THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

BRAZIL SYSTEMATIC COUNTRY DIAGNOSTIC

UPDATE

JULY
2023


THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

BRAZIL SYSTEMATIC COUNTRY DIAGNOSTIC

UPDATE

Cover photos: Freepik and Shutterstock®
Cover and Graphic Design: doublecom.com.br

Contents

Acknowledgements

We would like to thank the members of the World Bank Group's Global Practices, the staff of the International Finance Corporation (IFC), and the Brazilian authorities, and other partners who contributed to the preparation of this Systematic Country Diagnostic (SCD) Update.

This report has been prepared by a team led by Gabriel Lara Ibarra (Senior Economist), Ana Guerrini (Senior Transport Economist) and Josefina Posadas (Senior Economist) under the leadership of Carlos Felipe Jaramillo (Regional Vice President), Johannes Zutt (Country Director) and Robert Taliercio (Regional Director), and the guidance of Carlos Rodriguez Castelan (Practice Manager), Bianca Bianchi Alves (Practice Manager), Pablo Gottret (Practice Manager), Doerte Doemeland (Practice Manager), and Sophie Naudeau (Operations Manager). Additional guidance was provided by Manuel Reyes-Retana (Director, IFC) and Hiroyuki Hatashima (Chief Evaluation Officer, MIGA). The team thanks Pablo Acosta (Program Leader) and Luis Alberto Andres (Sector Leader) for their comments and contributions. Special recognition goes to Shireen Mahdi as the lead author of the Brazil Policy Notes that served as testing grounds for the prioritization exercise that informed this update.

Sector-specific knowledge, inputs and contributions were provided by Arthur Braganca (Senior Economist), Werner Kornexl (Senior Natural Resources Management Specialist), Carolina L. Vaira (Senior Governance Specialist), Gustavo Covolan (ET Consultant), Renzo Lavin (Consultant), Bruno Perdigao (ET Consultant), Diogo Bardal (Associate Operations Officer), Marcos Vaena (Senior Strategy Officer), Fabiano Colbano (Senior Economist), Raphael Fernandes (Consultant), Marek Hanusch (Lead Economist), Luigi Calderon (Economist), Michael Weber (Senior Economist), Claudia Tufani (Consultant), Otavio Conceição (ET Consultant) and Ricardo Campante Vale (ET Consultant). This Update strongly benefited from the evidence collected by other colleagues' analytical reports on various development-related areas in the past year. Their findings and availability to answer our queries were important inputs to this Update. We thus would like to thank Gabriel Zaourak (Senior Economist), Ildo Lautharte (Economist), Matteo Morgandi (Senior Economist), Tiago Falcao Silva (Senior Social Protection Specialist), Diji Chandrasekharan Behr (Lead Environmental Economist), Stephane Hallegatte (Senior Climate Change Adviser), Anna Luisa Paffhausen (Economist) and Rita D. Costa (Consultant).

The team would like to thank the peer reviewers Antonio Nucifora (Practice Manager), Rafael Muñoz Moreno (Lead Country Economist) and Samuel Freije (Lead Economist) for their insightful comments and suggestions.

The team is grateful to Desiree Gonzalez (Program Assistant), Mirela Catuneanu (Operations Analyst) and the Country Office Administrative and Client Support staff for all the assistance and support in the preparation of this SCD Update.

Abbreviations and Acronyms

ABC plan	Plano de Agricultura de Baixa Emissão de Carbono (Low-Carbon Emissions Agriculture Plan)
ABEMA	Associação Brasileira de Entidades Estaduais de Meio Ambiente (Brazilian Association of State Environmental Entities)
AE	Auxilio Emergencial (Emergency Aid)
ALMP	Active labor market programs
B40	Bottom 40 percent
BCB	Banco Central do Brasil (Central Bank of Brasil)
BPC	Benefício de Prestação Continuada (Continuous Cash Benefit)
BRIC	Brazil, Russia, India, China
BRL	Brazilian Reais (the official currency of Brazil)
BTI	Bertelsmann Stiftung's Transformation Index
CADE	Conselho Administrativo de Defesa Econômica (Administrative Council for Economic Defense)
CAR	Cadastro Ambiental Rural (Rural Environmental Registry)
CGU	Controladoria Geral da União (Office of the Comptroller General)
CICC	Comitê Interministerial de Combate à Corrupção (Inter-ministerial Committee of Corruption Fight)
CO2	Carbon dioxide
COFINS	Contribuição para o Financiamento da Seguridade Social (Contribution for the Financing of Social Security)
CPI	Consumer Price Index
DETER	Real-Time Deforestation Detection System
Embrapa	Empresa Brasileira de Pesquisa Agropecuária (Brazilian Agricultural Research Corporation)
FGV-IBRE	Fundação Getúlio Vargas – Instituto Brasileiro de Economia (Getulio Vargas Foundation – Brazilian Institute of Economics)
FPE	Fundo de Participação dos Estados (State Participation Fund)
FPM	Fundo de Participação dos Municípios (Municipal Participation Fund)
GDP	Gross domestic product
GHG	Greenhouse gas
GtCO2	One billion tonnes of carbon dioxide
HLO	High-level outcomes
HRM	Human Resource Management
IADB	Inter-American Development Bank
IBGE	Instituto Brasileiro de Geografia e Estatística (Brazilian Institute of Geography and Statistics)
ICMS	Imposto sobre Operações relativas à Circulação de Mercadorias e sobre Prestações de Serviços de Transporte Interestadual e Intermunicipal e de Comunicação (Tax on Interstate and Intermunicipality Transactions of Goods, Provisions of Services and Communication)
ICT	Information and communication technology
IDEB	Índice de Desenvolvimento da Educação Básica (Basic Education Development Index)
IMF	International Monetary Fund
INPE	Instituto Nacional de Pesquisas Espaciais (National Institute of Spatial Research)

IP	Indigenous people
IPI	Imposto sobre Produtos Industrializados (Tax on industrialized products)
IPR	Intellectual Property Rights
ISS	Imposto sobre Serviços (Tax on services)
LAC	Latin America and the Caribbean
LPI	Logistics Performance Index
MEI	Microempreendedor Individual (Individual microentrepreneur)
MSME	Micro, Small and Medium Enterprises
Mt	Megatonne
NDC	Nationally determined contributions
NTM	Non-tariff measures
OECD	Organization for Economic Cooperation and Development
PBF	Programa Bolsa Familia (Bolsa Familia Program)
PIM	Public Investment Management
PIMA	Public Investment Management Assessment
PIS	Programa de Integração Social (Contribution to the Social Integration Program)
PISA	Program for International Student Assessment
PJ	Pessoa Jurídica (Legal person)
PNL	Plano Nacional de Logística (National Logistics Plan)
PNMC	Plano Nacional sobre Mudança Climática (National Plan about Climate Change)
PPCDAm	Plano de Ação para Prevenção e Controle do Desmatamento na Amazônia Legal (Plan for the Prevention and Control of Deforestation in the Legal Amazon)
PPP	Purchasing power parity
PRODES	Projeto de Monitoramento do Desmatamento na Amazônia Legal por Satélite (Project for Monitoring Deforestation in the Legal Amazon by Satellite)
PTA	Preferential Trade Agreement
R&D	Research and Development
REDD+	Reducing Emissions from Deforestation and Forest Degradation in Developing Countries, and the Role of Conservation, Sustainable Management of Forests, and Enhancement of Forest Carbon Stocks in Developing Countries
SCD	World Bank Systematic Country Diagnostic
SCD1	World Bank Systematic Country Diagnostic 2016
SEBRAE	Serviço Brasileiro de Apoio às Micro e Pequenas Empresas (Brazilian Micro and Small Enterprises Support Service)
SINE	Sistema Nacional do Emprego (National Employment Service Office)
SME	Small and medium enterprises
SOE	State-owned enterprises
SUS	Sistema Único de Saúde (Unified Health System)
TFP	Total factor productivity
TVET	Technical and vocational education and training
USD	United States Dollars (currency)
VAT	Value-added tax
WEF	World Economic Forum

Executive Summary

After rebounding from an average negative growth in 2014-2019 and the pandemic, Brazil's economic growth remains far below its peers. Brazil's gross domestic product (GDP) grew on average by 3.3 percent annually in real terms between 2001 and 2014 propelled by the international commodities boom and the domestic expansion of social programs, among other things. However, falling commodity prices, political instability, and unaddressed structural challenges led to an economic recession that began in 2014 and from which the country has yet to recover. Real GDP growth fell to an average of -0.3 percent between 2014 and 2019. Productivity has remained stagnant in the manufacturing and many services sectors, where over 90 percent of the workforce is employed. The COVID-19 pandemic further impacted the economy, causing a contraction of 4.1 percent in 2020. Growth turned positive in 2021 and 2022, but potential growth is expected to remain at a low 2.1 percent[i], far below peers such as China, India, Türkiye, and Russia.

Poverty rates in 2022 are projected to be at the same level as in 2014, which contrasts with a significant progress in poverty reduction observed until 2013. Income inequality is also highly persistent. From 2001 to 2012, poverty was cut in half, and around 27 million Brazilians were lifted out of poverty thanks to economic growth, increased labor formalization, and the expansion of social policies. However, after 2014, the crisis led to stagnant income growth among the poorest and little progress in poverty reduction. COVID-19 emergency measures cushioned the effects of the pandemic on poverty, but by 2021 poverty rates were still higher than in 2019 (28.4 percent and 26.2 percent, respectively). Brazil is still one of the most unequal countries in the world. With a Gini coefficient of 0.529 in 2021, Brazil's income inequality is as high as it was in 2011. At the same time, the wealthiest 1 percent own almost half of the country's household wealth. Disparities across regions, particularly between the poorer North and the richer South, are evident. Female-headed households, Afro-Brazilians[ii], and Indigenous people (IP) are overrepresented among the poor, and they face worse labor market outcomes and enduring wage gaps (even within comparable sectors and skills).

Brazil needs to revisit its development model to halt deforestation and be able to confront environmental challenges due to the high risks posed by climate change. Similar to other countries in the Latin America and the Caribbean (LAC) region, land use change is the key driver of greenhouse gas (GHG) emissions in Brazil. However, the magnitude of deforestation significantly surpasses that of other countries, reaching 11,568 km^2 in 2022. The Amazon rainforest alone, of which about 60 percent lies in Brazil, delivers ecosystem services valued at a minimum of USD 317 billion a year to Brazil and the world. Deforestation puts these services at risk, especially if a tipping point is triggered and results in the permanent dieback of the Amazon. The country also faces significant, recurring, and increasing losses from climate -related events: in 2019, reported losses were over BRL 22 billion, almost twice the long-term average of BRL 13.3 billion. Droughts are the costliest hazard, followed by flash floods and riverine floods. These events impact agribusiness, the energy sector (substantially relying on hydro energy), and rural areas, but also disproportionately affect the rural poor, who have few options to protect themselves from natural hazards, and the urban poor, particularly those living in informal settlements.

Brazil's structural challenges to eradicate poverty and boost shared prosperity identified in the World Bank Systematic Country Diagnostic 2016 (SCD1) came to bear with the end of the commodity boom. SCD1 showed how the drivers of socioeconomic progress in the 2000s had gone in reverse by 2015. With commodity prices trending down, Brazil found itself in great need of adjusting its fiscal policy and growth model if the country was to sustain the gains of previous years.[iii] The country's fundamental weaknesses relate to its struggle to generate strong and sustained broad-based productivity growth across sectors and the (un)sustainability of public spending commitments. Given the intrinsic linkages of the bottom 40 percent to natural assets, SCD1 also highlighted the need to improve Brazil's environmental impact, including the management of land and water resources.

This SCD update argues that the development challenges identified in SCD1 remain relevant. Moreover, there is a renewed urgency to build the capacity of individuals to generate income and a reinforced need for timely action in a transition to a greener economy. SCD1 identified three key requirements for Brazil to achieve the twin goals: i) creation of sufficient productive and well remunerated jobs to provide opportunities for all Brazilians; ii) smarter management of Brazil's natural resources and better mitigation of environmental pollution and the risk of natural disasters; and iii) more efficient and better targeted government spending. The Update builds on the evidence collected in a long series of recently published analytical reports to review the challenges identified in SCD1 and inform the definition of the Update's challenges. The first requirement is complemented by the definition of another challenge so that not only the need to have productive jobs is highlighted, but also the poverty-reduction prerequisite of building the income-generating capacity of all individuals (through human, natural, and financial capital) is explicitly stated. The third requirement is also expanded to underscore Brazil's need to address increased exposure to climate change risks in a timely manner.

The SCD1 documented that the primary obstacle to increasing Brazilians' incomes is the country's low-productivity economic model in non-agricultural sectors. This challenge, reflected in Brazil's bias in employment creation in low-productivity services and low growth in total factor productivity (TFP) (1.3 percent per year on average between 2006 and 2014)[IV], had several underlying causes. Among them, SCD1 documented the high costs of doing business, the poor state of physical infrastructure, and the limits to competition due to heavy regulation and relatively high tariff and non-tariff barriers against imports.

As Brazil's factor accumulation-based growth model reaches its limits, the country stands a lot to gain from boosting productivity growth. Brazil reached its upper-middle income status on the back of factor accumulation. Currently, this approach delivers only limited growth, as demographic tailwinds are fading, low domestic savings constrain capital formation, and land accumulation manifests in deforestation. Brazil needs higher savings and investment rates, and its future prosperity will hinge on its ability to raise productivity growth. Yet, total factor productivity has been falling by 0.8 percent between 2014 and 2022, especially in the non-commodities sectors. While in the past agriculture and mining achieved high productivity gains, other sectors, especially manufacturing, fared much worse, reflecting a model where primary sectors are export-oriented while manufacturing is inward-oriented.

With a fifth of the population in chronic poverty before the pandemic, the COVID-19 crisis further exposed the vulnerability of Brazilian households to shocks. The gains of earlier years in households' income-generating capacity have not been reproduced. SCD1 highlighted key achievements in widening access to public services for the poor and deprived: completion rates of basic (primary plus lower secondary) education increased by 20 percentage points to close to 70 percent, infant and maternal mortality decreased significantly (70 and 50 percent, respectively) in the previous two decades and access to power supply, drinking water and sanitation improved. Limited gains have occurred since then. In 2019, one-fifth of Brazilians are classified as chronically poor due to their lack of basic assets to leverage their income – this share was 23 percent in 2012. While access to education improved, its quality remains a concern, as the average student has low performance in both national and international assessments. The pandemic further worsened learning outcomes and inequality due to school closures and higher dropout rates, which will have long-lasting consequences on the future productivity of children. It is now estimated that it may take up to 13 years to recover the human capital losses caused by the pandemic. Access to relevant skills for the job market, especially in science, engineering, and technology fields, is limited, and there are gender gaps in these areas. Higher education enrollment is still highly dependent on family income, reinforcing inequality. There are still gaps in basic access to health services and sanitation. Land tenure is unequally distributed, with high insecurity affecting low-income individuals. While financial inclusion has improved, certain groups still struggle to access financial assets.

Deforestation and agriculture are the main contributors to Brazil's emissions. The country must confront head-on the challenge of curbing deforestation. When SCD1 was completed, Brazil stood out for its contribution to climate change mitigation due to its success in reducing deforestation: yearly deforestation dropped 82 percent between 2004 and 2014, before increasing again after the end of the commodity super-cycle. Political pressure on environmental protection mechanisms intensified, and some interest groups were effective in lobbying to the easing of regulations on environmental protection. The lack of law enforcement in remote areas has exacerbated the issue, and weak governance and financial constraints have hindered climate action efforts. Brazil's institutional capacity for climate policies has gaps, and there is a need of better coordination between government agencies and more enforcement of environmental laws.[V] Weak management of natural resources had been flagged by SCD1 as a challenge. Today, modernization of land registration practices and incentives for more sustainable land use are crucial to address the country's environmental needs.

Structural fiscal reforms, including addressing persistent structural spending issues and improving the tax system, will be critical for the country to find ways of creating space to support higher and more inclusive growth. SCD1's assessment of public finances remains valid today: "revenues [have a] high reliance on indirect taxes… [and] the share of truly discretionary spending… is very low… [while] the bulk of spending is tied up in social commitments… many of which do not go to the poor". SCD1 documented that less than 15 percent of expenditure was discretionary in Brazil[VI] while recent estimates suggest it is now closer to 10 percent. Factors such as public sector pay and pensions, and increased demand for social protection spending, continue to strain public finances, leaving limited space for discretionary and much-needed investment spending. The country's tax system, highly reliant on consumption of goods and services, offers opportunities for more progressive taxation and increased efficiency. The highly complex tax system is also an important contributor to the high costs of doing business in Brazil known as "Custo Brasil". The intergovernmental transfer system needs revamping to address horizontal gaps between states. Several subnational governments are facing a fiscal crisis, yet states and municipalities are responsible for the front-end provision of basic services to the population, such as education and health. Comprehensive administrative reform is needed, focusing on fiscal aspects, governance, and the quality of public service delivery.

Tackling these challenges must be accompanied by improvements in governance and a complementary removal of institutional constraints. Key legislation has been adopted in recent years, including the state-owned enterprises statute (2016), aimed at aligning state ownership practices with international standards, the fiscal rule (2016), the labor legislation reform (2017), the political reform (2017), which gradually established more rigorous criteria for political parties to have access to electoral party funds, form coalitions and achieve a "performance clause", and the pension system reform (2019). Moving

forward, there are additional reforms needed to address the four development challenges. From opening up to trade and promoting innovation to raise productivity, to enhancing teachers training and a more skill-focused educational system to boost human capital, to improving forest monitoring and law enforcement to curb deforestation, to improving the tax system and addressing human resources challenges in the public sector to increase fiscal space. This update places the agenda of institutional reforms as a cross-cutting priority for Brazil.

The Update identified four development challenges that must be overcome, which are linked to three desired High-Level Outcomes (HLOs). These outcomes, reflecting transformative changes that are critical to achieving the twin goals, are defined as long-term sustained improvements in the well-being of the poorest and most vulnerable. The HLOs are i) increased access to high quality job opportunities; ii) improved households' accumulation and use of productive assets; and iii) reduced vulnerability to climate shocks.

Table 1. SCD1 requirements to achieve the twin goals and challenges identified in the Update

Requirements to achieve twin goals in SCD1	Development Challenges in SCD update
Productive and well remunerated jobs	Pursue productivity-led growth and a competitive economy
	Increased capabilities and income-generating capacity of the most vulnerable
Smarter management of Brazil's natural resources	Meeting potential in green and climate friendly development
More efficient and better targeted government spending	Sustainable financing of inclusive growth

Source: World Bank.

1. GROWTH AND WELFARE IN THE LAST DECADE

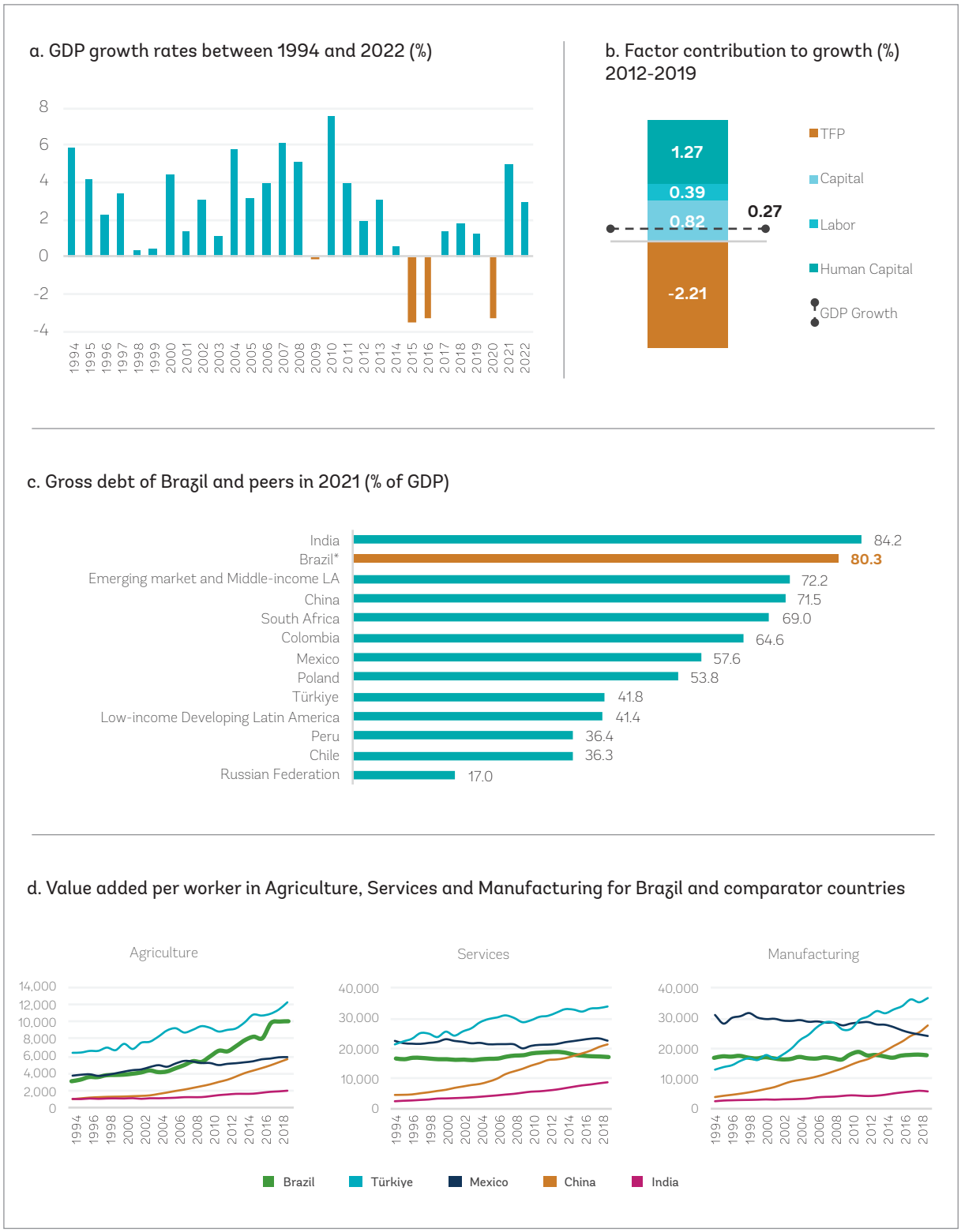
1.1 Growth and macroeconomic trends

Following a strong growth momentum in the decade prior to 2014, Brazil's growth turned negative between 2015-2019 due to negative productivity growth. Brazil's GDP grew on average by 3.3 percent annually in real terms between 2001 and 2014, powered by ambitious structural reforms in the 1990s, the global commodities super-cycle and strong external demand, coupled with a private consumption increase supported by the expansion of social programs, minimum wage policy, a lower unemployment rate (from 12.9 percent in the beginning of 2002 to 4.6 percent at the end of 2012) and increasing formal employment (growing 5 percent annually between 2003 and 2014).[7] However, the combination of falling commodity prices, political instabilities, higher interest rates aimed at controlling inflation, and unaddressed structural challenges led the country to an economic recession in 2015. Brazil experienced negative 0.3 percent average growth in the 2014-2019 period, as the factor accumulation-based growth model was running into constraints, and negative productivity growth wiped out the gains from capital and labor (Figure 1).

Productivity growth has been concentrated in primary sectors; but was absent in manufacturing and services. Agriculture experienced strong growth in labor productivity between 1994 and 2019, performing as well or better than many peers (Figure 1). This contrasts with weak labor productivity growth in services and manufacturing where Brazil was majorly outperformed by peers in other regions, like China, Türkiye, and India. This uneven sectoral productivity performance constrains Brazil's development as commodities sectors contribute for a relatively small share of both GDP and employment while putting pressure on the country's natural wealth.

The economy rebounded quickly from the pandemic-induced recession, supported by a strong fiscal stimulus. Brazil's GDP was still recovering from the 2015-16 recession when it was hit by the COVID-19 crisis, contracting 3.3 percent y/y in 2020. The unemployment rate soared to 14.9 percent by March 2021, and Brazil experienced the world's fourth highest death per capita rate.[8] Growth reached 5 percent in 2021 and 2.9 percent in 2022, propelled by a success-

Figure 1. Growth and macroeconomic trends



Source: a) World Development Indicators; b) World Bank (2022c); c) IMF Fiscal Monitor Data. Brazil's gross debt from Central Bank (BCB) using official methodology; d) WDI. Notes: LA = Latin America.

ful vaccination campaign, pent-up demand for services and fiscal stimulus.[9] Moreover, labor market restoration after the COVID aftermath has been substantial, as the unemployment rate declined to 7.9 percent by December 2022, the lowest unemployment rate since February 2015 (7.5 percent). However, elevated food, fuel and energy prices partly due to booming international commodity prices, bottlenecks in global supply chains, and a depreciated exchange rate have pushed CPI inflation up to 10.1 percent in 2021 and 5.8 percent in 2022[10]. Banco Central do Brasil's (BCB) proactive stance in raising interest rates (reaching 13.75 percent in September 2022)[11] and other measures to reduce fuel taxes helped reduce inflation further in 2023.[12]

Despite the recent adoption of important reforms, steady growth in recurrent and rigid spending still crowds out critical public investment and poses challenges for long-term debt sustainability. In the post SCD1 period, large public sector pensions and wage bill payments continued to contribute to an elevated public debt level[13] (from 51.5 percent in 2013 to 69.8 percent of GDP in 2016) and led the government to approve a ceiling on federal primary expenditures in 2016.[14] Public debt kept raising to 75.3 percent of GDP in 2018 before starting to gradually decline in 2019. Payroll and pensions continued to increase, though at slower pace due to a freeze of public salaries and the approval of a pension reform in 2019. In 2020, when the country was hit by the pandemic, the spending cap rule was waived to allow for the COVID-19 response.[15] However, the compliance with the ceiling fiscal rule, the rollback of COVID-related expenses, and higher-than-expected revenue supported by inflation effects, the growth of the Brazilian economy and elevated commodity prices led to significant fiscal consolidation in 2021 and 2022. Brazil reached a primary surplus in both 2021 and 2022[16], while the general government's gross debt decreased to 72.9 percent of GDP in 2022 – a share lower than the 74.4 percent of GDP from 2019.[17] While important debt management reforms have significantly reduced the government's debt exposure to exchange rate and rollover risks,[18] Brazil pays the highest interest bill – in terms of GDP and share of spending – of any country in LAC, given its relatively high public debt level (Figure 1).[19]

Since the last SCD, Brazil has implemented other key reforms. Brazil enjoys a sounder and more stable financial sector because of the recently approved financial sector reforms that helped boost competition in financial markets and promote financial inclusion and market access.[20] Other advancements include increased labor flexibility and reduced litigation costs introduced by the labor reform in 2017 and the openness to competition and private sector participation in key infrastructure sectors (water and sanitation, telecom, and energy). These reforms are already paying dividends. In the sanitation sector, for instance, investments committed for the following years after the new law passed are currently estimated at BRL 100 billion, above the level observed between 2016 and 2020 (BRL 86 billion). Most recently, the Central Bank independence law, approved in February 2021, reassures the conduct of monetary policy away from external interferences, allowing it to tame inflation in the medium term and reduce risk premiums.

1.2 Poverty, shared prosperity and welfare

The long-term decrease in poverty documented in SCD1 came to a halt with the 2014 crisis. Estimates relative to the first decade of the 2000s indicate a sizable reduction in poverty: between 1999 and 2012, about 27 million Brazilians escaped from poverty.[21] Such a reduction is considered an achievement of regional significance, representing half of the reduction in poverty in the whole LAC region during the period. Poverty rates decreased only slightly after the 2014 crisis: from 28.2 percent in 2012 to 26.2 percent in 2019. Extreme poverty rate, in turn, rose from 4.5 to 5.4 percent between 2012 and 2019 (Figure 2.a).[22] Combining the pre-crisis, crisis and recovery periods (i.e., 2012-2019), the real income of the average Brazilian grew by an average of 1 percent annually while that of the poorest 40 percent went up by only 0.6 percent. More worryingly, the poorest decile's income decreased by an average of 1.1 percent yearly.

The pandemic and post-pandemic years decoupled the evolution of GDP from that of poverty, as low-income families became more dependent on public transfers. Despite the historical economic collapse of 2020, poverty rates in Brazil decreased from 26.2 percent in 2019 to 18.7 percent in 2020 thanks to the Auxilio Emergencial (AE) program that provided cash transfers amounting to 3.9 percent of the GDP. Brazil thus stood out as one of the few countries in which poverty did not increase at the onset of the COVID-19 pandemic. In the LAC region, poverty went up by 1.2 percentage points between 2020 and 2021[23]. In 2021, the Brazilian economy bounced back, but the labor market was still struggling: the unemployment rate decreased by only 0.6 percentage points. Thus, the significant reduction in the coverage and benefits of AE led to an increase in poverty to 28.4 percent. Indeed, non-labor income is estimated to be the main factor driving poverty dynamics in 2020-2021 (Figure 2.b). The diminishing role of labor income in families' livelihoods was accompanied by income volatility[24] that also explains the rise of food insecurity in Brazil.[25] Projections of poverty rates for 2022 are estimated at 24.3 percent – a similar rate to that of 2014.

Brazil is still one of the most unequal countries in the world, with a Gini coefficient of 0.529 in 2021. Income inequality in 2021 was as high as in 2011. Income inequality consistently decreased in the first decade of the 2000s, from 0.584 in 2001 to 0.527 in 2012, but such gains were reverted in the period 2012-2019. After reaching its lowest level since the 21st century in 2015, inequality rose sharply in 2016 and continued to increase during the recovery until 2018. The sharpest increase was during 2016 when inequality grew by 1.5 Gini points in one year — the largest single-year jump in inequality since the 1990s. Income disparities are evident along a north-south divide. States in the Northern region have high levels of poverty as well as those in the Northeast. Alagoas, Amazonas, Pará, Amapá and Piauí have poverty rates of over 50 percent. The highest one is observed in the state of Maranhão (59.9 percent), and it is about five times that of Santa Catarina. Finally, income disparities translate into wealth disparities. It is estimated that 1 percent of the population owns almost half the country's household wealth in 2019, compared with 40.5 percent in 2010[26]. This high concentration translates into a wealth Gini coefficient of 0.89 in 2019 up from 0.822 in 2010.

Brazilian families continue to suffer in non-monetary dimensions, with their place of residence playing a key role in their access to economic opportunities and basic infrastructure. Approximately one-fifth of Brazilians were identified as chronically poor in 2019 – a share only slightly lower than in 2012 (23 percent).[27]

Poor access to essential services, substandard living conditions, and insufficient human capital accumulation are all indicators that can readily explain why households are unable to stay out of poverty over time. About 31 percent of households in the North and 27 percent in the Northeast do not have access to basic services such as water, sanitation or electricity (Figure 2.c). It is also noticeable in the relatively richer Southeast, where 32 percent of the household heads did not complete primary education, and this share reaches 51 percent in the Northeast. In the Southeast region, 38 percent of workers do not have paid-sick leave, and this share is 58 percent in the North region. Heterogeneity in access to infrastructure completes the picture. In 2021, access to electricity and water was estimated to be over 99 percent in urban areas and over 96 percent in rural areas. However, less than two thirds (62.9 percent) of rural areas have access to sanitation compared to the 94.1 percent coverage rates among urban dwellers. Relatedly, 20 percent of poor women and 26 percent of poor Afro-Brazilians, respectively, do not have improved sanitation.[28]

Figure 2. Evidence on the poverty and welfare trends in the period 2012-2022

Source: World Bank (2022b) and Lara Ibarra et al. (2023). Notes: Income in panel B is in July 2019 prices. Extreme poverty based on $2.15 (2017 PPP) line. Poverty based on the $6.85 (2017 PPP) line.

Inequalities are mitigated only partially by the Brazilian fiscal system.

Recent evidence shows that the Brazilian fiscal system in 2019 is both inequality- and poverty-reducing. Income inequality (measured by the Gini) is reduced by 6.4 percentage points and extreme poverty by 5.1 percentage points[29]. Nonetheless, the most effective poverty-decreasing programs are those targeting the elderly (i.e., rural pensions and BPC). After considering fiscal policies, the elderly poverty rates go from 37.6 to 14.8 percent. Meanwhile, poverty rates among children and adolescents go from 54.2 to 56.6 percent when comparing the pre- and post-fiscal incomes. Fiscal policies benefit all race groups in terms of their effects on poverty, but households headed by Afro-Brazilians (-6 p.p.) are more benefited than those headed by whites (-5.1 p.p.) and non-AfroBrazilians/non-whites (-3.9 p.p.). However, poverty remains high among households headed by Afro-Brazilians at 38 percent (compared to 18 percent among those headed by whites).

1.3 A sustainable path will require policies to become a greener and resilient economy

SCD1 highlighted how the prospects of the bottom 40 percent (B40) are intrinsically linked with the country's natural assets, but against a background of high and increasing risk from climate change, the whole country's development will need to address environmental challenges head on. Extreme weather events such as droughts, flash floods, and riverine floods are already causing and are expected to continue causing losses across the entire country. Between 1995 and 2019, reported nationwide losses from climate-related events cost an average of more than BRL 13.3 billion per year (USD 2.6 billion or 0.1 percent of 2022 GDP) per year.[30] Overall, drought is the costliest climate-related hazard in the country (BRL 199.8 billion between 1995 and 2019), followed by flash floods (BRL 55 billion) and riverine floods (BRL 32.2 billion). Extreme heat is more frequent and intense in urban areas due to the urban heat island effect. The states of Rio Grande do Sul, Minas Gerais, Bahia, Pernambuco, and Santa Catarina have reported the greatest losses, accounting for half of the total BRL 333.36 billion in reported losses between 1995 and 2019.[31] Nearly every municipality reported some losses and damage during the period, and 85 percent of the 5,570 municipalities reported climate-related disaster losses. Although droughts affect far more people nationwide, floods caused 88 percent of deaths from disasters between 2000 and 2018—2,435 altogether, mainly in urban areas.[32]

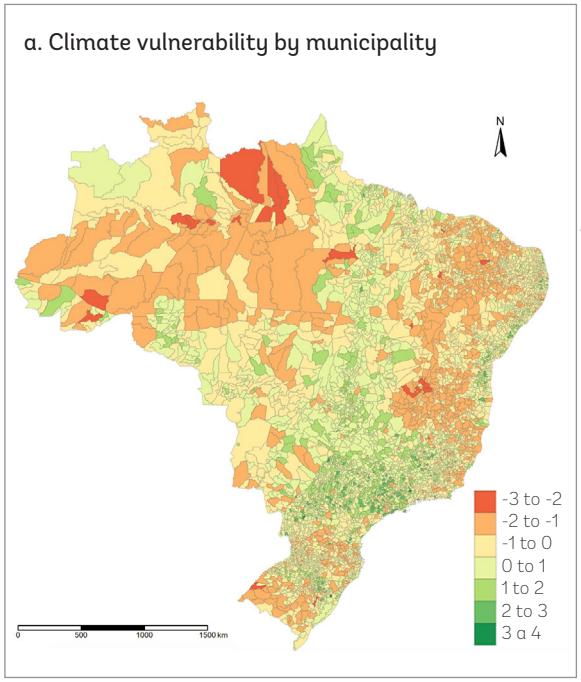
Among other direct consequences, natural hazards significantly disrupt infrastructure negatively impacting the competitiveness of Brazil's economy. Brazilian firms lose amounts equivalent to 0.2 percent of GDP every year due to infrastructure disruptions. The majority (55 percent) are caused by failures of transport infrastructure, followed by power (44 percent) and water (2 percent).[33] More than 5 percent (120,000 km) of Brazil's road and railway infrastructure is exposed to flood risks. The projected reduction in precipitation and changes in seasonal rainfall patterns are also likely to create risks for Brazil's hydropower-dominated electricity supply.[34] Notably, most of the natural hazards affect agricultural production, as private losses referring exclusively to agriculture are registered in 81.8 percent of damage

occurrences (World Bank, 2020b). The value of losses linked to agriculture represents 56.2 percent of the sum of public and private losses due to these events.

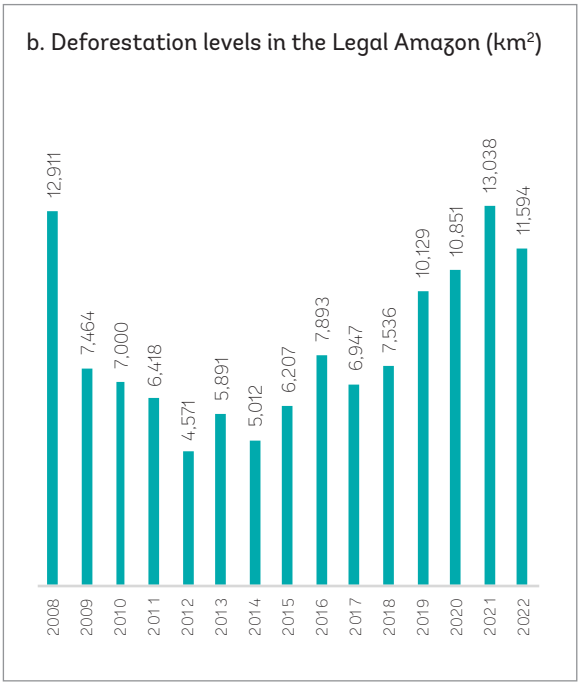
Impacts from climate change on households' welfare are expected to be broad and inequitable. About 3 out of 10 individuals live in either high socioeconomic vulnerability or high environmental vulnerability (Figure 3.a).[35] At the same time, 19 percent of the population reside in municipalities considered to be at high environmental risk, while about 8 percent are in municipalities considered to be in high socioeconomic vulnerability – though not at high environmental vulnerability. The urban poor in certain large metropoles are particularly vulnerable to disasters: low-income households typically reside in informal settlements that are often located on low-lying, flood-prone land, and consist of structures that are easily damaged during floods and landslides. Finally, water shortages may disproportionately impact smaller producer systems who do not have the financing for irrigation.

Despite progress in earlier years, deforestation rates have been increasing steadily since 2014. Under the 2004 Plan for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAm) and other environmental protection policies, coupled with favorable economic forces taking pressure off frontier expansion, Brazil managed to effectively reduce deforestation in the Amazon by over 80 percent between 2004 and 2014 (Figure 3.b).[36] This decreased Brazil's emissions from land-use change by 65 percent. The trend has since reversed as interventions focused on command and control and a

Figure 3. Brazil's vulnerabilities to climate change



Source: Adapted from World Bank (2022b).



Source: PRODES / INPE.

deteriorating economic environment accelerated frontier expansion once again, intensifying pressures to hollow out environmental protection policies, including the PPCDAm and the Forest Code[37]. Illegal logging and land grabbing practices[38] accelerated, expanding cattle ranching and agriculture into the Amazon and Cerrado biomes. Illegal mining, fishing and other natural resource exploration also increased as a result of the lack of law enforcement in remote areas. Damages to the forest landscape caused by these practices also increased the risk of large fire outbreaks from which tropical forests can hardly recover. Fiscal measures that can implicitly incentivize extensive cattle ranching also add deforestation pressures.[39]

While Brazil is one of the top 10 GHG emitters in the world, its emissions profile differs from that of most upper-middle income and high-income countries.[40] Brazil's GHG emissions are primarily due to land use change (primarily deforestation) and agriculture. Land use change and agriculture accounted for 52 percent and 24 percent, respectively, of Brazil's total GHG emissions between 2000 and 2020. Electricity and transport accounted for 12.5 percent and 45 percent of GHG emissions from the energy sector in 2000. This is very different from global averages: energy use (for electricity, heating and cooling, transport, industry, and other uses) accounts for about three-quarters of global emissions, while agriculture, forestry, and land use combined contribute only with about 18 percent.[41] In 2020, gross GHG emissions in Brazil amounted to 2.16 billion tonnes of carbon dioxide equivalent ($GtCO_2e$). However, these were lowered by the approximately 600 million tonnes (Mt) of removals by Brazil's natural ecosystems, thus making net GHG emissions 1.52 $GtCO_2e$.[42] Although Brazil does not generate a large amount of emissions from fossil fuels it is becoming a major exporter of fossil energy, increasingly supported by vast offshore ("Pre-Salt") deposits, unlocked by Brazil's highly productive and competitive extractives sector.

Brazil has important reforms and sectoral plans to address climate change. Various reforms in recent years have strengthened market flexibility (especially land, capital, and product markets), making the economy more adaptable to shocks and aiming to strengthen productivity growth.[43] Agricultural policy uses rural credit as its main policy tool, including the Low-Carbon Agriculture Plan (ABC plan) and the new Agro Law. To date, Brazil has applied 17.4 million hectares of different combinations of integrated crop-livestock-forest systems, surpassing by 21 percent the original nationally determined contributions (NDC) targets by 2020. The National Logistics Plan (PNL)[44] aims to tackle the inefficiency and, in some regions, the large environmental footprint of road-based transport infrastructure and low connectivity for a large portion of the national territory. The PNL projects investments in transportation infrastructure between BRL 730 billion and BRL 1.2 trillion by 2035.

2. DEVELOPMENT CHALLENGES

Starting from the requirements for poverty reduction and priority constraints identified in SCD1 and considering new analytical findings, this SCD update identifies four development challenges. SCD1 identified three key requirements for Brazil to achieve the twin goals: i) creation of a sufficient number of productive and well-remunerated jobs to provide opportunities for all Brazilians; ii) smarter management of Brazil's natural resources and better mitigation of the risk of natural disasters and environmental pollution; and iii) more efficient and better targeted government spending. In this update, a rich collection of recently published reports was used as the main source of evidence for the changes, reforms, and extensions. The reports A Balancing Act for Brazil's Amazonian: An Economic Memorandum (2023), Brazil Poverty and Equity Assessment: Looking Ahead of Two Crises (2022), Alternative Futures for Brazil: Productivity, Inclusion, Sustainability (forthcoming), Opportunities for All (2022), Social Protection for the future: a 2042 outlook (2023), The Brazil Human Capital Review: Investing in People (2022), The Brazil Infrastructure Review (forthcoming), Agriculture Productivity Growth in Brazil: recent trends and future prospects (2017), A fair adjustment: efficiency and equity of public spending in Brazil : Volume I (2017), Jobs and growth: Brazil's productivity agenda (2018), Gestão de Pessoas e Folha de Pagamentos no Setor Público Brasileiro: o Que Os Dados Dizem (2019), and The Country Climate and Development Report for Brazil (2023) provided a wealth of post-SCD1 information that informed a review of the SC1 challenges.[45] For this update, the first SCD1 requirement is complemented by the definition of an additional challenge so as to highlight not only the necessity of having productive jobs, but also the prerequisite of building the income-generating capacity (through human, natural, and financial capital) of all individuals to reduce poverty. The third requirement is also broadened to underscore Brazil's need to address increased exposure to climate change risks in a timely manner.

The first development challenge is to create opportunities for all Brazilians through a focus on productivity-led growth and a competitive economy. It is critical to raise productivity across all economic sectors. Reliance on agricultural productivity has been an enduring feature of the Brazilian economy. While opportunities exist to further develop the agricultural sector, a large potential remains untapped due to low productivity in other economic sectors. This challenge encompasses priorities that are still relevant for Brazil: further global integration and stronger links to trade, improving the business environment, promoting innovation, modernizing infrastructure and adopting a modern tax law. Higher productivity growth across Brazil would raise incomes and build wealth rather than consume it through debt accumulation or the destruction of natural wealth through frontier expansion, making growth more fiscally and environmentally sustainable.

The second development challenge is to develop a people-centric strategy that increases the income-generating capacity of the poor. Economic development and the population's ability to sustainably escape from poverty will require building all individuals' capacity to generate income. Inclusive policies that close the gaps in the accumulation of human, natural, and other types of capital are identified as priorities under this development challenge. Priorities include measures to boost high-quality educational attainment, improved access to digital services, and effective land tenure regulation.

The third development challenge is to unlock the country's potential as a green economy. Brazil's commitment to net-zero and its increased exposure to natural hazards require renewed and broader efforts to move towards a greener economy. Priorities to address this challenge include the promotion of cross-economy productivity, climate-smart agriculture, increasing the resilience of industries and cities, curbing illegal deforestation, and improving the management of natural resources.

The fourth development challenge is to finance the country's inclusive growth through a sustainable framework that relies on more efficient spending, better taxes and a sound fiscal framework. Creating fiscal space in a context of limited discretionary spending is not novel for Brazil. However, a myriad of factors make financing the required investments a fundamental policy priority, including the rising fiscal needs caused by the COVID-19 crisis, the heightened climate change risks, and the slow progress in building a competitive economy. Increasing the efficiency of government spending, harmonizing taxes across income sources, eliminating regressive exemptions, and improving the credit market are all promising policy options to address this challenge.

Reforms to tackle these challenges must be accompanied by a complementary removal of institutional constraints. Despite Brazil's struggle with policy stability, key legislation has been adopted in recent years, including the state-owned enterprises statute (2016), aimed at aligning state ownership practices with international standards, the fiscal rule (2017), the labor legislation reform (2017), the political reform (2017), which gradually established more rigorous criteria for political parties to have access to electoral party funds, form coalitions and achieve a "performance clause", and the pension system reform (2019).[46] And while the state administration system is relatively efficient, particularly at the federal level,[47] government effectiveness is lower than expected. The country also ranks low on the World Economic Forum (WEF)'s Global Competitiveness Index regarding the future orientation of the government, including indicators like policy stability (130th), responsiveness to change (122nd), and long-term vision (129th).[48]

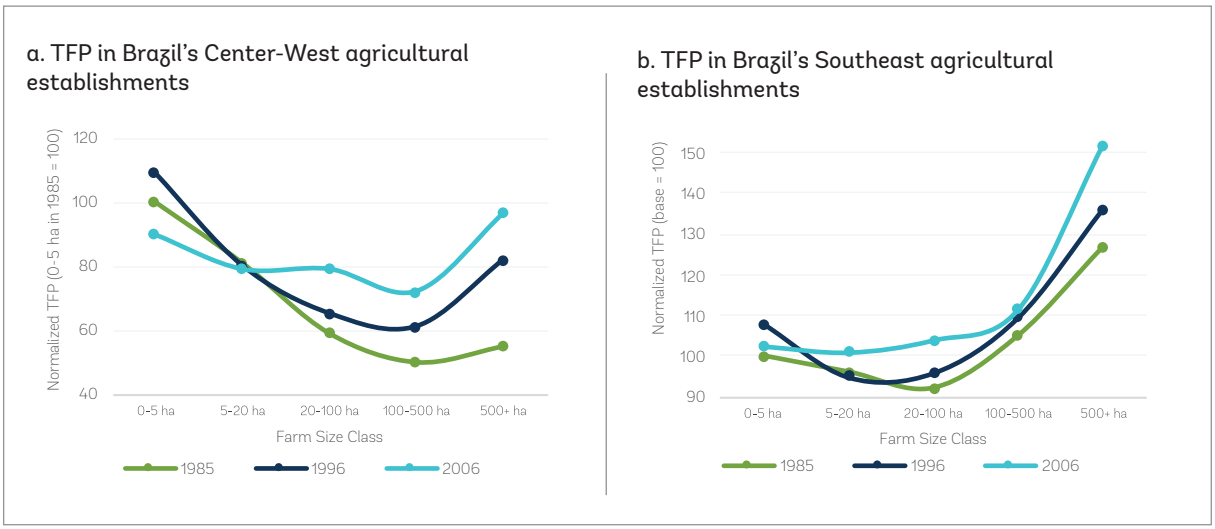
2.1 Challenge 1: Creating opportunities for all Brazilians through a focus on productivity-led growth and a competitive economy

The most important obstacle to increasing the incomes of Brazilians is the lack of productivity growth in non-primary sectors which employ the majority of the workforce. Except for the enduring legacy of structural reforms of the 1990s and the commodity super-cycle of the 2000s, when productivity improved, TFP growth in Brazil has been negative on average, with growth driven mainly by factor accumulation. Between 2011-2019, economic output benefited from an expansion in the labor force, an increased supply of skills, and the accumulation of capital. However, negative productivity growth over the same period all but eliminated these gains. Productivity has been low in Brazil, even by Latin America's lackluster standards. In contrast, productivity has been the key driver of economic growth in countries like China, India, and Türkiye (Figure 1). More specifically, labor productivity decreased by 7.9 percent in services, 3.7 percent in the manufacturing sector, but climbed by 53 percent in the agricultural sector.[49] However, services and manufacturing employ 90.8 percent of the workers, including 78.0 percent of the working poor, and 81.9 percent of those in the bottom 40 percent. In addition, higher growth in other sectors has the potential to lift lagging regions such as Amazonia by rising demand for Amazonian products and reducing pressures on natural forests.

Agriculture has been a key driver of productivity in Brazil, and there is still some potential for growth. Between 1996 and 2020, labor productivity in agriculture grew by 6 percent on average annually, though the sector's TFP growth has been mostly concentrated on large producers and with large gains observed in establishments in the Southeast region.[50] Brazil's productivity growth in the agricultural sectors has also buffered the

country against further economic contractions. Evidence from the last two decades demonstrates that the agriculture industry has consistently acted as a stabilizing force during periods of negative GDP growth.[51] There are many reasons for the success of Brazilian agriculture, including the migration (notably of European farmers) to the South of Brazil[52], the availability of credit[53] and the substantial investments in research and development by Brazilian universities, research institutes, and the Brazilian Agricultural Research Corporation (Embrapa)[54]. Still, Brazil's agricultural production has room to grow further. For instance, Brazil's corn yield is about half that of the U.S. (5.8 vs. 11 metric tons per hectare). Growth could come from improving productivity of midsize farmers and regions, reforming agriculture policies towards agriculture financing, and further investments in irrigation systems and transport infrastructure.[55]

Figure 4. Agricultural productivity in Brazil.



Source: Adapted from Helfand and Taylor (2021). Notes: ha = hectare.

The high cost of doing business, despite some recent progress, remains an important challenge in the country. The last 15 years have seen improvements in the Brazilian business environment, but it is estimated that doing business costs companies BRL 1.5 trillion (USD 283 billion, or 22 percent of GDP) more in Brazil than in OECD economies.[56] In 2019, Brazil ranked 71st out of 141 economies in the World Economic Forum's Global Competitiveness Index. These figures were even worse in 2016, when Brazil was ranked 81st (out of 138 economies).[57] Such improvements may be reflecting Brazil's Economic Freedom Law (i.e., Ordinary Law No. 13,874 from 2019) aim to move towards a more business-friendly environment and the launch of online systems for company registration, licensing, and employment notifications[58]. "Custo Brasil", a term that refers to the high cost of doing business in the country compared to many of its competitors, is particularly burdensome for small companies.

Brazil's tax system is an important contributor to the "Custo Brasil". In 2021, the tax burden in Brazil was around 33.9 percent of GDP, one of the highest among developing economies, though just below the average of OECD countries. With dozens of different taxes managed by different levels of government and a multitude of tax benefits and special regimes[59], the complexity of Brazil's tax system creates high compliance costs. High costs are also due to various obstacles that hinder business operations, such as inefficient financial markets, complicated administrative regulations, and a constantly changing regulatory environment. These costs make firms less competitive, reduce their motivation to innovate, and encourage rent-seeking behavior.[60] Moreover, the inefficiencies caused by the indirect taxation framework are of particular concern.[61] The majority of indirect taxes are levied on turnover, following a cumulative regime that imposes higher effective rates on firms that are in the final stages of the production chain. This cumulative structure creates an artificial incentive for vertical integration and market segmentation, creating incentives against firms that produce complex products. The ICMS tax[62] follows the origin principle, so revenues go to the state in which the product is produced. This puts ICMS at the core of a "fiscal war" among Brazilian states, as its structure creates a strong perverse incentive for firm location decisions to be based on tax benefits and not on production efficiency. Effective tax rates that vary greatly based on category of product, location and firm size create further distortions to efficient resource allocation.[63]

While some progress has been made since SCD1 with regards to distortions in credit markets, Brazil still has a very segmented market for bank credit. In Brazil, a very regulated market for bank credit (i.e., earmarked) coexists with a non-regulated market (i.e., non-earmarked). State-owned enterprises (SOEs) - in particular, Banco do Brasil, Caixa Econômica and BNDES - are responsible for the largest share of earmarked loans. As of April 2023, earmarked loans corresponded to 40.9 percent of the outstanding bank credit, higher than 2007's level (33.5 percent). The average cost of the earmarked credit portfolio (9.3 percent) is well below that of the non-earmarked portfolio (32.4 percent) and even lower than the average public debt cost (10.7 percent). Differential access to earmarked resources contributes to a non-leveled playing field, distorting market prices and leading to a misallocation of resources.[64]

Access to financing is particularly binding for small and medium enterprises (SMEs) thus limiting potential innovation capacity and productivity growth. Information asymmetries and concentration in credit markets have hindered SMEs' access to financing. According to the country's small business support agency (SEBRAE), there are almost 9 million micro and small companies in Brazil, who represent 27 percent of the country's GDP and generate 52 percent of the formal employment.[65] Recent estimates point that almost 2 million of these companies are financially constrained, and the finance gap is estimated at USD 437 billion or 24.7 percent of GDP. The finance gap was deepened by the COVID-19 crisis. According to a poll made with micro, small and medium enterprises (MSMEs) during the crisis, only 14 percent of MSMEs that sought credit were granted loans.[66] Bank credit for MSMEs, as a percentage of GDP, was significantly smaller in April 2023 (9.6 percent) than it was in December 2022 (13.3 percent).[67]

Despite the liberalization of the late 1980s and mid-1990s, Brazil's tariffs are still high, and the country is less open to trade than its peers. Barriers to trade in services and high non-tariff measures (NTM) set additional constraints on trade. Services account for only 13 percent of Brazil's gross exports, a low share when compared with 25 and 15 percent for the world and Latin American countries, respectively. This is reflected in its underperformance in the OECD Services Trade Restrictiveness Index, which shows a below-average score in 18 of 22 sectors in 2020.[68] Brazil also has high NTMs: the percentage of imports subject to at least one NTM is higher in Brazil than in other countries: 74 percent for technical barriers, 55 percent for sanitary and phytosanitary measures, and 23 percent for quantity controls, well above world averages. Simulations suggest that the actual negotiated European Union–Mercosul agreement, including liberalization of tariffs and NTMs, could increase GDP by 6.7 percent by 2040.[69]

Although recent progress has been made, Brazil ranks below most peers when it comes to innovation. SCD1 identified that circa 2015 Brazil ranked in the middle of a group of OECD and middle-income peers in terms of capacity for innovation and 84th out of 140 countries in the Innovation Indicator. In 2016, for example, the average age of patents (15.3 years) in force in Brazil was the highest in a sample of twenty economies. While this average decreased to 11.9 years in 2022,[70] Brazil still exhibits substantial lags against comparator countries in the global innovation index and in terms of key inputs to innovation such as the number of researchers and engineers as a proportion of the labor force. Brazil has implemented several innovation policies, mostly through fiscal incentives, but they have had limited impact on technological adoption and innovation.[71] Although the incentives have induced some global information and communication technology (ICT) hardware firms to produce locally, the beneficiaries have not been able to produce internationally competitive ICT products. Similarly, evidence suggests that the Fiscal Incentives Law (Lei do Bem) had a positive but modest impact on innovation. Average realized research and development (R&D) intensity has been low. The law favors larger and older firms and does not reach most small or new companies: it excludes firms that file income tax returns based on their presumed profit, which includes most young firms. To the extent that it favors incumbent firms, it may have slowed the reallocation of resources from low-growth incumbents to high-growth young firms.[3]

Brazil's infrastructure financing gap is approaching USD 800 billion, the equivalent to 3.7 percent of GDP per year through 2030. Mobilizing private capital will be essential to closing this gap. Investment in infrastructure hit a near all-time low in 2020, when only 1.6 percent of GDP was invested in transportation, electricity, water and sanitation, and telecommunications combined. Notably, transportation accounts for more than half (53 percent) of the country's financing gap. Brazil also lags in terms of investing in multimodal logistics solutions to support the competitiveness of industrial and export value chains. Brazil ranked 56

out of 161 countries in the Logistics Performance Index (LPI) in 2018, lagging behind Mexico, India, China, Canada, and the United States. Brazil, which has dropped 15 places since 2010, is the only BRIC country whose performance has decreased. Improvements in logistical performance and mass transit services are essential for more productive industries and cities, and even a more resilient economy to climate-change. Indeed, addressing climate change impacts an additional 0.8 percent of GDP per year in investment needs between 2022 and 2030.[72] Better connecting coastal towns (rather than expanding rural roads into the hinterland, including into the Amazon) could yield considerable welfare gains for Brazil. Recognizing fiscal constraints, Brazil must meet the challenge of effectively design strategies to complement public investments and boost the participation of the private sector (e.g., public-private partnerships, concessions) to mobilize capital towards infrastructure projects.

Finally, Brazil must address the limited adaptability of its current and future workforce to a more modern labor market. Over the last ten years, the educational attainment of workers has been a significant predictor of the time needed to recover from labor market shocks. Following massive layoffs, workers with lower education levels take up to eight years to reach their previous wage levels, whereas those with higher levels of education achieve this in less than two years.[73] At the same time, the gradual scarcity of routine jobs and the rise of occupations requiring more cognitive and abstract skills are worsening the mismatch between requirements of the modern labor market and the skills of the workforce. In Brazil, about one third of individuals aged 20-39 have not completed secondary education, and about 78 percent of the workforce and close to 95 percent of the working poor work in occupations facing a relatively high risk of automation.[74] This means that skill-biased inequality in employment and wages and individuals' differential ability to overcome shocks are likely to widen in the future, negatively affecting upward mobility and Brazil's overall productivity. Finally, the quality of education in Brazil is a cause of concern for the ability of the future workforce to hold high-productivity jobs: in upper secondary education nearly all students in Brazil graduate without full proficiency in math.[75]

IC1 Institutional constraints to boost productivity and a competitive economy

Strengthening Brazil's competition enforcement framework is critical. A 2018 peer review on competition law and policy identified weaknesses in Brazil's competition enforcement system as part of the country's efforts to join the OECD. These weaknesses include issues with investigation and decision-making processes, the appointment system for the Administrative Council for Economic Defense (CADE) commissioners and the general superintendent, inadequate resources for competition enforcement, and the need for improvements in the methodology for calculating fines and substantive guidelines. Addressing these issues is crucial for fostering a more competitive economy.

Brazil improved enforcement of international intellectual property rules, although a patent backlog persists. The lack of enforceable Intellectual Property Rights (IPR) policies and substantive rules on IPRs through preferential trade agreements (PTAs) hinders innovation and productivity growth in the domestic market. Reforms to lower tariffs for capital and intermediate goods, reduce trade costs, and attract foreign direct investment in key service sectors are essential for encouraging technological transfers and fostering a more competitive economy. Brazil has made strides in patent and trademark protection.[76] However, patent processing remains slow, with an average approval time of eight years. In 2019, the federal government introduced a strategy to address the longstanding patent backlog problem.

Public investment faces several institutional challenges in Brazil. The IMF's Public Investment Management Assessment (PIMA) 2018 found that Brazil's PIM institutions are stronger than that of other emerging market countries in the areas of national planning, budget comprehensiveness, company regulations and monitoring of assets. However, they perform poorly in the allocation and implementation phases, especially project appraisal and selection, protection of investments, funding availability and project management. In terms of effectiveness, most institutions were assessed as medium or low scoring. Strategic prioritization of investment and project selection and appraisal were found to be the most significant areas of weakness

in the country. Finally, the lack of coordination across levels of government and the low capacity at the subnational level were recognized as serious constraints.

Political institutions in Brazil, characterized by coalitional presidentialism, pose challenges for long-term, within-budget infrastructure spending. State governors depend on fiscal transfers from the central government to finance their public infrastructure needs due to the rigidity of state budgets. Thus, infrastructure initiatives, assumed to originate within the executive branch, require significant efforts and political capital to get approved and funded via the national legislature. Furthermore, private infrastructure providers frequently operate as monopolies or oligopolies, creating challenges for infrastructure investment. Limited flexibility in Brazil's federal budget also makes it difficult for policymakers to allocate funds for infrastructure projects.

2.2 Challenge 2: Developing a people-centric strategy that increases the income generating capacity of the poor

The effects of the pandemic made bare the vulnerability of Brazilian households to cope with shocks. Long-term economic development can only be achieved if investments are made in their income-generating assets.[77] As individuals are able to accumulate their human capital, build other assets, securely own natural capital and usufruct from it through reliable infrastructure, they will be able to sustainably get out of poverty.

A major driver of the recent rise in Brazil's stock of human capital was improved access to basic education.[78] Between 2000 and 2019, net enrollment rates jumped from 66 percent to 94 percent in pres-

chool (5-6-year-olds) and more than doubled in upper secondary school. As a result, average years of schooling increased substantially in the last decades. Upper secondary school dropout rates decreased from 10.3 percent in 2010 to 4.8 percent in 2019, though increased somewhat to 5.7 percent in 2022 partly as a result of the pandemic.[79] The number of college entrants, in contrast, kept rising from around 1.9 million in 2010 to around 3.6 million in 2019, and 3.9 million in 2021.[80]

The quality of education has increased more slowly than enrollment. Learning at the primary education level has risen steadily as demonstrated in the Indice de Desenvolvimento de Educação Básica (IDEB), which includes standardized test scores in Portuguese and math and school dropout rates.[81] However, the quality of education remains below that of Brazil's regional peers. In the most recent Program for International Student Assessment (PISA) tests, almost half of 10-year-old in Brazil were unable to read or understand a simple text (the World Bank's definition of learning poverty). Results in language and science improved over time, but those in math stalled. In 2021, only 31 percent of students completing upper secondary education attained adequate proficiency in language and a staggeringly low 5 percent in math.[82]

The COVID-19 pandemic significantly affected learning levels and inequality through long school closures and higher dropout rates and exacerbated existing deficiencies in the provision of education. About 50 million students lost the benefit of in-person instruction during closures. Such a prolonged period of school closures has multiple consequences including increased school dropout rates and large learning losses. Indeed, nearly 1.4 million school-age students between 5 and 17 years old were out of school in 2021, half of whom were from the North and Northeast of Brazil. Moreover, the Human Capital Index dropped to 0.54 in 2021, compared to 0.601 in 2019 – setting back to levels of 10 years ago.

Another challenge includes equipping the youth with relevant skills for the labor market. In 2012, for example, Brazil had the lowest share of graduates in engineering and sciences among tertiary graduates in a sample of 11 countries. National statistics currently indicate that about 18 percent of college graduates in Brazil specialize in science, engineering, and technology subjects, below the OECD average (25 percent). Gender gaps are substantial: one woman for every seven men graduate in ICT fields in Brazil and less than 1 in 2 in engineering and related subjects. Technical and vocational education and training (TVET) remains a little-pursued path: only 10 percent of upper secondary students are enrolled in TVET, four times less than the OECD average, despite the estimated 9.7 percent wage premium when compared to students with only high school.[83]

Access to higher education in Brazil has grown in recent decades, but enrollment continues to be highly dependent on family income. Higher education degrees are strongly associated with upper middle- or upper-class status in Brazil. Data from PNAD-C 2019 indicate that youth aged 18–24, almost 7 in 10 in the top income decile are enrolled in higher education, compared to 1 in 10 in the bottom 30 percent and less than 1 in 5 among the vulnerable middle class.[84] Importantly, the adoption of affirmative action in Brazilian federal universities

in the last decade has contributed to increase the enrollment of public high-school students and Blacks.[85] Enrollment rates have increased, but the pace of progress may be too slow to reverse today's stark income and class inequality. Projections suggest that after three generations, only 12 percent of the poor will have achieved tertiary education.

While Brazil has a comprehensive set of social protection programs and policies that succeed in achieving many desired outcomes, they tend to fall short in promoting economic inclusion for vulnerable workers. Even though Brazil's total spending on labor market policies is similar to that of high-income economies, the active labor market programs (ALMPs) designed to promote skill development, entrepreneurship and job intermediation services for vulnerable workers receive only a minimal share of this spending. Existing programs largely serve formal workers.[86] In addition, there is a lack of connection between Brazil's public employment services network (Sistema Nacional de Emprego, SINE) and ALMPs, as well as of linkages between income support programs and SINE.[87]

Most Brazilians rely on the national public health system (Sistema Único de Saúde, SUS), but effective access remains unequal. In fact, 97 percent of low-income rural households use the SUS when sick, as do 88 percent of the low-income urban households.[88] While SUS is a universal system that has progressively expanded access to care, its true cost is reflected in long wait times to access health services[89]. Access to health services is unequal across the country with rural areas having the lowest number of doctors per capita.[90] As highlighted in SCD1, there are significant differences in terms of access to health care by race and ethnicity. Unfortunately, inequality in access to health care can start even before birth. At the time SCD1 was prepared, 74.9 percent of the white population had seven or more prenatal visits compared to 54.8 percent among Blacks and pardos, and 24.3 percent among indigenous people. More recent data indicates that about 82 percent of Brazilian white mothers do seven or more prenatal care visit, compared to only 68 percent of Afro-Brazilian mothers.[91]

Gaps in terms of basic access also relate to sanitation and internet services. Brazil has achieved near universal access to several key infrastructure services. Almost all Brazilians now have access to electricity and drinking water. However, there are still important racial, ethnical, urban-rural, and gender gaps in terms of access to water supply. About 13 percent of Brazilians poor households have no access to water supply and this share is 39 percent in rural areas, 3 percent in urban areas, 9 percent among female-headed households and 13 percent among those headed by Afro-Brazilians[92]. These figures are even worse among IP and quilombolas, as roughly 51 percent of IPs and 42 percent of quilombolas have no access to a water supply. The access to sanitation and internet services has also lagged behind, especially in the northern and northeastern regions: over 60 percent of the population in these regions do not have access to improved sanitation services, while 85 percent of those in the Southeast do so. Similarly, almost 30 percent of the Northeast's population do not have access to the internet. Limited access to these services represents an important constraint to connectivity, digitalization and the quality of life of underser-

ved communities. Despite the well-established framework of concessions and public-private partnerships, the poor quality of public services has been penalizing the quality of life in cities and productivity.

Land tenure, a bastion of security among vulnerable households, is unequally distributed. The Brazilian poor have ownership rates of dwelling or land similar to those of the non-poor. However, a major difference stands out in the ownership of legal titles: about 61 percent of the Brazilian population owns a land title, while only 50 percent of the poor and 46 percent of the rural poor do.[93] In fact, land concentration in Brazil remains one of the largest in the world: one percent of landholdings occupy almost half of the country's rural area.[94]

A related issue, land tenure security, also tends to disproportionately affect low-income individuals. Insecure land rights can lead to underdeveloped rental markets and inefficient investment decisions in properties.[95] Insecure land rights create high obstacles to gaining access to credit that can be very important for agricultural cycles. This could partly explain why the properties of familiar agriculture are characterized by their small size (up to 4 hectares) and low levels of production even when a relatively high proportion of poor families in rural locations report to own their land. Within familiar establishments, even among properties larger than 50 hectares, the registered value of production does not surpass BRL 25 thousand.[96] Land tenure insecurity is more pronounced in regions of expansion of the agricultural frontier, especially along the Amazon Forest borders. While it is difficult to quantify how much of the land in Brazil is lacking a designation, in the Legal Amazon territory, about 143.6 million hectares (or 28.5 percent of the area) do not have a designation.[97]

Brazilians are increasingly avid users of financial accounts, with many recent improvements in the digital arena. About 84 percent of the population over 15 years old had an individual or shared formal financial account in 2021, up from 56 percent in 2011, according to the World Bank's Findex database on financial inclusion. The same survey indicated that 51 percent of respondents have used a mobile phone or internet connection to access financial accounts. These changes are likely to have followed from BCB's agenda that introduced the PIX payment system in November 2020 and that counted over 138 million users by October 2022, and the open-banking initiative that started in November 2021.[98]

Notwithstanding the recent progress, there are still certain groups lagging in their ability to hold financial assets and benefit from the financial system. Account ownership still lags among the bottom 40 percent. In 2017, 56 percent of the bottom 40 percent had an account compared with 79 percent among those in the top 60 percent. Differential banking access has also translated into gaps in credit access—many entrepreneurs still face barriers to access the financial system. According to SEBRAE, twenty percent of small firms have not yet incorporated the PIX payment system into their operations. Brazil is one of the countries with the highest percentage of business discontinuity among women, with a female-to-male ratio at 1.6. Among LAC countries, Brazil is the country with the second highest share of female entrepreneurs who abandon their business activities due to lack of finance (8.1 percent).

IC2 Institutional constraints to promote inclusion

There are several institutional constraints that affect public sector efficiency and human development in Brazil, particularly in the education sector. These constraints include insufficient funding, inadequate teacher training, unequal access to education, outdated curricula, limited vocational training opportunities, fragmented responsibilities among different levels of government and inconsistent policies. These constraints result in disparities in enrollment rates between different regions and socioeconomic groups and inadequate training for Brazilian teachers, contributing to widening disparities in education outcomes across different regions of Brazil.

Governance reforms are essential for achieving cost efficiency and improved learning outcomes in Brazil's basic education system. States like Ceará and São Paulo have demonstrated the effectiveness of such reforms by leveraging financial incentives, fostering cooperation and competition, and equipping school principals with management tools and training. These capacity-building efforts have led to better school approval ratings and decreased repetition rates, particularly in schools serving low-income students. Key governance reforms include enhancing the accountability of school systems, teachers, and principals for learning outcomes, rewarding performance, selecting principals and regional education coordinators based on technical criteria and abilities, and encouraging school management to prioritize the improvement of learning outcomes.

In higher education, governance reforms are crucial for promoting growth and enhancing quality in the sector. Diversifying funding sources, such as implementing means testing for tuition fees and scholarships, can make the higher education system more equitable and improve its quality. As public funding alone is insufficient, performance-based financing formulas considering graduation rates and labor market outcomes can boost efficiency and value for students. Granting public universities more autonomy in managing resources jointly with increased accountability is also another promising policy option to improve efficiency. To ensure learning quality, it is essential to focus on refining teaching methodologies and approaches such as linking professors' career progression to research output.

There is room for improvement in the design and implementation of government programs aimed at addressing the skill gap in the labor market. The growing mismatch between the workforce's skills and the demands of the labor market affects employment, wages, and productivity. Low-skilled workers are more vulnerable to automation and have longer recovery times from labor market shocks. Brazil needs to stimulate students to enroll in promising fields, including science and technology, and improve TVET. While TVET courses have been found to lead to a positive wage premium, uptake is still hindered by limited information and undersupply.

2.3 Challenge 3: Unlocking the country's potential as a green economy

Deforestation in Brazil could soon lead to a tipping point in the Amazon. Forest-conservation policies, associated with other economic factors, contributed to a reduction of 80 percent on deforestation rates in the Amazon from 2004 to 2012, when the deforestation in Amazonia Legal reached a low of 4,571 km^2. Deforestation has trended upward: in 2018 there were 7,536 km^2 deforested, increasing to 11,568 km^2 in 2022. Thus, the combination of climate change, deforestation, and expansion of low-intensity pasture in the Amazon biome is intensifying threats to Brazil's key ecosystems. This will have major consequences for agriculture, urban water supply, flood mitigation and hydropower. The projected impact from a potential Amazon tipping point on Brazil's cumulative GDP through 2050 is estimated at BRL 920 billion (USD 184.1 billion or 9.7 percent of 2022 GDP).

Brazil's commitment to end deforestation in the Amazon by 2030 is the largest source of future emission reductions and, as demonstrated by Brazil in the past, can be achieved without compromising development.[99] A policy package that lowers deforestation, while simultaneously promoting growth of the economy should (i) ensure effective forest law enforcement and governance, (ii) increase productivity across the economy, and (iii) incentivize more in-

tensive use of land.[100] Simulations show that raising Brazil's productivity performance in urban areas, in the manufacturing and services sector support deforestation efforts, as they help shift economic activity to non-land-based sectors.[101]

Stopping illegal deforestation holds the promise of contributing the most for Brazil to enter a path towards net zero by 2050, but the country can also benefit from decarbonizing other important parts of its economy. More climate-smart agriculture (including restoration of degraded lands and pursuing sustainable value chains) and sustainable landscape management can help Brazil continue growing and keep its agricultural powerhouse status. The expansion of non-hydro renewables and the transition to a greener urban infrastructure and transportation sector (especially decarbonizing logistics) could provide growth opportunities and better prepare the country for shocks.

Investments in enhancing the resilience of urban areas must tackle multiple challenges simultaneously, such as improving access to infrastructure and services, and mitigating the risks and vulnerabilities associated with extreme climatic events.[102] This can be achieved through a combination of physical and non-physical interventions. Large-scale solutions may involve the renovation of informal settlements, the development of both traditional and environmentally friendly infrastructure to enhance drainage and manage flooding, and the restoration of ecologically valuable areas along water bodies.[103] Non-physical measures encompass improving the understanding of risks and the impacts of hazards, strengthening early warning systems, and enhancing disaster preparedness and response mechanisms. Developing the capacity for disaster preparedness will also necessitate effective coordination with civil protection and defense systems, as well as active engagement with local communities.

World Bank estimates place Brazil's annual investment needs for climate action at around 0.8 percent of GDP between 2022-2030.[104] These investments would yield significant savings, equivalent to 0.3 percent of GDP over 2022-2030 through avoided energy spending in transport and industry and reduced costs from congestion and air pollution. Thus, such investments could bring overall net economic costs of Brazil's resilience and net zero pathway to about 0.5 percent of GDP annually over this period.

By implementing measures to adapt to climate change, Brazil has the potential to substantially decrease the negative effects on agricultural production, although the specific impacts will vary by region. Utilizing an effective adaptation strategy that involves reallocating resources and adjusting the spatial distribution of crops (for example, moving soybean areas south and pasture areas south and east), models indicate that Brazil's overall impact would be a minor loss at the national level, equivalent to 0.15 percent of GDP by 2042.[105] However, the economies of the major soy-producing states, namely Mato Grosso and Mato Grosso do Sul, would be particularly affected by these changes. The adaptation process, however, may result in significant social disruptions and household impacts. Therefore, ensuring a fair transition for agricultural workers would be essential and necessitate supportive measures.

IC3 Institutional constraints to pursue a greener economy

Brazil made some progress in developing institutional arrangements to address climate change and advance sustainable growth, but there are still significant gaps in the government's capacity to implement effective climate policies. The adoption of the National Policy on Climate Change (PNMC) in 2009 provided a framework for addressing the issue, leading to the development of nine mitigation plans in key areas for reducing greenhouse gas emissions. But the installed technical capacity, which resulted in development of the Sectoral Mitigation Plans, the National Adaptation Plan, the National REDD+ strategy and the 2015 NDC has been impacted since 2019 by the loss of influence of several technical bodies, particularly at the federal level. In 2023, substantive structural changes to reinstate the needed institutional capacity were adopted. For instance, the PPCDAm was re-launched while the Forest Service is now under responsibility of the Ministry of Environment (formerly under the Ministry of Agriculture).

Stronger institutional coordination is needed to reduce conflicting policies and improve the coherence in the government's approach to climate action and sustainable development. The Coalition of Governors for Climate has led at the subnational level plans and programs to deliver on their climate action commitments, but these efforts have not helped to advance a centralized and consolidated strategy. The country's federation units display varying levels of progress in terms of climate policies, adaptation plans, and GHG reduction targets, which can be attributed to gaps in technical and managerial capacities. Furthermore, weak governance and financial constraints create opportunities for illegal activities that undermine climate action efforts. The overlapping functions of government agencies and inconsistent regulations exacerbate these challenges.

Immediate and urgent measures are essential to prevent land-grabbing, strengthen land, forest governance, and deter illegal deforestation. Brazil's capacity to monitor forests through the Satellite Monitoring Project of the Amazon Rainforest (PRODES) and the Real-Time Deforestation Detection System (DETER) remains strong, but law enforcement capacity and intelligence must be improved to enable collaboration among federal, state, and municipal institutions. Untitled public land mapping will

provide crucial spatial data and facilitate the designation of protected areas. Additionally, modernizing land registration, analysis, and validation practices will expedite the validation of the Rural Environmental Registry (CAR), enabling the use of instruments in the current forest code, such as trading forest certificates and utilizing carbon finance for forest restoration and enabling tracking systems of value chains to work more effectively.

2.4 Challenge 4: Financing the country's inclusive growth needs through a sustainable framework based on efficient fiscal policies

Structural spending pressures continue to strain the recurrent budget and create important inefficiencies. These pressures encompass public sector wages, pensions, and the expansion of social protection expenditures, which do not necessarily benefit the poor. Notably, the country's flagship cash transfer program has contributed to this momentum, with its budget increasing from the equivalent to 0.5 percent of GDP in 2019 (as Bolsa Familia) to an anticipated 1.5 percent of GDP in 2023. Moreover, Brazil's allocation of funds towards interest payments is escalating. The significant budget rigidity further intensifies the pressure, as discretionary resources account for less than 10 percent of the budget, making it challenging to reallocate funds to meet evolving expenditure needs. In a business-as-usual scenario, and without a robust fiscal anchor, projections suggest a return to an unsustainable fiscal trajectory.

Brazil's social protection programs achieve many of the desirable outcomes of a well-performing system, but an increased focus on the poor is warranted. The flagship conditional cash transfer program (Bolsa Familia)[106] has been contributing to poverty reduction over the last two decades. Jointly with an early childhood education program (Programa Criança Feliz) and school feeding, this network of programs has promoted human capital through conditionalities on children's health and education. Keeping the costs of these programs under control while improving effectiveness will be

critical for their sustainability.[107] Currently, however, fiscal policies provide income support to households in a fragmented way. The coexistence of numerous benefits with different targeting approaches creates duplications in some households and a lack of coverage in others. World Bank estimates[108] suggest that about 40 percent of households in income deciles 2 to 5 receive two or three benefits often due to the design of the programs in question.

Brazil's tax system imposes high costs on growth while contributing little to reducing inequality. Taxation of goods and certain services in Brazil exhibits a high degree of inefficiency. The indirect tax system is primarily levied on turnover, operating under a cumulative regime that imposes higher effective rates on firms at the final stages of the production chain. Furthermore, even taxes that are meant to be non-cumulative in theory can become cumulative in practice due to inadequate institutional frameworks, such as inputs related to telecommunication services or advertising.[109] The high complexity of the tax system significantly adds to the costs of doing business (see section 1). Indeed, Brazil's tax burden is heavily concentrated on taxes on goods and services, and on payroll, which respectively account for 43 and 24 percent of the tax burden.[110] This structure of indirect taxes is regressive: the poorest spend a relatively larger share of their income on taxes levied on consumption.[111] Meanwhile, special tax regimes such as Simples Nacional for small firms and the individual microentrepreneur (MEI) for self-employed workers help high earners avoid taxes by shifting income from the personal to the corporate tax base. This phenomenon, often referred to as "pejotização" (from "PJ", or Pessoa Jurídica), limits the inequality-reducing impacts of the tax system and decreases the tax base.[112]

There is potential for improving the management of the civil service wage bill. In 2021, Brazil allocated approximately 9 percent of its GDP to wages and salaries of active public servants lower than the 13 percent of 2015. The federal government's wage premium significantly contributes to the growth of the wage bill. The federal wage premium was estimated at 96 percent, while the average wage premium for state employees stood at 36 percent.[113] Many professions offer high initial salaries[114] and enable rapid progression to the highest salary level. Furthermore, states and municipalities adhere to federal public administration human resources standards but have also implemented diverse salary structures and specific advancement rules for each profession, often offering more favorable incentives compared to the private sector.[115]

It is equally crucial to address the challenges arising from the civil service pension bill at both the national and subnational levels. In at least half of the Brazilian states, the growth in spending with inactive servants exceeds that with active ones.[116] Drivers of spending on inactive workers are the wage parity, the increase in the life expectancy of the population, the increase in the number of retirees, and noncompliance with Constitutional Amendment No. 41 from 2003, which foresees the establishment of a complementary welfare option to limit the retirement of public servants to the ceiling of the general pension system.[117] The federal pension reform implemented in 2019 was a significant milestone towards establishing more sustainable pension systems in states and municipalities, but it has not been uniformly implemented. Key ingredients of the reform include the gradual increase in the effective retirement age, taxing benefits beyond the minimum wage, and revising rules

regarding survivor benefits, among others.[118] Although the federal pension reform of 2019 mandated states to implement certain measures, the most important fiscal actions were optional for subnational entities. In principle, subnational governments are allowed to strengthen the changes in pension regulations beyond what was approved for the federal civil servant scheme. However, so far, most of the first-mover states have chosen to either replicate or weaken the pension reform package implemented at the federal level.[119] As a result, their pension deficits continue on an unsustainable path. To achieve greater long-term benefits, it is crucial to increase the number of states and municipalities that adopt comprehensive pension reforms.

Making fiscal space for climate action is also critical: Brazil should tap into a wide range of sources and leverage public and private investments for its endeavor towards net-zero. Repurposing carbon-intensive subsidies to support the low-carbon transition and expanding carbon taxes can help. Economy-wide interventions can also create new markets on the environmental front, providing the right incentives for the private sector to act on them. The creation of an emissions trading system, carbon taxes, or a mix of these instruments, to reduce emissions and reward emission reductions through carbon markets have strong potential. There is huge untapped potential or Brazil for conservation finance linked both to carbon dioxide (CO2) reductions and protection of biodiversity. Other areas include the development of emergent technologies for decarbonization such as green hydrogen, offshore wind, second generation ethanol, grid digitization and green buildings. Potential gains from these innovations are large: green hydrogen could generate USD 15-20 billion in revenues for Brazil by 2040.[120]

IC4 Institutional constraints for fiscal sustainability

Brazil's intergovernmental transfer system needs to be revamped to address horizontal gaps between states and promote regional redistribution. The largest transfers between federal and subnational governments result from the FPE (Fundo de Participação dos Estados) and the FPM (Fundo de Participação dos Municípios). Recently, the Supreme Court has declared that the current formula to distribute FPE is unconstitutional[121], which will force the executive and legislative branches to agree on a new mechanism. FPE's allocation formula has

several drawbacks, including its pro-cyclical nature, which amplifies economic shocks.[122] In addition, FPE's current design does not promote equity, which was its original goal. Improving its allocation formulas could come from ex-post-performance related criteria on transfer results, including for instance forest preservation indicators. In turn, FPM has incentivized the sprawling of hundreds of small municipalities, which have limited capacity to provide the services assigned to them.[123] A formula to incentivize amalgamation of municipalities could improve both the fiscal situation of local governments and service delivery. Subnational difficult fiscal positions – exacerbated by the COVID-19 pandemic – are expected worsen without reforms on expenditures and allocation of resources.

Human resources challenges in the public sector are mainly related to pay, grading and performance issues. There is a high wage dispersion among civil servants, accentuating inequalities between careers, with an extremely fragmented and rigid structure in the federal and subnational levels. Numerous careers have high initial wages and allow employees to reach the top salary in a relatively short time, with little incentive for public employees to assume high responsibility functions or leadership positions. Performance management is still vague, with dismissal allowed just in case of no appeal lawsuits, administrative processes, or insufficient performance, which is still to be regulated. Temporary contracts are allowed just in case of emergency situations and regulations are unclear about the labor rights to these employees.[124] Personnel expenditures are incompressible in the short term due to the stability of civil servants and the impossibility of reducing salaries. Finally, increasing the efficiency of human resources management (HRM) must accompany the goal of preserving sustainable finances, and strengthening the governance and the quality of public service delivery: reducing the number of careers, establishing a single salary scale, including recognition and compensation mechanisms tied to performance and the exercise of leadership positions, systematic strategic workforce planning, promoting inter-agency cooperation to guarantee operational flexibility and regulating the dismissal of public employees due to poor performance or outdated demand can all contribute to tackle this challenge.

3. PRIORITIES AND HIGH-LEVEL OUTCOMES

Grounded in the evidence above, this SCD update provides an updated assessment of the country's priorities based on the following filters: the potential impact on the twin goals, the confirmation of their key role stemming from the knowledge developed in very recent analytical work, and consultations with external counterparts and experts.

The wealth of recently concluded analytical work provides a solid foundation for the identification of priority areas with the highest potential to address the constraints that define Brazil's four development challenges. The priorities have been highlighted as recommended policy actions in reports that covered a broad range of issues relevant for Brazil's development. The list of the SCD Update analytical foundations is included in Appendix 2. The collection of evidence, with many reports published only a few months prior to the preparation of this document, allowed tapping into the most current data and analytics. All emerging findings were discussed and broadly resonated with the groups consulted.[125]

Given the challenges identified, three HLOs are proposed for the achievement of the goals of poverty eradication and boosting shared prosperity in Brazil. First, increase access to high-quality job opportunities. Second, improve households' income-generating capacity through the accumulation and use of productive assets. Third, reduce vulnerability to climate shocks. Several priorities for policy action were identified in this Update due to their strong potential to contribute to achieving the HLOs. While certain actions have a clear line of sight to one HLO, it is important to recognize that others – such as those related to fiscal sustainability- can be cross-cutting in nature. Figure 5 provides an illustration of a mapping of the priorities to the HLOs.

Figure 5. Development challenges, priorities, and High-level Outcomes for Brazil

Source: World Bank.

References

Almeida, Rita; Anazawa, Leandro; Menezes Filho, Naercio; Vasconcellos, Ligia (2015). Investing in Technical and Vocational Education and Training: Does it Yield Large Economic Returns in Brazil?. Policy Research Working Paper;No. 7246. © World Bank, Washington, DC. http://hdl.handle.net/10986/21861 License: CC BY 3.0 IGO.

Arias, D., Vieira, P. A., Contini, E., Farinelli, B., & Morris, M. (2017). Agriculture Productivity Growth in Brazil: recent trends and future prospects. World Bank Publications.

Assunção, Juliano and Bragança, Arthur (2015). Technological Change and Deforestation: Evidence from the Brazilian Soybean Revolution. Working paper. Available at: <https://www.climatepolicyinitiative.org/wp-content/uploads/2021/01/Technological_Change_and_Deforestation_Working_Paper_CPI.pdf>.

Assunção, Juliano, Souza, Priscila, Fernandes, Pedro and Mikio, Sergio (2019). Does Credit Boost Agriculture? Impacts on Brazilian Rural Economy and Deforestation. Working paper. Available at: <https://sistemas.colmex.mx/Reportes/LACEALAMES/LACEA-LAMES2019_paper_602.pdf>.

Assunção, Juliano, Bragança, Arthur, and Ferraz, Claudio (2023). Human Capital and Technology Adoption: Evidence from Brazil's Green Revolution. Working paper. Mimeo.

Attanasio, O., and Székely, M. (1999). An asset-based approach to the analysis of poverty in Latin America. Unpublished paper.

Bonomo, M., Brito, R. D., and Martins, B. (2015). The after crisis government-driven credit expansion in Brazil: A firm level analysis. Journal of International Money and Finance, 55, 111-134.

Bonomo, M. A. C., Brito, R. D., & Lazzarini, S. G. (2018). Crédito direcionado e financiamento do desenvolvimento. In: Desafios da Nação, Volume 1, Instituto de Pesquisa Econômica Aplicada.

Brumby, Jim, Marcos Mendes, and Tarsila Velloso (2012). Public Investment Management in Brazil. Working Paper. Mimeo.

Bussolo, M., and Lopez-Calva, L. F. (2014). Shared prosperity: Paving the way in Europe and Central Asia. World Bank Publications.

Campos, Guilherme Caldas de Souza, and Jacqueline Aslan Souen (2017). Da Euforia ao Retrocesso: O Comportamento do Emprego Formal no Brasil no Período Recente, Revista Pesquisa & Debate 28, no. 1 (51).

Castro, Isabel (2021). Base Fundiária 2021. Instituto de Pesquisa Ambiental da Amazônia, Belém-PA.

Central Bank of Brazil (2023). Time Series Management System. https://www3.bcb.gov.br/sgspub/localizarseries/localizarSeries.do?method=prepararTelaLocalizarSeries

Climate Watch (2022). Global Historical Emissions. Washington, DC: World Resources Institute. Available at: <https://www.climatewatchdata.org/ghg-emissions>.

Credit Suisse (2021). Global Wealth Report 2021. Credit Suisse Research Institute. Prepared by Anthony Shorrocks,

James Davies and Rodrigo Lluberas.
Cord, Louise, Genoni, María Eugenia and Rodríguez-Castelán, Carlos (2015). Shared Prosperity and Poverty Eradication in Latin America and the Caribbean. Washington, DC: World Bank.
Damasceno, Rita, Joana Chiavari, and Cristina Leme Lopes (2017). Evolution of Land Rights in Rural Brazil: Frameworks for Understanding, Pathways for Improvement. Rio de Janeiro: Climate Policy Initiative.
Dutz, Mark A. (2018). Jobs and Growth: Brazil's Productivity Agenda. International Development in Focus. Washington, DC: World Bank. doi:10.1596/978-1-4648-1320-7 License: Creative Commons Attribution CC BY 3.0 IGO.
Fandiño, P., Arretche, M., and Hanusch, M. (2022). A Genesis of Poverty and Inequality in Brazil Washington, DC: World Bank.
Ferreira, F. H., Firpo, S., & Messina, J. (1995). Ageing poorly? accounting for the decline in earnings inequality in Brazil, 1995-2012. World Bank Policy Research Working Paper.
GEM (2022). Global Entrepreneurship Monitor 2021/2022 Global Report: Opportunity Amid Disruption. London: GEM.
Getirana, A., Libonati, R., & Cataldi, M. (2021). Brazil is in water crisis—it needs a drought plan. Nature, 600(7888), 218-220.
Hanusch, Marek (2023). A Balancing Act for Brazil's Amazonian States: An Economic Memorandum. © Washington, DC: World Bank. http://hdl.handle.net/10986/39778 License: CC BY 3.0 IGO.
Hallegatte, Stephane; Rentschler, Jun; Rozenberg, Julie (2019). Lifelines: The resilient infrastructure opportunity. World Bank Publications, Washington DC.
Helfand, S. M., and Taylor, M. P. (2021). The inverse relationship between farm size and productivity: Refocusing the debate. Food Policy, 99, 101977.
IMF (2017). Global Debt Database. Washington, DC: International Monetary Fund. https://www.imf.org/external/datamapper/PS_DEBT_GDP@GDD/SWE
IMF (2021). Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic. Washington, DC: International Monetary Fund. https://www.imf.org/en/Topics/imf-and-covid19/Fiscal-Policies-Database-in-Response-to-COVID-19
INEP (2021). Sinopse Estatística de Educação Básica 2020.
INEP (2022). Sinopse Estatística de Educação Básica 2021.
INEP (2023). Resumo técnico do Censo da Educação Superior 2021. https://download.inep.gov.br/publicacoes/institucionais/estatisticas_e_indicadores/resumo_tecnico_censo_da_educacao_superior_2021.pdf
Lara Ibarra, Gabriel; Rubiao, Rafael Macedo; Fleury, Eduardo (2021). Indirect Tax Incidence in Brazil: Assessing the Distributional Effects of Potential Tax Reforms. Policy Research Working Paper;No. 9891. © World Bank, Washington, DC. https://openknowledge.worldbank.org/entities/publication/d94f143f-1b6d-5d3d-b9ef-f8188be218d6
Lara Ibarra, G., Cabrera, M., Conceição, O., Campante Vale, R. (2023). Poverty and Inequality Implications of Fiscal Policies: the case of Brazil. World Bank Policy Research Working Paper No. 10495. https://documents1.worldbank.org/curated/en/099423406222337139/pdf/IDU07d8faca60e1940410d093030b2726e376e29.pdf
Lopez-Calva, Luis F., and Carlos Rodríguez-Castelán (2016). Pro-Growth Equity: A Policy Framework for the Twin Goals. Policy Research Working Paper 7897, World Bank, Washington, DC. https://openknowledge.worldbank.org/handle/10986/25700.
Luna, F. V., & Klein, H. S. (2014). The. Economic and Social History of Brazil since 1889, New York: Cambridge University Press. 454pp.
Marinho, Alexandre (2009). A economia das filas no sistema único de saúde (SUS) brasileiro, Texto para Discussão No. 1390, Instituto de Pesquisa Econômica Aplicada (IPEA), Brasília.

Morgandi, M.; Tsukada, R.; Ed, M. ; Zviniene, A; Paiva, L; Barbosa, B (2023). Social Protection for Brazil of the Future : Preparing for Change with Inclusion and Resilience (English). Washington, D.C. : World Bank Group.
Neri, Marcelo (2021). Brazil: What Are the Main Drivers of Income Distribution Changes in the New Millennium? In: In Inequality in the Developing World, edited by Carlos Gradín, Murray Leibbrandt, and Finn Tarp. United Nations University World Institute for Development Economics Research (UNU-WIDER).
Neri, M. and Hecksher, M. (2022). A Montanha-Russa da Pobreza, – 15 págs., Rio de Janeiro, RJ – junho/2022 - FGV Social. https://cps.fgv.br/PobrezaMensal
OECD (2018). Product Market Regulation: OECD PMR Indicators. https://www.oecd.org/economy/reform/indicators-of-product-market-regulation/
Orair, R. O., & Gobetti, S. W. (2019). Reforma Tributária e Federalismo fiscal: uma análise das propostas de criação de um novo imposto sobre o valor adicionado para o Brasil (No. 2530). Texto para Discussão. IPEA: Instituto de Pesquisa Econômica Aplicada.
Rada, N. E., and Buccola, S. T. (2012). Agricultural policy and productivity: evidence from Brazilian censuses. Agricultural Economics, 43(4), 355-367.
Echavarria, Paulina and Grittayaphong, Praew (2021). Dollar-Denominated Public Debt in Asia and Latin America. Federal Reserve Bank of St. Louis Blog. https://www.stlouisfed.org/on-the-economy/2021/august/dollar-exposure-public-debt-asia-latin-america
Sant'Anna, A.A., and L. Costa (2019). "Bailing out Environmental Liabilities: Moral Hazard and Deforestation in the Brazilian Amazon." LACEA Working Paper No. 0031. Latin American and Caribbean Economic Association.
Scartascini, Carlos, Cruz, Cesi and Keefer, Philip (2021). The Database of Political Institutions 2020 (DPI2020). Inter-American Development Bank.
Scheffer, Mario Cesar, Alex Jones Cassenote, Alexandre Guerra dos Santos, Aline Gil Alves Guillloux, Ana Pérola Drulla Bandrão, Bruno Miotto, Cristiane de Jesus Almeida, Jackeline Oliveria Gomes and Renata Alonso Miotto (2020). Demografia Médica no Brasil 2020. São Paulo, SP: FMUSP, CFM. 312 p. ISBN: 978-65-00-12370-8.
Silva, J., Sousa, L., Packard, T., and Robertson, R. (2021). Employment in Crisis: The Path to Better Jobs in a Post-COVID-19 Latin America. World Bank Publications.
Souza, Priscila, Sant'Anna, André, Machado, Luciano, Intropidi, Barbara, Vogt, Pedro and Assunção, Juliano (2022). Credit for Investments in Brazilian Agriculture and the Role of the Brazilian Development Bank. Rio de Janeiro: Climate Policy Iniatiative.
SEBRAE (2014). Participação das Micro e Pequenas Empresas na Economia Brasileira. https://www.sebrae.com.br/Sebrae/Portal%20Sebrae/Estudos%20e%20Pesquisas/Participacao%20das%20micro%20e%20pequenas%20empresas.pdf
SME Finance Forum (2023). MSME Finance Gap. https://www.smefinanceforum.org/data-sites/msme-finance-gap
Van der Weide, Roy, Christoph Lakner, Daniel Gerszon Mahler, Ambar Narayan, and Rakesh Ramasubbaiah (2021). Intergenerational Mobility around the World. Policy Research Working Paper 9707, World Bank, Washington, DC.
Vieira, R. S., and Arends-Kuenning, M. (2019). Affirmative action in Brazilian universities: Effects on the enrollment of targeted groups. Economics of Education Review, 73, 101931.
West, T.A.P., and Fearnside, P.M. (2021). "Brazil's Conservation Reform and the Reduction of Deforestation in Amazonia." Land Use Policy 100 (January): 105072.
WIPO (2023). World Intellectual Property Indicators 2022. https://www.wipo.int/edocs/pubdocs/en/wipo-pub-941-2022-en-world-intellectual-property-indicators-2022.pdf
World Bank (2009). Brazil: Federal Public Financial Management Performance Based on the PEFA Methodology. World Bank Publications.

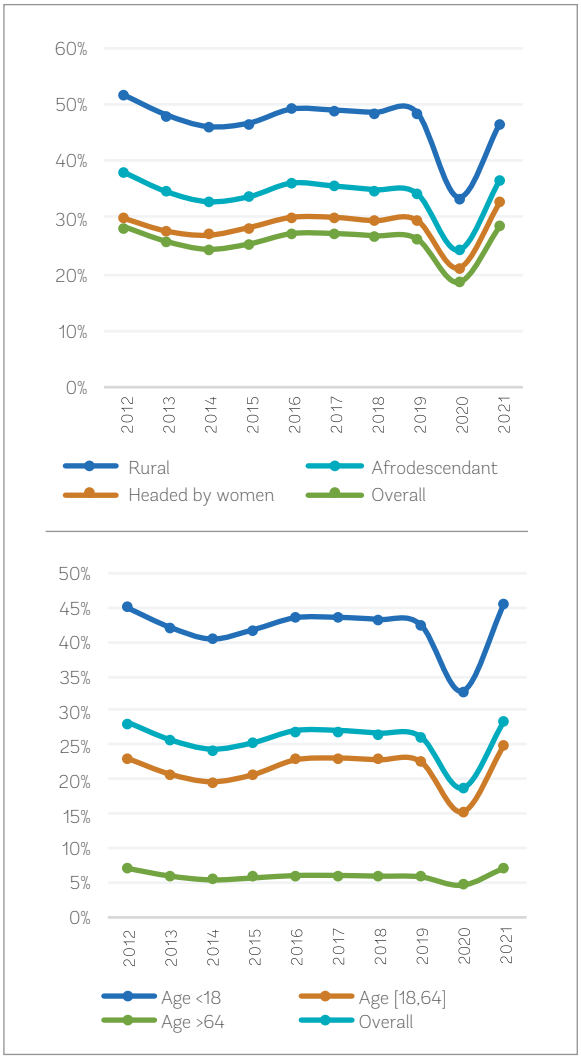
World Bank (2016). Retaking the Path to Inclusion, Growth and Sustainability: Brazil Systematic Country Diagnostic. World Bank Publications, Washington DC.
World Bank (2017). A fair adjustment: efficiency and equity of public spending in Brazil : Volume I : síntese (Portuguese). Washington, D.C. : World Bank Group.
World Bank (2018). Connecting to Compete 2018: Trade Logistics in the Global Economy. The Logistics Performance Index and Its Indicators. © Washington, DC : World Bank. https://openknowledge.worldbank.org/server/api/core/bitstreams/628a4f9d-7faa-54bf-97b0-f6080c6d46cd/content
Word Bank (2019). Gestão de Pessoas e Folha de Pagamentos no Setor Público Brasileiro: O que os dados dizem. https://documents1.worldbank.org/curated/en/449951570645821631/pdf/Gest%C3%A3o-de-Pessoas-e-Folha-de-Pagamentos-no-Setor-P%C3%BAblico-Brasileiro-o-Que-Os-Dados-Dizem.pdf
World Bank (2020a). Doing Business 2020: Economy profile of Brazil. Available at: <https://www.doingbusiness.org/content/dam/doingBusiness/country/b/brazil/BRA.pdf>.
World Bank (2020b). Report of material damages and losses due to natural disasters in Brazil - 1995–2019: Relatório de danos materiais e prejuízos decorrentes de desastres naturais no Brasil – 1995–2019 (Portuguese). Washington, DC: World Bank Group.
World Bank (2021). The Gradual Rise and Rapid Decline of the Middle Class in Latin America and the Caribbean. World Bank, Washington, DC.: World Bank. https://openknowledge.worldbank.org/handle/10986/35834.
World Bank (2022a). Brazil Human Capital Review: Investing in People. © Washington, DC: World Bank. http://hdl.handle.net/10986/37626 License: CC BY 3.0 IGO.
World Bank (2022b). Brazil Poverty and Equity Assessment: Looking Ahead of Two Crises. © Washington, DC : World Bank. https://openknowledge.worldbank.org/entities/publication/5c9a5af4-1960-5986-ab4f-bfd51436be6d License: CC BY 3.0 IGO.
World Bank (2022c). Opportunities for All Brazil Policy Notes 2022. World Bank Publications. https://doi.org/10.1596/38504.
World Bank (2022d). The Worldwide Governance Indicators (WGI). Washington, DC : World Bank. Last update: September 23, 2022. https://databank.worldbank.org/source/worldwide-governance-indicators
World Bank (2023a). Brazil Country Climate and Development Report. CCDR Series. © World Bank Group, Washington DC. http://hdl.handle.net/10986/39782 License: CC BY-NC 3.0 IGO.
World Bank (2023b). Connecting to Compete 2023: Trade Logistics in an Uncertain Global Economy. The Logistics Performance Index and Its Indicators. © Washington, DC : World Bank. https://lpi.worldbank.org/sites/default/files/2023-04/LPI_2023_report_with_layout.pdf
World Bank (2023c). Food Insecurity and Food Inflation in Brazil. Poverty and Equity Notes, May 2023. Prepared by Gabriel Lara Ibarra and Ricardo Campante C. Vale.
World Bank (2023d). Macro Poverty Outlook – April 2023.
World Bank (2023e). Social Protection for the future: a 2042 outlook.
World Bank (forthcoming a). Alternative Futures for Brazil: Productivity, Inclusion, Sustainability.
World Bank (forthcoming b). The Brazil Infrastructure Review.
World Economic Forum (2016) Global Competitiveness Report 2016-2017. https://www3.weforum.org/docs/GCR-2016-2017/05FullReport/TheGlobalCompetitivenessReport2016-2017_FINAL.pdf
World Resource Institute (2023). Interactive chart shows changes in the world's top 10 emitters. https://www.wri.org/insights/interactive-chart-shows-changes-worlds-top-10-emitters

APPENDIX 1.

A profile of the poor in Brazil

Poverty reduction stagnated in Brazil since the economic crisis started in mid-2014. As a consequence, the profile of the poor population has barely changed. In 2016, about 27.0 percent of the population were living under the 6.85 USD per day (2017 PPP) poverty line and 4.7 percent below the 2.15 USD dollars per day (2017 PPP). These rates increased slightly in 2021, when 28.4 percent and 5.8 percent of the population were living under the upper and the lower poverty lines, respectively. The long-standing disparities in poverty rates across the Brazilian population have also persisted. The poverty rate among Black and pardos was 35.9 percent in 2016 and 36.6 in 2021, the equivalent to 1.3 times the national average. Women are also persistently overrepresented among the poor: they lead 48 percent of the households in Brazil but 56 percent of the poor households. Poverty in rural areas has been approximately twice that of urban areas since 2016. In 2021, poverty rates among rural households were 49.0 percent. And, while just 6.3 percent of the population aged 65 or more could be classified as poor, this rate was 45.5 percent among those aged 18 or less.

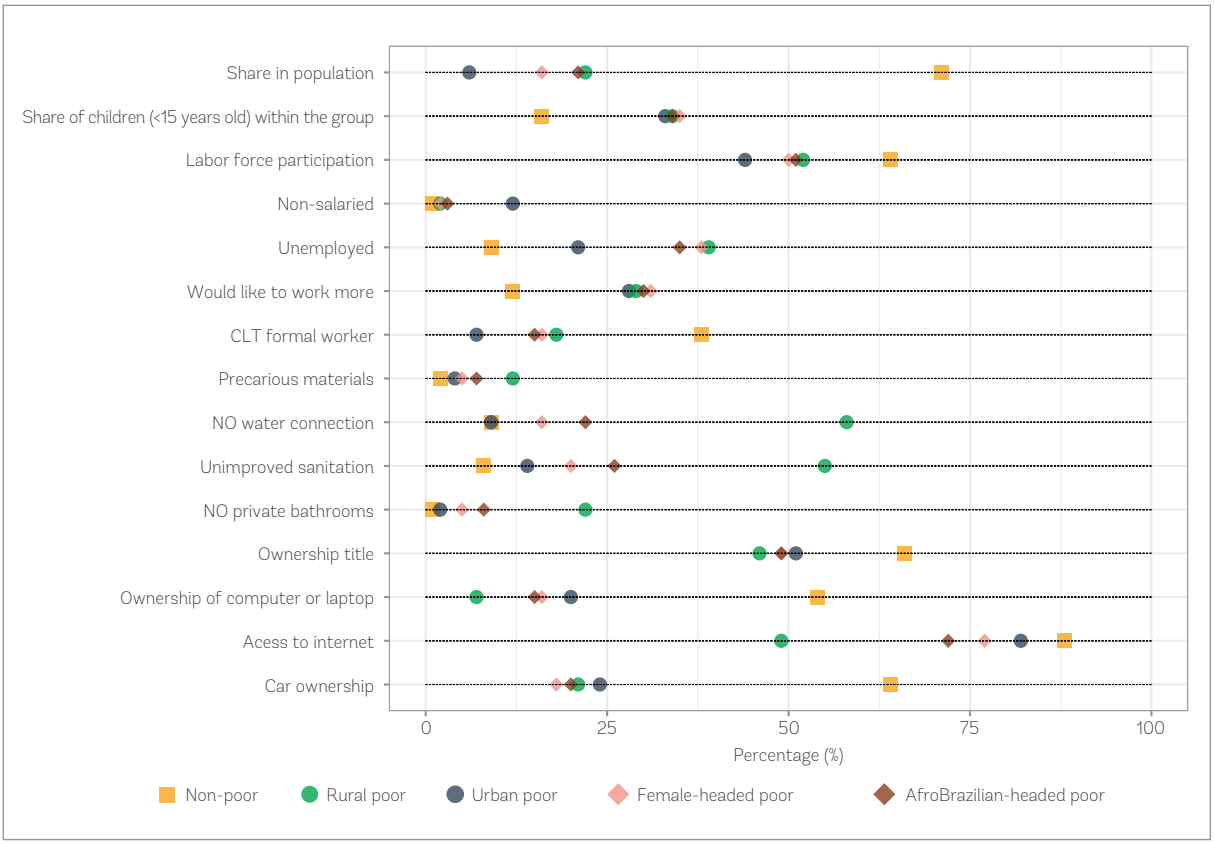
Figure A1.1. Poverty rates for selected demographic groups 2012-2021



Source: PNADC harmonized by SEDLAC. Notes: Poverty rates estimated at $6.85 (2017 PPP).

Education attainment is lower among the poor, but this cannot explain the differences in labor returns alone. The average years of education among adults aged 25 or more in the urban population is two years lower for the poor (7.9) than for the non-poor (9.9). The gap also holds in rural areas, where non-poor working adults have 6.2 years of education on average, against 7.8 of the non-poor. Limited improvement in formal education levels across generations also hinders economic development of historically disadvantaged groups. For instance, Brazil ranked in the second quintile of relative intergenerational educational mobility in a comparison of 153 countries (van der Weide et al. 2021). These facts can partially explain why the poor population has worse positions in the labor market. The average hourly wage of the urban non-poor was BRL 17.1 in 2021, 2.8 as high as BRL 6.1 of the poor. The ratio is 2.3 in rural areas, where the wages are respectively BRL 11.4 and BRL 5.0. About one half of the working-age poor (52 percent) are actively seeking a job or working in urban areas, and less than a half (44 percent) are doing so in rural areas. These rates are higher for the non-poor, 65 and 56 percent, respectively. Notwithstanding, once education attainment and residence area is controlled in an estimation of a Mincer equation, being male is significantly correlated with 18 percent higher wages on average. At the same time, AfroBrazilians have 11 percent lower wages everything else hold constant.

Figure A1.2. Distribution of assets by demographic groups



Source: PNADC. Notes: Statistics of the population headcount and related to labor market are from 2021, while the others are from 2019. IBGE has not released the dwelling module of PNADC since 2019 by the time the SCD update was prepared.

Besides the disparities in the accumulation of human capital, the economic status of the Brazilian population is also linked to structural heterogeneity in the access to physical capital and opportunities. About one-third (34 percent) of the poor work in agricultural or construction activities. Among women, 13 percent work in activities of private households. Many of these have low education attainment and no other capital to seek better economic opportunities. The precarious conditions of the dwellings are one of the factors that can harm the poor households' income generating capacities. In the rural zone, more than one-fifth (21 percent) is forced to practice open defecation due to the lack of bathrooms, more than a half (55 percent) do not have appropriate sanitation in their house, and 6 out of 10 have no water supply indoor. The situation is not much better for some of the urban poor, where 9 percent lack connection to the water network, and 15 percent have no access to sanitation network or adequate sanitation facilities. The gap in land titles ownership highlights another facet of the Brazilian inequality. The difference in land ownership rates is 7 percentage points between poor and non-poor in urban settings (respectively 61 and 68 percent report to own their land) and 4 percentage points in rural zones (72 versus 76 percent). But, when it refers to entitlement of the lands, the gaps come to 17 and 16 percentage points, respectively. In fact, only half of the urban poor and 46 percent of the rural poor hold their ownership title. The absence of land tenure is frequently associated with lack of collateral to access credit, and, even worse, insecurity and violence surrounding land disputes (Damasceno et al. 2017).

The rural poor are usually family farmers living of subsistence culture and lacking the assets to upgrade their productivity. Among the workers in agriculture in Brazil, 73 percent are relatives of the farming owner (Agricultural Census 2017). These small farmers primarily consume their annual crop production, mainly grains, for self-sustenance, including animal feed. However, horticultural production is focused on the market and concentrated in peri-urban areas. Family farmers face challenges due to limited access to infrastructure, technical assistance, capital, and education. They often lack electricity, receive minimal technical support, and have limited cooperative membership. Education and cooperative membership are key factors influencing smallholder productivity (Hanusch, 2023). Access to credit is crucial for productivity-improving inputs, but it remains low for small farmers (i.e. only 15 percent of family farmers are borrowers according to the Census), with limited availability of long-term investment loans. The agricultural work is becoming increasingly less attractive to younger generations of family farmers, thus making aging of the labor force another challenge to their competitiveness. One-fourth of family farmers are 65 or older, while this is the case for 15.4 percent of non-family farmers (Agricultural Census 2017). Poor family farmers heavily rely on nonfarm income, with pensions and retirement payments being their primary sources (Hanusch, 2023). Less competitive farmers adapt by changing their production mix, selling labor or land to more productive farmers, or shifting to labor-intensive products.

Indigenous people and quilombolas have been usually overlooked by the

Brazilian statistical system, but the available survey data and administrative registries suggest they are mostly poor families living in rural areas. The indigenous people (IP) and quilombolas registered in the CadUnico system are predominantly impoverished families residing in rural areas and living under half a minimum wage per capita. Among the IP registered in CadUnico, 75 percent live in rural areas. Similarly, the situation for quilombolas registered in CadUnico is not significantly different, with 80 percent residing in rural locations. Considering their historical context and the legacy of escaping slavery, it is not surprising to find high levels of monetary income poverty. Housing conditions for IP and quilombolas appear to be worse than those of poor rural families in general, with limited access to essential services such as water supply and waste collection. Their households also exhibit low-quality materials in their floors and walls and limited access to electricity, which may pose health risks and hinder economic integration. Despite some progress in previous decades, both IP and quilombolas have low levels of formal education attainment. While the Census data indicate that the illiteracy rate among indigenous people has decreased from 51 percent to 23 percent between 1991 and 2010, it remains twice as high as the national rate. Most household heads among IP and quilombolas have not completed primary education, with only a small percentage having secondary or tertiary education. Furthermore, a lower proportion of indigenous and quilombolas household heads report being employed compared to disadvantaged rural families, with self-employment being the predominant form of work, often on their own lands. Temporary employment in agriculture and other rural activities also contributes significantly to their economic activities.

APPENDIX 2.

Analytical foundations of the Systematic Country Diagnostic Update

TITLE	DESCRIPTION
A Balancing Act for Brazil's States of the Legal Amazon: An Economic Memorandum (2023)	Policy options on how to simultaneously provide a pathway to higher incomes for the Amazon States while also protecting natural forests and traditional ways of life.
Alternative Futures for Brazil: Productivity, Inclusion, Sustainability (forthcoming)	The report contributes to the debate in Brazil about how to overcome growth and inclusion challenges ahead, over a 20-year horizon.
Brazil Poverty and Equity Assessment: Looking Ahead of Two Crises (2022)	A compilation of poverty and inequality analytics produced in the past decade, with an emphasis on the impacts of the COVID-19 pandemic on Brazil's labor market, the role of the social protection system in supporting the poorest, and the increased vulnerability due to climate change.
Social Protection for the future: a 2042 outlook (2023)	An assessment of Brazil's social protection and labor systems and the reforms needed to address the challenges Brazil will face in the next two decades.
Agriculture Productivity Growth in Brazil: recent trends and future prospects (2017)	The document presents an evolution of the agriculture productivity growth focusing on recent trends and future prospects at the time of its publication. It also provides policy recommendations and discusses how to close the agriculture productivity gap for those left behind.
The Brazil Human Capital Review: Investing in People (2022)	The report produces a detailed analysis of the gaps in quality education and health for every child, and how these limit the potential of an individual's productivity.
The Brazil Infrastructure Review (forthcoming)	The report looks at how to modernize and close Brazil's infrastructure gap to improve productivity and secure long-term growth.
The Country Climate and Development Report for Brazil (2023)	The report examines the implications of climate change and climate action for Brazil's development objectives, priorities, and pathways. It identifies opportunities for Brazil to achieve both its development goals and its climate commitments.
A fair adjustment: efficiency and equity of public spending in Brazil: Volume I (2017)	The report conducts a throughout analysis of the quality of public spending in Brazil, covering various aspects from the public sector wage bill to public procurement, the efficiency of labor market programs and the level of expenditures in the health sector.
Jobs and growth: Brazil's productivity agenda (2018)	The report provides a comprehensive investigation on the causes of low productivity growth in Brazil and the main barriers to realizing Brazil's productivity promise.
Gestão de Pessoas e Folha de Pagamentos no Setor Público Brasileiro: o Que Os Dados Dizem (2019)	The report documents a series of facts about the evolution of the public sector wage bill and discusses policy options for reform.
Opportunities for All Brazil Policy Notes 2022 (2022)	The notes aim to spark discussion around the key challenges that Brazil is currently facing and presents potential ways to address them.

Source: own compilation. Notes: Full citations can be found in the references section.

APPENDIX 3.

Reforms adopted by the Brazilian government after 2016, by chronological order

YEAR	LAW OR REGULATION	INTENDED OBJECTIVES	LEGAL ACTS
2016	**Spending Cap Reform**	Intended to limit public spending to inflation in the 20 years following the enactment of the Constitutional Amendment. The cap is applicable to all administrative levels of government (federal, state and municipal) including the Public Prosecutor's Office and the Public Defender's Office. The main measure of the reform is to limit public spending and investments to the same amount of previous year, adjusted for official inflation.	Emenda Constitucional N. 55/2016
2017	**Novo Ensino Médio (High School Reform)**	Aimed to increase youth's interest in the school, reducing dropout, and adapt the curricula to the current labor market requirements. There are many challenges to implementation, especially in low socioeconomic contexts, since it demands more resources from the schools and more time in classroom from the students.	Lei 13.415/2017; Portaria 727/2017 do MEC
2017	**Labor Legislation Reform**	Intended to increase employment and formality, particularly offering legal security to employers through the regulation of practices that were not established de jure. The law allowed part-time employment, relaxed the rules over the labor journey period, set collective agreements as prevalent over the legislation, allowed the split of annual vacation period, increased the costs of legal litigation, and ended the mandatory contribution to unions.	Lei 13.467/2017
2018	**Fintechs Legal Framework**	Envisioned increased competition and access to credit in the financial sector. Through a handful of legal normative acts, the Central Bank of Brazil created the legal framework to allow the establishment and functioning of financial institutions that do not follow traditional banks business model. For instance, it created Direct Credit Society, and Interpersonal Lending Society, and established FinTech Regulatory Sandbox.	Resoluções 4.656/2018; 4.657/2018; 4.658/2018; 4.865/2020 do BCB

YEAR	LAW OR REGULATION	INTENDED OBJECTIVES	LEGAL ACTS
2019	**Pensions System Reform**	Had the objective to pave public debt sustainability. The pensions reform tried to contain the explosive trajectory of the expenses with pensions by increasing the retirement requirements and reducing the value of the benefits. The age and time of contribution to retire were combined and raised. The load factor on past contributions determining the value of the pensions was diminished.	Emenda constitucional 103
2020	**Water and Sanitation**	Reduced barriers to entry in the water and sanitation sector, making it possible to attract more private investments. It encompasses norms that should promote the adequate provision of services, with full service to users, and ensure the simultaneous provision of water supply and sanitary sewage services.	Lei 14.026/2020
2020	**Instantaneous Payment System (PIX)**	Intended to foster economic growth through the facilitation of monetary transactions and financial inclusion. PIX legal framework was being enacted since 2018, but the system was only implemented in 2020. The PIX transactions are done in instants of seconds, can be executed easily with a mobile phone (i.e.: by typing a phone number in a bank app or reading a QR code in camera), and charge no costs at the users. PIX has been widely adopted as a mean of payment and its acceptance ranges from micro informal business to luxury goods vendors.	Comunicado 32.927/2018 do BCB
2020	**Environmental Easing**	Intended to ease bureaucracy and diminish the costs of doing business. The government passed several decrees and normative acts to lower environmental conservation standards required of enterprises and agricultural producers. Among others, the government changed the legal understanding from the Atlantic Forest Conservation Law that required landowners to restore Areas of Permanent Preservation (APP) in that biome.	Parecer 00115/2019/DECOR/CGU/AGU; Despacho 4410/2020 do MMA; Resolução 37/2020 da ANM/MME; Ato 42/2020 do MAPA
2021	**Flagship Cash Transfers Reform**	The changes had the objective to increase the social protection of the most vulnerable during and after the covid-19 pandemic. It increased the coverage as well as the benefits of the program, but at the expense of relaxing inclusion criteria verification, reducing the conditionalities of permanence monitoring, and diminishing the cost-effectiveness of the program design.	Lei 13.982/2020; MP 1.000/2020; Decreto 10.661/2021; MP 1.061/2021; Decreto 10.851/2021; Decreto 10.852/2021; Decreto 11.013/2022; Emenda Constitucional 123; MP 1.164/2023

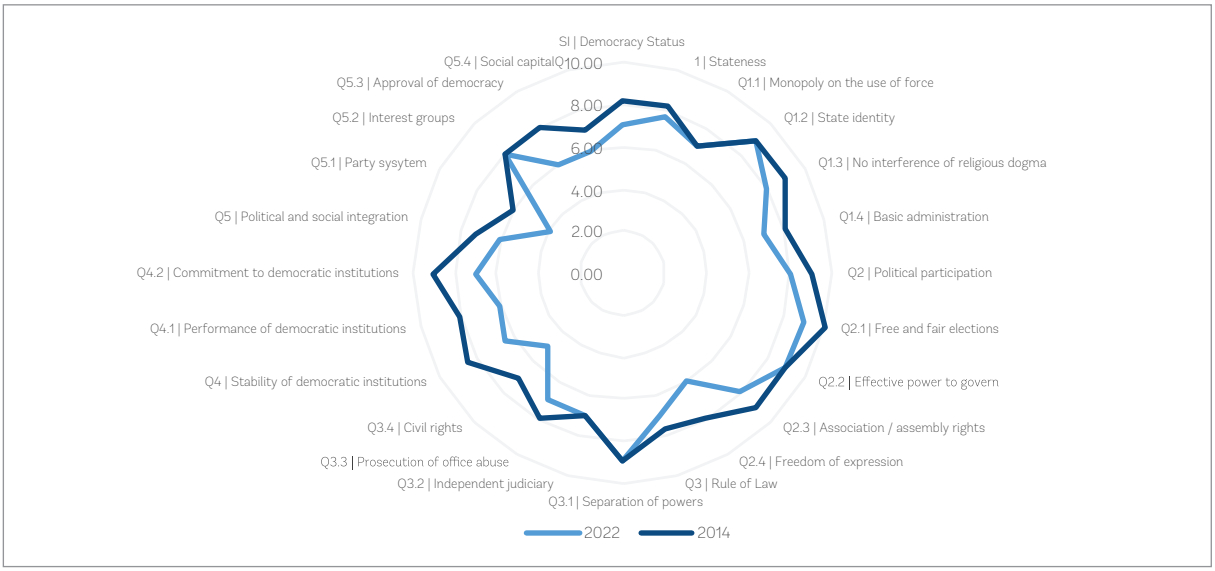
Source: own compilation.

APPENDIX 4.

Governance and Institutions in Brazil after SCD1

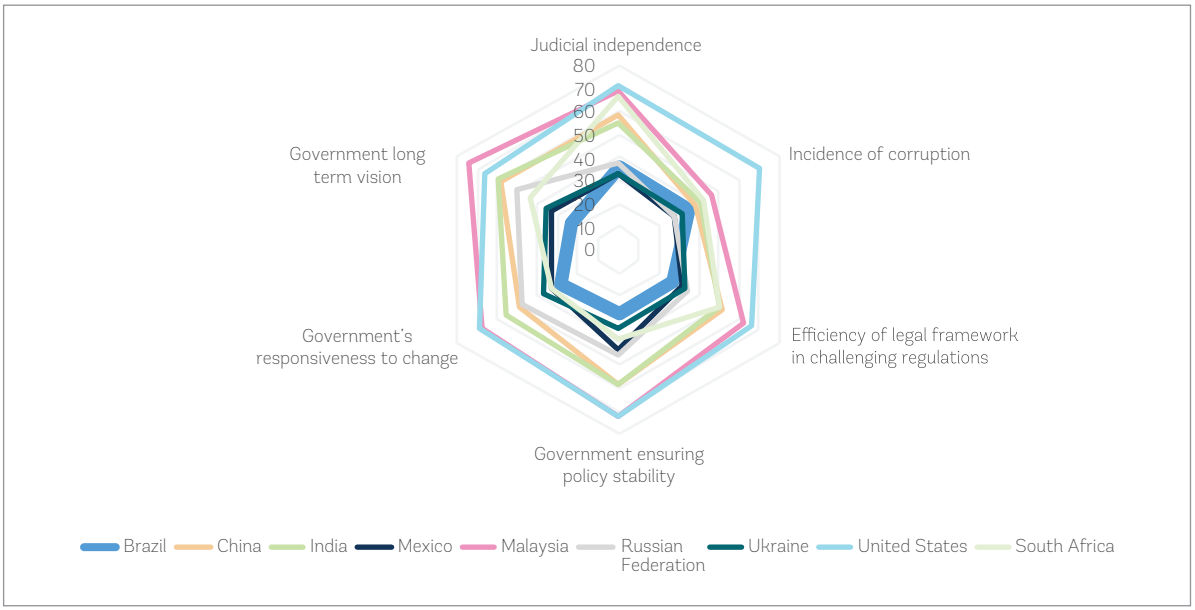
Brazil's legal system is anchored in the principle of the rule of law and the separation of powers. However, the country's declining performance on international indexes highlights ongoing challenges. Brazil's performance on the Bertelsmann Stiftung's Transformation Index (BTI) has seen a decline in the Democracy Status dimension, with the country's ranking dropping from 19th in 2014 to 29th in 2022 (Figure A4.1). The Rule of Law Index of the World Justice Project has also seen Brazil's score and ranking drop from 2016 to 2022. The WEF's Global Competitiveness Index (2019) reveals significant weaknesses in the areas of checks and balances (Figure A4.2), with Brazil ranking poorly in judicial independence (94th), incidence of corruption (91st), and efficiency of the legal framework in challenging regulations (115th).

Figure A4.1. BTI Democracy Status



Source: Bertelsmann Transformation Index 2022

Figure A4.2. Rule of law and governance

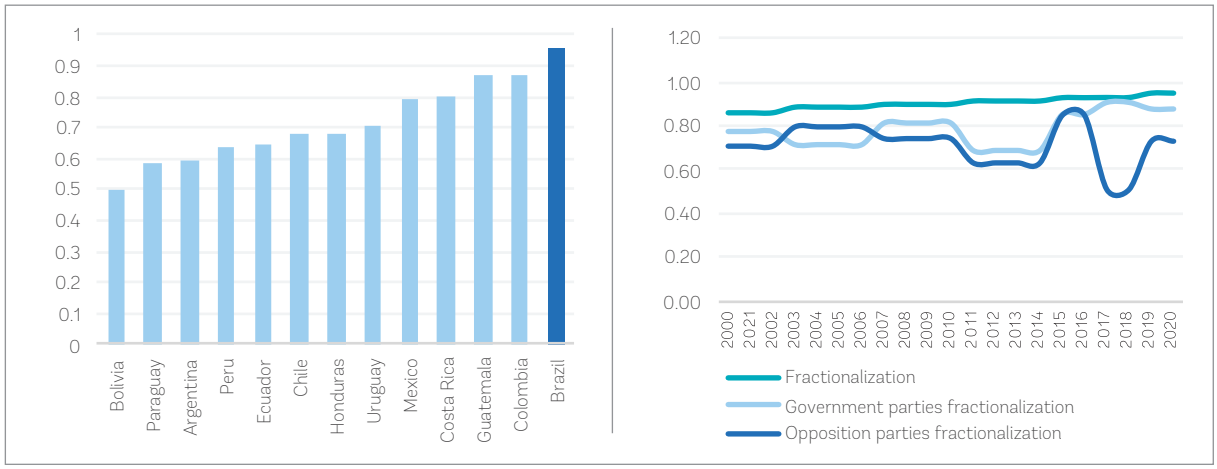


Source: Global Competitiveness Index 2019

Brazil has a robust legal framework to combat corruption, but it faces challenges in effectively implementing and enforcing these laws. According to a 2021 survey conducted by the federal government in partnership with the World Bank, 58.7 percent of sampled civil servants witnessed unethical practices during their careers, and 51.7 percent did not feel safe enough to report illegal conduct. The fight against corruption in Brazil, however, has seen significant developments. For instance, the creation of the Inter-ministerial Committee against Corruption (CICC) in April 2019 was a step forward towards strengthening the enforcement of the accountability and anti-corruption legal framework. The CICC launched the 2020-25 Anti-corruption Plan with the aim of improving the mechanisms for prevention, detection, and accountability for acts of corruption. Despite these efforts, there is still concern about the weakening of corruption control bodies in the country due to political interference. For instance, Brazil's ranked 94th out of 180 countries in the 2022 Corruption Perceptions Index.

Party fragmentation in the country is the highest in the region and one of the highest in the world. The Brazilian Congress has experienced significant party fragmentation over the past two decades. The probability that two deputies picked at random from the legislature will be of different parties has risen every year since 2000, going from 0.86 to 0.95 in 2020 (Figure A4.3), the highest in the region and only surpassed by a few countries in the world. Fragmentation in government parties is often higher than fragmentation within opposition parties. This suggests that even within ruling coalitions, there is considerable fragmentation and diversity.

Figure A4.3. Party fractionalization

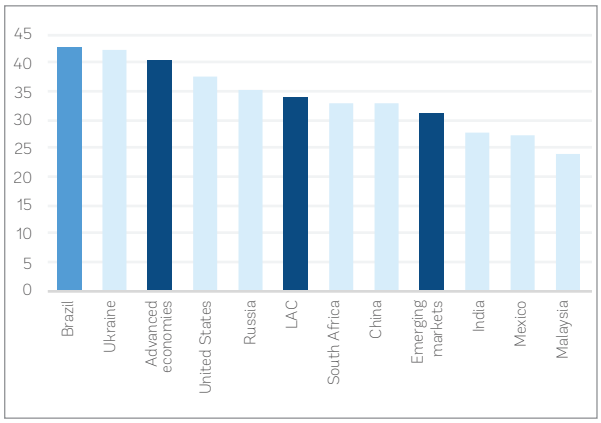


Source: IADB's Database of Political Institutions (DPI2020)

Significant efforts have been made to minimize the fragmentation of the Brazilian party system that was observed in SCD1, but consensus building around key reforms remains difficult. A constitutional amendment passed in 2017 with the aim of reducing the prevalence of smaller, transient parties. Another significant development was the introduction of 'party federations' through Law 14.208 in 2021 to prevent the formation of mere electoral coalitions, as was common until the 2018 elections. However, fragmentation is still high, and the process of consensus-building remains intricate. The political landscape has seen the emergence of political fractions wielding substantial influence over the legislative agenda, following minor reforms in the internal regulations of the Congress and Senate. This has resulted in a higher bargaining power for these groups when negotiating with the Executive branch, and a significant cost on the national budget. The power of the Brazilian President to pass major reforms hinges on their ability to create supportive coalitions within Congress, a process that can be time-consuming and costly.

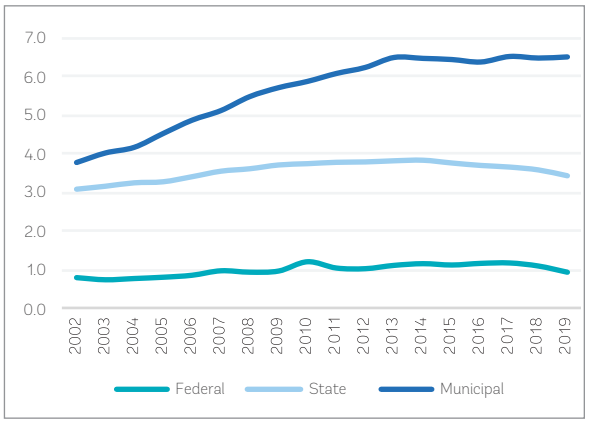
Constitutional expenditure commitments, evolving social demands, and political system dynamics, has perpetuated the growth of the public sector over the past years. Between 2014 and 2021, government expenditure in Brazil averaged 42.8 percent of GDP (Figure A4.4). This is significantly higher than the average of 34.0 percent for Latin American and Caribbean countries, and surpasses the average for advanced economies (40.4 percent of GDP). Public employment, which includes federal, state, and municipal positions, has stabilized in recent years, but the wage bill is still considerable (Figure A4.5). Federal employment dropped from 1.2 million in 2014 to 0.9 million in 2019, representing a decline of 25 percent. However, state employment saw a less drastic decrease, from 3.9 million in 2014 to 3.4 million in 2019, a reduction of 12.8 percent. Meanwhile, municipal employment remained stable at around 6.5 million since 2013. While the public sector wage bill accounted for about 9 percent of GDP in 2021, down from 13 percent in 2015, it is still considerable, largely due to the wage premiums, especially in the federal government and judiciary.

Figure A4.4. General government expenditure, average 2014-2021 (percent of GDP)



Source: World Economic Outlook (WEO) database, April 2023

Figure A4.5. Public employment in Brazil, 2002-2019 (Millions)



Source: IPEA-Atlas do Estado Brasileiro, based on Relação Anual de Informações Sociais (RAIS)/ME

Despite a well-established administrative system, particularly at the federal level, government effectiveness challenges persist. Rules require the civil service to maintain neutrality, independence, and equitable management, with the majority of appointees selected through public examinations. In certain areas, the hiring of civil servants is based on strict professional evaluation criteria. However, Brazil's government effectiveness is lower than anticipated, given its robust administrative capacity. Since SCD1, Brazil has seen a decline in most variables of the Worldwide Governance Indicators, including a significant drop in 'Government Effectiveness'.[126] In terms of government spending efficiency, as measured by the World Economic Forum's Global Competitiveness Index, Brazil's score is significantly lower than many other major and emerging economies. This relatively low score underscores the existing gap between Brazil's public sector resources and the actual effectiveness of its government operations. Also, performance variances across federal agencies, and inconsistencies in capacity and bureaucratic profiles at state and municipal levels, have persisted over the years.

Brazil's intergovernmental transfer system needs to be revamped to address horizontal gaps between states and promote regional redistribution. By international comparison, Brazil's vertical fiscal disparities are relatively low (27 percent in 2017) compared with other countries such as Peru and Mexico (80 percent) or the UK and South Korea (above 60 percent). However, Brazil has experienced large horizontal gaps. The allocation formula for the State Participation Fund (FPE) relies entirely on taxes, thereby causing the annual volume to be heavily correlated with the economic cycle, and the rule mandates the distribution of 100 percent of the values every year, resulting in low flexibility for shock absorption. To improve local public policies, allocation formulas could include ex post performance-related criteria on transfer results, mostly in the efficiency of states public resources management.

Fiscal capacity at the state level is uneven across the country. To lessen this situation, the federal government created in 2017 the Fiscal Recovery Program (RRF) and

Fiscal Sustainability Program (PEF). RRF offers debt relief to highly indebted states that comply with various fiscal adjustment requirements, such as reducing tax exemptions, privatizing state-owned enterprises, and implementing pension reforms. PEF aims to help subnational governments in fiscal distress regain creditworthiness by improving current savings and fiscal liquidity. Under PEF, the Federal Government provides guarantees for new lending against the implementation of a fiscal adjustment program, which must include at least three fiscal measures from the RRF. The Federal Government, through the Ministry of Economy, developed in 2021 the Progestão program[127] to support fiscal measures with management system reforms to increase efficiency in public expenditure. The program aims to help states improve their management capacity, increase efficiency in public expenditure, and address management challenges in a coordinated, country-wide technical assistance program in line with ongoing and upcoming reforms.

APPENDIX 5.

Data and knowledge gaps about Brazil

AREA/SECTOR	DATA/KNOWLEDGE GAP DESCRIPTION
Nonrevenue water	Estimates suggest that almost one-third of all water produced in Brazil is lost. Such figures, however, are frequently underestimated due to a lack of data, especially at the municipal level. This is an area where very little progress has been made over the past few decades.
Administrative tax data	Data on how much citizens declare and pay in taxes has remained highly secretive beyond aggregate statistics in Brazil even to other areas of government. International experience shows that there are ways to make such data available in forms that protect the privacy of the more identifiable (usually high-income) contributors.
Data on certain population vulnerable groups	Brazil stills lacks reliable disaggregated information about some specific population groups. One limitation is related to gender-sex data. The National Basic Education Assessment System (Sistema Nacional de Avaliação da Educação Básica, SAEB), for example, stopped releasing its disaggregated data by sex in 2019. In some databases, race is self-identified, and in others it is reported by a third person, what creates some inconsistencies when comparing different data sets. Third, data about the indigenous population are often underreported. There is room for improvement in producing evidence that mirrors the "many coexistent Brazils" in terms of human capital indicators across different population groups.
Timely data on losses related to natural hazards	Information on loss estimates is dated. Better and more timely information should be produced to more accurately monitor the impacts of climate change as well as potential effects on livelihoods of vulnerable populations.

Source: own compilation.

Notes

[i] World Bank (2023d).

[ii] IBGE distinguishes five racial and ethnic categories in its household surveys, according to self-declaration: preto (generally understood as dark-skinned Afro-descendants), pardo (generally light-skinned Afro-descendants or those of mixed race), indígena (indigenous), amarelo (Asian-descendants), and branco (white). Pretos and pardos comprise the broader group of Afro-descendants. In this Update, we use the term "Afro-Brazilian" when referring to both preto and pardo demographics together.

[iii] World Bank (2016).

[IV] Calculations using the TFP indicators series from FGV-IBRE's Regis Bonelli Observatory of Productivity.

[V] In terms of financing challenges, cities face a significant disparity between the various responsibilities they have and their limited ability to generate revenue. Only 18 percent of the overall public budget is allocated to municipalities, which means that their capacity to invest heavily relies on income from sources like property taxes, service fees, and direct federal investments (World Bank, 2023a).

[VI] World Bank (2009) and Brumby, Mendes, and Velloso (2012).

[7] Campos and Souen (2017).

[8] Data from Johns Hopkins Coronavirus Resource Center: https://coronavirus.jhu.edu/data/mortality

[9] Brazil's fiscal stimulus package was one of the biggest in the LAC region though below that of Chile and Peru and one of the largest among emerging economies (IMF, 2021).

[10] These were above the Central Bank's inflation target upper band for both years (5.3 percent and 5 percent, respectively).

[11] From historically low 2 percent in early 2021 to counter the negative effects from the pandemic in 2020.

[12] In May 2023, inflation was 3.9 percent, less than a third the rate in April 2022 (12.0 percent) and the lowest rate since October 2020 (3.9 percent).

[13] Public debt is defined as the general government gross debt, including Central Bank repo operations. This definition differs from the one used by the IMF, which includes all Treasury securities held by the Central Bank, not only those related with repo operations (IMF, 2017).

[14] The ceiling limited the growth of federal primary expenditures (net of transfers to other levels of government) to the previous year's inflation for 20 years (between 2016 and 2036) and imposed a reduction of 3 percentage points of GDP on all primary expenditures by 2030, therefore maintaining constant these expenditures in real terms.

[15] A 11.2 percent of GDP fiscal stimulus package cushioned the plunge and supported subnational governments, companies, and vulnerable households (including through a large, generous temporary emergency social program, Auxilio Emergencial), allowing a consumption-led recovery. The fiscal expansion to support activity in 2020 led to the primary deficit to rise from 1 percent of GDP in December 2019 to 9.3 in 2020 and general government's gross debt from 74.4 percent in 2019 to 86.9 percent in 2020.

[16] Primary surplus was 0.7 percent and 1.3 percent of GDP, respectively

[17] This share was certainly lower than the 86.9 percent of GDP in 2020 and 78.3 percent of GDP in 2021.

[18] FX-denominated government debt represents 5.9 percent of GDP and 94.7 percent of debt was held in the domestic market in February 2023, with about 29 percent of the outstanding debt maturing within one year (37.9 percent in December 2020). Additionally, Central Bank reserves stood at high USD 328.1 billion (16.7 percent of GDP) in February 2023.

[19] See Echavarria and Grittayaphong (2021). Other indicators also point to an improvement in Brazil's debt position. About 28.8 percent of the outstanding debt will mature within one year, compared to 37.9 percent in December 2020.

[20] Distortions in credit markets were mitigated by a reduction in earmarked loans, with the share of earmarked credit in total credit decreasing from 49 percent in 2015 to 40 percent 2022. Also, earmarked loan rates are now closer to non-earmarked rates, with a substantial impact of the Long-Term Rate (TLP) approval. These developments in the financial sector contributed to a booming private capital market, including for long-term financing, represented by a 263 percent increase in debentures issuance between 2014 and 2022.

[21] Cord et al. (2015).

[22] The poverty headcount rate is measured at USD 6.85 per day (2017 PPP), while the extreme poverty rate is measured at USD 2.15 per day (2017 PPP).

[23] World Bank (2021).

[24] Neri and Hecksher (2022).

[25] World Bank (2022b) and World Bank (2023c).

[26] Credit Suisse (2021).

[27] World Bank (2022b). At the time the SCD update was written, the PNAD-C 2019 was the latest available survey with the data on households' characteristics needed to estimate chronic poverty. IBGE did not publish the dwelling module of PNAD-C for the annual release of 2020 and 2021. Data for 2022 was published in the second week of June 2023.

[28] See Appendix 1 for a more detailed profile of the poor in Brazil.

[29] Lara Ibarra et al. (2023).

[30] Costs may have been increasing, as the average costs for the period 1995-2005 is estimated to be around BRL 7 billion. Unfortunately, the most recent cost estimates are for 2019 (see World Bank, 2020b). Data collected within that report comes from incident reports submitted by municipalities to access federal funds for response and recovery. Therefore, the cost of disasters in Brazilian cities is estimated to be much larger. Some cities, such as São Paulo, have not submitted many reports, and this may indicate not that they are not experiencing disasters or that these cities (usually the most financially sound ones) are covering most of the costs without reaching out for federal support.

[31] The Northeast region has the largest losses: BRL 125.55 billion, the equivalent to 47 percent of the country's registered losses and 49.4 percent of the total number of occurrences, most of them being caused by climatological events such as droughts (World Bank, 2020b).

[32] See EM-DAT dashboard for Brazil: https://www.emdat.be/emdat_atlas/sub_html_pages/sub_html_BRA.html.

[33] World Bank analysis using data from Hallegatte, Rentschler and Rozenberg (2019).

[34] The current hydropower assets are aging, with large-scale hydropower assets averaging 55 years, with reduced efficiency and capacity - due to both their age and inadequate maintenance.

[35] World Bank (2022b).

[36] West and Fearnside (2021).

[37] Sant'Anna and Costa (2019).

[38] Illegal deforestation is most prevalent in undesignated lands.

[39] Two examples are the outdated rural land tax and untargeted agricultural subsidies.

[40] World Resources Institute (2023).

[41] Climate Watch (2022).

[42] Data from the Greenhouse Gas Emission and Removal Estimating System (SEEG); see http://seeg.eco.br.

[43] Reforms focuses, amongst others, on improving the efficient allocation of credit, labor market efficiency, reducing the cost of doing business, attracting investment (for example in sanitation), and opening the economy to trade.

[44] See https://www.epl.gov.br/plano-nacional-de-logistica-pnl.

[45] The list of the SCD Update analytical foundations is included in Appendix 2.

[46] See Appendix 3 for a compendium of reforms adopted after SCD1.

[47] Brazil is generally seen as having effectively developed a competent group of federal officials who can implement intricate economic and social policies – especially when compared to countries like Argentina and Colombia. However, at the state and local levels, administrative systems often exhibit greater political influence.

[48] Institutional constraints are presented for each of the challenges identified in the Update. Additional information on governance and institutions in Brazil after SCD1 are presented in Appendix 4.

[49] Productivity was estimated using the gross product by sector at 1995 prices (IBGE – National Accounts) divided by the number of employed individuals by sector from PNAD-C.

[50] TFP increased in large agricultural establishments (i.e., with 500 hectares or more) in the period 1985-2006, while it remained mostly stagnant among small producers (i.e., with up to 5 hectares). In all regions but the North, the TFP level of small producers in 2006 was smaller than that of 1996. In the North, TFP among small farmers was higher than those of large producers in 2006, but the TFP growth was lower: between 1985 and 2006 large producers saw increases of about 60 percent while TFP grew about 30 percent among small farmers (Helfand and Taylor, 2021). Moreover, TFP growth of small farmers was mainly driven by increases in land productivity, while this was not observed among large agricultural establishments. Data from the Agricultural Census 2017 suggests that small farmers in the North are a relatively small group: they represent 27 percent of the total number of establishments in the North (3.1 percent of the establishments in Brazil) and the value of their agricultural production is 6.2 percent of the agricultural production in the North (0.4 percent of the production in Brazil).

[51] Arias et al. (2017).

[52] Luna and Klein (2014). European migrants also settled in other parts of the country including Paraná (1940s) and in the Cerrado, mainly Mato Grosso (1970s).

[53] Assunção et al. (2019) and Souza et al. (2022).

[54] Rada and Buccola (2012), Assunção and Bragança (2015) and Assunção et al. (2023).

[55] Increased productivity in agriculture and mining could have negative impacts on environmental sustainability unless it is combined with more effective land and forest governance. Higher productivity in agriculture and mining, also means more efficiency, so less resource use. However, if demand is elastic, higher productivity means more consumption of the good (the so-called Jevons effect), which may lead to more pressure on natural resources. For oil exports, higher oil productivity could lead to higher oil exports, potentially contributing to higher global damage from GHG emissions. Similarly, the Jevons effect can also arise in agriculture, potentially putting more pressure in the "arc of deforestation" of the Legal Amazon - where forest governance is weak (Hanusch, 2023).

[56] Source: Research developed by the Competitive Brazil Movement (available at https://www.mbc.org.br/programa-custo-brasil/)

[57] Global Competitiveness Report 2016-2017. World Bank data from the Doing Business report cannot reflect that because the latest information for Brazil refers to 2019. These figures were even worse in 2016, when it used to take 83 days to start a business in Brazil. Since then, the time required to start a business has reduced substantially, reaching 17 days in 2019.

[58] World Bank (2020a).

[59] Dutz (2018).

[60] Hanusch (2023).

[61] There are four taxes of such kind: two federal taxes (PIS/Cofins and IPI), one state tax (ICMS) and one municipal tax (ISS). Each of them is subject to different regimes and a variety of tax rates, depending on sector and location.

[62] The ICMS - Imposto Sobre a Circulação de Mercadorias e sobre Prestações de Serviços - is an origin-based VAT on consumption of goods and selected services administered by the States.

[63] A more in-depth assessment of the Brazilian tax system is limited due to the unavailability of some tax data. See Appendix 5 on this and other knowledge gaps identified in this Update.

[64] Bonomo et al. (2015) and Bonomo et al. (2018) discuss how small firms with innovative and risky projects are expected to find it difficult to receive credit and, as such, they are natural candidates for earmarked credit. In Brazil, however, they find evidence that larger, older and less risky firms have benefited the most from the government sponsored credit expansion of the period 2004-2012. Thus, earmarking may be contributing little to boost innovation in Brazil.

[65] SEBRAE (2014).

[66] Central Bank of Brazil (2023).

[67] SME Finance Forum (2023).

[68] Air transport, rail freight transport, legal services, and architecture services have the lowest score relative to the average across sectors (indicating lower restrictions on trade). In recent years, STRI scores improved for commercial banking and insurance, reflecting the ease of licensing conditions for foreign banks and insurance providers.

[69] World Bank (forthcoming a).

[70] WIPO (2023).

[71] Lei de Informática (Informatics Law) of 1991 (renewed in 2001, 2004, and 2014) promotes increased local content of information and communication technology (ICT) hardware and related electronics assembly, as well as investments in local R&D operations. Lei do Bem (Fiscal Incentives Law) of 2007 expanded incentives for investments in R&D, authorizing companies that invest in R&D and meet certain requirements to claim tax incentives automatically.

[72] World Bank (2023a).

[73] Silva et al. (2021). Additionally, during the period spanning the economic crisis of 2014-2015 and the onset of the COVID-19 pandemic, employment rates continued to decline for individuals without a secondary education, while recovering for those who had completed at least secondary education.

[74] World Bank (2022b).

[75] More specifically, less than 5 percent of all students from upper secondary schools in Brazil perform above level 9 in the Sistema de Avaliação da Educação Básica (SAEB), which measures of proficiency in a certain area of knowledge by students. Commonly students below proficiency level 4 present inadequate learning levels for her grade. More information can be found here: https://download.inep.gov.br/saeb/resultados/apresentacao_saeb_2021.pdf

[76] Brazil is a signatory of various international agreements, including the Uruguay Round Accords of the General Agreement on Tariffs and Trade and the Paris Convention for the Protection of Industrial Property.

[77] A useful framework to understand the income generating capacity of households is found in Attanasio and Székely (1999), Bussolo and Lopez-Calva (2014) and Lopez-Calva and Rodriguez-Castelan (2016) whereby households' assets (including various types of capital), the rate of use, the returns gained from them and key components to understand their capacity to escape poverty.

[78] The Brazilian Constitution allocates responsibility for education to the federal, state, and municipal levels of government, which jointly provide public pre-tertiary education to 38 million students. Preuniversity education in Brazil consists of ECE for children from birth to age 5, primary and lower secondary education (grades 1 to 9) and upper secondary education (grades 10 to 12 on the general track or grades 10 to 13 for technical programs). The federal government is responsible for overall education planning and policymaking, such as setting the minimum wage of teachers and the rules governing funding formulas. Municipalities are responsible for providing ECE and primary and lower secondary education, while states are responsible for providing lower and upper secondary education. Municipalities and states overlap in their responsibilities for lower secondary education because not all municipalities can afford to provide it. Out of the 47 million students in preuniversity education, 15 million are enrolled in state school networks, 23 million in municipal school networks and 9 million are enrolled in private schools, which represent 31 percent, 49 percent and 19 percent of total national enrollment, respectively. The federal government manages a few mostly technical and military schools but focuses on providing tertiary education.

[79] INEP (2022).

[80] INEP (2023).

[81] The state of Ceará and the municipality of Sobral, for instance, are well-known examples of success in primary and lower secondary education thanks to a combination of results-based financing, technical assistance to school administrators, and a culture of monitoring and evaluation.

[82] QEDU, accessed in 2021. https://qedu.org.br/

[83] Almeida et al. (2015).

[84] Based on PNAD-C 2019.

[85] Viera and Arends-Kuenning (2019).

[86] Although the number of those in formal employment that lose their jobs is relatively low, the programs financed by the federal government's Workers' Protection Fund (Fundo de Amparo ao Trabalhador) are almost entirely devoted to this group. In addition, funding for the national system for job search and employment (Sistema Nacional de Emprego – SINE) has been minimal and falling.

[87] Examples include the federal skills programs such as Employ More (Emprega Mais), which promotes qualification and employment opportunities aligned to companies' needs, and the Learning Contract (Contrato de Aprendizagem), which assists approximately 400,000 young people annually with on-the-job training and formal education.

[88] Low-income refers to households belonging to the bottom 40 percent of the income distribution. See World Bank (2022b).

[89] Marinho (2009).

[90] Scheffer et al. (2020).

[91] World Bank (2022b).

[92] World Bank (2022b).

[93] According to survey data from 2019 (World Bank 2022b).

[94] Fandiño, Arretche and Hanusch (2022).

[95] See Damasceno, Chiavari, and Lopes (2017).

[96] World Bank (2022b).

[97] See Castro (2021).

[98] The open banking initiative aims to enable bank users to transfer their own information between banks and to other providers of financial services more easily. The measure seeks to better align interest rates with borrowers' creditworthiness, increase competition and spur financial inclusion.

[99] On June 23, 2023, Brazil's president announced the country's commitment to end deforestation in the Amazon by 2030. The announcement was made after Lula's participation in an event organized by the French government to discuss a new global financing pact. In a similar vein, in 2021 during COP26, the then-president Bolsonaro announced that Brazil was committed to end illegal deforestation by 2028.

[100] World Bank Group (2023). Interventions need to be well designed, however. Recent evidence shows that incentivizing land use in tropical for-

ests can increase deforestation: https://link.springer.com/article/10.1007/s10531-022-02540-4

[101] Hanusch (2023).

[102] World Bank (2023a).

[103] These interventions are particularly suitable for Brazilian metropolises and larger regional capitals and should be executed in a systematic manner.

[104] World Bank (2023a).

[105] World Bank (2023a).

[106] The program was renamed Auxilio Brasil in 2022 following the ending the of emergency cash transfer Auxilio Emergencial. However, the original name was adopted once more in 2023.

[107] See Morgandi et al. (2023) for a set of medium-term recommendations to strengthen the social protection system.

[108] World Bank (2017).

[109] ICMS, a key revenue sources for Brazilian states, can be adjusted by local authorities and only inputs that are physically incorporated into the final products are eligible for credits. Thus, telecommunication services or advertising do not generate credits and become cumulative within the tax structure.

[110] See Orair and Gobetti (2019). Indirect taxes on the production of goods and some services constitute almost half of the entire tax revenue (World Bank, 2018). In contrast, income taxation in Brazil accounts for only 8 percent of total tax revenue, which is relatively low when compared to the OECD average.

[111] Lara Ibarra et al. (2021).

[112] The distortions arise because high-paid workers can choose to offer their labor as a company, instead of as a formal worker. What the worker would receive as wages now become profits, which are only taxed inside the firm at the SIMPLES rate (which is normally lower than the income tax rate for the corresponding level of income). Since profits are exempt from taxation after distribution, those workers can avoid higher tax rates that would fall on personal income.

[113] Word Bank (2019).

[114] Such as the legislative, judiciary and the federal prosecutor's office.

[115] Some examples are: leave permissions, annual holidays longer than 30 days, benefits for time of employment ("anuênios, quinquenios"), incorporation of temporary function benefits to the actual wage.

[116] World Bank (2019).

[117] According to Constitutional Amendment No. 41 of 2003, public servants that entered the public service until December 19, 2003 are entitled to full retirement, i.e., retirement with the last salary for contribution, and parity, i.e., receive the adjustments granted to active workers (World Bank, 2019).

[118] Exceptions to the reform were made for uniformed personnel, civil servants hired before 2003, and teachers who still retained preferential treatment in retirement eligibility conditions.

[119] World Bank (2022c).

[120] According to a McKinsey study. The same report suggests that the carbon trading market related to Article 6 in the Paris Agreement could reach up to USD 1 trillion globally in 2050.

[121] Supreme Court ruling was published on June/2023. More information can be found at https://portal.stf.jus.br/processos/downloadPeca.asp?id=15359322188&ext=.pdf

[122] The Fund relies entirely on taxes, thereby causing the annual volume to be heavily correlated with the economic cycle, and the rule mandates the distribution of 100 percent of the values every year, resulting in low flexibility for shock absorption.

[123] Services provided by subnational governments include health, education, security, and environment.

[124] Each government agency is responsible to regulate the prerogatives and labor rights of its temporary contracts. This legal uncertainty has led to lawsuits, at all levels, seeking the recognition of broader rights.

[125] Consultations included representatives of the Government of Brazil and of international institutions.

[126] Worldwide Governance Indicators are a research dataset summarizing the views on the quality of governance provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries, that are gathered from a number of survey institutes, think tanks, non-governmental organizations, international organizations, and private sector firms, and do not reflect the official views of the World Bank, its Executive Directors, or the countries they represent, and are not used by the World Bank to allocate resources.

[127] A partnership was also established with the World Bank to support State governments' public sector management reforms.


THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

THE WORLD BANK

IBRD • IDA | WORLD BANK GROUP

www.worldbank.org