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This Survey was prepared in the Economics Department by Jens Arnold and Alberto González Pandiella under the supervision of Piritta Sorsa. Research and statistical assistance was provided by Christian Abele, Matheus Bueno, James Hiroshi Habe and Anne Legendre and editorial assistance by Carolina González.

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Basic statistics of Brazil, 2016

(Numbers in parentheses refer to the OECD average)*

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	206.1		Population density per km²	24.7	(37.2)
Under 15 (%)	22.6	(17.9)	Life expectancy (years, 2015)	75.2	(80.5)
Over 65 (%)	8.1	(16.6)	Men	71.6	(77.9)
			Women	78.9	(83.1)
Latest 5-year average growth (%)	0.9	(0.6)	Next general election	10/2018	
ECONOMY					
Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	1,796.2		Primary sector	5.5	(2.5)
In current prices (billion BRL)	6 266.9		Industry including construction	21.2	(26.6)
Latest 5-year average real growth (%)	-0.4	(1.8)	Services	73.3	(70.9)
Per capita (th USD PPP)	15.2	(42.0)			
GENERAL GOVERNMENT					
Per cent of GDP					
Expenditure	41.6	(41.6)	Gross financial debt	69.9	(108.5)
Revenue	32.7	(38.7)	Net financial debt	46.2	(69.9)
EXTERNAL ACCOUNTS					
Exchange rate (BRL per USD)	3.489		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	1.995		Crude materials, inedible, except fuels	25.6	
In per cent of GDP			Food and live animals	24.3	
Exports of goods and services	12.5	(53.9)	Machinery and transport equipment	18.8	
Imports of goods and services	12.1	(49.5)	Main imports (% of total merchandise imports)		
Current account balance	-1.3	(0.2)	Machinery and transport equipment	37.3	
Net international investment position	-39.9		Chemicals and related products, n.e.s.	24.7	
			Mineral fuels, lubricants	11.0	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate for 15-64 year-olds (%)	54.0	(66.9)	Unemployment rate, LFS (age 15 and over) (%)	12.0	(6.3)
Men	64.3	(74.7)	Youth (age 18-24, %)	25.9	(13.0)
Women	44.5	(59.3)	Tertiary education completed 25-64 y/o (%)	14.8	(35.7)
Participation rate for 15-64 year-olds (%)	61.4	(71.7)	Gross dom. expenditure on R&D (% GDP, 2014)	1.2	(2.4)
ENVIRONMENT					
Total primary energy supply p.c.(toe, 2014)	1.5	(4.1)	Exposure to air pollution (more than 10 g/m3 of PM2.5, % of population, 2015)	50.9	(75.2)
Renewables (%, 2014)	38.6	(9.6)	CO2 emissions from fuel combustion p.c.(tonnes, 2014)	2.3	(9.4)
SOCIETY					
Income inequality (Gini coefficient, 2013)	0.470	(0.311)	Education outcomes (PISA score, 2015)		
Relative poverty rate (%, 2013)	20.0	(11.3)	Reading	407	(493)
Median disp.househ.income (th USD PPP, 2013)	7.3	(20.4)	Mathematics	377	(490)
Public and private spending (% of GDP)			Science	401	(493)
Health care (2014)	8.3	(9.0)	Share of women in parliament (%)	9.9	(28.7)
Pensions (public, 2014)	11.6	(9.1)			
Education (public , primary, secondary, post sec. non tertiary, 2014)	4.1	(3.4)			

Note: Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 29 member countries.

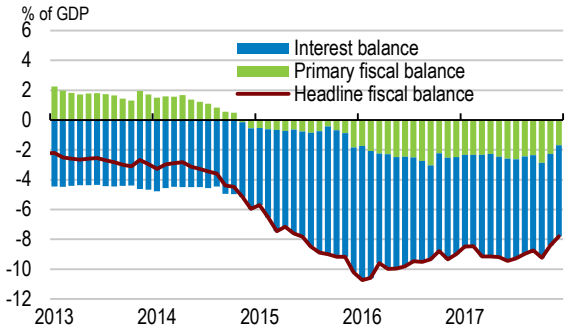
Source: Calculations based on data from OECD, International Energy Agency, World Bank, IMF and Inter-Parliamentary Union.

Executive summary

- *Sustaining inclusive growth with further significant reforms*
- *Stronger investment and productivity are key for future growth*
- *Brazil can seize greater benefits from greater global and regional integration*

Sustaining inclusive growth with further significant reforms

Fiscal outcomes have deteriorated sharply



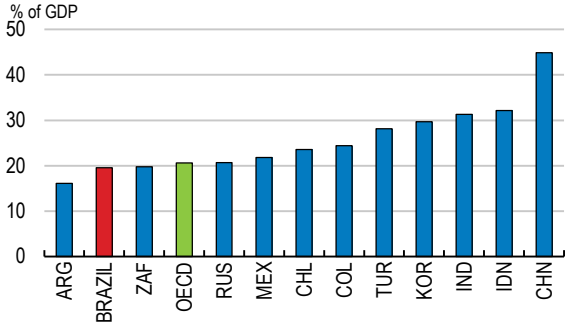
Source: Central Bank of Brazil.

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Over the past two decades, strong growth combined with remarkable social progress have made Brazil one of the world's leading economies, despite the long recession that began in 2014 and from which the economy is now slowly emerging. However, inequality remains high and fiscal accounts have deteriorated substantially, calling for wide-ranging reforms to sustain progress on inclusive growth. A better focus of social expenditures towards the poor would reduce inequality and ensure sustainability of public debt at the same time. This will require difficult political choices, particularly in pensions and social transfers. Reducing economic transfers to the corporate sector, in conjunction with more systematic evaluations of public expenditure programmes, will strengthen growth, improve economic governance and limit the future scope for rent seeking and political kick-backs. Fighting corruption will require continuing reforms to improve accountability.

Stronger investment and productivity are key for future growth

Investment is low in international comparison
2010-2016



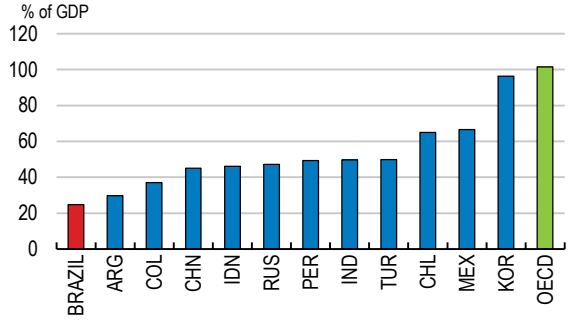
Source: World Development Indicators, World Bank.

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Growth, which was supported by a rising labour force over many years, will slow down due to rapid population aging. Maintaining the growth potential of the economy requires stronger investment, which could also raise productivity and concomitantly, the scope for future wage increases. Public spending has crowded out private investment in the past, and the absence of well-developed private financial markets with longer maturities has hindered the flow of savings into more efficient projects, including infrastructure. Simplifying taxes, reducing administrative burdens and streamlining licensing would raise investment returns. Stronger competition will allow high-performing enterprises to thrive and will further enhance investment opportunities.

Brazil can seize greater benefits from greater global and regional integration

Integration into global trade is weak
Imports and exports, average 2010-2016



Source: OECD Economic Outlook database.

StatLink http://dx.doi.org/10.1787/888933655168

Integration into global trade is much lower than in other emerging markets as trade barriers shield enterprises from global opportunities and foreign competition. Exports and growth could be stronger if firms could source the best inputs and capital goods from international markets. More exposure to trade will also lead to rising productivity among domestic producers as they improve efficiency and seize new export opportunities. This would create new jobs across the economy, but especially for those with lower skills and incomes, making growth more inclusive. Consumers would also benefit from more competitive prices, with particularly strong effects among low-income households. A stronger integration into the global economy would be an effective way to enhance competition and would help the most productive firms and industries to succeed, although a select few sectors would see their output decline. Well-designed policies that protect workers rather than jobs through a combination of training and income protection, can shield the poor and vulnerable from the burden of adjustment, ensuring inclusive growth.

MAIN FINDINGS	KEY RECOMMENDATIONS
Improving macroeconomic policies and economic governance	
Fiscal outcomes have deteriorated substantially since 2014 reflecting mostly increases in expenditure. A primary surplus of around 2% of GDP is required to stabilise public debt in the medium term.	Implement the planned fiscal adjustment through permanent spending cuts. Gradually raise the retirement age. Index pensions to consumer prices rather than the minimum wage.
Social transfers have raised spending, but only few of them reach the poor.	Delink benefit floors from the minimum wage. Shift more resources towards transfers that reach the poor, including Bolsa Familia.
The Central Bank has conducted monetary policy in an independent way but formalising this independence would strengthen monetary policy effectiveness.	Limit dismissal of the Central Bank governor to severe misconduct to rule out political influence in monetary policy decisions in the future. Safeguard the budget autonomy of the Central Bank.
Targeted industrial support policies have generated substantial rents without effects on investment or productivity.	Scale back sector- and location-specific industrial support policies, including tax benefits. Evaluate existing programmes.
Political consensus building has required costly and inefficient expenditures without systematic audits and reduced the effectiveness of the public sector. This has been a key obstacle to passing reforms.	Limit political appointments, especially in state-owned enterprises. Strengthen performance incentives in public companies. Undertake more systematic audits of all expenditures, including parliamentary budget appropriations.
Public procurement has been subject to large-scale corruption.	Review public procurement laws. Use more centralised purchasing bodies. Strengthen whistle-blower and leniency procedures.
Raising investment	
A challenging business climate including high tax compliance costs, high costs of capital and high administrative burdens curb investment returns while weak competition misallocates resources.	Consolidate consumption taxes at the state and federal levels into one value added tax with a broad base, full refunds for input VAT paid and zero-rating for exports. Reduce barriers to entry due to administrative procedures.
Long-term credit has been dominated by the national development bank BNDES, which creates an uneven playing field and may hamper the development of private investment financing. The recent decision to phase out subsidies in its lending operations will allow a redefinition of the role of BNDES.	Focus BNDES lending activities on niche areas where the private sector finds it difficult to operate, including in the financing of small start-ups and innovation projects. Use BNDES more to arrange syndicated loans for infrastructure and lead the creation of structured financial instruments.
Weak project structuring has been holding back private participation in infrastructure financing. Concessions cannot be used in projects where user fees are not possible.	Provide more training to officials involved in infrastructure structuring. Make wider use of BNDES' technical capacity to assist public entities in project structuring, especially local governments. Make wider use of public-private partnerships but ensure that all present and future liabilities are taken into account in a transparent way.
Fostering the integration into the world economy	
High barriers to international trade reduce benefits from integration into the global economy.	Lower tariffs and scale back local content requirements.
Greater integration into the global economy will reallocate jobs across firms and sectors.	Bolster training and job search assistance programmes for affected workers.
Strengthening green growth	
Deforestation has declined up to 2014 but risen again since then.	Ensure continuous decreases in deforestation, including through stronger enforcement and maintaining the status of areas currently under environmental protection.

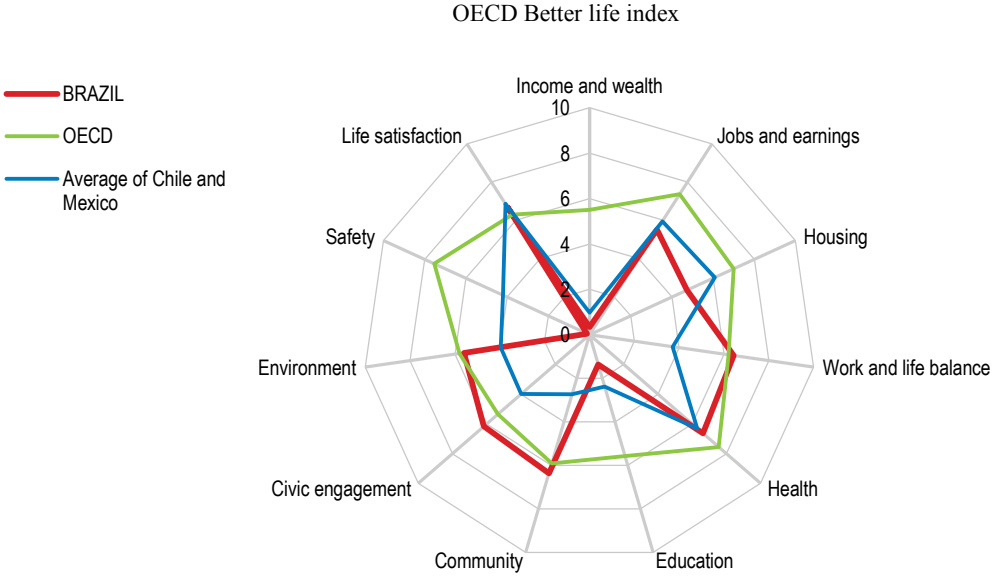
Assessment and recommendations

- *The economy is gradually emerging from the recession*
- *Inflation has declined but financial intermediation could be improved*
- *Fiscal outcomes need to improve to ensure the sustainability of public debt*
- *Improving governance and reducing corruption*
- *Raising investment is a key policy priority*
- *Supporting the integration with the region and the world economy*
- *Green growth challenges*

Strong growth and remarkable social progress over the past two decades have made Brazil one of the world's leading economies, despite the deep recession that the economy is now emerging from. Macroeconomic stability, favourable demographic trends and external conditions allowed an expansion of private and public consumption, in the context of solid employment and wage growth. A buoyant labour market coupled with improving access to education and extensive transfer programmes allowed millions of Brazilians to move into better jobs and attain better living standards. As 25 million Brazilians have escaped poverty since 2003, growth has become much more inclusive. These are remarkable achievements.

However, Brazil remains one of the most unequal countries in the world. Half of the population receives 10% of total household incomes, while other half holds 90%. Severe inequalities continue to put women, racial minorities and youths at a disadvantage. Male workers are paid 50% more than women, a gap that is 10 percentage points higher than the OECD average. Women are also more likely to have informal employment. Poverty is highest among children and unemployment among youths is more than twice the overall average. These inequalities tend to feed off of each other, considerably limiting the ability of part of the population to fulfil their productive potential and improve their lives. Brazil performs well in only a few measures of well-being, including subjective well-being and social connections, but below average in income and wealth, jobs and earnings, housing, environmental quality, health status, safety, education and skills (Figure 1). At the same time, there has also been considerable progress. Besides falling inequality and poverty, the gender gap in labour force participation has halved since 1990, and with 52% of women participating in the labour force, Brazil exceeds the average of OECD or Latin American countries.

Figure 1. Well-being indicators

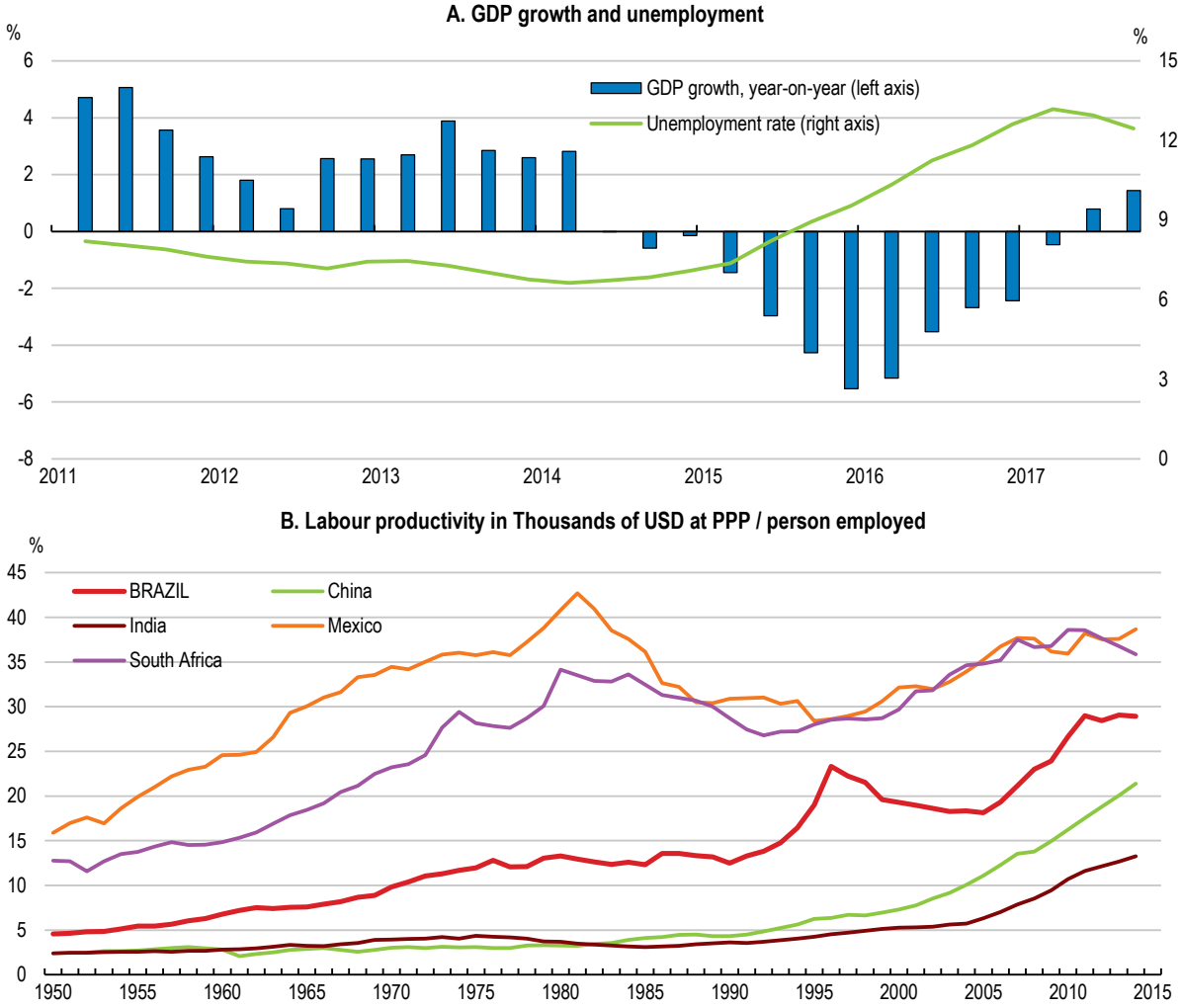


Note: Each well-being dimension is measured by one to four indicators from the OECD Better Life Index set. Normalised indicators are averaged with equal weights. Indicators are normalised to range between 10 (best) and 0 (worst) computed over OECD countries and non-OECD countries according to the following formula: (indicator value - minimum value) / (maximum value - minimum value) x 10.
Source: OECD calculations based on OECD Better Life Index – 2017 Edition.

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Since the turn of the millennium, a rising labour force lifted per-capita incomes while rising commodity prices supported public revenues (Box 1). But this growth model is now largely exhausted and the recession has brought long-standing structural imbalances to the fore. Brazil's population has started to age rapidly and the sustainability of public finances can no longer be taken for granted. Policies have been slow in adapting to this new situation. Attempts to remedy longstanding policy-induced competitiveness challenges with generous subsidies and transfers to domestic companies helped little as they failed to solve the real problems. Rising public spending has in part come at the cost of lower private investment. This and other factors including deteriorating terms of trade, political turmoil and corruption allegations have led to a decline in investment by around 30% since 2014. Inflation rose into double digits. In this context, confidence in economic policies and business prospects declined sharply, leading the economy into a deep and prolonged recession in 2015 that wiped out almost 7 years of growth and doubled unemployment (Figure 2). Labour productivity growth began to stagnate in 2010, even before demand declined.

Figure 2. The economy is recovering and productivity growth has slowed down



Source: OECD Economic Outlook database, Feenstra, Robert C., Robert Inklaar and Marcel P. Timmer (2015), "The Next Generation of the Penn World Table" American Economic Review, 105(10), 3150-3182, available for download at www.ggdc.net/pwt

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Further advances in living standards will hinge on finding a new inclusive and green growth strategy, ensuring actively that the benefits of growth will be broadly shared across the population as a whole. Productivity will have to become the principal engine of growth, but that will require significantly higher investment and a wide-ranging agenda of microeconomic reforms. This would also contribute to create more and better remunerated jobs for all Brazilians. There is a tight nexus between raising productivity and making growth more inclusive. Improvements in productivity require not only more investment in physical capital, but also in the skills of people, which will in turn help everyone to contribute to stronger productivity growth and ensure that it benefits all parts of society (OECD, 2016e, World Bank, 2018).

Box 1. A glance at Brazil's recent economic history

Brazil's economic history is characterized by significant economic volatility until 1994. Between the return to democracy in 1985 and 1994, the economy went through spells of hyperinflation, recessions and brief intervals of relative stability under ultimately unsuccessful economic plans. Inflation peaked at 2950 percent in 1990. Macro-economic turbulence gave rise to a strong short-term focus of economic agents and was most detrimental to the poor, who were not able to protect themselves against inflation. This only changed with the 1994 Real plan, which established a crawling currency peg, limited public spending and undid much of the existing inflation indexation. Under the new currency regime, the real became overvalued and significant current account deficits emerged, which became difficult to finance as international liquidity dried up after the Asian crisis. As a result, the exchange rate was floated in 1999 and an inflation targeting regime was adopted. Brazil entered the 2008 global crisis with significant buffers to enact countercyclical policies and initially showed strong resilience, with economic growth rebounding strongly in 2010. Since then, however, a combination of rising fiscal imbalances, increasingly interventionist economic policies and unaddressed structural weaknesses have led to a sharp erosion of confidence, which ultimately led into the economy's strongest recession on record.

A number of structural weaknesses that had been masked by the commodity boom have by now become visible. At the same time, the more limited fiscal room will make it more difficult to achieve consensus for reforms in the fragmented political system, as in the past consensus was achieved mainly on the back of significant inefficiencies in government spending. Without a significant reform of mandatory public spending, the fiscal deficit of 7.8% of GDP and public debt at 74% of GDP in November 2017 risks becoming unsustainable.

The public sector will need to make a politically difficult choice between keeping the status quo or cutting back on transfers to the non-poor while boosting support to poor and the vulnerable households to continue contributing to growth and social progress, both of which are intertwined. Past reductions in inequalities have been based on a combination of solid growth, the resulting improved labour market prospects, better access to education and social transfers. Among the latter, highly efficient and well-targeted programmes co-exist with others transferring significant resources to middle class households, with very limited effects on inequality and hardly any impact on poverty. Fine-tuning the allocation of resources across and within social programmes could multiply the potential social progress that Brazil could achieve.

The pervasive dimensions of corrupt practices exposed by recent allegations at the highest levels have also revealed significant challenges in economic governance. Tax exemptions, subsidised lending, sector-specific industrial support policies and irregularities in contracts with public entities or state-owned companies distributed large economic benefits to the corporate sector, creating fertile grounds for rent-seeking behaviour and political kick-backs. Rents have also arisen as a result of policies that are shielding sizeable parts of the economy from competition, including through trade protection. These policies have effectively redistributed resources towards the affluent and made the political decision-making process less transparent. At the same time, they have rewarded firms for seeking political connections rather than performing better. Reconsidering these policies will reduce inequalities in incomes and opportunities and boost productivity.

However, recent events also reveal a steady strengthening of Brazil's institutions, evidenced by an independent judiciary that has not shied away from pursuing and sentencing senior leaders. This provides an opportunity for Brazil to distance itself from the past and continue strengthening its institutional framework, which would reduce future vulnerabilities and could strengthen long-term growth prospects. International evidence shows strong links between well-functioning institutions and growth (Acemoglu et al., 2005).

In spite of the political upheaval of the last few years, significant reforms have been approved (see Box 2). Building on this reform momentum would have substantial payoffs. OECD estimates suggest long-run GDP effects from a continuation of structural reform of over 20%, to be realised over a horizon of approximately 15 years (Table 1). This would have a substantial impact on incomes (Figure 3) as well as on inequality and poverty, although these benefits may occur with a lag. Reform areas with the highest growth payoff include improvements in institutions, business regulations, financial markets and trade integration. At the same time, the political economy of undertaking these reforms will not be easy. Finding the right sequencing, good communication and effective flanking policies to ensure that the benefits are shared by all will be crucial.

Box 2. Recent and ongoing reform initiatives

Since 2016, the following reforms have been implemented:

- An expenditure rule requires a freeze of real federal primary expenditure growth over the next 20 years.
- An independent fiscal council has been established and has started to produce high-quality monthly reports.
- A financial market reform will align directed lending rates with market rates within at most 5 years.

This reform will level the playing field and facilitate the development of private long-term financial markets through a new, market-based long-term interest rate called TLP.

- Competition in the oil and gas sector has been strengthened.

Local content rules have been scaled back in the sector and the state oil company Petrobras no longer has to be a partner in every offshore drilling project.

- A labour market reform has removed obstacles to stronger formal employment growth.

The reform has allowed firm-level agreements to take prevalence over the law, which provides a legal basis for long-standing practice and reduces legal uncertainties. At the same time, essential employee rights have remained non-negotiable.

- An education reform was passed in 2016.

The reform has reduced the number of mandatory subjects, providing more options and more room for tailoring teaching content to less academically inclined students. This is likely to help reducing drop-out rates.

- A new immigration law was passed in 2017.

The new law streamlines work visa application processes and enables workers already in the country to switch jobs without applying for another visa.

- Tax assets have been included in credit registry information and can be used by firms as loan collateral.
- Brazil has requested to adhere to the OECD Codes of Liberalisation of Capital Movements and of Current Invisible Operations.

Further reform proposals are currently being discussed, including:

- An extensive pension reform proposal has been submitted to Congress, but has not been voted on. It is expected that a new, less ambitious reform proposal could be submitted to Congress in the near future.

The original reform proposal as sent to Congress defined a minimum retirement age of 65 and raised the minimum contribution time from 15 years to 25 years, with a transition rule for those already close to retirement. Rules for women would gradually converge to those for men over 20 years. For those receiving more than the minimum pension, more years of contribution would be required to achieve the same replacement rates as at present. Survivor pensions would be reduced and the possibility of minimum survivor

pensions below the minimum wage was proposed.

- A substantial privatisation package of state-owned enterprises has been announced.
- A bankruptcy reform aimed at accelerating insolvency procedures has been prepared.
- A proposal to improve credit registries aims at reducing interest rate spreads.

The proposal will widen the coverage of positive information in credit registries, such as payment history on utility bills, unless the individual opts out from having this information covered.

- Plans about a tax reform are currently being discussed.

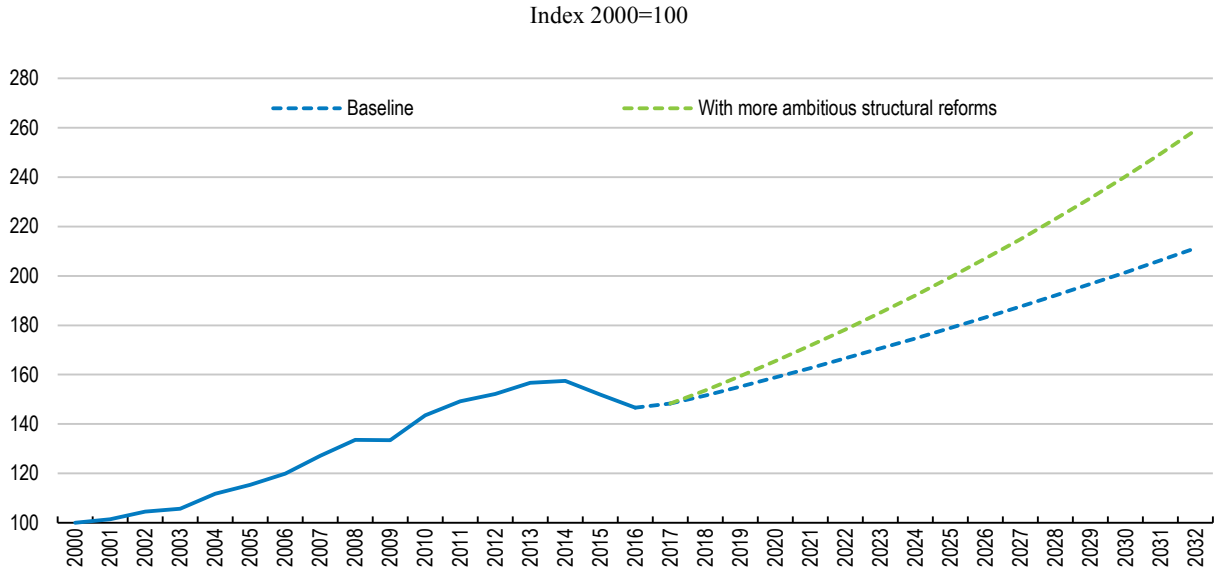
Table 1. Expected gains from structural reform are substantial

Estimated impact of selected reforms on real GDP

Reform	Impact on real GDP
Lower trade barriers (e.g. by reducing tariffs and local content rules)	8%
Reduce barriers to entrepreneurship (e.g. by cutting administrative burdens and streamlining licensing requirements)	5%
Develop domestic financial markets (e.g. by fostering private entry into long-term credit markets)	3%
Reduce corruption (e.g. by improving procurement laws and whistle-blower procedures)	3%
Improve government effectiveness (e.g. by undertaking systematic audits and evaluations)	2%
All of the above	21%
Corresponding to an average annual growth increase of:	1.4 % points

Note: These estimates were obtained on the basis of: i) a numerical indicator of Brazil's policy stance in each policy area, taken from World Bank's World Governance Indicators, Doing Business and World Development indicators; ii) a simulated policy shock to the indicator, defined as moving Brazil to the average of all countries covered in the different indicators; iii) the quantification framework developed in Egert (2017), which provides an estimate of the impact of changes in the indicator on long-term output growth. For trade openness, the scenario assumes that Brazil moves to the average of countries of similar size. Clearly, these quantifications are subject to uncertainty, both about their size and the time horizon of their materialisation.
Source: OECD calculations.

Figure 3. GDP growth could be much stronger with more ambitious structural reforms



Note: The baseline growth projection assumes growth as in Table 2 and 2.4% from there onwards, while the more ambitious structural reform scenario adds estimated GDP gains resulting from additional structural reforms as in Table 1.
Source: OECD estimates based on OECD Economic Outlook Database.

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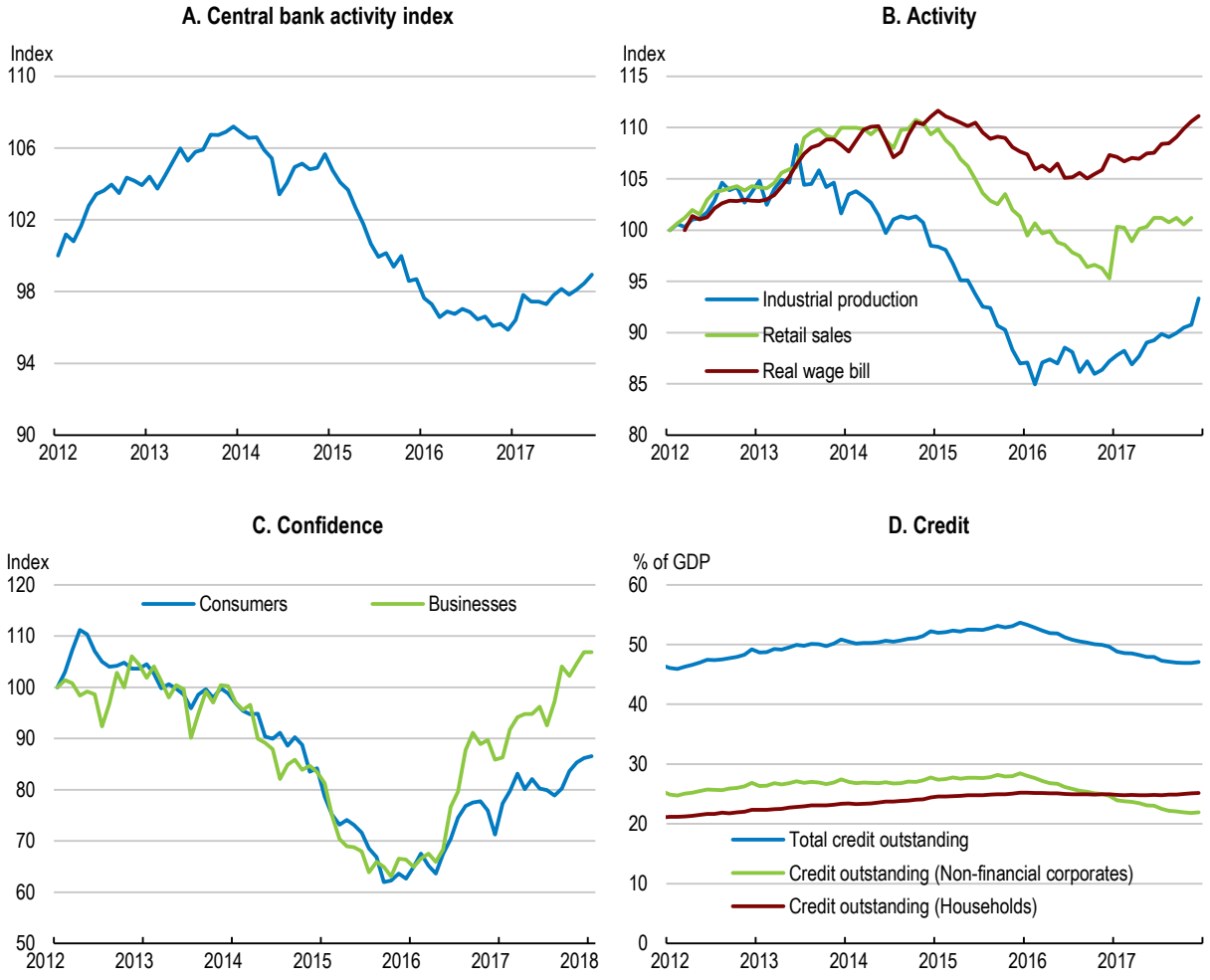
Against this background, the main messages of the Survey are:

- Stabilising public debt and ensuring that inflation remains close to the target are key macroeconomic priorities. The new expenditure rule will be crucial for restoring the credibility of fiscal policy.
- Well-being is significantly affected by high inequalities, both in terms of incomes and opportunities. Improving the effectiveness of public spending, and in particular public transfers, will be crucial for further social progress. Well-targeted transfers in combination with further improvements in education and health hold the key to more inclusive growth.
- Raising investment by improving the business climate and access to finance would raise productivity and potential growth. Addressing infrastructure bottlenecks from years of underinvestment will be crucial.
- Greater integration into the global economy would raise potential growth and productivity through increased competition and efficiency gains, and help share in the gains of international trade. It would also create more jobs with higher productivity and better wages and allow more workers to join the formal sector.

The economy is gradually emerging from the recession

After falling for eight consecutive quarters, growth resumed at the beginning of 2017. A stronger government commitment to fiscal sustainability and several structural reforms improved confidence and short-term indicators (Figure 4). Unemployment peaked at 13.3%, but started to decline. Total credit to the private sector is still contracting on a year-on-year basis, but credit to households has been recovering significantly.

Figure 4. After a deep recession, the economy is recovering

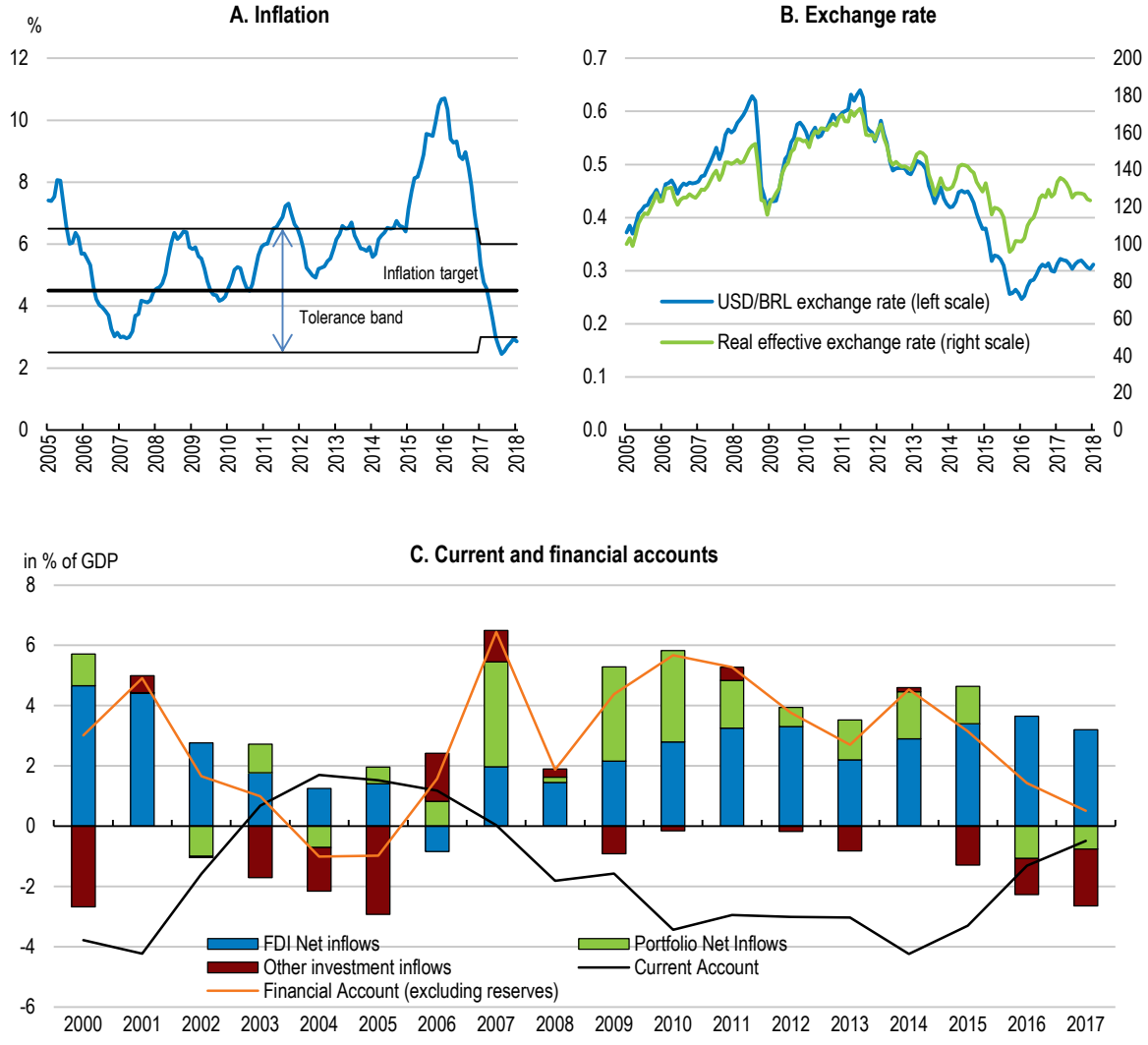


Source: Central Bank, CEIC.

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Annual inflation has come down substantially, from a peak above 10% in January 2016 to below 3% in January 2018. This is supporting household real incomes and has opened space for significant interest rate reductions. Private consumption has started to grow and will gain momentum as employment growth picks up and the real wage bill increases. Aided by more favourable external conditions, exports are projected to outpace import growth, resulting in further improvements in the trade balance. Foreign direct investment, amounting to a multiple of the current account deficit, will continue to hold up strong, while portfolio inflows, which had turned negative in 2016 but have since recovered, will be buoyed by a slow pace of interest rate hikes in advanced economies. The exchange rate has depreciated markedly since 2011, both in nominal and in real terms (Figure 5).

Figure 5. Inflation has come down, the exchange rate has depreciated



Source: Central Bank, CEIC.

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Growth is projected to strengthen during 2018 and 2019 (Table 2). Assuming the implementation of a substantial part of the current reform projects, confidence and easier credit conditions will support investment. Monetary policy can continue to provide support maintaining the current low level of interest rates in light of significant slack in the economy, although much will depend on the successful implementation of the fiscal adjustment. Against the background of subdued inflationary pressures and the need to ensure the sustainability of fiscal accounts, this policy mix appears appropriate.

Table 2. Macroeconomic indicators

	2014	2015	2016	2017	2018	2019
Real GDP growth	0.5	-3.8	-3.5	1.1	2.2	2.4
Private consumption	2.3	-3.9	-4.4	1.1	3.0	2.5
Government consumption	0.8	-1.1	-0.6	-0.5	0.7	1.3
Investment	-4.2	-13.9	-10.3	-2.5	2.5	2.7
Final domestic demand	0.7	-5.3	-4.6	0.2	2.5	2.3
Stockbuilding[1]	-0.3	-1	-0.5	0.7	-0.5	0
Exports	-1	6.3	1.7	6.6	5.9	4.5
Imports	-1.9	-13.9	-10.3	5.0	.5.0	3.4
Net exports[1]	0.2	2.6	1.7	0.2	0.2	0.2
Inflation (average for the year)	6.3	9.0	8.7	3.6	3.9	4.2
Inflation (end of period)	6.4	10.7	7.0	2.9	4.2	4.2
Unemployment	6.8	8.5	11.5	12.7	11.2	9.4
Fiscal balance (per cent of GDP)	-6.0	-10.2	-9.0	-7.8	-8.0	-7.3
Primary balance (per cent of GDP)	-0.6	-1.9	-2.5	-1.7	-2.3	-1.8
Public sector debt (gross, per cent of GDP)	56.3	65.5	69.9	74.0	77.1	81.1
Current account balance (per cent of GDP)	-4.3	-3.1	-1.3	-0.7	-1.9	-1.9

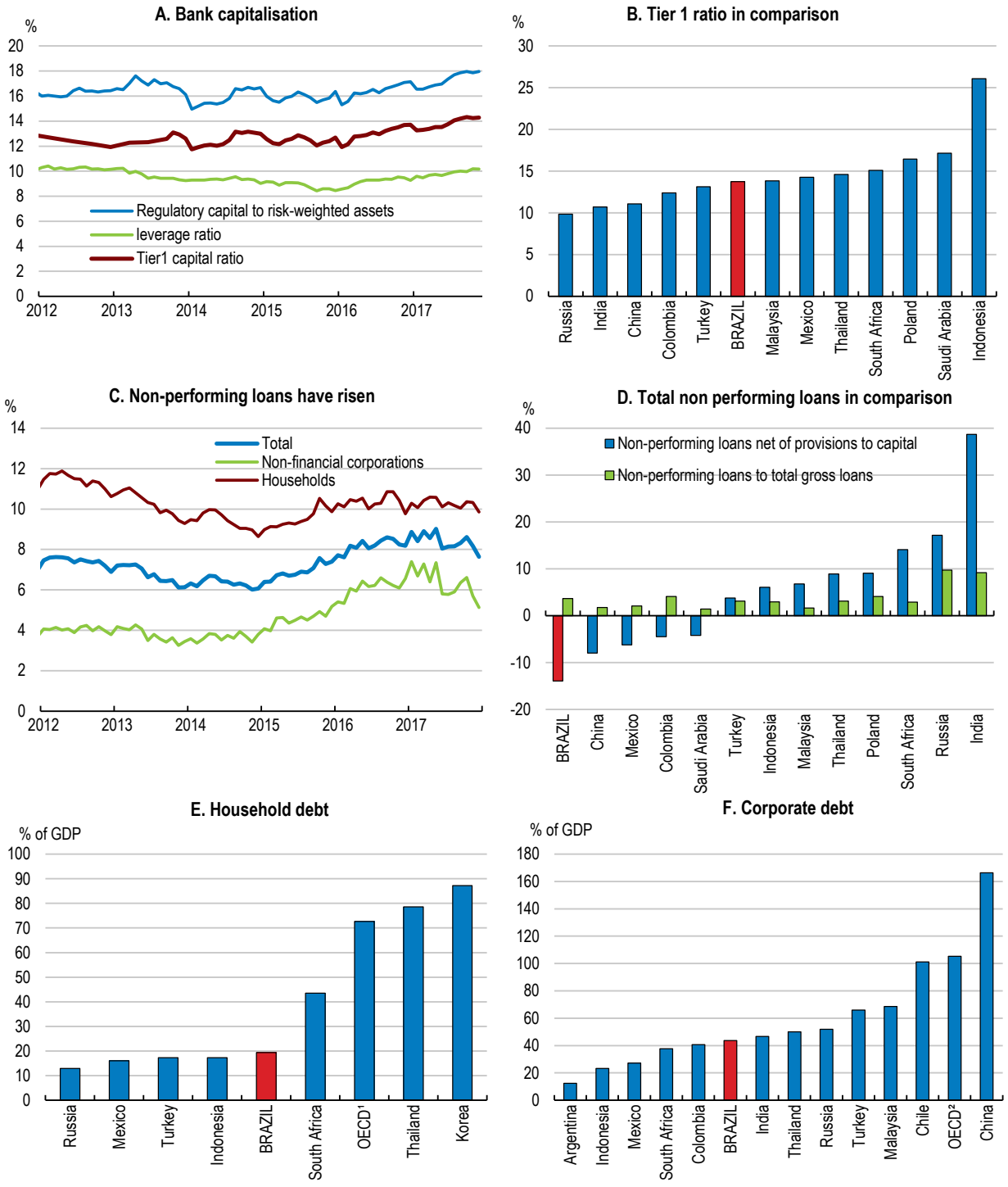
1. Contribution to changes in real GDP.
Source: OECD projections, OECD Economic Outlook Database, Central Bank.

Risks related to political developments are substantial

Risks to these projections include a failure to implement planned reforms, such as the much-needed fiscal adjustment. If the new expenditure rule is not adhered to, unsustainable fiscal dynamics could reduce confidence and trigger a return to recession. In particular, a successful implementation of the pension reform, without which the expenditure rule cannot be met in the medium term, will be a litmus test for the ability of the authorities to implement further structural reforms. Higher volatility on financial markets related to a normalisation of US monetary policy could also present risks for Brazil, although bouts of volatility have been well managed by the Central Bank in the past. Reserves and the strong FDI component of inflows would cushion related exchange rate risks.

In the banking sector, capitalisation exceeds regulatory requirements mitigating solvency risks (Figure 6). Stress test results point to an ability to withstand substantial shocks to growth or risk premiums (BCB, 2017; IMF, 2017a). In some sense, the severe downturn has acted like a real-world stress test for financial institutions, which have anticipated the recession by tightening credit standards and increasing fee income, and have remained solid. However, non-performing loans have risen and around a third of firms have interest obligations exceeding their earnings. Under adverse scenarios, this share could rise to 40%, corresponding to around 15% of total outstanding corporate debt (IMF, 2017a). On the household side, financial education has a role to play for prudent borrowing decisions and the resulting asset quality, as well as for fostering financial inclusion (Banco Central do Brasil, 2015, OECD, 2015h).

Figure 6. Financial markets contain risks, but these appear manageable



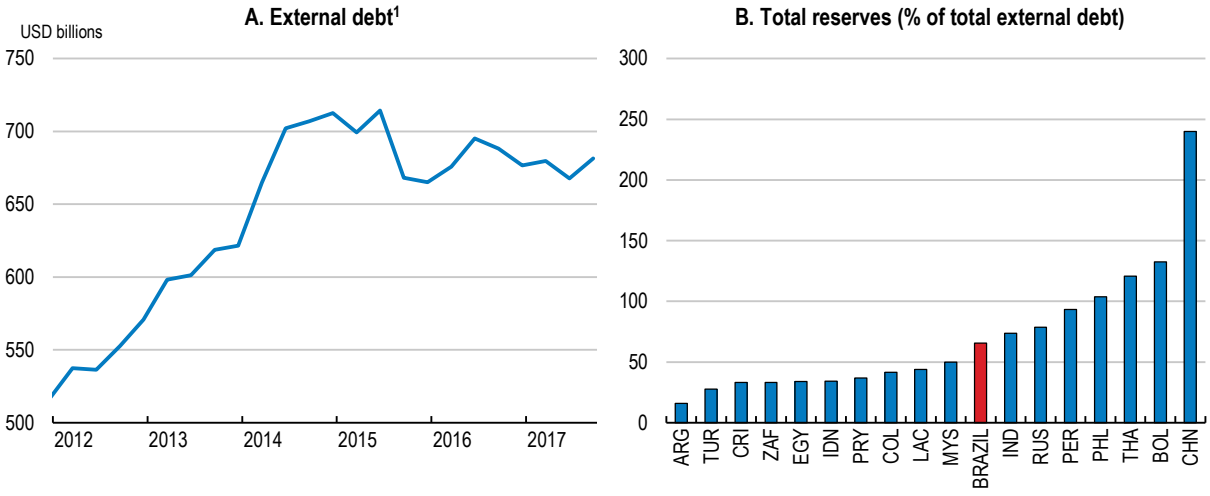
1. Unweighted average of 24 OECD countries with available data.
2. Unweighted average of 30 OECD countries with available data.

Source: CEIC, Central Bank.

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The flexible exchange acts as a shock absorber, but in interaction with unhedged foreign-currency debt it can create risks. The corporate sector, whose debt amounts to around 43% of GDP, is exposed to exchange rate risk as unhedged corporate liabilities of non-exporting firms in foreign currency amount to around 9% of GDP (BCB, 2017). By contrast, external debt is not a vulnerability for the public sector, with only 3.6% of public debt denominated in foreign currency and 12.7% of domestic public debt securities held by non-residents. Economy-wide external debt has risen over the past 5 years but is lower than in most emerging market economies (Figure 7). The total amount of external debt to be rolled over within 12 months amounts to 40% of currency reserves.

Figure 7. External debt has risen but currency reserves are high



1. The external debt definition used here includes intercompany lending and domestic fixed income securities held by non-residents.
Source: CEIC, Central Bank

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Table 3. Key vulnerabilities

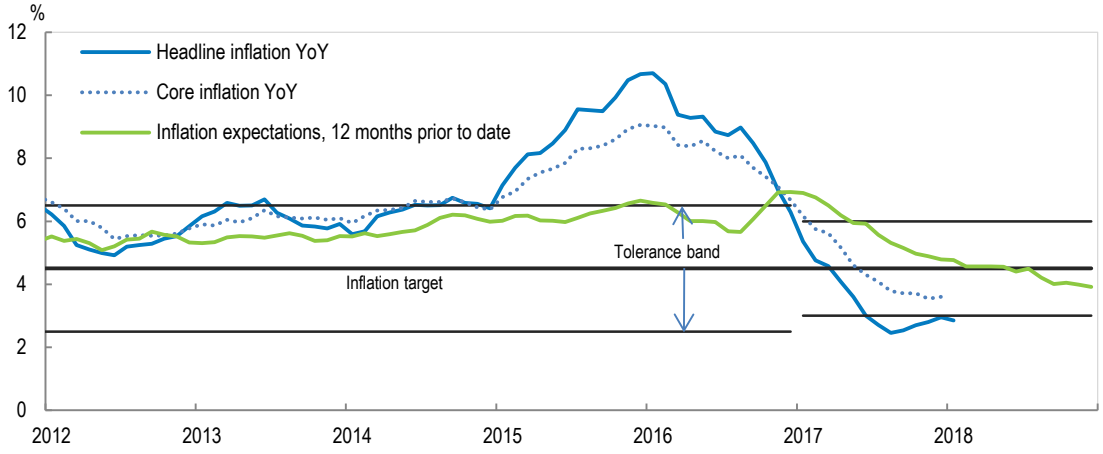
Uncertainty	Possible outcome
Corporate debt defaults	Lower earnings or rising interest obligations could bring highly indebted corporates into payment difficulties, with concomitant capital losses in the banking sector. This risk is mitigated by banks' high levels of credit provision.
A significant slowdown in China	China accounts for a quarter of Brazil's exports. Lower Chinese import demand and lower commodity prices would reduce exports and growth. Commodity sectors account for 64% of Brazil's exports, but only for 7% of GDP.

Inflation has declined but financial intermediation could be improved

Inflation began to trend upwards in early 2014 and rose to almost 11% in early 2016 as overdue adjustments of administered prices were implemented, among other factors. Since then, it has fallen well below the 4.5% inflation target of the Central Bank (Figure 8). Core inflation has declined to below 4.5% as well and expectations remain firmly anchored around the inflation target, which represents a break with recent history. Tight monetary policy until mid-2016 helped contain inflation, supported by improving

market expectations about macroeconomic policies, food prices, weak domestic demand and the fading administered price effects.

Figure 8. Inflation and core inflation have eased, while expectations converge towards the target



Source: CEIC, Central Bank.

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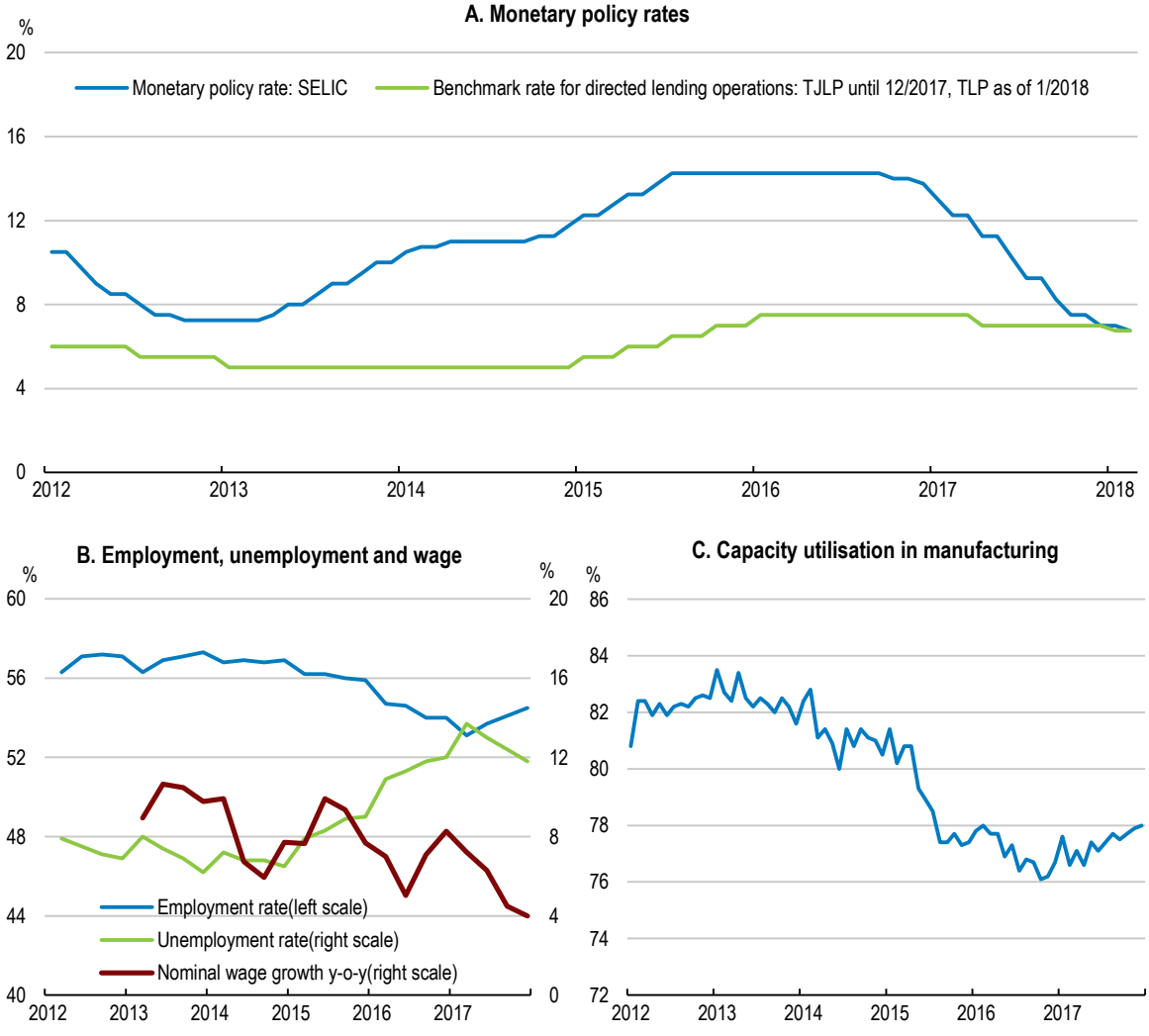
The Central Bank has responded to the decline in inflation by a series of reductions in the policy target rate SELIC from 14.25% in October 2016 to 6.75% in February 2018 (Figure 9). This is close to the level suggested by a Taylor rule, although much will depend on fiscal dynamics (IFI, 2017d). The labour market still has slack, with unemployment remaining high. Falling employment has also reflected lower participation rates, particularly among youths. The inflation target has been reduced for 2019 and 2020 to 4.25% and 4%, respectively.

While the Central Bank has acted independently recently, the effectiveness of monetary policy could be improved further by formalising this independence and shielding it from possible future political interference. Setting a fixed term for appointments of the central bank governor and members of the monetary policy committee, during which they cannot be dismissed, would be in line with current practice in most inflation-targeting countries (Hammond, 2012). Furthermore, safeguarding the financial independence of the Central Bank, including through an adequate budget and adequate levels of capital, are key for maintaining a strong credibility. Chile and Mexico have had formal Central Bank independence for over 20 years, which include long fixed-term appointments of board members.

The financial sector has many public and private banks, but most of them are only operating in the short-term segment. Long-term credit beyond 3 years is almost exclusively provided through directed lending operations, in particular by the national development bank BNDES, while private domestic financial markets accounted for only 8% of investment financing in 2016. There is no empirical evidence that the stark increases in BNDES lending to particular sectors since 2008, with subsidies peaking at over 2% of GDP in 2015, were able to prevent a massive decline in investment (World Bank, 2017; Bonomo et al., 2014; Ribeiro, 2016). All other firms seeking investment financing face severe credit constraints, high lending rates and short maturities.

In the past, directed lending was guided by a benchmark rate that was independent of but much lower than the monetary policy rate, resulting in negative real interest rates over many years. A new law approved in September 2017 introduced a gradual alignment of directed lending rates with market rates by 2022 at the latest, although much of the alignment may de facto take place earlier. The new law is expected to make the credit channel of monetary policy more effective, as recommended in the 2015 OECD Economic Survey of Brazil (Table 5). It will also allow the development of private long-term credit markets by levelling the playing field between public and private lenders. A sophisticated financial industry consisting of domestic and foreign banks, without major practical barriers to entry, is likely to be able to provide long-term finance in the future. If this turned out to be difficult, then additional measures may be required.

Figure 9. Monetary policy has responded to declining inflationary pressures



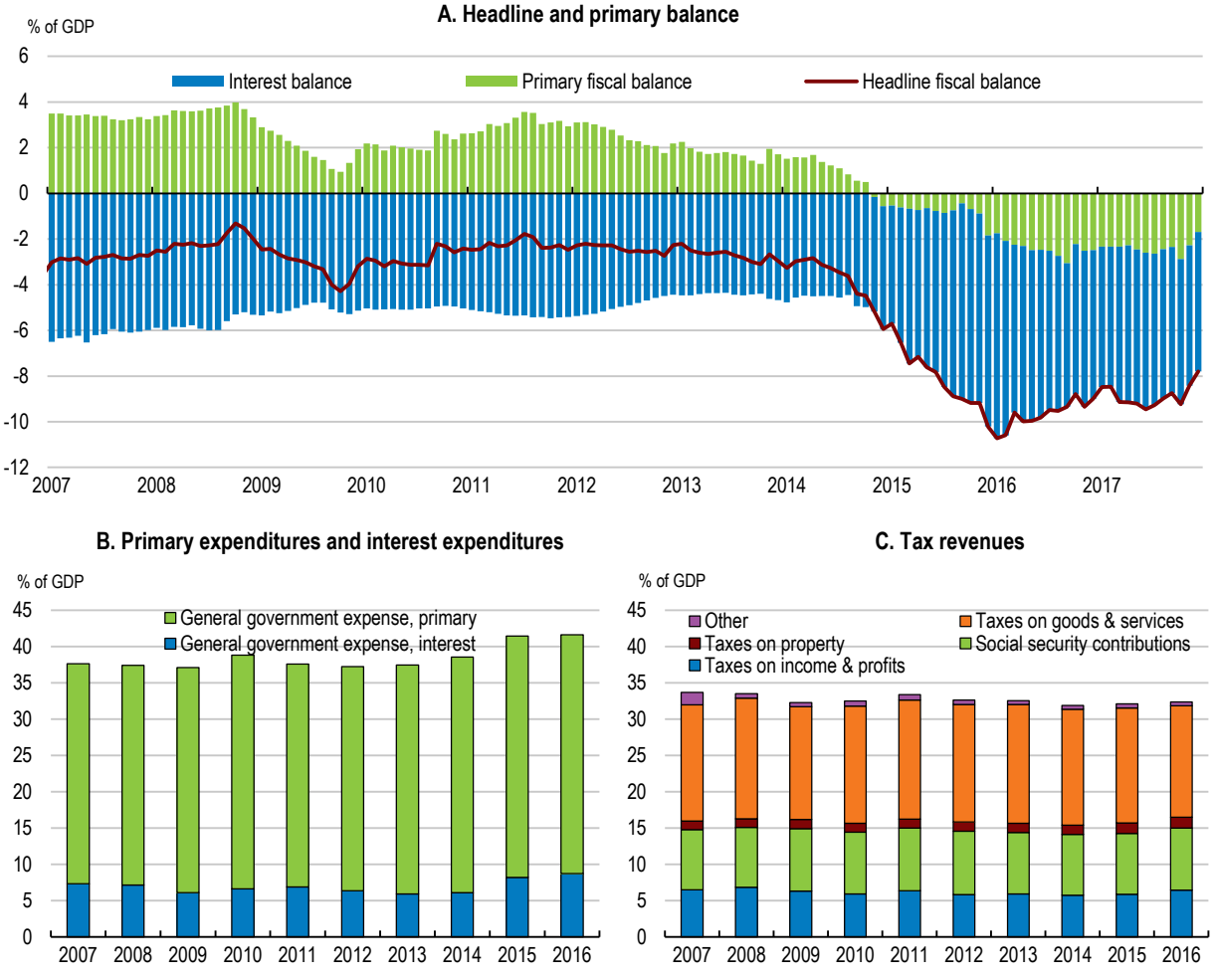
Source: CEIC, Central Bank.

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Fiscal outcomes need to improve to ensure the sustainability of public debt

Fiscal outcomes have deteriorated substantially since 2014, when the primary balance (excluding interest payments) turned negative after more than a decade of primary surpluses, reflecting mostly increases in expenditure, including tax expenditures (Figure 10). The current primary deficit of 1.7% of GDP (November 2017) is significantly below the primary surplus required to stabilise public debt in the medium term, estimated at around 2% of GDP. Interest expenditures have declined from 9% of GDP in January 2016 to 6.1% and will likely decline further as maturing debt is rolled over at lower interest rates. Tax revenues amounting to 32% of GDP are close to the OECD average of 34%. The headline fiscal deficit stood at 7.8% of GDP in December 2017. The fiscal situation of a few Brazilian states has deteriorated substantially in recent years, which may create fiscal risks, although measures have been taken to contain these risks (IMF, 2017a).

Figure 10. Fiscal outcomes have deteriorated sharply

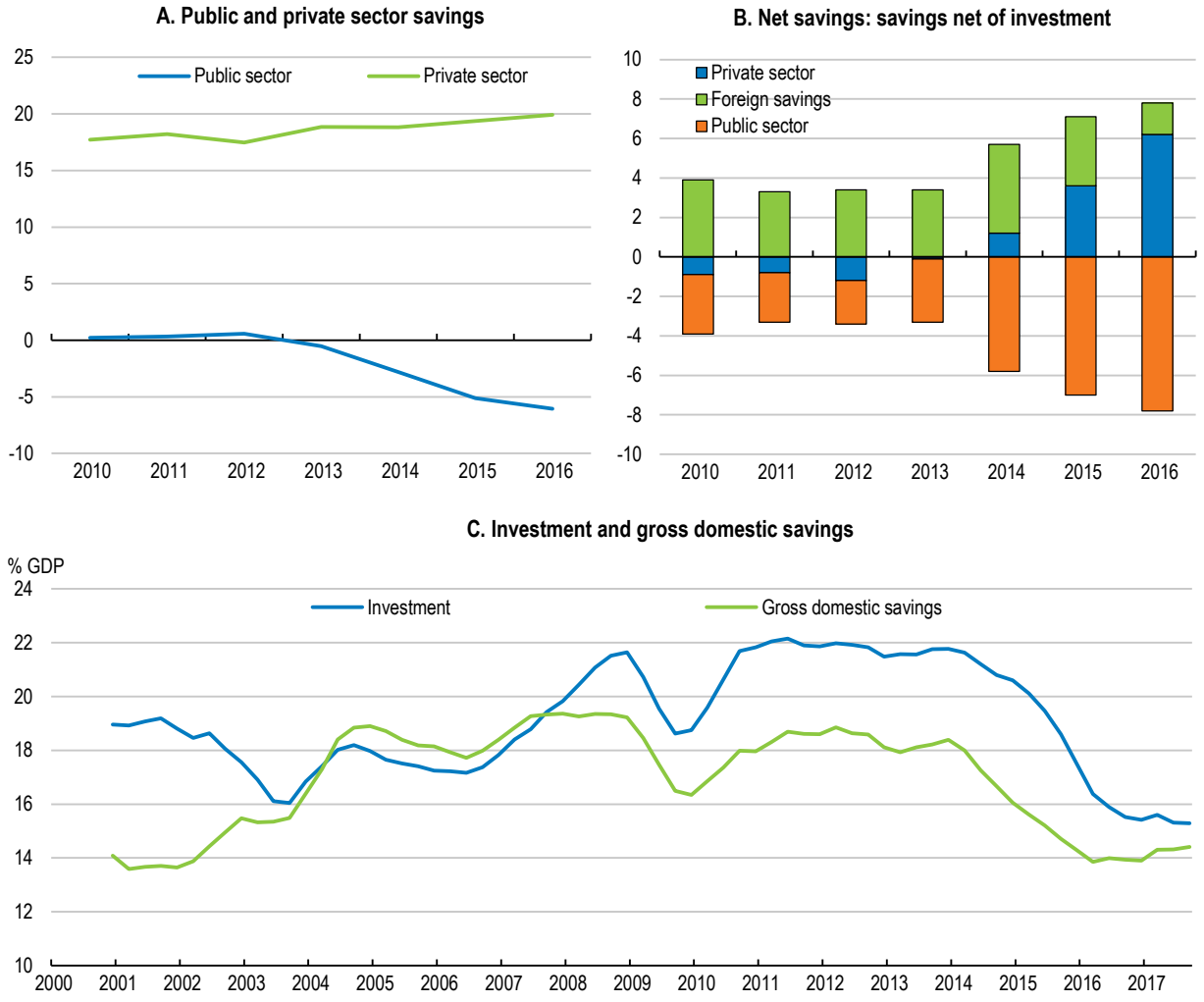


Source: Central Bank, Treasury.

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The rising public deficit has also reduced domestic savings and crowded out private investment which has more or less followed developments in gross domestic savings over the years (Figure 11). As public investment has also declined, private investment has been replaced by public consumption.

Figure 11. Investment is closely following domestic savings



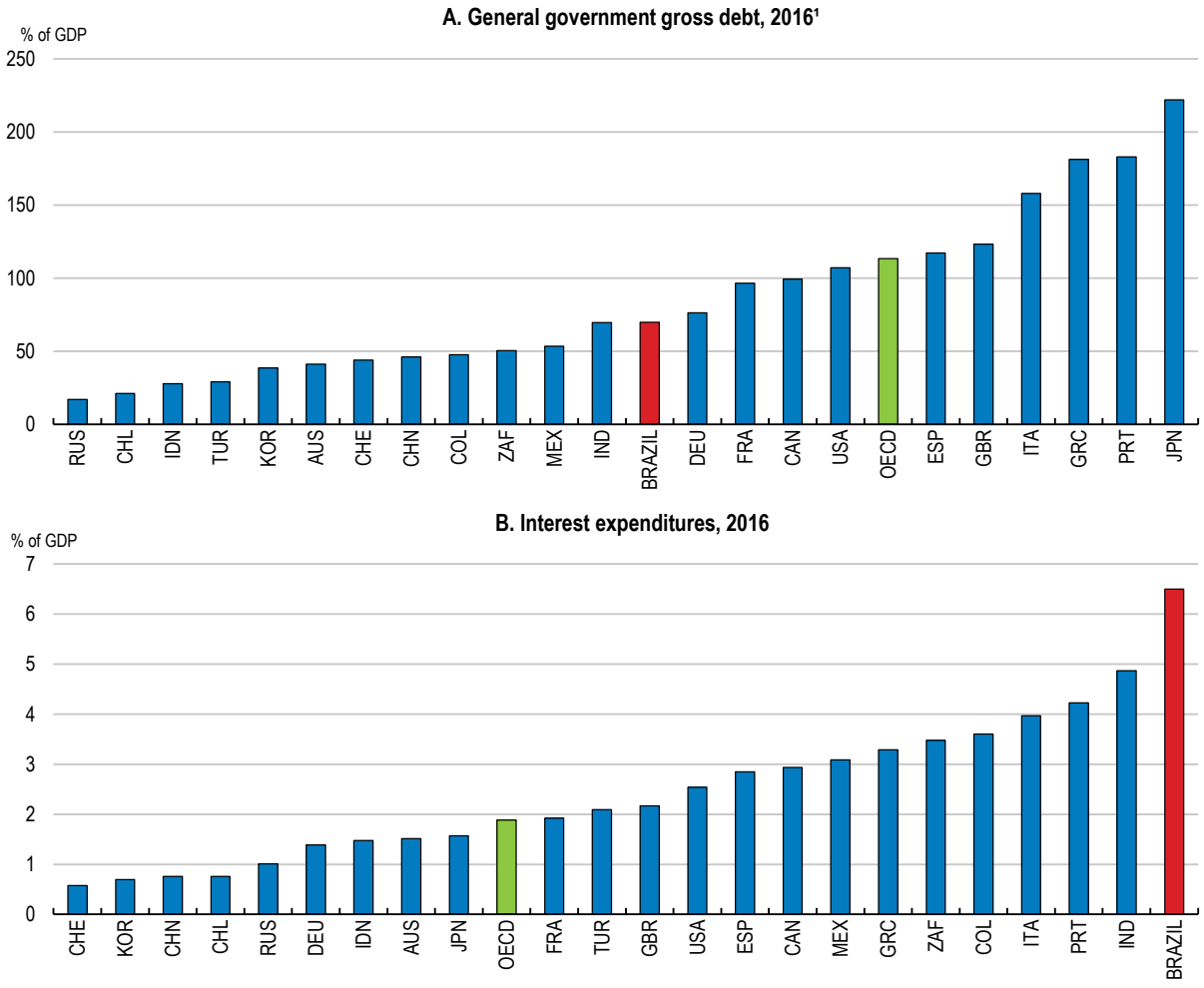
Source: IBGE, CEIC, CEMEC (2017).

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Gross public debt has increased by approximately 20 percentage points of GDP over the last 3 years and currently stands at 74% of GDP (December 2017), according to the Brazilian official methodology. Both rising expenditures and lower revenues in the context of the recession have contributed to this. This level is high for an emerging market economy (Figure 12, Panel A). Brazil's average debt cost of 8.6% and interest expenses of 6.1% of GDP (December 2017) are among the world's highest (Figure 12, Panel B). While the explanations for Brazil's high interest rates are hard to pin down, a history of macroeconomic instability, low public and private savings, low confidence in

fiscal dynamics, high inflation of the past and credit market segmentation have likely played a role (Segura-Ubiergo, 2012).

Figure 12. Public debt levels are middle-range but interest expenditures are high



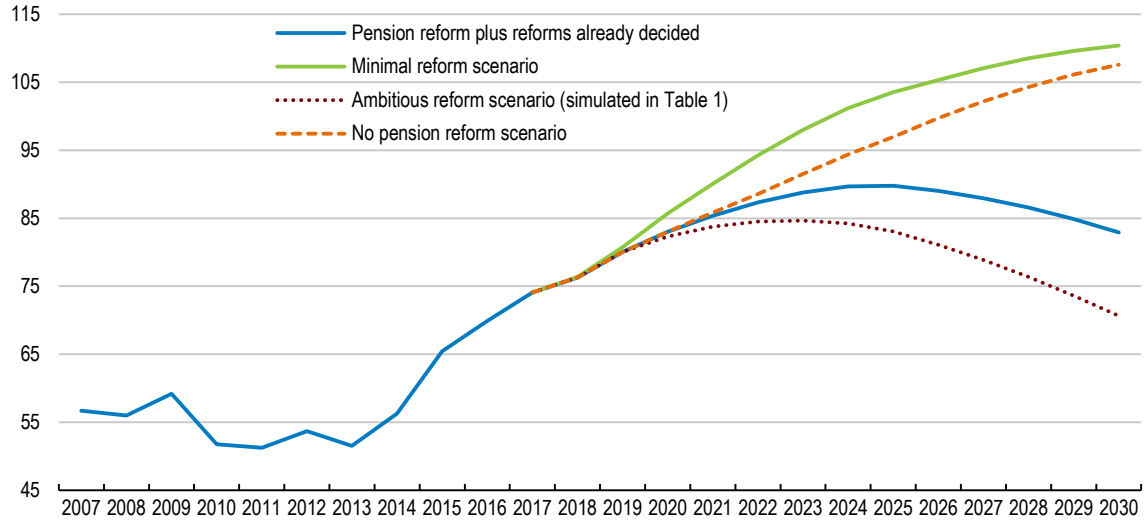
1. Using the IMF debt definition, which also includes securities held by the Central Bank that are not part of gross debt by the official Brazilian methodology.
Source: OECD Economic Outlook Database, IMF World Economic Outlook 4/2017, Central Bank.

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Debt simulations suggest that gross debt will continue to rise until 2024, peaking at around 90% of GDP, and decline gradually thereafter (Figure 13). These simulations assume that the current fiscal plans are met by the present and incoming governments and compliance with the expenditure rule is ensured. However, the trajectory of debt is highly sensitive to the implementation of the reform agenda. In a scenario in which only minimal reductions in mandatory spending items can be achieved and the primary deficit is reduced but not turned into a surplus, debt relative to GDP will continue to rise without bounds and not be sustainable. By contrast, in an ambitious reform scenario as in Table 1 with 1.4 additional percentage point of GDP growth from 2021, debt would stabilise earlier and return to current levels by 2027.

Over the next years, fiscal targets aim at a gradual improvement of the primary balance to -0.6% of GDP by 2020, from the current -1.7%. Beyond 2020, the new fiscal rule will become binding, essentially limiting the growth of almost all primary central government expenditures to inflation for the next 20 years, with a possibility of review after 10 years. The rule contains credible enforcement mechanism and only transfers to subnational governments, emergency expenditures, expenses with the electoral process, certain education expenditures and capital increases in state-owned enterprises are excluded. The establishment of an expenditure rule was recommended in the 2015 OECD Economic Survey of Brazil (Table 5).

Figure 13. Public debt trajectory



Note: In the baseline scenario, the primary deficit is as in government targets. Hence, using OECD GDP projections, the primary balance is -2.3%, -1.8% and -0.6% of GDP for 2018, 2019 and 2020, respectively. After 2020 compliance with the expenditure rule is assumed. The exchange rate and the interest rate are assumed to remain constant over the projection horizon. GDP growth is assumed as in table 2 and constant at 2% after 2019. The minimal reform scenario assumes a slower reduction of mandatory spending, with a balanced primary result not before 2030. The ambitious reform scenario assumes structural reforms that boost raise productivity growth (see table 1) and results in 3.4% GDP growth in the period 2021-2027. The no pension reform scenario assumes the absence of any noticeable parametric reform to the pension system.
Source: OECD calculations.

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While current plans are just about sufficient to stabilise public debt, compliance with the expenditure rule will be challenging. The deterioration of fiscal accounts reflects an unsustainable path of primary expenditures which have grown almost 3 times faster than GDP over the last decade. Discretionary spending, which includes public investment and cash transfers to the poor, is only 20% of the central government's primary spending and does not present much room for further savings.

The expenditure rule can only be met with ambitious reductions of rigid mandatory spending items and this should be the main avenue forward. Otherwise, the sustainability of public debt would be in jeopardy, with the possibility of a serious fiscal crisis looming in the medium term. The downside to this is that reforms to mandatory spending are politically more difficult as they require approval by Congress. The upside is that there is significant scope for improving the efficiency of public expenditures and reducing tax

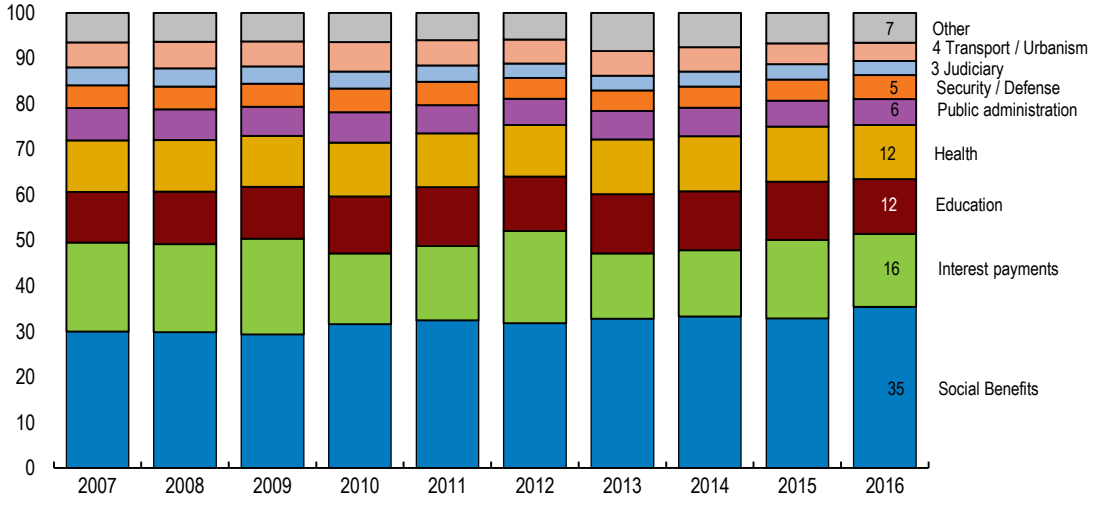
expenditures such as exemptions and reduced rates without detriment to attaining social and economic objectives.

Enhancing the efficiency of public expenditures, including tax expenditures

Brazil spent over 15% of GDP on social benefits in 2016, corresponding to 35% of total public sector expenditure (Figure 14). Social benefits are responsible for more than half of the increase in primary expenditures and continue to outpace GDP growth. Several of these programmes are crucial for more inclusive growth but much can be done to raise the social returns through better targeting towards those most in need of support. In some cases, this will require reconsidering acquired rights to reduce the inequalities across generations, recognising that the state has made promises that cannot be upheld for future generations.

Figure 14. Main functional areas of public expenditure

In percent of total public sector spending, 2016

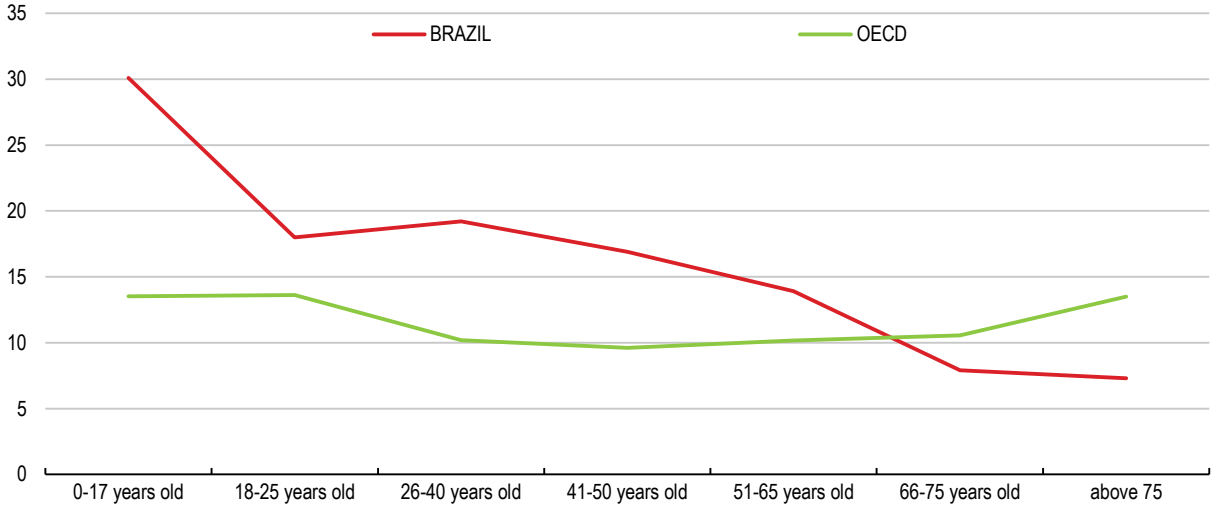


Note: A significant part of the 4.5% of GDP that Brazil spends on private sector development programmes are not visible in this breakdown as they take the form of tax expenditures. Part of the cost of past transfers from the National Treasury to public banks that allowed an expansion of subsidised lending operations show up as interest payments in public accounts, as the National Treasury issued additional debt to finance these transfers.
Source: OECD calculations based on National Treasury data.

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A large and rising share of social benefits is paid to households that are not poor, which reduces their impact on inequality and poverty. Already, poverty is highest among children and youths (Figure 15). Limiting future increases in social benefits that mostly reach the middle class could help to increase social transfers with a strong inequality-reducing impact and a strong targeting towards children and youths, like the conditional cash transfer programme *Bolsa Família*. The attached conditionalities regarding school attendance and medical check-ups also help to reduce inequalities with respect to education and health, which in turn strengthens productivity.

Figure 15. Poverty is relatively high for young people

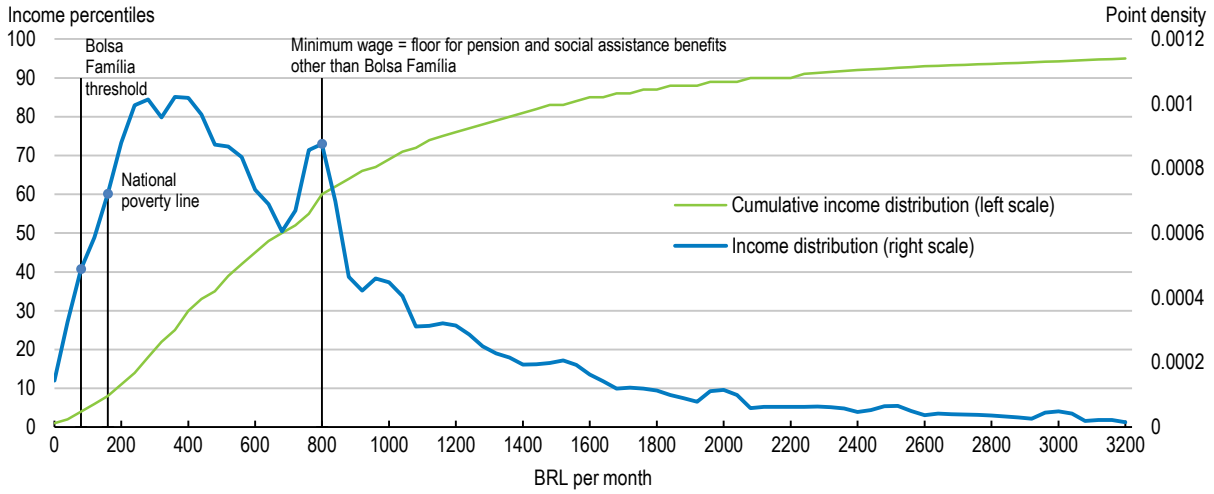


Source: OECD Income Distribution Database (IDD).

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Brazil's constitution defines that many social benefits cannot be lower than the minimum wage, but the current level of the minimum wage is almost 7 times as much as the poverty line (Figure 16). In fact, it is even above the median income as more than 56% of Brazilians have incomes below the minimum wage. The minimum wage has increased rapidly over the years, and its real value is now 80% higher than 15 years ago while GDP per capita increased by only 23%. Maintaining the minimum wage as a floor for many social benefits will likely lead to a continuation of rapid increases, with the result that an ever larger share of benefits will be paid to those with above-median incomes and not to the poor.

Figure 16. Different benefits reach people at different income levels



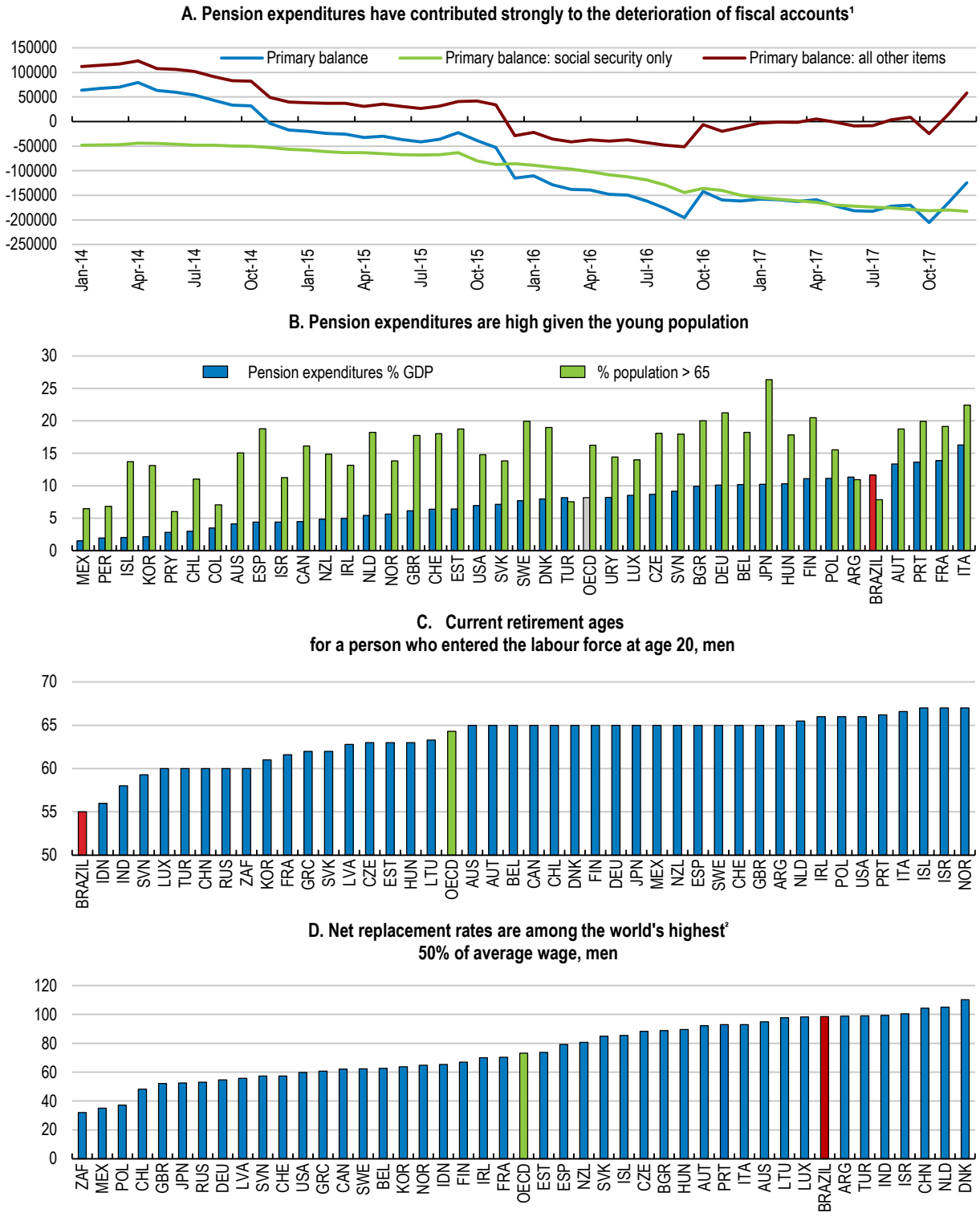
Note: The blue line represents the income distribution of Brazil (or point density function). Higher values mean that more people have incomes of the corresponding level on the horizontal axis. The green line is the cumulative distribution function, showing how many people have incomes equal or lower than the corresponding income level on the horizontal axis. The 2015 minimum wage of 788 BRL, for example, corresponds to the 56th income percentile, meaning that 56% of Brazilians had incomes of BRL 788 or less in 2015.

Source: OECD calculations based on 2015 Pesquisa Nacional por Amostra de Domicílios, IBGE.

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A comprehensive social security reform has become the most urgent element of fiscal adjustment, and is also an opportunity to make growth more inclusive through better targeting of benefits. Brazil's pension system costs almost 12% of GDP, which is high given Brazil's young population (Figure 17). Pension expenditures have been largely responsible for the decline in the primary balance. All pension benefits are subject to the minimum wage floor, resulting in high replacement rates, in particular for low-wage earners. Aligning Brazil's pension rules with those practiced in OECD countries would imply a minimum pension lower than the minimum wage, with eligibility to some prorated pensions for shorter periods. Indexing pension benefits to the consumer price index for low-income households would preserve the purchasing power of pensioners while improving the sustainability of the pension system. Sustainability would also be helped by establishing a formal minimum retirement age as current effective retirement ages of 56 years for men and 53 for women are far below the OECD average effective retirement age of 66 years for men and women (OECD 2015b). Without reform, pension expenditure will more than double, rendering the system clearly unsustainable (OECD, 2017a; IFI, 2017a). Moreover, the highly regressive subsidy element of the pension system with 82% of funds spent on the richest 60% would rise further (World Bank, 2017).

Figure 17. Pension reform is urgent



1. Accumulated over 12 months in BRL million.
2. Net replacement rates for a male full-career worker having entered the labour market in 2016.

Source: National Treasury, OECD Pensions at a Glance 2017.

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A pension reform bill has been submitted to Congress, and, if passed without significant amendments, would improve pension sustainability. Still, delinking the minimum pension from the minimum wage will become inevitable in the future. Moreover, aligning more generous pension provisions for civil servants with that of private employees would be another source of potential savings. Consideration should also be given to prorate the minimum contribution period of 25 years for those with fewer years of contributions to avoid difficulties for poorly educated workers migrating between formal and informal employment, as years spent in informal employment do not give rise to pension rights.

Beyond contributory pensions, different social assistance programmes could be coordinated better or merged to eliminate overlaps and duplication of benefits. Brazil spends around 0.7% of GDP on non-contributory pensions for disabled people and the elderly without pension contributions. With no means-testing, only 30% of this benefit reaches the bottom 40% of the income distribution, with the remainder accruing to the more affluent (World Bank, 2017).

The only truly progressive social expenditure is the 0.5% of GDP spent on the well-targeted conditional cash transfer programme *Bolsa Família*, which also helps families to move out of poverty over time by conditioning transfers on children's' school attendance and basic health check-ups. 83% of benefit outlays reach the bottom 40% of the income distribution. The maximum benefit for a whole family is less than a third of one minimum wage. These benefits have been subject to discretionary increases broadly following prices, but a planned adjustment for 2017 was suspended until 2018.

Bolsa Família is the only transfer where incremental spending would really reach the poor. It is also a key instrument to protect the most vulnerable, including women, Afrodescendants and people of indigenous origin, many of which still suffer discrimination, despite recent progress made (World Bank, 2016). A package of reforms that would sever the link between minimum benefit levels and the federal minimum wage while shifting at least some of the savings to *Bolsa Família* could have led to 63% faster declines in inequality over recent years (Arnold and Bueno, 2018). In the same vein, tax revenues lost with some consumption tax exemptions, such as basic food, would be more effectively spent on *Bolsa Familia*.

Labour market benefits have a strong focus on passive income support measures for the 64% of workers that are in the formal sector. With around 36% of employment currently informal, the existing unemployment protection schemes fail to reach the most vulnerable group of workers (IBGE, 2017).

Formal sector unemployment insurance consists of two parallel schemes, *Seguro Desemprego* and the individual unemployment accounts called FGTS. These two programmes have a joint fiscal cost of around 1% of GDP when considering government top-ups of withdrawals as expenditure. They could be merged gradually as they essentially serve the same purpose and the current mandatory employer contribution to FGTS of 8% of salaries raises the cost of formal employment. In the transition, account balances, whose remuneration has traditionally fallen short of inflation, should be remunerated at market rates to reduce the currently strong incentives for frequent job turnover, often involving self-induced layoffs by arrangement with the employer. Merging the two unemployment insurance schemes *Seguro Desemprego* and FGTS would allow savings that could finance extending the maximum coverage period of *Seguro Desemprego*. At currently 3-5 months, this period is short relative to an OECD average of 16 months.

Two overlapping employment subsidy programmes with a joint cost of 0.2% of GDP and no proven effects on formalisation, *Abono Salarial* and *Salário Família*, could be reconsidered as they reach only workers with above-median incomes given that the legal floor for this benefit is the federal minimum wage (Figure 16).

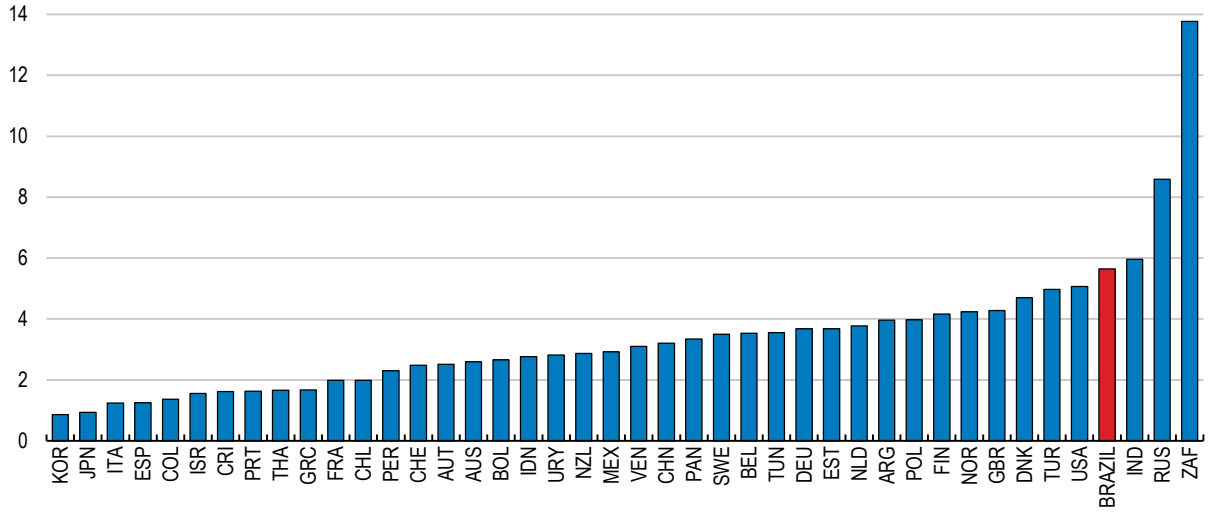
The fact that the most vulnerable segment of workers is not covered by labour market programmes as a result of informality limits their effectiveness as a broad-based insurance or support mechanism. Acknowledging that informality is a complex issue and will only recede over time, a stronger focus towards general income support schemes that protect workers would provide more effective insurance against income losses than benefits tied to a history of formal employment. This may strengthen the case for raising benefit levels in conditional cash transfer schemes, most notably *Bolsa Família*.

At the same time, further efforts to reduce informality will be key for more inclusive growth going forward. Informal employment offers not only lower job quality, but is also generally less productive (OECD, 2016e). Where informality affects entire firms, as it often does, it precludes access to financial services, credit, and public procurement opportunities. Brazil can build on substantial progress in reducing informality, including programmes to reduce the administrative and tax burdens for micro and small enterprises to join the formal sector (World Bank, 2016; Silva et al., 2015; ILO, 2014). The recent labour market reform may also strengthen the incentives for formal job creation as restrictive regulation on formal labour markets has been identified as one factor behind informality (Estevão and de Carvalho Filho, 2012). Further improvements in the ease of registering a business may also improve incentives for firms and their workers to become formal, while enforcement efforts also have a role to play.

Public health expenditures of 4.4% of GDP finance Brazil's unified public health system that provides public health services to the population since 1989. In comparison to other countries, the efficiency of health expenditure in Brazil appears to be low. International comparisons based on data envelopment analysis indicate Brazil could gain more than 5 years of health-adjusted life expectancy, a commonly used health indicator, through efficiency improvements, while maintaining current per-capita health expenditures (Figure 18; Chapter 2 of the 2015 OECD Economic Survey of Brazil). Significant savings could result from better coordination across different levels of government and care complexity, improving performance monitoring and strengthening incentives. Since 1990, Brazil has seen one of the strongest declines in child mortality in Latin America (World Bank, 2016). However, indigenous communities suffer from significantly worse health conditions, including higher child mortality rates, suggesting the need for a better focus on vulnerable and disadvantaged groups. Developing a more explicit definition of what is covered by the public healthcare system and what is not would allow a better focus of existing resources on the most important kinds of treatment and those most in need. This would include putting an end to the current practice of relatively well-educated and better-off patients suing the state to cover their drug expenses with no regard to their cost-effectiveness, which exacerbates inequalities. A tax deductibility of private health plan contributions paid by 25% of Brazilians and their employers has regressive effects and could be phased out, saving 0.3% of GDP (Castro, 2014).

Figure 18. Potential gains from greater spending efficiency on health

In years of health-adjusted life expectancy

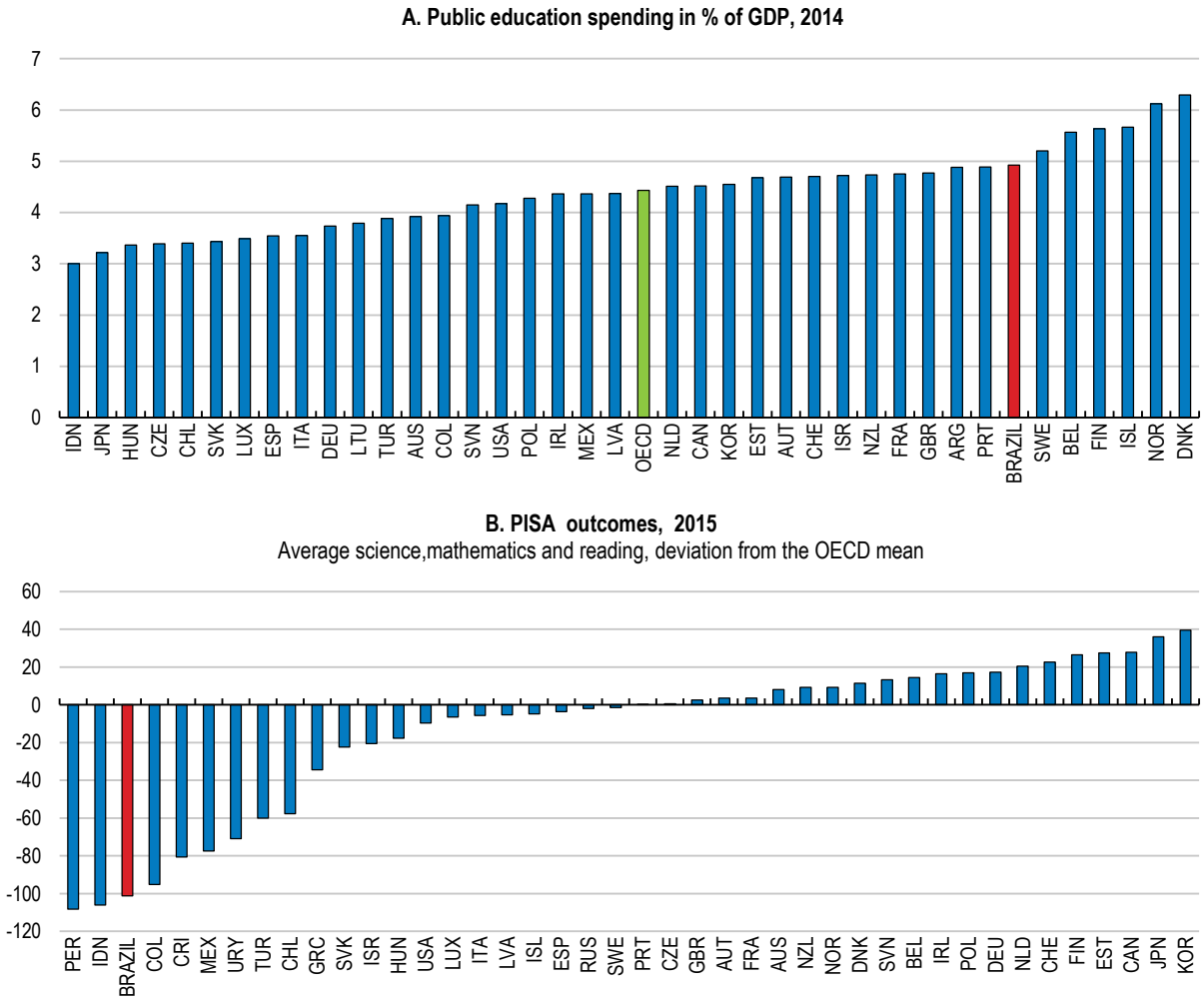


Source: OECD calculations based on World Bank and WHO data.

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Brazil's public sector spends 5.4% of GDP on education, above the OECD average and other Latin America Countries (Figure 19). However, while Colombia, Mexico and Uruguay spend less per student than Brazil does, they perform better in the OECD PISA tests, suggesting scope for raising spending efficiency (OECD, 2015f). Shifting spending from tertiary to the pre-primary, primary and secondary levels of education would simultaneously raise progressivity and efficiency. Free public tertiary education tends to benefit students from high-income families as graduates of private secondary schools tend to score better on admission exams. By contrast, early childhood education significantly decreases the likelihood of disadvantaged student dropping out from the education system later on (OECD, 2016p). When allocating scarce spaces in early childhood education, preference should be given to low-income households and single mothers, as this would allow more women to participate in the labour market. Only 15% of poor families with children below 3 years have access to child-care, compared to 40% of the more affluent families (World Bank, 2016). Although it has been narrowing in recent years, there is still a substantial gap in educational attainments between whites and Afrodescendants (World Bank, 2016).

Figure 19. High expenditures in education coincide with weak outcomes



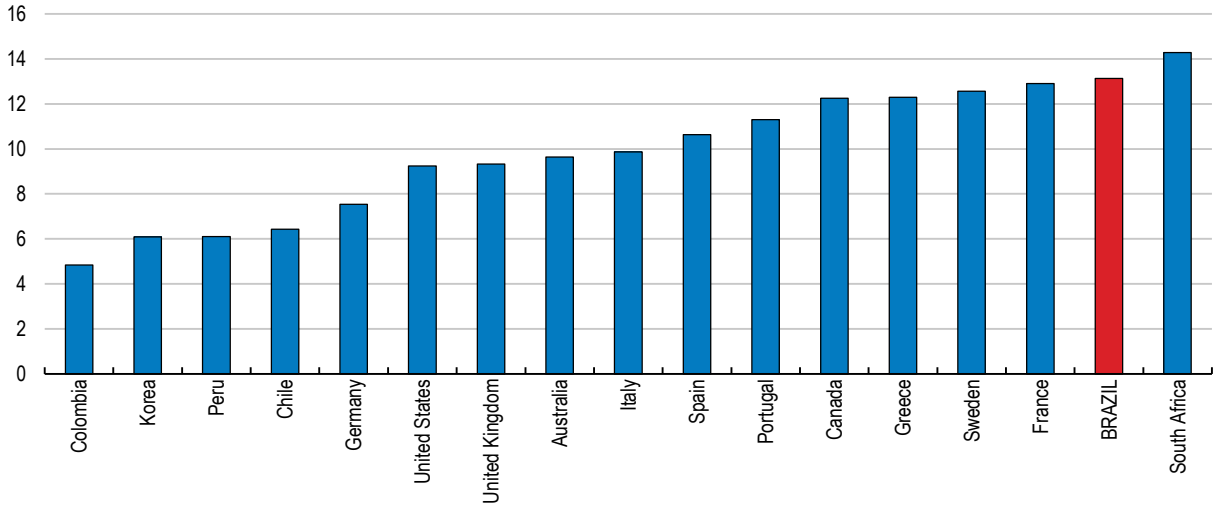
Source: OECD Education at a Glance 2017; OECD PISA 2015 Results (Volume I): Excellence and Equity in Education.

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The public sector wage bill of 13.1% is high in international comparison (Figure 20). Following through on current plans to align entry-level salaries for civil servants with private sector pay has significant potential for saving as 39% of civil servant will retire within 10 years (World Bank, 2017). The efficiency of public administration could also be improved by further limiting the scope for political appointments, including in regulatory agencies and public enterprises. The executive's right of political appointments is regularly passed on to parliamentarians to reward specific voting behaviour. Empirical research suggests that political appointments are associated with lower agency capacity, thus diminishing spending efficiency, and also the bureaucracy's ability to effectively combat corruption (Bersch et al., 2017). Especially in public enterprises, where technical or management experience is paramount, the rationale for political appointments is weak. The new SOE law of 2016 has effectively put some limits on political appointments in SOEs by defining minimum technical requirements for candidates.

Figure 20. Compensation of general government employees

In % of GDP, 2015



Source: Government Finance Statistics, IMF.

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Programmes specifically geared at parts of the industrial sector cost an annual 4.5% of GDP, most of which in the less transparent form of tax expenditures, but also subsidies. Rigorous evaluations of these policies are rare but existing evidence has failed to find significant benefits for productivity or investment (World Bank, 2017).

At 1.2% of GDP, the targeted tax regime for small and medium enterprises *Simples Nacional* combines a lighter tax burden with a simplified calculation of tax liabilities based on turnover. This encourages firms to stay small and reduces the possibilities to achieve productivity gains by sourcing intermediate inputs from potentially more efficient external providers (Caprettini, 2015; OECD, 2009b). For very small firms, the easier compliance may outweigh these considerations, especially considering that youth and women are overrepresented in informal micro- and small enterprises, either as workers or entrepreneurs (ILO, 2014). However, with a high participation ceiling of USD 1.5 million in turnover per year, the regime is currently used by 74% of Brazilian firms. Evidence that the scheme has been successful in fostering firm formality is limited to micro-enterprises in the retail sector (Piza, 2016; Monteiro and Assunção, 2012). In the context of a broader tax reform that would simplify the general tax system, lowering the participation ceiling of *Simples Nacional* would allow to narrow the scope of application of the targeted tax regime to firms where formalisation gains are more likely and the resulting distortions of the organisation of the value chain matter less. Such a reform would bring substantial productivity benefits for businesses and foster inclusiveness. At significantly lower fiscal cost, the *Microempreendedor Individual* programme, with a ceiling of USD 20 000 in turnover, has contributed to lower informality among low-income entrepreneurs, especially women (OECD, 2012c).

Special tax benefits have also been given to domestically-produced electronics and vehicles and to promote technological upgrading, often adding to trade protection. Some of these measures have recently been found in breach with WTO rules (WTO, 2017). In most cases, they have raised prices for consumers and increased income for producers,

but there is no solid evidence of positive longer-run effects. In addition, large-scale tax benefits for producers in the Manaus Free Trade Zone, located in the state of Amazonas, and a few other special zones cost around 0.4% of GDP per year. Submitting these special regimes to systematic evaluations could allow identifying scope for fiscal savings.

State-owned enterprises (SOEs) play a sizeable role in Brazil. There are 141 SOEs in Brazil, with revenues on the order of 5% of GDP (OECD, 2015b; OECD, 2012a). The authorities have passed a new SOE law as a first step to harmonise and improve governance in 2016 and announced a package of privatisations of state-owned enterprises in 2017, including the electricity generator Electrobrás, oilfields, energy transmission lines, highways and several airports. While privatisations generate one-off revenues that can help improve fiscal accounts in the short term, the principal reason for undertaking them should be to improve governance mechanisms and raise efficiency. In Brazil, management positions in state-owned enterprises have often been political appointments, which tends to affect management quality and governance, and at the state level, political parties have maintained strong influence over local SOEs. This suggests scope for efficiency gains from private operation. The OECD Guidelines on Corporate Governance of State-Owned Enterprises (OECD, 2015b) can be a powerful tool to address governance challenges usually faced by state-owned enterprises attributable to political interference, lack of incentives to improve performance and complex institutional arrangements.

Estimates suggest that these proposals to raise spending efficiency could generate annual fiscal savings of up to 7.9% of GDP (Table 4).

Table 4. Expected possible savings from improving the efficiency of public expenditures

Measure	Potential annual savings
Social benefit reform, including a reform of contributory pensions, non-contributory social assistance pensions and phasing out labour market programmes Abono Salarial and Salário Família (maximum effect to be obtained over 10 years due to transition rules)	Up to 2.7% of GDP
Raising spending efficiency in the health sector, including integrating basic and advanced care, a universal coverage of basic care and raising the efficiency of hospitals and health professionals	0.3% of GDP
Removing federal tax deductibility for private health plan contributions	0.3% of GDP
Eliminating inefficiencies in primary and secondary education, as well as federal higher education institutions	1.5% of GDP
Aligning public sector pay levels with private sector salaries	0.9% of GDP
Reforming targeted SME tax regime in the context of a broader tax reform	up to 1.2% of GDP
Scaling back tax expenditures and subsidies targeted at the industrial sector	up to 0.8% of GDP
Improving public procurement	0.2%
TOTAL	**Up to 7.9% of GDP**

Source: World Bank staff estimates from World Bank (2017), OECD estimates.

Improving the fiscal framework

Brazil has made substantial progress on its fiscal framework, including the new expenditure rule and the recently established fiscal council (IFI), which has been publishing high-quality monthly reports, including fiscal projections and scenarios. Its establishment has been a recommendation in previous OECD Economic Surveys or Brazil (Table 5). Fiscal transparency has also made progress (IMF, 2017b). Further improvements could include systematic periodic policy impact evaluations for major expenditure items. Moreover, the widespread practice of budget appropriations by

parliamentarians for projects in their constituency could be reduced and made more transparent, as empirical evidence suggests links between these appropriations and corruption (Azevedo and Colaço, 2010). Without systematic audits, these budgets are essentially used for coalition building, as evidenced by their sharp increases ahead of key parliamentary votes.

Table 5. Past OECD recommendations on macroeconomic policies

Recommendations	Actions taken since the 2015 Survey
Implement the fiscal adjustment in line with medium-term objectives, including a stabilisation of gross debt.	Plans for fiscal adjustment have been made, particularly with the new expenditure rule.
Gradually raise the retirement age and index pensions to consumer prices rather than the minimum wage.	A draft pension reform bill is currently discussed in Congress, but has not been voted on.
Adopt an expenditure rule and reduce budget rigidities such as revenue earmarking and fixed expenditure shares. Consolidate fiscal oversight to monitor compliance with the fiscal rule ex-ante.	An expenditure rule has been adopted, the indexation of federal minimum expenditures on health and education to GDP has been removed and a fiscal council (IFI) has been created successfully.
Gradually phase out the tax deductibility of private healthcare expenses to free more resources for the SUS.	No action taken.
Establish fixed-term appointments for the Central Bank governor and members of the Monetary Policy Committee.	No action taken.
Adjust the directed lending rate TJLP more frequently in line with the monetary policy rate Selic.	The directed lending rate TJLP has been replaced by a new rate called TLP that will converge to market rates over 5 years.

Improving governance and reducing corruption

Brazil ranks 79th out of 176 countries in the latest Transparency International corruption index (TI, 2016). Corrupt practices and kick-backs such as those revealed in recent years (see Box 3) waste public resources and exacerbate income inequalities by allowing relatively prosperous public officials and businessmen to divert taxpayer resources. Evidence has mostly surfaced in the context of public procurement, including by state-owned companies, credit subsidies or tax benefits to specific companies and sectors. Infrastructure concessions are also vulnerable to collusion among bidders and corruption, as estimates suggest that corporate campaign donations by companies have significantly increased the probability of being awarded public contracts (Boas et al., 2014). Regulating the financing of political parties and campaigns, which Brazil is currently discussing, is crucial to prevent powerful special interests from capturing the policy process, which makes growth less inclusive and decreases trust in government (OECD, 2016d).

Box 3. Recent corruption investigations

A series of corruption allegations began to surface in Brazil in 2014, associated to the term "Operação Lava Jato" (Operation Car Wash). The investigations, facilitated by a new anti-corruption law and enhanced scope for plea-bargain agreements, were initially focused on the state oil company Petrobras, but later extended to other sectors, including construction, infrastructure, energy and food processing. Through plea bargain arrangements, business executives implicated high-ranking politicians, some of which have been sentenced. In many cases, investigations are still ongoing.

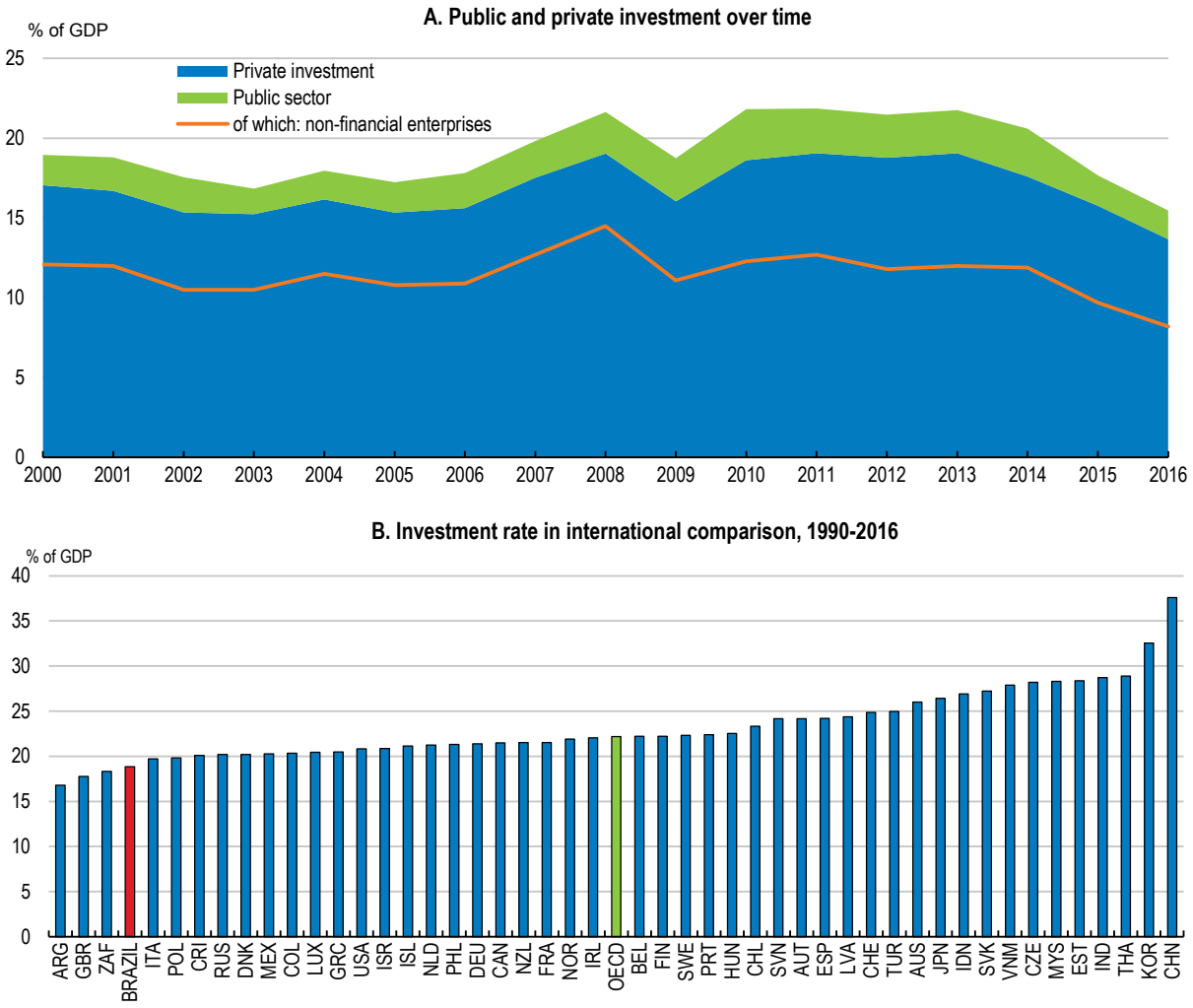
Improving transparency and accountability are key for addressing the root causes of corruption. Brazil already has a transparency law, but despite progress at the federal level, its enforcement is uneven across states and municipalities. Essential information about procurement contracts whose disclosure is mandated by law is often not provided (Mohallem and Ragazzo, 2017). Moreover, institutions charged with combating corruption have sometimes failed to collaborate, despite a national Anti-Corruption and Anti-Money Laundering Strategy (ENCCLA) (Mohallem and Ragazzo, 2017). At the same time, recent progress in exposing and prosecuting corruption charges is remarkable and shows the strength of Brazil's judiciary.

Efforts to combat corruption should include a thorough assessment of public procurement laws, in particular how their many complexities and exemptions affect integrity and competition in the tendering process. Such a review should also cover the risk of collusion in public tenders, which is substantial. Reducing collusion will reduce the prices paid by public authorities and opportunities to corrupt the collusion process (OECD, 2010b; OECD, 2014). Rules pertaining to conflicts of interests, incompatibilities and impartiality in public procurement could be streamlined and strengthened. The mandatory use of centralised purchasing bodies, which are less prone to corruption, could be expanded, together with systematic training of procurement officials on effective tender design and effective detection of collusive practices (OECD, 2012b). Whistleblowing procedures are presently hampered by concurrent competences and parallel systems for similar offences, which make it difficult to protect whistleblowers effectively. Most OECD countries have dedicated whistle blower protection laws while Brazil does not (OECD, 2016c). With respect to foreign bribery, Brazil has significantly improved its ability to proactively investigate foreign bribery in close cooperation and coordination with other parties to the OECD Anti-Bribery Convention (OECD, 2017e).

Raising investment is a key policy priority

Investment has been on a steady decline since 2013 and is low in international comparison (Figure 21). Investing more would lift the economy's growth potential and strengthen productivity growth, which also defines the wage increases that workers can pocket without jeopardising the competitiveness of domestic producers.

Figure 21. After years of decline, investment is low in international comparison

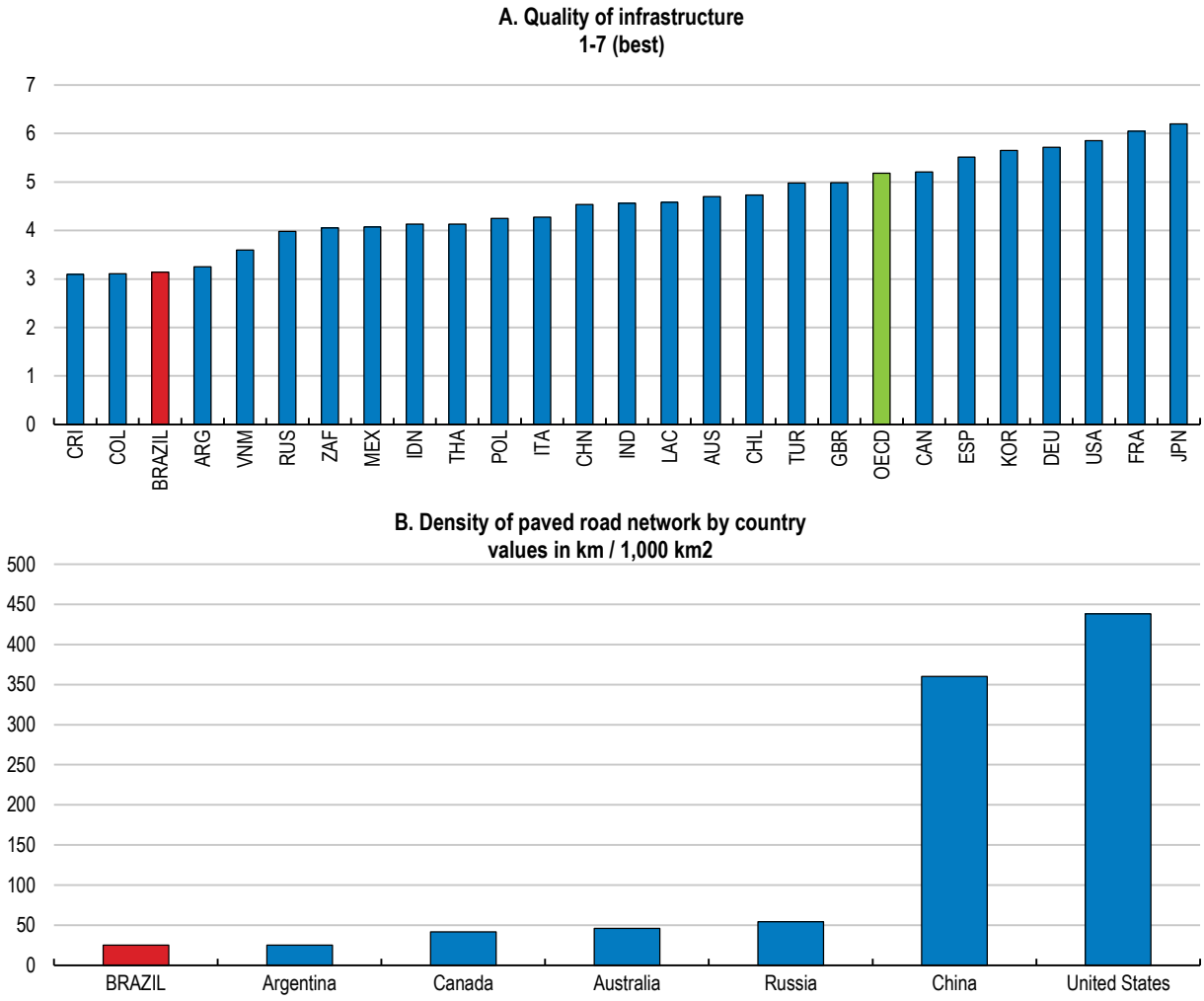


Source: OECD EO database, IBGE, CEMEC (2017).

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Investing in infrastructure is particularly important. Brazil ranks 116 out of 138 countries on infrastructure quality in the latest World Economic Forum survey, following years of losing ground to other countries. Quality shortcomings are common to many infrastructure areas (Figure 22).

Figure 22. Infrastructure quality is low



Source: World Economic Forum, Global Competitiveness Indicator database; CNT, available at http://pesquisarodovias.cnt.org.br/. Data are for 2016.

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Enhancing the options for investment financing

Access to finance and high costs of credit have been a key impediment to investment. Dominated by the public development bank BNDES, long-term corporate credit markets may not be allocating scarce available funds effectively, as even long-term investments are overwhelmingly flowing into short-term, mostly overnight instruments. A competitive private credit market is likely to lead to better outcomes and the conditions for its development are now better than ever as BNDES lending rates will converge with market rates and returns on safe government bonds have declined.

At the extreme long end of the credit market, 53% of outstanding infrastructure loans are extended by BNDES, whose resources will be insufficient to meet future infrastructure needs. Drawing in more private funding requires relying on a wider variety of financial products to suit different kinds of investors such as international banks, sovereign wealth funds, foreign pension funds and multilateral development banks.

The focus of BNDES could evolve from being the principal source of infrastructure finance in Brazil to serving as a catalyst for mobilising private, including foreign financing. Co-financing requirements for investment loans are one way to engage private lenders. For large infrastructure loans, BNDES could arrange syndicated loans among several banks. BNDES could also lead the creation of structured financial instruments, tranches of which could be purchased by a wider range of institutional investors, including those that are limited to investment grade assets. Mimicking the practices of multilateral lenders, BNDES itself could invest in subordinate or mezzanine debt with loss absorption capacity to reduce the risk profile for other investors, or provide guarantees against certain types of risk to complement incomplete insurance markets. A shift of focus from lending to these kinds of instruments, some of which have already been used by BNDES in the past, would make more effective use of BNDES' balance sheet, which could in turn be substantially reduced to leave more space for private lenders. At the same time, BNDES could shift its lending towards specific areas that the private sector is struggling to cover and where market failures are particularly prevalent, for example the financing of small start-ups and innovation projects. In most OECD countries that have public development banks, their focus is on such specific areas.

BNDES could also take a leading role in the transition towards the project financing model, which limits creditor recourse to the assets and cash-flows of the project, capping the downside for equity investors. Currently, most BNDES loans require collateral from the sponsor companies, thus narrowing the range of equity investors to all but the largest industrial companies, utilities or construction firms. As many large construction firms have been weakened by corruption scandals, diversifying the equity investor base to include investment funds or pension funds has become more urgent.

Improving the business climate to enhance investment returns

Beyond difficulties in accessing finance, Brazil's low investment reflects an unfavourable business climate that raises costs and curtails returns on investment. Reforms in several areas could lead a long way to improve this and provide a much-needed boost to investment in Brazil.

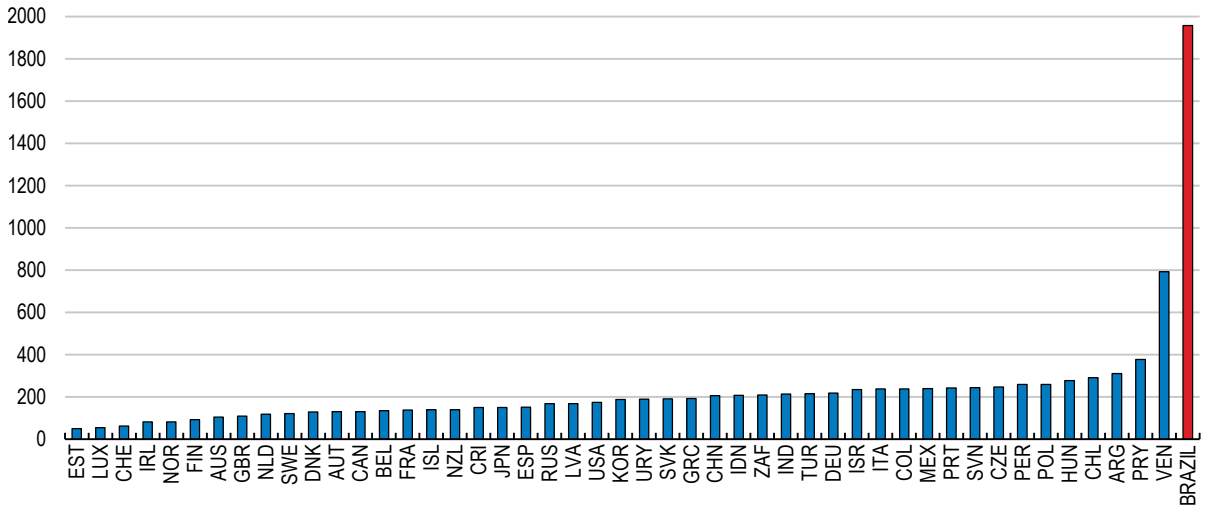
One key element of this is a fragmented consumption tax system that raises the cost of capital by failing to refund input tax paid on fixed assets and makes Brazil the country with the highest tax compliance costs (Figure 23). Brazil's 6 consumption taxes are levied in part by the federal government and in part by the states, each of whom applies its own tax code, tax base and tax rates. Companies wishing to offer goods and services nationwide are required to comply with all states' tax rules (CNI, 2014). Tax credits for intermediate inputs accrue only if they are embodied in the final good sold which results in extensive use of tax accountants and frequent lawsuits over disputes.

One solution would be to consolidate the different consumption taxes into one value-added tax with simple rules, following the recent example of India and as recommended in the 2015 OECD Economic Survey of Brazil (OECD, 2017c, OECD, 2015g). The federal government could lead the way by consolidating its own consumption taxes into a single value added tax with a broad base, full refund for input VAT paid and zero-rating for exports. Once such a tax was established, state-level taxes could be integrated into this system as state-specific surcharges on the same tax base. This could be done in a gradual manner and would not preclude different states from applying different rates as long as the tax base is uniform and the destination principle is applied consistently for interstate commerce. A temporary compensation via the federal government of some states that are

likely to face revenue losses from moving to the destination principle may help to allow these states to adjust gradually and would make it easier to reach a consensus, as has been done in India (OECD, 2017d).

Figure 23. Hours required to prepare taxes

For a benchmark manufacturing company, 2017



Source: World Bank (2017).

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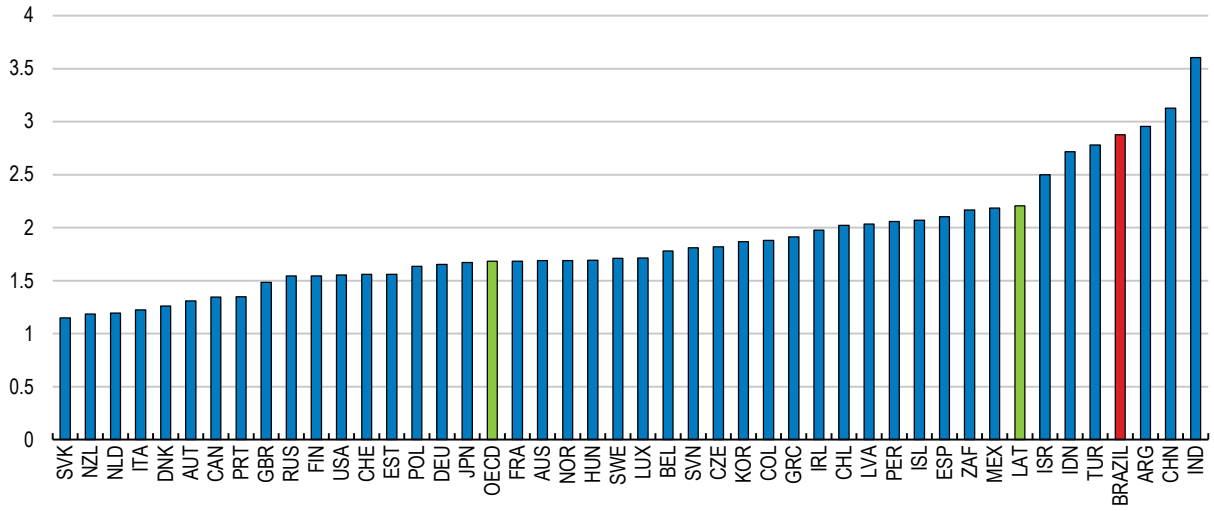
Many industries are characterised by low levels of competition, which tends to foster rigid industry structures in which strong performers find it more difficult to grow at the expense of low-productivity firms. This has trapped resources in low-productivity firms with fewer investment opportunities and curtailed incentives for innovation and technological upgrading (Pinheiro, 2013; IEDI, 2011; IEDI, 2014; World Bank, 2018).

Both domestic barriers to entry and a lack of foreign competition have contributed to this. Brazil has scope to reduce administrative burdens and streamline licensing procedures for new businesses, to make sure its regulations do not unnecessarily hinder competition (Figure 24). Portugal, for example, has made positive experiences with applying a silence-is-consent rule in areas without major safety or environmental concerns. More generally, the OECD's Competition Assessment Toolkit (OECD, 2010a) can provide guidance not only for identifying but also for revising policies that unduly restrict competition. Empirical results suggest that high administrative burdens are linked to lower firm productivity (Arnold and Flach, 2018).

Finally, industrial policies should provide neutral treatment across incumbents and entrants, and across different sectors of activity. Many industrial policies of the past have tended to cement existing industry structures, but the exit of less productive firms releases the resources that more successful firms need to grow to an efficient scale (Andrews et al., 2017). In addition, environmental licensing could be streamlined and made more predictable, without opening the door to wholesale exemptions from licensing.

Figure 24. Regulatory barriers to entrepreneurship are high

Indicator scaled from 0 (least restrictive) to 6 (most restrictive), 2013



Note: LAT includes Argentina, Chile, Colombia and Mexico. Data for Argentina are for 2016.
Source: OECD Product Market Regulation Indicators, 2013, available at www.oecd.org/eco/pmr.

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In infrastructure, reviewing some of the current regulations and practices, particularly in the structuring and preparation of projects before a tender call and at the subnational levels, could raise investment. Due to a lack of technical capacity, some projects have been structured by the same firms (or their subsidiaries) that later submit tenders. This reduces the number of bids received in the tender call, often down to one, and opens the door to anti-competitive behaviour (World Bank, 2016). The capacity for structuring infrastructure projects could be enhanced by providing more training to officials involved in infrastructure structuring. At the same time, the national development bank BNDES has built up substantial technical capacity in structuring projects and particularly state and municipal authorities could make wider use of its expertise.

While Brazil has 20 years of experience using concessions remunerated through user fees, public-private partnerships (PPPs) could serve as an additional tool where user fees are hard to implement. Despite a federal PPP law, there are only few cases so far, mostly involving subnational governments. Unifying policies and processes on how to prioritise, prepare, structure, and conduct bidding for PPPs across jurisdictions could reduce uncertainty and costs for investors (World Bank, 2016). However, in some countries, PPPs have been attractive in the past because the associated future liabilities were not properly recorded in the budget which shows the dangers of using PPPs without an appropriate and transparent accounting framework. As a lesson from these experiences, it is important to incorporate the full budget implications of PPPs over their whole life-cycle into the medium-term budget framework.

A new 2016 investment partnership law has created a new central entity attached directly to the presidency, tasked with selecting and prioritising projects and monitoring their implementation. The coordinating role of this central entity would be similar to the infrastructure planning done for the electricity network. The PPI Secretariat (*Secretaria Executiva do Programa de Parcerias de Investimentos*) is in line with international best

practices and should remain well resourced, both financially and in terms of human resources. Environmental concerns should also be part of infrastructure planning.

Supporting the integration with the region and the world economy

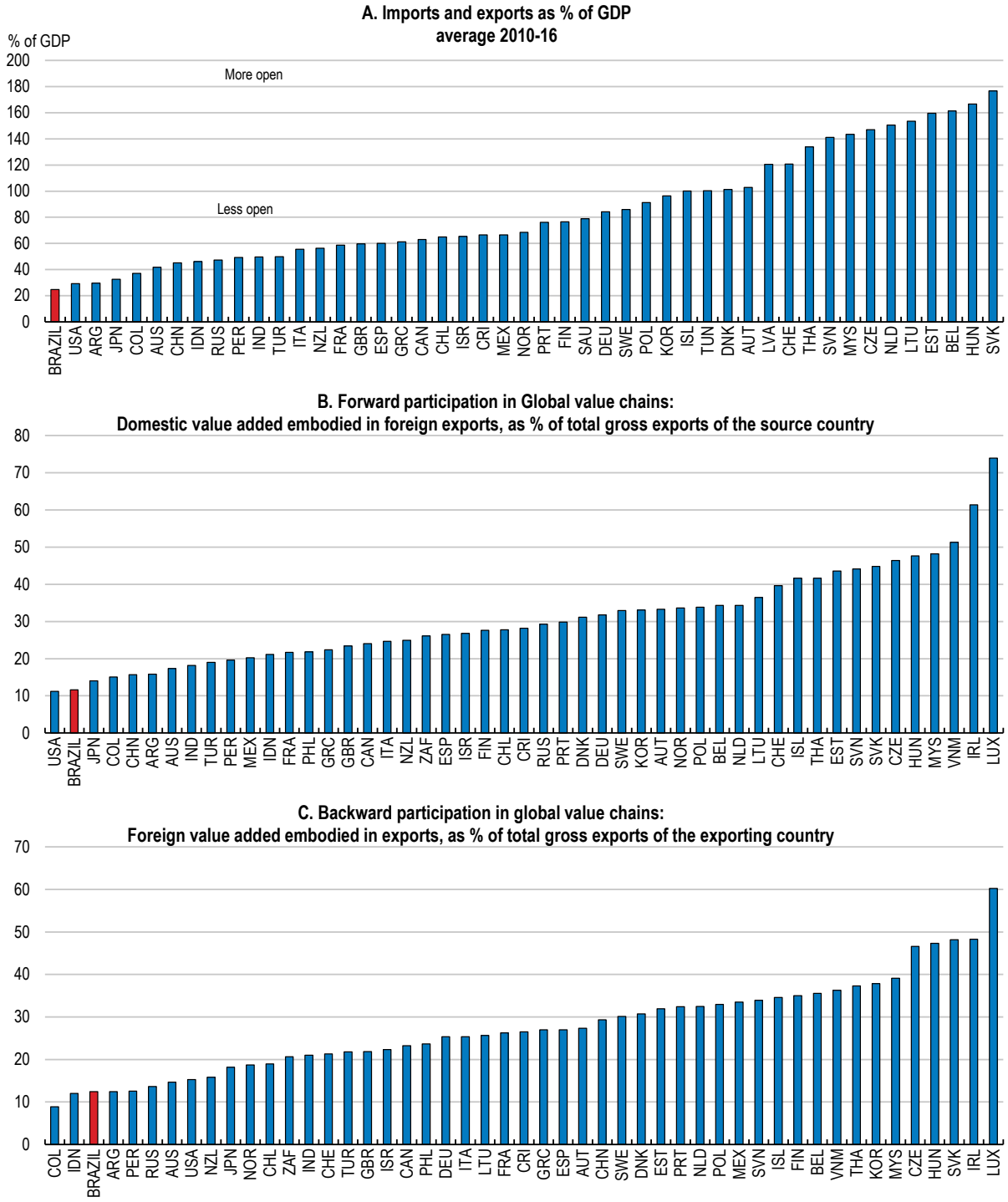
With exports and imports of less than a quarter of GDP, the economy is significantly less integrated into international trade than other emerging market economies of similar size (Figure 25). This reflects several decades of inward oriented policies including a strategy of industrialisation through import substitution. Trading little, Brazil has remained on the side lines of global value chains (GVC), as its exports contain mostly domestic value added and do not feed much into other countries' exports. Brazil's only discernible GVC link is with neighbouring Argentina, with no other significant trade link in the region, while many Asian economies are tightly intertwined through their trade relationships, both among themselves and with advanced economies (Figure 26).

The economy is shielded from global opportunities and foreign competition

This situation reflects trade barriers of various forms. Average tariffs levels weighted by imports are almost twice as high as in neighbouring Colombia and more than 8 times higher than in Mexico or Chile (Figure 27). Brazil's most frequently applied tariff rate is 14%, while around 450 tariff lines are at the maximum of 35%, including textiles, apparel and leather and motor vehicles. Effective protection levels due to the cascading effects of tariffs at different levels of the production chain are 26% on average, but range between 40% and 130% for textiles, apparel, and motor vehicles, in ascending order (Castilho and Miranda, 2017). Brazil is the country with the highest number of tariff lines above 10%. In addition to tariffs, various forms of local content requirements are probably adding to the protection of domestic producers and model simulations suggest that they are at the root of significant reductions in imports and exports (Stone et al, 2015).

The high trade barriers preclude Brazil from many of the benefits of an increasingly integrated global economy. Both consumers and companies purchasing intermediate or capital goods are paying markedly higher prices than in other countries. Trade barriers on capital goods tend to be even higher than average tariffs and this may be a good starting point for tariff reductions as the benefits of lower-cost capital goods would spread across the entire economy. A special tax regime is in place to reduce import tariffs on capital goods, but it is applicable only if no equivalent domestic product exists, and Brazil has a sizeable capital goods industry. Brazilian firms use the least of imported inputs among Latin American and emerging market economies, which contributes to low productivity at the firm level (Brambilla et al., 2016).

Figure 25. Exposure to trade and participation in global value chains are low

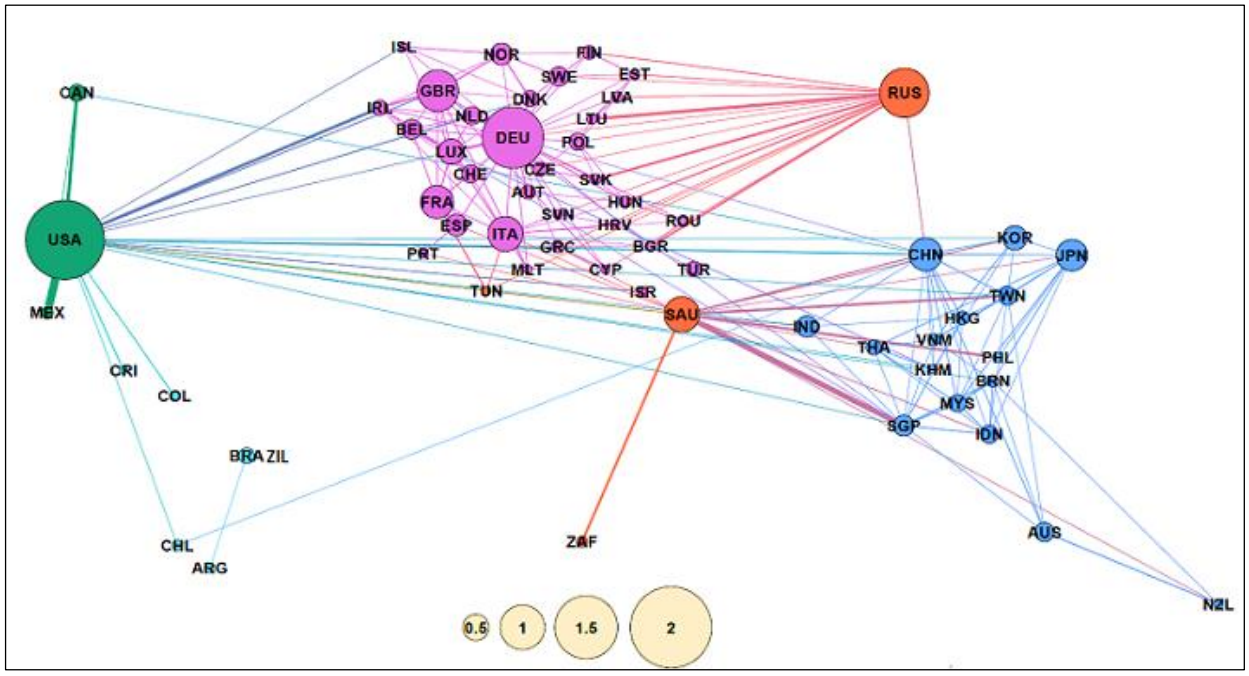


Source: OECD Economic Outlook database, OECD, TiVA Nowcast Estimates.

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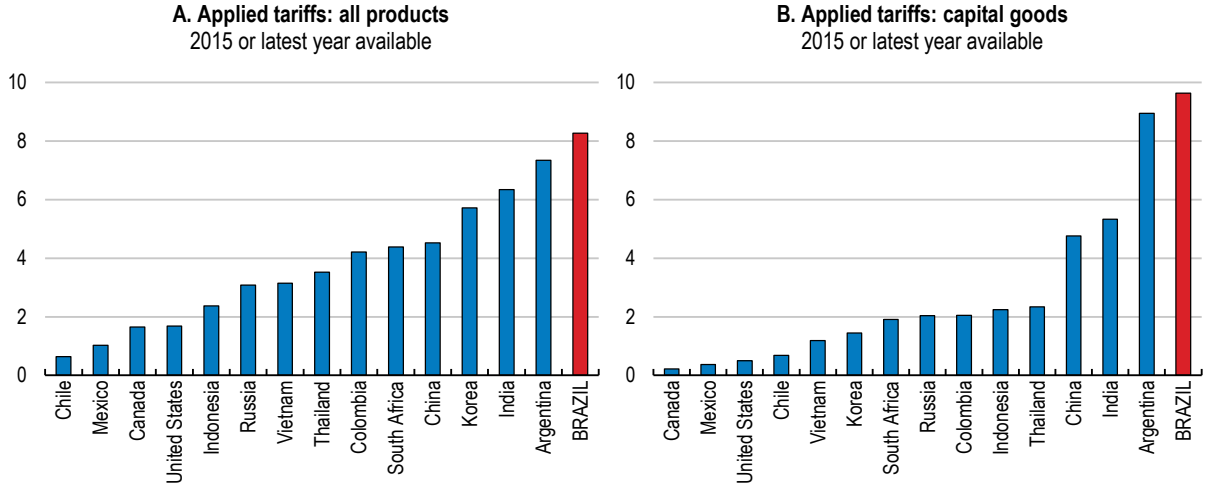
Figure 26. Brazil has remained on the side lines of global value chains

A map of global value chains



Note: A larger circle reflects an economy whose sectors are more connected within global production networks.
Source: Criscuolo and Timmins (2017).

Figure 27. Trade barriers are high, especially in capital goods



Source: World Integrated Trade Solution database (WITS).

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Moreover, providing a boost to competition will foster growth and job creation. Opening up would probably be the most effective way to strengthen competitive pressures in many

industries. This would also support Brazil's export performance which has declined by almost 25% over the past 15 years, while Mexico's export performance has increased by 25%. Given their poor trade integration in general, Brazilian companies have also shown only scant participation in global value chains. In Latin America, Mexico and Chile exemplify how trade and the integration in global value chains can contribute to economic growth and resilience (OECD, 2017b, OECD, 2015c).

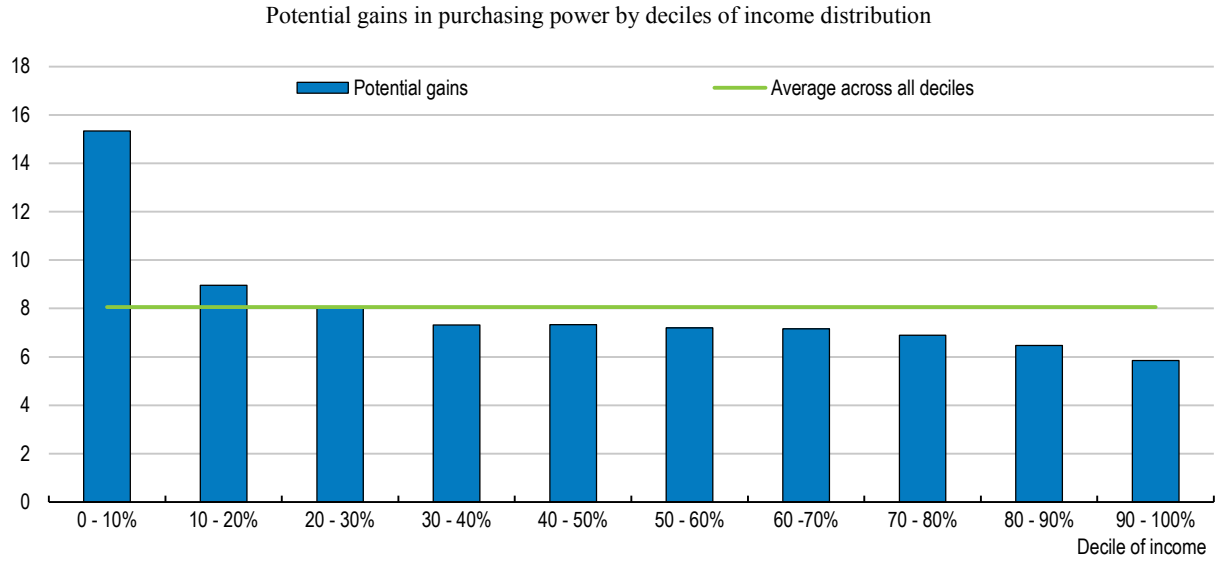
A stronger integration into international trade would support growth and social progress

Raising productivity, which has been largely stagnant over the last 15 years, will require embracing global opportunities more fully. The most evident and immediate effects of lower trade barriers are falling import prices for consumers. Estimates suggest that Brazilian consumers could see their purchasing power increase by 8% without trade barriers (Figure 28). Moreover, these benefits are highly progressive as lower income households spend larger shares of their incomes on tradable goods such as food, home appliances, furniture and clothing. A detailed analysis of reducing trade protection, taking into account differences in the consumption basket across households, suggests that the lowest-income decile could gain as much as 15% in terms of additional purchasing power, compared to 6% for the top decile (Arnold et al., 2018). Lower tariffs would therefore bring particular benefits to poor consumers, including women in their role as family providers (UN-IANWGE, 2011). Lowering tariffs would not result in significant fiscal losses as they currently amount to around 0.5% of GDP and the productivity effects of better integration would likely lead to an expansion of activity and additional tax revenues.

With respect to companies and employment, the effects of lowering trade barriers generally combine medium-term benefits with short-term adjustment costs as it triggers resource allocations between sectors and firms, including job losses in some areas and job creation in others. On one hand, firms –just like consumers– gain improved access to intermediate and capital inputs from imports, but also via the reaction of domestic producers to rising competition. Tariff reductions in the 1990s triggered substantial productivity benefits (Lisboa et al., 2010; World Bank, 2018). A recent study concluded that a 1% reduction in tariffs of inputs would increase productivity by around 2% (Gazzoli and Messa, 2017). Similar effects have been found for other countries (Amiti and Konings, 2007; Grossman and Helpman, 1991).

On the other hand, lower trade barriers intensify the competitive pressures that domestic companies face in their own market. As a result, some low-performing firms will lose market share and may eventually be squeezed out of the market. It is precisely this reallocation process that will allow capital and labour to flow to more productive sectors or firms where new and better-paying jobs can be created (Criscuolo et al., 2014). A significant share of productivity growth in advances economies can be attributed to these reallocation effects (Hsieh and Klenow, 2009). For Brazil, estimates suggest potential productivity gains on the order of 40% (Busso et al, 2013).

Figure 28. The potential consumer benefits from lower trade barriers are highly progressive



Source: Arnold et al. (2018).

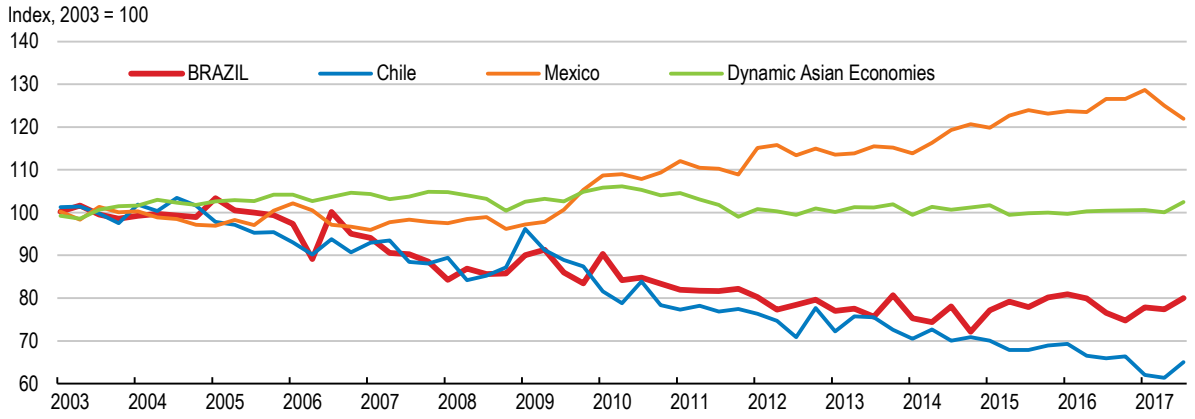
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Just as some firms lose domestic market share in the face of stronger integration, others seize newly arising export opportunities, expand and hire new workers. Brazil's export performance has been weak over the last decade and promoting stronger exports would be a key reason to reduce trade protection (Figure 29). In terms of overall employment, the export effect is likely to dominate, with analytical work suggesting overall employment gains exceeding 1% (Araújo and Flaig, 2017). Moreover, the demand for low-skilled labour would likely rise much more than the return on capital, suggesting that newly arising job opportunities in a more open Brazilian economy would disproportionately help the poor (Harrison et al., 2004). Previous reductions in trade protection were associated with an increase in female employment (Gaddis and Pieters, 2012), in line with international evidence suggesting that women benefit particularly from job opportunities arising in the context of stronger integration (UNCTAD, 2009). Jobs created in exporting firms are also more likely to be formal and to pay better, as Brazilian exporters pay 51% higher wages than non-exporters (Brambilla et al., 2016).

Opening up to the world economy tends to have pro-poor effects in emerging market economies (Artuc et al, 2017; Porto, 2006). However, for some workers, reallocations will involve the need to search for a new job. Brazil has high job turnover rates with a third of manufacturing employees changing jobs within one year (Assunção et al., 2017; DIEESE, 2014). This is partly due to incentives arising from the FGTS unemployment insurance scheme. Hence, more firm turnover in the adjustment period is probably a manageable burden for those who find new employment in the same sector. However, when entire sectors contract and workers have to learn new skills, the adjustment costs may be more substantial. Empirical analysis using exogenous variation in exchange rates to proxy changes in effective trade protection suggests that this would only affect a very limited number of sectors, including clothing and textiles, machinery and metal products, while all other sectors are likely to hold up well to more cost-competitive foreign competitors (Arnold et al., 2018). Model-based simulations by Messa (2017) also point to

contractionary effects only for the clothing and leather sectors. For other sectors, the effect is either small or positive.

Figure 29. Export performance has been weak

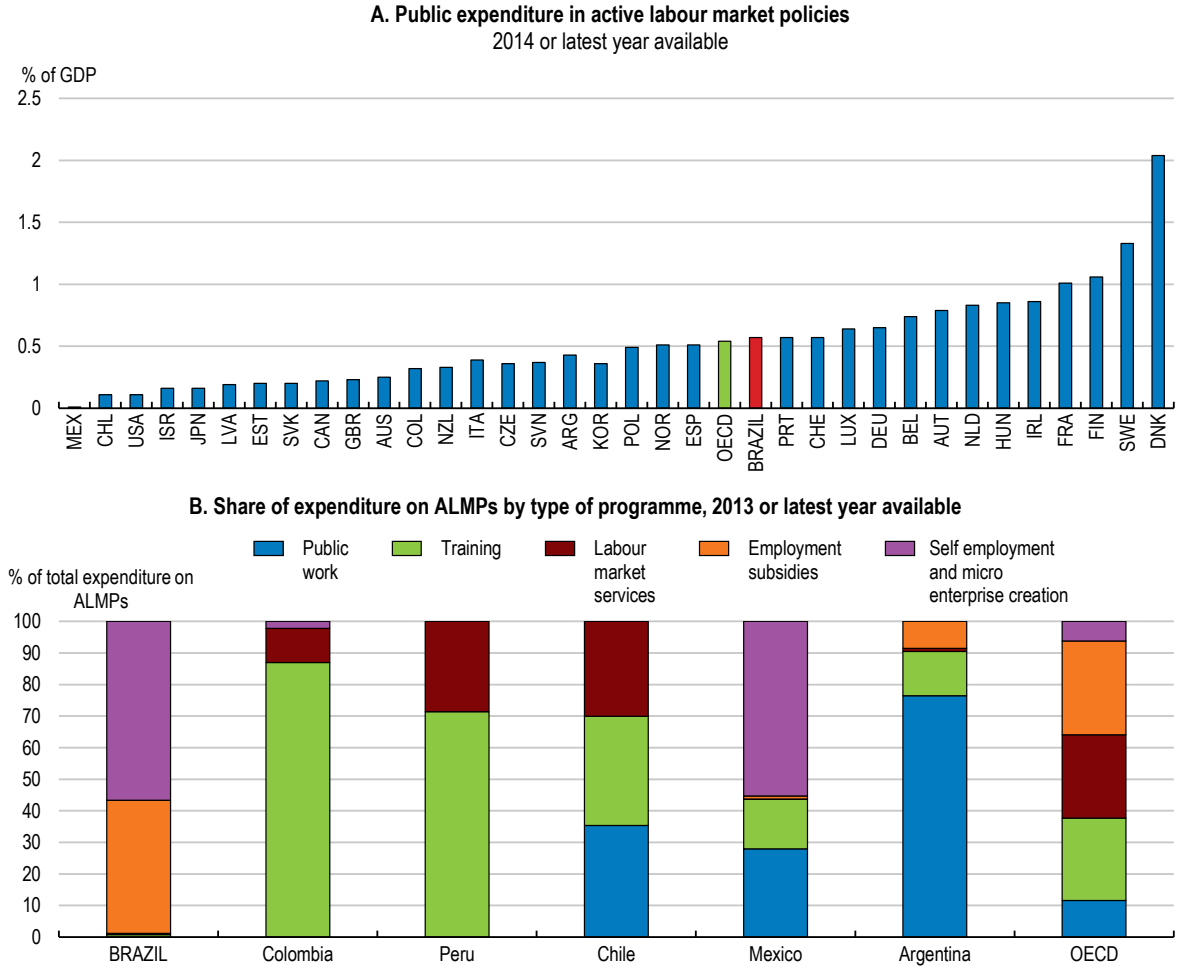


Note: Export performance is measured as actual growth in exports relative to the growth of the country's export market, which represents the potential export growth for a country assuming that its market shares remain unchanged.
Source: OECD Economic Outlook database.

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For affected workers, active labour market policies can go a long way to reduce the burden of adjustment. Such policies, whose focus should be on protecting workers rather than on protecting jobs, economic sectors or firms, can help workers move across sectors through training, job search assistance and activation measures (World Bank, 2013; Flanagan and Khor, 2012). While overall spending on active labour market policies is close to the OECD average, the composition of this spending is very much focused on supporting self-employment and employment subsidies (Figure 30). These programmes are often less effective in increasing the future employability of participants (Brown and Koettl, 2015). In the same vein, the effect of employment subsidies tends to be short-lived. Thus, shifting spending towards those schemes that support the acquisition of new skills, such as training, would better support that Brazilians get ready for the new jobs that will be created. Training can help workers to get ready for new jobs in expanding sectors, and even enhance their chances of accessing better paying jobs. Programmes to retrain workers so that they get new skills and ready for new jobs in other sectors are only starting to be deployed, but should become a priority. Parallel to this, a strong social safety net can protect incomes during unemployment spells (see discussion above).

Figure 30. Active labour market policies are not focused on training and labour market services

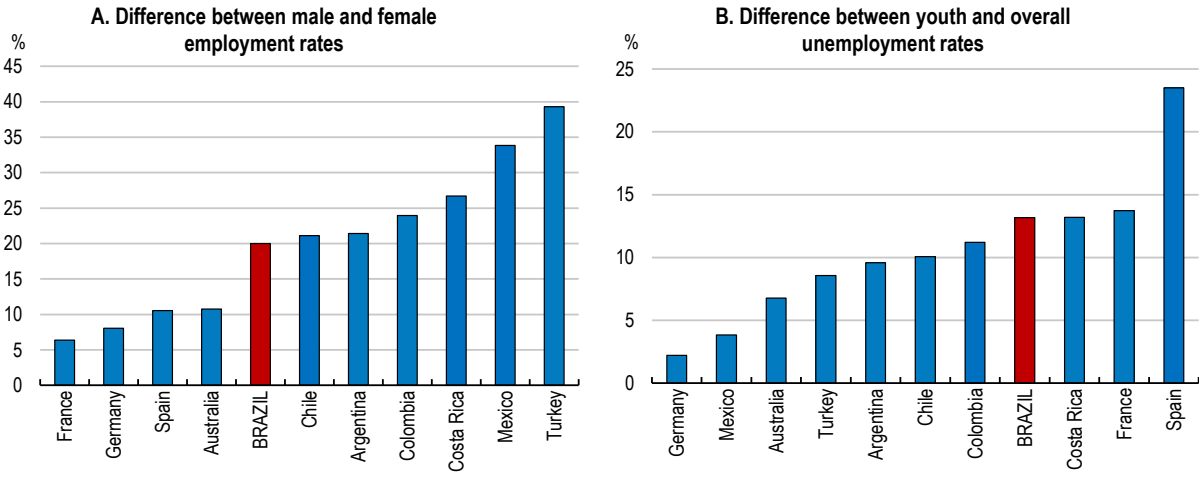


Source: OECD Public expenditure and participant stocks on LMP database; ILO; and ILO (2016) "What works. Active labour market policies in Latin America and the Caribbean."

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Additional policy efforts on training will also help to ensure that the benefits from integration reach youths or women, both of which are characterised by below-average labour market attachment (Figure 31). Active labour market policies with a strong training component can be effective in reducing gender inequalities, as evidence suggests that women tend to benefit more from them (Bergemann and van den Berg, 2007). Brazil's youth unemployment rate of 27% is high in international comparison, and keeping youths attached to the labour market is essential to avoid scarring effects and social exclusion later in life. Skill acquisition is a key factor determining the impact of trade on the economic opportunities of women and youths (UN-IANWGE, 2011).

Figure 31. Women and youths have lower labour market attachment



Note: Data in Panel A refer to 2015, data in Panel B to 2016.
Source: OECDstat, ILOStat.

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Policy options for strengthening integration

Defining a concrete policy agenda for integration requires thinking about the right sequencing and the role of international trade negotiations. On the former, it is tempting to argue that domestic policy reforms to strengthen the competitiveness of Brazilian companies should precede stronger integration. Despite ample scope for improvements, in practice this argument is likely to block any progress in the nearer term. Given the low growth prospects in the absence of structural reforms, Brazil cannot afford to hold its breath for a political consensus on all domestic reform agendas to arise. Instead, a gradual but credible reduction of trade barriers should be announced without further ado, which would still give domestic companies time to adapt. Ongoing efforts to improve the business environment would also help in the transition to a more open economy.

A similar question arises with respect to leveraging trade opening to negotiate better market access with trading partners. Brazil is a member of the MERCOSUL customs union, which has helped to strengthen trade linkages with other members of the trade bloc, in particular Argentina. At the same time, the exchange of goods and services with the rest of the region is weak (IMF, 2017c). Regional integration could be supported by negotiations with other trade blocs and countries in the region such as the Pacific Alliance or Mexico. Besides lowering tariff barriers, which in the case of Brazil are on average significantly lower for vis-à-vis countries in the region than those outside, a convergence of trade rules and regulatory standards could also play a significant role. Finally, weak connectivity among countries due to geographic factors and low investment in infrastructure has been identified as key reasons behind Latin America's relatively low intra-regional trade integration. This highlights the importance of progress on the quality of transport infrastructure, the efficiency of customs management and the quality of logistic services (IMF, 2017c).

Beyond South America, a tighter integration with large foreign markets would have strong potential to deliver a significant boost in competition and access to intermediate goods. At present, Brazil has bilateral agreements with only about 10% of world GDP, while Peru and Chile have trade agreements covering about 70-80% of world GDP.

Negotiations such as those currently underway between Mercosul and the European Union/EFTA are important initiatives in which Brazil should play a leading role, taking advantage of the window of opportunity presented by recent policy efforts in Argentina to foster a greater integration into the global economy.

At the same time, the sometimes glacial pace of trade negotiations suggests to make unilateral advances alongside bilateral negotiations according to a gradual, pre-announced schedule on both tariffs and local content rules, which should be phased out without delay. Many Asian countries pursued a strategy of liberalising unilaterally in addition to regional and bilateral agreements, with tariffs often reduced for the purpose of attracting investment (Baldwin, 2006).

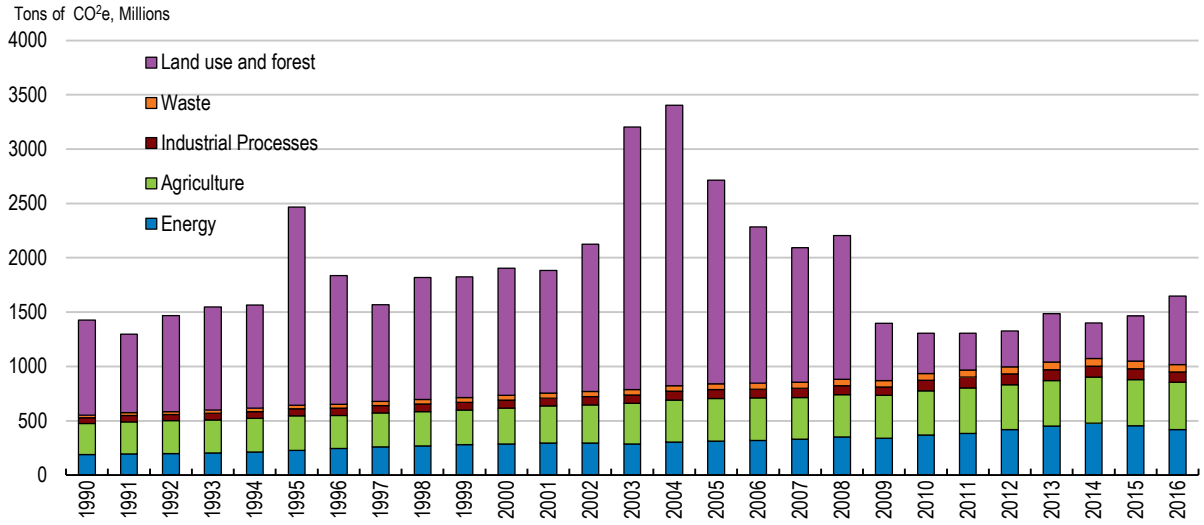
Table 6. Past OECD recommendations on improving the investment climate

Recommendations	Actions taken since the 2015 Survey
Consolidate consumption taxes at the state and federal levels and work towards one value added tax with a broad base, full refunds for input VAT paid and zero-rating for exports.	No action taken.
Reduce the level of trade protection steadily by lowering tariffs and scaling back local content requirements.	Local content requirements have been reduced in the oil and gas sectors.
Strengthen competition by streamlining regulation on product markets and implementing planned reductions in entry regulations.	No action taken.
Improve the technical capacity and planning for infrastructure concessions at all levels of government. Elaborate more detailed tender packages prior to launching tender calls.	No action taken.
Further expand the participation in vocational training to alleviate skill shortages for technical workers.	Participation in the PRONATEC programme has expanded, with 67% of participants being women, but it has sometimes missed labour market demands.

Green growth challenges

Brazil has made substantial progress in reducing its greenhouse gas emissions and is on track for meeting its reduction target by 2020, corresponding to a 40% reduction vis-à-vis a 1990 business as usual scenario. Most of this reduction has come from a decrease in deforestation of 82% in the decade leading up to 2014 (Figure 32). Reasons behind the progress include the fact that significant surfaces have been granted protection and stronger law enforcement following the implementation of the new 2012 forest code, enforced by satellite imagery.

Figure 32. Net greenhouse gas emissions by sector of origin



Source: Observatório do Clima (SEEG), http://plataforma.seeg.eco.br/total_emission.

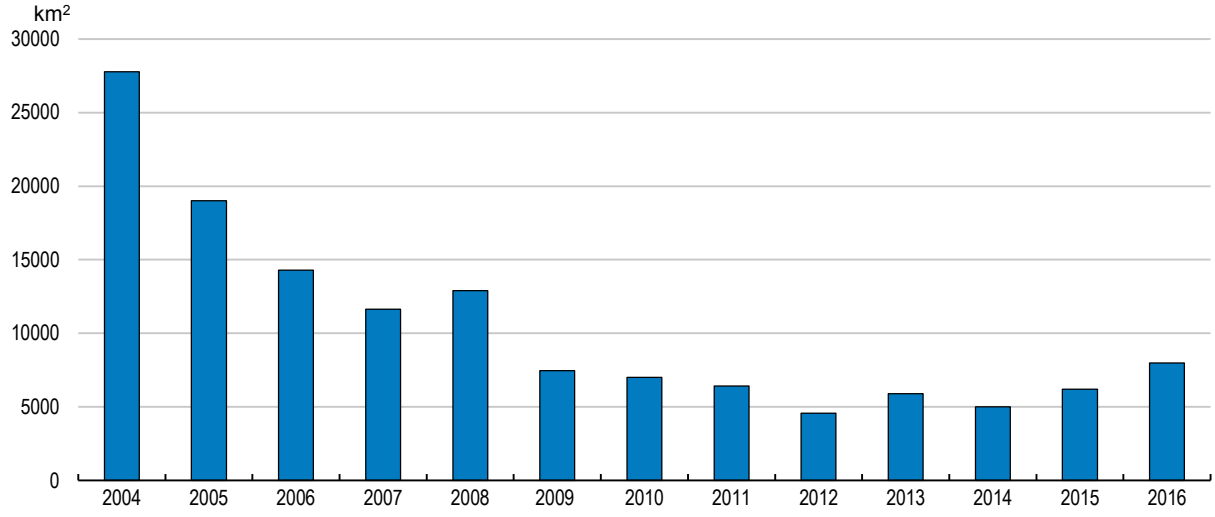
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Latest data, however, show annual increases of 24% and 29% in 2015 and 2016, respectively, which may be temporary as the enforcement budget has recently been restored (Figure 33). Nonetheless, a clearer definition of current environmental priorities would be useful. This should also include a clear commitment not to reduce those areas currently under environmental protection. The biodiversity of Brazil's natural resources, including the Amazon rain forest, hold significant opportunities and potential to spur economic growth and social inclusion in what are currently economically lagging regions. A sustainable use of these natural assets is crucial for helping people in these regions to fulfil their productive potential. This includes people of indigenous origin who depend on the natural environment for their livelihoods and whose lifestyles are dependent on the preservation of Brazil's natural habitats. Tapping more extensively into green finance could allow the financing of investments that generate environmental benefits.

Contrary to emissions from deforestation, energy-related and agricultural emissions have risen steadily as the economy, and particularly the agricultural sector, expanded. The composition of energy sources is favourable, however, with 44% of energy supply coming from renewable sources in 2015, compared to 9% in OECD countries (EPE, 2017). 62% of electricity comes from hydroelectric sources. Energy use from transport is on the rise in line with a growing vehicle fleet, but 17% of the fuel consumption consists of ethanol from sugar cane. This is the highest share of biofuel consumption worldwide and most passenger vehicles currently sold in Brazil can use either ethanol or gasoline (OECD, 2015d; OECD, 2015e). Taxes on fossil fuels have risen in line with previous OECD recommendations (Table 7). However, they are still low by international standards (Figure 34) and raising them further could strengthen incentives for biofuel use. Taxes on Diesel fuel should be raised at a minimum to the level of petrol as there is no environmental justification for lower taxes on Diesel (Harding, 2014). Higher fossil fuel taxes could help to reverse the recent increase in the CO2 intensity of the economy (Figure 35). Raising these taxes would also make growth more inclusive, as affluent households tend to consume more fossil fuels while the poor are most exposed to the negative health effects from air pollution.

Figure 33. Deforestation is increasing

Deforestation in the Amazon area (legal definition), in km^2

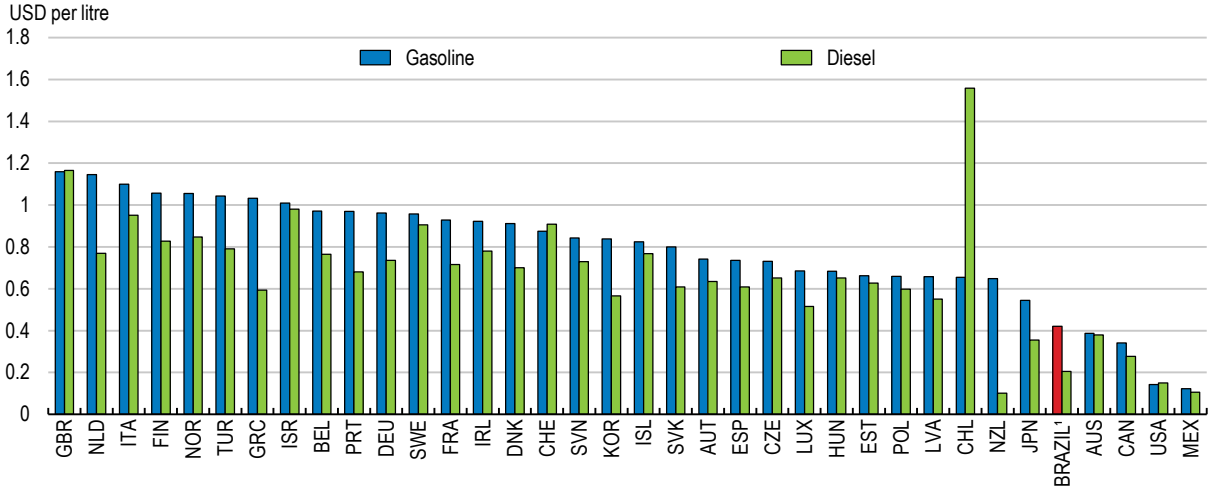


Source: Instituto Nacional de Pesquisas Espaciais, http://www.obt.inpe.br/prodes/index.php

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Figure 34. Taxes on fossil fuel are low in international comparison

Tax rate in USD per litre, 2015.



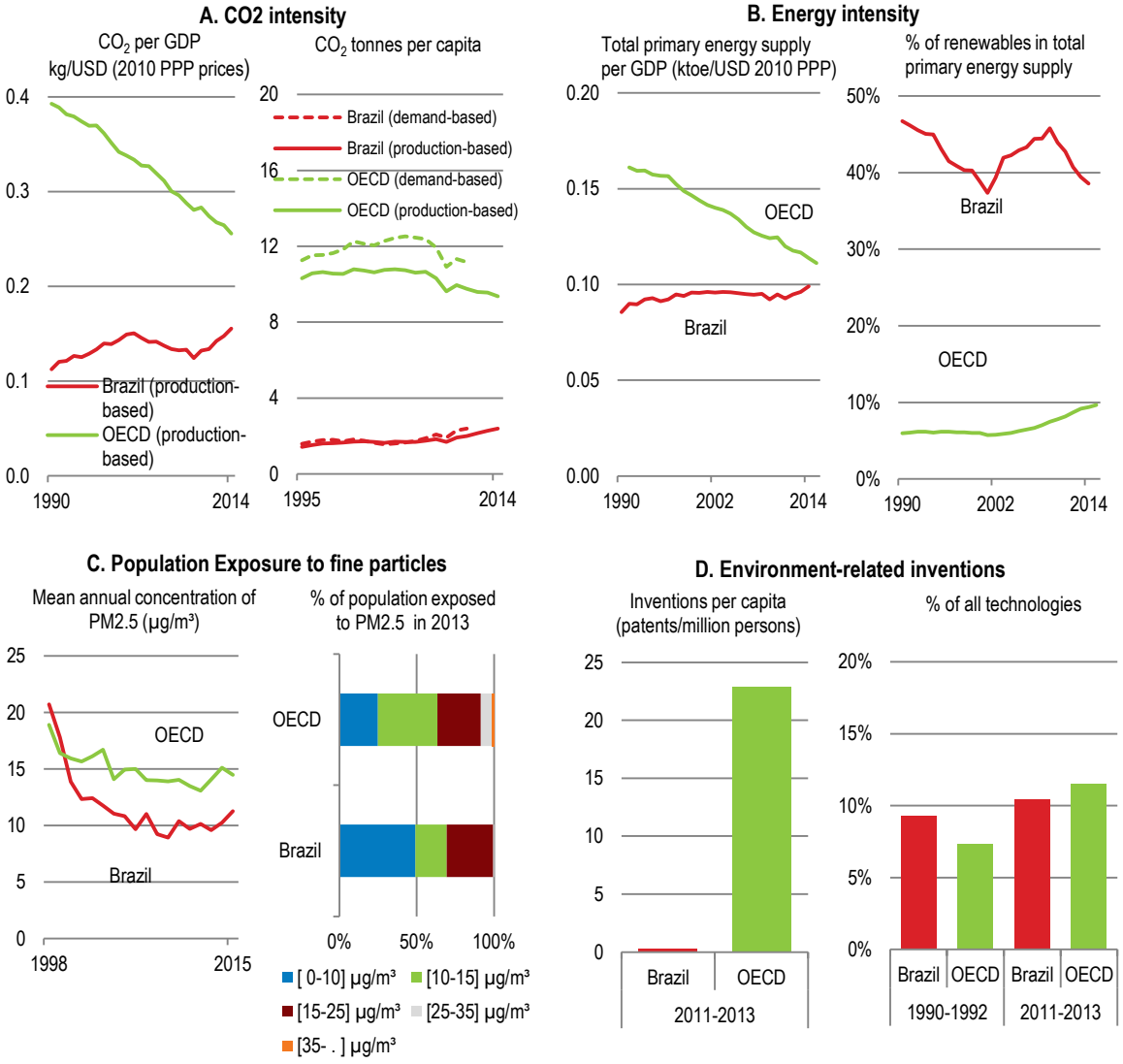
1. Brazil data pertain to 2016.
Source: OECD Tax Database, Petrobras.

StatLink http://dx.doi.org/10.1787/888933655795

Table 7. Past OECD recommendations on green growth

Recommendations	Actions taken since the 2015 Survey
Consider further increases in fuel taxes.	Fuel taxes have been increased in 2017 but remain low in international comparison.
Avoid a resurgence of implicit petrol subsidies in case of future oil price increases by adjusting petrol prices regularly.	Implicit petrol subsidies have not returned.

Figure 35. Green growth indicators



Source: OECD (2017), Green Growth Indicators, OECD Environment Statistics database; OECD National Accounts (database); IEA (2017), IEA World Energy Statistics and Balances database; OECD (2017) National Accounts database; OECD (2017), Exposure to air pollution, OECD Environment Statistics database; OECD (2017), Patents: Technology development, OECD Environment Statistics database.

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Thematic chapters

Chapter 1.

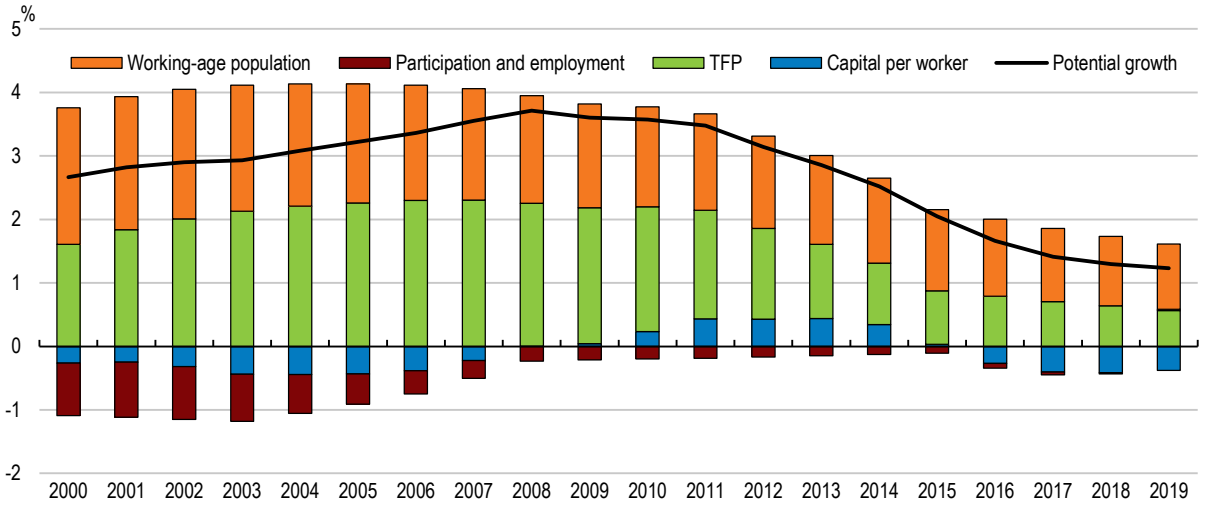
Raising investment and improving infrastructure

The economy's growth potential has declined in recent years and the income gap vis-à-vis advanced economy has widened, mainly due to comparatively weak labour productivity. Following years of falling investment that can explain almost 40% of the decline in labour productivity, Brazil has one of the lowest investment rates among OECD and emerging market economies. As a result, growth is likely to fall substantially below current levels unless new sources of growth are tapped into. Strengthening investment will be one key avenue to maintain solid growth and build on the social progress of the past. The ability of firms to pay better wages without jeopardising their competitiveness will depend crucially on stronger investment and productivity. One area of investment with particularly wide ramifications into other sectors is infrastructure and almost all areas of infrastructure are characterised by quality shortcomings and bottlenecks. Explanations for Brazil's low investment are related to a lack of profitable business opportunities in which the private sector could invest, owing to structural policy settings that act as a drag on the investment climate. Areas where reforms could significantly improve the business climate include red tape and licensing procedures, legal uncertainty, tax compliance costs, labour costs and improvements in workforce skills. Strengthening competition would allow a reallocation of resources to more productive firms and sectors, freeing labour and capital from low-productivity and low-remuneration activities. Financing has also been a constraint and a second important explanation for low investment. Long-term investment lending has so far been dominated by one single public-sector financial institution. Recent policy changes have paved the way for developing private long-term credit markets and tapping into more diverse sources of financing. For infrastructure financing, using a wider array of financial instruments would allow drawing institutional investors, including foreign ones, into financing infrastructure projects in Brazil.

Stronger investment is a key requisite for solid growth

Over the last ten years, the growth potential of the Brazilian economy, which measures how fast GDP can grow over a longer horizon, has declined substantially, from around 3.8% per year in 2008 to now less than 2% (Figure 1.1). This growth differential makes a noticeable difference for material well-being. Growing at the current potential growth rate, income per capita would double over the next 40 years, reaching approximately the level where Greece or Estonia are today. By contrast, if the economy grew at 3.8% per annum, per capita incomes would be more than 4 times higher in 40 years, reaching approximately the current levels of Japan or New Zealand.

Figure 1.1. The economy's growth potential has declined



Source: OECD Economic Outlook 102 database.

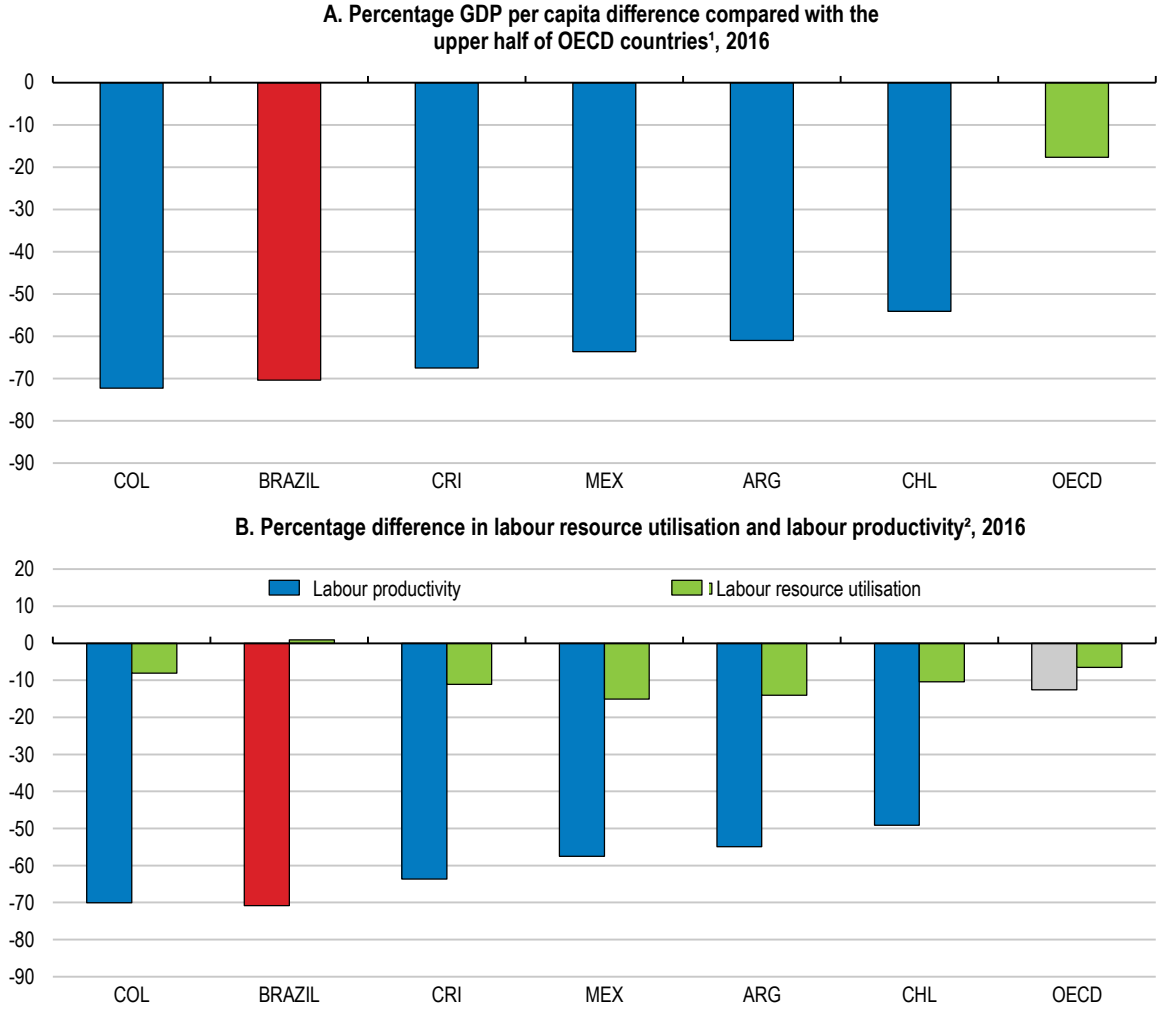
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Consistent with the lower growth potential, the narrowing of Brazil's significant GDP per capita gap with advanced OECD countries has stalled in recent years. This is the result of comparatively weak labour productivity (Figure 1.2). Productivity will have to become the principal engine of growth and is intimately linked to inclusiveness, as raising productivity is also about expanding the productive assets of an economy by investing in the skills of its people, allowing everyone to contribute to stronger productivity growth and ensuring that it benefits all part of society (OECD, 2016d; World Bank, 2018). At the same time, there is no guarantee that the benefits of higher levels of growth, or higher levels of productivity in certain sectors, when they materialise, will be broadly shared across the population as a whole. This calls for a comprehensive policy framework to account for the multiple interactions between inequalities and productivity and how these interactions play out across countries, regions, firms and between individuals.

Raising labour productivity can be done through two channels: stronger investment to equip each worker with a larger capital stock or higher multi-factor productivity, which measures how effectively factors of production are combined to produce goods and services. In fact, the falling investment has explained almost 40% of the decline in labour productivity since 1995 (Considera, 2017). Multi-factor productivity is itself partly related to investment, as technological progress embedded in new capital goods often

allows improvements in the use of other resources or a better organisation of production processes. Moreover, many of the policy reforms that would be conducive to stronger investment are likely to also have beneficial effects for multi-factor productivity.

Figure 1.2. Income gaps with OECD countries remain large due to low productivity



1. Compared to the weighted average using population weights of the 17 OECD countries with highest GDP per capita in 2015 based on 2015 purchasing power parities (PPPs). The sum of the percentage difference in labour resource utilisation and labour productivity do not add up exactly to the GDP per capita difference since the decomposition is multiplicative.
2. Labour productivity is measured as GDP per employee. Labour resource utilisation is measured as employment as a share of population.
Source: OECD National Accounts and Productivity Databases; World Bank, World Development Indicators (WDI) (Database); ILO (International Labour Organisation), Key Indicators of the Labour Market (KILM) Database.

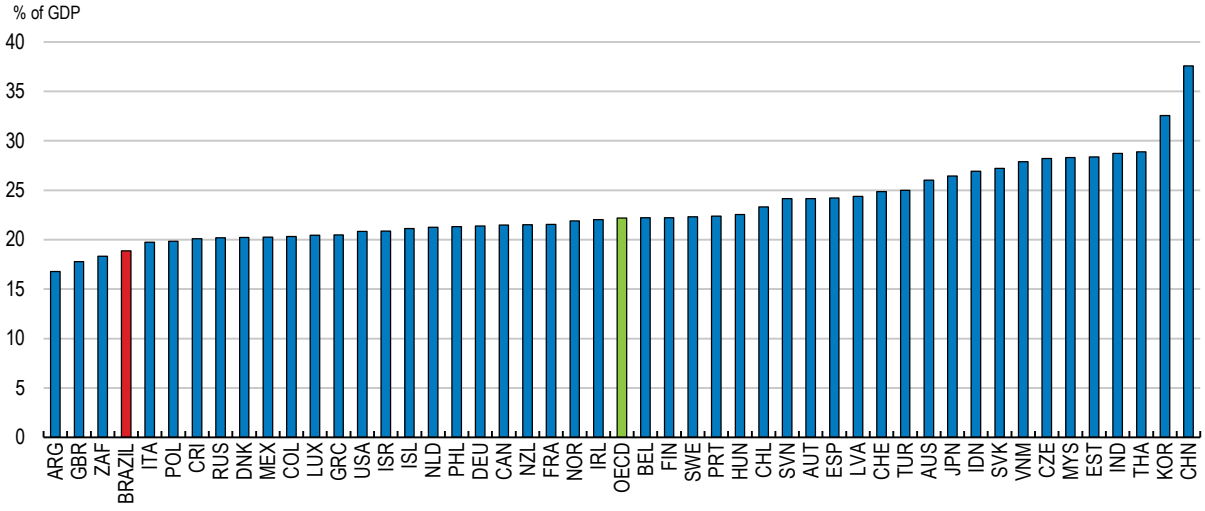
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Brazil invested only 13.7% of GDP in 2016, which is one of the lowest investment rates among OECD and emerging market economies (Figure 1.3). Even though investment has never contributed as much to economic growth as in other economies, notably in Asia, a decline in investment is one of the reasons why the economy's growth potential has

declined so sharply. Over the last years, investment has hardly exceeded the depreciation of the existing capital stock, meaning that growth of the productive capital stock has stalled if not declined.

Figure 1.3. The investment rate is low in international comparison

Gross fixed capital formation as % of GDP, 1990-2016



Source: World Bank.

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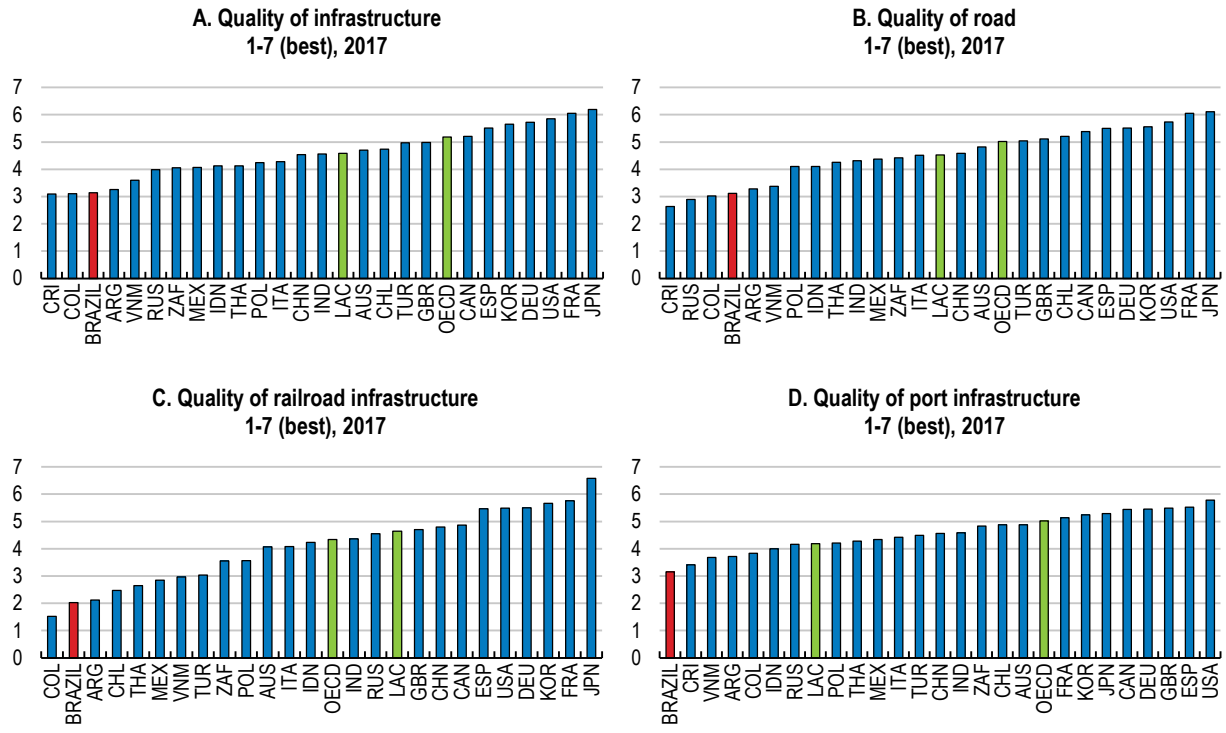
This comes in addition to declining labour inputs, which are largely the result of demographic changes. Going forward, the boost to economic growth from demographic changes is going to diminish continuously as Brazil embarks on a process of rapid population ageing. As a result, the economy's growth potential is likely to fall substantially below current levels unless new sources of growth are tapped into, such as stronger investment.

Strengthening investment will therefore be one key avenue to maintain solid growth and build on the social progress of the past. In fact, the recent emergence of a new Brazilian middle class owes much to the combination of new employment opportunities arising from economic growth and improving access to education, which enabled more people to move into better paid jobs (Chapter 2 of OECD Economic Survey of Brazil 2013). Boosting investment also matters for wage and productivity developments. Low investment limits the growth of labour productivity, which represents the wage increases that Brazilian workers can pocket without deteriorating the competitiveness of domestic producers.

One area of investment with particularly wide ramifications into other sectors is infrastructure. For households, and especially those with low incomes, the availability of transport, electricity, safe water and sanitation and other basic facilities have a direct bearing on their quality of life. Brazilian businesses are suffering competitive disadvantages from high transport and logistics costs. On infrastructure quality, Brazil ranks 116 out of 138 countries in the latest World Economic Forum survey, following years of losing ground to other countries. Quality shortcomings are common to several aspects of infrastructure (Figure 1.4). For example, transport costs for soy exports to

China are three times higher from Brazil than from the United States, with the bulk of that explained by the cost of road transport, which is used for transporting 60% of agricultural commodities due to an underdeveloped rail network.

Figure 1.4. Infrastructure quality is low



Source: World Economic Forum, Global Competitiveness Indicator database.

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Why has investment been so weak?

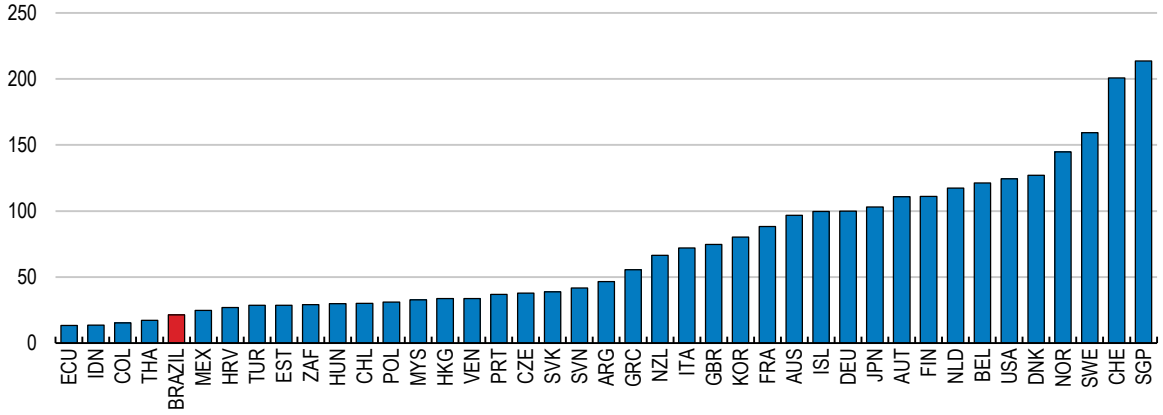
Investment implies foregoing consumption opportunities today in the hope of greater benefits in the future. Hence when an economy does not invest much, it can be either because the future benefits of doing so are low or uncertain or because there are not enough resources to be put aside today. Explanations in the former area call for improving investment opportunities, including by improving the business climate, while the latter type of explanations have to do with savings and the capacity of the financial sector to channel them to those with lucrative investment opportunities.

Possible explanations for Brazil's low investment rate can be found along both of these dimensions. Much can be done to create more profitable business opportunities in which the private sector could invest. This includes a variety of measures that could reduce the by now well-known "Brazil cost", such as reducing the costs of complying with unnecessarily cumbersome regulations and complex tax rules, a more effective judiciary, or further progress in alleviating skill scarcities. All of these factors have contributed to low productivity in tradable sectors (Figure 1.5). In the infrastructure sector, a better performance of public institutions could make it significantly easier for the private sector to engage in the execution and the financing of infrastructure projects. Better incentives

and more opportunities for strong-performing enterprises to grow, including at the expense of less efficient incumbents, would also create new investment opportunities with higher returns. These issues will be discussed in the section on raising the returns on investment.

Figure 1.5. Productivity is low in international comparison

Labour productivity in thousands of 2010 USD per employee, 2015

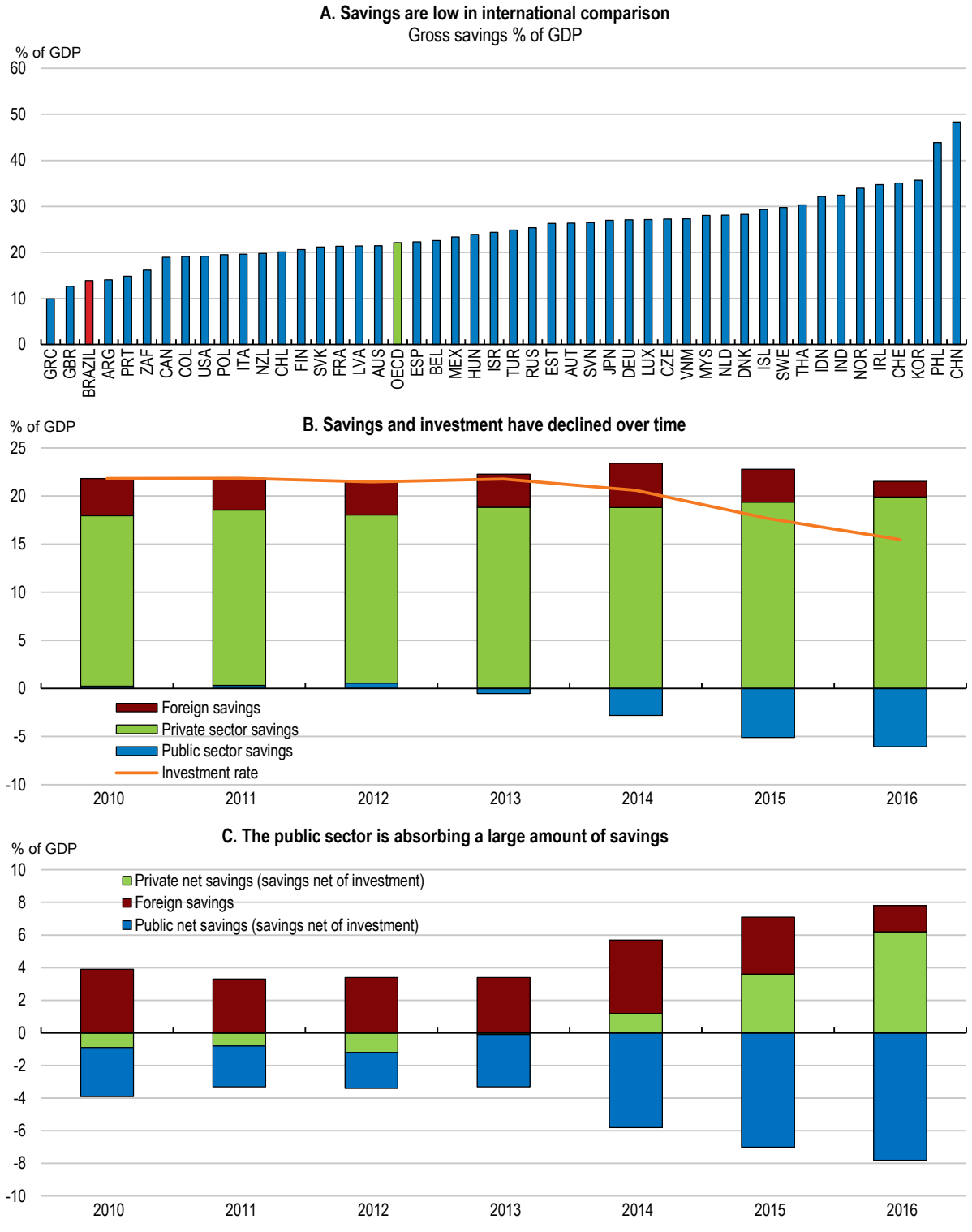


Source: World Bank, ILO, IBGE

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On the financing side, Brazil has traditionally been characterised by low domestic savings, lower than in other emerging economies, particularly in Asia (Figure 1.6). The scarcity of saving is also reflected in the high real interest rates with which Brazil remunerates saving (Bacha, 2010a). At the same time, already low saving has declined markedly since 2013, reflecting primarily a steep decline in public sector savings. This means that an increasing amount of private saving has been absorbed by the public sector, estimated at 6.2% of GDP in 2016. Since the public sector has invested less and less over time, potential private investment has been crowded out by public consumption, not public investment. Empirical work suggests that whenever domestic savings, which include public savings, increase or decline by one percentage point of GDP, investment increases or declines by half a percentage point of GDP (Considera, 2017). Increasing public savings through a reduction of the fiscal deficit would therefore alleviate financing constraints for investment. At the same time, even in the years when public savings were higher, investment was still low, suggesting that additional policy action is required to strengthen investment.

Figure 1.6. Saving is low and has declined

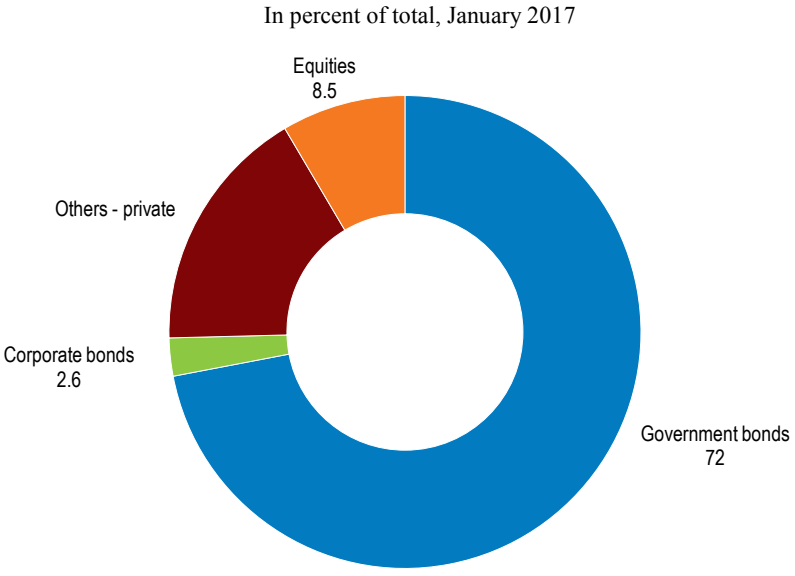


Source: World Bank, IBGE, CEMEC (2017).

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Brazil also has a few peculiar features in the relationship between the public and private sectors with respect to savings. While most countries use private savings to finance private investments, much of private savings in Brazil flow into public debt. The portfolio of Brazil's asset management industry consists to more than 70% of public-sector bonds and has risen by almost 10 percentage points of GDP over the last years (Figure 1.7). At the same time the public sector is the single largest source of financing for private investment (Canuto and Cavallari, 2017). Possible reforms affecting the financial sector and its role in intermediating between savers and investors will be discussed in the next section on improving access to financing.

Figure 1.7.Private sector assets under management



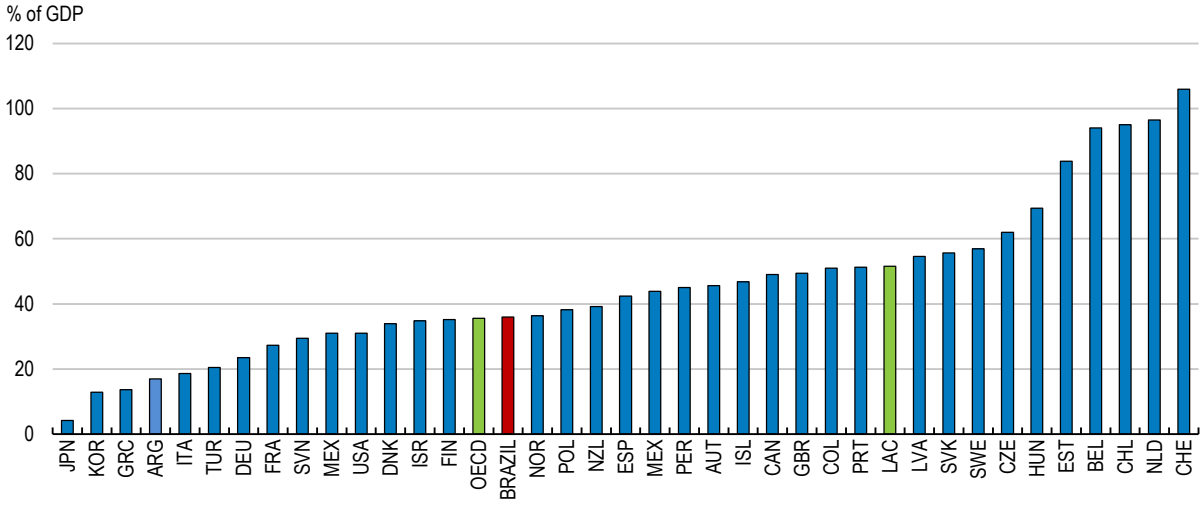
Source: Canuto and Cavallari, 2017 based on Anbima.

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Foreign savings can be a complement to domestic savings as capital inflows can finance domestic investment, in particular when it comes in the form of foreign direct investment (FDI). In theory, this should decouple investment in a given country from its own capacity to save since in a frictionless world, capital would simply flow to where its returns are the highest. In reality, however, foreign savings are an imperfect substitute to domestic savings and domestic investment tends to be highly correlated with domestic savings. This empirical regularity has become known as the Feldstein Horioka (1980) puzzle. In Brazil, the correlation between domestic savings and domestic investment has been 67% since the turn of the millennium. Although FDI inflows have been resilient even in the face of the major recession that the economy has gone through, the stock of foreign direct investment is below those observed in other Latin American countries, such as Chile, Peru or Mexico (Figure 1.8).

Figure 1.8. Brazil attracts less direct investment than other countries in the region

Stock of FDI, 2015



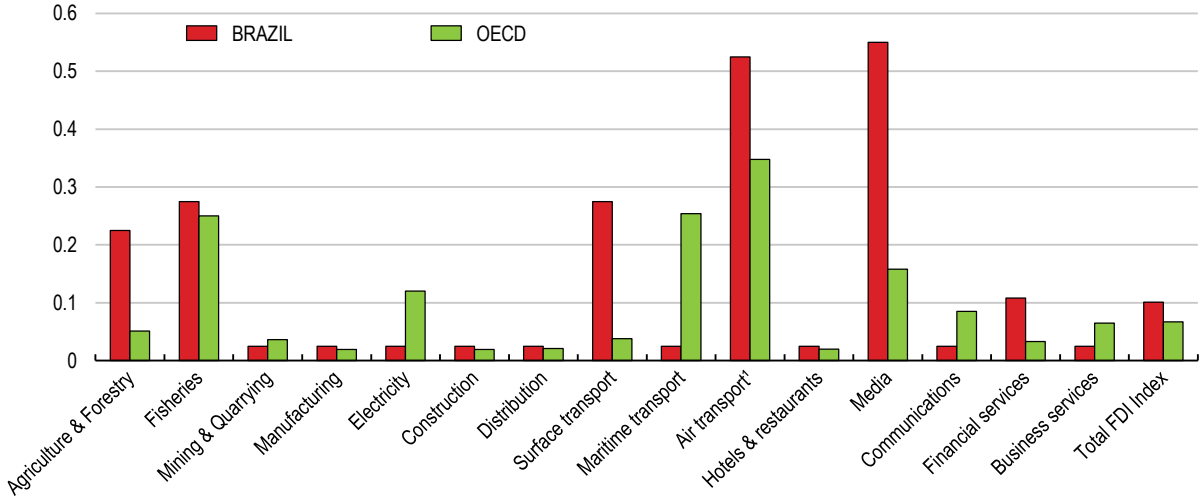
Source: CEPAL and OECD FDI main aggregates database.

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The economy is fairly open to international investment flows. Particularly restrictions on foreign direct investment are at comparable levels with OECD economies and concentrated in only a few sectors (Figure 1.9). A recent presidential decree has temporarily removed ceilings on foreign capital in airlines, although this has yet to be approved by Congress. Without this, Brazil's FDI restrictions in air transportation are still high in international comparison.

Figure 1.9. FDI restrictions are low compared to OECD countries

Only sectors with significant restrictions in Brazil shown



1. Could move to 0.025 if the recent temporary removal of foreign capital restrictions in airlines became permanent.

Source: OECD FDI Regulatory Restrictiveness Index database.

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However, more can be done to attract more FDI. Adopting a comprehensive and coherent approach to investment climate reforms, which are essentially the same as those that would raise domestic investment, would allow Brazil to use foreign savings more than it has in the past to finance its investment needs. Among the different aspects of the business climate, foreign investors may be particularly sensitive to judicial uncertainty and the stability of rules. Bolstering foreign direct investment in the agriculture sector could be a valuable avenue to bolster Brazil's participation in global value chains, particularly in the agro-food sector. In the area of infrastructure, structural changes on financial markets and a wider variety of financial products tailored to the needs of specific foreign investor profiles would allow tapping into international financial markets in a way previously unseen.

Raising returns on investment

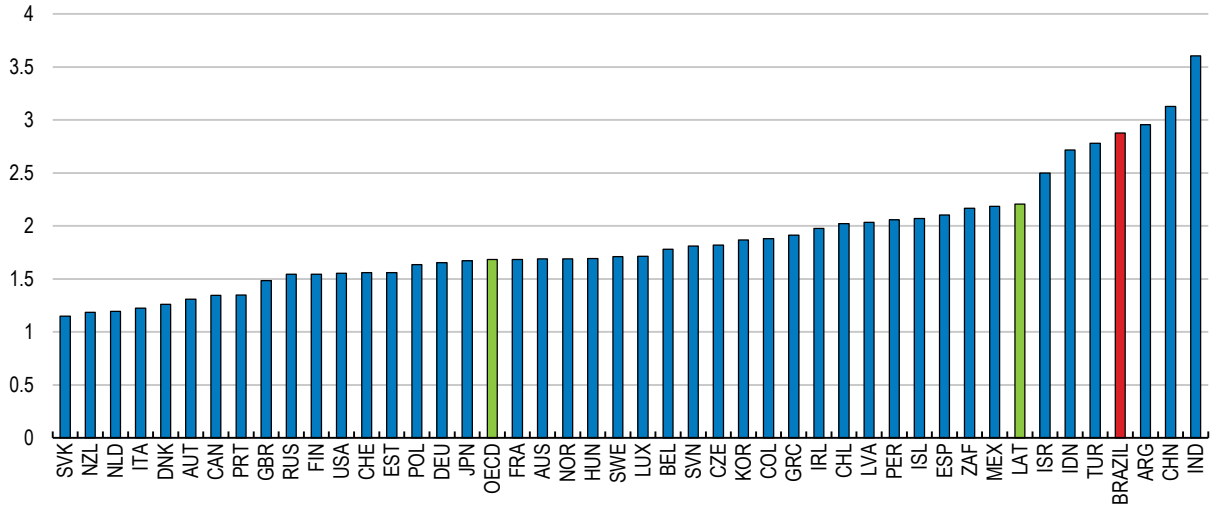
Better policy settings could result in substantially lower costs of operations for most Brazilian companies. Brazil's high cost of production is the result of complicated regulatory procedures, ineffective contract enforcement, judicial uncertainty, high tax compliance costs, labour costs and infrastructure bottlenecks. Costs beyond the influence of firms make it harder for them to compete and reduce returns to investment.

Reducing red tape and regulatory barriers would reduce costs and improve incentive structures

Brazil's regulatory procedures for market entry and licensing have long been significantly more cumbersome and restrictive than in OECD countries, and lack transparency and simplicity, according to the OECD Product Market Regulation indicators (Figure 1.10).

Figure 1.10. Regulatory barriers to entrepreneurship are high

Indicator scaled from 0 (least restrictive) to 6 (most restrictive), 2013



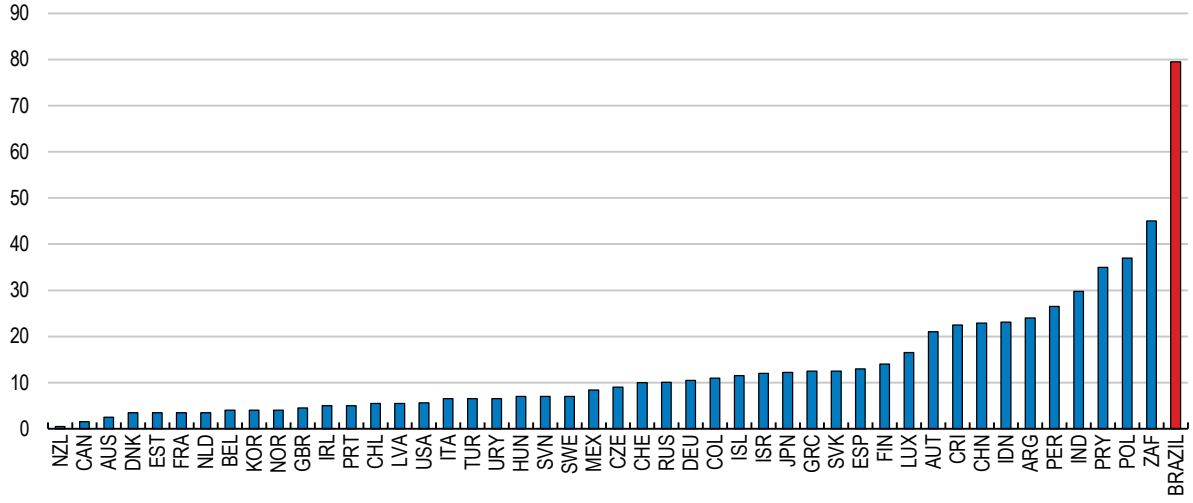
Note: LAT includes Argentina, Chile, Colombia and Mexico. Data for Argentina are for 2016.
Source: OECD Product Market Regulation Indicators, 2013, available at www.oecd.org/eco/pmr .

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The widely used World Bank Doing Business indicators confirm this picture, positioning Brazil at rank 123 out of 190 economies surveyed for the ease of doing business. Brazil is particularly far behind best practice in areas such as the licensing process to start a business, dealing with construction permits or registering property. Starting a business requires 12 procedures in Brazil and takes 83 days, while Chile, Colombia and Mexico require fewer procedures that can be accomplished in less than 11 days (Figure 1.11).

Figure 1.11. Ease of starting a business

Days required to start a business, 2017



Source: World Bank (2017b).

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Recent government initiatives have included pilot projects, including in the capital city of Brasilia and in São Paulo, to allow opening and closing a company within a few days. In São Paulo, for example, the time to open a business fell from 101 days to 7 days. A nationwide rollout of such fundamental reforms has not happened yet, but would be a major improvement. Besides the procedures to open a business, streamlining licensing procedures is also crucial. In this regard, Portugal has recently made positive experiences with applying a silence-is-consent rule in areas without major safety or environmental concerns. Brazil could apply easier administrative procedures and streamline licensing procedures more widely, to make sure its regulations do not unnecessarily hinder entry and competition.

In addition, environmental licensing is often adding to the costs and regulatory uncertainty of investment projects. Despite recent improvements, overlapping responsibilities between understaffed environmental agencies at the federal, state and municipal levels and cumbersome licensing procedures create delays and regulatory uncertainty, including about the length of the delay. The licensing process could be streamlined significantly without detriment to legitimate environmental concerns, for example by rolling out single-window facilities, making use of on-line tools or improving the sharing of information across government agencies.

Several regulatory agencies have made progress in launching regulatory impact assessments before making changes to existing regulation, although this is not yet a consistent practice across the whole administration. Applying such assessments more

widely and in a harmonised manner could help to avoid further regulations with detrimental effects on entry. In addition, systematic use of ex post evaluation to assess whether regulations achieve their objectives is mostly unexplored.

One factor that delays licensing is that public sector managers can be held personally liable for their decisions. In fact, officials have much to lose if ex-post a judge takes a different view on the impact of a specific license than the official had at the time of granting it. As a result, public officials tend to be overcautious and try to back up any decision with long legal analyses. Limiting the possibilities to take public officials to court over their decisions to cases of abuse or bad faith would have significant potential to speed up licensing procedures.

Empirical results from firm-level analysis suggest that easing these administrative burdens is likely to improve the productivity of Brazilian firms as the number of procedures required for starting a business and the associated delays are negatively associated with firm level productivity (Box 1.1, Arnold and Flach, 2018a). These findings are confirmed by cross-country panel regressions that control for other time-invariant differences across countries and for time effects (Ferreira Mation, 2014). Their work suggests that if Brazil's labour productivity could be 11% higher if its business climate were to improve to the level of Chile's, for example. The prospects for the entry of new and innovative firms could also improve with the development of deeper capital markets (Kerr and Nanda, 2009; Hubbard, 1998; Beck, 2007; Aghion et al., 2007).

Brazil's tradable sector would also benefit from more competition in upstream non-manufacturing sectors, as access to cost-effective and innovative services inputs can play an important role for manufacturing productivity (Arnold et al., 2011; 2015; World Bank, 2018). As measured by the OECD Product Market Regulation (PMR) indicators, regulations that curb competition in non-manufacturing sectors are more restrictive in Brazil than in the average OECD country, but less so than in the average of the BRIICS countries. While Brazil scores 2.54 on a scale of 0 to 6 in 2013, similar to the average values of China, India, Russia and South Africa, but significantly higher than the OECD average of 1.51.

Box 1.1. Identifying constraints to productivity growth using firm-level data

In order to explore the link between structural policy variables and productivity, a large data set of accounting data from over 16 000 firm observations across Brazilian industrial and services sectors has been analysed. Using data from firms' annual balance sheets and profit and loss accounts from the ORBIS database, total factor productivity (TFP) is calculated as a multilateral index with industry-specific factor intensities, following Griffith et al. (2004). The main advantage of the index approach of measuring TFP is that it makes the comparison between any two firm-year observations possible, since each firm's inputs and outputs are calculated as deviations from a reference firm. Robustness checks with other TFP measures have also been used to confirm the findings. The data have been cleaned for obvious outliers and reporting mistakes, which has resulted in dropping less than 1% of the original sample. A few sectors have been excluded from the analysis due to their monopolistic nature such as in the case of utility sectors, or due to their the strong degree of public control, such as in public administration, defence, education and health services, or because they are subject to strong cyclical swings such as financial services or mining.

In a second step, firm-level TFP is then used as a dependent variable and related to policy measures or variables that are directly influenced by policies. The empirical strategy follows closely the difference-in-differences approach proposed by Rajan and Zingales (1998). The rigour of this approach stems from the fact that it draws on comparisons only across comparable units, such as firms within the same state of Brazil and the same year. In a typical estimation set-up, and there are minor differences across the estimations due to data availability, the policy variable varies across time or across states, and is interacted with an industry-specific variable that is assumed to measure the relevance of this policy aspect for the sector to which the firm belongs. For example, in the case of energy costs that vary across states, the interaction factor is the energy intensity of industries. This set-up assumes that firms in sectors that are more energy-intensive are more affected by regional differences in energy costs than other sectors. The estimation coefficient is hence identified only from comparisons across firms in different industries within the same state. State industry combinations are the level at which the interaction measure varies, while fixed effects control for all idiosyncratic productivity influences specific to combinations of states and years and specific to industries. The resulting estimation equation in this case is the following:

$$TFP_{it} = \alpha + \beta\ energy_cost_{reg} * energy_intensity_{s} + size_{it} + age_{it} + D_{reg,t} + D_{s} + \varepsilon_{it}$$

where subscripts *i* denote the firm, *t* the year, *reg* the region or state, s the sector. Size and age denote a firm's size in number of employees and age since its date of incorporation. D are binary variables and ε is a white-noise error term. Whenever possible, and following the strategy of Rajan and Zingales (1998), the interaction factors at the industry level have been taken from international benchmarks, for example the United States, rather than from Brazilian data, to ensure a maximum degree of exogeneity. This empirical strategy means that the estimated effect can be interpreted as causal under acceptance of the identifying assumption, i.e. the relevance of the interaction factor chosen. Estimation results have been obtained for the effects of energy prices, transport and road infrastructure, the tax burden, several aspects of administrative burdens, labour regulations and skill availability. Detailed estimation results including regression results are presented in the Annex to this Chapter.

Reducing legal uncertainty and strengthening contract enforcement

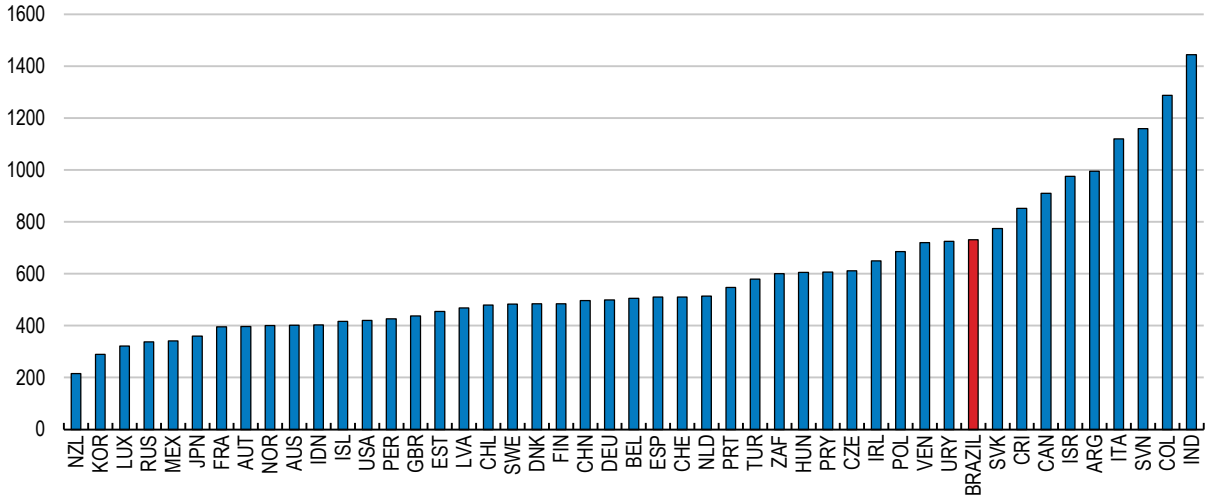
The investment climate could also be improved by reducing uncertainties related to the judicial system and to regulation. Both an ineffective court system and frequent regulatory changes in recent years have made legal uncertainty a key concern among investors. Clear, transparent and stable legal and regulatory frameworks help reducing legal risks, which can be a strong deterrent for investors as the possibilities for insuring against such risks are usually very limited. In regulated sectors such as utilities, communications and transport, the principle responsibility for this lies with sectoral regulatory agencies, which have been characterised by heterogeneous degrees of institutional capacities and independence in the past. Building up confidence in regulatory frameworks will take time, but avoiding ad-hoc changes and political interference, including through political appointments, is key for confidence to improve.

Enforcing contracts through the judicial system is lengthy and the outcome is often uncertain due to the significant discretionary power of judges. The cumbersome procedures of dealing with courts can substantially add to firms' costs and reduce their productivity. Enforcing a standard debt contract takes 731 days in Brazil, compared to 230 in Korea, 338 in Mexico, 426 in Peru or 480 in Chile (Figure 1.12). The time and value losses resulting from inefficient processes of resolution of contractual conflicts and insolvency situations have repeatedly been mentioned as a key constraint for the investment climate (Canuto, 2016). Empirical evidence from firm-level data suggests that higher enforcement costs hamper firm productivity, and this effect becomes particularly pronounced when focusing young firms that have been in business for less than 5 years (Box 1.1, Arnold and Flach, 2018a).

Measures to enhance the efficiency of the judicial system adopted across OECD countries include reorganising courts, implementing electronical judicial files and promoting out-of-court solutions to conflicts. The latter is particularly important, as mediation arrangements can provide faster and more efficient resolution of commercial disputes. Increasing competition in the legal profession can also induce lower litigation and hence have a positive effect on the efficiency of the system.

Figure 1.12. The court system is slow to resolve commercial disputes

Time required to enforce a contract (in days), 2017



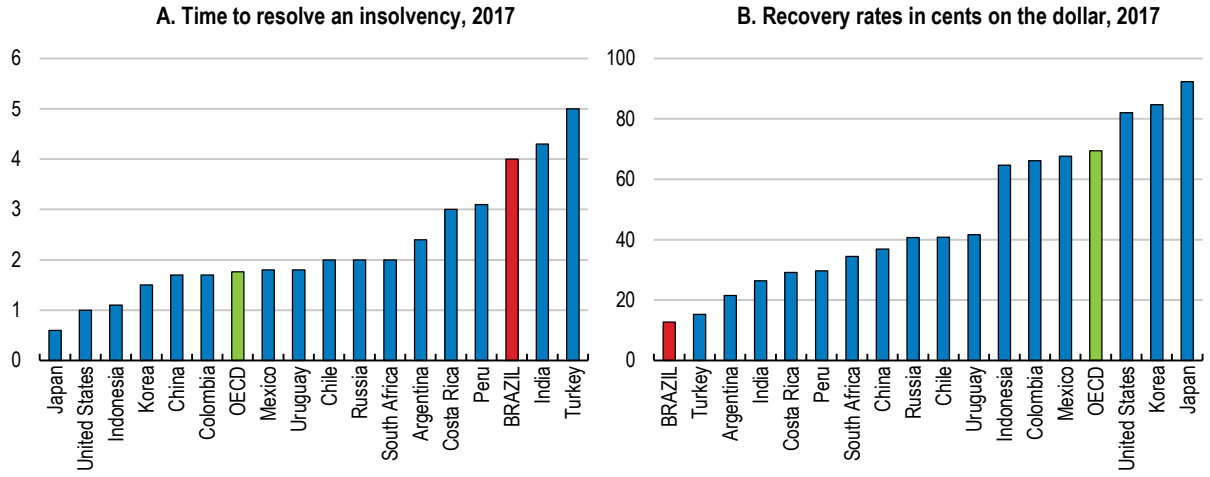
Source: World Bank (2017b).

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Effective insolvency procedures can play a crucial role to boost investment and productivity (Adalet McGowan and Andrews, 2016). A well working insolvency framework is crucial to restructure companies that are still viable and to allow a speedy recovery of non-viable companies' assets before they lose value or can be abducted from the insolvent company. It can also boost entrepreneurship by providing second chance opportunities to entrepreneurs.

Brazil reformed its insolvency law in 2005. The reform aimed at providing creditors with a more rapid liquidation of distressed firms and allocated higher priority for secured creditors vis-à-vis workers and tax authorities. It resulted in credit expansion and business investment growth, especially in high productivity firms (Arnold and Flach, 2018b). However, Brazil's insolvency procedures continue to be less efficient and more costly than those found in OECD and in peer Latin America countries (Figure 1.13). A typical bankruptcy resolution takes 4 years in Brazil, compared to 2.9 years in LAC countries and 1.7 years in OECD countries. Since assets of distressed companies tend to lose value quickly, it is not surprising that Brazil's recovery rate on debt with insolvent companies is only 15.8 cents on the dollar, while it is 31 cents in Latin America and Caribbean and 73 cents in OECD high-income countries (World Bank, 2017b).

Figure 1.13. Insolvencies are slow and recovery rates low



Source: World Bank (2017b).

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Faster and more efficient insolvency procedures would lower the credit risk of corporate borrowers and contribute to boost private investment. Acknowledging this, authorities are reviewing insolvency procedures to make them clearer and to facilitate quicker processes. Among new features being considered is the possibility for tax authorities to take a haircut, facilitating that firms can access finance during the recovery processes and strengthening out-of-court procedures. The latter is particularly important, as bottlenecks in the judicial system prevented that the 2005 reform boosted investment and productivity more strongly. Firms operating in districts with more congested courts experienced lower access to loans and lower increase in investment and productivity than firms operating in districts with less congested courts (Ponticelli, 2015). Overall, planned changes seem to go in the right direction to improve insolvency procedures.

Reducing the cost of complying with taxes

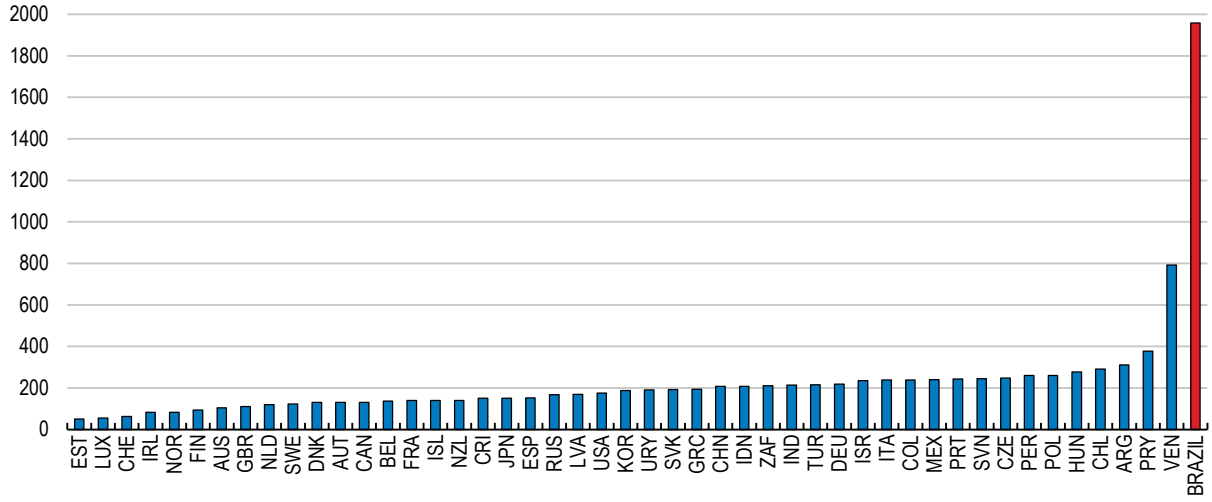
Brazil's tax system is a major cost driver for companies and substantially reduces investment returns, both because of the level of taxes and compliance costs. Corporate taxes with a peak rate of 35% are high in international comparison. A combination of unifying several parallel corporate tax systems, broadening the base and reducing the rate may help to simplify corporate taxes and reduce distortions. In addition, several consumption taxes drive up overall tax levels on formal sector companies. In part, this is owing to the weak design of consumption taxes which, when properly designed, do not constitute a burden on businesses. However, in the current fiscal context, the scope for reducing public revenues is extremely limited. Still, even within the realm of revenue-neutral tax reforms, Brazil can improve investment returns significantly by making the tax system more efficient and easier to comply with.

When measuring the time requirement to comply with taxes for a benchmark manufacturing company in 190 jurisdiction across the world, the World Bank finds that Brazil comes out as one of the last, with 2 600 hours required, as opposed to 356 in the average Latin American country or 184 in the average OECD country (Figure 1.14). Tax departments of companies are consequently huge in international comparison, adding

substantially to fixed costs. Some estimates suggest that for the whole economy, tax compliance costs alone amount to 0.43% of GDP (Appy, 2013), while other estimates have calculated that tax compliance costs for industrial companies as 2.6% of consumer prices (Coelho, 2015).

Figure 1.14. Hours required to prepare taxes

2017



Source: World Bank (2017b).

StatLink http://dx.doi.org/10.1787/888933655605

Scope for simplification exists primarily in the area of indirect taxation. Brazil has 6 different kinds of consumption taxes, which generate more than half of public revenues. The industrial sector stands to gain particularly from a comprehensive consumption tax reform, as it is heavily affected by the complexity and weak design of consumption taxes, including the lack of refunds for taxes paid on fixed assets. For example, about a third of consumption tax revenues comes from manufacturing firms, which account for only 13% of value added, according to industry estimates (Coelho, 2015). In contrast, the services sector is facing a lighter tax burden.

The largest of Brazil's 6 consumption taxes, called ICMS raises revenues of around 8% of GDP. It is levied by Brazil's states and each state applies its own tax code, tax base and tax rates. Brazil applies a mixture of the origin and destination principles to interstate commerce and companies wishing to offer goods and services nationwide are required to comply with each state's individual tax rules. Credits for interstate transactions are regularly delayed or refused (CNI, 2014a).

Another reason why compliance costs are high relates to the imprecise definition of tax credits for inputs, which gives rise to excessive litigation. Tax credits for consumption taxes paid on inputs follow the so called "physical credit" principle, by which tax credits are granted only for inputs embodied in the final good sold. This rules out tax credits for overhead expenses and in particular fixed assets. As a result, it raises the cost of capital and breaks the usual "neutrality" of a well-designed VAT. The "physical credit" principle requires companies to prove that every input for which they claim a credit goes directly into the final product. A practical example is that industrial companies often hire tax

accountants to identify how their electricity consumption is divided between the part that powers the machines and the part that lights the companies' offices, with the former being deductible and the latter not. Lawsuits over disputes are common and use up resources that could be employed more productively. Recent initiatives to allow tax credits for all intermediate goods should be implemented swiftly.

The ICMS tax base is narrowed by the exclusion of many services, which are instead subject to a municipal service tax called ISS, which does not allow any credit for inputs, making it effectively a sales tax T. The uneven tax treatment of the industrial and the services sector should be eliminated. This could even lead to some increase in revenues, given that the services sector is currently taxed less than the industrial sector.

Another large consumption tax is a set of federal "contributions", including those known as PIS/Pasep, and Cofins. Together these contributions account for 7.5% of GDP in revenues. Tax credits for intermediate inputs are also subject to the "physical credit" principle, as in the case of the ICMS. In addition, PIS/Cofins is often applied on the value of a good including ICMS tax already paid on it, thus making the two taxes cumulative.

A special sales tax called IPI is levied on certain industrial products. The IPI has been used for temporarily protecting Brazilian producers in specific sectors, for example the automobile sector, against international competition since 2011, by charging differential rates according to the share of local content. Finally, another special federal tax called CIDE has been levied on select goods and services, most notably on imports of services and financial transactions including remittances abroad. CIDE contributes to the very high taxation of imported services, for which effective tax rates range between 40% and 50% (Ernest and Young, 2013). This is not only a very high tax burden but also a barrier to competition and it precludes Brazilian companies from the competitive advantages associated to international trade in tradeable services. The tax distortion against imported services is further aggravated by the relatively low tax burden on domestically produced services relative to goods. CIDE has also been levied on petrol, on which the effective tax burden is lower than in other countries and could be raised further to promote responsible use of fossil fuels and incentivise the use of ethanol for powering cars (see Assessment and Recommendations).

A sensible tax reform would be to consolidate the different consumption taxes into one value-added tax with simple rules. The federal government could lead the way by consolidating its own consumption taxes into a single value added tax with a broad base, full refund for input VAT paid and zero-rating for exports (OECD, 2017c). Once such a tax were established, it might be easier to integrate the state-level ICMS into this system, possibly as state-specific surcharges on the same tax base that preserve current revenues. While tax reforms involving different levels of government are typically politically difficult, other countries like India has recently managed to unify state-level consumption taxes (OECD, 2017b).

In principle, it is possible to accommodate the desire for different states to tax at different rates, once taxation strictly follows the destination principle and tax credits are refunded swiftly for interstate transactions. Such a system is applied in the European Union, for example, where different member states apply different tax rates but consumers are normally subject to VAT in the destination country.

For many years now, the central government has discussed plans to harmonise the state-level ICMS. The challenge, however, is to find a political consensus among the states, some of which are threatened by revenue shortfalls from a rationalisation of the system as

they effectively tax consumption taking place in other states. Moving towards a destination principle would make this impossible, so that a temporary compensation of some states via the federal government may help to allow these states to adjust gradually and would make it easier to reach a consensus, as has been done in India (OECD, 2017b). In light of the political difficulties involved in reforming the ICMS system, there has not been any progress since the unification of ICMS rates for imports in 2012, which had put an end to unproductive tax competition among states to attract import shipments.

Labour costs and complex labour regulations have curbed investment incentives

Labour regulations have been reported as the fifth most important obstacle to growth and competitiveness by Brazilian firms, and as the second highest by large firms (World Bank, 2014). Brazil's labour justice alone costs 0.3% of GDP, more than twice as much as the whole justice system in Argentina (Da Ros, 2015; CNJ, 2016). The 1943 labour code contains many very detailed rules whose benefits to either employees or employers are no longer evident. Prior to a labour market reform passed in July 2017, alternative firm-level agreements on some of these details would not be recognised by courts, resulting in 4.4 million court cases pending (BNDES, 2017). The recent reform has provided more scope for firm-level agreements while keeping essential employee rights non-negotiable.

In the area of collective bargaining, the reform implements the principle of derogation of collective agreements and individual contracts above a certain pay threshold from the labour code. The reform allows derogation in a number of areas such as annual leave organisation, working time, incentive pay and other issues of internal flexibility. However, the minimum wage, the mandatory 13th salary, unemployment insurance and 27 other key employee rights explicitly remain non-negotiable. In addition, the reform lifts the obligation to pay affiliation fees to a union for formal workers and enhances the scope for outsourcing, which can now be done in all areas of activity of a company, while before it was permitted only for cleaning and security services.

In the area of employment protection for open-ended contracts, the reform introduces a new form of separation (by mutual agreement), which should result in lower compensation for workers and lower cost to employers with respect to dismissal without just cause. The reform also reduces the incentives for workers to file a complaint since the overall cost of the procedure is now charged to the losing party -either the employer or employee- with no more public financial aid, except in a few cases. Prior to the reform, essentially all costs of an employee's complaint were covered by public money, regardless of whether the case was lost or won.

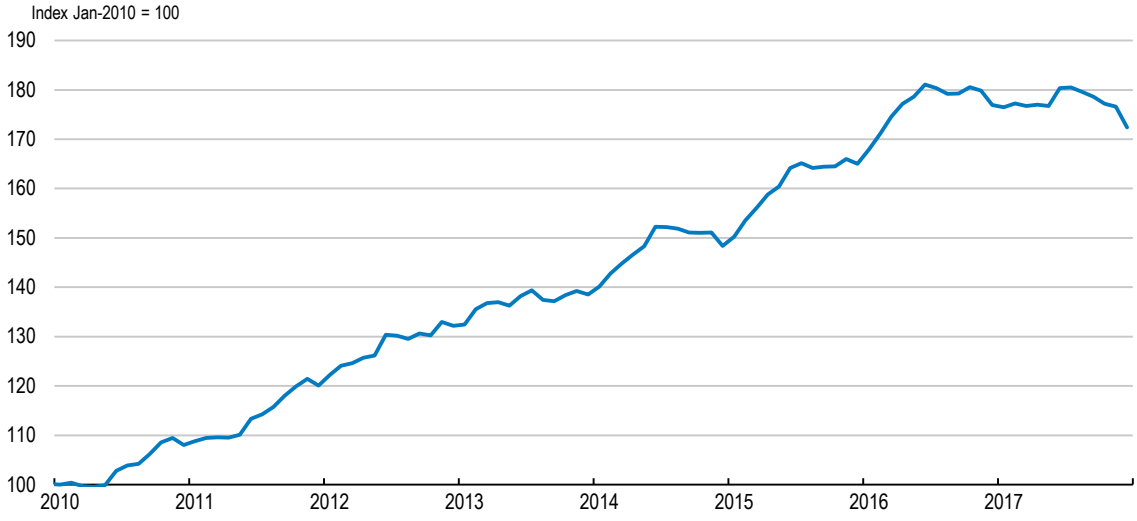
In principle, the labour reform should diminish legal uncertainty and litigation, thereby reducing labour costs. It will likely result in greater flexibility with advantages for both employers and employees. By regularising a number of de facto situations and reducing the cost of formal labour it might result in a reduction of informality, more inclusive growth and higher productivity. However, it will be important to ensure that outsourcing does not result in greater informality due to a possible higher prevalence of informal employment among subcontractors. In order to avoid this risk, sufficient resources should be given to the competent authorities to fight informality. Moreover, it will be important to evaluate the effectiveness of the reform after a few years and see if additional measures are needed to ensure a reduction in informality.

Labour costs, both wage and non-wage costs, have outpaced productivity for several years which has resulted in rising unit labour costs (Figure 1.15). This has eroded returns

on capital among large firms, with concomitant effects on corporate savings and investment (Rocca and Santos Junior, 2014; Considera, 2017). Estimates suggest that 88% of the variation in average wages can be explained by changes in the minimum wage (Considera, 2017). The current rule for yearly adjustments of the minimum wage is based on the previous year's inflation and GDP growth two years back and has led to real increases of 80% over the past 15 years. At 75% of the median wage, Brazil's minimum wage is higher than in any OECD country by that measure (Figure 1.16). Allowing a progressive reduction of the minimum wage relative to the median wage by limiting future real increases would help to improve international competitiveness and reduce informality.

Figure 1.15. Unit labour costs have risen

Index January 2010=100



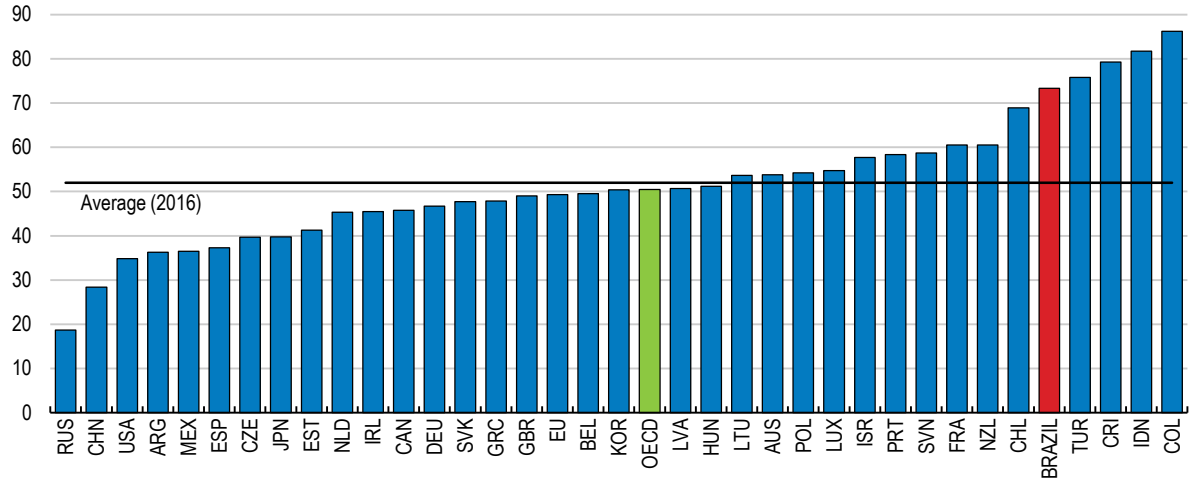
Source:Central Bank.

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To ensure future wage developments that are compatible with strong investment and employment, the current minimum wage rule, which is set to expire in 2019, could be replaced by a rule that indexes annual minimum wage increases to the consumer price index for low-income households for some time. Such a rule would protect the purchasing power of minimum-wage earners, and imply reducing but not halting future real increases in the minimum wage.

Figure 1.16. Minimum wages are high in international comparison

Minimum wage as a percentage of median wages, 2016[1]



1. Exactly half of all workers have wages either below or above the median wage for the OECD countries. Percentage of minimum to average wage for Argentina, China, Indonesia and the Russian Federation.
Source: OECD, OECD Employment Outlook Database; China Ministry of Human Resources and Social Security, National Bureau of Statistics; Instituto Brasileiro de Geografia e Estatística (Pesquisa Nacional por Amostra de Domicílios); International Labour Organisation (ILO) Database on Conditions of Work and Employment Laws; Ministry of Man Power and Transmigration of the Republic of Indonesia and Statistics Indonesia (BPS); Russia Federal State Statistics Service; National Institute of Statistics and Census of Argentina.

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The federal minimum wage is defined only as a monthly payment, with no hourly equivalent. This severely limits the scope for low-wage earners to work part-time, or pushes work opportunities with less than full time into the informal sector. Given that the minimum wage is a binding floor for a large share of Brazil's workforce, the lack of an hourly definition may have a significant impact. This may be particularly relevant for women, who are almost 5 times more likely to work part-time across OECD countries. Moving towards an hourly definition of the minimum wage would make it easier to combine work and childcare without losing the benefits associated to formal employment.

It is also important to note that individual states can set a state–level minimum wage above the federal level, which could be used to reflect differences in labour market conditions and productivity, across Brazilian states. Moreover, state-level minimum wages have no fiscal implications through linked social benefits, while the amount of the federal minimum wage acts as a floor for several social benefits.

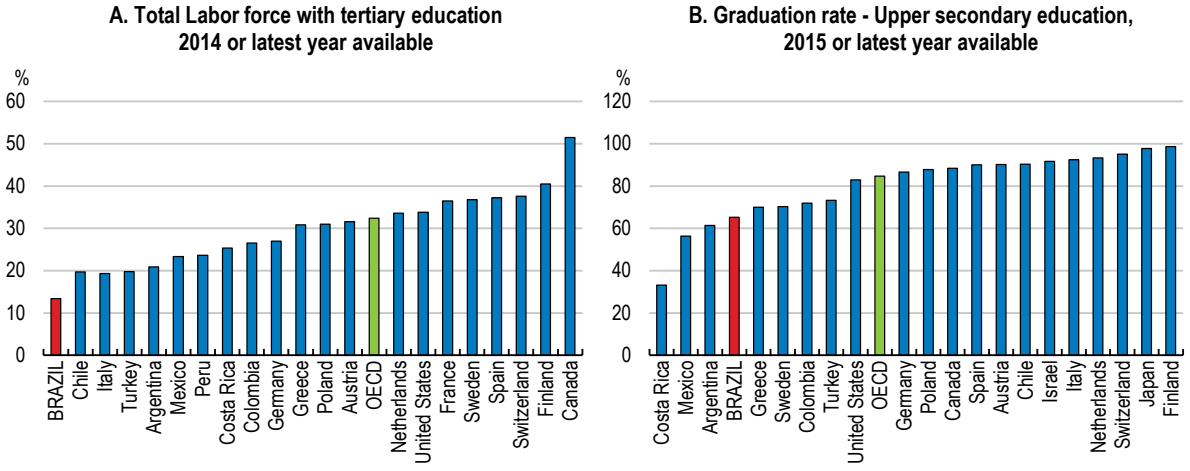
Other labour market policies have rightly placed a priority on reducing gender and race gaps, including the 2012–2015 National Plan for Women and a 2014 law establishing race-based affirmative action in filling federal civil servant positions (World Bank, 2016). Just like income inequality, gender or racial discrimination tends to reduce growth and hold back development by crippling a part of society´s human capital.

Improving skills

Brazil has progressed substantially over the last decades in facilitating access to education, but attainments and the quality of education remain low in international

comparison (Figure 1.17). More than 50% of Brazilians have not attained secondary education, and 17% did not even complete primary education, well above the OECD average of 2%. Low performance on the OECD PISA tests suggests quality challenges, but also large disparities in outcomes depending on socio-economic background.

Figure 1.17. Skill gaps are significant



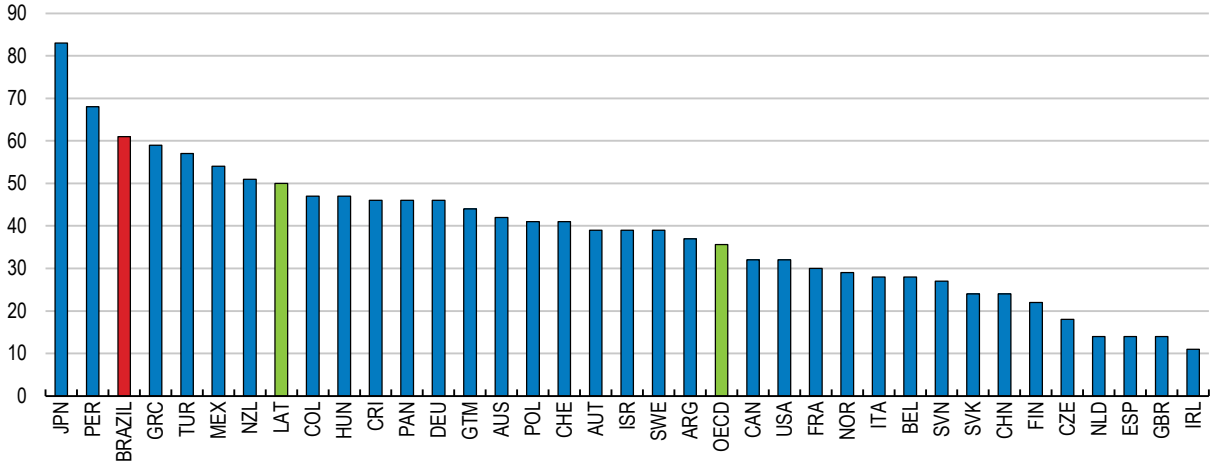
Source: World Bank World Development Indicators database; OECD Education at a Glance database; and UNESCO Education database.

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Survey results suggest that employers are finding it particularly hard to find technicians, skilled trades and engineers (Figure 1.18). Empirical analysis suggests that a lack of skills is a significant factor behind low productivity levels (Arnold and Flach, 2018a). Wage premiums of up to 20% for those with technical training and of 120% for those with tertiary degrees reflect a dearth of skills (CNI, 2014b, OECD, 2016c).

Figure 1.18. Many firms struggle to fill jobs

Firms identifying difficulty filling jobs, 2015, in percent



Source: Manpower Group (2015).

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Higher spending on education is not a guarantee for success; how money is spent is critical. In fact, Brazil increased spending on primary and secondary education by 58% per student between 2010 and 2014, while across OECD and partner countries it increased by 5% on average. But these increases in spending still need to translate into better learning outcomes. Other low-spending countries, such as Colombia, Mexico and Uruguay, spend less per student than Brazil does, and perform better (OECD, 2015a).

Many students in Brazil repeat grade and finally drop out of secondary education. Grade repetition has high costs and its benefits are highly disputed (Ikeda and García, 2014). Focusing on early and targeted support to those students with a higher risk of leaving the education system would be more efficient and produce better outcomes, as drop-outs often lack basic cognitive and social skills that are acquired during early childhood. Brazil has reached near universal enrolment of 5 and 6 years old but lags behind in the participation of younger children (OECD, 2017d). An education reform passed in December 2016 has provided some room for offering relevant content to the less academically inclined into secondary curricula by reducing the number of mandatory subjects. Inspiration for further reform could come from interesting experiences in some Brazilian state, such as the north-eastern state of Ceará, which have demonstrated the potential power of incentives and regular evaluations, together with teacher training and management support for schools (Box 1.2).

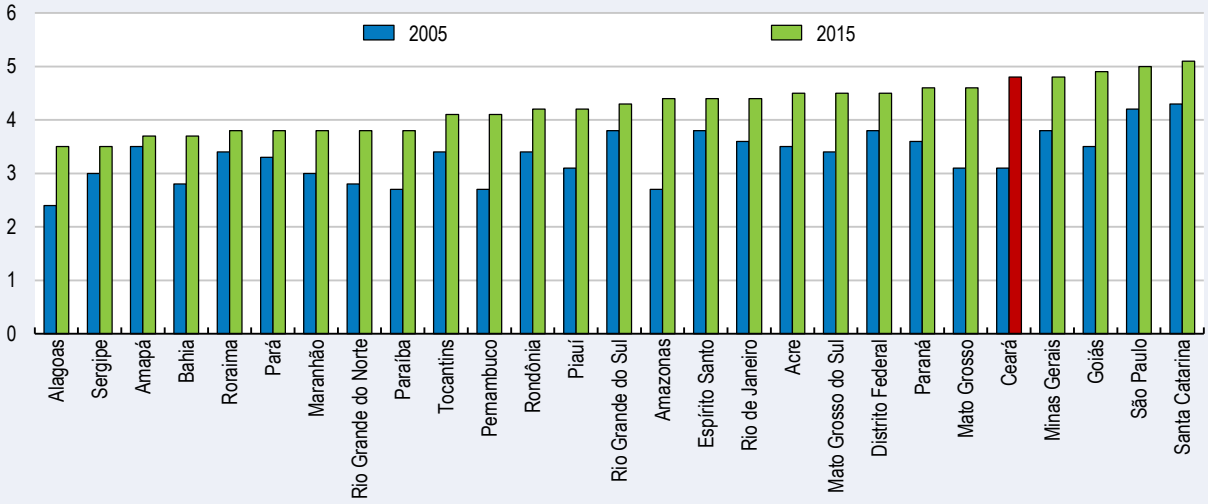
Enrolment in professional training and technical degrees is low in international comparison (Figure 1.20). Only 3.8% of secondary students choose technical courses, with the rest being academically focused. Brazil has started to address this issue by creating additional vocational training opportunities under the umbrella of the Pronatec programme. The programme has also contributed to gender equality, as 67% of participants have been women (World Bank, 2016). It has also supported youths, with 47% of participants being under the age of 29. While progress has been made, the programme has often missed labour market demands, as witnessed by dropout rates of above 50%. One reason for dropping out is that participants found a job in another industry than the one they were training for. Systematic consultations of local labour market and evaluations of labour market outcomes of participants of vocational education and training are therefore crucial to guide the supply of training courses, but have only recently been introduced. Demand-driven programmes initiated by requests from employers have proven significantly more effective in raising the chances of finding employment (O'Connell et al., 2017). Dropout rates are substantially lower in integrated secondary programmes with vocational content, suggesting that these may be avenues worth exploring further. Given that many Brazilians with training needs have already left formal education, it is crucial to ensure access to the Pronatec programme to adults that are either unemployed or looking for new opportunities.

Box 1.2. The power of incentives in education policies: Lessons from the state of Ceará

The experiences of some of Brazil's states show that progress is possible with well-designed policies and good governance. Educational outcomes have improved visibly in the relatively poor north-eastern state of Ceará. Starting from a very low base, the state of Ceará has become one of the top performers with respect to the quality of education (Figure 1.19). This progress was based on an effective mix of increasing resources and introducing incentive mechanisms (OECD, 2011, Boekle-Giuffrida, 2012). Practices included an early extension of compulsory schooling to nine years, production and distribution of structured course materials to all schools and performance-based pay for teachers and principals, coupled with teacher training and management support for schools. The state of Ceará has even tied the distribution of consumption tax revenues across municipalities to educational outcomes, which created competition of municipalities for improving their schools. In all cases, incentive-based measures were coupled with periodic evaluations based on student test scores. It is likely that many of these local experiences could be successfully expanded nationwide.

Figure 1.19. The state of Ceará has made substantial progress in education quality

Basic Education Development Index (IDEB) by state[1]

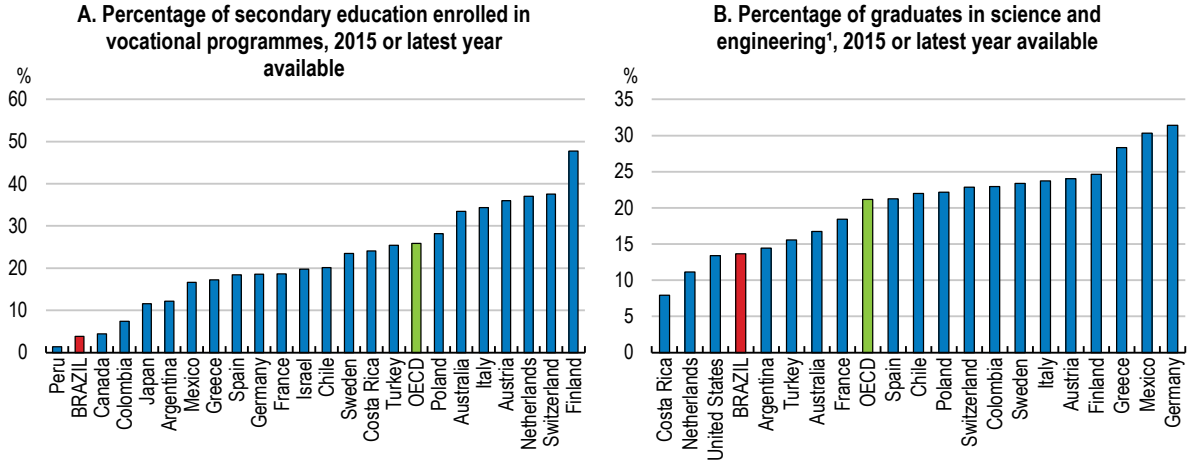


1. IDEB is a synthetic indicator of education quality, based on the academic passing rate and the results of student assessments for each municipality in Brazil.
Source: Observatório do Plano Nacional de Educação.

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Figure 1.20. The share of students in vocational and technical programmes is low

2015



1. This includes all the tertiary graduates in the fields of Engineering, Manufacturing, Construction, Natural Sciences, Mathematics and Statistics.
Source: UNESCO Institute for Statistics

StatLink http://dx.doi.org/10.1787/888933656156

International experience suggests that workplace training and employer participation in the design and delivery of the training are key elements for a successful development of VET. Currently, training institutions are the dominant players of the Brazilian VET system and the involvement of employers is minimal. Giving employers a more central role, both in the design of courses and in the delivery of workplace training, would bring the Brazilian VET system closer to international standards.

On-the-job training could be expanded by eliminating distortions originating from the individual unemployment insurance account system FGTS. Given that dismissals or resignations disguised as dismissals are the usual strategy to access these accounts, less than 20% of jobs have a tenure of more than 2 years. These high job turnover rates significantly reduce incentives for employers to invest in training.

As in many OECD countries, there is also scope for a better alignment of university curriculums to the type of occupations prevailing on the labour market (OECD, 2017d). Deepening integration to the world economy, together with global trends such digitalisation, demographic shifts and other changes in work organisation are constantly reshaping skill needs, creating challenges for the education system, in particular universities, to update curriculums regularly (OECD, 2016c). The tertiary education system produces relatively few graduates in science, technology, engineering and mathematics. Sciences and Engineering account for 13% of graduates, below the OECD average of 20% or Mexico at 26%.

Reallocating spending from tertiary to earlier levels of education would also make spending both more inclusive and efficient. Students from high-income families are those who tend to reach virtually free public tertiary education in Brazil, while attendance of pre-primary education decreases the likelihood of low performance in secondary education for students from low-income households (OECD, 2016b).

Strengthening competition and shifting resources to firms with the best investment opportunities

Competition is key for creating incentives to invest and for allowing those firms with the best investment opportunities to thrive. However, policies such as entry barriers, directed lending, low integration into the global economy and targeted industrial policies have led to low competitive pressures in the Brazilian economy (Lucinda and Meyer, 2013; Clezar et al., 2011; World Bank, 2018).

For existing firms, low competition has reduced incentives to invest into the adoption of the most efficient production technologies, to introduce new innovative products and to reach global best practice (Pinheiro, 2013; IEDI, 2011; IEDI, 2014).

But besides affecting incentives for existing firms, such policies also affect entry and exit, and the reallocation of resources. Brazil's policies towards the business sector have often tended to defend the status-quo rather than to accompany productivity-enhancing changes in industry structures. This has been the case for targeted industrial policies that conferred benefits, in the form of tax breaks or subsidies, to a handful of established incumbents at the expense of potential entrants. Targeted benefits also reduce the pressure for the exit of less productive firms, which is essential for releasing the resources that more successful firms need to grow to an efficient scale (Andrews et al, 2017). Subsidised directed credit has had a similar effect. Although financing conditions for incumbent and new clients are equal, incumbents with a standing business relationship with the national development bank BNDES probably found it easier to get access to subsidised loans than new entrants. Moreover, much of the directed lending volumes have flown to large firms up until 2015. In 2017, 42% of disbursements were to small and medium enterprises.

Low competition tends to foster rigid industry structures, characterised by low entry rates, and a misallocation of resources. Evidence suggests that reallocation mechanisms, including entry and exit, are an essential element of aggregate productivity growth (Hopenhayn, 1992; Melitz, 2003; Aghion et al., 2005). In fact, these reallocations can often account for a larger share of aggregate productivity growth than developments within individual firms (Olley and Pakes, 1996; Foster et al., 2001; Bartelsman et al., 2008; Andrews and Cingano, 2014). Those Brazilian firms with strong productivity growth are on average significantly younger and smaller than others (De Negri and Ferreira, 2015, Criscuolo et al., 2014).

Reallocation mechanisms do not seem to work well in Brazil, and it is often the less productive firms within a sector that enjoy large and even increasing market shares (Gomes and Ribeiro, 2015, OECD 2015c). Start-up rates in Brazil's manufacturing sector are low in international comparison, and new firm entry has been on a constant decline over the last 15 years (Calvino et al., 2015). This has reduced profitable investment opportunities in potential new entrants, as some of those few firms that manage to enter the market tend to have particularly strong productivity and employment growth (Calvino et al., 2015). These firms would have significant investment opportunities. Instead of making full use of this potential, however, rigid industry structures have trapped resources in low-productivity firms with fewer investment opportunities, and with lower pay prospects for workers.

A boost to competition could come from lower barriers to market entry, but also stronger foreign competition as a result of lower trade barriers (see Chapter 2 of this Survey). In addition, policies to support the business sector should be mindful not to inhibit the natural selection process of firms and provide neutral treatment across incumbents and

entrants, and across different sectors of activity. The OECD's Competition Assessment Toolkit (OECD, 2010) can assist the government by providing a flexible methodology not only for identifying but also for revising policies that unduly restrict competition.

Brazil is using specific support policies in several areas. Brazil's support policy for the information technology sector (Lei de Informática), for example, required foreign companies in the computer and information technology business to become minority partners in joint ventures with Brazilian firms and move production activities to Brazil in order to sell in the domestic markets. Only very few major companies did so. On the whole, the policy has not enabled Brazilian made computers or communication equipment to become globally competitive. The resulting price distortions may well have slowed down economic growth more generally, given the widespread use of information and communication technology throughout the economy (IDB, 2014).

Tax breaks for specific sectors can also distort relative prices across activities in the domestic markets. The Information Technology Law of 1991 allocates tax breaks worth BRL 5.5 billion per year to domestic electronics producers (almost 0.1% of GDP), but evidence suggests that it has failed to stimulate R&D or raise productivity in the sector (Kannebley and Porto, 2012). Tax benefits related to the Manaus Free Trade Zone located in the state of Amazonas, far away from major consumer markets, cost BRL 25 billion per year (0.4% of GDP), but no systematic analysis of the economic benefits of this tax expenditure has been made. While employment and industrial activity have risen in these special zones, the corresponding fiscal costs of USD 47 500 per job created are a multiple of workers earnings (World Bank, 2017).

Targeted policies are generally designed with learning effects in mind, but learning will only occur if their temporary nature is made clear from the very outset, ideally with a clearly defined phase-out schedule for specific support measures. Looking at the international experience, the temporary nature of support is what has often drawn a line between the structural upgrading achieved in East Asia and the creation of uncompetitive industries that remained dependent on public support. The Brazilian case illustrates that the political economy of withdrawing public support can easily become complicated if the temporary nature of the measure was not made clear from the beginning.

One example for the effect of local content rules can be seen in the case of equipment for generating electricity from wind and solar sources. Brazil's unique geography and wind resources imply a significant comparative advantage for wind and solar energy (IRENA, 2013). The average capacity factor of the country's wind farms, a measure of how much they actually produce compared with what they could produce under perfect wind conditions, is more than 50%, twice the world average (Abeeólica, 2016). However, local content rules (LCRs), some of which have been attached to financing from BNDES, have made wind turbines more expensive than in other emerging economies, such as India and China (IRENA, 2017). This has hampered investment in generation capacity. By raising prices, LCRs have led to the emergence of a domestic wind power equipment industry, but so far, there are no signs that this industry is becoming more competitive or could at some point survive without LCRs. In addition, the LCRs created upward price pressure on Brazilian steel, an industry that is dominated by a single supplier (Azau et al., 2011). Empirical evidence shows that LCRs have a significant detrimental effect on global investment flows in renewable energy sectors (OECD, 2015b). LCRs add also significant rigidity, which is especially detrimental in an industry such as the wind energy in which technology is evolving quickly and is dependent on global supply chains.

Horizontal policies to boost productivity across the economy have recently gained momentum. The government has launched a support programme called Brasil Mais Produtivo (More Productive Brazil) to help firms to adopt new technologies (MDIC, 2017). The program is being evaluated by the public-sector think tank IPEA, which is in itself a novelty, and has shown positive outcomes. Plans exist to scale it up. This is a move in the right direction to raise productivity without favouring specific sectors.

Attracting private investment into infrastructure projects

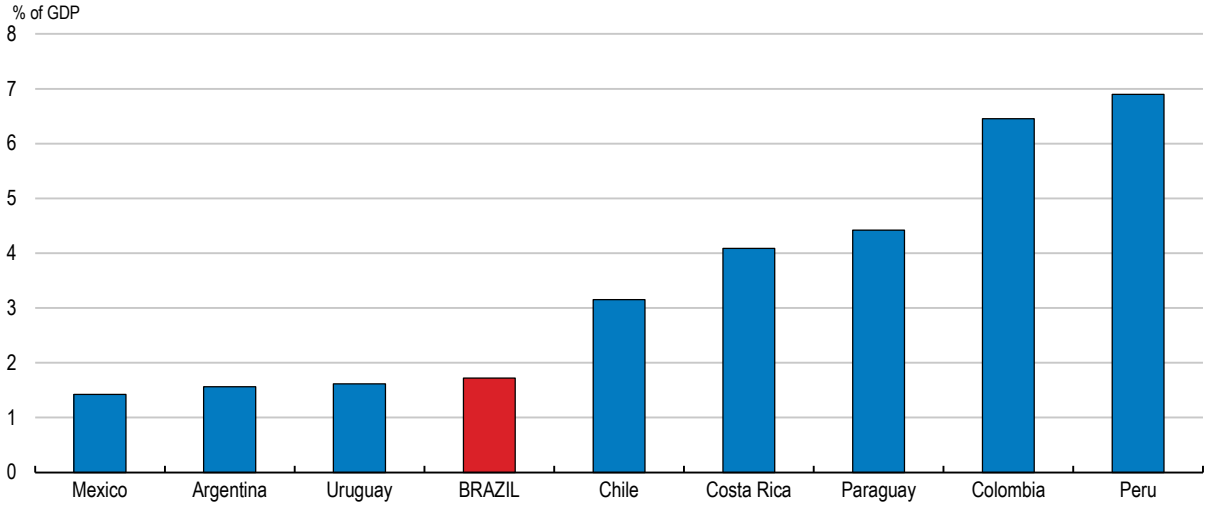
Infrastructure bottlenecks are acting as a drag on productivity, export performance and the integration of the domestic market. Infrastructure needs are sizeable in almost all sectors although they are most pronounced in transportation and logistics, and sanitation (Frischtak and Mourão, 2017). Brazilian companies suffer from high costs of transport and logistics, which reduce the profitability of many otherwise viable investment projects. For domestically oriented producers, infrastructure shortcomings limit the possibilities to exploit economies of scale, while exporters are put at a comparative disadvantage.

Brazil scores low in international rankings in terms of quality of infrastructure. It ranked at 116 out of 138 in the latest World Economy Forum ranking. Brazil scores have been persistently worsening over the last decade. Recent estimates put total infrastructure stocks at a value of 36% of GDP in 2016, while a reasonable mid-range infrastructure stock target for Brazil would be around 60% of GDP, which would still be far below international best practice (Frischtak and Mourão, 2017).

The relatively poor state of infrastructure reflects low spending over the last decades (Figure 1.21). Three decades of low infrastructure investment have left a strong mark, and compared to its significant needs in the area of infrastructure, Brazil still invests too little. Doubling infrastructure investment from currently around 2% of GDP to slightly above 4% of GDP would allow Brazil to reach this target over a period of 20 years (Frischtak and Mourão, 2017). By contrast, current levels of infrastructure investment are not even sufficient to offset depreciation, estimated to be around 3 per cent of GDP per annum (World Bank, 2016). While comprehensive comparable data are not available, existing evidence suggests7 that Brazil's infrastructure investment has been well below the levels observed in other Latin America and emerging market countries, such as Chile, China and India (Calderón and Servén, 2010; Frischtak, 2013).

Figure 1.21. Investment in infrastructure is low

2015 or latest year



Source: Infralatam, IDB and ECLAC.

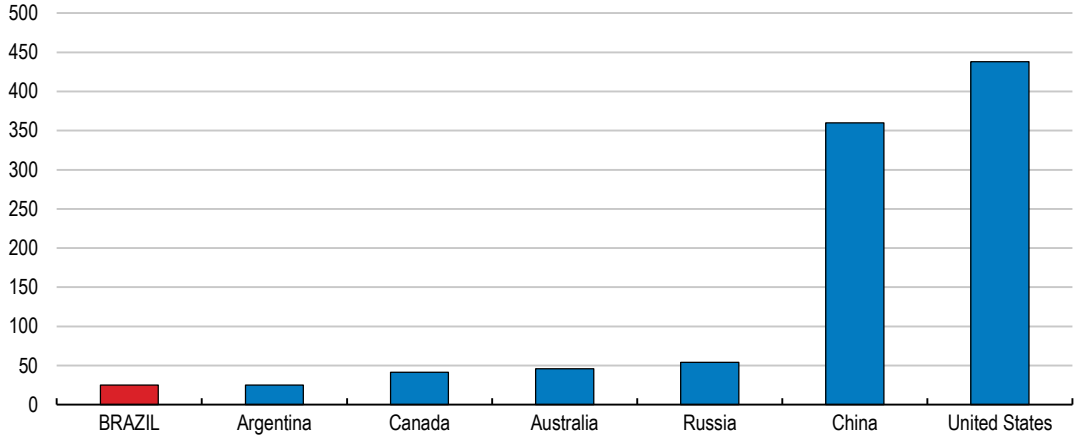
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The impact of the lack of investment in infrastructure can be seen most clearly in transport. While Brazil scores lower than any of its main trading partners in all transport categories, road conditions are a particular bottleneck as two thirds of all cargo transportation is via road. Only 13.5% of the total road network in Brazil is paved and 8% has dual-carriage. This implies that Brazil compares poorly to other large countries and has a direct impact on logistic costs (Figure 1.22). For example, transport costs to export soy to China from Brazil are approximately USD 190 per ton, three times the cost from the United States. The difference is entirely accounted for by the cost of transport from the interior to the ports.

The relatively poor development of Brazil's rail network also contributes to high transportation costs. Inter-urban railway transport, almost exclusively dedicated to cargo, has a relative low extension and has not increased since the 1950s (World Bank, 2016). In addition, the use of different gauges fragments the railway network. Rail transportation is particularly well-suited for high-volume, low-value-added commodities and most other commodity-producing countries use it extensively. By contrast, Brazil moves 60% of agricultural commodities by road, with only iron ore exports traveling predominantly by rail (Credit Suisse, 2013). This transportation mix limits export competitiveness, particularly given the poor state of roads.

Figure 1.22. Density of paved road network by country

Values in km / 1,000 km2



Source: CNT (2016), available at http://pesquisarodovias.cnt.org.br/

StatLink http://dx.doi.org/10.1787/888933656194

Entry regulations have contributed to the poor development of rail transportation. Although different operators exist, each of them has exclusive rights to a geographic area, which limits competition and investment. Providing better opportunities for entry on the basis of regulated access fees and allowing different franchisees to compete in the same area would allow economies of scale and reduce rail transportation costs.

Port operations are another aspect of transport infrastructure characterised by high costs and low efficiency. Governance shortcomings in public ports are reflected in the fact that the port of Santos, South America's largest port, recently had to restrict the loads of large vessels because the drainage had not been properly ensured by the public operating company (Financial Times, 20/8/2017).

Many public ports are suffering from underinvestment and inefficient management under public operating companies, which are proving hard to reform. Terminals are usually managed as private concessions, granted through public tenders. However, some contracts have been signed before the 1993 Ports Law and these have not gone through an open and transparent process. Concessions have often lacked well-defined investment commitments by concessionaires and have not led to a considerable expansion of port capacity. A tendency towards automatic renewals has failed to harness the benefits of competition. Public ports are also subject to a special labour regime under which port labour can only be contracted through a monopoly entity (OGMO) rather than hired directly under regular labour laws. Despite a reform in 2013, inter-port competition remains insufficient (Lodge et al., 2017).

The strategy to improve the current situation includes both an enhanced efficiency of publicly managed ports and new licenses for entirely private ports. While in the past, ports could only be managed by private companies if they would commit to providing 70% of the cargo volume through own merchandise, new port licenses can now be obtained without any vertical integration requirements. Given how difficult it is to reform public port operating companies, private ports may be a powerful option for raising port efficiency. Another strategy currently discussed is the privatisation of the public operated port companies (Companhias das Docas). The Central Government has conducted the

necessary studies to implement the first privatisation of a public port company in combination with a service concession for a predetermined period, mimicking the successful airport concessions programme launched in 2011.

There is also significant scope to reduce red tape and bureaucratic obstacles facing port users. Despite some progress in selected areas, there is not generally a one–stop shop for all the permissions and payments required to dock, load and unload cargo in Brazilian ports. A recent initiative is the "Paperless port programme" based on an online system already in operation in all public ports. The system collects all required documents from various government agencies and reduces the administrative burden by eliminating paper forms and multiple repeated requests for the same information. It is still not a "one-stop shop" solution because it still lacks integration with customs procedures, but it has drastically reduced the time required for filling out paperwork.

Significant progress has been made with respect to the opening hours of government bodies such as customs, which now operate on a 24–hour basis. Still, customs clearance processes involve the work of several government agencies and take an average of two weeks. These long delays imply that a significant amount of space in the ports is used for storage areas. Storage fees have become an important and increasing source of revenues for the ports, creating clear incentives against speeding up the clearance process (World Bank, 2016).

One area of logistics that has not received much attention is cabotage, i.e. the shipment of goods by sea between domestic ports. Given that the bulk of Brazil's population lives close to the coast and distances are large, cabotage could be a cost efficient means of transporting industrial goods. Some actions are being taken to streamline procedures. Cabotage shipments used to require the same documentation as international ones, which amounted up to 44 different documents. A joint task force of three ministries has revised many of the documentation requirements and substantially reduced administrative burdens. Still, significant room for further improvements remain. Currently, cabotage is overwhelmingly used for shipping mineral oils and metal ores, especially to servicing off-shore oil platforms. Both further progress in reducing administrative burdens and improvements in port infrastructure would help to exploit the potential of cabotage shipments.

The reduction in infrastructure investment is mostly explained by a decline in public investment, which is currently only around 0.9% of GDP and mostly concentrated on state-owned enterprises and highways built by states. Against the background of budget rigidities, rising mandatory spending and falling revenues, discretionary public investment expenditures have proven to be the only remaining margin of fiscal adjustment. Attempts of fiscal consolidations have almost always resulted in cuts to capital outlays, affecting significantly spending on infrastructure. The current fiscal situation implies that the funding available for public investment in infrastructure are unlikely to improve in the medium-term. Filling infrastructure gaps primarily through private financing will therefore become a key challenge and necessity.

Reviewing some of the regulations and practices for infrastructure projects could significantly accelerate private investment in infrastructure. Given the extremely limited fiscal space, the focus should be on improving the procedures for attracting private actors. Brazil can build on almost 20 years of experience, but reforms could improve the ability to tap into private funds, which has fallen short of other Latin American countries, in particular Chile.

Most private participation has been in the area of electricity and telecommunication, two areas where Brazil compares relatively well to other emerging economies in terms of regulation (Prado, 2012). This provides hope that better regulatory frameworks can attract more private investment if the framework conditions are improved. In roads and ports the focus of private participation has been on improving and managing existing infrastructure.

Getting the most out of concessions and PPPs

Concessions, whereby private partners are remunerated exclusively from user charges, have been the delivery model of choice in Brazil, whereas there are only few cases of public-private partnerships (PPPs), which involve payments from public entities. So far, these have mostly involved subnational governments. A greater use of PPPs as an additional tool would facilitate private sector engagement in a wider array of infrastructure projects, including those where user fees are hard to implement, such as sanitation or public lighting projects. However, in some countries, PPPs have been attractive in the past because the associated future liabilities were not properly recorded in the budget. As a lesson from these experiences, the full budget implications of PPPs over their whole life-cycle should be incorporated into the medium-term budget framework.

A key challenge for the public sector is to build up credibility through stable, well-defined and standardised procedures to reduce uncertainty and costs for investors. Despite a federal PPP law, policies and processes on how to prioritize, prepare, structure, and conduct bidding for PPPs vary widely across states (World Bank, 2016). Canada, for example, uses standardised bidding documents and guidance manuals for local governments (CCPP, 2011). Avoiding sudden changes in the contract terms, such as those that occurred in 2014 when the government tried to negotiate lower electricity tariffs in return for renovation of concessions without a new tender call, is also important for investors (OECD, 2015c, World Bank, 2016).

Improvements could also be made in the design, structuring and preparation of projects before the tender call. Expertise and technical capacity for project structuring tend to be scarce, particularly at the state and municipal levels. In many cases, insufficient planning and structuring has resulted in significant regulatory uncertainty, cost overruns and delays. Tenders for public works and concessions should be better prepared and include all relevant details and contingencies to make costs more predictable. This would imply dedicating more time and resources to the planning phase, which has often been cut short against the perception of urgency in delivering progress.

As a result of bottlenecks in structuring capacity, projects have regularly been structured by the same firms (or their subsidiaries) that later submit tenders (World Bank, 2016). This opens the door for anti-competitive behaviour such as selective passing on of information to affect competitors' valuation of the contract or gauging technical requirements to exclude competitors from the tender. Such projects receive fewer bids and are often won by the firm engaged in the structuring. Some projects have even failed to attract bidders (World Bank, 2016).

By contrast, projects structured by the International Finance Corporation (IFC) or the recently founded structuring agency EBP (Estruturadora Brasileira de Projetos), a joint venture between public and private banks, have on average received 5 bids, similar to tenders in the UK, Canada and the EU, as compared to only one for projects structured by a bidder (Pinheiro et al., 2015). Competition among multiple bidders is key for maximising value for money and international experience shows that at a minimum, there

should be at least three proponents with the ability and capacity to deliver. At the local level, there may be a need also for municipalities to proactively look for proponents beyond local boundaries.

Taking better account of physical, legal, environmental and judicial details and risks in the project structuring would also help to avoid costly renegotiations once a contract has been signed and competition can no longer be harnessed. Where risks exist that are beyond the influence of the private sector, the public sector should consider providing insurance or including the possibility of direct compensation payments into the contracts, rather than just contract period extensions or reduced investment requirements as in the past. These compensation regimes introduce significant uncertainty and discourage potential investors from bidding for certain projects.

Looking ahead, a diversification of the type of assets and services delivered by the PPP mechanisms, including healthcare, education, prisons, street lighting, and management of environmental and several other social infrastructure projects is likely (Infraescope, 2017). This diversification beyond traditional areas will exacerbate bottlenecks in technical capacity to appraise and structure projects and of insufficient bidders. The need to develop or bring technical capacity to government at all levels is therefore paramount and urgent. The benefits of providing more training to officials involved in infrastructure structuring would be substantial. The national development bank BNDES also has significant technical capacity that could be tapped into to support subnational governments in the structuring of infrastructure projects. BNDES already has a division for this, but the uptake of this available expertise by states and municipalities has been limited so far.

A new 2016 investment partnership law has created a new central entity attached directly to the presidency, tasked with selecting and prioritising projects and monitoring their implementation. The PPI Secretariat (Secretaria Executiva do Programa de Parceiras de Investimentos) is in line with international best practices and similar units exist in some OECD countries. It is fundamental that the PPI unit remain well resourced, both financially and in terms of human resources. The new law has also established a project preparation fund to finance and procure professional services to assist Brazilian contracting authorities in preparing and structuring projects.

Beyond the PPI unit, other measures should be taken to develop capacity and expertise across government. Independent external advisers, whether they are technical, financial or legal, can also bring deep transactional experience and understanding of the PPP landscape, especially at subnational level. Advisors should be involved throughout a project's lifetime and can help to build government technical capacity over time. In Canada successful projects at municipal level have benefited from participation by external advisers (CCPP, 2011), which have ultimately proved to be an effective way to save government resources.

Transparency and accountability standards for PPPs and concessions must also be further developed in order to shield the mechanism against the kind of corruption cases that affected the infrastructure market in 2016. Otherwise the procurement process will become less competitive and it will be challenging to achieve value for money (Infraescope, 2017).

Improving sectoral regulation

Brazil has set up a number of specific regulatory agencies to guide regulation in sectors such as electricity, water, telecommunications or transport. Perceptions concerning the role played by infrastructure regulatory agencies vary across sectors. Those in energy and communications, which have more years of experience, are deemed to perform better than others, including those in transport. High regulatory risk has been identified as a key concern by investors in the road sector. This can be attributed to the weak autonomy of regulators, both from governmental political interference and from the influence from the infrastructure providers themselves (Amann et al, 2016). Political pressures in the level of tariffs have also been observed in the electricity sector, contributing to the failure to boost power generation and distribution capacity (Amann et al, 2016). Regulatory risk should be eliminated by designing reliable rules and sticking to them, rather than compensating companies financially for the regulatory risk, as has happened in the past.

Increasing the independence of the regulators would reduce regulatory uncertainty. While the government should provide guidance on long-term decisions, it should not interfere with the work programme, individual cases or appeals. Establishing fixed terms for key agency officials of at least 5 years would support this independence from the political process (OECD, 2017a). An effective supervision requires that the regulator can collect information from the regulated entities through a well-established and compulsory process. Restrictions on taking up jobs in the regulated industry after their term of office would also help to insulate the regulators.

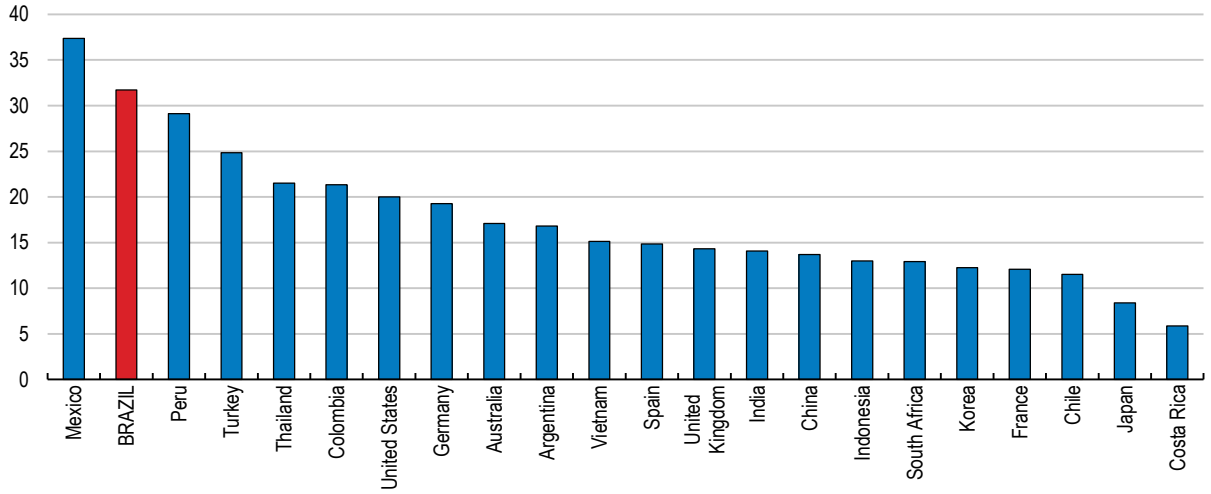
Beyond ensuring the independence of regulations, there is a need to improve regulations and laws per se. A way to improve regulations, particularly concerning its effect on competition, would be to submit all regulations and laws affecting infrastructure to a regulatory impact analysis, using a mandatory process. A regulatory impact analysis is a systemic approach to critically assess the positive and negative effects of proposed and existing regulations and non-regulatory alternatives, which have proved useful to increase competition across OECD countries, including Mexico or Chile.

Cost reductions in the implementation of infrastructure projects could also be achieved by strengthening competition. This is true for a number of sectors, including telecommunications, where both regulations and investments have been stronger than in other sectors. Still, user prices for mobile broadband services are significantly higher than in other countries (Figure 1.23).

Competition is a particular concern in the construction sector, which is dominated by few domestic companies. Several of which have become ineligible for public projects due to their involvement in recent corruption scandals. Foreign construction companies can effectively enter the market only in partnership with, or by acquiring, a local construction companies that has all necessary licenses. Removing existing barriers to foreign direct investment, for example by adopting mutual recognition procedures, would be a beneficial step to make the most out of limited public investment and make private investment more cost-effective. Reducing local content rules, as done in the energy sector, would also be a cost effective way to attract more foreign investors to the sector.

Figure 1.23. Mobile telecom services are relatively expensive

Price in 2015 USD at purchasing power parity, per gigabyte a month



Source: World Bank, World Development Report 2016, available at http://www.worldbank.org/wdr2016

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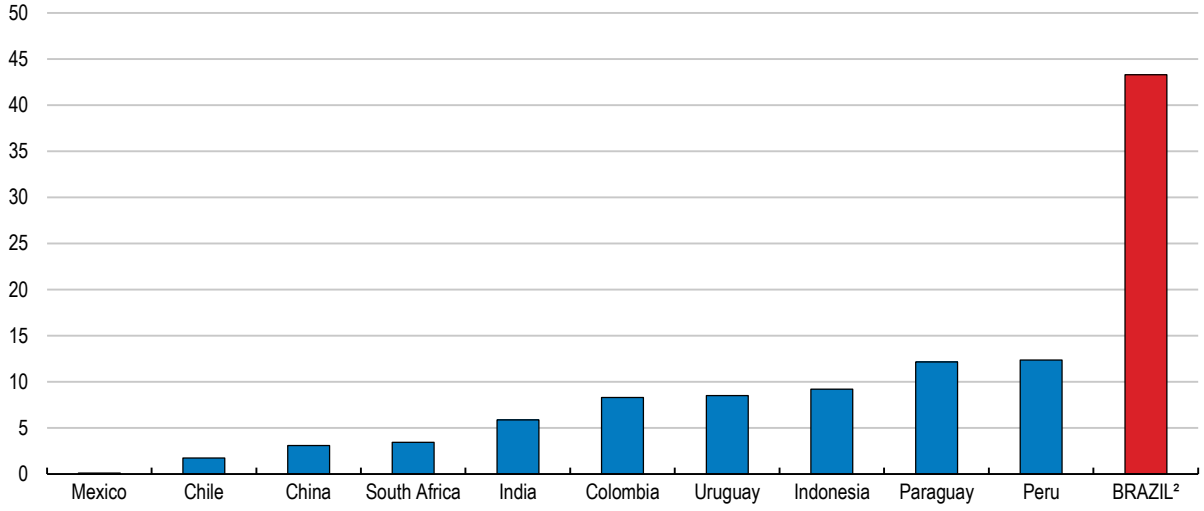
Improving access to investment financing

Besides generating more profitable investment opportunities through a better investment climate, financing constraints are another potential explanation why investment has been so low. It seems reasonable to assume that credit constraints have played a significant role in light of the peculiar features of Brazil's financial markets and its record-high interest rates for market-based lending (Figure 1.24).

These record-high lending rates are arguably one of the greatest deterrents to investment. Retail interest rates charged on bank loans vary considerably according to the type of borrower, the kind of credit contract and the use of collateral, but they are high across the board. Outside directed lending operations, corporate borrowers are charged average interest rates of 24%, and loans to households from non-earmarked resources carry a 62% annual interest rate. With these rates, only very profitable investment projects are economically viable. High interest rates hurt small and medium sized enterprises particularly severely, because they do not have access to foreign finance. Indeed, 90% of small Brazilian firms report high interest rates as one of their major growth obstacles (World Bank, 2014). Lower bank lending rates would also raise the incentives to join the formal sector, because the most significant advantage of going formal is often the possibility to access bank finance. Ex-ante real interest rates have risen since 2013, while investment started to decline shortly afterwards (Figure 1.25).

Figure 1.24. Real lending rates are extremely high

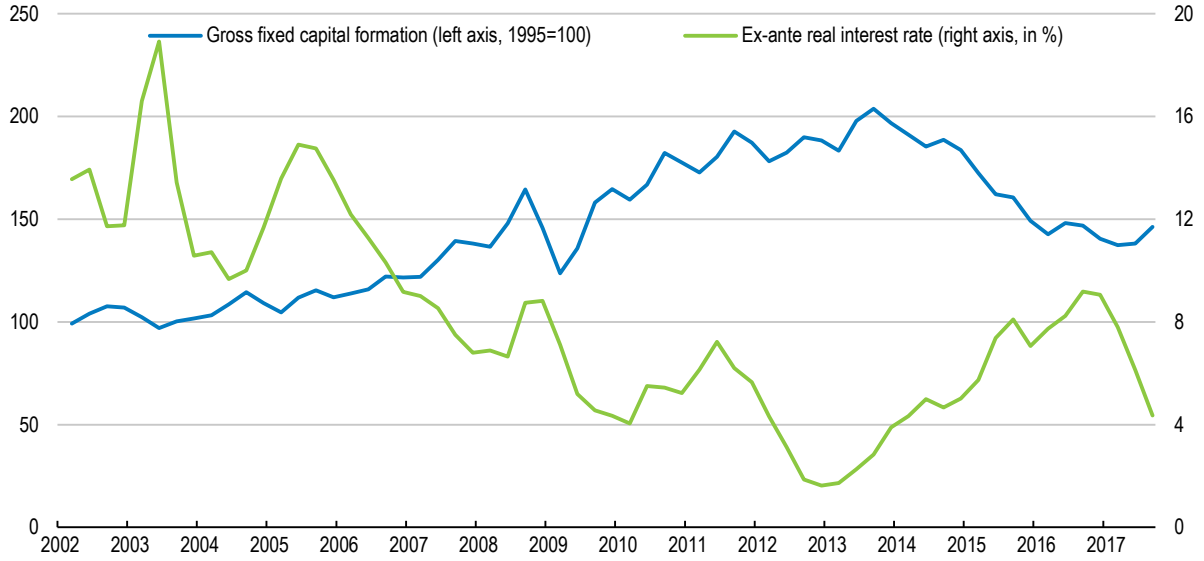
Average lending rate in percent, adjusted for inflation, 2016 [1]



1. Real interest rates are calculated by adjusting nominal rates by an estimate of the inflation rate in the economy. The real interest rates are calculated as (i - P) / (1 + P), where i is the nominal lending interest rate and P is the inflation rate (as measured by the GDP deflator).
2. Data for Brazil have been updated to August 2017. The 2016 value for Brazil was 40.4%.
Source: IMF, Central Bank of Brazil

StatLink http://dx.doi.org/10.1787/888933656232

Figure 1.25. Investment has been inversely correlated with ex-ante real interest rates

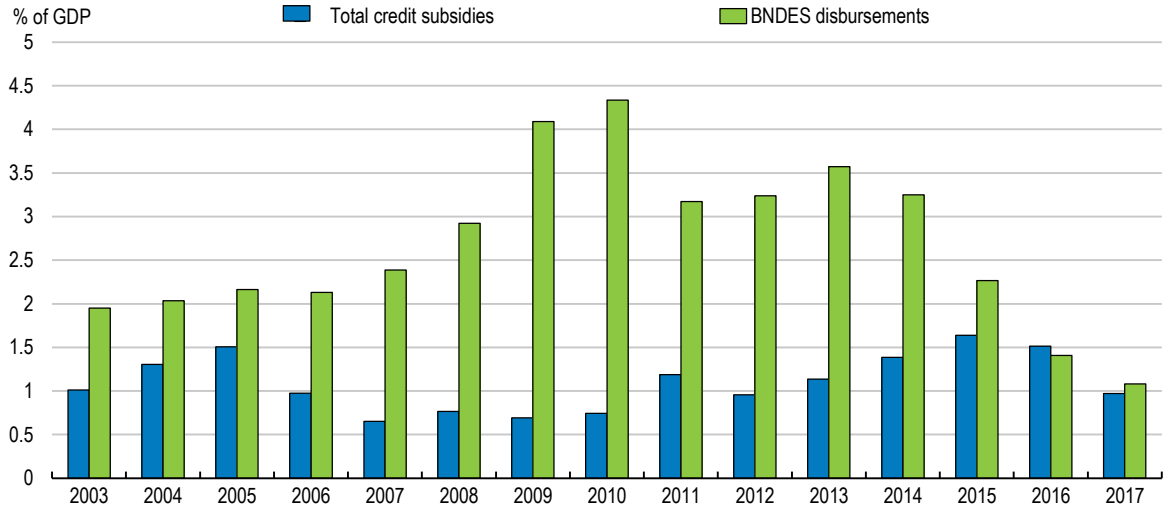


Note: The ex-ante interest rate is derived as the difference between the Selic rate and inflation expectations 12 months ahead (IPCA).
Source: IBGE. Central Bank of Brazil.

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The financial sector has many public and private banks, but most of them are only operating in the short-term segment. Long-term credit beyond 3 years is almost exclusively provided through directed lending operations, in particular through the national development bank BNDES, while domestic financial markets from free resources accounted for only 8% of investment financing in 2016. BNDES disbursements have risen sharply since 2007, supported by several capital transfers from the treasury to the bank. Their volume has declined since, but remains high at 1% of GDP. Subsidies embedded in these lending operations below the funding rate of the treasury have peaked at over 2% of GDP in 2015, implying a sizeable fiscal burden (Figure 1.26). Interest rates charged on earmarked credit have been on average one-fourth of market credit (Pazarbasioglu et al, 2017).

Figure 1.26. BNDES disbursements and credit subsidies remain high



Source: BNDES, Ministry of Finance/SEAE.

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Up until 2015, the bulk of below-market-rate BNDES lending has been to large firms, although SME lending has increased its share to 42% in 2017. There is no empirical evidence that the stark increases in BNDES lending since 2008 were able to prevent a massive decline in investment (World Bank, 2017a; Bonomo et al., 2014; Ribeiro, 2016). Instead, some evidence suggests that these lending operations, some of which at negative real rates, have generated rents for domestic producers (Ottaviano and Sousa, 2016). Recent corruption allegations have included cases of substantial kick-backs to politicians in return for obtaining BNDES financing.

Directed lending at below market rates has likely crowded out other lending and contributed to higher interest spreads on non-subsidised loans (de Bolle, 2015). Given that incumbent firms with existing business relations to BNDES probably had better chances of accessing subsidised loans than potential new entrants, these loans may also have contributed to rigid industry structures. With this constellation, Brazil's financial intermediation is less effective than it could be. Firms seeking investment financing face credit constraints, high lending rates and short maturities while funds of investors with a long horizon are overwhelmingly invested into short-term, mostly overnight instruments.

A competitive credit market is likely to lead to better outcomes, which still leaves scope for a public development bank in those specific segments where market failures are most pervasive and social returns exceed private returns, including financing for SMEs, innovation or to act as a catalyst of infrastructure finance. A precondition for a competitive private market to develop, however, is a level playing field, which has probably been hampered by large-scale public transfers at below-market rates. For many years, BNDES' privileged access to cheaper funding than what private banks could obtain made private market entry virtually impossible.

The authorities have recognised the need for reform and Congress approved a new law in September 2017 to create a new benchmark lending rate for BNDES. The new rate called TLP will converge with market rates over a period of 5 years. This will substantially reduce the gap between directed and market lending operations. As a result, it will likely open space for private market entry and reduce the dominant role of BNDES in many market segments. Private co-financing requirements attached to BNDES loans can be expanded to turn BNDES into a catalyst for developing long-term financial markets. Once lending rates follow market rates, there would also be scope for securitising bundles of BNDES loans, which has been impossible so far due to a benchmark interest rate called TJLP with no clear link to market rates. All in all, it is likely that the new rules will substantially improve access to credit, reduce interest rates and improve credit allocation. In addition, the creation of a department for monitoring and evaluation within BNDES is a welcome development.

One channel through which interest rates are likely to fall after the reform is that the effectiveness of monetary policy will be increased, requiring lower rate hikes to control inflation. The credit channel of monetary policy transmission has so far affected around half of outstanding credit, which directed lending rates have not been tied to the monetary policy rate. As over time all of outstanding credit will react to changes in the policy rates, the credit channel will be strengthened and inflation is likely to be permanently lower and less volatile. Estimates suggest that for every percentage point increase of the interest rate applied to directed lending operations, the benchmark interest rate Selic could fall by 0.55 percentage points (Gonçalves, 2017).

Costs of lending can also be reduced by further reducing information asymmetries. Brazil has a credit registry that includes positive information such as payment history of utility bills, but at present, clients must opt in and authorise each bank to use the information in the credit history database. Recent plans aim at reversing this, making access to credit information for all banks the default, while allowing individuals and firms to opt out from sharing this information. This is an important step in the right direction. In the same vein, a reform to the collateral registry framework has recently been implemented in Brazil. The new centralised system has made it harder to use the same collateral to multiple credit operations. In the old system, the collateral information was recorded in one registry, without being shared to other registries, making it very costly to double check every registry.

Attracting new investors to infrastructure financing

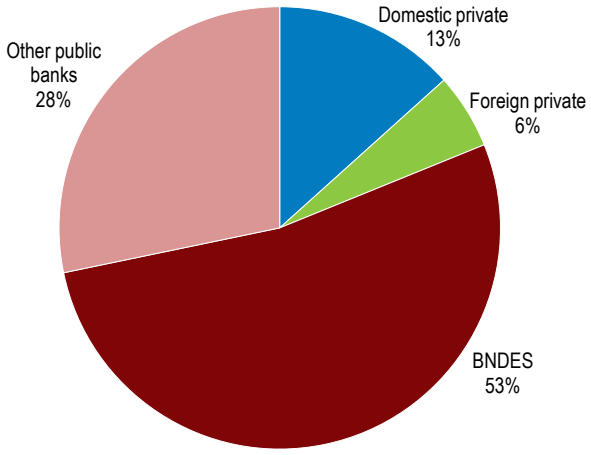
Infrastructure finance is typically situated at the extreme long end of the credit market. Brazil's traditional model with a dominant role of BNDES in the provision of infrastructure finance, with 53% of outstanding infrastructure loans held by BNDES and another 28% held by other public sector banks, will be insufficient to meet future infrastructure needs (Figure 1.27). Moving towards a more diverse and international

financing strategy entails designing a wider variety of financial products to suit different kinds of investors that may include international banks, sovereign wealth funds, foreign pension funds, multilateral development banks and export and investment promotion agencies.

Globally, bank lending is the dominant source of infrastructure finance, with large project debt often syndicated among a group of banks. In Brazil, only 19% of infrastructure funding comes from private banks. International banks, particularly when operating as syndicates, can mobilise large amounts of financing at longer maturities. Once a project begins generating a stable revenue stream and the need for monitoring becomes less intense, the initial bank loans are often re-financed with project bonds or lower-cost loans. Infrastructure investments with their long-term inflation-indexed stable cash flows are also well-adapted to the needs of institutional investors with long-term inflation-indexed liabilities. This is due to their low correlation with other asset classes, lower relative default rates, and often better returns than government bonds. Still, Brazilian institutional investors invest only 0.3% of their assets in infrastructure, largely owing to a lack of suitable investment instruments that match the risk profile and needs of institutional investors.

Figure 1.27. Infrastructure finance is dominated by public banks, in particular BNDES

Stock of infrastructure loans by lender, 2015



Source: Central Bank.

StatLink http://dx.doi.org/10.1787/888933656289

To tap into new sources of infrastructure finance, the role of BNDES could evolve from being the principal source of infrastructure finance in Brazil to serving as a catalyst for mobilising private, including foreign, investment to expand the overall financing pool available for infrastructure investment. BNDES has developed capacities and experience with many instruments besides lending, but in the past, access to low-cost funding has facilitated a strong focus of BNDES activities on lending operations (Frischtak et al., 2017). The focus could now shift towards other instruments and activities.

One of these would be to act as the lead arranger for loans that are syndicated among groups of banks. Its vast experience in the Brazilian market would make it a preferred partner for international institutional investors for whom the cost of pursuing

opportunities alone would be prohibitive. Its balance sheet could be used in a more effective and targeted manner, which could in turn be substantially reduced to leave more space for other lenders.

Besides syndicated loans, BNDES could lead the creation of structured financial instruments, tranches of which could be purchased by a wider range of institutional investors, including those that are limited to investment grade assets. Mimicking the practices of multilateral lenders such as the IFC, EFSI or EBRD, BNDES itself could make smaller and more targeted commitments that reduce the risk profile for other investors, for example by investing in subordinate or mezzanine debt with loss absorption capacity or by providing guarantees against certain types of risk to complement incomplete insurance (Box 1.3). This would require putting in place a transparent system for assessing, approving and managing guarantees and monitoring the contingent liabilities they entail. Such changes should be embedded in a longer-term strategy that prepares the market, and addresses bottlenecks in the institutional and regulatory framework.

Given the substantial clout of BNDES, it could also take a leading role in the transition towards the project financing model, which is the preferred mechanism for structuring infrastructure financing internationally. Project finance provides protections to equity investors by limiting creditor recourse to the assets and cash-flows of the project, capping the downside for equity investors. In Brazil BNDES loans currently require collateral from the sponsor companies, thus narrowing the range of equity investors to all but the largest industrial companies, utilities or construction firms. As many large construction firms have been weakened by corruption scandals, diversifying the equity investor base to include investment funds or pension funds has become more urgent.

The introduction of infrastructure bonds in Brazil represents a major step forward in terms of diversifying sources of financing for infrastructure, but their uptake has been limited, especially among institutional investors. Improving the risk-return profile of these bonds through the use of credit enhancements such as guarantees could make them more attractive, possibly on collaboration with multilateral lenders that have substantial experience in this area. The World Bank has developed a project bond model for Brazil that addresses some of the obstacles to using infrastructure bonds to finance greenfield projects and it is structured in order to appeal to institutional investors, including foreign ones.

Box 1.3. A few successful examples in the area of infrastructure finance

European Fund for Strategic Investments

The European Fund for Strategic Investments (EFSI), otherwise known as the Juncker Plan, was instituted in 2015 in response to the decline in investment levels in Europe in the wake of the global financial crisis. At the core of the EFSI is a 16 billion euro guarantee fund provisioned from the EU budget. The European Investment Bank (EIB) borrows approximately 60 billion euros against the guarantee fund to which it contributes 5 billion euros of its retained earnings. The EIB uses these resources to invest in high-risk/high-return projects that would otherwise not receive funding. By making investments in equity or junior debt, the EIB seeks to attract private financing into the more senior debt categories. With the EIB financing constituting one fifth of each project, the mechanism would mobilise a total of 315 billion euros of investment, thus leveraging the initial public sector contribution 15 times.

EBRD-MIGA risk mitigation solution for infrastructure bonds

The European Bank for Reconstruction and Development (EBRD) and the Multi-lateral Investment Guarantee Agency (MIGA) have developed a joint risk mitigation solution that is designed to boost the credit rating of infrastructure bonds issued for PPP projects.

The mechanism combines two unfunded liquidity facilities (CSF and RSF) provided by the EBRD with political risk insurance (PRI) provided by MIGA:

Construction Support Facility ("CSF"): An unfunded credit facility designed to provide significant timely liquidity during the construction period. The facility provides liquidity in the event of contractor default from failure to pay liquidated damages or the replacement costs of the contractor in the event the EPC contract is terminated.

Revenue Support Facility ("RSF"): Subordinated unfunded credit facility designed to credit enhance grantor risk during the operations period of the project. The facility is designed to provide timely debt service in the event of a default by the grantor bridging the period until the arbitration process is completed (usually 2 to 3 years) after which MIGA honours its payment obligation.

MIGA's PRI Guarantee: based on standard three-point coverage (Breach of Contract, Expropriations and Transfer Restriction). Under the "Breach of Contract" coverage, lump-sum insurance proceeds would be paid out following an arbitral award. Under the "Expropriations" coverage, PRI payment is not subject to arbitration award.

The facility was piloted in Turkey in a PPP transaction to build, design, finance and maintain a large integrated health campus located in Elazig, Eastern Turkey for a concession period of 28 years. The project forms part of the Government of Turkey's Health Transformation Programme put in place in 2003 to tackle inequality in access to health care services. Under the PPP agreement the Turkish Ministry of Health as the grantor is required compensate the project company for the availability of the facility. The project was financed through the issuance of a EUR 288 million euro-denominated bond, structured into two tranches. As a result of the EBRD-MIGA risk mitigation facility, Moody's assigned the bonds a Baa2 rating, two notches above Turkey's sovereign rating ceiling, thereby making the bonds eligible for the portfolios of institutional investors.

IFCs Managed Co-Lending Portfolio Programme

The IFC has developed a new mechanism, the Managed Co-Lending Portfolio Programme (MCPP) for Infrastructure that aims to mobilise institutional money for investing in infrastructure projects in developing countries. The MCPP for Infrastructure involves a three-way partnership between the IFC, a bilateral lender (Sida - Swedish International Development Agency), and a number of institutional investors. Institutional investors provide funding to a debt fund that will invest in a portfolio of projects that are originated and approved by the IFC. The IFC provides credit enhancement through a first-loss tranche. Sida provides a guarantee on a portion of IFC's first loss position in exchange for a guarantee premium. The fund thus provides institutional investors with an investment grade asset with good returns and excellent diversification benefits. The programme aims to mobilise up to USD 5 billion over the next three to five years.

Source: EIB, Bruegel, EBRD, IFC and Moody's.

Greater private financing of infrastructure development in Brazil will require a different approach to identifying and allocating risks, as well as instruments for mitigating risks. A much finer analysis and parsing of the risks is required in order to accommodate the risk profiles of different classes of investors. Key project risks such as construction risk, demand and revenue risk, political risk, breach of contract, currency risk (for foreign investors), and refinancing risk will be of particular concern for investors and lenders.

Private insurers provide coverage for a range of political and business risks that can afflict infrastructure projects. However, investors, whether in Brazil or elsewhere, face many gaps in insurance coverage. For example, during the construction phase, it is possible to obtain insurance against damage to equipment or facilities as a result of an accident or unforeseen events (e.g. fire or flood) that are out of the control of the contractor. However, overruns or delays that are caused by the contractor will not be covered by an insurance policy. Similarly, political risk insurance (PRI) policies covering breach of contract will only pay out following a favourable dispute settlement procedure, which could often take years. For other risks, such as that of adverse regulatory changes, there is typically no insurance coverage. Finally, tenors for political risk coverage available in the private insurance market are often shorter than the duration of the loans. All of these gaps can result in a project company defaulting on its debt repayments.

Public sector providers of insurance including MDBs such as the Multilateral Investment Guarantee Agency (MIGA) and export credit agencies (ECAs) offer a range of political risk insurance products. The largest source of political risk insurance is ECAs (whose support is linked to the activities of home country exporters and investors). These public sector providers can play a crucial enabling role in terms of supporting Brazil's efforts to attract international investors into infrastructure. Public sector insurers offer a major advantage over private insurers since through their political clout they can also deter harmful actions by host country governments and facilitate dispute resolution. However, coverage from the public sector is meant to provide additionality, not substitute private coverage. These public sector providers intervene, in principle, only when private coverage is unavailable. In addition, public sector insurers often have more stringent terms and disclosure requirements, which may be a disincentive for some investors. In practice, public and private investors often operate jointly, and reinsure each other's risks.

While insurance provides protection against well-defined (and often narrowly defined risks), guarantees provide payment protection for lenders irrespective of the cause of default. The provision of a guarantee from a multi-lateral development bank is often a pre-condition for the participation of international commercial lenders. The Inter-American Development Bank, for example, offers all-risk credit guarantees that protect commercial lenders against loan repayment difficulties.

Brazil could explore providing guarantees that protect against the risk of non-payment by a government entity. This is particularly relevant for PPPs whose revenues depend on payments provided by a granting authority. However, care must be taken in the provision of state guarantees given that they represent a long-term liability for taxpayers. They should therefore be used in a targeted manner to support projects that yield a strong positive net benefit, that would otherwise fail to obtain financing. Such changes require putting in place a transparent system for assessing, approving and managing guarantees and monitoring the contingent liabilities they entail and should be embedded in a longer-term strategy that prepares the market, and addresses bottlenecks in the institutional and regulatory framework. Projects that benefit from a state guarantee should be subject to a transparent prioritisation process using objective criteria similar to what should be applied to any public investment decision. In addition, the total liability arising from guarantees provided by the state should be capped, through, for example, the establishment of a guarantee fund.

As one step into this direction, the Brazilian government has established the Infrastructure Guarantee Fund (FGIE) to guarantee, directly or indirectly, any risks, including non-manageable risks, related to concessions. PPPs implemented by the federal government or state governments are also eligible. The fund will only directly guarantee risks for which there is no available insurance or reinsurance cover. The government will contribute a maximum of BRL 11 billion to the fund. The fund will be managed by the Brazilian Guarantees and Fund Managements Agency (ABGF), Brazil's national export credit agency.

Box 1.4. Summary of policy recommendations for raising investment

Key recommendations

- Consolidate consumption taxes at the state and federal levels into one value added tax with a broad base, full refunds for input VAT paid and zero-rating for exports.
- Reduce barriers to entry due to administrative procedures.
- Focus BNDES lending activities on niche areas where the private sector finds it difficult to operate, including in the financing of small start-ups and innovation projects.
- Use BNDES to arrange syndicated loans for infrastructure and lead the creation of structured financial instruments.
- Provide more training to officials involved in infrastructure structuring.
- Make wider use of BNDES' technical capacity to assist public entities in project structuring, especially local governments
- Make wider use of public-private partnerships but ensure that all present and future liabilities are taken into account in a transparent way.

Other recommendations

Reducing red tape and regulatory barriers

- Gradually expand the use of regulatory impact assessments and systematic policy evaluations.
- Limit the possibilities to take public officials to court over their decisions about projects to cases of abuse or bad faith.

Improving contract enforcement and the efficiency of the judicial system

- Enhance the efficiency of the court system by reorganising courts, implementing electronical judicial files and promoting out-of-court solutions to speed up decisions in civil cases and make contract enforcement easier.
- Ensure stability of regulatory policies, particularly in infrastructure sectors.
- Implement the planned reform of the insolvency law.

Reining in labour costs

- Index the minimum wage to consumer prices for low-income households.

Improving skills

- Reallocate education spending from tertiary education to earlier levels of education.
- Ensure access to the Pronatec programme to adults that are unemployed or looking for new opportunities.
- Take stock and evaluate successful local experiences with incentive-based reforms of the education system and consider expanding some of them nationwide.

Strengthening entry, competition and regulation

- Implement regular evaluations of the costs and benefits of targeted support policies to specific industrial sectors, and ensure the discontinuation of those that

are not delivering the expected results.
- Reduce remaining barriers for the participation of foreign construction companies in public infrastructure tenders.

Infrastructure

- Increase the independence of infrastructure regulators.
- Avoid ad-hoc changes and political interference in regulatory agencies, including through political appointments.
- Issue standardised bidding documents and guidance manuals for PPPs and concessions and promote their use at the subnational level.
- Avoid local content restrictions in infrastructure projects.

Improving access to investment financing

- Promote wider use of the project financing model and reduce collateral requirements from sponsor companies.
- Improve the risk-return profile of infrastructure bonds through the use of guarantees.

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Annex 1.A.
Description of the empirical analysis and results

This Annex provides details on the firm-level evidence on the links between market distortions and the productivity of firms. A full description of the analysis is available in Arnold and Flach (2018a).

The analysis combines data from a number of sources. Firm-level productivity measures of total factor productivity are obtained from the commercially available data base ORBIS, published by Bureau van Dyke. While the coverage of the data set is fairly large, it is certainly much smaller than that of official business registers, which were not available for this research. Most of the policy variables used are objective and measurable variables, although in some cases aggregates of perception-based variables have also been used to confirm results. Some of the policy or interaction variables were not available for all sectors, thus reducing the size of the estimation sample.

The firm-level data contain information from annual balance sheets and profit and loss accounts, with sufficient data available to infer productivity for 16,384 firm observations. The main productivity measure has been constructed using a multilateral productivity index for each firm i in sector s at time t as follows:

$$TFP_{it} = \ln\left(\frac{Y_{it}}{\bar{Y}_s}\right) - \sigma_i^l\left(\frac{x_{it}^l}{\bar{x}_s^l}\right) - \sigma_i^k\left(\frac{x_{it}^k}{\bar{x}_s^k}\right) \quad (1)$$

where Y is value added, x^l and x^k represent the use of labour and capital, $\bar{Y}_s$, $\bar{x}_s^l$ and $\bar{x}_s^k$ are geometric means of value added and the use of factors labour and capital of all firms in the same 2-digit industry s over all years, and $\sigma_i^l = (\bar{\sigma}_i^l + \bar{\sigma}_s^l)$ is the average of the labour share in firm i and the geometric mean factor share in industry s, with the analogue definition applied for the factor capital. Constant returns to the two factors of production, capital and labour, are assumed by imposing $\sigma_i^l + \sigma_i^k = 1$.

The main advantage of the index approach is that it allows comparisons between any two firm-year observations even across industries, since each firm's inputs and outputs are calculated as deviations from a reference firm in the industry. Parametric productivity estimates do not allow such comparisons. For further details on the index measure, see Arnold and Schwellnus (2008) and Caves et al. (1982a, 1982b). In equation 1, value added is calculated using information on operating turnover, the cost of goods and the wage bill of employees, by firm and year. Nominal values are deflated using an industry-specific output and capital deflators from IBGE (2012). Robustness checks using alternative productivity measures, in particular the semi-parametric estimator proposed by Olley and Pakes (1996) confirm the results obtained in the analysis. The data have been cleaned for obvious outliers and reporting mistakes, which has resulted in dropping less than 1% of the original sample. A few sectors have been excluded from the analysis due to their monopolistic nature such as in the case of utility sectors, their the strong degree of

public control, such as in public administration, defence, education and health services, or because they are subject to peculiar cyclical swings such as financial services or mining.

Productivity measures have been related to policy variables using a difference-in-differences strategy following Rajan and Zingales (1998), which relies on comparisons within comparable sub-groups of firms, such as firms within the same state of Brazil and the same year. In a typical estimation setup – and there are minor differences across the estimations due to data availability – the policy variable varies across times or across states, and is interacted with an industry-specific variable that is assumed to measure the relevance of this policy aspect for the sector to which the firm belongs. For example, in the case of energy costs that vary across states, the interaction factor is the energy intensity of industries. This setup assumes that firms in sectors that are more energy-intensive are more affected by regional differences in energy costs than other sectors. The estimation coefficient is hence identified only from comparisons across firms in different industries within the same state. State-industry combinations are the level at which the interaction measure varies, while fixed effects control for all idiosyncratic productivity influences specific to combinations of states and years and specific to industries. The resulting estimation equation in this case is the following:

$$TFP_{it} = \alpha + \beta\, energy_cost_{reg} * energy_intensity_{s} + D_{reg,t} + D_{s} + \varepsilon_{it} \qquad (2)$$

Where the subscript reg represents the region or state, D are binary variables and ε is a white-noise error term. This empirical strategy means that the estimated effect can be interpreted as causal under acceptance of the identifying assumption, i.e. the relevance of the interaction factor chosen. The tables below show the results of the regression analysis following the approach set out in equation (2). A more detailed description of the variables used and their sources is available in Arnold and Flach (2018a).

Chapter 2.

Fostering Brazil's integration into the world economy

Brazil is less integrated into the world economy than other emerging markets as trade barriers shield enterprises from global opportunities and foreign competition. Stronger integration would improve the ability of Brazilian firms to compete in foreign markets by greater access to intermediate inputs and technology at internationally competitive conditions. This would boost productivity and allow them to pay higher wages. Lowering barriers to trade would also reduce the cost of capital goods, spurring investment and growth and creating new jobs across the economy. Consumers would see their purchasing power increase, with particularly strong effects among low-income households. Ensuring that everyone can benefit from trade will require accompanying policies to help workers cope with the likely reallocation of jobs across firms and sectors. Such policies should focus on protecting workers, rather than jobs, by creating training and education opportunities that allow low-skill individuals to acquire new skills and get ready for new jobs, while protecting their incomes in the transition.

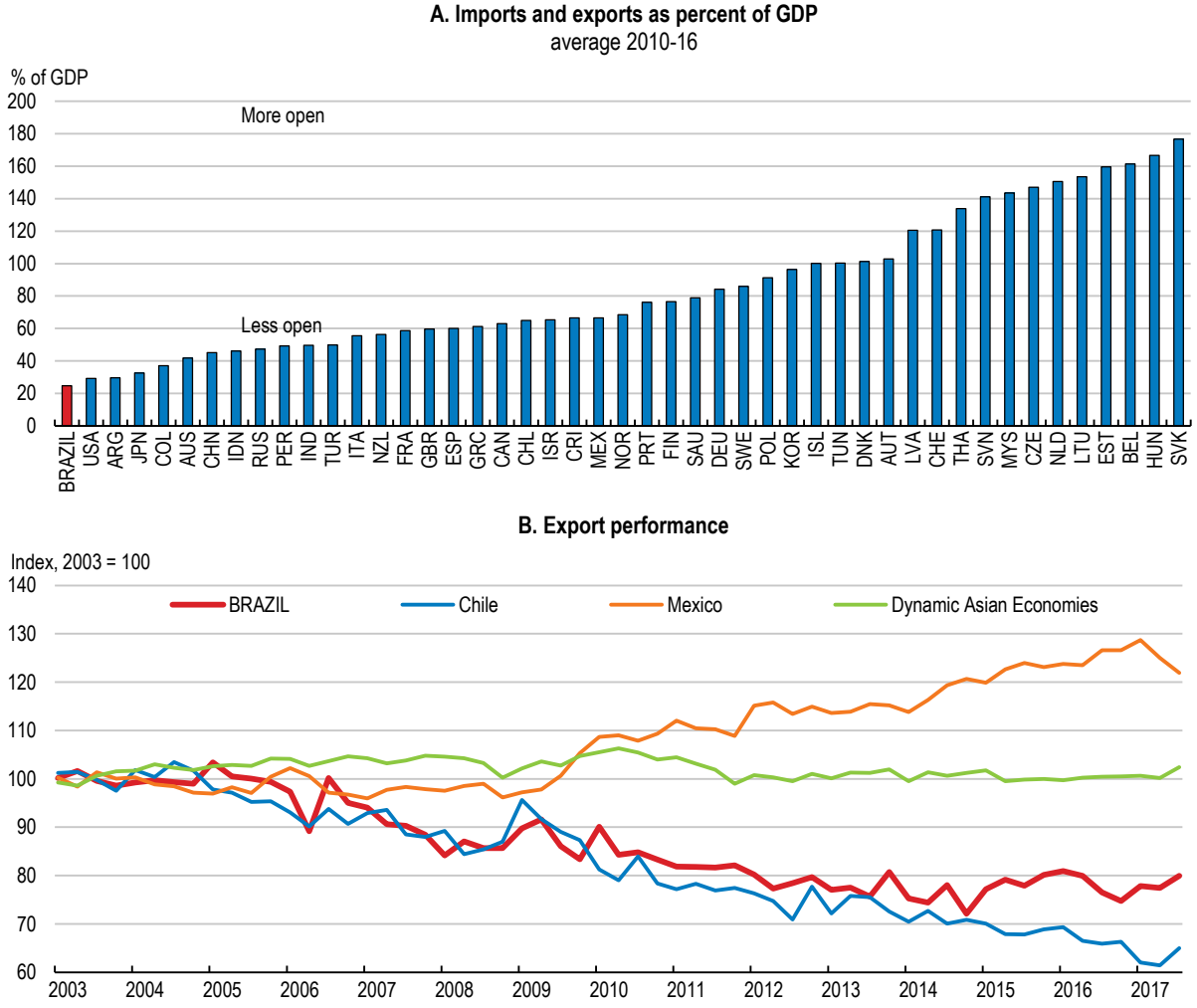
International trade has been a powerful engine of growth and improvement in living standards across countries. In emerging economies it has contributed to economic convergence and poverty decline. Both consumers and producers can broadly benefit from trade and the efficiencies it creates. Brazil has so far not fully reaped the benefits that integrating into the world economy can offer. High tariff and non-tariff barriers have shielded large parts of the economy from international competition, with detrimental effects for their competitiveness, but also for consumers in higher prices. For example cars tend to cost three times more than in more open economies. Increasing integration into the global economy would create new opportunities and propel growth, which is the basis for further improvements in living standards.

Brazil is missing out on the opportunities arising from international trade

The economy is relatively closed and poorly integrated into the global economy

Brazil has remained on the side lines of an increasingly integrated world economy. This reflects several decades of inward oriented policies including a strategy of industrialisation through import substitution. Trade has been persistently falling, with imports plus exports amounting to less than 30% of GDP, even lower than in much larger economies (Figure 2.1, Panel A). Export performance, which measures how exports have grown relative to the growth of export markets, has been worsening persistently since 2007 (Figure 2.1, Panel B). Brazil's participation in global value chains is low (Figure 2.2), both forward and backward, meaning that Brazil adds little value to foreign exports and, at the same time, Brazilian firms make little use of foreign intermediate goods and services. Brazil's only discernible GVC link is with neighbouring Argentina, while many Asian and European economies are tightly intertwined through their trade relationships, both among themselves and with advanced economies (Figure 2.3).

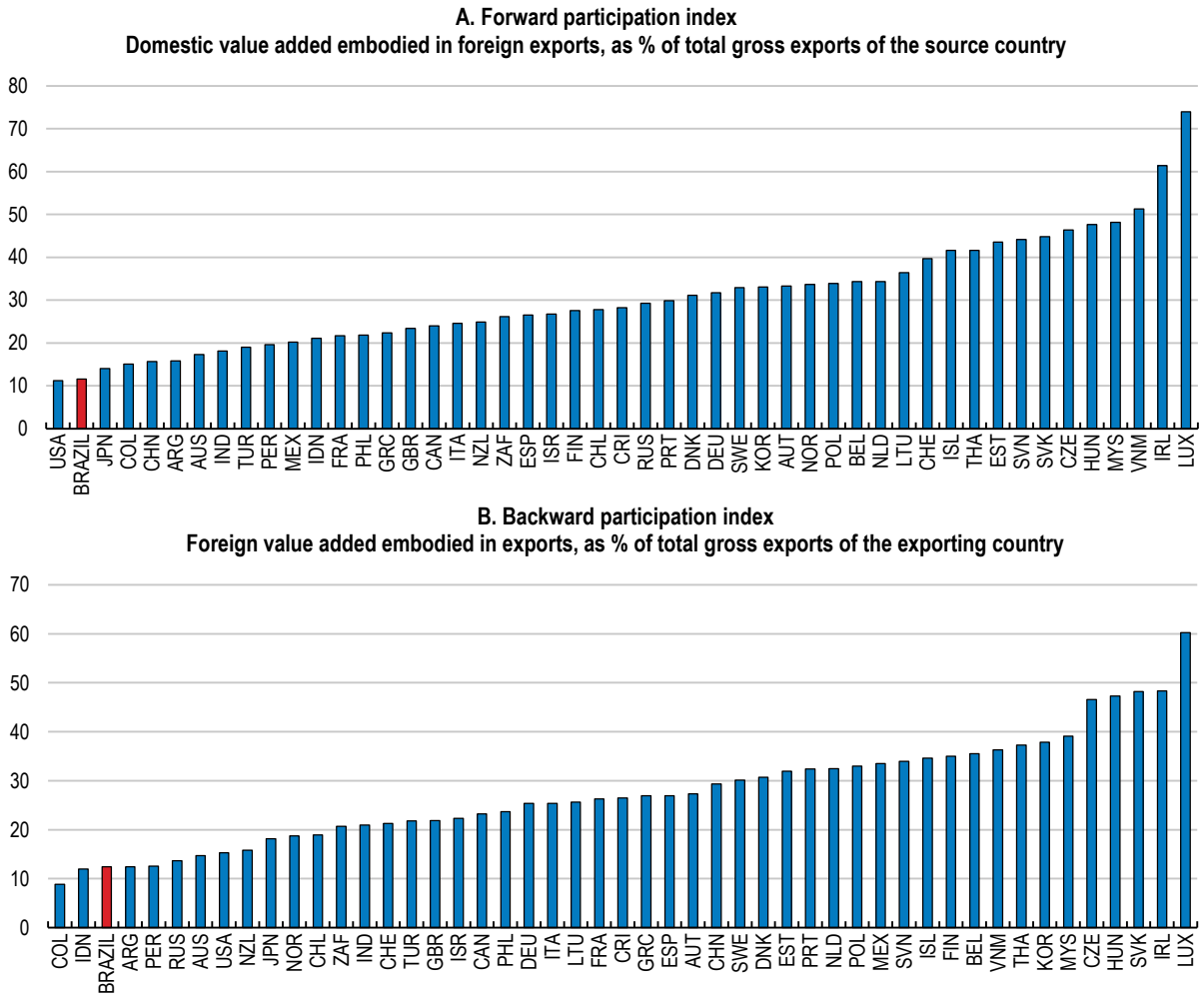
Figure 2.1. Exposure to trade is low and export performance has declined



Note: Export performance is measured as actual growth in exports relative to the growth of the country's export market, which represents the potential export growth for a country assuming that its market shares remain unchanged.
Source: IMF, International Financial Statistics; OECD Economic Outlook database.

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Figure 2.2. Brazil integration in global value chains is minimal

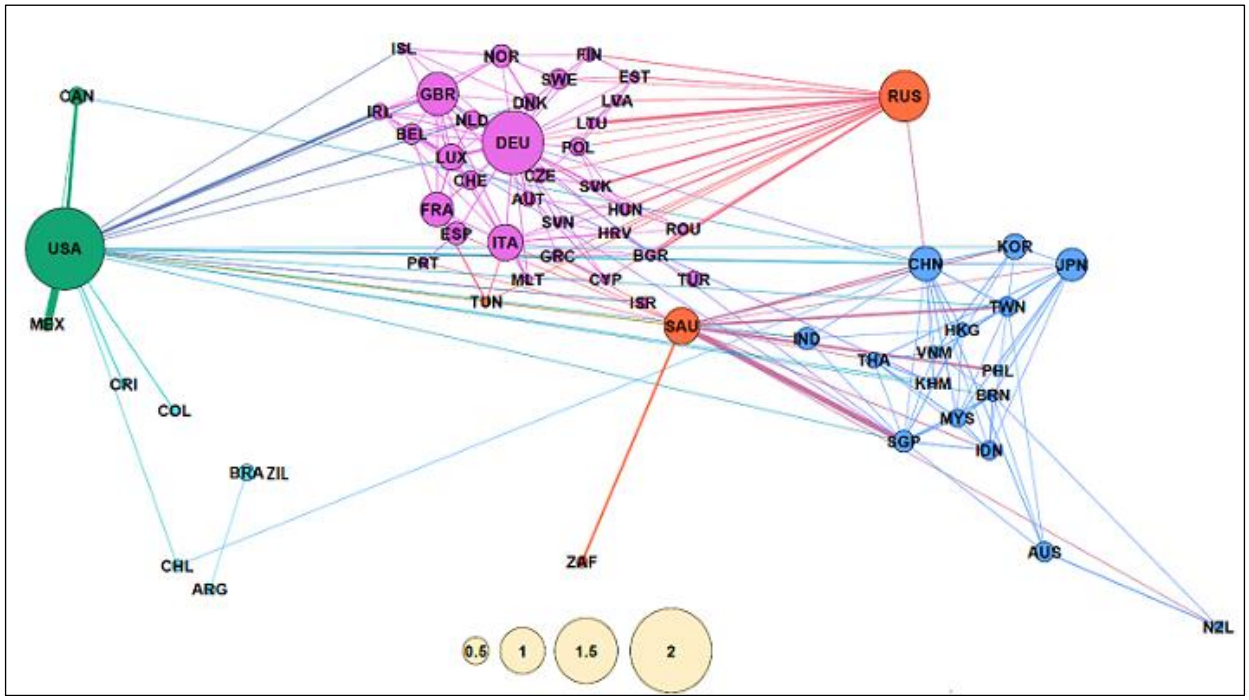


Source: OECD, TiVA Nowcast Estimates.

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Figure 2.3. Brazil has remained on the side lines of global value chains

A map of global value chains

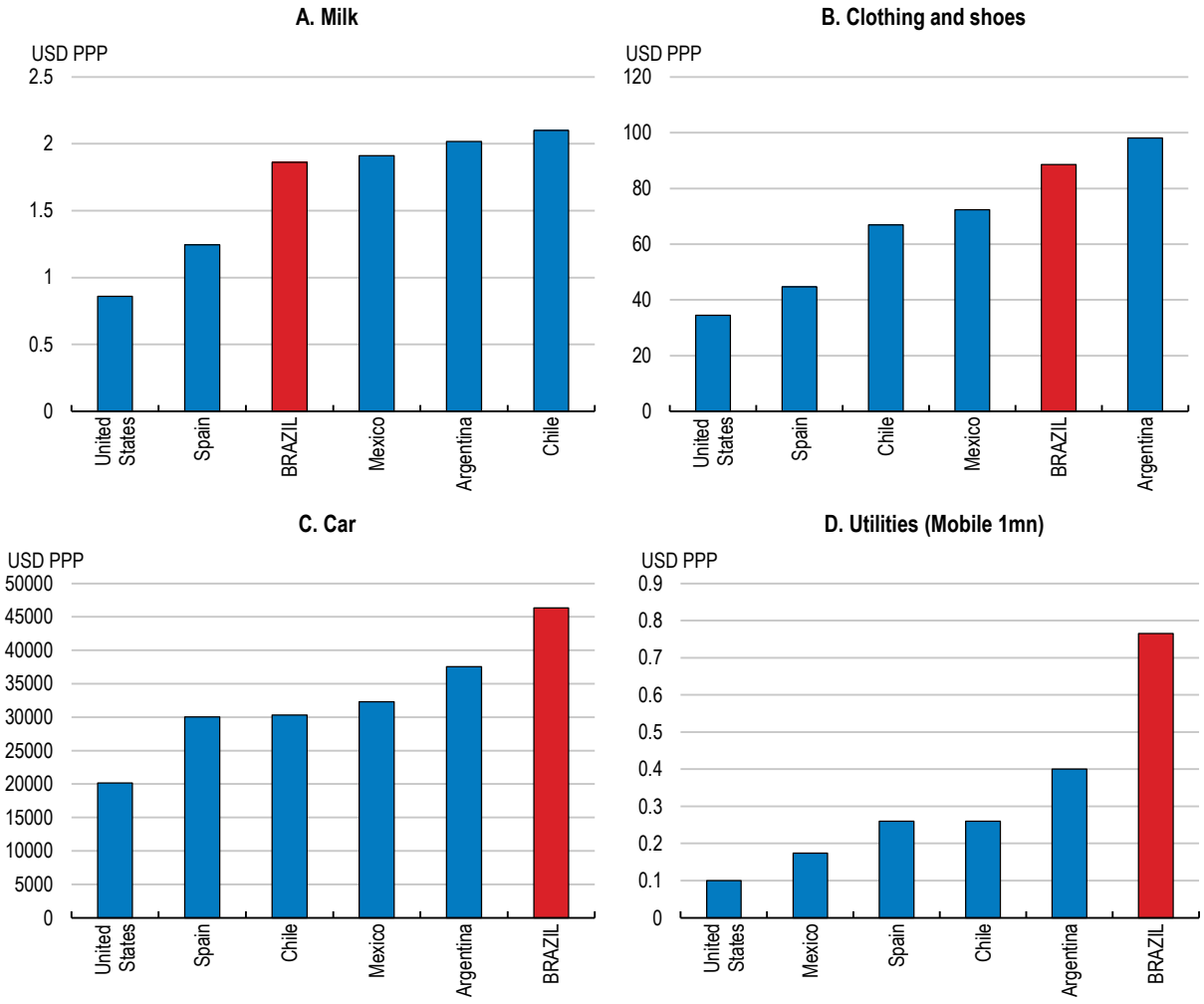


Source: Criscuolo and Timmins (2017).

Prices are high

Brazil has not shared in many of the benefits that an increasingly integrated global economy is offering, such as access to a wider variety of quality goods and services at more competitive prices for both firms and consumers. At present, prices for tradable goods are substantially higher than in other countries (Figure 2.4). For example, a 2017 Toyota Corolla passenger car costs 40% more in Brazil than in Mexico, which like Brazil is a producer of this model. Relatively high prices also affect services, including in key sectors such as telecommunications, but also business services, as Brazil restricts trade in services more than other countries, reducing competition in key sectors that provide inputs to other sectors across the economy.

Figure 2.4. Prices are relatively high



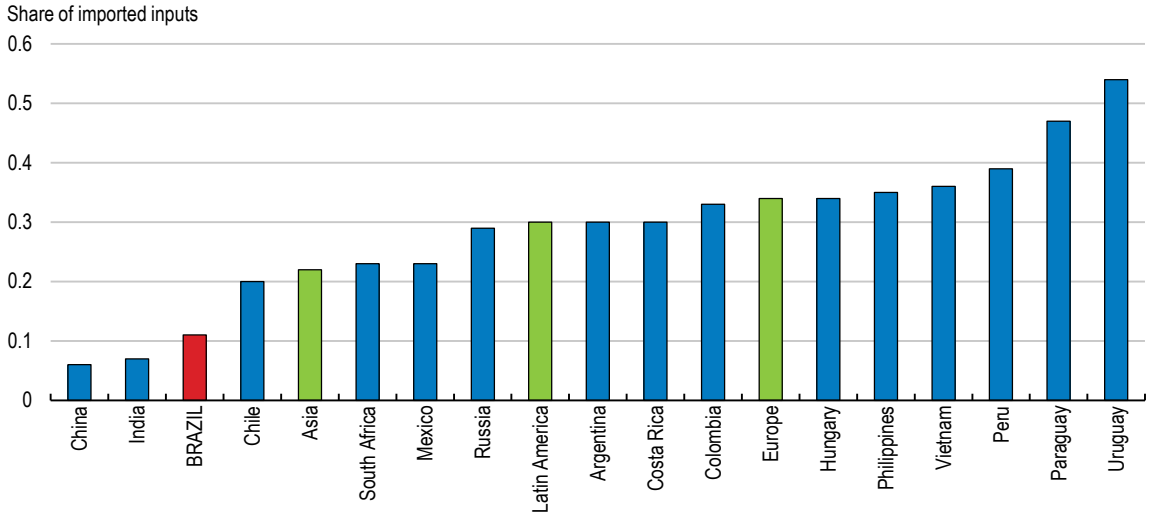
Note: Clothing and shoes prices are proxied by the price of a dress in a chain store. Car prices are proxied by the price of a Toyota Corolla or equivalent new car. Mobile prices are those of 1 min. of prepaid mobile tariff local. Prices are converted to PPP dollars by using conversion rates published in IMF's World Economic Outlook.
Source: Numbeo database.

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The share of imported inputs is low

Brazilian firms use significantly less imported inputs than their peers in Latin American and other emerging economies (Figure 2.5). Imported inputs can be an important conduit for the spread of new technologies and a wider choice of available inputs can reduce costs and improve competitiveness. Firm-level evidence shows a sizeable link between the use of imported inputs and productivity (Brambrilla et al., 2016), which is the basis for sustainable improvements in wages and living conditions.

Figure 2.5. The share of imported inputs is low



Source: Brambrilla et al. (2016).

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Competition is weak and policies have protected existing industry structures

Shielding domestic producers from foreign competition has curbed competition in many sectors, which has in turn reduced the incentives and discipline for undertaking constant improvements and innovation (OECD, 2015a; World Bank, 2018). Moreover, international trade is an important vehicle for cross-border knowledge diffusion (Andrews and Cingano, 2014).

Trade protection tends to cement existing industry structures and hampers the natural reallocation of resources towards their most productive uses, both across sectors and across firms.. Even more recently, trade policies have been excessively focused on protecting specific economic sectors. This includes both high tariffs but also an extensive use of non-tariff barriers such as local content rules and antidumping measures. Such sector-specific support policies create an uneven playing field that can favour ailing sectors and hamper the reallocation of resources towards the most competitive sectors.

Weak competition within sectors, resulting from trade policies but also from domestic policies, have furthermore protected incumbent firms at the expense of entrants and deterred firm creation. Given the importance of entry and exit for aggregate productivity growth and job creation (Brandt et al., 2012; Criscuolo et al., 2014), this is likely to be one factor behind Brazil's weak productivity growth.

In contrast, other Latin American countries like Chile, Colombia, Mexico and Peru, but also emerging market economies in Asia, have put a greater emphasis on horizontal policies and in actively promoting integration with large markets such as Japan, China and the United States, which has contributed to better productivity performance (Chapter 1).

Trade is dominated by commodities

Brazil is a large exporter of natural resources. Soybeans, iron ore, crude petroleum and raw sugar account for 30% of all exports (Table 2.1). Refined and crude petroleum are the

largest import items, followed by vehicle parts and cars. Export diversification has fallen overtime (Figure 2.6), and remains below the one observed in other emerging economies, including large economies such as India. At the same time, the level of sophistication of its export base has not improved overtime, with an increasing share of primary agricultural exports). This contrasts with other countries in the region such as Mexico or Costa Rica, which managed to enhance the sophistication of their export basket.

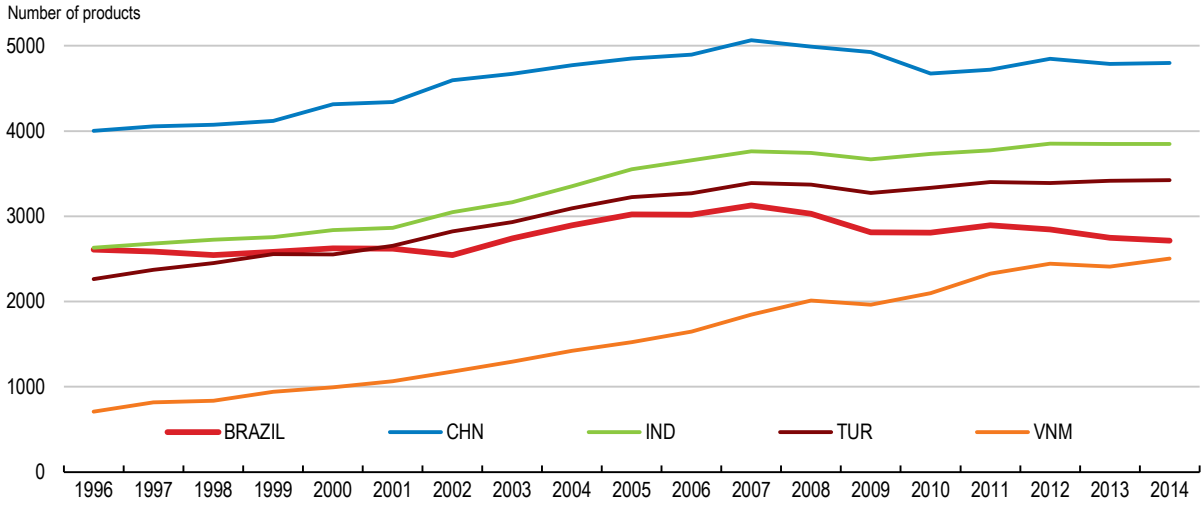
Table 2.1. The structure of exports and imports

10 main exported/imported goods (% on total exports/imports)

Exports		Imports	
Soy beans and oleaginous fruits	10.4	Refined petroleum	5.3
Iron ore	7.2	Vehicles and parts	3.5
Raw sugar	5.6	Electronics	3.6
Crude Petroleum	5.4	Pharmaceutical	2.4
Meat	3.3	Crude petroleum	2.1
Wood	2.8	Vehicles and parts	2.1
Soybean oil	2.8	Electrical machinery	2.0
Coffee	2.6	Mechanical appliances	2.0
Vehicle and parts	2,5	Mineral fuels and oils	2.0
Aircrafts	2.4	Pharmaceutical products	1.9

Source: OECD computations based on UNCTAD data.

Figure 2.6. Export diversification has fallen



Source: WTO (2017)

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Box 2.1. Building on Brazil's success in agriculture and food

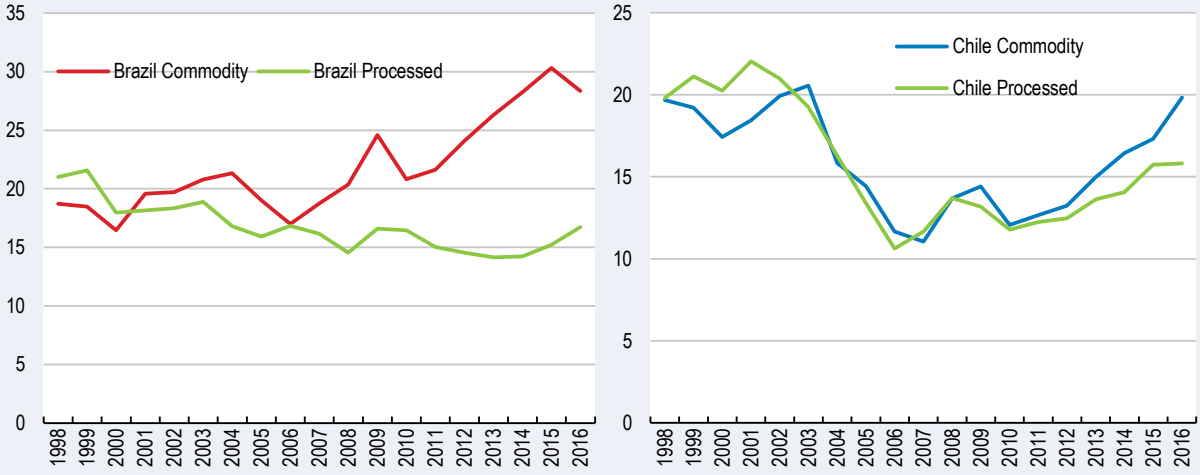
Brazil is the world's largest supplier of sugar, orange juice and coffee and among the top three in soybeans, beef, maize and poultry. The strong performance of these sectors today illustrates the benefits of opening up to trade and competition.

In the late 1980s, Brazil started to adopt market-oriented policies in these sectors, which allowed the transformation from being a net food importer to a net food exporter. New technologies and economic reforms, which created a more competitive environment and enabled the reallocation of resources, boosted incentives to increase productivity (OECD, 2015b).

To build on this progress, Brazil will need to respond to global changes in agro-food trade. The share of processed products in global trade has been increasing, to the detriment of primary agriculture products. In general, the demand for goods of higher knowledge content is expected to increase more in the future, also in the agro-food sectors. However, Brazil has been increasing its relative specialisation in raw agriculture products compared to processed foods, in contrast to Chile (Figure 2.7; OECD, 2013).

Figure 2.7. The share of processed agriculture and good exports has diminished

Share of raw and processed agriculture and food exports over total exports



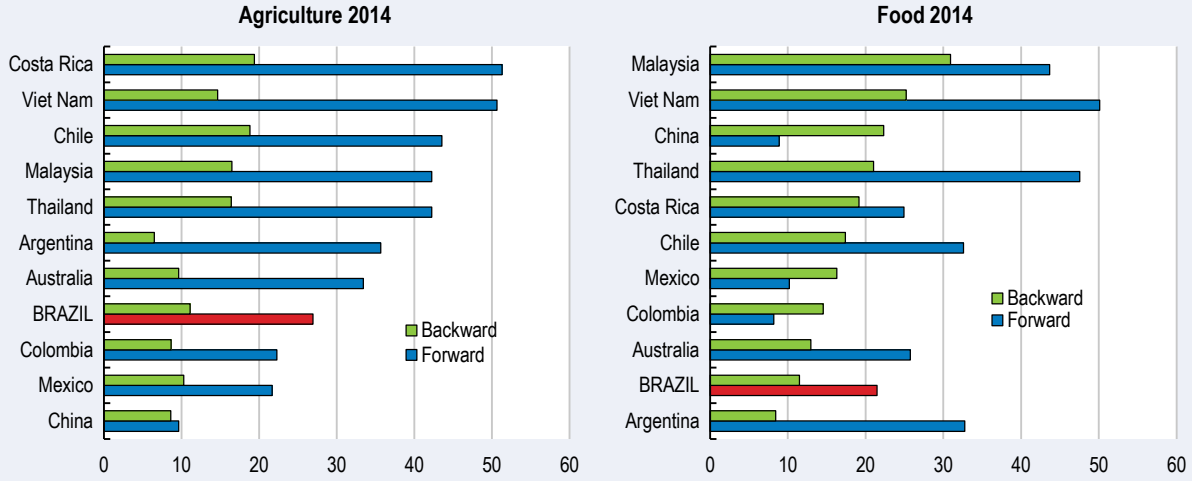
Source: OECD calculations based on Comtrade database.

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Global value chains (GVCs) are also changing the nature of production and specialisation in agriculture and food around the world (Greenville et al, 2017). Among agro-food traders, Brazil is in the middle range in terms of participation in global value chains in agriculture, and in the bottom in food (Figure 2.8).

Globally, services are an important part of value added in exports in agro-food, greater than in the manufacturing sector. The functioning of services markets is therefore critically important for agro-food sectors. In Brazil, the services value added share of food exports is relatively low (OECD, 2015c), particularly with respect to foreign services.

Figure 2.8. Brazil's participation in food GVCs is small



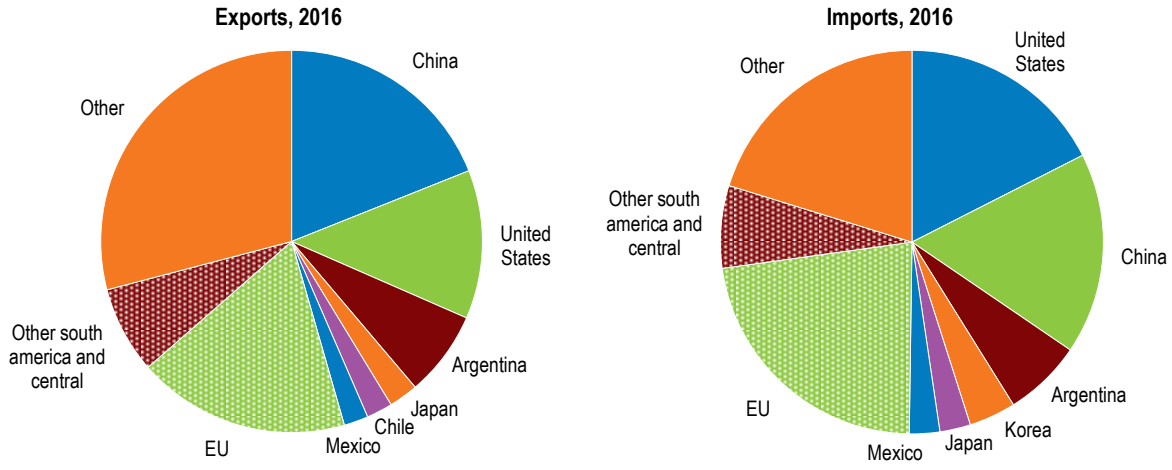
Note: Forward participation index: Domestic value added embodied in foreign exports, as % of total gross exports of the source country. Backward participation index: Foreign value added embodied in exports, as % of total gross exports of the exporting country.
Source: OECD (2017a).

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Given these trends, Brazil will need to continue improving productivity and competitiveness in primary products to sustain its strong position in this segment. Indeed, it has significant opportunities to diversify its agro-food export base by adding value to primary products and differentiating them. Seizing these would allow Brazil to tap into the increasing demand for processed and differentiated agro-food products. Filling infrastructure gaps, improving access to credit and reducing tariffs on inputs, as recommended across this survey, would help to achieve these goals. Beyond that, services that add value through differentiation, customisation and innovation, such as R&D, design, engineering, branding or IT services are fundamental. Lowering trade barriers in these areas would support a stronger performance in the agro-food sector. Argentina's wine sector is a good example of how differentiating products, based on innovation and by adding value through marketing and branding services, can allow tapping into new markets and boost exports, incomes and jobs (Artopoulos et al., 2013).

As a major commodity importer, China is Brazil's main trading partner, accounting for 19% of all exports and 17 % of imports. The European Union and the United States are also important trading partners (Figure 2.9). By contrast, Brazil trades relatively little with other Latin American countries, beyond Argentina. Unlike other emerging market economies, Brazil has not been able to raise the diversification of its trading partners in recent years (Figure 2.10).

Figure 2.9. China is Brazil's main trading partner

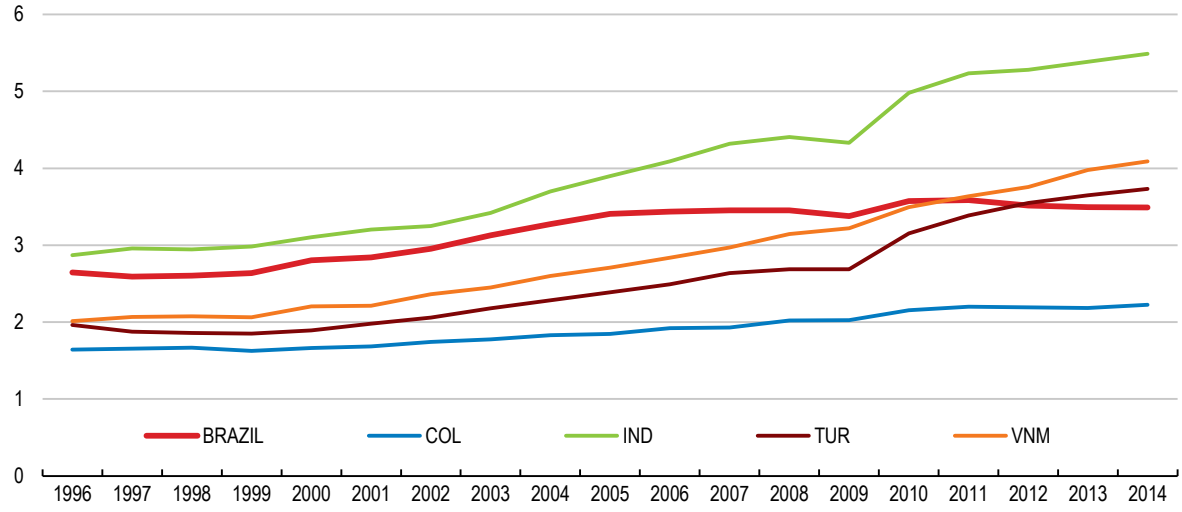


Source: OECD computations based on UNCTAD data.

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Figure 2.10. Brazil has not gained new markets for its exports in recent years

Annual average number of trading partners per product category



Source: WTO (2017).

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Trade barriers have significant economic effects

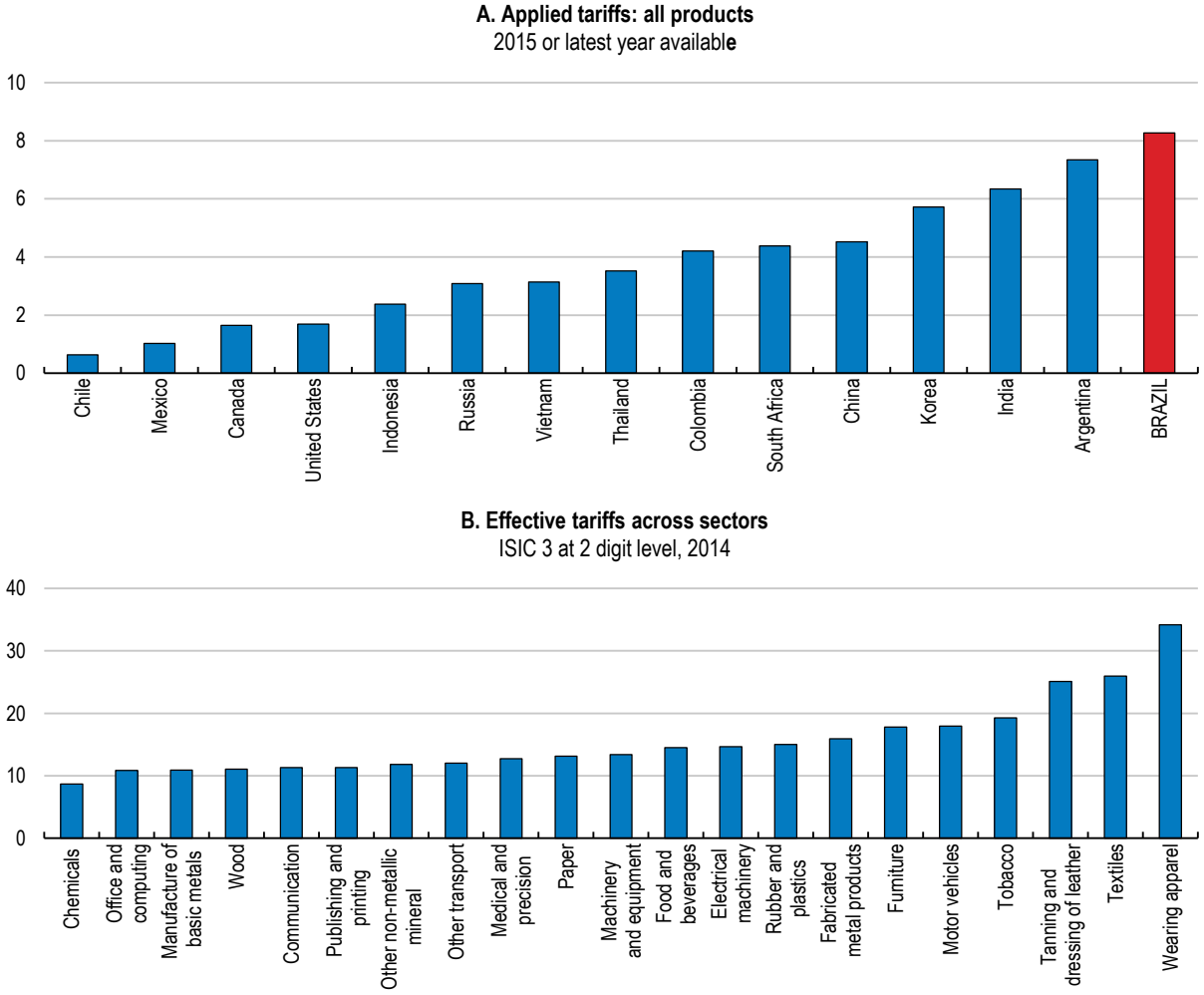
Brazil's low participation in international trade is the result of policies that restrict trade in one way or another, as trade policy has focused on safeguarding domestic markets rather than facilitating access to foreign markets.

Trade tariffs are high

Tariff barriers are among the highest among advanced economies, but also emerging economies in Latin America and Asia (Figure 2.11, Panel A). For example, average tariffs are almost twice as high as in neighbouring Colombia and more than eight times higher as in Mexico or Chile. Average tariff levels vary across different industries (Figure 2.11, Panel B). Wearing apparel, textiles, motor vehicles and furniture are particularly protected. On the other side of the spectrum, the aerospace industry is much more open to trade (Box 2.2).

Brazil's most frequently applied tariff rate is 14%, while around 450 tariff lines are at the maximum of 35%, including textiles, apparel and leather. Brazil has the highest number of tariff lines above 10% among emerging markets. High tariffs in labour-intensive and low-productivity activities, such as textiles, distorts relative prices and encourages resources to remain in – or even flow to – low-productivity, protected sectors.

Figure 2.11. Tariffs barriers are high



Source: WITS database (World Bank) and OECD computations.

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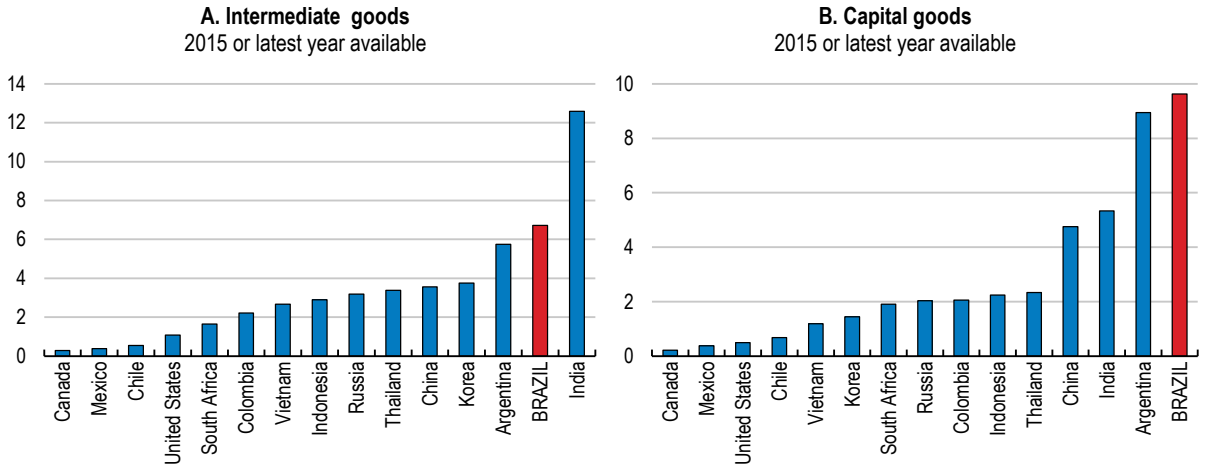
Box 2.2. A tale of two industries – automobiles and aerospace

Brazil is the world's seventh largest automobile producer, and the industry is heavily protected from foreign competition. As a result, Brazil's car manufacturers are excessively focused on the domestic market. Only 15% of the production is exported, much of which is sold to equally protected Argentina where Brazilian producers enjoy tariff preferences, and Brazil ranks only 21st in automotive exports. While many foreign producers have set up production plants in Brazil in light of the country's rising middle class and the resulting domestic market prospects, most of them have not integrated their Brazilian plants into global value chains. Productivity has fallen sharply behind Mexican car manufacturers, who are fully integrated into global production chains and have achieved remarkable gains in global market share. For example, Mexican plants produce 53 cars per worker and year, as opposed to 27 in Brazil, although the cars produced in Mexico are on average smaller models.

A very different story can be told about Brazil's aircraft industry. Imports tariffs on aircraft components were lifted, allowing firms in the sector to source from global suppliers. Given that production volumes of airplanes are much smaller than for automobiles, economies of scale mandate that firms in this industry naturally focus on the global market. Embraer, originally created in 1969 as a state-owned company, was privatized in 1994 and has become one of the top global players in the industry since. Its initial strategy was largely based on buying almost all components internationally for a final assembly in Brazil, although over time it has started to produce parts itself. As a result of its roots, Embraer has always been strongly integrated into global production chains, and imports still account for 70% of its value added.

Tariffs are particular high on capital and intermediate goods (Figure 2.12). A special tax regime is in place to reduce import tariffs on capital goods, but it is applicable only if no equivalent domestic product exists, and Brazil has a sizeable capital goods industry. As a result, all sectors face high tariffs on their inputs, which hampers their competitiveness and efficiency. Effective protection levels, which account for total effect of the entire tariff structure across the production chain in each sector, are 26% on average, but range between 40% and 130% for textiles, apparel, and motor vehicles, in ascending order (Castilho and Miranda, 2017).

Figure 2.12. Tariff to intermediate and capital products are very high

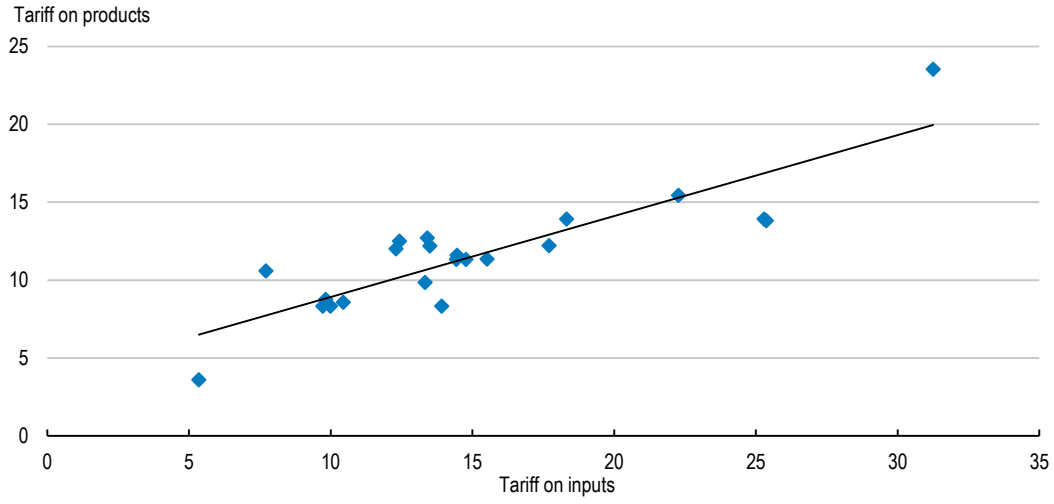


Source: World Bank World Integrated Trade Solution.

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The detrimental impact of tariff on inputs is larger in sectors whose final products are subject to high tariffs on their outputs, such as textiles, clothing and leather (Figure 2.13). This suggests that some of these sectors could in fact be more competitive in foreign markets if they had better access to competitively-priced inputs.

Figure 2.13. Sectors with high tariffs are also hampered by high tariffs on their inputs



Source: Messa (2015).

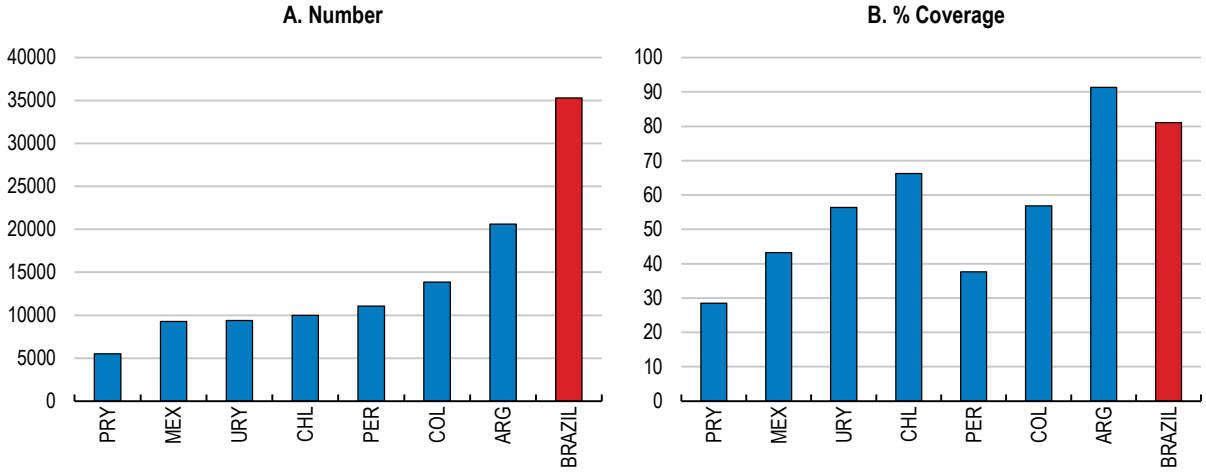
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Non-tariff barriers are numerous

Besides tariffs, other policies also affect trade flows, but often in a much less transparent manner. In Brazil, local content rules and anti-dumping measures are examples of such measures. Some measures such as anti-dumping, countervailing duties and safeguard measures are easy to quantify as they are "tariff-like" measures, acting via a tariff rate or

price surcharge. For measures that involve specific regulation, however, measuring the economic effects of so-called non-tariff measures can be fraught with difficulties, as a result of which existing indicators are limited to number counts or measures of the proportion of goods categories subject to a least one non-tariff measure. Compared to other countries in the region, Brazil makes more frequent use of these (Figure 2.14). The non-tariff measures have increased overtime for all sectors, but those more heavily affected are textiles, clothing and leather.

Figure 2.14. Brazil makes a large use of non-tariff trade barriers

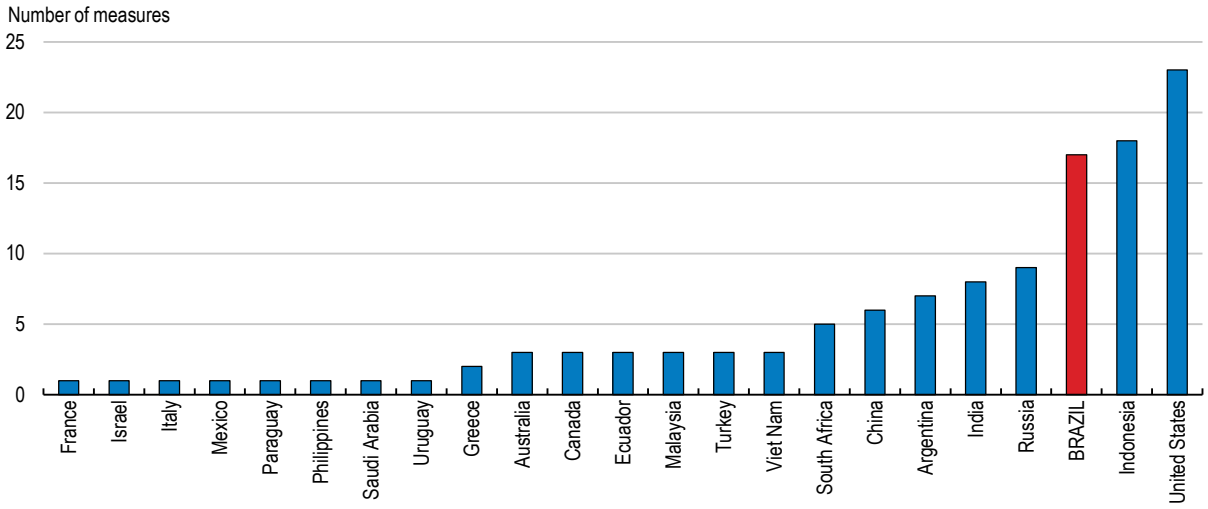


Note: Based on product information at a six digit sub-heading in the Harmonized System Classification, as available in UNCTAD TRAINS database. Coverage refers to the percentage of imports subject to at least one non-tariff trade measure.
Source: OECD computations based on UNCTAD TRAINS database.

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Local content rules are widely used in Brazil. They are defined as measures that favour domestic industry at the expense of foreign competitors and include aspects of government procurement and regulation (Stone et al, 2015). They are embedded in key government policies such as subsidised lending, transactions with state-owned companies or public procurement and applied more frequently than in other countries (Figure 2.15). For example in wind and power sectors, only those companies using local content of 50% in building their projects qualify for maximum financing from the national development bank BNDES. By excluding competition from imports just like tariffs, local content rules raise costs and reduce the choice of inputs or providers. This has restricted foreign participation and investment in key areas of the Brazilian economy, such as infrastructure projects.

Figure 2.15. Local content rules are relatively abundant in Brazil



Source: Stone et al. (2015).

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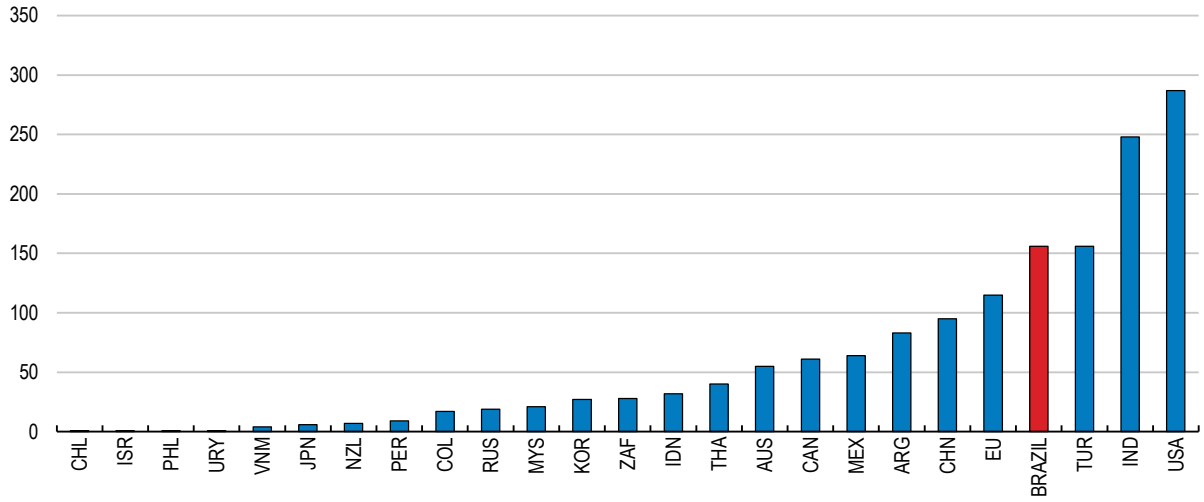
Local content rules lack transparency and create the risk of political capture. Empirical evidence suggests that lobbies have had influence on Brazil's trade policies (Baumann and Messa, 2017). This is not unique to Brazil, but research suggests that the weight is larger than observed in other countries. Moreover, this weight has increased at the same time as the use of non-tariff measures has expanded, suggesting that local content rules may be a preferred, possibly because they are less transparent, vehicle for attending political pressures from lobby groups. Clothing, ITC, electronics and optics are economic sectors benefiting from particularly high levels of trade protection that can be associated with lobby activities (Baumann and Messa, 2017).

Brazil has embarked on a process of reflection about local content rules recently, and some have been relaxed somewhat. This applies most notably to the oil and gas sector, but also to lending operations by BNDES, the largest public bank, which have also seen more flexibility regarding exceptions on a case-by-case basis. In some cases, local content rules could not even be met because of capacity constraints of domestic producers. In the oil and gas sector, for example, some have been systematically under fulfilled due to such constraints. This has led to the application of fines. Continuing the current reflection about the use of local content rules is welcome as their effect on trade is at least as restrictive as that of tariffs and their lack of transparency is a particular concern.

Besides local content rules, anti-dumping measures have been applied in an increasing manner over the last decade (Aráujo de Almeida and Messa, 2017). In fact, Brazil is one of the countries with the highest number of anti-dumping measures in effect (Figure 2.16). At end-2016, the number of measures was double that in the neighbouring Argentina. Empirical evidence for Brazil shows that antidumping measures increase profit margins in protected sectors and decreases their productivity (Remédio, 2017 and Kannebley et al., 2017). Antidumping measures appear to have very limited quantity effects, but they do increase import prices significantly (Aráujo de Almeida and Messa, 2017).

Figure 2.16. The number of antidumping measures in effect in Brazil is relatively large

In effect at end 2016



Source: WTO (2017).

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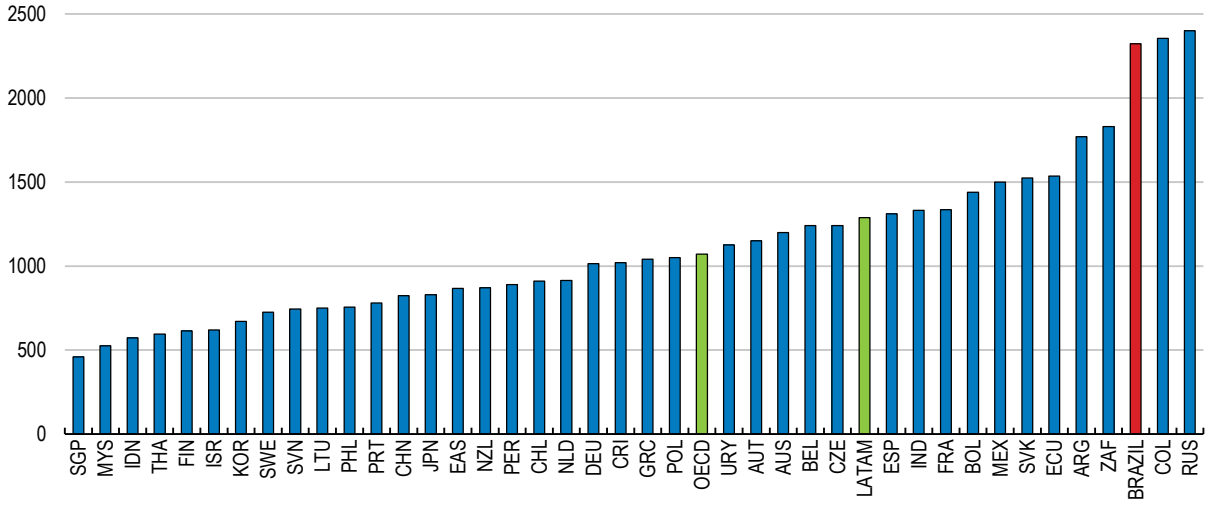
Trade facilitation measures can help

Trade facilitation measures can also play an important role in stimulating trade, for example by reducing costs to exporting, which are relatively high in Brazil (Figure 2.17). Infrastructure bottlenecks, such as those in ports or in roads (Chapter 1) contribute to these high costs to export but the complexity of trade procedures is also a key driver. There is room to improve trade procedures in Brazil (Figure 2.18). Administrative burdens on exports and imports have been high, and rank below regional partners such as Chile or Mexico in terms of efficiency of customs and border clearance, according to World Bank's Logistics Performance Index. Harmonising procedures into a single electronic document and consolidating information and certifications from various authorities, such as customs or health and agriculture, can significantly increase efficiency in customs and reduce associated costs (Sarmiento et al., 2010).

There are ongoing efforts in the area of trade facilitation in Brazil, including the creation of a single trade window, called *Portal Único de Comercio Exterior* (Single Trade Window), to make export and import operations less costly. The programme will be gradually implemented until 2018 and foresees wider use of online tools and sharing of information across government agencies to reduce administrative burden. Ongoing efforts are concentrated in exports but it is expected to cover imports as well. These are significant steps in the right direction. Continuing to modernise and simplify customs procedures is fundamental, as cross-country evidence signals that it improves the capacity to export and import high-quality inputs (Moïse and Sorescu, 2012). It will also contribute to reduce the scope for corruption in the customs sector, especially if online procedures are introduced.

Figure 2.17. The cost to export is high

Fees levied on a 20-foot container in US dollars

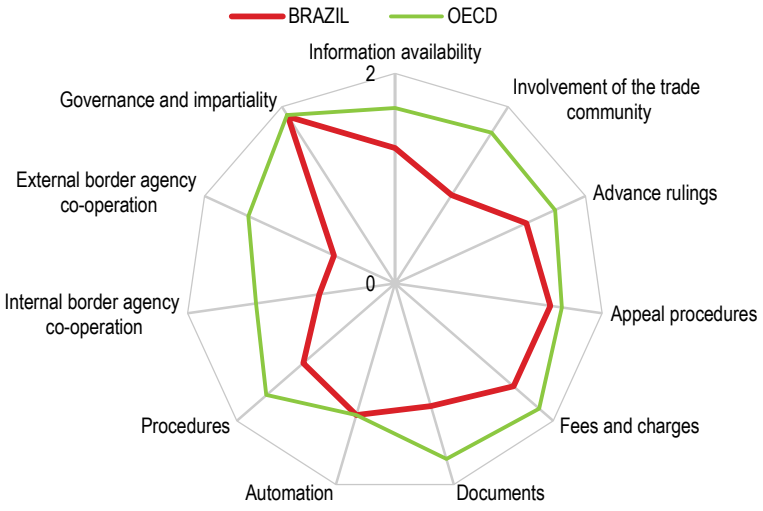


Source: World Bank Doing Business.

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Figure 2.18. Trade facilitation procedures could improve further

Index scale from 0 to 2 (best performance)



Source: OECD Trade facilitation database.

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Beyond simplifying customs procedures, a cost-effective avenue for trade facilitation is through more cooperation, both among various agencies of the country and also with neighbouring and third countries. Brazil would benefit from a harmonisation of data requirements and documentary controls among domestic agencies involved in the management of cross border trade, as established in other countries in the region such as

Peru and Mexico. A similar coordination and harmonisation effort with cross-border agencies in neighbouring countries will also help to reduce administrative burden. In the same vein, a systematic sharing of control results among neighbouring countries at border crossings would improve the risk analysis as well as the efficiency of border controls and would also facilitate intra-regional trade. Alignment of working days and hours with neighbouring countries at land borders would also contribute to decrease time and costs to trade across borders.

Engaging in mutual recognition agreements would be an additional measure that can facilitate trade. According to the OECD's Product Market Regulation Indicators, there is room to pursue such agreements in areas such as construction, telecommunications, insurance, hotels and restaurant, and legal and engineering business services. Likewise, requiring regulators to use internationally harmonised standards and certification procedures would also facilitate trade. Business services, such as accountancy, legal, engineering and architecture, are areas where harmonisation is currently lacking.

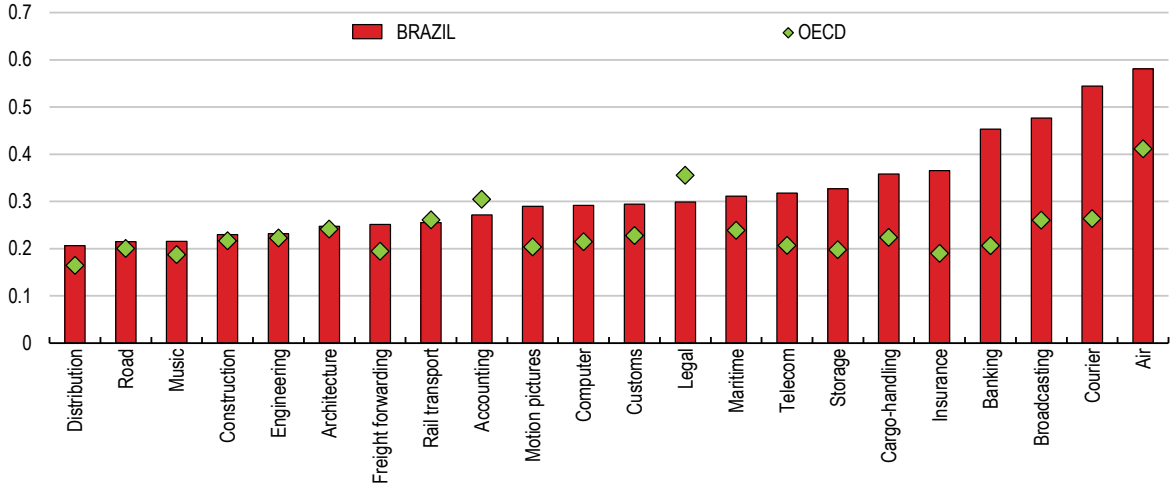
There is scope for more integration in services

The scope for stronger integration is not limited to goods trade. Producer services have also become an important intermediate input into manufacturing activities, representing 65% of manufacturing value added in industrial countries (CNI, 2014). Empirical research has demonstrated the significant role that services inputs can play for manufacturing productivity (Arnold et al., 2011; 2016). Brazil's regulations are more restrictive than the OECD average (Figure 2.19), particularly so in the area of logistics, legal services, architecture and engineering services, telecoms, banking, insurance, air and rail transport and courier services. These barriers take the form of restrictions on foreign entry, such as in legal or accounting services, but also barriers to competition in telecommunication or lack of regulatory transparency in logistics services (OECD, 2016).

Across all sectors, the scope for using imported producer services is further limited by the taxation of many imported producer services under the CIDE tax. CIDE contributes to the very high taxation of imported services, for which effective tax rates range between 40% and 50% (Ernest and Young, 2013).

Figure 2.19. Brazil restricts trade in services more than other countries

Index, from 0 (least restrictive) to 1 (most restrictive)



Source: OECD Services Trade Restrictiveness database

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Seizing the opportunities of the global economy

A stronger integration into the global economy would bring significant benefits in terms of growth and well-being. Estimates suggest long-run GDP gains of 8% (Table 1, Assessment and Recommendations). In fact, current trade barriers are preventing many Brazilians from seizing the opportunities of trade that have raised living standards in other emerging market economies. Instead, current barriers generate monopoly rents for a few and protect selected sectors at substantial costs for the rest of the economy.

The increase in trade that Brazil could experience from lowering its trade barriers is potentially large. Weak competitiveness has been a key concern for the manufacturing sector, for example, and part of this is related to a lack of competitively priced inputs and low levels of competition (OECD, 2015a). Lower trade restrictions, in addition to domestic structural reforms, would enable Brazil to become a strong producer for international markets in many sectors. The economy would also gain attractiveness as a production base for globally-oriented companies, who may see a large domestic market as an additional bonus rather than the only reason for coming.

More foreign trade and investment would generate economies of scale and trigger large productivity gains, which has been well-documented in the empirical literature for a wide range of countries (Amiti and Konings, 2007; Bloom et al. 2016; Taglioni, 2016; Haugh et al., 2016; Pavcnik, 2002, Tybout, 2002, Harrison, 1994; Ferreira and Rossi, 2003; Krishna and Mitra, 1998; Schor, 2004, Levinsohn, 1993). In addition, the flow of resources to more productive uses that result from stronger international integration would trigger substantial productivity gains and raise living standards.

It is important to acknowledge that opening up to trade, even gradually, will involve adjustment costs for some workers. Although the overall employment effects are likely positive, reallocation implies that jobs will be lost in some sectors, firms and regions and created in others. These movements enable capital and labour to move to more productive

sectors where new firms will be created, or existing ones will expand, creating new jobs. But in the transition process policies can go a long way to reduce the burden of adjustment for poor and vulnerable households. Therefore, it is fundamental to analyse which sectors and regions would be affected by these adjustment costs so that appropriate policies, as discussed further below, can be deployed.

Productivity will improve through several channels

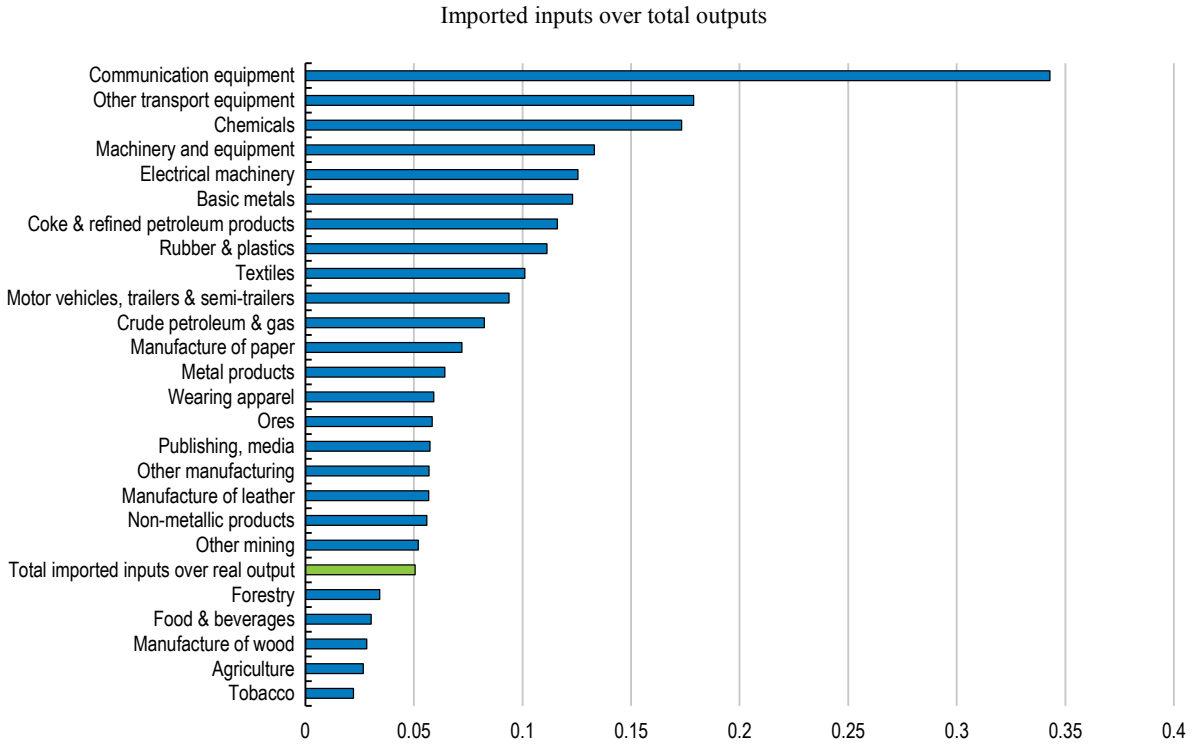
The economic literature has identified a positive link between decreasing tariffs barriers and productivity through various channels. One of these is the ability to source imported intermediate inputs and capital goods at a lower cost, thus raising competitiveness. Economic theory predicts that the competitive threat of imports will increase innovation and productivity among the more advanced firms in the intermediate sector that produce inputs for the final sector (Helpman and Krugman, 1989; Aghion et al., 2003). A tariff reduction in the input sector will then lead to higher productivity in the downstream sector as a result of this competitive effect. In addition to the price of inputs, their quality will also improve, for example by using more advanced technologies.

These effects do not necessarily imply a massive substitution of domestic inputs and capital goods by imports. Domestic producers of such goods would react to the stronger foreign competition by reducing their prices, reducing slack and improving their products. Many domestic producers would be able to withstand foreign competition through productivity-enhancing adjustment, and only the least productive ones would lose the battle and exit.

A substantial body of empirical work has confirmed the predictions from theory (Krishna and Mitra, 1998; Tybout, 2002; Pavcnik, 2002; Ferreira and Rossi, 2003; Schor, 2004; Amiti and Konings, 2007; Fernandes, 2007). In the case of Brazil, the reduction in tariffs undertaken in the first half of the 1990s made a substantial contribution to lowering input prices, particularly capital goods and led to a significant increase in productivity (Lisboa et al., 2010; World Bank, 2018). Such an effect was significantly stronger in the technology and capital-intensive sectors than in the natural resources and labour intensive ones. More broadly, recent studies have concluded that a 1% reduction in tariffs of inputs would increase productivity by around 2% (Gazzoli and Messa, 2017). Productivity would increase across all economic sectors, although the increase would be somewhat stronger for firms already making use of imported inputs.

Communication equipment, transport and chemicals products are the manufacturing sectors making larger use of imported inputs (Figure 2.20) and therefore would be those benefiting more from a cut in tariffs. Beyond manufacturing, extraction of crude petroleum and natural gas, and mining of metal ores would also potentially benefit largely from better access to foreign inputs.

Figure 2.20. Sectors using more imported inputs will benefit more from tariff cuts



Source: OECD calculations.

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Besides the input effect, the disciplining impact of foreign competition in the same sector would also force companies to reduce inefficiencies, apply more advanced technologies and reduce margins. Again, this would not imply a complete substitution towards imports, but rather lead to a revitalising effect by which the more productive firms manage to use the new incentives to become more efficient while some low-productivity firms would leave the market, freeing resources for more productive ones.

This would also create an environment in which it would be easier for new firms to enter and thrive. Among these, there are typically a number of so-called "rising stars", i.e. new firms with a steep upward trajectory in productivity, which have been shown to contribute strongly to overall productivity growth in advanced economies (Bartelsman et al., 2013). New firms also tend to contribute disproportionately to job creation (Criscuolo et al. 2014).

Brazil, as other economies, shows a large firm heterogeneity with respect to size and productivity. For example, Brazilian exporting firms are 50% more productive than non-exporting ones (Araújo, 2017). This suggests that the scope for increasing productivity by reallocating resources would be large. The potential gains in terms of productivity of moving to a more efficient allocation of capital and labour have been estimated at 40% (Busso et al, 2013). This estimate is likely to be a lower bound as it is based on firms above 30 employees, and in Brazil, as elsewhere, the proportion of small firms is large and they display lower productivity. Potential gains would also vary across economic sectors and go beyond the manufacturing sector. For example they could reach 250% in

the retail sector (De Vries, 2009). This large gain highlights that a good part of the low productivity in the services sector is not only due to the low productivity of firms, but also to the inefficient allocation of resources across them.

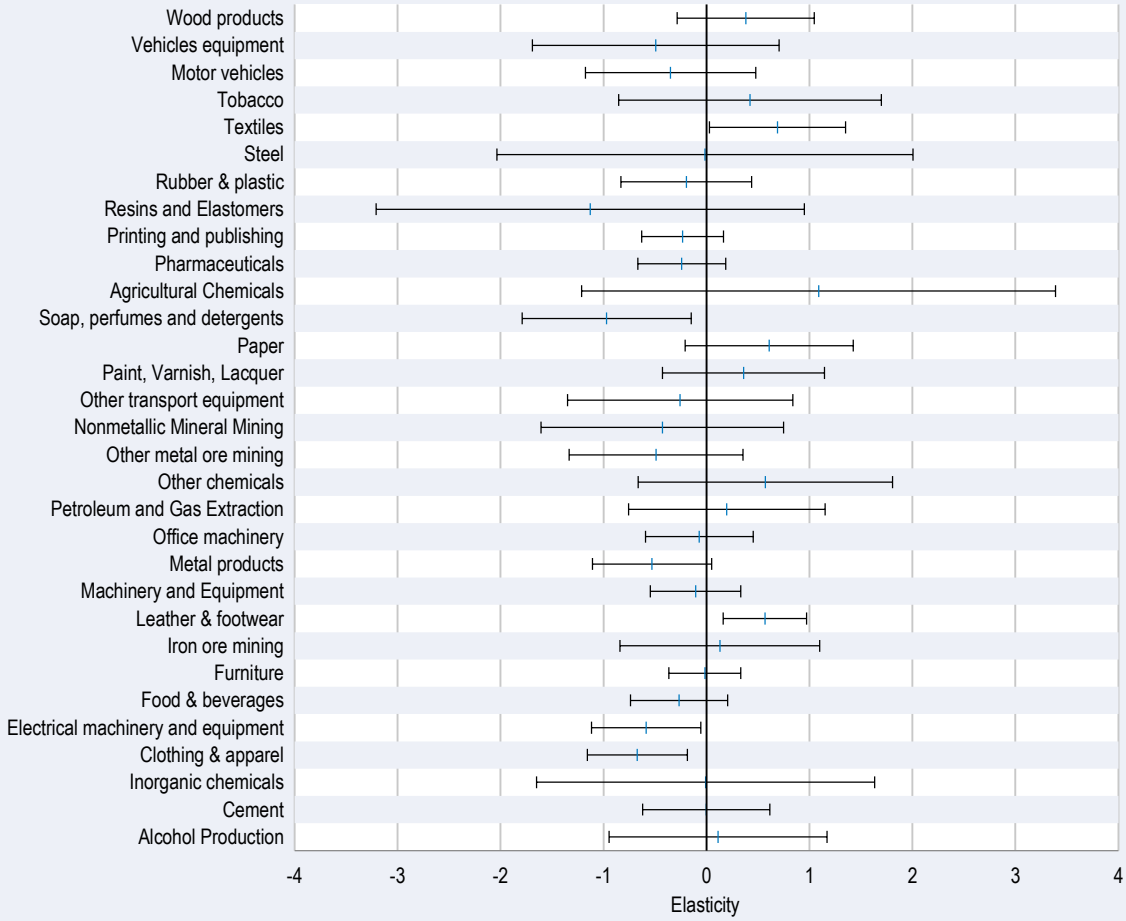
Reallocating resources imply that some firms, those less efficient, will exit. Studies based on data up to 2007 indicate that those firms that exited were 25% less productive than those that continue their activity (Gazzoli and Messa, 2017). Given that non-exporting and small firms are significantly less productive, it is expected that they would be the most affected by the resource reallocation.

The impact would also diverge across economic sectors. Empirical analysis undertaken for this chapter has looked at how sectors have reacted to changes in effective trade protection over the past 20 years (Arnold et al., 2018). The difficulty with this exercise is that trade policy has hardly changed over this period, meaning that there is no variation to exploit empirically. However, exchange rate movements can have similar effects as trade protection, at least as far as competition with imports on the domestic market is concerned. Since exchange rate movements are affected in part by domestic developments and may hence be endogenous, the analysis has relied on instrumental variables techniques to identify exogenous variation in the BRL-USD exchange rate, based on developments that affected the global economy and that are not specific to Brazil. Relating these exogenous exchange rate movements (as a proxy for changes in trade protection) to the output of different sectors suggests that only a very limited number of sectors have seen their output reduced when foreign competitive pressures on the domestic market intensified (Box 2.3). The only two sectors for which the positive link between trade protection and value added is significant at the 95% level are textiles and shoes. These sectors may indeed reduce their activity in Brazil as trade barriers fall. By contrast, clothing, electrical equipment and para-pharmaceutical products have grown whenever simulated trade protection fell, which is consistent with benefits resulting from lower input prices.

Box 2.3. Quantifying the effects at sectoral level of a cut in trade tariffs

Trade protection in Brazil has not changed significantly since the beginning of the 1990s, which hampers any attempt to quantify the effects of a tariff reduction. However, an appreciation of the exchange rate is akin to a reduction in trade barriers, as far as domestic sales are concerned. Hence it is possible to proxy tariff cuts by long-lasting exchange rate changes (Arnold et al., 2018). By regressing the nominal exchange rate on market sentiment indexes and on global liquidity indicators, one is able to single out exogenous global drivers of exchange rate movements, such as global risk-appetite or levels of liquidity on international financial markets, allowing the construction of an exogenous proxy for changes in effective trade protection through long-lasting exchange rate trends. After constructing these measures, elasticities of sectoral value added with respect to changes in effective protection have been estimated (Figure 2.21).

Figure 2.21. Estimated responses of value added by sector to changes in trade protection



Note: How to read this chart: A blue centre bar above zero represents a positive estimated elasticity of sector value added in response to changes in trade protection, i.e. when protection rises, sector output will rise as well. The ends of the bars represent 95% confidence intervals.
Source: Arnold et al. (2018).

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The estimated elasticities do not support the idea of widespread sectoral contractions in response to lower trade protection. For example, a 50% tariff cut would reduce output in textiles between approximately 5 and 70%, and output in leather & footwear by between 10 and 50%, but it would increase value added in clothing between 10 and 60%, and in electrical equipment between 5 and 55%.

Simulations based on a theoretical model have found quite similar results (Messa, 2015). These findings also hint at a positive effect for the clothing sector and find also a negative impact for textile and leather sectors. Other sectors either would not be affected by the cut or would be positively impacted, in particular in agriculture and extractive sectors, which would benefit from the cheaper access to capital goods.

Workers will benefit from new opportunities, despite short-term adjustment costs

The economic literature has concluded that the contribution of international trade to growing inequality has generally been modest (Goldberg and Pavcnik, 2007) compared to other forces such as technology. Improvements in export performance can even create substantial amounts of jobs. In the case of Brazil, the export acceleration during the early 2000s contributed to a fall in inequality and unemployment, suggesting that new export opportunities could foster inclusiveness (Cera and Woldemichael, 2017).

It is important to note that much of the existing wage inequality in Brazil occurs within sectors and occupations rather that between sectors and occupations and that wage inequality tend to occur between firms rather than within firms (Helpman et al., 2012). This reflects the large differences in productivity across firms and the fact that a significant share of labour is trapped in low-productivity firms that manage to survive on the back of preferential treatment including tax benefits specific to small and medium enterprises or specific sectors or regions, in addition to informality or subsidised access to credit (Castelar, 2017). A process of reallocation that would allow these jobs to move into higher-productivity activities would enhance the scope for better wages.

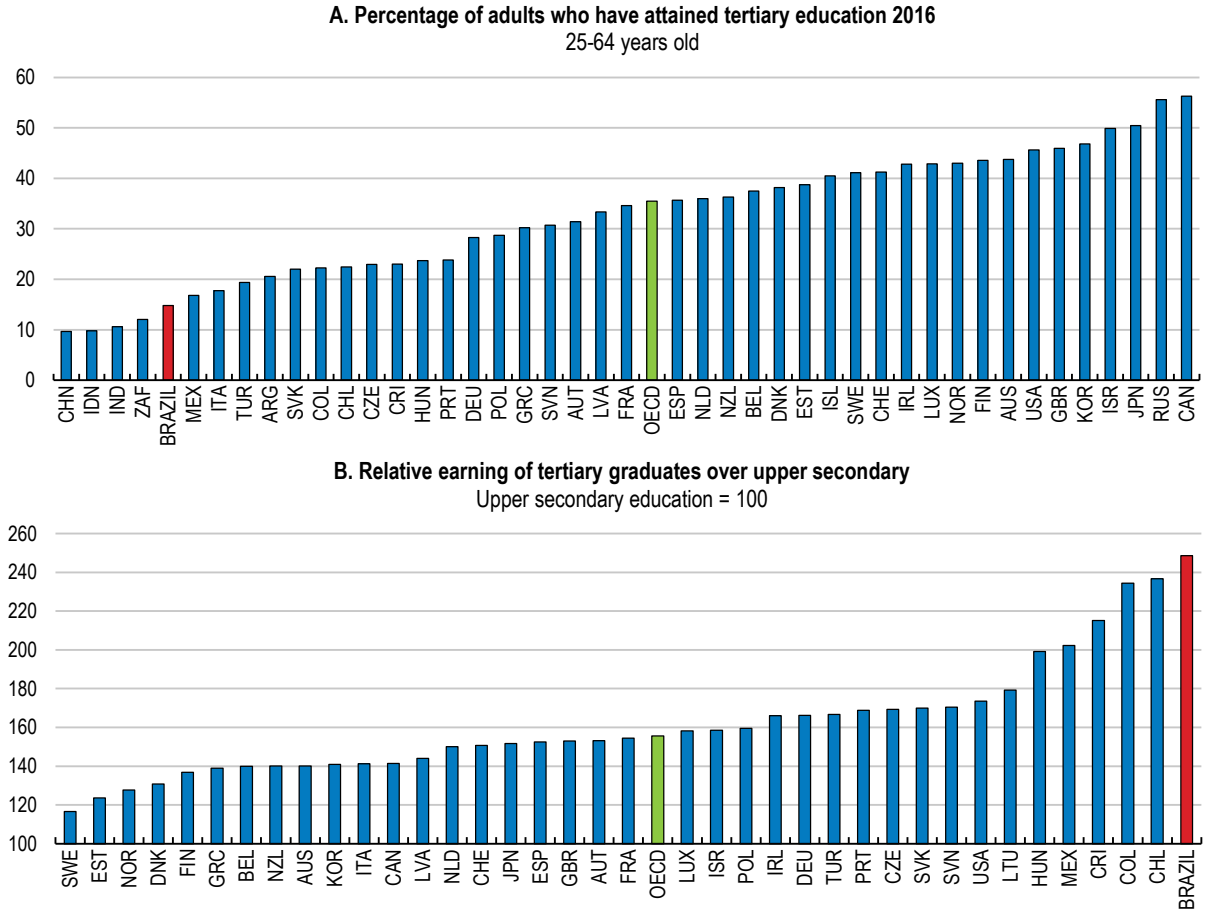
In addition to the competition effect, export status per se is a fundamental source of this type of wage inequality. Brazil shows one of the highest wage export premium among Latin American and emerging economies. Brazilian exporter firms pay 51% higher wages than non-exporters (Brambilla et al, 2016), which is in line with their higher productivity (Araújo, 2017).

Whenever some sectors or firms grow at the expense of others, this implies job losses in some areas and job creation in others. These effects are positive for the economy as a whole and, in the medium-run they raise the earnings potential of those workers who manage to find jobs in more productive activities. Still, such involuntary job changes can obviously imply temporary hardship for displaced workers who need to seek a new job. How large adjustment costs will be is determined by how swiftly workers can move across sectors. Currently, Brazil is already characterised by high voluntary job turnover rates in international comparison (see Chapter 1), suggesting that the burden on individuals is probably not too high. However, to the extent that job changes have to occur across sector boundaries, new skills may be required and this may involve risks for some workers. Policies should therefore be put in place to prevent long periods of inactivity or shifts into low-productivity informal activities, particularly for those with low skills and low incomes.

Increasing integration to the world economy would also raise the demand for skills. Not only do exporting firms pay a wage export premium in comparison with non-exporters but they also increase their demand for skills (Araújo and Paz, 2014). As Brazilian firms increase their imports of inputs of higher technology content, this will favour the adoption of new technologies, which in turn will increase the demand for skilled workers (Araújo and Paz, 2014 and Fajnzylber and Fernandes, 2009). This increasing demand for skilled workers will probably occur first in those sectors that make a greater use of foreign inputs (Acemoglu, 2003).

This expected increase in demand for skilled workers highlights the need to accompany changes in trade policies with stronger efforts to improve education outcomes. Only 15% of 25-64 year olds in Brazil have attained tertiary education, well below the OECD average and also below other Latin American countries such as Argentina, Chile, Colombia, Costa Rica or Mexico (Figure 2.22, Panel A). Employers are already struggling with difficulties to find skilled workers, especially in technical areas (ManPower, 2017). This is reflected in high skill premiums. Although it has declined over the past decade as more people gained access to education, Brazil still has one of the highest skill premiums among advanced and emerging economies (Figure 2.22, Panel B). A person with a bachelor degree earns 2.4 times more than those attaining upper secondary education.

Figure 2.22. The share of tertiary graduates is relatively low



Source: OECD (2017b).

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Changes in trade protection can affect men and women differently as they are often employed in different sectors of the economy. Moreover, women are still more likely than men to be a secondary earner in the household. Empirical analysis for Brazil shows that the reduction in trade protection that occurred in the late 1980s and early 1990s was associated with an increase in female labour force participation and employment (Gaddis and Pieters, 2012). Female labour force participation and employment increased faster in those states that had greater exposure to the reduction in trade protection due to their sector specialisation. The increase in female employment occurred, on one hand, because new opportunities for women arose, particularly in trade and other services sectors. On the other hand as a result of lay-offs that affected men in some sectors, more women join the labour force.

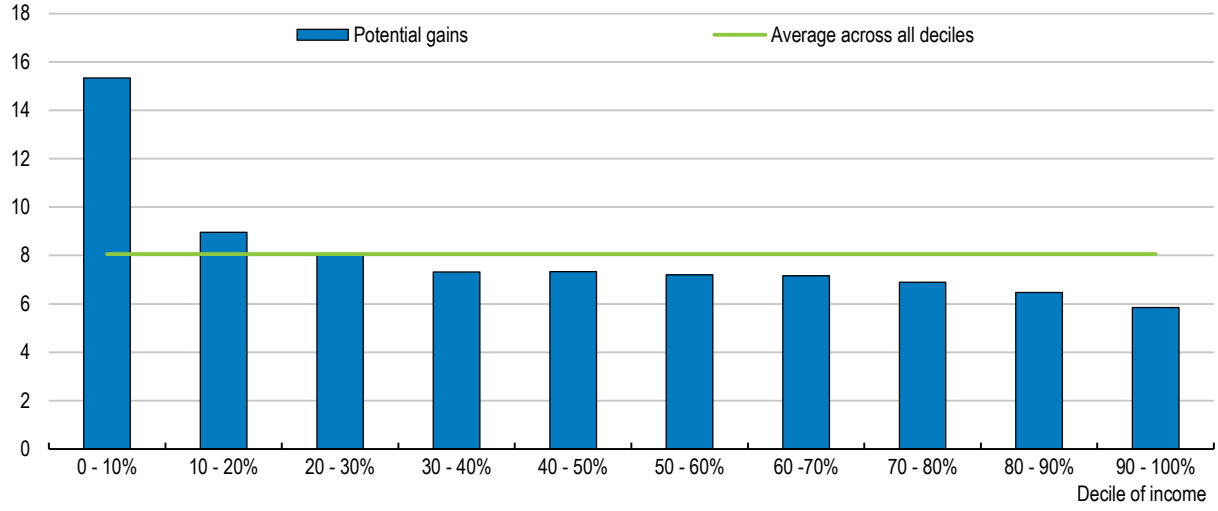
Tariffs are taxes on imported goods and tariff rates are far from uniform. Since people with different levels of income consume these goods at different intensities, tariff reductions will also have a distributional impact.

Several studies have analysed the effect of trade from a consumption or expenditure perspective (e.g. Fajgelbaum and Khandelwal, 2016; Atkin et al., 2015). They focus on how international trade affects individuals through the expenditure channel and conclude that trade is pro-poor as the relative prices of goods consumed more intensively by the poor fall more. Analyses of the incidence of tariffs themselves across the income distribution are less frequent. But existing studies conclude that tariffs tend to have a regressive effect (Furman et al., 2017 and Porto, 2006).

An analysis based on Brazilian household survey data conducted for this chapter reveals similar results. Reducing tariffs would result in income gains across the entire income distribution, but the largest benefits of the tariffs cut would accrue to lower income households (Arnold et al. 2018). In a scenario of tariffs being reduced to zero, the purchasing power of the poorest households, i.e. those in the lowest income decile, would increase by 15% (Figure 2.23). Overall, average household income would increase by 8%. The marked pro-poor feature of the tariff reduction is explained by the fact that lower income households spend more on traded goods as a share of their income. In addition, the higher tariffs are placed on key consumer goods, such as food, home appliances, furniture and clothing, which represent a relatively larger share in the consumption basket of lower income families. Thus, from a consumption perspective, the Brazilian tariff structure is clearly regressive and reducing tariffs would contribute to reduce income inequality. It will bring particular benefits to poor consumers, including women in their role as family providers (UN-IANWGE, 2011).

Figure 2.23. Reducing tariffs would benefit especially low-income households

Potential gains in purchasing power by deciles of income distribution



Source: Arnold et al. (2018).

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Policy options to strengthen integration

Defining a concrete policy agenda for integration requires a reflection on the right sequencing and about which policies should go in tandem with trade reform so as to maximise the benefits of trade. It will also require thinking about the role of international trade negotiations.

A gradual and pre-announced reduction of trade barriers would have many advantages

The case for Brazil to become more integrated into the global economy and fully reap its benefits in terms of economic growth and jobs is strong. Finding a right sequence for reducing numerous trade protection mechanisms would facilitate the quick materialisation of positive effects and would also help to mitigate adjustment costs.

A gradual, pre-announced and steady reduction of both tariff and non-tariff protection has many merits as it encourages firms to upgrade their technologies and become more competitive before protection is removed, helping to mitigate negative effects on some sectors. Thus, establishing and communicating a clear and credible time line for phasing out trade barriers could be a useful instrument. At the same time it is also important that in sectors providing key intermediate inputs to other parts of the economy, such as capital goods, trade protection is removed promptly to avoid harming the competitiveness of sectors that can benefit from better access to inputs. This would reduce effective trade protection across all the economy. This would in turn help to boost exports, as with expanded access to modern technology embodied in foreign inputs local companies can become more productive and competitive in global markets (Amiti and Konings, 2007). Tariffs on those goods with the highest tariffs are also good candidates for being reduced first, as it would help to eliminate the largest distortions (Rodrik, 2007). Lowering tariffs would not result in significant fiscal losses as they currently amount to around 0.5% of

GDP and the productivity effects of better integration would likely lead to an expansion of activity and additional tax revenues.

Scaling back non-tariff mechanisms such as local content rules should also be frontloaded, as these measures are particularly non-transparent and their effects can be more binding than those of tariffs. First steps in the reduction of local content rules have been taken in some areas such as in the petrol industry. This should be pursued further and extended to other areas, as this will also help to boost investment. Eliminating local content rules from public procurement at all levels of government and from other government policies, such as directed subsided credit granted by public banks, would contribute to a more efficient allocation of resources and would have visible short-term benefits and even provide fiscal savings.

Reform packaging would help to maximise the benefits of trade, but should not be a pre-condition

To increase integration into the world economy and fully exploit the benefits of a gradual reduction of trade protection, accompanying trade reform with reforms in other key areas of the economy would ease the transition. The competitiveness of Brazilian firms could be improved by better infrastructure, lower administrative and tax compliance burdens or a more developed financial system. Reform packaging can also facilitate the implementation of reforms as it helps to maximise benefits and support those that may be initially negatively affected (OECD, 2017c). It also allows exploiting synergies and encouraging a faster translation of trade integration into more jobs and better living conditions. Improving education and active labour market policies is fundamental in this regard, and reforms in those areas should proceed in tandem with the trade reforms. Improvements in infrastructure would also bring benefits for workers from more remote and isolated areas and allow them to access newly created jobs. Ongoing efforts to improve the business environment would also help in the transition to a more open economy.

At the same time, some of these reform efforts have confronted challenges of their own in the past and building a political consensus may require further time. It may therefore not be a wise idea for trade policy reforms to be put on hold until all the other structural bottlenecks are removed. At the same time, it is important to acknowledge that more external competition would strengthen the voice of those advocating such domestic reforms and may in fact unlock progress in areas such as taxes, where discussion have been going on for many years.

Both unilateral and new trade agreements are needed

Trade policies can contribute to boost export performance by providing wider market access and facilitate integration into global value chains. Brazil, is a member of the *Mercosul* customs union, which has helped to strengthen trade linkages with other members of the trade bloc, in particular Argentina. At the same time, the exchange of goods and services with the rest of the region is weak (IMF, 2017). Regional integration could be supported by negotiations with other trade blocs and countries in the region such as the Pacific Alliance or Mexico. Besides lowering tariff barriers, which in the case of Brazil are on average significantly lower for vis-à-vis countries in the region than those outside, a convergence of trade rules and regulatory standards could also play a significant role. Finally, weak connectivity among countries due to geographic factors and low investment in infrastructure has been identified as key reasons behind Latin

America's relatively low intra-regional trade integration. This highlights the importance of progress on the quality of transport infrastructure (Chapter 1), the efficiency of customs management and the quality of logistic services (IMF, 2017).

Beyond South America, a tighter integration with large foreign markets would have strong potential to deliver a significant boost in competition and access to intermediate goods. Brazil has been significantly less active than other countries in the region in getting access to new export markets. It has bilateral trade agreements with economies representing only about 10% of world GDP. Countries like Colombia, Chile and Peru have more actively pursued free trade agreements and have concluded bilateral or multilateral negotiations with numerous developed and developing countries in other regions, especially Asia. As a result, their agreements cover economies representing about 70-80% of world GDP. Since *Mercosul* was created in the early 1990s, Brazil has only concluded three free trade agreements, while Mexico, since NAFTA, has put in place more than 40 agreements.

New opportunities for Mercosul to seek more trade agreements are coming up. Besides fostering stronger regional integration among Latin American economies, negotiations, such as those currently underway with the European Union/EFTA are important initiatives in which Brazil should play a leading role, taking advantage of the window of opportunity presented by recent policy efforts in Argentina to foster a greater integration into the global economy. This could combine the benefits of more openness with improvements in market access, particularly in the area of agriculture where Brazil has an obvious competitive edge. At the same time, the sometimes glacial pace of trade negotiations suggest making unilateral advances alongside bilateral negotiations according to a gradual, pre-announced schedule on both tariffs and local content rules, which should be phased out more swiftly. Many Asian countries pursued a strategy of liberalising unilaterally in addition to regional and bilateral agreements, with tariffs often reduced for the purpose of attracting investment (Baldwin, 2006).

Making trade work for all Brazilians

It is important to acknowledge that trade opening combines strong medium-term benefits, such as more and better jobs, with short-run adjustment costs as jobs will be lost in some firms, sectors and regions, and created in others. Policies can go a long way to reduce the burden of adjustment for poor and vulnerable households and facilitate that all Brazilians benefit from trade and that those that may be initially hurt by the transition get adequate support. This is particularly relevant to strengthen political support for stronger integration into the global economy.

Protecting workers with better active labour market policies

Policies should put the emphasis on supporting workers rather than on protecting economic sectors or firms (Flanagan and Khor, 2012). The focus should be on equipping them with the means to succeed in an open and changing world. This requires helping workers move from jobs in declining sectors to jobs in expanding sectors. This can be best achieved through activation measures, education and training, and by facilitating labour mobility across sectors but also regions.

Scaling up active labour market policies and providing training opportunities is a key policy lever in this context. Training can help workers to get ready for new jobs in expanding sectors, and even enhance their chances of accessing better paying jobs.

Unemployment benefits or other social safety nets can also protect incomes during temporary unemployment spells.

Spending on active labour market policies is on par with the OECD average (Figure 2.24, Panel A). But most of the spending goes to programmes to support self-employment and micro enterprise creation (56%) and employment subsidies (42%). Conversely the share of spending on training is very low, and below spending in Chile, Colombia or the average OECD country (Figure 2.24, Panel B). Labour market services take also a limited share of government budget, compared with Chile, Peru or OECD countries.

Programmes to support self-employment and micro enterprise creation are less effective in increasing the future employability of participants (Brown and Koettl, 2015). In the same vein, the effect of employment subsidies tends to be short-lived. Thus, shifting spending towards those schemes that support the acquisition of new skills, such as training, would better support that Brazilians get ready for the new jobs that will be created. Programs to retrain workers so that they get new skills and ready for new jobs in other sectors are only starting to be deployed and should become a priority. In addition, job search assistance programmes can help workers identify new job opportunities that they may not have been aware of, particularly in combination with new training opportunities.

Vocational education and training programmes have become a priority under the PRONATEC flagship programme, with a focus on reaching the poor and disadvantaged population. Still, Brazil has one of the least developed vocational tracks among advanced and Latin American economies (Figure 2.25). Given the needs, it is fundamental that resources devoted to technical education are allocated to programmes and courses that help participants to enter the labour market. To that end it is crucial that the impact of VET courses on participants labour market outcomes are tracked and that that information is used to adjust courses. So far such mechanisms for ensuring the labour market relevance of training courses offered are lacking.

Reinforcing unemployment insurance and the social safety net

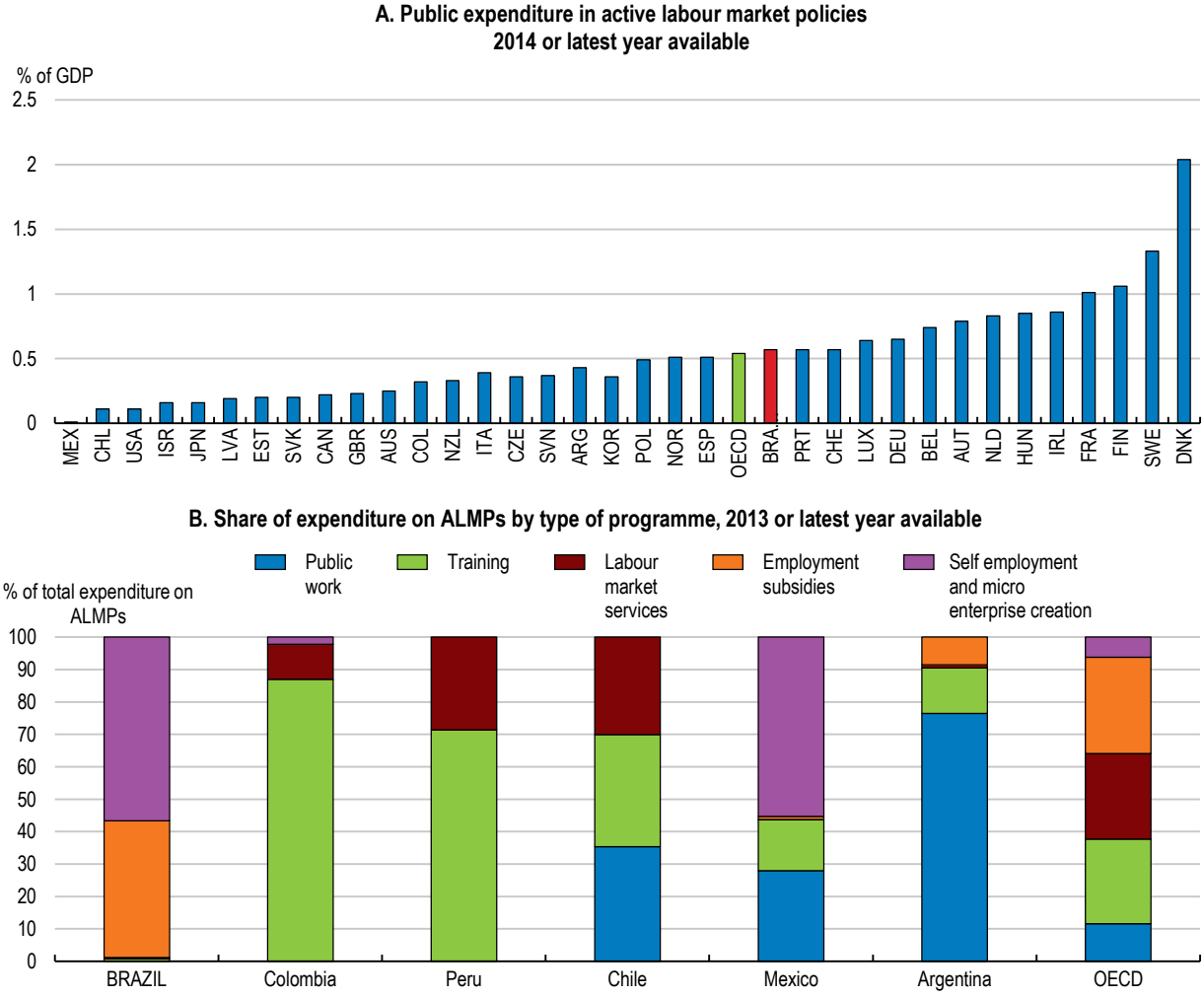
Brazil has two parallel unemployment insurance schemes schemes, *Seguro Desemprego* and the individual unemployment accounts called FGTS (*Fundo de Garantia por Tempo de Serviço*). These two programmes essentially serve the same purpose.

Seguro Desemprego covers job losers in the formal private sector with monthly benefits over a period of three to five months, depending on their employment over the last three years. The duration of the benefit is short in comparison with OECD countries, where the average maximum period for receiving unemployment insurance is 16 months. A longer duration, conditioned on attending training and job-search efforts, would be advisable to provide affected workers with time to identify or get ready for a newly created job.

Such an extension of the benefit duration could be financed by merging the system with the individual account system FGTS, which is financed principally through an 8% employer contribution on salaries and government top-ups. Such individual account systems has performed well in several OECD countries, most notably Austria. In Brazil, however, the fund has been poorly managed and remunerated substantially below market rates in the past, leading to poor or even negative returns (OECD, 2014a). The individual accounts can only be accessed by workers upon unjustified dismissal and certain other life events, and a fine equivalent to 40% of the accumulated fund is paid by the employer directly to the worker. This has generated strong incentives for workers to induce their

own dismissal. In addition, the value of severance pay for workers with four years of tenure is high by OECD standards and may create incentives for employers to dismiss workers earlier rather than later, further contributing to Brazil's already high job turnover (OECD, 2014a).

Figure 2.24. Spending on active labour market is very concentrated in subsidies



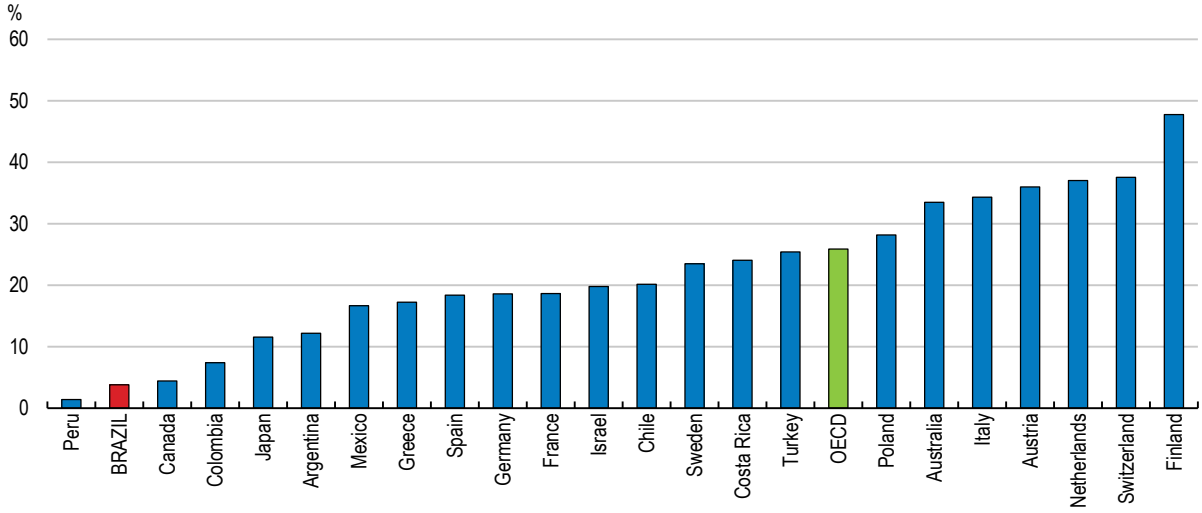
Source: OECD Public expenditure and participant stocks on LMP database; ILO; and ILO (2016) "What works. Active labour market policies in Latin America and the Caribbean."

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In its current configuration the FGTS is not providing income support in case of job losses as it creates perverse incentives for both among employers and employees to terminate voluntarily the employment relationship. Thus, the fund should be re-designed. One option would be to merge or sequence FGTS and *Seguro Desemprego*. FGTS could be used to provide income support beyond the three or five months during which *Seguro Desemprego* offers support. Such an option would provide better incentives and protect workers for longer time in case of a genuine job loss, facilitating that workers can follow a training to get ready for a new job.

Figure 2.25. Vocational education is not well developed

Percentage of secondary education enrolled in vocational programmes, 2015 or latest year



Source:UNESCO Education database.

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In the transition, FGTS account balances, whose remuneration has traditionally fallen short of inflation, should be remunerated at market rates to reduce the currently strong incentives for frequent job turnover, often involving self-induced layoffs by arrangement with the employer. Two overlapping employment subsidy programmes with a joint cost of 0.2% of GDP and no proven effects on formal job creation, *Abono Salarial* and *Salário Família*, could be reconsidered as they reach only workers with above-median incomes (see Figure 15, Assessment and Recommendations).

With almost half of employment currently informal, existing income protection schemes fail to reach the more vulnerable half of workers. This may strengthen the case for raising benefit levels in general minimum income schemes, most notably *Bolsa Família*, the well-targeted conditional cash transfer programme.

Several Latin American countries managed to make labour market policies more effective by adding an active labour market component, such as training and education, to existing conditional cash transfer programmes (Cecchini and Madariaga, 2011, González Pandiella, 2016 and López Mourelo and Escudero, 2017). Cash transfers provide income support in times of need but they can become more effective if supplemented by a training component that improves participants' chances to find more autonomous and sustainable income generation opportunities. Hence, targeting additional training opportunities to recipients of *Bolsa Família* may also be an effective way to help those most in need of assistance to access employment. In this direction, the government has recently announced *Progredir*, a programme aiming at providing micro-credits, technical assistance, training and financial education to *Bolsa Família* recipients.

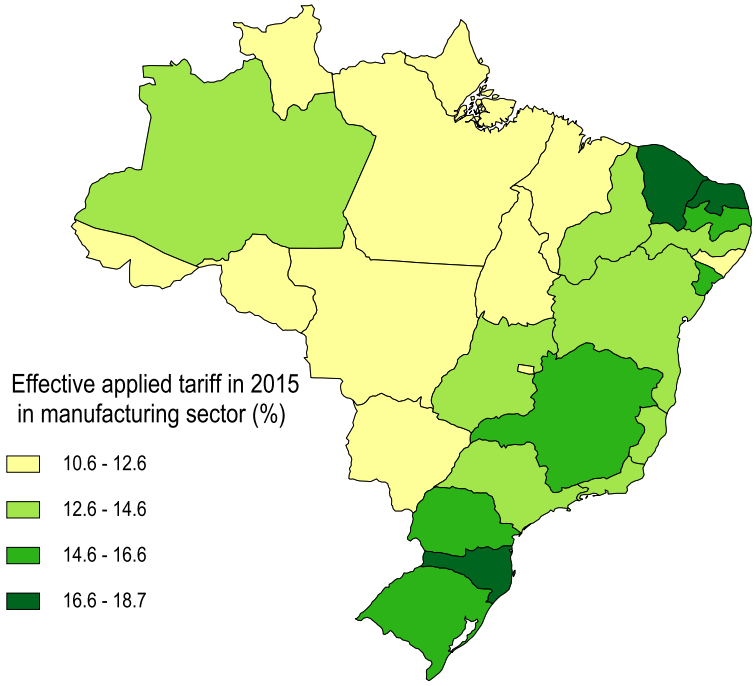
Facilitating workers mobility and regional adjustments

The effects of changes in the industry structure, such as those triggered by a stronger integration into the global economy, can affect regions asymmetrically if sectors affected by job reallocation are concentrated in specific regions In particular, manufacturing tends

to be heavily affected by trade shocks and is more regionally concentrated than other sectors (Rusticelli et al., 2017). This has been the case in several OECD countries (OECD, 2017d). For Brazil, empirical evidence from the late 1980s and early 1990s shows that the reduction in trade barriers affected urban areas with more industrial employment more strongly than rural ones (Castilho et al, 2012).

Regional measures of effective trade protection can be constructed using a weighted average of national industry-level tariffs, where the weights correspond to employment or value added shares by industry in each region. Such measures can give valuable insights into the regional impact of a reduction in trade barriers (Topalova, 2007; Kovak, 2013). For Brazil, an exercise conducted for this chapter reveals significant differences across states (González Pandiella and Hiroshi, 2017). For example, effective tariffs are 75% higher in *Rio Grande do Norte* than in *Alagoas*, despite being both states being situated relatively close to each other in the north-eastern part of Brazil (Figure 2.26). *Rio Grande do Norte, Ceará, Santa Catarina* and *Paraíba*, with a large proportions of employment in textiles, leather and food and beverages industries are the states that could be more initially exposed to job reallocations resulting from a reduction in tariffs. On the other side, states such as *Alagoas, Roraima, Pará* and *Maranhão*, where protected industries contribute less to employment, are likely to be less affected. Some of these states, such as *Alagoas* and *Maranhão*, are the nation's poorest. These states would be less affected by job reallocations, but they would benefit from the positive effects on the prices of goods consumed by low-income consumers.

Figure 2.26. There are large differences in tariff protection across states



Source: González Pandiella and Hiroshi (2017).

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Even in cases where regions lose a key activity that has provided employment for a large part of the population, policies can help to ease the structural transformation of regional economies. Several OECD regions have seen their main industry decline or disappear, forcing them to move into entirely unrelated activities. This has particularly been the case for the coal, steel and textile industries, large parts of which found it impossible to compete with imports from countries with lower labour costs. Yet, there are examples where such a transformation has been managed successfully, supported by the right policies to facilitate the adjustment (Box 2.4). These examples suggest that working with regions to facilitate that firms can update their technology can speed up transformation and the creation of new opportunities. In this regard, *Brasil Mais Produtivo*, a recently launched horizontal programme to help firms adopt new technologies, is a promising initiative.

Where retaining all previous jobs turns out to be difficult, more mobility of workers and capital could in theory dampen the impact on specific regions. In practice, however, low geographical and inter-industry mobility of workers has hindered local economies' ability to adjust to shocks across OECD countries (OECD, 2017d). This has also been observed in Brazil (Dix-Carnerio and Kovak, 2017a). Both imperfect interregional labour mobility and a slow response of labour demand, related to slow investment, contributed to prolonged declines in formal employment and earnings in some regions, which could have been mitigated by greater factor mobility (Dix-Carnerio and Kovak, 2017b). Instead, workers have tended to move primarily from the tradable to the non-tradable sector within the same region.

Policies could support more mobility of workers, both through public services and education. Good transport connections to high-density areas where more jobs are created would allow workers to seek new opportunities without having to move. For those that decide to move, access to childcare is an important factor, as such a move may limit the ability to rely on childcare services provided within the larger family (OECD, 2017d). Brazil has reached nearly universal enrolment of 5 and 6 years old but lags behind in the participation of children younger than 4. Boosting participation in early childhood education would also help to mitigate the impact of socio-economic background on education outcomes. Finally, education also matters. More educated workers are generally more mobile (OECD, 2005). In Brazil, some regions have particularly low educational attainments (Figure 2.27) and better education would allow some of their residents to seek better employment opportunities elsewhere.

Box 2.4. Successful examples of regional policies to foster structural transformation

Episodes of structural transformation across OECD regions can offer valuable insights about how policies can facilitate regional adjustments to changes in economic structure. The cases of the Ruhr area in Germany and Basque Country in Spain exemplify how a coherent and stable policy package can facilitate transformation and lead to jobs and opportunities in new areas.

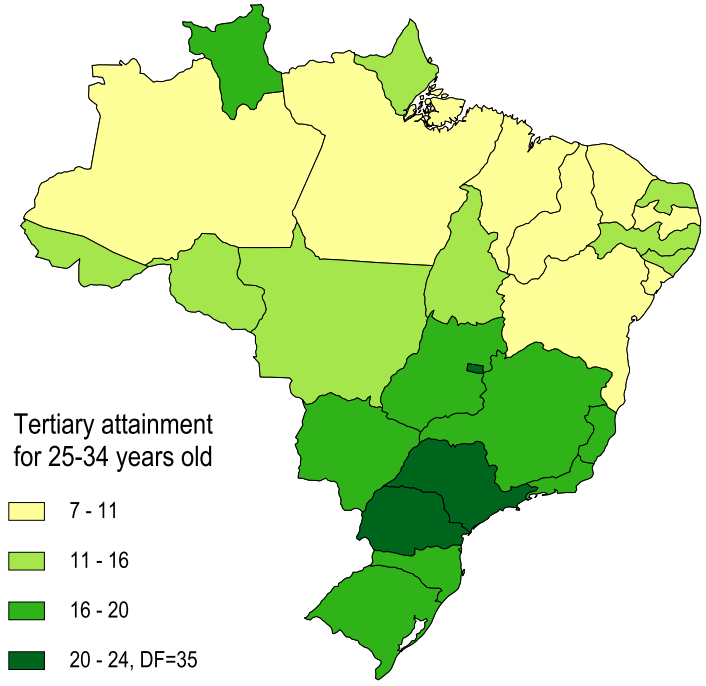
The Ruhr region used to be one of the most important industrial regions of Europe, with strong coal mining and steel industries. With a shrinking global demand and a loss of international competiveness, the Ruhr area faced the challenge to restructure their economy. To respond to that challenge, regional policies changed the focus towards environmental technology. Enterprises shifted away from coal and steel and invested in plant engineering, control services and environmental technology. The move into the field of environmental technology has its root in the search for new ways to reduce pollution levels undertaken by traditional coal and steel industries (Galgóczi, 2014). As these industries required significant energy resources and produced a lot of waste, the region benefited from an existing comparative advantage in energy supplies and waste disposal. Building on that comparative advantage, the focus was on stimulating R&D in the fields of renewable resources, recycling and waste combustion. Nowadays, the Ruhr area is the centre of environmental technology research in Germany, underpinned by local universities, research centres and local firms. Labour market policies were also part of the strategy, as agencies specialized in job-counselling and training took care of facilitating labour market transitions of affected workers. The change in the employment structure of the area was large; manufacturing and services sector accounted respectively for 60% and 36% of employment at the beginning of the 1960s. By 2000, services employed 65% and manufacturing 33%.

In the 1970s and 1980s, the Basque County underwent a significant restructuring of its economy following the decline of traditional sectors such as steel, shipbuilding and machine tools, which led to high unemployment. Regional policies put the focus on technological upgrading as a way to restore the international competitiveness of the manufacturing sector. This included strengthening the existing but weak technology infrastructure, promoting R&D activities by firms, creating technology parks and developing training programmes for researchers (OECD, 2011). This strategy, pursued with stability and continuity over time, paid off in the end. The Basque Country now has a strong business-oriented innovation system and has technological strengths in machinery and equipment. Business R&D is double the national average and is also in the top 25% of OECD regions and countries (OECD, 2014b). The export performance of the region has improved markedly, driven by goods with a higher technological content (such as aeronautics or telecommunications) and also due to the innovation carried out in traditional industries such as automobile and tool‑machinery. Knowledge intensive sectors have also gained weight, particularly in areas linked to manufacturing (e.g. engineering and consultancy). The Basque County is now the region with the lowest unemployment rate in Spain and GDP per capita is 25% above the European Union average.

Oulu, the regional economic and administrative hub of Northern Finland, was also severely affected by the structural transformation that the ICT sector underwent in Finland. This implied significant closures and layoffs in the IT sector, especially Nokia

and its suppliers. Building on its skilled workforce and talent pool, Oulu has seen the emergence of a successful high tech start-up ecosystem. This ecosystem has attracted significant interest from international investors and resulted in several acquisitions from top global IT and finance companies. Taking advantage of existing comparative advantage in mobile phone technology, many of the rising start-ups involved such technology. These successes in the technology start-up industry have been supported by programmes to boost equity financing and R&D support. Tech incubators in local universities and mentor programmes have also been established.

Figure 2.27. Educational differences across regions are large



Source: OECD (2017b).

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Box 2.5. Recommendations to foster integration into the world economy

Key recommendations

- Lower tariffs and scale back local content requirements.
- Bolster training and job search assistance programmes for affected workers.

Other recommendations

Trade policies

- Take an active role in seeking more trade agreements between *Mercosul* and large markets.
- Take unilateral measures to reduce trade barriers, especially local content rules.
- Undertake a thorough evaluation of anti-dumping measures.
- Eliminate those not based on genuine injury to domestic producers, with a view towards reducing them altogether.
- Expand mutual recognition agreements and require regulators to use internationally harmonised standards and certification procedures.
- Develop coordination and harmonisation of documentation among agencies involved in the management of cross-border trade.
- Further reduce administrative requirements for importing and exporting.

Support policies

- Boost income support for job losers by extending the duration of unemployment insurance, for example by merging parallel unemployment insurance schemes.
- Make available vocational training programmes to adult unemployed.
- Evaluate the impact of vocational training on participants' labour market outcomes and adjust courses, capacities and curricula accordingly.
- Expand horizontal programmes to facilitate firms adopting new technologies.
- Raise benefit levels in the minimum income scheme *Bolsa Família*.
- Consider targeting additional training opportunities to *Bolsa Família* recipients.
- Expand early childhood education.

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