

OPPORTUNITIES FOR ALL

Brazil Policy
Notes • 2022



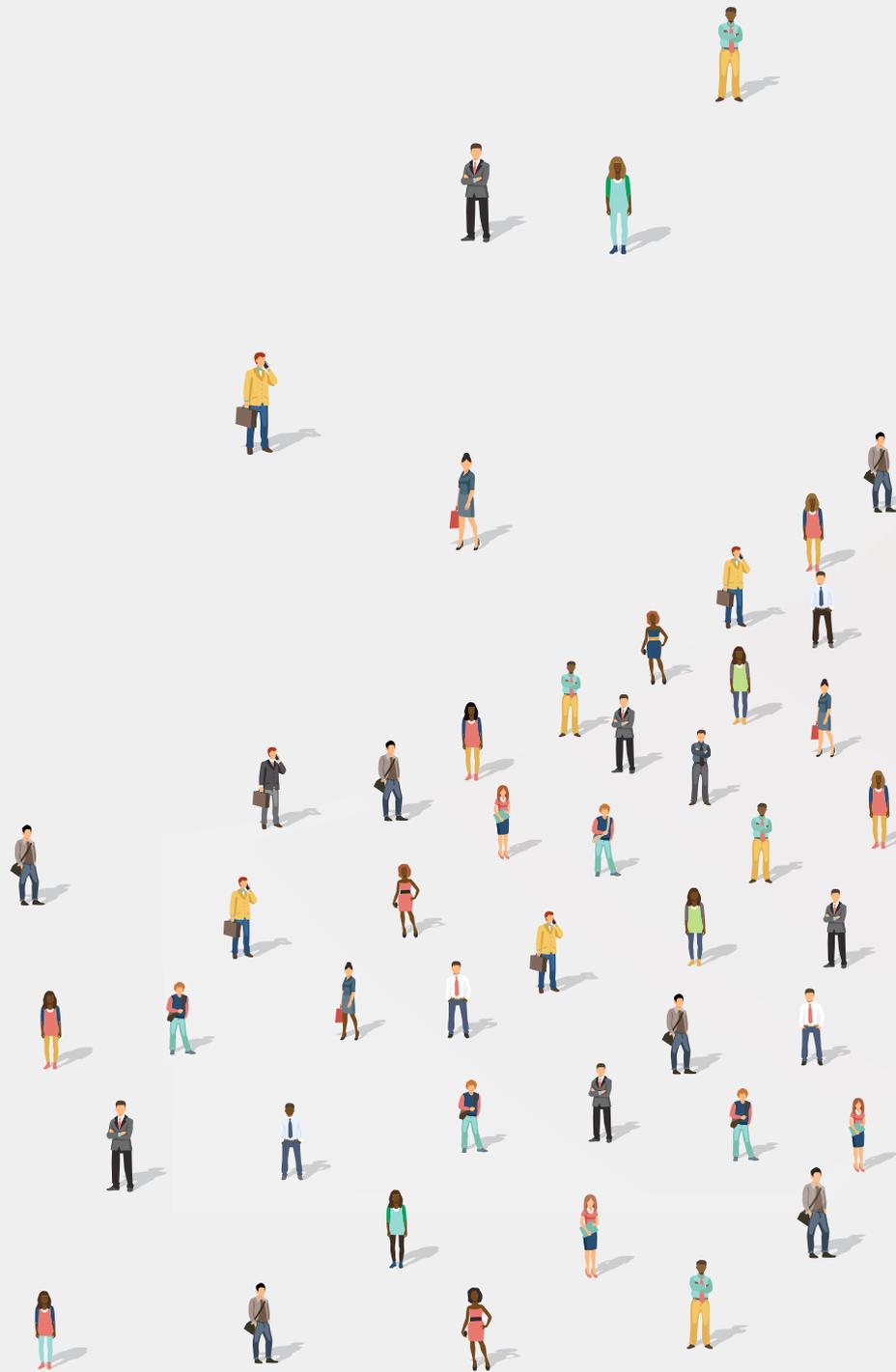
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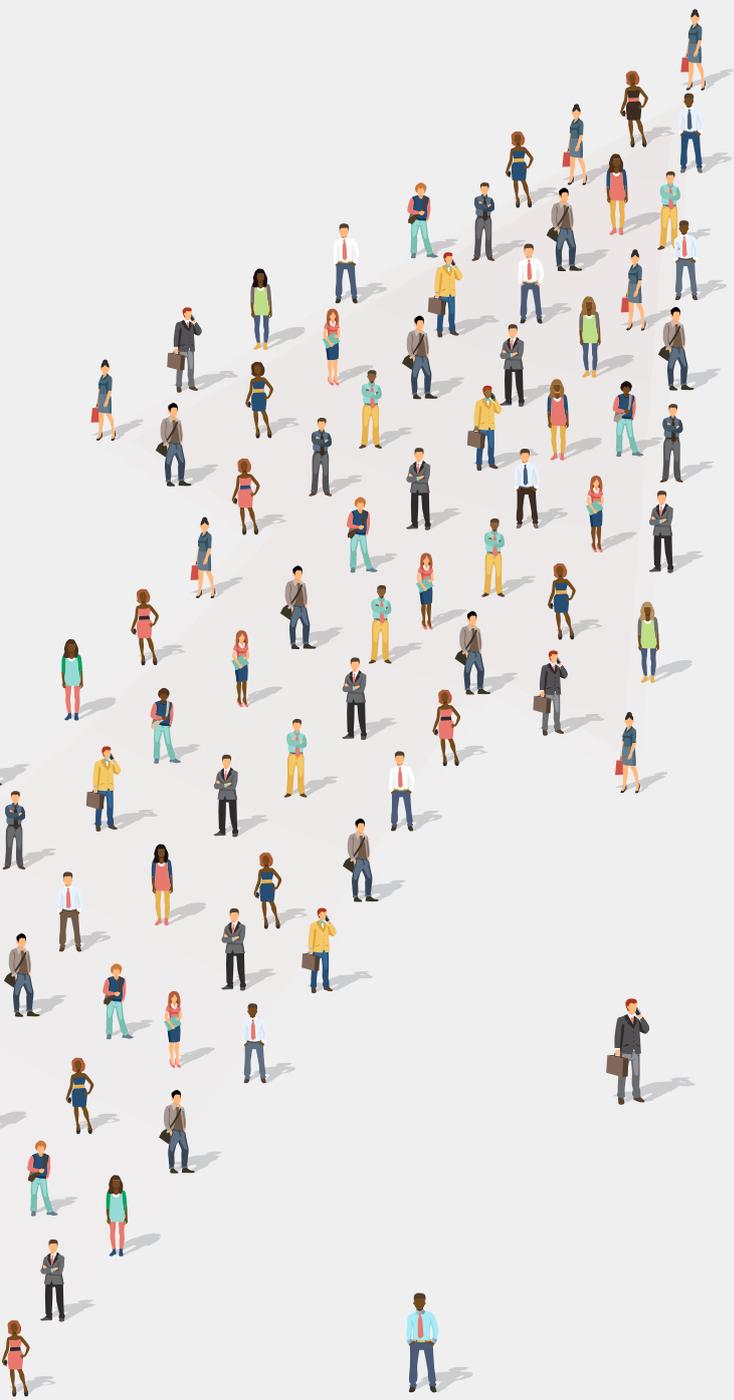
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Brazil Policy Notes 2022

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Seven Recent World Bank Reports Underlying these Policy Notes

Brazil Poverty and Equity Assessment: Looking Ahead of Two Crises (2022)	The report brings together a collection of poverty and inequality analytics produced in the past two years, including recent evidence 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.
The Brazil Human Capital Review: Investing in People (2022)	The report shows what would happen to labor productivity if Brazil were to offer quality education and health to every child, in every part of the country and discusses how can the gap between ideal circumstances and what is actually achieved can be reconciled.
Brazil 2042: Toward a More Inclusive and Prosperous Society (forthcoming)	The report contributes to the debate in Brazil about how to overcome growth and inclusion challenges ahead, over a 20-year horizon.
Social Protection for the future: a 2042 outlook (forthcoming)	This report assesses how Brazil's social protection and labor systems can be reformed most effectively to meet the challenges that the country will face in the next two decades while also fostering social inclusion and shared prosperity.
The Country Climate and Development Report for Brazil (forthcoming)	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 Balancing Act for Brazil's States of the Legal Amazon: An Economic Memorandum (forthcoming)	The memorandum discusses how to simultaneously provide a pathway to higher incomes for the Amazon States while also protecting natural forests and traditional ways of life.
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.

Abbreviations and Acronyms

ALMPs	Active Labour Market Policies	INSEAD	Institut Européen D'administration des Affaires
AS	Abono Salarial	IPEA	Instituto de Pesquisa Econômica Aplicada (Institute of Applied Economic Research)
BPC	Benefício de Prestação Continuada (Continuing Provision Benefit)	IPI	Imposto sobre Produtos Industrializados (Tax over industrialized products)
BEM	Benefício Emergencial de Manutenção do emprego e renda (Emergency Benefit for Maintaining Employment and Income)	ISS	Imposto Sobre Serviços (Tax over services)
BRL	Brazilian real	IT	Information Technology
CAR	Cadastro Ambiental Rural (Rural Environmental Registry)	ITR	Imposto Territorial Rural (Rural Land tax)
CCDR	Country Climate and Development Report	LPI	Logistics Performance Index
CCT	Convenções Coletivas de Trabalho (Collective Work Agreements)	MEI	Micro-empendedor individual (Independent Micro-entrepreneur)
Comtrade	Commodity Trade	Moderagro	Programa de Modernização da Agricultura e Conservação de Recursos Naturais (Agriculture Modernization and Natural Resources Conservation Program)
COFINS	Contribuição para Financiamento da Seguridade Social (Contribution to Social Security Financing)	NTM	Nontariff Measures
CONAMER	Comisión Nacional de Mejora Regulatoria (National Regulatory Improvement Commission)	OECD	Organization for Economic Co-operation and Development
DETER	Departamento de Transportes e Terminais (Department of Transport and Terminals)	PBF	Programa Bolsa Família
ECE	Educational Credential Evaluators	PEC	Proposta de Emenda à Constituição (Constitutional Amendment Bill)
EU	European Union	PIS	Programa de Integração Social (Social integration program)
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuária (Brazilian Agricultural Research Corporation)	PISA	Program for International Student Assessment
ETS	Emissions Trading System	PPCDAM	Plano de Ação para Prevenção e Controle do Desmatamento na Amazônia (Action Plan for the Prevention and Control of Deforestation in the Amazon)
FAT	Fundo de Amparo ao Trabalhador (Workers Support Fund)	PPP	Public-Private Partnership
FDI	Foreign Direct Investment	PRODES	Projeto de Monitoramento do Desmatamento na Amazônia Legal por Satélite (Project for Monitoring Deforestation in the Legal Amazon by Satellite)
FGTS	Fundo de Garantia por Tempo de Serviço (Employment Time Guarantee Fund)	ProUni	Programa Universidade Para Todos (University for All Program)
FGP	Fundo Garantidor de Parcerias (PPP Guarantee Fund)	R&D	Research and Development
FGIE	Fundo Garantidor de Infraestrutura (Infrastructure Guarantee Fund)	RPSS	Regime Próprio de Previdência Social (Own Social Security System)
FIES	Fundo de Financiamento Estudantil (Student Financing Fund)	SA	Social Assistance
FUNDEB	Fundo de Manutenção e Desenvolvimento da Educação Básica e de Valorização dos Profissionais da Educação (Fund for the Maintenance and Development of Basic Education and the Valuation of Education Professionals)	SAEB	Sistema de Avaliação da Educação Básica (Evaluation System of Basic Education)
GDP	Gross Domestic Product	SEME	Secretaria Especial de Modernização do Estado (Special Secretariat for State Modernization)
GHG	Greenhouse gas	SF	Salário Família (Family Salary)
IBS	Imposto sobre Bens e Serviços (Tax on Goods and Services)	SINE	Sistema Nacional de Emprego (National Employment System)
ICMS	Imposto sobre Circulação de Mercadorias e Serviços (Tax on Circulation of Goods and Services)	SNCR	Sistema Nacional de Cadastro Rural (National Rural Credit System)
ICT	Information and Communication Technology (Tax on Sales and Services)	STRI	Services Trade Restrictiveness Index
IDEB	Índice de Desenvolvimento da Educação Básica (index of basic education development)	TD	Tax Deduction
INEP	Instituto Nacional de Estudos e Pesquisas Educacionais (National Institute of Educational Studies and Research)	TVET	Technical and vocational education and training
INESC	Instituto de Estudos Socioeconômicos (Institute of Socioeconomic Studies)	VAT	Value added tax
INOVAGRO	Programa de Incentivo à Inovação Tecnológica na Produção Agropecuária (Incentive Program for Technological Innovation in Agricultural Production)	UNESCO	United Nations Educational, Scientific and Cultural Organization
		WIPO	World Intellectual Property Organization

BRAZIL POLICY NOTES 2022

Opportunities for All

As it looks ahead under its next administration, Brazil faces the task of securing a recovery from past shocks and building a future full of opportunities for all its people. The 2014-2016 crisis, the COVID-19 pandemic and the fallout from the Ukraine war had a deep impact on the country, lowering growth and increasing unemployment and raising inflation. These crises also contributed to a decade that presented few, if any, gains in the fight against inequality. Existing disparities have widened due to disproportionate impact of these shocks on

the most vulnerable. An incipient recovery is underway, but the recovery is fragile and exposed to heightened uncertainty given a gloomy global outlook and growing climate risks.

This package of Public Policy Notes is directed to Brazilian policy makers and society to present the World Bank Group's overview of key challenges facing the country at this juncture, and possible ways forward to address them. We present an agenda prioritized around four issues of core relevance to



Brazil's recovery and its future resilience. First is the goal of financing development sustainably given the immediate challenge of situating the country's enormous growth, inclusion and climate action needs within a credible macroeconomic framework and efficient and effective fiscal policies. The second theme addressed in this note is building opportunities through productivity-led growth. With the growing reliance of Brazilians on social assistance policies, it is critical to keep sight of growth and jobs as the most important vehicles for the dignity and upward mobility of the poor. Third is increasing the capabilities and economic inclusion of the poor so that they are better able to capture the opportunities that come with growth. The fourth theme we address in this note is meeting Brazil's potential as a leader in green and climate friendly development. This document is accompanied by a package of six policy presentations and an underlying set of more detailed policy reports that can be accessed here: <https://www.worldbank.org/en/country/brazil>.

Financing development sustainably

A credible fiscal policy will be critical for Brazil to achieve its development goals, accelerating growth, inclusion and climate action. The country has made progress towards rebalancing its budget by winding down much of the pandemic's emergency spending package. But debt levels remain elevated, spending pressures are high and a less favorable global and domestic growth outlook presents considerable risks. In the longer-term, a closing demographic window of opportunity means that inter-generational pressures in the pension and public service system will increase in absence of substantial reforms. Improving

the efficiency and effectiveness of fiscal policy, will be critical for Brazil to navigate these challenges and make progress in achieving its development goals. In this context, we discuss policy options that focus on: (i) maintaining a credible fiscal anchor, (ii) making social transfers and taxation more efficient and progressive, and (iv) containing public sector remuneration, in the first section of this note (pages 15-30),

Building opportunities through productivity-led growth

The most important obstacle to increasing the incomes of Brazilian is the economy's low-productivity model, which has underpinned Brazil's lackluster economic performance over the past two decades. Brazil grew at just 0.53 percent per capita annually between 2010 and 2021, compared with 4.0 and 1.4 for upper middle-income countries and OECD members, respectively. With this, unemployment and informality remained stubbornly high at around 13 and 40 percent, respectively, throughout the past decade, while real incomes of Brazilian families fell.¹

As economic conditions and incomes took a hit, the country increasingly looked to its social assistance programs to support the poor. Brazilian families' reliance on social transfers grew over the past decade as a result.² The policy focus on delivering social assistance continues to be high and suggests that redistribution may be taking a deeper role in Brazil's policy mix, not only as a counter-cyclical tool, but also as a crutch in the context of an ailing economy.

A renewed focus on economic growth is essential if the next administration is to succeed in creating opportunities for Brazilians, especially the underprivileged among them. Reducing the reliance of Brazilian households on cash transfers requires more access to jobs and opportunities by means of a more dynamic economy. This means a sharp focus on the growth agenda. To this end, we propose policy option for increasing productivity and economic growth by: (i) deepening integration and competition through trade; (ii) increasing innovation and technological uptake; (iii) improving the investment climate; and by (iv) modernizing infrastructure and its management, in section two of this note (pages 31-46). These transversal productivity enhancing reforms would need to be complemented with the sector specific reforms discussed in sections three and four

Increasing the capabilities and economic inclusion of the poor

The third challenge we highlight in these policy notes is increasing the capabilities and the economic inclusion of the most disadvantaged Brazilians. Despite the large gains of earlier decades, poverty and disparities remain prominent in the lives of many Brazilians. Before the pandemic, the richest 10 percent of Brazilians had an average income per capita over 50 times that of the poorest 10 percent. One in five were chronically poor, with most residing in households headed by someone with less than elementary-level education or deprived of a formal job. The onset of the pandemic widened these existing gaps and today, nearly half of Brazil's future workforce, today's children, are

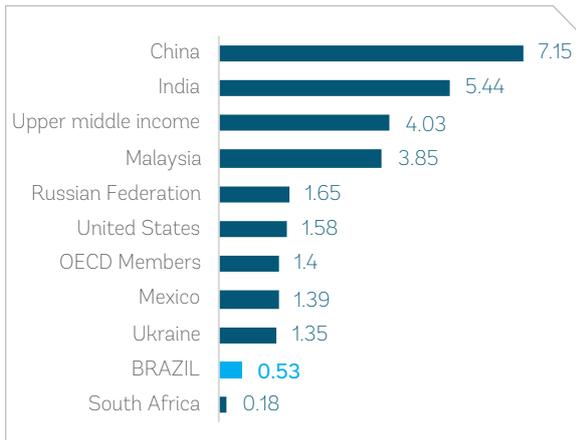
growing up in poor households. These children have experienced deep losses in learning during the pandemic that will set them even further behind. Amongst Brazilians, women, youth and Afro-Brazilians were most deeply affected by past shocks, facing steeper challenges and experiencing a partial reversal of past welfare gains. We propose, in these policy notes, a set of measures to (i) rebuild capabilities by placing learning and skills back on the right track; and (ii) strengthen policies for economic inclusion, in the third section of this note (pages 47-58),

Meeting Brazil's potential as a green economy

The fourth challenge highlighted in these policy notes is reversing recent climate trends so that Brazil can realize its potential as a leader in green and climate-friendly development. Brazil faces significant climate change impacts that are compounded by deforestation and land degradation. Climate change is already altering temperature and rainfall patterns in the country, resulting in reduced water availability and extended droughts. These problems are expected to worsen with time. Climate shocks could also push another 800,000 to 3,000,000 Brazilians into extreme poverty as soon as 2030. Reversing these trends will be crucial for Brazil's growth and for protecting the vulnerable from the impacts of climate shocks. Stopping illegal deforestation in the Amazon and Cerrado biomes is of particular urgency. The policy notes offer policy options to support Brazil in meeting its potential as a leader in the climate agenda by: (i) curbing deforestation; (ii) advancing sectoral transitions to net-zero; and (iii) increasing the role of carbon pricing and climate-smart social safety nets as key economy-wide measures, in the fourth section of this note (pages 59-71)

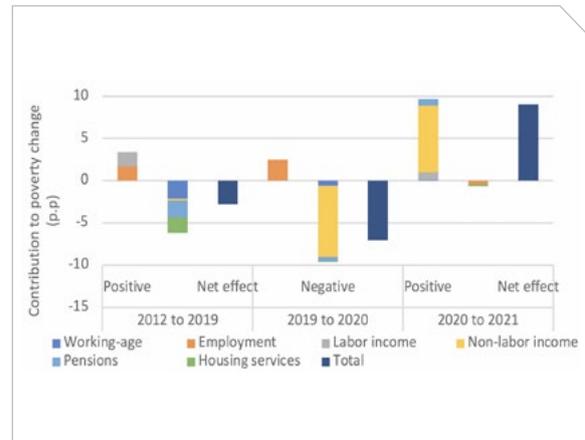
Low growth and limited income opportunities

Figure 1: Average Annual GDP Per Capita Growth 2010–2019 in Brazil and Selected Comparator Countries (Percent)



Source: World Development Indicators

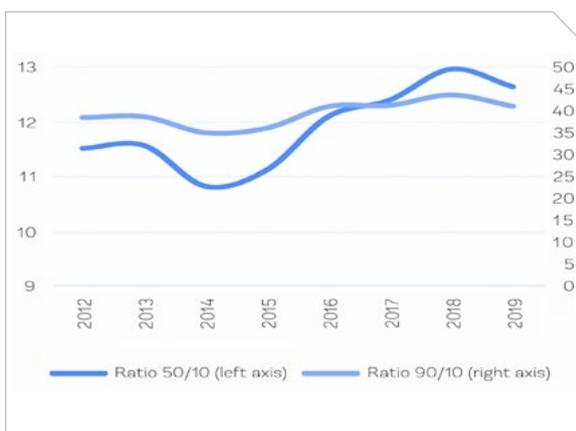
Figure 2: Contributions to household income growth



Source: World Bank estimates based on PNAD-C

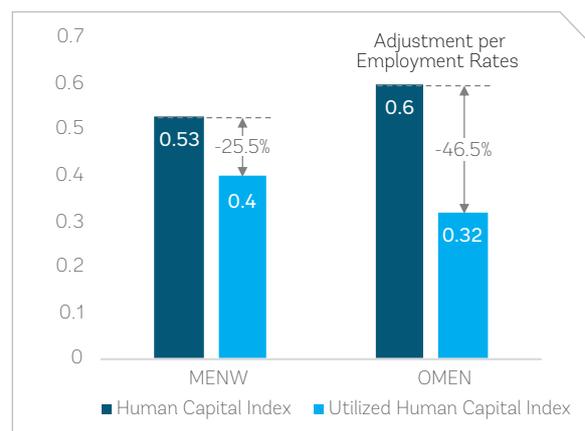
Large and persisting inequalities

Figure 3: Inequality in Brazil, 2012–2019 (Ratio 50/10 and 90/10)



Source: Brazil Poverty and Equity Assessment (World Bank, 2022)

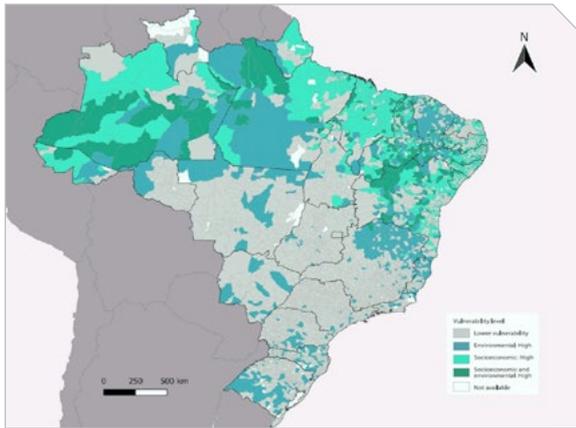
Figure 4: Human capital and human capital utilization levels (2017)



Source: Brazil Human Capital Review (World Bank, 2022)

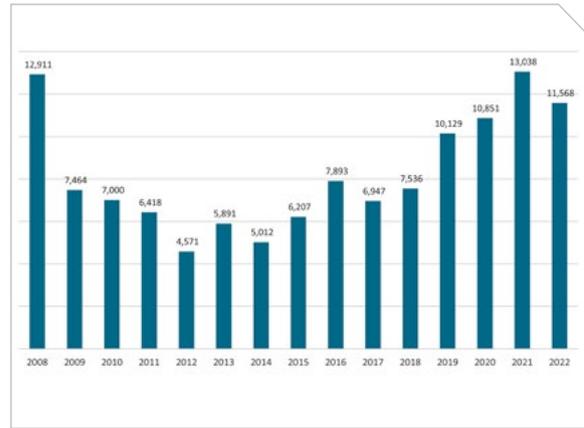
Growing climate vulnerabilities

Figure 5: Environmental and socioeconomic vulnerability of Brazilian municipalities



Source: World Bank Poverty Assessment (2022)

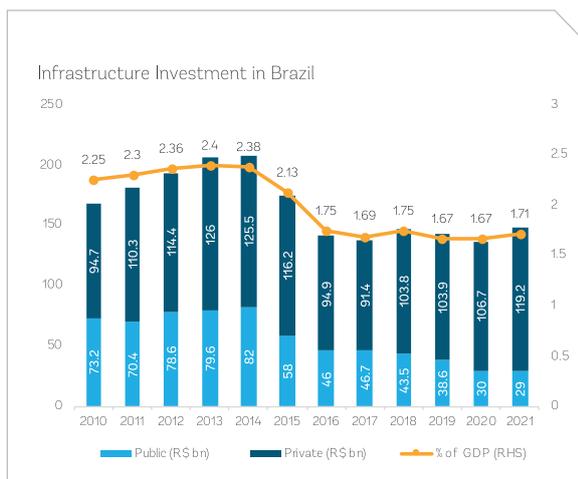
Figure 6: Amazon annual deforestation rates (km²)



Source: Inpe (2022)

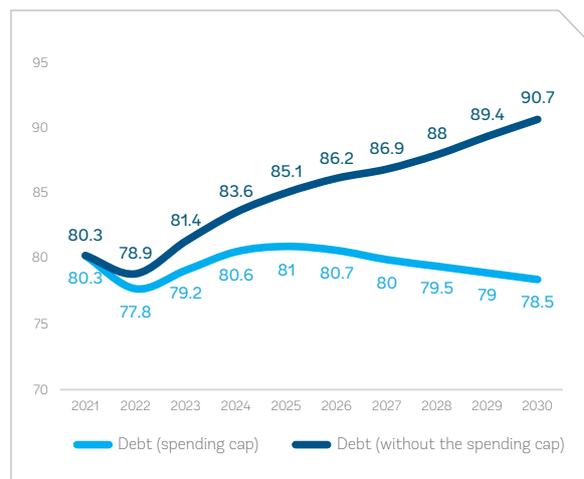
The challenge of reconciling fiscal sustainability with development needs

Figure 7: A sharp decline in public investment (% GDP)



Source: World Bank calculations based on data from Central Bank of Brazil and Federal Treasury.

Figure 8: Brazil's debt outlook with and without spending controls (% GDP)



Source: World Bank calculations based on data from Central Bank of Brazil and Federal Treasury.

Overview of the policy notes

	Theme	Priority Reform Options
Pages 15-30	Financing development sustainably	
	A credible fiscal framework.	<ul style="list-style-type: none"> • Reestablishing a credible fiscal anchor.
	More efficient and progressive social transfers.	<ul style="list-style-type: none"> • Making <i>Auxilio Brasil/Bolsa Familia</i> more progressive and affordable. • Optimizing payouts from unemployment insurance schemes. • Optimizing (non-public sector) pension schemes.
	More efficient and progressive taxation.	<ul style="list-style-type: none"> • Harmonizing income taxation across different tax bases and removing exemptions for dividends and pension incomes. • Eliminating regressive and inefficient tax exemptions.
	Controlling public sector pay and pensions.	<ul style="list-style-type: none"> • Increasing the number of subnational entities that have adopted comprehensive pension reforms. • Adopting an administrative reform to narrow the wage premium and modernize the public sector's human resource management practices.
Pages 31-46	Building opportunities through productivity-led growth	
	Accelerating productivity, growth and job creation.	<ul style="list-style-type: none"> • Advancing regional integration and trade negotiations with the EU and other economies. • Reducing barriers to trade and investment in services. • Improving the business climate and promoting innovation and technological adoption. • Reforming consumption taxation. • Revamping underperforming innovation policies. • Increasing the volume of financing for infrastructure to close the investment. • Modernizing infrastructure and its management.
Pages 47-58	Increasing the capabilities and economic inclusion of the poor	
	Placing learning and skills back on the right track.	<ul style="list-style-type: none"> • Recovering learning losses. • Reducing dropout rates. • Increasing the quality of education through higher quality teaching and a more skill focused curriculum.
	Strengthening policies for economic inclusion.	<ul style="list-style-type: none"> • Improving labor market outcomes through active labor market programs. • Revamping the <i>Sistema Nacional de Emprego</i> (SINE). • Improving workers protection through reforms of unemployment insurance and labor benefits. • Increasing the private sector's contribution to economic inclusion through more robust diversity and inclusion policies in corporate governance structures.
Pages 59-71	Meeting Brazil's potential as a green economy	
	Curbing illegal deforestation.	<ul style="list-style-type: none"> • Preventing land-grabbing. • Strengthening land and forest governance. • Promoting sustainable forest livelihoods.
	Resilient and climate-smart agriculture, industries, and cities.	<ul style="list-style-type: none"> • Scaling-up climate-smart agriculture. • Decarbonizing the energy sector. • Greening cities and their transport systems.
	Economy-wide interventions.	<ul style="list-style-type: none"> • Adopting a national emissions trading system. • Considering the introduction of a carbon tax and initiating a phaseout of subsidies to emission-intensive activities. • Supporting households in managing the climate transition.

1.

FINANCING DEVELOPMENT SUSTAINABLY



1.

Financing Development Sustainably



Fiscal policy has a particularly pertinent role at this juncture for Brazil as the country looks to pursuing a social, economic, and environmental recovery through more investment and improved service delivery.³ Sound public finances will be a cornerstone of the Brazilian government's agenda, both for its ability to respond to shocks and its importance in shaping future development outcomes. For Brazil's incoming government, financing a robust social assistance package is a priority. The decline in infrastructure spending is also of particular concern, having fallen dramatically from about 4.8 percent of GDP in the 1980s to just over 2 percent in the 2010s, and merely 1.7 percent in 2021, a volume that is no longer sufficient to replace depreciating capital, let alone expand the infrastructure stock.

Yet, the country's fiscal framework is challenged by elevated debt and uncertainty around its future direction. High debt levels and the limited flexibility of the budget leave little room for policy makers to maneuver. Moreover, recent economic shocks did not only affect Brazil's debt position but also challenged the credibility of the underlying institutional framework anchoring the budget. Specifically, recent changes to the federal spending ceiling rule to accommodate higher expenditures, and the political debate around reframing Brazil's spending cap have left stakeholders uncertain about

the future basis for fiscal sustainability. This has raised the cost of financing at a time of heightened uncertainty and increasingly turned the risk of fiscal slippage into the Achilles heel of Brazil's macroeconomic framework.^{4,5}

The main message in this section of the policy notes is that sound fiscal policy will be critical, particularly in the context of high uncertainty, if the country is to achieve its development goals in pursuit of growth, inclusion, and climate action. The incoming authorities have an opportunity to sustainably carve out space for priority development needs by improving the efficiency and effectiveness of fiscal policy while shoring up the credibility of the fiscal framework. The latter can be achieved through credible fiscal rules to steer public finances to a sustainable footing, along with measures to enhance spending efficiency and increase the progressivity of the tax system. We present in this section policy options that could form key pillars of such a plan by: (i) maintaining a credible fiscal anchor; (ii) rationalizing regressive social transfers; (iii) making taxation more progressive; and (iv) controlling public sector pay and pensions. In addition to these, the measures for accelerating productivity-led growth discussed in section two of this note and policy options for adopting carbon taxes discussed in section four would also help buoy the fiscal outlook.

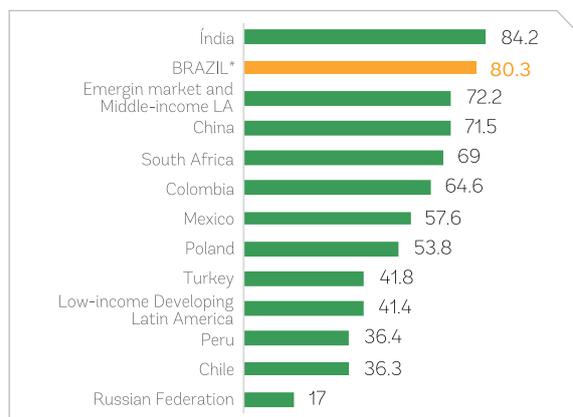
1.1 Maintaining a credible fiscal anchor

A credible fiscal anchor will be critical to retain confidence at a time of high uncertainty, to ensure that the government maintains its ability to respond to future shocks and support efficient fiscal policy decisions.⁶ Considering the growing demand for social support and infrastructure investments needs, the ongoing debate around the future of the “*teto de gastos*” as the key fiscal anchor is not unexpected. But it is critical to bear in mind in this debate that Brazil’s public finances are on a fragile footing. After spiking to 88.6 percent of GDP in 2020, public debt fell to 77.1 percent of GDP by September 2022 due to improvements in the primary fiscal balance and a recovering economy.⁷ Still, Brazil’s debt levels are higher than its peers (Figure 9). Debt is expected to increase gradually between 2022 and 2025 due to higher interest payments and slow recovery of the structural primary balance and is at risk of spiraling upwards in the absence of continued fiscal discipline (Figure 10). Moreover, unless new public investments are financed by savings elsewhere in the budget, a return to an average of 2.1 percent of GDP between 2023 and 2030 would increase the public debt by 2.1 percentage points of GDP by 2030. In this scenario, debt levels would stabilize only in 2030 at 82.7 percent of GDP.⁸

The structural spending pressures that inflated the recurrent budget over the past 15 years persist today, further stressing the need to anchor public finances. These include public sector pay and pensions (discussed below) and growth in social protection spending. The *Auxilio Brasil* program in particular, which increased from 0.5 percent of GDP in 2019 (as *Bolsa Familia*) to and expected 1.5 percent of GDP in

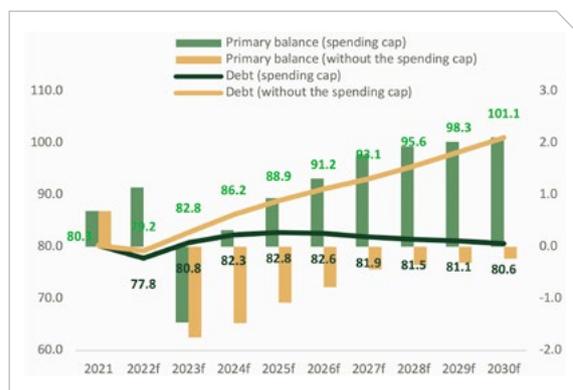
2023, has locked additional momentum into the budget. Brazil is also spending an increasing share of its budget on interest payments. A high level of budget rigidity is a further source of pressure with less than 10 percent of budget in discretionary resources, making it difficult to reallocate resources to meet evolving spending needs.⁹ In this setting, fiscal projections under a business-as-usual scenario indicate a return to an unsustainable fiscal trajectory in the absence of strong fiscal anchor (Figure 10).

Figure 9: Gross debt in comparison with peers in 2021 (% of GDP)



Source: IMF Fiscal Monitor Data. Note: Brazil’s gross debt from Central Bank (BACEN) using official methodology.

Figure 10: Debt and deficits with and without spending controls (% of GDP)



Source: World Bank calculations based on data from the Central Bank of Brazil and Federal Treasury.

MAINTAINING A CREDIBLE FISCAL ANCHOR: POLICY OPTIONS¹⁰

As the country engages in debate around ways to finetune its fiscal rules, we highlight four important best-practice principles for consideration for any new arrangement:

- **Maintaining a focus on fiscal sustainability.** The choice of fiscal rules comes with relative advantages and drawbacks that must be weighed by policy makers to select those that best reflect economic circumstances and policy priorities (Figure 11).¹¹ Considering Brazil's context, the objective of engraining fiscal sustainability remains essential, whilst also avoiding procyclicality to the extent possible. The current spending cap rule helps make spending acyclical while leaving room to respond to adverse shocks through an escape clause.¹² It is designed to encourage the consolidation of spending, but is not directly linked to debt sustainability. Going forward, a combination of debt rules with expenditure rules, or of debt rules with budget balance rules could help ensure debt sustainability. Combining expenditure rules with debt rules, for example, can favor debt sustainability while reducing the procyclicality of government spending.

- **Simple and transparent fiscal rules to support communication and broad based buy-in.** Fiscal rules are an important tool for enhancing the credibility of a country's macroeconomic management because they favor the transparency and predictability of fiscal policy. Even more than this, they represent a fiscal pact between the State and its citizens that involves tradeoffs, and even sacrifices, in pursuit of macroeconomic stability. They require public scrutiny and a robust political consensus to gain and maintain support over time. For this reason, fiscal rules should be transparent, simple, monitorable and easy

to communicate. These are considerations that should be carefully take into consideration when designing or adjusting a fiscal rule to ensure a robust dialogue with the public and enhance the sustainability of the reform.¹³

- **Well defined “escape clauses” to deal with shocks.** To be resilient and credible, a rules-based fiscal framework must be sufficiently flexible to cope with unpredictable events with significant fiscal implications, such as natural disasters, pandemics or other large shocks. But this flexibility must come primarily in the form of well-designed escape clauses that ensure that the integrity of the rule is not undermined. This is a critical aspect, as many countries have adopted fiscal rules with ill-defined escape clauses that leave too much scope for governmental discretion in triggering them and are vague about the resumption path. To ensure that the credibility of the rule is not undermined, the escape clause should define: (a) the type or types of shocks that allow for the escape clause to be triggered, which should be very limited; (b) the exact magnitude of the shock(s), with numerical measures; (c) clear guidelines for the interpretation of events; and (d) the path back to the fiscal rule, with clearly articulated timing and numerical targets. In the region for example, fiscal rules in Colombia, Grenada, Jamaica, Panama, and Peru have well-defined escape clauses that specify a narrow set of events that could trigger their use, that precisely define the magnitude of the shocks and the deviation allowed, and that establish the period and path of the adjustment in the aftermath of the shock.¹⁴ For Brazil, the spending ceiling rule allows for the utilization of “*créditos extraordinários*” (extraordinary budget allocations). But this leaves wide sco-

pe for government interventions since the rule does not clearly define the shocks covered (it is only necessary to declare public calamity) or the size of the government response to mitigate the impact of the shock. This may result in overspending in a moment of a crisis.

• **Progress in implementing structural fiscal reforms to support the fiscal rule.**

A fiscal rule is not a standalone tool. It works best when part of an integrated fiscal program of reforms that tackles the underlying sources of budgetary pressure. Without this, the risk of an uneven fiscal adjustment, typically cutting investment in favor of recurrent spending, is accentuated. It also raised the risk of failure to comply with the rule. Indeed, this scenario partly echoes the case of the “*teto de*

gastos”, which imposes strict spending controls that are difficult to manage without more progress in structural fiscal consolidation reforms. The effectiveness of a fiscal rule is further enhanced when adequate public financial management systems (data reliability, budget reporting systems, internal and external audit systems, public release of data and medium-term expenditures frameworks) are in place. The start of a new government mandate is an opportune time for a restarting the momentum around key fiscal reforms such as administrative reform to control the public sector wage bill, the wider roll-out of pension reform to states and municipalities, measures to increase the efficiency of public spending and reduce rigidities and built-in momentum from earmarking and indexation as discussed below.

Figure 11: Consideration for the selection of fiscal rules

Aspect	Budget balance rules	Structural balance rules	Debt rules	Expenditure rules	Revenue rules
Analytical aspects					
Effect on fiscal sustainability	Strong	Weak	Strong	Medium	Weak
Effect on output stabilization	Negative	Positive	Depending on the actual debt level	Positive, if includes an escape clause	Negative
Welfare and social insurance impacts	Negative	Positive	Negative	Positive	Negative
Type of shocks in which rule is more effective	Highly persistent and asymmetric	Transitory and symmetric	Highly persistent and asymmetric	Transitory and symmetric	Transitory and symmetric
Practical aspects					
Technical and institutional requirements	Low	High	Low	Low	Low
Simplicity and transparency, monitoring and communication	Easy	Difficult	Easy	Easy	Easy
Initial debt conditions					
High debt levels	Suitable	Less suitable	Suitable	Neutral or less suitable (on its own)	Less suitable

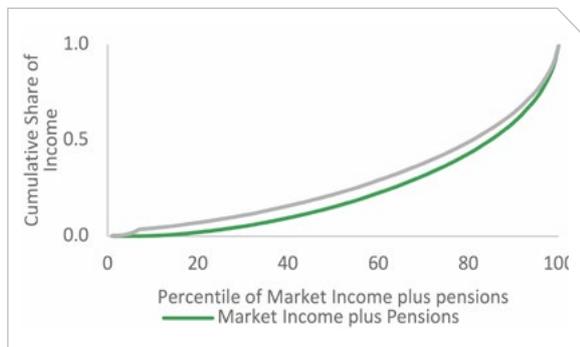
1.2 Making social transfers more efficient and progressive

Brazil's social protection programs already achieve many of the desirable outcomes of a well performing system. The flagship conditional cash transfer program (*Bolsa Familia* and later *Auxilio Brasil*) has been contributing to poverty reduction efforts over the last two decades. Jointly with *Programa Criança Feliz* - the flagship early childhood education program - and school feeding, these programs have promoted human capital through conditionalities on children's health and education. The system also provides a wide range of benefits to foster household resilience through unemployment insurance and pension programs. This has helped ensure that, on average, Brazil's fiscal policies contribute to lowering inequality since the estimated net cash position for the bottom 40 percent is improved due to the country's social protection programs (Figure 12).¹⁵

Still, the country's social protection programs could be more focused on the poor and less burdensome on the budget. As a new government takes seat, dealing with the increased costs of Brazil's flagship cash transfer program (*Bolsa Familia*,

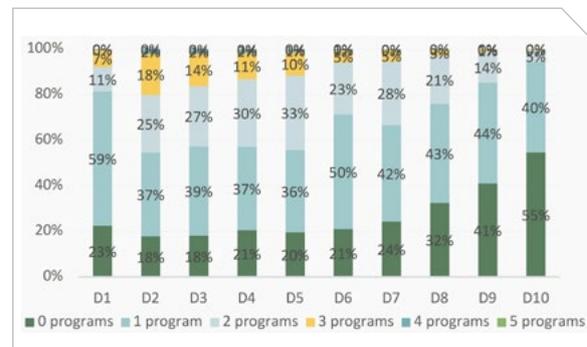
later renamed as *Auxilio Brasil*) is at the top of policy makers' minds. Keeping the costs of this program under control while maintaining—or even improving—its effectiveness will be critical, both to ensure the program's future sustainability and to limit its fiscal burden. Looking further ahead, there is much scope to mold a number of Brazil's social assistance scheme into a more poverty focused and affordable system. Brazil provides some form of income supplement to households in all sectors of the income distribution. However, this income support is delivered in a fragmented and overlapping way. The coexistence of numerous benefits with different targeting approaches creates duplications in some households and a lack of coverage in others. World Bank estimates¹⁶ 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, particularly in terms of targeting (Figure 13). Consolidating the various social protection programs is a policy agenda that would both enhance the performance of the social protection system whilst also offering fiscal gains. Some policy options for near term and medium-term challenges are presented below.

Figure 12: Concentration Curves: incomes before and after taking fiscal policies into account (pensions, direct taxes and transfers)



Source: World Bank Poverty and Equity Assessment (2022).

Figure 13: Share of the population in each decile, according to the number of benefits received by their households¹⁷



Source: World Bank (2018), using PNAD Continua data.
 Note: Deciles using Market Income plus Pensions per capita. All benefits are non-contributory

MAKING SOCIAL TRANSFERS MORE EFFICIENT AND PROGRESSIVE: POLICY OPTIONS

A more progressive and affordable *Auxilio Brasil/Bolsa Familia*

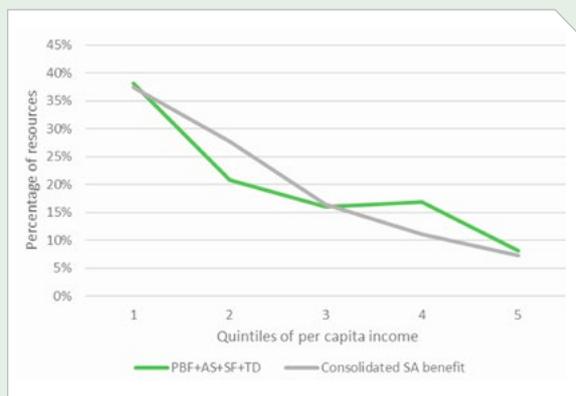
In the near term, the design of *Auxilio Brasil/Bolsa Familia* could be finetuned to offer a more fair and efficient use of resources. An important policy option for consideration in the near term is to adjust the conditional cash transfer program so that it provides benefits to individuals, as opposed to a flat benefit amount per family. This would eliminate the incentive to split households in order to receive more benefits currently observed. A potential design could offer BRL 150 per person and additional BRL 150 per children up to 17 years of age (or up to 21 if they are continuing education). The benefit received by the average family of four would reach more than BRL 600. Larger households would receive a higher total transfer, which would be fairer than the current arrangement that allows an individual to receive the same amount of financing as a large family. It would also be more progressive and further improve poverty outcomes since poorer households tend

to be larger in size and tend to hold more children. World Bank simulations of this approach suggest that it would offer savings. At an estimated cost of around BRL 144 billion, targeting *Auxilio Brasil/Bolsa Familia* benefits to individuals would cost around 17 percent less than the projected cost of the electoral proposition (BRL 173 billion).

In the medium term, Brazil has the opportunity to consolidate several social assistance programs into a single social transfer that refocuses around the needs of the most vulnerable Brazilians and saves costs. A policy option that Brazil could consider in the medium-term is to adopt a single social transfer that combines a universal flat benefit for children with a broadly targeted means-tested benefit to poor households,¹⁸ a “consolidated social assistance benefit.”¹⁹ There are several advantages to this approach. It would prevent overlaps between

the various programs and better align benefits with needs (Figure 14). It would also reduce the likely exclusion errors that arise as a result of the current fragmented system whilst bridging the existing gap in the coverage of children. For instance, estimates place the number of children that received more than one benefit at 2.5 million whereas 17 million children received no benefit at all, half of whom were in the bot-

Figure 14: Distribution of benefits by income level: the current system vs. a consolidated social assistance benefit



Source: World Bank – Social Protection for the Future Brazil. (forthcoming).

tom 30 percent of the income distribution.²⁰ The universal component would thus create a stable income stream to support children living in vulnerable households, regardless of the households' form of engagement in the labor market or of the frequent fluctuations of income that currently cause families to constantly rotate in and out of programs.²¹

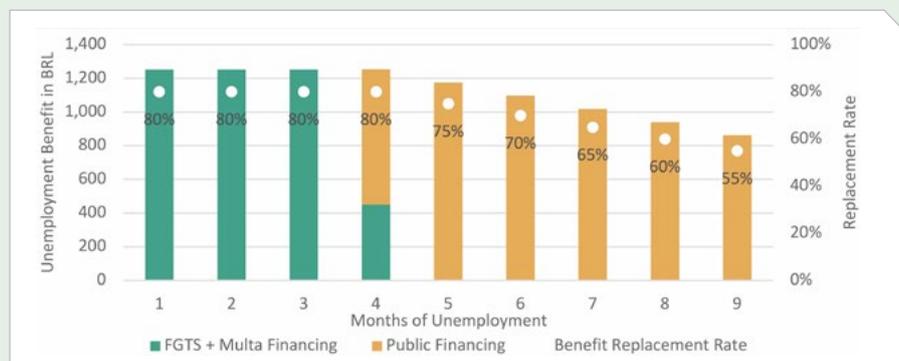
Many operational aspects of such a reform would require further planning and more analysis will be needed to make sure the reform provides the right incentives. But the broadening of the beneficiary base, especially among the vulnerable middle class, could also support the acceptance of reform. This approach would send a clear signal to most beneficiaries of *Abono Salarial*, *Salário Família*, and income tax deductions that most of them would get something from the new program (either because they are low earners, or because they have children) and with less risk of being required to exit the program.

Optimizing unemployment insurance schemes

To increase the efficiency of unemployment protection programs, unemployment insurance (*Seguro Desemprego*) and individual unemployment insurance savings accounts (“*Fundo de Garantia do Tempo de Serviço*” - FGTS) should be coordinated with each other and with other services. Evidence based on international experience (World Bank, 2018) points to the adoption of reforms that enable individual savings accumulated in the FGTS to be used as the first line of financing for unemployment claims. Only once the worker's funds in the FGTS are exhausted would the worker receive funds

from unemployment insurance.²² In this way, workers would receive less than they earned while working (thus removing perverse incentives), payout periods could be extended (see the example in Figure 15), and individual savings would be used up before any payouts would be given from the public risk pool. In addition, the reform should include allowing FGTS savings to earn market interest rates and the transfer of the statutory ‘*multas*’ to the (*Fundo de Amparo ao Trabalhador* or FAT), to further eliminate remaining disincentives to participate and job-search. This reform could result in fiscal savings whilst providing improved protection to workers.

Figure 15: Unemployment payouts if unemployment insurance (*Seguro Desemprego*) and individual savings accounts (FGTS) were coordinated



Source: World Bank – Social Protection for the Future Brazil. (forthcoming).

Note: Unemployment benefit for dismissed worker with a pre-unemployment wage equal to 1.5 of the minimum wage and job tenure of 24 months.

Optimizing (non-public sector) pension schemes

Considering the large fiscal costs and the major sustainability challenges facing the private pension system, reform of the minimum pension benefit will be vital, coupled with compensating measures in the provision of social pensions. Brazil currently provides a “minimum benefit guarantee” for most old age residents through several programs: (i) the guaranteed minimum pension; (ii) the (de facto non-contributory) rural pension; and (iii) the “*Benefício de Prestação Continuada*” (BPC) social pension. We recommend a series of design changes to all three benefits to improve their equity and consistency and to increase their efficiency:

- **Pro-rating of the minimum pension to the number of years that individuals have contributed to the system during their working lives would be fairer.** The minimum pension amount is set in the Brazilian constitution as equivalent to the minimum wage, but currently only those who make at least 15 years of contributions receive this benefit. The proposed reform

would remove the 15-year minimum contribution condition, thus no longer penalizing those with shorter work histories.²³ At the same time, the benefit would no longer have its currently high floor and, instead, be prorated to years of contributions. A worker with a full contribution history (35 years for men at the moment) would continue to qualify for a full minimum pension, while one with 5 years of contributions would receive 5/35 of that amount. Only the contributory part of this benefit would be extendable to survivors. This reform would make the subsidy component of the minimum pension guarantee fairer. For those who did not qualify for the full pension, the BPC benefit could be used to complement the income gap, as discussed below.

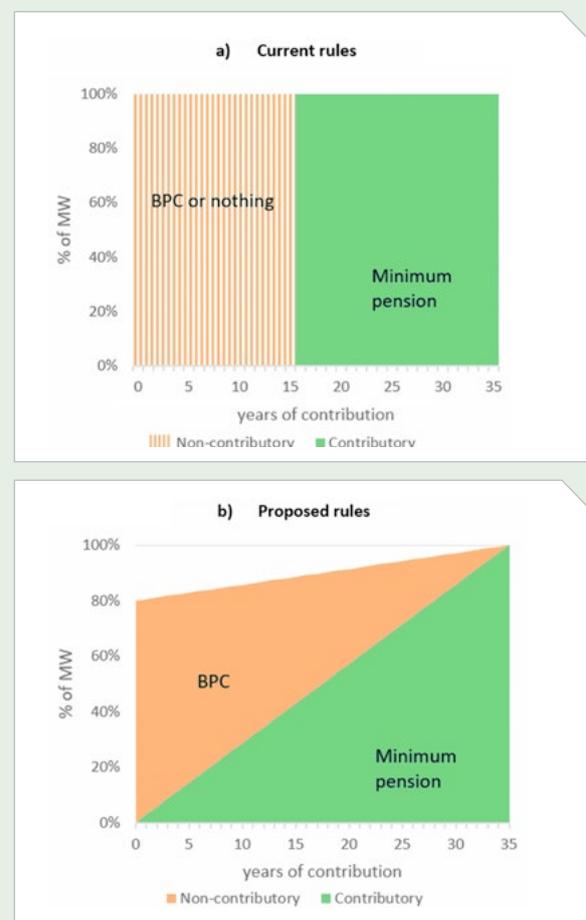
- **The BPC could be coordinated with the newly designed contributory pension guarantee to ensure that all elderly people remain out of poverty.** Consistent with usual practice in most countries, the BPC benefit per person could be gradually reduced in real terms to become lower than the minimum contributory pension, for example by decoupling its in-

dexation from the minimum wage until the desired difference between the minimum pension and BPC is reached. In addition, for those elderly people who qualify for only a portion of the contributory minimum pension guarantee because of their short contributory history, the BPC would complement their income. For example, a person could receive 5/35 of contributory minimum pension guarantee and 30/35 of BPC. For those elderly people with no contributory pension (such as those who have worked in the informal sector all their lives), the BPC would be paid in full (Figure 16). This design would *de facto* make the minimum old age protection universal and eliminate the means test currently applied to the BPC. This universal approach would not be overly costly, since most elderly people already receive some benefit now but would help to ease the political challenge of a reform and reduce administrative burden of means-testing. The income tax reforms that we propose below make it possible for the government to claw back part of the benefit paid to higher earners.

The savings generated by this reform would enhance fiscal sustainability of the system without increasing poverty. With the aging of the population, the demand on mandatory entitlements in pensions would otherwise continue to rise, so reforms like this will be essential to avoid crowding out other less protected and more pro-poor expenditures. As the minimum pension accounts for a large share of pension benefits granted annually, the reform would have a sizable fiscal impact. Under our proposal, if the implicit rate of return of contributory pension is held at 4 to 6 percent, not only for those with a complete work career of 35 years but also for those with partial career (by prorating the minimum pension amount),

the total savings on current contributory pension spending would be 36 percent. Even accounting for increased expenditure on the BPC, the total system savings would still be around 30 percent of all current spending on minimum benefits, or BRL 80 billion per year (0.9 percent of GDP).²⁴ To put this into perspective, expenditure on the entire BPC program is currently BRL 35 billion per year. Thus, the proposed reform would also provide the elderly with secure protection against poverty and improve incentives to contribute, increasing fairness.

Figure 16: Consolidating the components of old-age pensions (BPC and rural pension) and the prorated minimum contributory pension guarantee



Source: World Bank – Social Protection for the Future Brazil. (forthcoming).

1.3 Making taxation more progressive

Brazil's tax system, which currently contributes little to reducing inequality, offers opportunities for shifting to more progressive taxation. Brazil's tax burden departs from international standards in that it is heavily concentrated on taxes on goods and services and on payroll, which respectively account for 43 and 24 percent of the tax burden.²⁵ This regressive structure affects the poorest given the share of their income that goes to consumption. At the same time, taxes on personal income and dividends, which could be used to compensate this effect

by setting higher rates for the rich, represent a small share in total tax revenue. Special tax regimes such as SIMPLES for small firms and for MEI independent workers help high-earners to avoid taxes by shifting income from the personal to the corporate tax base. This phenomenon, called "*pejotização*" (from "PJ", or *Pessoa Jurídica*), not only harms the ability of the system to fight inequality, but also reduces the size of the tax base.²⁶ A number of reforms could help to make Brazil's tax system more progressive, thus leveraging its contribution to reducing inequality. We highlight some policy options below.

MAKING TAXATION MORE PROGRESSIVE: POLICY OPTIONS

Increasing the progressivity of income taxation

Policy makers have the opportunity of harmonizing income taxation across different tax bases – personal, capital and corporate income – to even out the tax burden. This could be done by reducing the difference in the costs of procuring labor from a dependent wage employee and a self-employed worker mitigating the "*pejotização*" phenomenon. Another important measure would be aligning taxes across different types of incomes (dividends/profits, pensions, wages, and rents). These reforms could be accompanied by steps to increase the overall progressivity of the personal income taxation scale. These proposed changes would reduce the cost of formal dependent work and, in general, would lower the differential in taxation levels between forms of work, particularly for high earners who are most capable of exploiting arbitrage opportunities.

Brazil could align personal income taxes with international good practices by removing the current exemptions for dividends and pension incomes. In Brazil, dividends distributed to individual shareholders are exempt from income taxes, which is a global anomaly. This further incentivizes individuals to register themselves as firms. A second group that is treated differently than dependent workers are pensioners. Income tax exemptions on a portion of the income from pensions currently costs the government more than BRL 70 billion per year. Both changes would increase the neutrality of income taxes and would help to finance a reduction in the cost of labor, thus stimulating the creation of formal employment in formal firms.

Eliminating regressive and inefficient tax exemptions

Rationalizing tax exemptions could also significantly contribute to the fiscal adjustment while reducing distortions, and increasing progressivity.

Overall, tax exemptions stood at an estimated BRL 320 billion (or 3.3 percent of GDP) in 2022,²⁷ representing a significant cost to public accounts. Eliminating or reducing tax exemptions that benefit mostly the richest segments of society or that have been proven to be inefficient as instruments of industrial policy would contribute to making fiscal policy more efficient and equitable. Several of tax exemption schemes have these characteristics. For example, the *Desoneração da Folha*, a labor market pro-

gram has shown to have limited impact on job creation, with a cost of almost BRL 10 billion in 2019.²⁸ Similarly, several programs designed to promote innovation provide fiscal incentives that have not stimulated technological upgrading or innovative R&D (as discussed in section 2.3 below). Other exemptions such as the those granted to private hospitals, income tax deductions for private health plans and private education spending are also regressive. A comprehensive review of tax exemptions, with a view to identifying and rationalizing those with a low contribution to is an important policy agenda for reconciling fiscal constraints with Brazil's development needs.

More progressive taxation through VAT reform

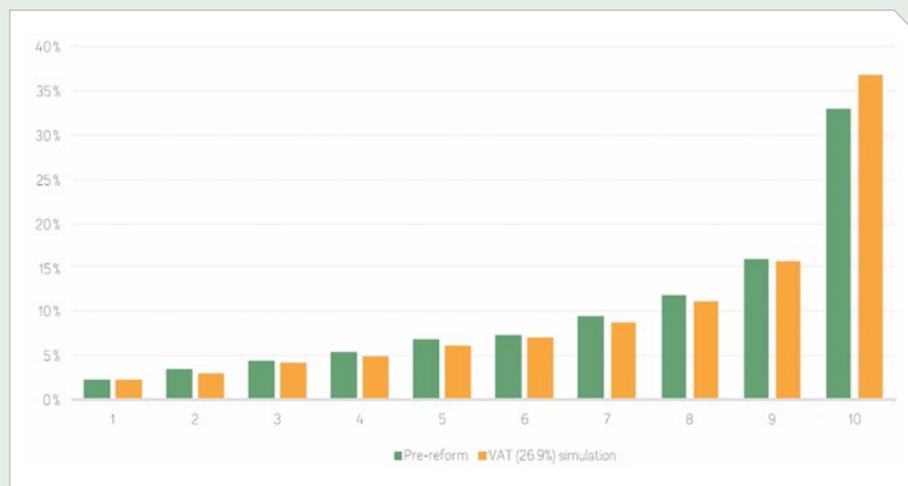
Further gains in fiscal progressivity can be made through reforms that consolidate and simplify indirect taxation.

Indirect taxation reform is critical for Brazil's productivity and competitiveness agenda, as discussed in section 2.2 below. But indirect taxation reform is also important for making taxation more progressive since these taxes take up between 23 and 45 percent of the income of the poorest households. Brazil can take the opportunity to rebalance the distribution of this tax burden amongst its population whilst simplifying and its indirect taxation framework, thus combining two important fiscal policy agenda.

World Bank estimates show that a flat indirect tax rate could contribute to reducing inequality, both horizontally and vertically.

For instance, our estimates suggest that a reform introducing a flat 26.9 percent VAT would raise the share of taxes paid by the richest households when compared with the status quo. Under the current system, the poorest decile contributes about 2.4 percent of total indirect taxes while the richest decile contributes about 33 percent (Figure 17:). After the reform, the poorest decile contribution would fall to 2.2 percent and the richest decile contribution would increase to 36.9 percent.

Figure 17: Share of Total Indirect Taxes Paid by each Income Decile—Status Quo versus VAT Simulation



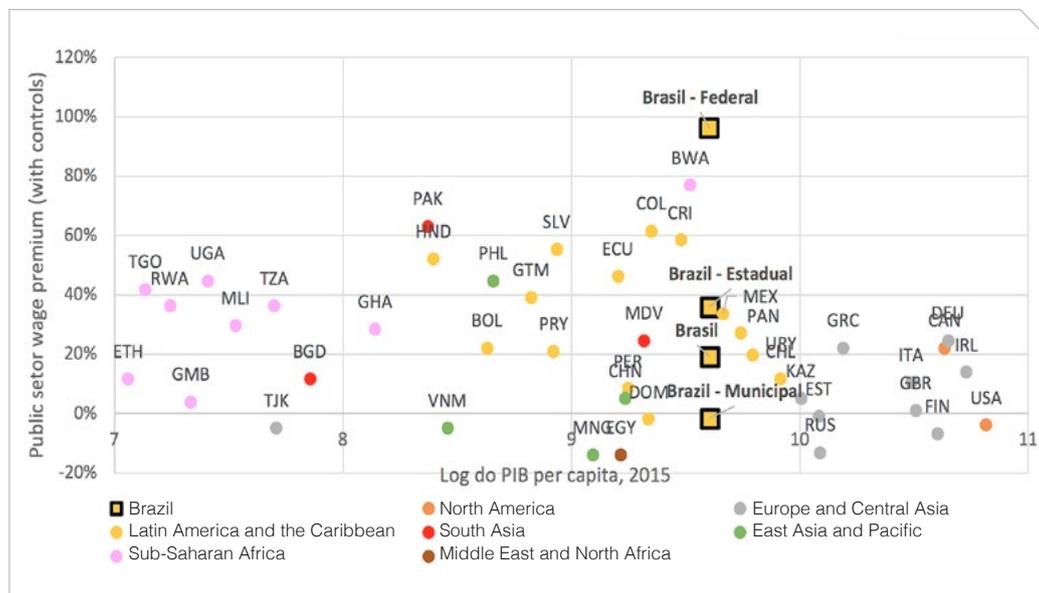
Source: World Bank Poverty and Equity Assessment (2022)

1.4 Controlling public sector pay and pensions

Maintaining control of the civil service wage bill, with a focus on the public sector wage premium, is a key pillar of a sustainable fiscal plan. Brazil spent around 9 percent of GDP on wages and salaries of active public servants in 2021, down from around 13 percent of GDP in 2015. This is only slightly above the average for Latin America (8.5 percent of GDP in 2020) and OECD countries (8.4 percent of GDP in 2020). While the size of the Brazilian civil service is not large by international standards, the federal government wage premium is an important contributor to the size of

the wage bill. According to World Bank (2019)²⁹, the federal wage premium was estimated at 96 percent, whilst the average wage premium of the states was estimated at 36 percent (Figure 18). Numerous careers have high initial wages³⁰ and allow employees to reach the top salary in a relatively short time, making it difficult to control the wage bill. In addition, States and municipalities generally follow federal public administration HR standards, but have also introduced many different salary tables and specific progression rules for each career, with incentives³¹ generally more favorable than the private sector.

Figure 18: Public sector wage premium: Brazil in comparison



Source: Worldwide Bureaucracy Indicators (World Bank, 2019)

Managing pressures stemming from the civil service pension bill is equally as critical, especially at the sub-national level. The federal pension reform of 2019 was a key step toward more sustainable subnational pension systems, although it has not been equally rolled out in all States and municipalities. Gradual increases in effective retirement ages were a cornerstone of this reform, along with the taxation of benefits above the minimum wage, and revision of survivor benefit rules, amongst others. 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. The impact of the 2019 pension reform on pu-

blic finances will be gradual given its long transition period and will not alone prevent further increases in the pension deficit. Because of this, additional measures to manage medium-term pension pressures will be needed. In the near term, policy focus should be on advancing the pace and depth of subnational pension reforms initiated at the federal level in 2019, given the uneven pace and breadth of their adoption by States and municipalities to date. Investments in digitalization of records, advancements in monitoring and control of pension assignment and payment procedures, and integration of human resource and pension policies will be critical in order to modernize and prepare subnational pension schemes for the future.

CONTROLLING PUBLIC SECTOR PAY AND PENSIONS: POLICY OPTIONS

Implementing an administrative reform to reduce the wage premium and improve human resource management

Brazil has a renewed opportunity to adopt an administrative reform that delivers savings in personnel expenditure by reducing wage premia. Policy options include: (i) restricting wage increases to reduce the wage premiums over time, (ii) career reforms such that the interval for progressions increases while the wage adjustment between progressions decreases; and (iii) decreasing replacement rates depending on the sector. An increase in the interval for progressions, combined with decreases in wage adjustments linked to progression, is a particularly important policy for sectors and States where salaries intervals between levels of the careers are too narrow and where pay adjustments are large. High initial wages in many careers³² also contribute to the high wage premium of the public sector.³³ A policy option to tackle this is reducing entry level salaries for new entrants and thus gradually shifting remuneration levels down and increasing returns to experience as older cohorts of civil servants retire.

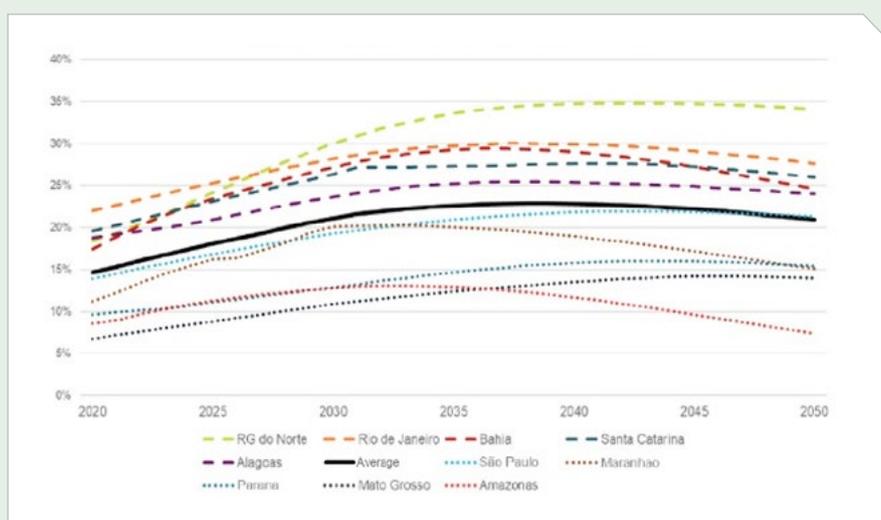
The administrative reform should also strengthen human resources management policies to generate efficiencies while promoting improved performance. The career structure of the federal and State governments is fragmented and rigid, which does not allow for much mobility, either vertical or horizontal. At the same time, it generates duplication and overlap across job categories making it difficult to base hiring decisions on strategic planning. This means that going forwards, modernizing the public sector's human resource systems and adopting digital management solutions will generate efficiencies from improved work force management. The introduction of more rigorous performance evaluations would link salary increases to gains in performance and incentivize junior civil servants to strive for results.

Reducing the pension deficit: a focus on subnational pension schemes

In the short term, the fiscal sustainability of subnational systems remains the main concern of the overall pension system, highlighting the need for tighter pension reforms in States and municipalities. While the 2019 federal pension reform required that States incorporate some pension reform measures, the most fiscally important reforms remained optional for subnational entities.³⁴ Subnational governments are, in principle, allowed to strengthen the changes in pension rule parameters beyond those approved for the federal civil servant scheme. But so far, most first-mover States have opted to copy or weaken the pension reform package adopted at the federal level, keeping their pension deficit on an unsustainable trajectory (Figure 19). Increasing the num-

ber of States and municipalities that adopt a comprehensive pension reform will be essential if Brazil is to benefit more fully in the long-term. Moreover, very few States have consolidated the management of pensions from all their government branches into a single management unit, as mandated by 2019 federal reform. Some implementation delays have been due to complications in integrating different IT solutions now used by separate government branches to assign and monitor benefit payments. However, even States making steps toward integration of pension sub-schemes tend to take a narrow view of the task, and rarely attempt a more ambitious integration of human resource and pension systems.³⁵ This creates opportunities to increase efficiencies through the use of integrated IT systems and audits.

Figure 19: Pension deficit projection using selected State level RPPS (% of Net Current Revenue)



Source: World Bank – Social Protection for the Future Brazil. (forthcoming).

2

**BUILDING
OPPORTUNITIES
THROUGH
PRODUCTIVITY-
LED GROWTH**



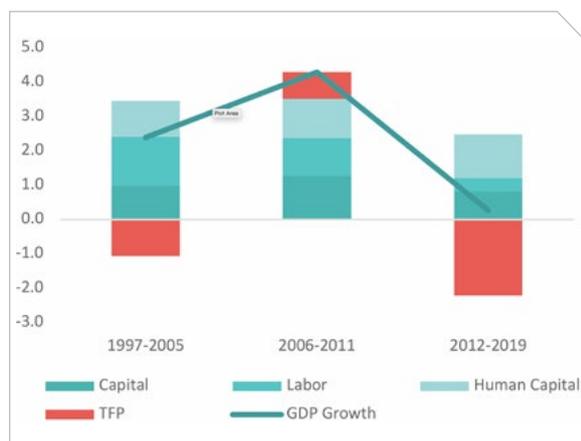
2. Building opportunities through productivity- led growth

Low rates of productivity growth continue to hamper Brazil's potential for growth.³⁶ When the commodity price super-cycle ended in 2015, Brazil's economy slid back into a prolonged period of weakness pointing out at its insufficient competitiveness. The difficulty to recover from the two major subsequent crisis also revealed its insufficient resilience.³⁷ Annual per capita GDP growth averaged 0.53 percent between 2011-2019, much below that of comparable countries (Figure 1). Over this period, economic output benefited from factor accumulation: an expansion in the labor force, an increased supply of skills, and the accumulation of capital.³⁸ But negative productivity growth over the same period all but eliminated these gains (Figure 20) and productivity remained low, even by Latin America's lackluster standards (Figure 21). This contributed to keeping unemployment levels high and depressed household consumption, which grew by just 0.2 percent each year between 2011 and 2021.



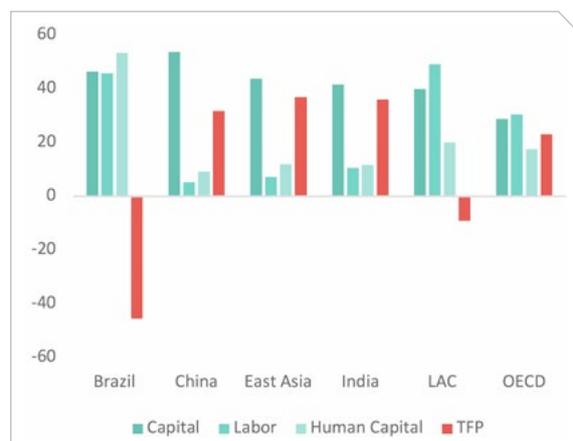
Pivoting the economic model on to a more productive and dynamic trajectory is now even more urgent than before if Brazil is to create lasting opportunities for its population. Although there is still some potential for growth through capital accumulation and higher labor force participation, productivity gains will increasingly need to sustain growth. Faster growth is also essential for a more sustainable fiscal outlook. In this section, we highlight four policy areas for stimulating productivity and growth over the coming years. First, we emphasize the importance of (i) more open markets and trade to sharpen competition, increase investment and facilitate access to modern inputs and technologies. Measures to increase the competitiveness of the Brazilian economy are essential alongside this agenda. For this, we highlight policy options for (ii) reducing the “*Custo Brasil*”, (iii) increasing innovation and technological adoption, and (iv) modernizing infrastructure asset and management.

Figure 20: Productivity growth has been negative on average over the past decade. (factor growth contribution, selected periods)



Source: World Bank Brazil 2042 Reports (forthcoming) using Penn World Tables 10.0.

Figure 21: Brazil's productivity growth is low among its peers (average annual contribution to growth, 1997-2019)



Source: World Bank Brazil 2042 Reports (forthcoming) using Penn World Tables 10.0.

2.1 Increasing integration in global markets through trade

Brazil is in position to realize significant gains from a more competitive and open economy once again, helping the country in becoming more productive and in gaining position in the global market. From the late 1980s to the mid-1990s, Brazil liberalized its trade largely through unilateral reductions in tariffs, with substantial positive impacts on productivity growth and output per worker.³⁹ In the manufacturing sector, firms were thus able to acquire more advanced equipment and components from other countries.⁴⁰ Trade liberalization also expanded markets for national firms, while exposing them to more competition (in both the export market and the domestic market), stimulating innovation and efficiency and spurring productivity growth. More recent progress in the trade agen-

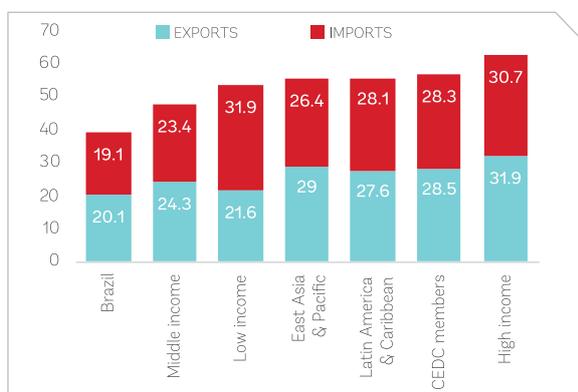
da to advance trade agreements, strengthen the anti-dumping rules and improving trade facilitation offers a useful base for future reforms.

The main challenges ahead are in reducing both trade tariffs and nontariff measures (NTMs) and beginning to lower barriers to trade in services. Brazil's tariffs are still high, and the country is less open to trade than its peers (Figure 22 and Figure 23). Barriers to trade in services and high NTMs set additional constraints to trade. Services account for only 13 percent of Brazil's gross exports, a low shared when compared with 25 and 15 for the world and Latin American countries, respectively. This is reflected in its underperformance in the OECD Services Trade Restrictiveness Index, which shows a be-

low average score in 18 of 22 sectors in 2020.⁴¹ 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

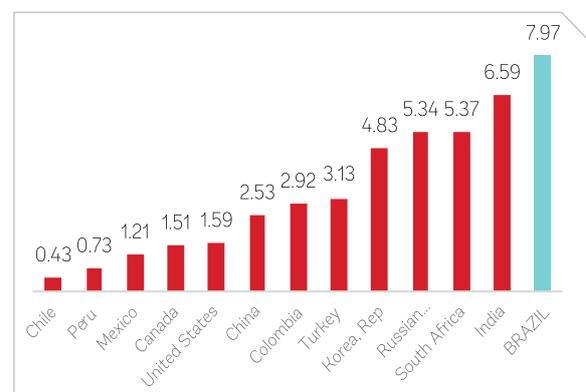
phytosanitary measures, and 23 percent for quantity controls, well above world averages. Tackling these barriers would place Brazil in a position to make significant gains in growth. We highlight some priority measures below.

Figure 22: Exports and Imports as a share of GDP (2021)



Source: World Development Indicators

Figure 23: Applied tariff rate in Brazil and comparator countries, weighted average, 2019⁴²



Source: World Bank staff using WITS from COMTRADE and TRAINS data.

INCREASING INTEGRATION IN REGIONAL AND GLOBAL MARKETS THROUGH TRADE : POLICY OPTIONS

Maintaining recent tariff reductions.

Brazil recently reduced import tariffs for a wide range of products (covering about 80 percent of tariff lines with nonzero duty rates), with an average cut of 10 percent. This is an extensive reform in agreement with other Mercosul partners that lowers the Mercosul common external tariff in a horizontal way for the first time since its insertion in 1995. These reductions also make permanent temporary reductions by Brazil set to expire by the end of 2023.⁴³ These measures make imports of capital goods and ICT goods cheaper for consumers and producers, increasing domestic competition and overall competitiveness. Another benefit from the reduced tariffs is lower logistics and civil construction costs

through reductions in the costs of cranes, excavators, forklifts, locomotives, and containers, among other items.

Advancing regional integration and trade negotiations with the EU and other economies.

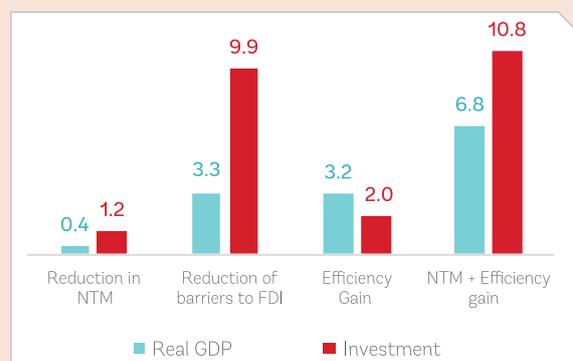
The recently negotiated (but not yet ratified) trade agreement between Mercosul and the European Union provides for greater access of Mercosul countries to EU markets, especially for agricultural commodities, and greater access for EU manufactured goods to Mercosul countries. World Bank simulations suggest that the actual negotiated European Union–Mercosul agreement, including liberalization of tariffs and NTMs, could increase GDP by 6.7 percent by 2040, thus

raising economic performance while fostering Brazil's integration into the global economy. Brazil is also negotiating new trade agreements with Canada, Republic of Korea, and Singapore. These new agreements are deeper than previous ones. Increasing the momentum on securing these trade deals, including trade deals with other Latin America economies will be a critical part of the policy agenda for increasing productivity and growth.

Reducing barriers to cross border trade and investment in services.⁴⁴

Brazil has ample policy space to unilaterally open up to services trade in the context of Mercosur, where a common external tariff is not a constraint. Its factor endowments suggest it could be well-suited for the export of new modern services (e.g., computer and IT-enabled) if key constraints are addressed. Brazil also would benefit from negotiating 'deep provisions' in existing and future preferential trade agreements with new partners. These commitments in the areas of services can be an important driver and institutional enforcement tool for reforms that increase services exports. Reducing restrictions on foreign direct investment (FDI) in modern services can enhance inflows of technology and capital into activities such as ICT, finance, and business services. These services are not only exportable, but they are also intermediate inputs into manufacturing and agriculture. World Bank simulations find potential sizable gains in output and investment from reducing restrictions to trade and foreign direct investment in services. The gains from liberalization of service sectors are distributed across all sectors of the economy: agriculture, manufacturing, services, and natural resources. Manufacturing, which depends the most on services as inputs, experiences important gains (Figure 24).

Figure 24: Brazil's estimated total gains from trade in services liberalization by 2035 (Percentage change from baseline)



Source: Estrades 2021.

Note: NTM is nontariff measures; FDI is foreign direct investment.

Implementing horizontal and sector-specific productivity-enhancing initiatives.

In order to realize the potential gains from trade Brazil will need to implement horizontal productivity enhancing initiatives discussed in this section of the note, including an open, investment-friendly, transparent, and sound regulatory environment and tax simplification. Moreover, the service sector productivity growth will increase the need for skilled labor. Thus, build up the human capital by investing in both current and future workforce through practical, applied, and short-skill upgrades and facilitating the entry of specialized high skilled foreign worker would alleviate short run skills constraints but also open room for a sustainable flow of skilled labor in the future.

Supporting workers in navigating labor reallocation.

While trade liberalization is expected to benefit several sectors of the economy, a potential negative effect is the displacement of workers, especially among the unskilled, in regions and sectors facing larger shocks due to higher competition. This job displacement not only affects the tradable sectors subject to more intense competition

but may also have negative spillovers to non-tradable sectors. Thus, an integral trade liberalization strategy must include policies that facilitate labor reallocation. For instance, there is evidence of positive effects on earnings and re-employment from the extension of unemployment insurance coupled with training in the US.⁴⁵ Other active labor market policies (discussed in section 3.2 of this note)

can also have positive impacts in the medium-term. Currently, Brazil's public employment services and labor market programs are not well suited for supporting job-to-job transitions during the structural transformation. Meanwhile, informal workers are not able to be protected by the *Seguro de Desemprego*. Strengthening these tools will help the country take full advantage of trade liberalization.

2.2 Improving the climate for business

The high cost of doing business remains an important challenge for the country. Even though Brazil has worked to improve its business environment, reduce red tape and encourage entrepreneurship in the past 15 years, significant hurdles remain. A 2019 government study estimated that doing business costs companies BRL 1.5 trillion (US\$ 283bn, or 22 percent of GDP) more in Brazil than in OECD economies.⁴⁶ In 2019, Brazil ranked 71st out of 141 economies in the World Economic Forum's Global Competitiveness Index. "*Custo Brasil*", a term that refers to the elevated cost of doing business in Brazil compared to many of its competitors, is particularly burdensome for small companies, which play an increasingly critical role in the Brazilian economy.

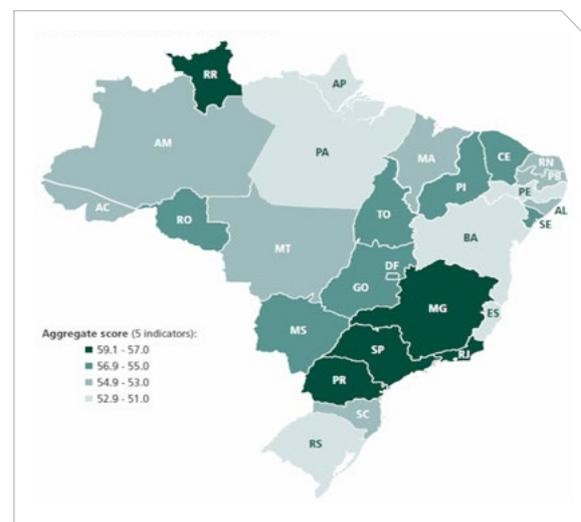
Brazil's tax system is an important contributor to the "*Custo Brasil*". In 2021, the tax burden in Brazil was around 33.9 percent of GDP, one of the highest among deve-

loping economies, but a little below the average of OECD countries. The rules and institutions that govern the collection of these taxes are the source of several inefficiencies, hampering the country's growth prospects. Brazil has one of the most complex tax systems in the world, with over 80 different taxes managed by different levels of government and a multitude of tax benefits and special regimes (World Bank, 2018). The complexity of Brazil's tax system creates high compliance costs. The vast amount of taxes, with rates that vary according to region and sector, the proliferation of special regimes and the constant changes in legislation lead firms to spend a lot of time and money on tax planning. As an illustration, Brazilian taxpayers spend four times as much time to comply with tax obligations as the average of Latin American countries and eight times as much as OECD average (World Bank, 2018). Moreover, the system imposes a high amount of uncertainty on taxpayers and extensive resources are spent in judicial disputes.

The inefficiencies caused by the indirect taxation framework are of particular concern.⁴⁷ 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, using several industrial inputs that embed a high amount of taxes in their cost. In turn, it might benefit firms in the primary sector, which need fewer inputs for their final products. ICMS tax⁴⁸ rules are also at the core of a “fiscal war” among the states, harming States’ public revenues and fiscal balances and increasing the misallocation of production factors. Contrary to international standards, the ICMS tax follows the origin principle, such that tax revenues go to the state where the product was produced. Since states have freedom to set ICMS rates, this creates an incentive for them to offer tax discounts in order to attract mobile economic

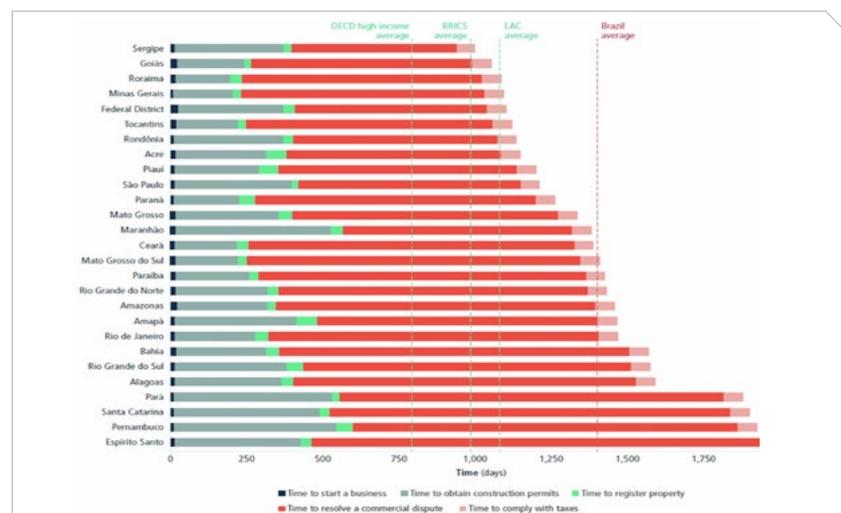
activities into their borders. This “fiscal war” is an extremely distortive instrument of regional development, as firms will choose their location based on tax benefits instead of going to the state where production will be more efficient.

Figure 26: Southeastern and Central-Western states overall perform better on the business environment



Source: Estrades 2021.
Note: NTM is nontariff measures; FDI is foreign direct investment.

Figure 25: Red tape eats up productive hours from businesses throughout Brazil



Source: Estrades 2021.
Note: NTM is nontariff measures; FDI is foreign direct investment.

IMPROVING THE CLIMATE FOR BUSINESS AND INVESTMENT: POLICY OPTIONS

Improving the investment climate

Examples of good business environment practices are found in States from all regions, income levels, and sizes. Among 27 locations studied by the World Bank's Sub-national doing business report (2021), it is easiest to: start a business in Pará; obtain building permits in Roraima; register a property transfer in São Paulo; comply with taxes in Espírito Santo; and resolve a commercial dispute in Sergipe. These results highlight an opportunity for local policy makers around the country to learn from each other and adopt in-country examples of good practices, taking steps to increase competitiveness and improve Brazil's overall business environment.

Replicating good practices that have been proven successful within the Brazilian territory is a first step. For example, the state of Maranhão, where entrepreneurs wait for almost one and a half years for their building permits, could look to Fortaleza, which has adopted fast-track approvals to simplify and expedite the building licensing process. Through the Fortaleza Online one-stop shop, a firm can obtain a construction license in 10 days, much faster than the national average of 118 days. Likewise, in the area of registering property, Pará could serve as an inspiration for reforms in neighboring Amapá, where it takes three times as long to transfer a property (68 days). Adopting existing local good practices would only be the first step. These improvements will benefit from the adoption of other structural reforms guided by international best practices.

Adopting a comprehensive reform agenda, championed by a dedicated actor, working across federal agencies, States and cities, is another key step in a federal setting. During the past decades, large federal countries like India and Mexico have created national agencies dedicated to streamlining business processes and improving coordination. In Brazil, the current Special Secretariat for State Modernization (*Secretaria Especial de Modernização do Estado*, SEME) has a strategic role in this regard by coordinating reforms with federal, State, and municipal agencies. Going forward, broadening the focus of SEME beyond the two main business cities: São Paulo and Rio de Janeiro, will be critical. A coordinated, nationwide reform agenda, pulling together the relevant agencies and committing them to enforceable and actionable goals, could greatly benefit business activities beyond Brazil's largest cities. The bottlenecks and good practices identified by Subnational Doing Business in Brazil 2021, among others, can guide authorities to identify areas for reform and existing good practices within the country.

Mexico provides an example of how to leverage competition among States and promote peer learning as strategies to incentivize reforms. Championed by the National Regulatory Improvement Commission (*Comisión Nacional de Mejora Regulatoria*, CONAMER), Mexico's national reform agenda included the creation of a fund—the *Fondo de Apoyo para la Micro, Pequeña y Mediana Empresa* (the micro, small, and medium enterprise support fund)—to provide fi-

nancing to foster competition for growth, productivity, and innovation. The fund advertises online each year for proposals, with funding available to private firms, State and municipal governments, and the judiciary. It supports regulatory improvement projects at the three levels of government to facilitate regulatory

compliance, increase formalization, and reduce costs, time, and cumbersome procedures for companies. To track results, CONAMER periodically carried out subnational Doing Business studies and organized biannual meetings for local officials to learn about good practices and connect to peers from other States.

Adopting a simpler and more efficient tax system

There is widespread consensus about the need to reform consumption taxation in Brazil, replacing several indirect taxes for a standard value added tax. The new tax should be non-cumulative, with a broader tax base that includes intangible goods and financial services. Refunds for tax credits should be provided in reasonable time. Moreover, the number of tax rates should be limited, avoiding exemptions and special regimes that impose extensive compliance costs for firms. Finally, the tax should follow the destination principle, eliminating incentives for “fiscal war” between states and municipalities (Orair and Gobetti, 2019). In this case, tax revenues would go to the state where the product is consumed, such that reducing ICMS rates would not draw any new business.

Currently, there are two proposals in congress that go in this direction.⁴⁹

The Constitutional Amendment Proposal PEC 45/2019, elaborated at *Câmara dos Deputados*, aims to replace five indirect taxes with a single VAT called *Imposto sobre Bens e Serviços* (IBS). It would follow the destination principle and have a broader tax base that exempts only investments and exports. There would be a ten-year transition period, when the IBS rate would increase gradually, while tax rates for the other indirect taxes would slowly be reduced to zero. Another option is the Constitutional Amendment Proposal PEC 110/2019, under discussion in the Senate, that replaces nine existing taxes, for a state administered IBS, with the same goal of simplifying the system, as *Câmara’s* proposal. It would also introduce a federally administered excise tax applied to oil and derivatives, tobacco products, alcohol and specific vehicles.

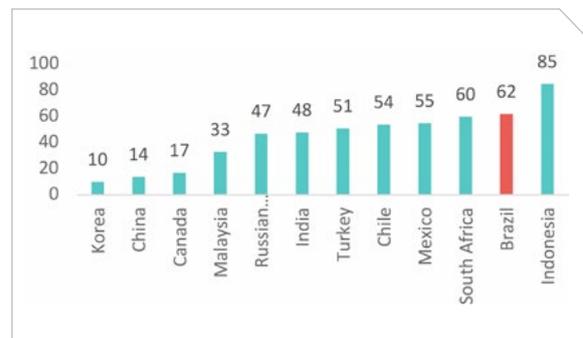
2.3 Promoting innovation and technological adoption

Although recent progress has been made, Brazil ranks below most peers when it comes to innovation. A number of recent measures have moved Brazil's innovation agenda in the right direction. Yet, Brazil still exhibits substantial lags against other comparator countries in the global innovation index and in terms of key inputs to innovation such as the as the number of researchers and engineers as a proportion of the labor force (Figure 27: and Figure 28:).

Underperforming innovation policies are part of the reason. Brazil has implemented several innovation policies, most of them involving fiscal incentives, with limited impact on technological adoption and innovation.⁵⁰ Several studies show that the incentives for innovation and research and development (R&D) adopted in the past have not been effective. For example, the informatics law has not stimulated productivity-enhancing R&D.⁵¹ Although the incentives have induced some global 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 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 favors incumbent firms, it may have slowed the reallocation of resources from low-growth incumbents to high-growth young firms.

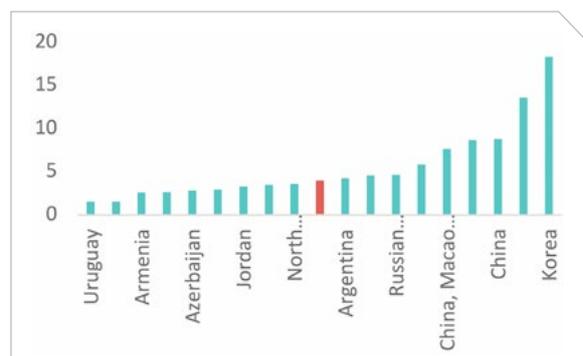
More competition, openness to trade and a better investment climate (discussed above) will help stimulate innovation, but an additional focus on innovation policies will help Brazil access even higher returns and raise productivity.⁵² We propose some key policy options for the innovation agenda below.

Figure 27: Brazil ranks below most peers on the Global Innovation Index, 2020...



Source: World Bank – Brazil 2042 (forthcoming) based on data from WIPO, Cornell University, and INSEAD (2020).

Figure 28:... And in number of researchers, 2018
Researchers per thousand labor force participants



Source: World Bank – Brazil 2042 (forthcoming) based on data from UNESCO Institute of Statistics.

INNOVATION TECHNOLOGICAL ADOPTION: POLICY OPTIONS

Revamping the current underperforming innovation policies. Although around 4.5 percent of GDP (2015) has been spent on policies and programs to support business (including tax expenditures, subsidized credits, and direct spending), evidence suggests the most programs are not able to either increase productivity or create jobs. For instance, the PSI investment support program (*Programa de Sustentação do Investimento*) that provided subsidized credit for capital goods investments and the *Inovar-Auto* program which shields the auto industries by rising import tariffs has not been proven to result in production or employment gains. Also, while the R&D incentives of the *Lei do Bem* showed a positive impact on R&D incentives its performance is significantly below what would have been expected due to lack of coverage – reaching only incumbent old large firms. At the same time, the current industrial policy that provides tax exemptions and protection against foreign competition tend favor incumbent large firms, creating conditions for inefficient firms to maintain their position (and market share) without creating pressure for technological adoption or innovation incentives through competition. A detailed review of the current innovation policies and incentives would help policy makers reorient resources towards more effective programs and remove policies that distort markets.

Seizing the opportunity of future preferential trade agreements (PTA) to adopt substantive rules on Intellectual Property Rights. Empirical evidence shows that intellectual property rights (IPR) positively affect the flows of trade in high-technology goods, services and FDI.⁵³ Since technology adoption is essentially linked to trade with technologically advanced partners, it would be important to lay the grounds for productivity growth through well-designed and enforceable IPR policies. However, Brazil has no ratified instrument adopted in the framework of a preferential trade agreement notified to the WTO with substantive rules on IPR. The IPR policy by itself generates innovation incentives within the domestic market allowing the inventors to accrue the benefits of their newly created ideas, especially when coupled with preferential trade agreements. The potential EU – MERCOSUL Free Trade Agreement, would support this agenda since it foresees the adoption of nine out of 15 essential international intellectual property treaties, as well as the incorporation of existing international intellectual property agreements.

2.4 Modernizing infrastructure

Brazil's infrastructure financing gap is fast approaching US\$800 billion (or 3.7 percent of GDP per year through 2030). The past 40 years have seen a steady decline in levels of investment in infrastructure, which hit a near all-time low in 2020, when only 1.6 percent of gross domestic product (GDP) was invested in transportation, electricity, water and sanitation and telecommunications, combined (Figure 29). Chronic underinvestment in infrastructure is a major challenge resulting in low-quality, highly vulnerable infrastructure stocks, threatening the country's long-term economic growth prospects. The deep inequalities in access to basic services, especially for vulnerable groups, also impact the country's aspirations for an inclusive society.

Transportation faces the largest financing gap given the volume of in-

vestment needed to improve logistical performance and mass transit services, essential for more productive industries and cities. The sector accounts for more than half (53 percent) of the country's financing gap, of which 43 percent is needed for maintenance and the replacement of existing assets. Addressing the rehabilitation and maintenance backlog stands as a first-order priority to extend the use life of existing infrastructure, improve climate resilience, and thus increase the efficiency of infrastructure spending. Brazil also needs to invest 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 (Figure 30). Dropping 15 places since 2010, Brazil is the only BRIC country whose performance decreased.

Figure 29: Total investment in infrastructure in Brasil as a percentage of GDP (1980-2020)

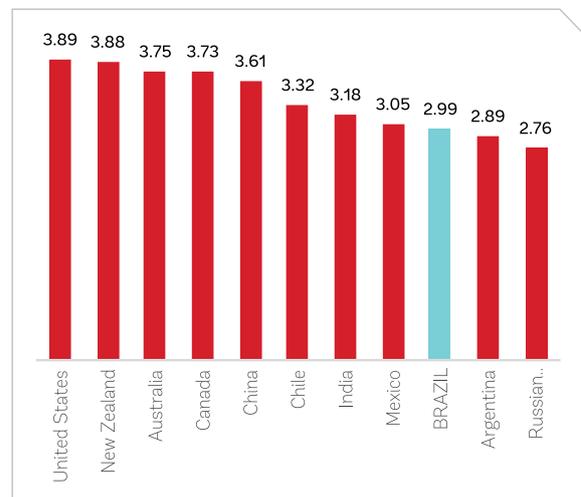


Source: World Bank Infrastructure Review for Brazil (forthcoming).

But the largest gaps in terms of basic access 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 improved drinking water. But access to sanitation and internet services has lagged behind, especially in the northern and northeastern regions of the country: over 60 percent of the population in Brazil’s North and Northeast regions do not have access to improved sanitation services, even though 85 percent of those in the Southeast do. Similarly, almost 30 percent of the Northeast’s population do not have access to the internet (Figure 31:). Limited access to these services represents an important constraint to connectivity, digitalization (internet) and the quality of life of underserved communities.

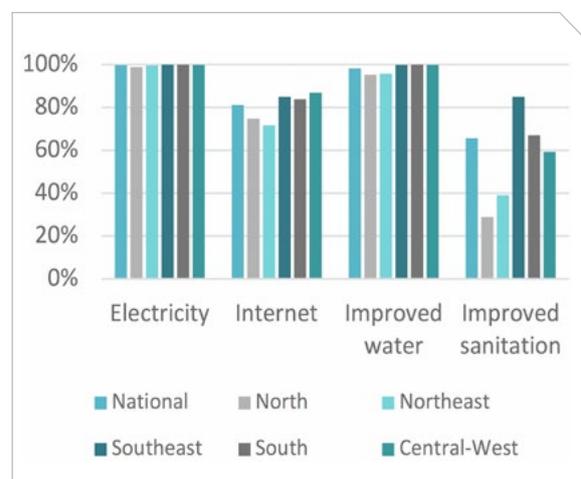
The impact of climate change on infrastructure is another challenge, triggering an additional 0.8 percent of GDP per year in investment needs between 2022 and 2030.⁵⁴ Brazil frequently experiences extreme rains, flooding, severe droughts, and other weather-related disasters. Brazilian firms lose approximately US\$22 billion (1.27 percent of GDP) every year because of infrastructure-related disruptions. The majority (55 percent) are caused by failures to transport infrastructure followed by power (44 percent) and water (two percent). There is a clear need for resilient infrastructure as part of a broader disaster prevention and management program in Brazil that will require a concerted effort across all levels of government.

Figure 30: Logistics Performance Index (2018)



Source: World Bank Infrastructure Review for Brazil (forthcoming).

Figure 31: Access to basic infrastructure services by region (2021)



Source: World Bank Infrastructure Review for Brazil (forthcoming).

MODERNIZING INFRASTRUCTURE: POLICY OPTIONS

An important first priority is increasing the volume of financing for infrastructure: Brazil will struggle to close its investment gap without more fiscal space for public investment.

Reorienting spending to raise the share of public investment in the budget will help ensure access to affordable, reliable, and climate resilient infrastructure services, stimulate productivity and support long term growth. Indeed, World Bank estimates indicate a multiplier effect on Brazil's economy from public investment by the federal government that is at least twice as high as that for public consumption, with similar effects at the subnational levels of government.⁵⁵ Brazil can realize these gains by making more space for rigorously selected public investments in a fiscally responsible manner, as discussed further in the first section of this note.

Crowding-in private financing for infrastructure is equally as important at all levels of Government; but the challenge is most acute for low-capacity States and municipalities.

Brazil has one of the strongest public-private investment frameworks among Latin American countries, enabling some Brazilian States to implement significant private-public partnerships and leverage private capital. But the potential of this legal framework is hampered by low planning capacity at the subnational level. Capacity is concentrated in a select few States and mu-

nicipalities. Consequently, many areas remain caught in a perpetual cycle of low-quality infrastructure and low capacity to close this gap. These conditions contribute to inequality and pose a major hurdle to increased productivity and competitiveness that warrants the government's full attention. Increasing the capabilities of low-capacity municipalities and States in key areas such as project structuring and financial modelling through targeted support, building alternative financial instruments and re-risking tools, will help leverage private investment and create a more robust PPP pipeline. Federal authorities could help close the implementation gap of subnational entities by using tools such as standardization.

Moreover, Brazil's public banks should increasingly play the role of catalysts in enabling project finance to crowd private capital into infrastructure, including by leveraging Brazil's considerable domestic capital market assets.

This means increasing the capacity of public banks in leveraging private capital by deepening the use of co-financing practices. It also calls for reducing credit market distortions and reduced reliance on directed credit policies to provide a more level playing field in credit markets. The catalytic role of public banks can be also used to enhance the climate change mitigation and adaptation aspects of infrastructure projects, both during project evaluation and structuring phases.

From the sectoral perspective, three critical areas for investment to increase the productivity and competitiveness of the Brazilian economy can be highlighted:

- **Optimizing the logistics network through an increased focus on maintenance of existing assets and the development of multimodality.** First, Brazil's road transport networks, which are the backbone of the country's logistic system, suffer from considerable maintenance backlogs, leading to increased costs of asset replacement. More comprehensive and sustainable maintenance programs that build on the country's experience in Performance-Based Contracts would increase the performance of existing networks at a fraction of the cost of major new investments. Second, Brazil's logistics sector relies heavily on its roads network, designed primarily to meet the needs of the country's agribusiness sector, while underutilizing transport by rail or waterways. This leaves multimodal logistics solutions that are critical for general cargo needs of Brazilian industries underused and contributes to less competitive transport services for industry. Improving the integration of Brazil's roads into a comprehensive, multimodal transport system will support efforts to improve logistics and increase future productivity while strengthening global competitiveness. Specific recommendations to encourage a more balanced and resilient logistics network include: (i) prioritizing rehabilitation and maintenance of existing infrastructure, especially road and rail networks, while closely integrating climate resilience aspects, (ii) sustainably expanding the country's rail and waterways by increasing network densities and the number of multimodal terminals; (iii) revising policies to reduce market concentration and discouraging oligopolies in transport services; and (iv) . Addressing the transport infrastructure gap will require further reliance

on private capital mobilization and innovative de-risking approaches to attract private operators, whilst also tapping into Brazil unique experience in implementing performance-based contracts in the management of projects to optimize results. Guarantee instruments are a potentially powerful and currently underutilized tool to leverage new sources of finance if paired with sound fiscal risk management practices.

- **Improving mass transit system in metropolitan areas.** Brazil is a highly urbanized country with 85 percent of its population living in cities, mainly located along its vast coastline. Mass transit systems have seen a steady decrease in ridership over the last decade as the use of private vehicles increased overtime, and also with the impact of the COVID-19 pandemic. The reduced demand of mass transit systems, in turn, contributed to a decreasing ability of the mass transit concessionaires to maintain adequate service levels and meet contractual service obligations, limiting connectivity and making it more difficult to offer high quality services to commuters. Most of Brazil's cities have limited financial and technical resources to tackle this challenge and upgrade these systems. Key policy areas to reverse these trends include: (i) reforming bus contract models at the subnational level to unbundle operations from fleet provision and fare collection services to leverage private sector participation and increase system efficiency; (ii) adopting performance-linked remuneration formula for public transport operators to improve service quality; (iii) promoting the use of electric vehicles for public transportation through financial and nonfinancial incentives to support the transition to

sustainable mobility; and (iv) improving the national regulatory framework for promoting the use of mass transit services.

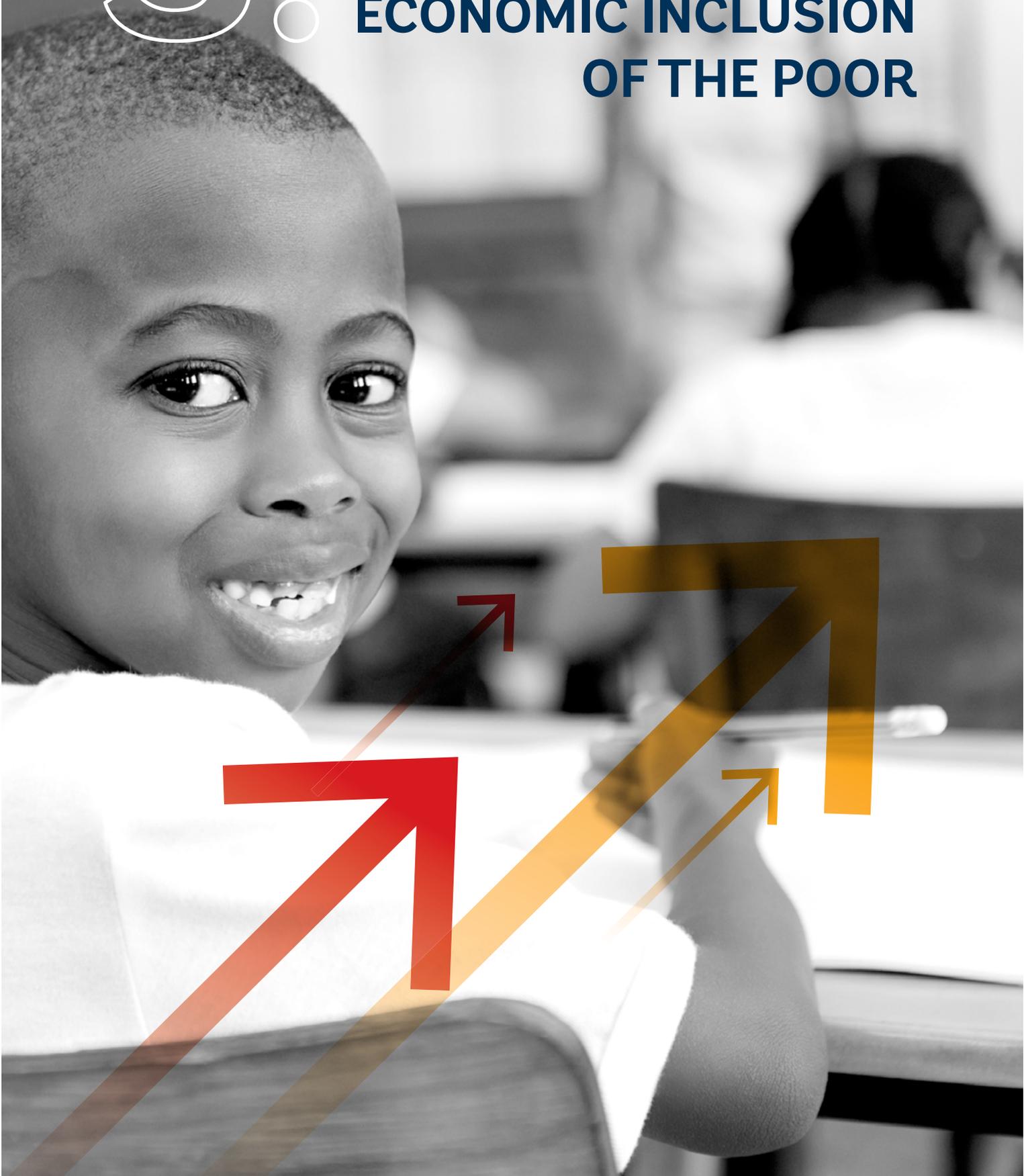
• **Increasing access to the internet and digital services.** The number of Brazilians using the internet rose from less than three percent of the total population in 2000 to over 70 percent in 2018. Brazil also has strong first and middle-mile connectivity. Still, the number of households with a fixed broadband subscription remains relatively low (less than 50 percent), especially in the North and Northeast of the country. These indicators are well below the OECD average and partially reflect the relatively high cost of subscription charges. Moreover, although Brazil has a good fiber optic network, fixed broadband speeds are relatively low, and while 3G and 4G coverage are comparable to OECD and high-income benchmarks, 5G is just emerging. Key policy options include (i) enhancing co-ordination among federal, State and municipal levels to increase access, quality and reliability of services; and (ii) initiating the implementation of projects funded by

the universal service fund to improve connectivity, including connecting schools and support for the newly created Group for Monitoring the Costing of School Connectivity Projects.

• **Increasing household access to improved sanitation.** The new legal framework governing the water supply and sanitation sector, approved in 2020, is in the early stages of implementation. It creates a more robust role for the national regulator, resolving the country's long-standing difficulty in coordinating countless regulatory agencies with insufficient financial resources and capacity. The new framework also promotes competition between public and private companies, encouraging private investment and ensuring services are provided by the operator most capable of delivering on the terms of the contract. The federal government can help ensure the success of the new legal framework by coordinating its implementation and providing incentives for service providers and municipalities to speed up the sector's expansion in under-served areas.

3

**INCREASING THE
CAPABILITIES AND
ECONOMIC INCLUSION
OF THE POOR**



3.

Increasing the Capabilities and Economic Inclusion of the Poor



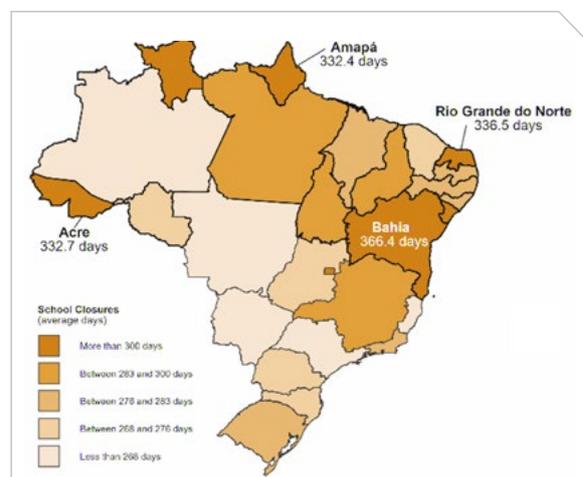
3.1 Placing learning and skills back on the right track⁵⁶

Dealing with school dropouts and learning losses

The COVID-19 pandemic significantly affected learning levels and inequality through long school closures and higher drop-out rates, and exacerbated existing deficiencies in the provision of education. Few countries in the region kept their schools closed as long as Brazil during the COVID-19 pandemic. Brazilian students did not receive face-to-face classes for a period equivalent to 1 year and 4 months of the school calendar during this time. This translates to about 50 million students in over 168,739 public and private schools losing the benefit of in-person instruction, especially in the North and Northeast regions. (Figure 32:) The geographic disparity is also perceptible in access to remote learning. While 92 percent of students participated in remote activities in the South, only 52 percent participated in remote activities in the Northeast. Such a prolonged period of school closures has multiple consequences, among them: (i) increased school dropout ra-

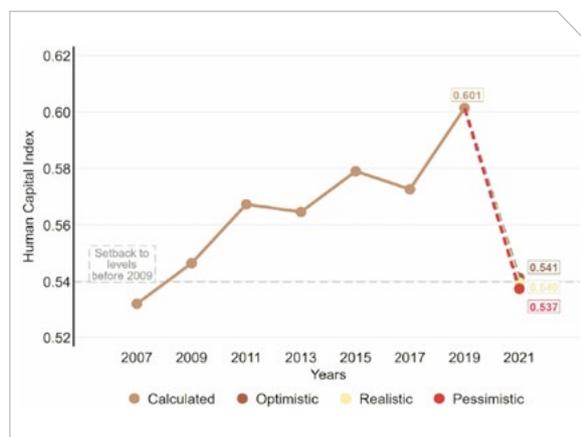
tes; (ii) large learning losses and inequality; (iii) negative impacts on socioemotional skills; (iv) the need to reinforce and accelerate foundational learning; and (v) the need to make fragile school networks ready for current and future natural disasters in education.

Figure 32: Days of School Closures by State in Brazil



Source: World Bank – Brazil Human Capital Review (2022)

Figure 33: The Lost Decade: estimated impacts of the COVID-19 pandemic on Brazil's human capital index



Source: World Bank – Brazil Human Capital Review (2022)

With the reopening of schools, vulnerable students are less likely to return to and stay in school. Even before the COVID-19 pandemic, school dropouts were a central challenge for the education system, along with the regional inequalities in dropout rates. In 2019, for example, the average dropout rate in lower secondary was 5.9 percent

in North and Northeastern Brazil, well above the rate of 3.5 percent in the Southeast region. The COVID-19 pandemic is worsening these numbers. According to IBGE, 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. The costs of leaving school prematurely will have direct implications for the individual's and society's ability to recover from the effects of the COVID-19 pandemic given that school dropout is associated with a lower probability of future employment, lower wages, and higher involvement in crime. According to World Bank simulations, there could be an increase of up to 70 percent in the proportion of 10-year-old Brazilian students unable to read a simple paragraph. Vulnerable students from the North and Northeast of Brazil were significantly less likely to know how to read and write after the pandemic started. In this context, bringing students back and maintaining them in school is one of the most vital education challenges facing the next administration.

DEALING WITH DROPOUTS AND LEARNING LOSSES: POLICY OPTIONS

The first challenge is reversing the trend in school dropouts by bringing students back and maintaining them in school. An important tool to achieve this goal is the implementation of decentralized observatories of school dropouts to monitor information and coordinate three anti-dropout policies. A first strategy could use *Sistema Presença* to foster and coordinate a Student Active Search program by integrating information of missing students that did not return to school and community agents at the local

level. If missing students are still not found, the second policy, known as the School Dropout Call Center, can offer communities a hotline for reporting sightings of school dropouts. The third policy is an early warning system at the school level since vulnerable students who return to school remain at high risk of dropping out again. Overall, the establishment of observatories of school dropouts can support governments to: (i) coordinate policies at the State and municipal level, (ii) flag municipalities with significantly high school dropout rates,

(iii) liaise with schools implementing the early warning system, and (iv) ensure that the anti-dropout protocols are followed.

Once back in school, the challenge is to make students (re)learn effectively.

The first line of action is “Recovering Learning Losses, Offline” through face-to-face approaches such as offering personalized tutoring to small groups of students with similar learning gaps and structured group discussions to mitigate the impacts of the pandemic on student socioemotional skills and mental health. The second line of action is “Recovering Learning Losses, Online,” through hybrid strategies

and education systems to recover from learning losses. This includes accelerating internet connectivity in schools, access to computer devices for vulnerable students under the law 14,172 and expanding the Creativity and Innovation Labs to inner municipalities. These innovations labs are training spaces meant to help teachers and school principals obtain the skills needed to use technology in a classroom setting and master the foundational teaching skills needed to recover learning losses. Strengthening hybrid learning models, training teachers to use technology and consolidating education systems, will also promote local resilience to future pandemics and natural disasters that could disrupt learning and teaching.

Improving the quality of education

Prior to the pandemic, a major driver of the rise in Brazil’s stock of human capital was improved access to basic education.⁵⁷ Between 2000 and 2019, net enrollment rates jumped from 66 percent to 94 percent in preschool (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 2019.⁵⁸ In the same period, the number of college entrants rose from around 2.5 million to around 3.6 million.⁵⁹

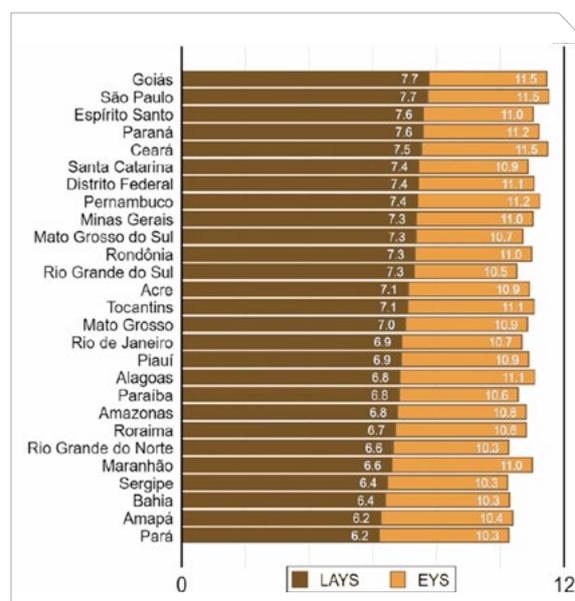
But the quality of education rose more slowly than enrollment, particularly in upper secondary education where nearly all children in Brazil gradua-

te without full proficiency in math.⁶⁰

Learning at the primary education level has risen steadily, as measured by the national education quality index (IDEB, which includes standardized test scores in Portuguese and math and school dropout rates). This occurred, in part, thanks to rising spending per student, particularly in the poorest areas of the country through national redistributive funds. When such progress is viewed from an international perspective, however, further quality improvements will be essential to prepare today’s children in Brazil to become proficient workers in 20 years. The quality of education, as measured by international standardized learning tests, remains below that of Brazil’s regional peers, but with some exceptions. 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. 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 2019, only 34 percent of students completing upper secondary education attained adequate proficiency in language and a staggeringly low 7 percent in math (Figure 34).⁶¹

Figure 34: Losses after adjusting for learning quality



Source: World Bank Human Capital Review (2022).
 Note: LAYS = Learning-Adjusted Years of School; EYS = Expected Years of School

Box 1: Ceara Model for Improving Educational Outcomes

Ceará, one of Brazil’s poorest States, presents one of the first documented cases showing how a results-based intergovernmental transfer mechanism can lead to reductions in dropout rates and improvements in learning gains. Since it began linking part of its fiscal transfers for municipalities to education performance in 2007, the State has seen some of the country’s biggest improvements in quality of education, with nine of its municipalities ranking among Brazil’s top 20 in 2017. How is has achieved it?

Each year, Ceará distributes a fixed budget; this means that municipalities are in competition with one another for resources. To achieve more resources, municipalities need to show improvements. But this implies municipalities must seek further

improvements each year to receive funds. In Ceará’s case, it was the poor municipalities that really seized the opportunity, with some securing funding increases of as much as 60 to 70 percent.

The approach to funding was not the only thing Ceará changed in 2007. To assist municipalities, the State provides technical assistance under an existing literacy initiative. Schools receive learning materials that define a clear routine for classes and prioritize basic skills, especially literacy in the early grades. Teachers undergo regular training on how to use these materials, including classroom observation with feedback. In addition, high-performing schools are incentivized to mentor low-performing ones to improve the latter’s performance.

The State also works with municipalities to improve management of their education system. It provides training and materials to municipal education secretariats, with the goal of increasing classroom teaching time,

reducing the number of multigrade classes, adopting meritocratic selection criteria for school principals, and offering financial and nonfinancial incentives for teachers whose students meet literacy targets.

Teacher performance is among the main factors impeding a sustained improvement in the quality of the Brazilian education system. Between 2009 and 2019, the proportion of basic education teachers with higher education diplomas grew from 67 percent to 85 percent. But this increase in the percentage of teachers with a degree is not translating into better student performance. Part of the reason is that teacher selection processes do not sufficiently focus on identifying the most suitable candidates and lack effective mechanisms for allocating, evaluating and promoting teachers based on need and merit. One example is that Brazil's public recruitment tests for teachers focus only on regulatory issues and knowledge of the taught discipline. Moreover, Brazil has no national exam to certify the new graduates of teaching programs before they are recruited and start teaching. Together, these factors prevent the education system in Brazil from identifying overall weaknesses, rewarding high performers, and targeting in-service training to the areas and the teachers needing the most help.

Similarly, an uncompetitive selection process for school principals affects the quality of school management. In most Brazilian municipalities, school principals are politically appointed, with little to no background in school management. A study found that Brazilian

public school students achieve higher learning results in schools whose principals are selected by community election or technical screening (including examinations and assessment), rather than political appointees.⁶² These selection mechanisms contribute to principals staying longer in their positions and focusing more on the professional development of their staff.

A further challenge is equipping youth in final years of schooling with relevant skills for the job market. Brazil needs to stimulate students to enroll in promising fields, including science and technology. National statistics indicate that about 18 percent of college graduates in Brazil specialize in science, engineering, and technology subjects, below the 25 percent OECD average. Gender gaps are substantial: a 1:7 ratio of women graduate relative to men in ICT fields in Brazil and less than 1:2 in engineering and related subjects. As discussed below, career counselling services are fundamental to enabling a shift in education decisions of women and most vulnerable groups.

These challenges hamper the country's ability to adapt to the needs of the modern labor market and deepen skill-biased inequality. The gradual scarcity of routine jobs and the rise of more complex occupations, that call for more cognitive and abstract skills,

are already resulting in an increasing mismatch between the requirements of the modern labor market and the skills of the workforce. In Brazil, workers who did not complete secondary school are at high risk of being affected by automation (about 60 percent). Workers with a college degree show lower risk of being affected by this phenomenon.⁶³ This means that skill-biased inequality in employment and wages is likely to widen in the future, with implications for the upward mobility of a large share of the population and the ability of Brazil to increase productivity. It also affects the resilience to shocks. In the past decade, workers' education levels have been a strong predictor of the time needed to recover from labor market shocks. After mass layoffs, it takes as long as eight years for less educated workers to attain their previous wage level but less than two years for better educated workers.⁶⁴ And between the 2015–2016 economic crisis and the emergence of the Covid-19 pandemic, employment rates continued to fall for workers without a secondary education, even as employment rebounded for those with secondary or higher education.

Technical and vocational education and training (TVET) remains a little-pursued path in Brazil, despite offering better job outcomes than traditional high school for students who do not enroll in higher education. Only 10 percent of upper secondary students are enrolled in TVET courses, four times less than the average in OECD countries. The low uptake is due to a combination of limited information and, especially, undersupply. Studies show a

statistically significant positive wage premium of 9.7 percent on average for students completing technical school compared with students with high school.⁶⁵ Brazil already allows TVET courses to be offered together with foundational disciplines in upper secondary education, such as math and language, and provide a good balance between technical and academic topics, which students more flexibility in the future.⁶⁶

Finally, while access to higher education in Brazil has grown in recent decades, enrollment continues to be highly dependent on family income and inter-generational inequality. Higher education degrees are strongly associated with upper middle- or upper-class status in Brazil. Currently, of young people ages 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.⁶⁷ Although these enrollment rates had improved in the recent years, the pace of progress is too slow to reverse today's stark income and class inequality. One statistic helps to illustrate this point. Only 20 percent of the students at public institutions of higher education come from the poorest 40 percent of the population, while 65 percent come from the richest 40 percent.⁶⁸ Private institutions have expanded to meet demand from those who could not access the free, but highly competitive, public universities. The federal government enabled this expansion through the FIES student loan program and tax offsets for private institutions (ProUni).

HIGH QUALITY EDUCATION: POLICY OPTIONS

Of the utmost priority is improving teacher quality. Improving teacher quality through more meritocratic and attractive and select profession is vital for Brazil's education system. In the best performing countries, teachers' wages are not always high relative to wages in other professions, but recruitment processes are competitive, focusing on selecting motivated applicants with great academic achievements and good communication skills.⁶⁹ The attractiveness of the profession to high quality candidates can be improved by raising the quality of pre-service and in-service teacher training and widening career advancement opportunities. Compensation policies will become more accessible as financial resources available to education systems might increase at local level due to the recent changes in FUNDEB. However, wage increases must be carefully planned to avoid compromising future sustainability of public spending. The provision of continuous support to teachers in the form of high-quality in-service professional development, similar to those provided in Ceará's education system, is yet another mean of improvement.

Second, building a more skill-focused learning system will help to reduce school dropout rates and better prepare youth for the labor market. Brazil's upper secondary education reform and the new national core curriculum for basic education are opportunities for incorporating missing cross-cutting skills. Inspired by several successful international examples, such as the education reforms in Poland and Portugal, Brazil approved a new curriculum for primary and secondary education in 2017 and 2018, clearly defining

education priorities. In addition, in 2017 Brazil approved the upper secondary education reform, which greatly increased the flexibility with which students could complete their studies and the disciplines they could pursue. Combined, these reforms offer space for schools to develop innovative programs and courses focused on socioemotional skills, technical skills, and digital skills. However, implementation has been challenging and slow. As of June of 2021, many states were still in the process of validating and approving new curriculums, which will take effect starting in school year 2022/23. Eleven states have formally approved their new curriculums through their state councils of education and have also promulgated them through their government. To fully reap the benefits made possible by the reforms, state education secretariats will need to assist schools, especially those in low-capacity municipalities, in identifying critical skills and support them in providing them, in conjunction with local employers. This includes revising the legal framework and the learning itineraries in each state and municipality, re-training teachers and re-designing national assessment exams. It is a massive effort that requires a sharp focus on supporting lagging regions. Almost 70 percent of municipalities are small, with 20,000 inhabitants or less, and few of them can succeed in the complex task of planning and overseeing education policies without technical and cooperation and financial assistance from state or the federal government.

More financial support should be also directed to enable students from poor families to complete secondary education and continue their academic

path into higher education. Improving high school completion rates, especially among those in the bottom 40 percent of the income distribution, is important for improving access to higher education for students from disadvantaged backgrounds. Among students who complete secondary school, the effect of socioeconomic background on higher education enrollment and completion diminishes. Thus, incentivizing students from disadvantaged backgrounds to complete high school, for example through a funding scheme that supports both high school completion and university enrollment, could boost both high school completion rates and university enrollment.

Diversifying funding sources, including means testing for tuition fees and scholarships, would further support the system in becoming more equitable and improve quality. Such reforms could increase efficiency by giving students a greater role on the demand side and by allowing competition between institutions on the supply side. While public funding will remain vital, expansion of access and quality will be difficult for universities while relying on government support alone. Additional resources could be raised with means-tested tuition fees, with fee waivers directed to vulnerable and low-income students.

3.2 Strengthening policies for economic inclusion

There is significant scope to strengthen the contribution of Brazil's social assistance and employment programs to the economic inclusion of the poor.

The most effective social protection programs in reducing poverty not only offer financial support but also promote labor market entry and human capital accumulation. To achieve this, these programs need to be combined with the appropriate incentives and the services that can increase individuals' employability and that can match them with available job opportunities. While Brazil has a comprehensive set of social protection programs and policies that succeed in achieving many sought outcomes, they tend to fall short in promoting economic inclusion for vulnerable workers and in adjusting to the needs of a changing job market.

A key challenge is that Brazil's job support programs for the vulnerable are currently narrow and underfunded.

While Brazil's total spending on labor market policies is at a similar level as high-income economies, active labor market programs that are designed to promote skill development, entrepreneurship and job intermediation services for vulnerable workers receive only a minimal share of this spending (Figure 35). Existing programs largely serve formal workers. For example, most of Brazil's unemployed are in the informal sector or are young people making the transition from school to work. Yet, 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.⁷⁰

Additional difficulties arise from the lack of linkages between income support programs and labor market services, which is a missed opportunity for promoting economic inclusion.⁷¹

Existing 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 are not coordinated with income support programs such as social assistance or unemployment insurance. Another challenge is that Brazil's public employment services network (*Sistema Nacional de Emprego* or *SINE*) plays little or no role in helping jobseekers to access other active labor market programs. *SINE*'s functions are limited to job matching, labor documentation, and enrolling workers in unemployment insurance. And even though it

has a presence in all States, *SINE* offers a short menu of programs with limited collaboration with the private sector.

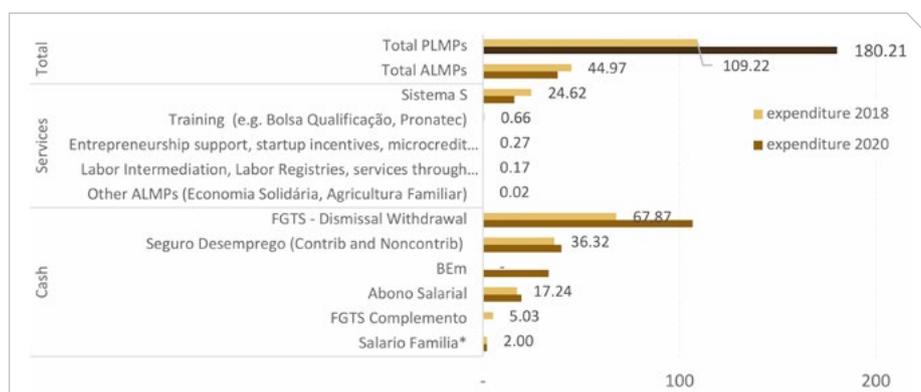
Few social protection and labor programs aim at promoting opportunity and facilitating the labor reallocation resulting from a changing labor market context.

The growth-oriented reforms discussed in the first section of this note will undoubtedly call for labor reallocation across economic activities, occupations, and geography. Brazil needs to offer a solid set of policy instruments to facilitate job-to-job transitions for the workforce. In particular, automation, digitalization, and the greening of the economy will create jobs that require new skills that will leave the poor behind if not supported by targeted economic inclusion programs.

Lastly, Brazil's private sector also has a role in promoting economic inclusion.

Women and Afro-Brazilians obtain lower wages than white men, even when looking at jobs with similar characteristics and despite controlling for the education level, location, and sector of employment.⁷²

Figure 35: Active and passive labor market expenditures (2018–2020)



Source: The World Bank using data from the Transparency Portal (*Portal Transparência*) for 2018 and 2020.

Note: Includes expenditure financed by the federal government and by employers: * = out of budget expenditures financed by mandatory employer contributions. Passive labor market policies (PLMP) = *Salário Família*, *Abono Salarial*, *Seguro Desemprego*, *FGTS*, and *BEm* (*Benefício Emergencial de Manutenção do Emprego e Renda*).

INCREASING ECONOMIC INCLUSION: POLICY OPTIONS

Expanding and improving active labor market programs (ALMPs). The delivery of ALMPs in Brazil needs to follow a structure that starts with a profiling stage (during which a professional assesses the worker's ability and work history) followed by more tailored provision of career counselling, job search support, technical skills development, or other services. Several developing countries are also experimenting with using performance-based contracts with providers delivering functions such as technical training, personalized intermediation, and subsidized placements, and this is a promising area for Brazil to explore. In addition, greater coordination between ALMPs, and the TVET system, in particular, Sistema S initiatives would also be helpful to ensure that the poor receive the support to prepare them to benefit from high-quality training courses.

Reorienting the Workers Protection Fund (*Fundo de Amparo ao Trabalhador*), which costs around BRL 17 billion a year and benefits mainly formal workers in middle and upper income quintiles, towards active labor market support programs that are available to all workers would increase support to more vulnerable jobseekers without increasing budgetary pressures.

Revamping the Sistema Nacional de Emprego. The public employment services at the local level (*Sistema Nacional de Emprego* - SINE) should be reformed to increase its coordination with other labor market and training programs and to improve the quality of services. Also, further development of the labor market information system is critical for

linking job seekers to vacancies, automating some of the functions of job counselors, and more broadly to support the labor market with relevant and timely information.

Introducing complementary income volatility management programs for informal workers. Financial inclusion policies that stimulate the creation of precautionary saving schemes are needed to strengthen the financial resilience and literacy of the poor. We propose that the *Cadastro Único* and *Auxílio Brasil/Bolsa Família* should be used to provide saving products to this vast population, particularly those who come under the Emancipation Rule (*Regra de Emancipação*), according to which recipients of the program can try out a formal job without fear of losing the benefits for up to two years even if their income rises above the eligibility threshold. Unemployment insurance programs in middle-income countries with high levels of informality (like Indonesia and Malaysia) are exploring introducing incentives to attract self-employed to purchase this type of insurance. International experience shows that saving products bundled with insurance reduce the chances of families relapsing into poverty by providing them with the tools to manage the cost of shocks. However, Brazil has yet to pursue this policy.

Finally, the private sector can strengthen its role in increasing economic inclusion through more robust and widespread diversity and inclusion policies in corporate governance structures. These include policies for including women, Afro-Brazilians and indigenous

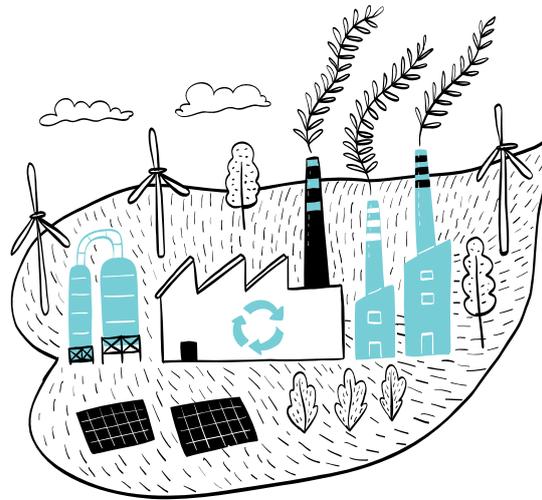
peoples, people with disabilities, sexual and gender minorities, both in leadership positions and the broader labor force. Besides voluntary commitments made by sector associations and individual companies, capital markets and financial sector regulation should also enhance transparency over adopted inclusion policies by each company as a measure of quality of their corporate governance. In the financial sector, financial institutions could also track segmented portfolios to ensure proper access to finance to these groups, which also are subject to disclosures to the market.

4.

MEETING BRAZIL'S POTENTIAL AS A GREEN ECONOMY



4. Meeting Brazil's Potential as a Green Economy



Climate change is already altering temperature and rainfall patterns in Brazil and could push another 800,000 to 3,000,000 Brazilians into extreme poverty as soon as 2030.⁷³

The Amazon's hydrological and ecological services are critical for Brazil's economic potential and future resilience, but the country now already faces impacts from climate change, deforestation, and land degradation, resulting in reduced water availability and extended droughts. These problems are expected to worsen with time, with implications for hydropower, agriculture, and urban water use. Extreme weather events such as droughts, flash floods, and riverine floods in cities are causing losses averaging BRL 13 billion per year (around US\$ 2 billion). The urban poor, especially residents of informal settlements, are particularly affected by this. Disasters also significantly disrupt Brazil's transport and power infrastructure, affecting economic competitiveness.

Moreover, the combination of climate change and deforestation is intensifying threats to Brazil's key ecosystems. With further forest loss and degradation in the Amazon, this biome could soon reach a tipping point beyond which large areas

of the Amazon basin, within and outside Brazil, no longer have enough rainfall to support the native ecosystems or provide essential ecosystem services, with consequences for key growth sectors of the country. The projected impact of a potential Amazon tipping point on Brazil's cumulative GDP to 2050 has been conservatively estimated at about BRL 920 billion (US\$184.1 billion).

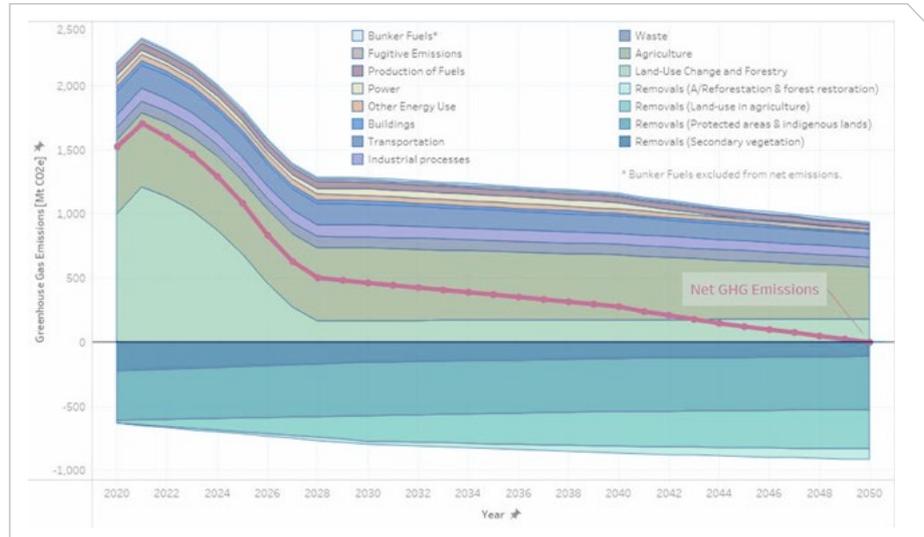
Yet, thanks to its unique greenhouse gas (GHG) emissions profile and its natural resources, Brazil has an extraordinary opportunity to build a prosperous future and become a global climate change leader by embracing a low-carbon, climate-resilient growth pathway. Between 2000 and 2020, 76 percent of the country's emissions came from land use change, mainly through deforestation and agriculture. Almost half of Brazil's energy supply, on the other hand, including over 80 percent of its power matrix, already comes from renewables, which is well above the global average. This emission profile presents low-cost options for reducing Brazil's overall emissions while enhancing its resilience to climate risks. Meeting the Government's commitment to stop illegal deforestation by 2028 and zero net defo-

restoration by 2050 (as per the 2012 Forest Code) could create significant CO₂ removals and enable Brazil to avoid reaching the Amazon’s tipping point. At the same time, the high share of renewable energy and the country’s potential for green fuels give Brazil a competitive advantage at global scale in supplying products and services required for decarbonization.

We focus on three policy areas to help Brazil meet its potential for a prosperous low-carbon future and to safeguard the population from the effects of climate change.

First, we highlight the urgency of reversing the growing trend of deforestation and present priority policy options. Second, we discuss policies and investment packages to support sectoral climate transitions. Third, as economy-wide policies for resilient and decarbonized growth, the policy notes discuss carbon pricing and measures to help households navigate the climate transition. Together, this package of policies would support Brazil in meeting its commitments to stop illegal deforestation by 2028, reduce GHG emissions 50 percent by 2030, and reach net-zero emissions by 2050. (Figure 36:)

Figure 36: Brazil potential pathway to net-zero by 2050



Source: World Bank Country Climate and Development Report (forthcoming).

4.1 Curbing illegal deforestation

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, and during the commodity boom between 2004 and 2012, Brazil managed to effectively reduce deforestation in the Amazon by about 80 percent.⁷⁴ This decreased Brazil's emissions from land-use change by 65 percent. This trend has since reversed due to macroeconomic factors, weakening of the implementation of the Forest Code and the undermining of institutions involved in forest monitoring and forest law enforcement.⁷⁵ Illegal logging and land grabbing practices 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 those remote areas. The damages to the forest landscape caused by these practices also increased the risk of large fire outbreaks from which tropical forests can hardly recover. Changes in the land law,⁷⁶ sub-

sidies that incentivize extensive cattle ranching, also added deforestation pressures.

Brazil's commitment to end illegal deforestation by 2028 is the largest source of future emission reductions and, as demonstrated by Brazil in the past, can be achieved without compromising development. World Bank analysis⁷⁷ shows that a policy package that (i) ensures effective forest law enforcement and forest governance, (ii) increases productivity, and (iii) incentivizes more intensive uses of land would lead to reduced deforestation while promoting green growth of the economy. Raising Brazil's productivity performance will also help reduce its carbon footprint as productivity gains in sectors such as manufacturing, and services support help shift economic activity to non-land-based sectors. This would enable Brazil to reach its climate commitments with a positive impact on GDP, export revenue, wealth, and social gains (Box 2).

CURBING ILLEGAL DEFORESTATION BY 2028: POLICY OPTIONS

A combination of immediate and urgent measures to prevent land-grabbing and strengthen land and forest governance are needed to set clear signals to illegal operators. Urgent priorities include reestablishing law enforcement presence in high deforestation risk areas and

tighter follow-up in the prosecution of illegal actors. Brazil's capacity to monitor forests (e.g. through PRODES and DETER⁷⁸) remains intact but law enforcement intelligence needs to be strengthened to enable transparent collaboration with federal, State and municipal institutions to increase efficiency and reduce political

interference. Mapping of untitled public lands also needs to be quickly accelerated to limit room for further land speculation. This would provide the Government with crucial spatial data on the location of public lands and facilitate their designation as protected areas (including sustainable use and indigenous areas). At the same time, it is important to modernize land registration, analysis, and validation practices. This would accelerate the validation of the Rural Environmental Registry (CAR), which would, in turn, enable the use of instruments in the current Forest Code, such as the mechanism for trading forest certificates and carbon finance for restoration of forest areas.

Support for sustainable land and forest-based economic activities could also contribute to lowering deforestation pressures.

The Amazon region's rural population density is very low which makes it a challenge to promote sustainable yet profitable business. But there are already good examples in place benefitting local population that can be expanded. Sustainable "bioeconomy" value chains (such as ecotourism, non-timber forest products, forestry, and fisheries) are relatively small in size but are essential for local communities living in the forest. The development of entrepreneurial skills, technical assistance to local communities, and partnerships with the private sector would help generate local jobs and incomes. Furthermore, well-managed forests have the potential to further benefit from Payment for Environmental Services (for example, through the ICMS *ecológico*) and carbon finance but also need regulatory certainty to fully take advantage of this market potential. Another effective intervention is the *Bolsa Floresta* program, a forest conservation program that combines direct conditional

payments with livelihood-focused investments in 15 multiple-use reserves in the Brazilian state of Amazonas, has proven effective to reduce forest threats and increase conservation especially in areas with higher deforestation pressure and higher potential agricultural income.⁷⁹

Ultimately, increasing the productivity of the economy and improving service delivery will provide the necessary long-term incentives to shift away from land and resource intensive model of development.

Brazil has strong synergies between its productivity and decarbonization agenda, meaning that the country could become greener by becoming a more productive. Productivity gains in manufacturing and traded services would make those sectors more competitive relative to resource-intensive sectors and help Brazil achieve high-income status.⁸⁰ Doing so would also ease pressure on land and other natural resources, with benefits for the climate, biodiversity, and local environment quality. A key step will be to accelerate structural reforms and close institutional gaps that hold back productivity-led growth, as discussed in section two of this report. Trade policy reform can also help Brazil integrate with global value chains beyond commodities, delivering economic and environmental gains. Finally, improved provision of basic health, education, land tenure security and other vital services to the rural population are essential for traditional communities and indigenous peoples to become more resilient against economic and other shocks. Without these services, there is a risk that families living traditionally with the forests migrate to the urban centers and abandon those forests, leaving them subject to land speculation and illegal logging.

Box 2: Brazil's national productivity agenda matters for both Amazonian forests and growth.

Productivity gains across all of Brazil's 27 states would have large positive impacts on GDP and on forest conservation. Productivity means doing more with less—or that a given food demand can be met with fewer natural resources, taking pressure off natural forests. Accordingly, general equilibrium modeling shows that raising agricultural productivity across Brazil would reduce deforestation (Ferrerira Filho and Hanusch 2022). This effect is not limited to agriculture. For example, raising productivity in manufacturing would also reduce deforestation by pulling production factors off the agricultural frontier into more urban-based activities. Similarly, although most deforestation happens in the states of the Legal Amazon, productivity gains in other parts of Brazil, say the economic hubs of the South/Southeast, would also move pressure off the agricultural frontier.

Balanced productivity gains and effective forest and land governance in the Legal Amazon states are important for regional convergence with lower deforestation. Although agricultural productivity gains across Brazil reduce deforestation, the modeling suggests that they might accelerate deforestation if they are concentrated in the Legal Amazon states and in the absence of stronger enforcement of forest governance. This reflects

the “Jevons’s paradox”: more competitive farmers produce more efficiently (reducing deforestation) but take market share from other farmers (which could increase net deforestation in the absence of strong land and forest governance). World Bank research draws attention to the need to counterbalance this effect through complementary productivity gains in urban sectors within the Legal Amazon, like manufacturing and services, as well as effective forest and land governance interventions. Jointly, this would accelerate sustainable and inclusive growth in the Legal Amazon, helping the region catch up with richer parts of Brazil.

Balanced productivity gains and complementary sectoral interventions also matter for greenhouse gas emissions. The modeling shows that although agricultural productivity gains across Brazil would reduce deforestation, net emissions could increase, if they are not accompanied by the increased adoption of climate-smart practices. Given Brazil's green energy matrix, emissions savings from manufacturing productivity are positive overall, due to the significant reduction in deforestation and relatively small increase in emissions from manufacturing itself. Sectoral interventions to both reduce the emissions intensity of all sectors would further strengthen the virtuous circle between cross-sectoral productivity-led growth and protecting the global climate.

(See section two of this document for policy options for raise productivity growth.)

4.2 Resilient and low-carbon agriculture, energy and cities

Even though stopping illegal deforestation is the biggest contributor to Brazil's path to net zero by 2050, Brazil also stands to benefit from measures to decarbonize other important parts of its economy. More climate-smart agriculture, greener energy and cities could provide growth opportunities and increase the resilience of the country to shocks.

We highlight sectoral policy and investment measures in three key intervention areas, selected based on their impact on GHG emissions, climate risk exposure, and potential contributions to growth. The first is scaling up climate-smart agriculture and sustainable landscape management. The second is transitioning to greener and resilient energy, infrastructure, and transport for industries and manufacturing. The third is to enable resilient and low-carbon cities.

RESILIENT AND LOW-CARBON AGRICULTURE, ENERGY AND CITIES: POLICY OPTIONS

Scaling-up climate-smart agriculture and sustainable landscape management

The Brazilian agriculture sector needs to become more climate-smart to achieve simultaneously: (i) increased productivity (particularly amongst the poorest farmers), (ii) enhanced resilience to climate shocks and, (iii) reduced emissions (by enhancing carbon storage in soils and fostering the use of low-carbon practices). Implementation of a range of policy measures for curbing deforestation and fostering climate-smart agriculture will need to be tailored across and within biomes and to farmers' size and capacities.

Reforming and retargeting the National Rural Credit System (SNCR) to support investments in sustainable and climate-smart practices and technologies. The Low-Carbon Agriculture Plus Plan (ABC+) should be scaled up to enhance existing incentives, R&D and technical assistance. It could also include more low carbon practices to benefit different biomes and farm sizes. Other similar financing programs, such as MODERAGRO and INOVAGRO, that aim at supporting innovation in the agriculture sector,

could also be revised to further enhance adoption of climate-smart innovations. Supporting farmer to register in the Rural Environmental Registry (*Cadastro Ambiental Rural – CAR*) is an important complementary measure to help them in adhering to the Forest Code and to access climate-smart rural credit facilities.

Reforming the rural land tax (*Imposto sobre a Propriedade Territorial Rural – ITR*). The current structure of the ITR rural land tax incentivizes the conversion of land towards extensive cattle ranching.⁸² Changing its parameters to reward the adoption of sustainable practices and the efficient use of areas that can be farmed or ranched would help foster climate-smart agriculture while reducing incentives towards deforestation.

Fostering innovative solutions for climate-smart agriculture through research and extension services. Brazil has significant research capacity, particularly on climate-smart agriculture through EMBRAPA, that is important to maintain and consolidate. Further innovations in integrated agro-sylvo-pastoral systems, agroforestry and on options to reduce methane emissions from cattle are needed. Increasing the diffusion of these innovations towards a wider ran-

ge of farmers, notably family farmers, would be key for scaling-up climate-smart agriculture through more efficient extension and technical assistance services. Technical assistance and effective extension services can also help leverage private investment. World Bank projections have found that US\$1 of public investment in training and technical assistance can leverage US\$ 8 in investment by farmers to adopt improved agricultural and restoration practices.⁸³

Insurance against climate shocks for farmers. Given the increased climate risks that farmers are facing, increased use of risk management tools such as insurance should be promoted. Tailoring risk management instruments to the sector's needs and deepening farmers' understanding of their role in mitigating risks should increase farmers' demand for insurance and related financial instruments, as well as improve their production decisions. An integrated data system with detailed information on agricultural potential, soil types, agricultural and producer risks, and other relevant information should help providers in tailoring insurance products. An important additional measure is increasing uptake of the *Garantia Safra*⁸⁴ to increase small farmers' access to safety nets against climate shocks.

Decarbonizing the domestic energy sector cost-effectively

Brazil's power system can be fully decarbonized without increasing costs relative to business as usual. Brazil could shift from its current domestic energy plans to a net-zero plan with 99 percent renewables and 1 percent nuclear power. This shift would not increase total costs, estimated at

BRL 376 billion, as higher upfront investment costs for power generation, transmission and storage are fully compensated by savings in fuel and operations.

Reducing government support for inefficient and costly fossil-fuel po-

wer generation is critical to improving economic competitiveness while lowering emissions. Importantly, Brazil should ensure that its plans to increase extraction of its offshore oil and gas resources do not result in the domestic use of these resources, which would increase emissions and generate large opportunity costs.

Along with this, legal and regulatory actions are needed to create an enabling environment for near-term investments that can displace fossil fuels currently play in the power system. New renewable energy generation and storage capacity will be needed to make Brazil's power matrix even greener. A third wave of power sector reforms is needed to enable this. For instance, Brazil can improve the enabling environment for green hydrogen development,

including building the capacity of the regulatory agency (ANP). Changes in the regulatory framework of the electricity distribution sector are also needed, such as moving away from price-cap schemes and towards revenue-cap schemes with incentives for overall energy efficiency, as well as better design of time-of-use tariffs. Furthermore, repowering and rehabilitating existing hydropower assets is fundamental for keeping up with demand growth. However, many concession contracts will be ending within the next five years, creating a disincentive for these investments. It is therefore critical that Brazil adopts regulations to incentivize capacity auctions and new instruments for ancillary system services. This will enable more optimal deployment of the existing hydropower assets and new investments in storage. In addition, new regulatory instruments, such as demand response contracts, will be needed to support increased system flexibility.

Greening cities and their transport systems

Brazil's high level of urbanization makes actions to ensure cities are resilient, low-carbon, and inclusive a priority. There are significant gaps in access to sanitation and to high-quality housing, and rapid and unplanned urbanization has left many people living in unsafe areas, such as floodplains and steep hillsides. Brazilian municipalities are already starting to take action to address climate change, but need policy support, increased private sector engagement, and access to finance. Policy support to enhance coordinated urban development planning and management will be instrumental. Increased private sector engagement and access to finance for investing in nature-based and grey

infrastructure measures could help augment urban resilience. Transport, the building sector, and waste management offer large GHG reduction opportunities.

Proactive investments to make the road network more resilient to natural hazards would increase upfront cost but pay back over time. In the next decades, the country will need to invest an estimated BRL 2,170 billion (or US\$434 billion) in road infrastructure to address the existing infrastructure gap. To make these new infrastructure assets climate resilient, additional investment needs are estimated at BRL 110 billion (or US\$22 billion), but they would avoid losses

estimated at BRL 235 billion (US\$47 billion). In contrast, economic analysis suggests that retrofitting roads outside the normal replacement schedule has a benefit-cost ratio below 1, except for the most critical assets (such as the main corridors for soy exports, for which retrofit for resilience makes economic sense).

The Avoid-Shift-Improve approach can help Brazil decarbonize its transport system and make it more inclusive, but this transition requires large investments. Travel demand can be reduced through more compact and mixed-use urban development, which can also improve people's

access to services and economic opportunities. Achieving a modal shift in freight will require large investments in railways and waterways, while modal shift in passenger transport will require improving public transit service and passenger rail. Because modal shift cannot fully eliminate the need for motor vehicles, it will be important to electrify trucks and locomotives and/or shift to hydrogen fuels. Investments will also be needed to electrify buses and light vehicles, to cover the costs of vehicles as well as charging infrastructure. The additional investment needed to achieve net-zero emissions for freight are estimated at BRL 532 billion (~US\$106 billion) and BRL 546 billion (US\$109 billion) for passenger transport.

4.3 Economy-wide measures: carbon pricing and supporting households in managing the transition

Sectoral policies are critical for Brazil's path to net-zero, but they need to be supported by economywide interventions that create the right incentives and that help households and workers navigate the transition. A set of economy-wide interventions is needed to provide the right incentives to households and the private sector, and to enable them to act

on them. Options include carbon pricing reforms such as 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. Policies for a people-centric approach to climate policy are also key, as the poor are disproportionately hurt by climate change and can also be harmed by ill-designed climate policies.

CARBON PRICING AND SUPPORTING HOUSEHOLDS TO MANAGE THE TRANSITION: POLICY OPTIONS

Carbon pricing

Adopting a national emissions trading system (ETS). The debate around the potential role of an ETS in Brazil continues. In the Brazilian context, an ETS can most obviously be applied to the industrial sector, and implementation would be relatively straightforward for its major emitters. But implementation challenges mean that agriculture and land use, land use change, and forestry are currently not good contenders for direct inclusion. However, an ETS could support emission reductions through forest-based carbon offsets. A jurisdictional REDD+ approach, focused on rewarding subnational governments for curbing deforestation, could also make sense for Brazil, since most deforestation is illegal.

Considering a carbon tax. If embedded into a broader reform of Brazil's tax system, there is also room to consider introducing a carbon tax that meets Brazil's revenue and climate objectives in a just and efficient manner. Brazil has significant room to improve its tax system which is considered overly complicated and burdensome. There is an opportunity to consider introducing a carbon tax (and initiate a phaseout of subsidies to emission-intensive activities) in the context of a simplification and improvement of the overall tax system. For instance, an economy-wide upstream carbon charge on fossil fuels could raise about BRL 150 billion (1.3 percent of GDP) by 2030, which could be used to replace less efficient, more distorting, or costlier-to-collect taxes (for instance in a budget-neutral way) or to invest in the country's development.

Supporting households and the labor force manage the climate transition

Investments in education and job skills training, with targeted support for vulnerable people and workers, will also be important to boost resilience and facilitate the green transition. People who depend on high-emission or climate-vulnerable activities will need support to shift to new livelihoods. Investing in education and retraining can thus reduce the social and macroeconomic costs of climate change, as well as the transition costs of achieving net-zero. A just transition in energy, manufacturing, and agriculture

will require active labor market programs and professional training to close skills gaps and help workers find new jobs, as discussed in section 3.2 of this note.

A more robust and adaptive social protection system could support families and communities from being impoverished by climate shocks—especially when those shocks affect large swaths of the population at once. The resilience of the population in the face of climate change will

be critical to support Brazil's competitiveness and productivity going forward. Although Brazil has a well-established social protection system, it currently lacks the readiness and ability to mount timely and scalable response to climate related emergencies. Integrating existing systems with strategies that help them react to the country's most recurrent and disruptive

climate-related shocks (such as excess rainfall and droughts) in a faster and stronger manner than at present will be increasingly important. In particular, household and community-level data from the *Cadastro Único* could be used to identify household's ex ante risk and the likelihood of ex post damage from disasters to aid in the provision of swift and targeted response.

4.4 Financing the climate transition

World Bank estimates⁸⁵ place Brazil's annual investment needs for climate action at around 0.8 percent of GDP between 2022–2030. 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, bringing overall net economic costs of Brazil's resilience and net zero pathway to about 0.5 percent of GDP annually over this period.

Brazil could tap into a wide range of sources for mobilizing financing for these investment needs. Making fiscal space for climate action will be critical for Brazil over the coming years, including by repurposing carbon-intensive subsidies to support the low-carbon transition and expanding carbon taxes. There is also significant potential for increased engagement with the Brazilian financial sector to expand opportunities for long term green finance. Opportunities associated with carbon markets can also be scaled-up.

FINANCING CLIMATE ACTION: POLICY OPTIONS

Repurposing agriculture and energy subsidies and tax breaks. In both agriculture and energy, there are substantial subsidies that incentivize environmentally harmful and economically inefficient activities. In the power sector, subsidies for coal alone totaled almost BRL 1 billion (US\$200 million) in 2020. Tax waivers and subsidies for coal have been extended until 2040.⁸⁶ The subsidies for coal-fired power generation could be redirected to support the energy transition, in order to reduce the fiscal burden on the public sector. Moreover, the share of Brazil's tax expenditures (tax breaks) that went to agriculture grew from 8.9 percent in 2006 to 12 percent in 2021, with a majority of these expenditures being allocated for agribusiness and beef industry rather than the ABC program and rural insurance.⁸⁷ In parallel, the current parameters of the ITR tax make extensive cattle ranching consistent with a lower ITR tax bracket. The overall impact of the ITR is thus to incentivize land conversion.⁸⁸ Repurposing existing tax breaks and subsidies could finance a just transition in agriculture and energy sector.

Leveraging the concession and public-private partnership (PPP) framework to increase climate related investments.

The private sector will play an important role in financing the investment needs for Brazil's path to net-zero, including a majority of capital investments to expand the power system. Businesses have led innovation in Brazil in agribusiness and forestry, renewable energy, public transit electrification, green buildings and retrofits, and waste to energy plants. Maintaining this role requires an appropriate enabling environment, and public support to accelerate innovation and incubate early investments in areas such as electrification of the economy and green hydrogen. In agriculture, the private sector would be best placed to invest

in activities that result in removals of emissions (e.g., agroforestry, restoration of pastureland), implement climate-smart agriculture, boost agricultural productivity, and support biomass and second-generation biofuels. The consolidation of a solid concession and PPP framework with clearly identified priority projects, can provide a better environment for private investment.

Scaling-up climate finance and carbon markets.

Brazil has the potential to benefit from recent developments in climate finance and carbon markets, including the expansion of innovative financing instruments. Voluntary carbon markets will continue to offer opportunities to commercialize forest carbon credits and REDD+. Green bonds and sustainability-linked bonds could provide significant amounts of finance. Brazil can also continue to access a mix of available climate finance through dedicated climate finance such as grants, concessional loans, and performance-based payments for environmental services to support climate efforts. Green bonds and sustainability-linked bonds also offer significant sources of financing for Brazil's transition to a productive, low-carbon and resilient growth path. The development of green financing instruments should also take into consideration the different risk/return profile of local firms to tap into financial markets. While large institutional investors such as pension funds and financial institutions are better positioned to tap into green financing instruments offered by capital markets (such as green bonds), a large share of the local private sector is composed of less sophisticated firms that may require a different set of instruments and incentive structures. In this context, it would be important for public authorities to develop a strategy to support access to green financing instruments, which can support the achievement of Brazil's climate goals.

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Endnotes

- ¹ Per capita real incomes fell by 7.3 percent between 2012–2021 on average, and at the higher rate of 11.9 percent for Brazilians in the bottom quintile (calculations based on PNADC 2012 and 2021).
- ² Between 2012 and 2019, the social pension was instrumental in supporting the incomes of elderly Brazilians while cash transfers played a more muted role in supporting those out of work. From 2020 onwards, cash transfers took a more prominent role.
- ³ This section of the policy notes draws on the following World Bank reports: Brazil 2042 (forthcoming); Social Protection for the Future Brazil (forthcoming); A fair Adjustment: Efficiency and Equity of Public Spending in Brazil (2017).
- ⁴ World Bank (2022a) pegs the gap just to meet the Sustainable Development Goals at 3.7 percent per year, up to 2030. World Bank (2022) estimates another 0.8 percent up to 2030 (or 1.2 percent up to 2050) for adequate spending on climate mitigation and adaptation.
- ⁵ Brazil's macroeconomic policy and institutional buffers helped it to weather recent shocks. The country has a credible and independent Central Bank that robustly responded to inflationary pressures, a sound and stable financial sector, and high levels of foreign reserves. The floating exchange rate regime also provides an effective first-line of defense against external shocks. The fiscal and debt position is buffered by low government debt exposure to exchange rate risks and Federal Treasury cash cushions (at around 19 of GDP by end 2021), reduce roll over risks.
- ⁶ A fiscal rule (or anchor) is a permanent constraint on fiscal policy to contain pressures to overspend, so as to ensure fiscal responsibility and debt sustainability. Its credibility depends on its ability to help deliver the required adjustment to put debt on a sustainable path, but that is socially and politically viable.
- ⁷ The pick-up in inflation also contributed to the increase in fiscal revenues since 2021.
- ⁸ Debt sustainability is also vulnerable to near term risks, including delays in fiscal consolidation, lower GDP growth in the short term, and higher real interest rates which together could raise public debt to over 100 percent of GDP by 2030.
- ⁹ A large share of federal primary expenditure is indexed to GDP, revenues or the minimum wage. For instance, the minimum wage determines a large part of pension benefits (due to the minimum pension being set equal to the minimum wage). Beyond indexation of individual benefits, rigidities and structural spending pressures also originate from minimum spending requirements.
- ¹⁰ World Bank. Fiscal Rules and Economic Sige in Latin America and the Caribbean (2020).
- ¹¹ For instance, debt rules and budget balance rules establish a clear, direct link with debt sustainability, but they tend to amplify the business cycle. Structural balance rules contribute to stabilizing output. Their link with debt sustainability depends on the characteristics of the economy, initial debt conditions, and the commodity price cycle. Expenditure rules can make spending acyclical, so they may replicate the functioning of structural balance rules but are not linked directly to debt sustainability. However, they can trigger the fiscal consolidation necessary to maintain debt sustainability when accompanied by a debt rule or a budget balance rule.
- ¹² The events triggering the activation of an escape clause should be outside government's control and preferably defined in quantitative terms if possible. They typically include severe economic downturns, large natural disasters, and states of emergency.
- ¹³ For example, structural balance rules are difficult to communicate to the public since targets under this approach are partly defined based on nonobserved (calculated) variables using a large number of assumptions, making them difficult to communicate to general audiences, undermining their transparency from the perspective of citizens, politicians, and other stakeholders and their potential support for the rule. A number of countries have opted for alternative arrangements such as the adoption of a combination of expenditure rules with debt rules or expenditure rules with budget balance rules (with well-defined escape clauses) can have the same effects, with more simplicity and transparency.
- ¹⁴ In Panama, for instance, escape clauses were triggered in 2009 (when the global financial crisis brought a slowdown of GDP growth of 1 percent) and in 2011 (natural disaster). Accordingly, the deficit ceilings of 2009 and 2011 were raised from 1 percent to 2.5 percent and then to 3 percent of GDP. The rule establishes a period of three years of linear adjustment (one-third per year) for a slowdown in economic growth, provided the rate of growth of GDP is less than 2 percent; it only applies for one year for a natural disaster.
- ¹⁵ Brazil's social protection programs improve the position of the households in the bottom 20 percent, partly due to their estimated pre-fiscal income of under R\$100. On the other side of the distribution, the richest quintile sees its net cash position reduced by about 22 percent due to fiscal policies, with one of the largest impacts coming from the personal income tax at 7 percent.
- ¹⁶ Source: A fair adjustment : efficiency and equity of public spending in Brazil : Volume I : sintese (Portuguese). Washington, D.C. : World Bank Group
- ¹⁷ Benefit programs: Pensions subsidies, Salario Familia, Unemployment Insurance, Abono Salarial, Bolsa Familia and BPC.
- ¹⁸ The universal flat benefit for children would consolidate all existing transfers targeted to children, which are now fragmented throughout the tax benefit system (including the child and youth benefits of Auxilio Brasil, Salario Familia, and child-related income-tax deductions). The broadly targeted means-tested benefit to poor households would consolidate the unconditional component of Auxilio Brasil with Abono Salarial. The benefit would begin to taper off above the eligibility poverty line to preserve incentives to participate in the formal labor market.
- ¹⁹ Over the years, several authors have proposed this type of benefit consolidation (see World Bank 2018, IPEA 2019, and Paiva et al, 2021). This proposal, named the "consolidated social assistance benefit," builds on this literature and on the innovations achieved by the social protection system since the COVID-19 crisis.
- ²⁰ Soares et al (2019) using data from the 2017 Brazilian National Household Sample Survey (PNAD)
- ²¹ World Bank – Social Protection for the Future Brazil. (forthcoming).
- ²² It is known that the FGTS is more than individual savings as it currently also finances housing and sanitation programs. Hence, using these funds as a substitute for unemployment insurance would not yield a neutral impact. In the context of Brazil's 2040 future outlook, the FGTS should be thought of as an invention to fund public goods that made sense when private financial markets were less developed. However, in the current and the near future, these policies should be financed by other budget sources rather than by forcing workers to save.
- ²³ The pension is currently accrued at 4 percent of the wage base per year for the first 15 years and at 2 percent thereafter.
- ²⁴ Savings from equalizing the retirement age are not included in these calculations.
- ²⁵ Income taxation accounts for only 8 percent of total tax revenue, which is relatively low when compared to OECD average (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).
- ²⁶ 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.

²⁷ Source: Gastos Tributários (Bases Efetivas), Receita Federal estimates.

²⁸ Source: World Bank (2018)

²⁹ Source World 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%ABlico-Brasileiro-o-Que-Os-Dados-Dizem.pdf>

³⁰ Such as the legislative, judiciary and the federal prosecutor's office.

³¹ Some examples are: leave permissions, annual holidays longer than 30 days, benefits for time of employment ("anuênios, quinquênios"), incorporation of temporary function benefits to the actual wage.

³² Such as the legislative, judiciary and the federal prosecutor's office.

³³ Career design should also take into account the value of the whole intertemporal benefit package, including pensions, which are highly impacted by career progression rules.

³⁴ These include retirement age increases to ages 62 and 65 for females and males respectively, revisions of survivor benefit formula and eligibility, increases in retiree contribution base, and allowances for extraordinary pension contributions.

³⁵ For example, recent experiences from Alagoas and Santa Catarina suggest that a pension record audit, greatly simplified by improved IT solutions, could yield substantial savings of pension spending.

³⁶ This section draws mainly on the World Bank's "Brazil 2042" report (forthcoming) and the World Bank's Infrastructure Review for Brazil, 2022.

³⁷ In 2015/16, caused by the end of the commodity cycle and a corruption scandal (the Lava Jato affair), and in 2020/21, caused by the Covid-19 pandemic.

³⁸ Labor adjusted for education represented about 100 percent of growth in 1997–2005, 200 percent in 2006–11, and 600 percent in 2012–19. Capital accumulation also contributed to Brazil's growth, though less than in East Asia because of lower savings rates. Converting natural land into productive land, mainly for agriculture, also contributed to growth

³⁹ World Bank, Brazil 2042 (forthcoming) based on Ferreira and Rossi 2003; Muendler 2004; Lisboa, Menezes Filho, and Schor 2010, Dutz 2018.

⁴⁰ World Bank, Brazil 2042 (forthcoming) based on Lisboa et al. 2010; Cirera et al. 2017.

⁴¹ 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.

⁴² Note: 2018 tariffs for United States, Republic of Korea, and Mexico.

⁴³ Additionally, flexibilities remain in place for product where Mercosul members can apply tariffs different than the CET rate (particularly for import duties on capital and ICT goods).

⁴⁴ World Bank – Strengthening the role of services trade in the Brazilian economy (2022) – Technical assistance report.

⁴⁵ World Bank, Brazil 2042 (forthcoming) based on Hyman (2018).

⁴⁶ Source: Pesquisa elaborada pelo Movimento Brasil Competitivo (disponível em <https://www.mbc.org.br/programa-custo-brasil/>)

⁴⁷ 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.

⁴⁸ The ICMS - Imposto Sobre a Circulação de Mercadorias e sobre Prestações de Serviços - is a VAT on consumption administered by subnational entities.

⁴⁹ This proposals are tagged as PEC 45/2019 and PEC 110/2019.

⁵⁰ 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.

⁵¹ World Bank 2017b; Kannebley Júnior and Porto 2012.

⁵² Goñi and Maloney 2017; Cirera and Maloney 2017.

⁵³ Maskus, K. (2012). Private rights and public problems: the global economics of intellectual property in the 21st century. Peterson Institute.

⁵⁴ World Bank. Country and Climate Report for Brazil (forthcoming).

⁵⁵ World Bank estimates suggest that public consumption multiplier is a small multiplier of less than 0.5 that does not differ statistically from zero at any time. The public investment multiplier becomes positive and statistically significant after three quarters. After two years, the public investment multiplier reaches a value of 1.43 (SE=0.43). When the state-level aggregate fiscal multiplier is decomposed the results are consistent with those estimated at the national level: The public consumption multiplier is 0.54 (SE=0.21) on impact and peaks around 0.85 (SE=0.28) after two years. This is larger than the national public consumption multiplier of less than 0.5. The state-level public investment multiplier is 0.77 (SE=0.23) on impact and after two years reaches a value of 1.89 (SE=0.53).

⁵⁶ This section of the policy notes draws primarily on the World Bank's Human Capital Review for Brazil (2022); the World Bank's Social Protection for the Future report (forthcoming), and the World Bank's Brazil 2042 report (forthcoming).

⁵⁷ The Brazilian Constitution allocates responsibility for education to the federal, state, and municipal levels of government, which jointly provide public pre-tertiary education to 42 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 48 million students in preuniversity education, 16 million are enrolled in state school networks, 24 million in municipal school networks and 8 million are enrolled in private schools, which represent 33 percent, 50 percent and 17 percent of total national enrollment, respectively. The federal government manages a few mostly technical and military schools but focuses on providing tertiary education.

⁵⁸ Sinopse Estatística de Educação Básica. INEP .

⁵⁹ Sinopse Estatística de Educação Básica. INEP 2021.

⁶⁰ 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/educacao_basica/saeb/2019/resultados/relatorio_de_resultados_do_saeb_2019_volume_1.pdf

⁶¹ QEDU 2021.

⁶² Pereda et al. 2020.

⁶³ World Bank – Brazil Poverty and Equity Assessment (2022).

⁶⁴ Silva et al. 2020.

⁶⁵ Almeida et al. 2015.

⁶⁶ Almeida and Packard 2018.

⁶⁷ Based on PNAD C, 2019.

⁶⁸ World Bank, 2017.

⁶⁹ Bruns, Evans and Luque 2012.

⁷⁰ In 2018, spending on labor intermediation was equivalent to less than 1 percent of spending on unemployment insurance.

⁷¹ Some of these concerns were raised in a recent survey of federal initiatives to prepare the Brazilian labor market for the digital transformation carried out by the national auditing authority in Brazil. <https://portal.tcu.gov.br/imprensa/noticias/sistema-s-deve-preparar-o-mercado-de-trabalho-para-a-transformacao-digital.htm>, accessed on November 29, 2021.

⁷² World Bank Poverty Assessment, 2022.

⁷³ This section of the policy notes is based primarily on the World Bank's Country and Climate Diagnostic for Brazil (forthcoming) and the Economic Memorandum for the Amazon States (forthcoming).

⁷⁴ West, T.A.P., and P.M. Fearnside. 2021. "Brazil's Conservation Reform and the Reduction of Deforestation in Amazonia." *Land Use Policy* 100 (January): 105072. doi:10.1016/j.landusepol.2020.105072.

⁷⁵ Illegal deforestation is most prevalent in undesignated lands.

⁷⁶ 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. http://vox.lacea.org/?q=wps/bailing_environmental_liabilities.

⁷⁷ World Bank Country Climate and Development (CCDR) Report, 2022.

⁷⁸ DETER (Departamento de Transportes e Terminais) is the Department of Transport and Terminals; PRODES (Projeto de Monitoramento do Desmatamento na Amazônia Legal por Satélite) is the Project for Monitoring Deforestation in the Legal Amazon by Satellite.

⁷⁹ Cisneros, Elias; Jan Börner; Stefano Pagiola; and Sven Wunder (2002), "Impacts of conservation incentives in protected areas: The case of Bolsa Floresta, Brazil", *Journal of Environmental Economics and Management*, Volume 111, January 2022.

⁸⁰ World Bank – An Economic Memorandum for the Amazon States (forthcoming).

⁸¹ Moderagro (Programa de Modernização da Agricultura e Conservação de Recursos Naturais) is Brazil's Agriculture Modernization and Natural Resources Conservation Program; INOVAGRO (Programa de Incentivo à Inovação Tecnológica na Produção Agropecuária) is an Incentive Program for Technological Innovation in Agricultural Production.

⁸² ITR is a progressive land tax based on the area and value of the land, as well as the productive area as a percentage of total area, making extensive cattle ranching consistent with a lower ITR tax bracket.

⁸³ Pereira, O.J.R. et al. 2018, "Assessing Pasture Degradation in the Brazilian Cerrado Based on the Analysis of MODIS NDVI Time-Series." *Remote Sensing* 10 (11): 1761. doi:10.3390/rs10111761.

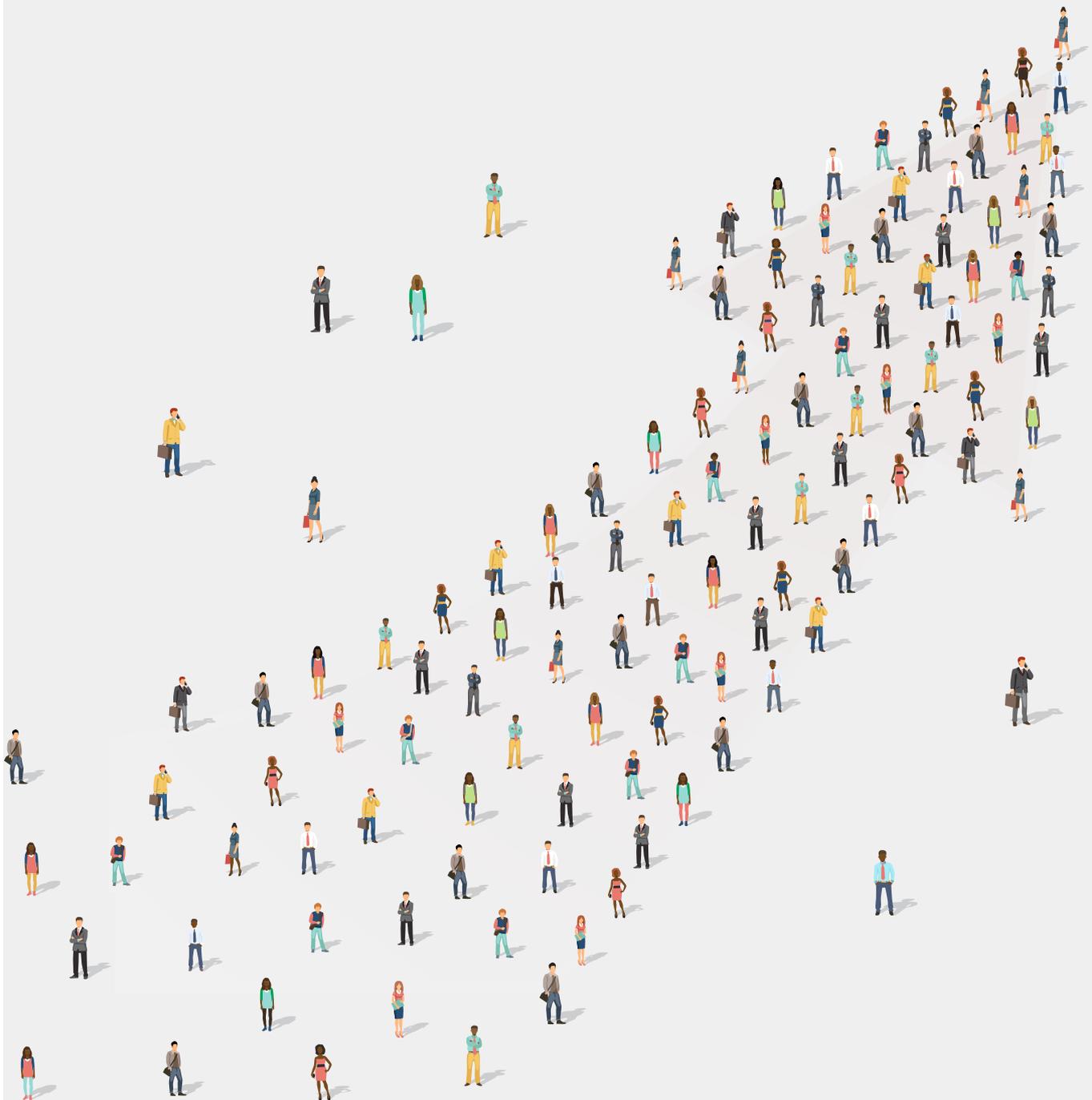
⁸⁴ Established in 2002, Garantia Safra is a conditional benefit to promote minimum security for family farmers in case of a climate event. To receive the benefits, the producers must (i) have a family income of less than 1.5 minimum salaries; (ii) cultivate between 0.6 and 5 hectares of cotton, rice, beans, manioc, or corn or other agricultural activities that coexist with the semiarid region; and (iii) reside in a municipality that lost at least 50% of this group of crops due to drought or excessive rainfall.

⁸⁵ World Bank Country Climate and Development Report (forthcoming).

⁸⁶ INESC, 2021, "Subsídios Aos Combustíveis Fósseis No Brasil (2020): Conhecer, Avaliar, Reformar."

⁸⁷ Leitão et al., 2020, "Do Pasto Ao Prato: Subsídios e Pegada Ambiental Da Carne Bovina."

⁸⁸ Ibid.





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