy rates. Sources: IMF Fiscal Monitor: Database of Country Fiscal Measures in Response to the COVID-19 Pandemic (October, 2021), Nechio and Serra Fernandes (2022) and Bloomberg.

[32] The path of debt/GDP after 2016 did not immediately reflect the significant fiscal consolidation efforts described in Section 4 because the effects of many of the reforms and measures were backloaded by design.