

OCTOBER 2018



THE  
**FUTURE OF  
GLOBAL STABILITY**

The World of Work in Developing Countries

CASE STUDY

**BRAZIL**

Authors

Romina Bandura  
MacKenzie Hammond  
Jena Santoro

**CSIS** | CENTER FOR STRATEGIC &  
INTERNATIONAL STUDIES

A Report of the  
CSIS PROJECT ON PROSPERITY AND DEVELOPMENT

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# Contents

Acknowledgments	V
1   Introduction: Brazil Case Study	1
2   Brazil’s Future Workforce Trends: Challenges and Drivers	3
3   Future Jobs: Sectors with Employment Potential	16
4   Recommendations	23
5   Conclusions: Key Takeaways	28
Annex A: Employment by Sector and Sub-Sector	29
Annex B: Methodology for Country Case Studies	30



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# 1. Introduction: Brazil Case Study

Brazil has become an economic powerhouse in Latin America as the eighth-largest economy in the world. The country has boasted strong economic growth since 2002, lifting many people out of poverty and fostering the emergence of a strong middle class. The country is rich in natural resources and geographic diversity. Brazil's consumer base is the eighth-largest in the world and is projected to be the fifth-largest consumer market by 2030 behind the United States, China, India, and Japan.<sup>1</sup>

During 2014-2016, Brazil experienced one of the worst recessions in its history, which precipitated an economic crisis that shook political institutions to their core, set back economic progress, and put vulnerable populations at risk. In 2017, a fiscal scandal and corruption led to the impeachment of President Dilma Rousseff. The new administration, under the leadership of former vice president Michel Temer, decided to pursue fiscal adjustments and reforms to enhance the investment climate and restore economic growth.<sup>2</sup>

Despite recent social accomplishments, widespread inequality persists. According to the Instituto Brasileiro de Geografia e Estatística (IBGE, the Brazilian Institute of Geography and Statistics), at the end of 2017, nearly 25 percent of the population still lived below the poverty line (less than \$5.50 per day).<sup>3</sup> To achieve long-standing, sustainable growth, Brazil must raise its productivity and competitiveness in the global market. To do so, the next generation of workers must be properly trained to meet the changing demands and trends of the workforce. Brazil's workforce problems are more basic than the looming technological disruptions and the fourth industrial revolution: high inequality and informality, youth unemployment and social problems. With an aging population and a growing need for social security, it is critical that Brazil integrates youth and the most vulnerable populations into the formal economy.<sup>4</sup>

*Our workforce problems are more basic than the looming technological disruptions and the fourth industrial revolution.*

*-Brazilian Labor Economist*

This case study analyzes the current world of work in Brazil and the upcoming trends that are poised to impact its workforce. Part one is a general description of the challenges and main drivers that are disrupting Brazil's labor market. Part two presents the sectors that we believe are likely to offer

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<sup>1</sup> Ernst & Young, "Sustainable Brazil Economic Growth and Consumption Potential," Sao Paulo: Ernst & Young Terco, 2008, 7, [http://www.ev.com/Publication/vwLUAssets/Economic\\_Growth\\_and\\_Consumption/\\$FILE/Economic\\_Growth\\_and\\_Consumption.pdf](http://www.ev.com/Publication/vwLUAssets/Economic_Growth_and_Consumption/$FILE/Economic_Growth_and_Consumption.pdf).

<sup>2</sup> "World Bank: Brazil Overview," World Bank, <http://www.worldbank.org/en/country/brazil/overview>.

<sup>3</sup> Jay Forte, "More Than 50 Million Brazilians Living Below Poverty Line," *The Rio Times*, December 16, 2017, <http://riotimesonline.com/brazil-news/rio-politics/more-than-25-million-brazilians-living-below-poverty-line/>.

<sup>4</sup> "World Bank: Youth Unemployment," World Bank, <https://data.worldbank.org/indicator/SL.UEM.1524.NE.ZS?locations=BR>.

employment or better income opportunities in the next five to ten years. The third part presents a set of policy recommendations for a variety of stakeholders that would help make the labor market more dynamic.

The study draws from a wide range of literature as well as a set of 25 interviews with thought leaders, company executives, industry associations, and government officials conducted in São Paulo, Brasília, and Florianópolis in February 2018 (see Annex B for Methodology).

The aim of this case study is to focus on a particular country scenario informing a broader report on the future of work in developing countries. Brazil is a large and diverse country with varying disparities in terms of economic development, geographic divides, and many other differences among 27 federative districts - its 26 states and Brasília, the capital city. Thus, the study has limitations and is not exhaustive. It mainly draws on qualitative insights and does not attempt to provide a numeric forecast of industries or occupations that will be impacted in the future by drivers such as demographics, globalization, and technological disruptions. However, we hope it will generate greater interest and debate on the topic and spur new policy ideas to better prepare Brazil's workforce for the inevitable upcoming shifts.

## 2. Brazil's Future Workforce Trends: Challenges and Drivers

### *Mapping Brazil's World of Work*

**Figure 1: Brazil- Key Labor Market Data**

Population (millions, 2017)	207.7
Labor force (millions, 2017)	111
Working-age population (15-64, in millions, 2017)	144.6
GDP per capita (as of 2016)	\$8,650
Informal employment rate (percentage, 2016)	38
Population living below poverty line (percentage, 2015)	8.7
Age dependency ratio (percentage of working-age population, 2016)	43.6
Labor force participation rate (percentage of population, ages 15+)	61.8
Unemployment rate (percentage, 2017)	12.8
Youth unemployment rate (percentage, 2017)	29.9
Literacy rate (percentage, 2011)	92.6

Source: World Bank Development Indicators, IBGE, CEIC<sup>5</sup>

The labor force in Brazil constitutes approximately 111 million people (2017) with a participation rate of 61.8 percent (Figure 1).<sup>6</sup> The majority of those employed (73 percent) are in service occupations, while industry employs 21 percent of the workforce, and agriculture 10 percent (Figure 2).<sup>7</sup>

The services sector consists of various activities such as food services and hospitality, industry, financial services, information technology (IT), public utilities, and special agencies.<sup>8</sup> In the services industry, the financial sector is by far the most important. The state of São Paulo has over half of all of Brazil's financial services and the state accounted for 33 percent of Brazil's GDP in 2015.<sup>9</sup> São Paulo attracts foreign investment and draws in multinational companies, banks, and firms, many of which serve as Latin

<sup>5</sup> The World Bank, "World Bank Development Indicators," (Washington, DC: The World Bank, 2016-2017), <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>; IBGE, "Síntese de Indicadores Sociais," (Brasília: IBGE, 2016), <https://cidades.ibge.gov.br/brasil/pesquisa/45/63207>; CEIC, "Brazil Labour Force Participation Rate," (Hong Kong: CEIC, 2017), <https://www.ceicdata.com/en/indicator/brazil/labour-force-participation-rate>.

<sup>6</sup> CEIC, "Brazil Labour Force Participation Rate," (Hong Kong: CEIC, 2017), <https://www.ceicdata.com/en/indicator/brazil/labour-force-participation-rate>.

<sup>7</sup> ILO, "Employment by Sector – ILO Modelled Estimates" (Geneva: ILO, 2016), [http://www.ilo.org/ilostat/faces/oracle/webcenter/portalapp/pagehierarchy/Page3.jspx?MBI\\_ID=33&\\_afLoop=1402989965501204&\\_afWindowMode=0&\\_afWindowId=165cg9g31m\\_1#!%40%40%3F\\_afWindowId%3D165cg9g31m\\_1%26\\_afLoop%3D1402989965501204%26MBI\\_ID%3D33%26\\_afrWin](http://www.ilo.org/ilostat/faces/oracle/webcenter/portalapp/pagehierarchy/Page3.jspx?MBI_ID=33&_afLoop=1402989965501204&_afWindowMode=0&_afWindowId=165cg9g31m_1#!%40%40%3F_afWindowId%3D165cg9g31m_1%26_afLoop%3D1402989965501204%26MBI_ID%3D33%26_afrWin)

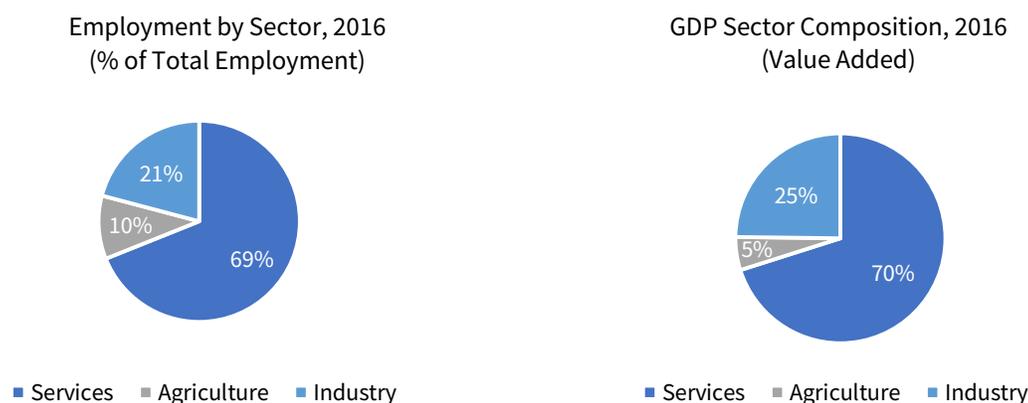
<sup>8</sup> United Nations Statistics Division, "Gross Value Added by Kind of Economic Activity at current prices - National Currency," (New York: United Nations, 2016), <http://data.un.org/Data.aspx?d=SNAAMA&f=grID%3A201%3BcurrID%3ANCU%3BpcFlag%3A0>.

<sup>9</sup> "Why Sao Paulo: GDP," Investe São Paulo, 2015, <http://www.en.investe.sp.gov.br/why-sao-paulo/diversified-economy/gdp/>.

American regional offices. Travel and tourism is considered the second most essential component of the service sector in Brazil, accounting for nearly 8 percent of employment in 2017.<sup>10</sup>

Brazil also has a strong industrial sector with new areas of employment opportunity emerging and changing the way Brazilians earn a living. Brazil's abundance of raw materials has greatly supplemented industrial development primarily through petroleum processing, cement, iron and steel production, and chemical production.

**Figure 2: Employment and Value Added (GDP) by Sector, 2016**



Source: ILO, United Nations<sup>11</sup>

Brazil is confronted with a series of challenges in the world of work: high youth unemployment and underemployment, low education quality and a skills gap, high informality and low productivity jobs, and social inequalities. The economic recovery remains very uneven across the states and across different social groups.<sup>12</sup> Unemployment began to rise again in 2014 following the beginning of the economic crisis. According to the Brazilian Institute for Geography and Statistics (IBGE), unemployment has tripled in three years from a little over 4 percent to more than 12 percent in 2017.<sup>13,14,15</sup>

<sup>10</sup> WTTC, "Travel and Tourism Economic Impact 2017: Brazil," (London: World Travel and Tourism Council, 2017), <https://www.wttc.org/-/media/files/reports/economic-impact-research/countries-2017/brazil2017.pdf>.

<sup>11</sup> ILO, "Employment by Sector - ILO Modelled Estimates" (Geneva: ILO, 2016), <http://data.un.org/Data.aspx?d=SNAAMA&f=grID%3A201%3BcurrID%3ANCU%3BpcFlag%3A0>.

<sup>12</sup> Ibid.

<sup>13</sup> Kenneth Rapoza, "Brazil's Labor Market is Imploding," Forbes, February 19, 2016, <https://www.forbes.com/sites/kenrapoza/2016/02/19/brazils-labor-market-is-imploding/#625b79f02b24>.

<sup>14</sup> Agencia IBGE, "Continuous PNAD: unemployment rate of 12.9% in the quarter ended April," IBGE, May 29, 2018, <https://agenciadenoticias.ibge.gov.br/en/agencia-press-room/2185-news-agency/releases-en/21303-continuous-pnad-unemployment-rate-of-12-9-in-the-quarter-ended-april.html>.

<sup>15</sup> The OECD cites higher statistics indicating that the pre-crisis level of unemployment was around 6.8 percent and in 2016 rose to 12.6 percent. See: OECD, "Employment Outlook 2017: How Does Brazil Compare?" OECD, 2017, <https://www.oecd.org/brazil/Employment-Outlook-Brazil-EN.pdf>.

At the same time, the labor market will face a series of disruptions. Technological changes and an aging population will be the main drivers impacting the Brazilian labor market in the medium run.

Brazil is undergoing an immense demographical shift: by 2050, the dependency ratio will increase to 60.2 from 43.8 in 2015. The elderly population as percentage of the working-age population will triple (i.e. from 11.4 percent in 2015 to 36.7 percent in 2050).<sup>16</sup> This means that social security spending will continue to increase. Yet funding social security remains a challenge and the levels of informality further erode tax collection and the financial sustainability of retirement systems.

Moreover, 86 percent of Brazil's population lives in cities and this urbanization trend will continue in the coming years.<sup>17,18</sup> Increased urbanization can put added pressure on city resources specifically with regards to creating jobs, providing education opportunities, and supplying quality infrastructure.<sup>19</sup> This urbanization will require governments to respond effectively with added infrastructure and policy reforms that promote equal opportunity and integrate marginalized populations into the labor market.

Technological advancements have opened new sectors for employment such as IT and communications and offered opportunities to earn a living in Brazil through digital platforms, yet these tend to centralize in urban areas. The sharing economy offers people the opportunity for flexible, non-traditional forms of freelance labor. With the rise of tech firms in Brazil, workplace flexibility such as contract work and telecommuting could become more common. The productivity and output of many sectors stand to benefit from Brazil's advancements in technology, yet automation can generate added risks to the labor force.

## **YOUTH UNEMPLOYMENT AND UNDEREMPLOYMENT**

In an already challenging political and economic environment, youth face particular disadvantages in the workforce. Approximately 39 percent of the population is under the age of 24, of which about 30 percent are unemployed—triple the average for the total population. Moreover, youth underemployment—encompassing those who work part-time or in jobs where they are overqualified—is significant.<sup>20,21</sup> While 70 percent of youth are earning an income, many of them underutilize their skills and lack opportunities for advancement.

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<sup>16</sup> UN Department of Social and Economic Affairs, "World Population Prospects 2017: Standard Projections Database, Population by Age Group, Both Sexes," (United Nations, 2017), <https://population.un.org/wpp/Download/Standard/Population/>.

<sup>17</sup> The World Bank, "Urban population (% of total)," (Washington, DC: The World Bank, 2016), <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=BR>. UN Department of Social and Economic Affairs, "World Urbanization Prospects," (New York: United Nations, 2014), 24, <https://esa.un.org/unpd/wup/publications/files/wup2014-highlights.pdf>.

<sup>18</sup> However, rural populations should be considered too. IBGE has adopted a new methodology that suggests that the rural population is bigger than previously thought after municipal law determined the classification of a given municipality as rural or urban. With the new methodology the rural population increases by 10 percent. It's important to recognize that the more than 35 million people that live in rural areas in Brazil face severe job market and formalization challenges.

<sup>19</sup> Shannon Bouton, Stefan M. Knupfer, Ivan Mihov, and Steven Swartz, "Urban Mobility at a Tipping Point," McKinsey & Company, September 2015, <https://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/urban-mobility-at-a-tipping-point>.

<sup>20</sup> The World Bank, "Unemployment, total (% of total labor force) (modeled ILO estimate)," (Washington, DC: The World Bank, 2017), <https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=BR>.

<sup>21</sup> Ibid.

More than 77 percent of Brazilian youth start working before the age of 18, as early as 10 to 14 years of age.<sup>22</sup> Brazilian youth often need to balance the responsibilities of both work and school, and in some cases, have lower school attendance rates because they need to work to supplement family income.<sup>23</sup> Many youth drop out of school. Lacking skills and formal education, many Brazilian youth are limited to low-income jobs, often in the informal sector.

Social welfare schemes have been instituted to decrease the number of school dropouts. These programs have helped youth delay their entrance to the workforce by supplementing families' income. The argument is that students that stay in school longer would have a higher chance of getting better employment opportunities in the future. Higher levels of education would improve their future economic prospects, increase upward mobility, and supply them with better wages: those prospects would prompt them to stay at school.<sup>24</sup>

### **LOW EDUCATION QUALITY AND SKILLS GAPS**

Formal education indicators have historically been low in Brazil but during the 1990s there was a movement to improve enrollment rates. For those Brazilian students that stay at school, there remains an added challenge in terms of the quality of education. Children that go to schools are not learning to their full potential.<sup>25</sup> The OECD's PISA assessments rank Brazilian students below the average scores in other countries in the majority of the performance categories.<sup>26</sup> In the 2015 assessment, Brazil scored an average of 409 compared with an OECD average of 493 in science, 407 compared with an average of 493 in reading, and 377 compared with an average of 490 in math.<sup>27</sup>

Low educational attainment has an impact on the Brazilian job market. Nearly 70 percent of employers in Brazil reported difficulty in hiring employees because of a prevalent skills gap in the workforce.<sup>28</sup> Moreover, according to a survey on labor productivity in Brazil, 72 percent of respondents said that the low-labor qualification highly effected an industry's productivity.<sup>29</sup> One of the most agreed upon strategies is to invest in reskilling current employees—59 percent agreed this was a top priority.<sup>30</sup>

According to an Inter-American Development Bank (IDB) survey of employers across Argentina, Brazil, and Chile, socioemotional skills were considered significantly more important than knowledge-specific or

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<sup>22</sup> Gregory Randolph (Ed.), "Overcoming the Youth Employment Crisis: Strategies from Around the Globe," (Washington, DC: JustJobs Network, October 2014), 22, <http://justjobsnetwork.org/wp-content/pubs/reports/Overcoming%20the%20Youth%20Employment%20Crisis.pdf>.

<sup>23</sup> Federico Blanco Allais and Frank Hagemann, "Child labour and education: Evidence from SIMPOC surveys," IPEC (ILO), June 2008, <https://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1688&context=globaldocs>.

<sup>24</sup> Ana Florez and Shubha Jayaram, "Bridging the Skills Gap: Insights from Employers, Educators, and Youth in Latin America and the Caribbean," (Washington, DC: FHI 360, 2016), 5, <https://youtheconomicopportunities.org/sites/default/files/uploads/resource/LAC%20Skills%20Gap.pdf>.

<sup>25</sup> The World Bank, "World Development Report 2018: Learning to Realize Education's Promise," (Washington, DC: The World Bank, 2018), <http://www.worldbank.org/en/publication/wdr2018>.

<sup>26</sup> The OECD evaluates education systems through an international survey, taken every 3 years measuring science, math, reading, and other cognitive and problem-solving abilities of 15-year old students. The test is called the Program for International Student Assessment (PISA) and was most recently taken in 2015. See: OECD, "Programme for International Student Assessment (PISA) Results 2015," OECD, 2015, <http://www.oecd.org/pisa/pisa-2015-Brazil.pdf>.

<sup>27</sup> Ibid.

<sup>28</sup> Florez and Jayaram, "Bridging the Skills Gap".

<sup>29</sup> Fernanda De Negri and Luiz Ricardo Cavalcante, "Produtividade No Brasil: Desempenho E Determinantes," (Brasilia: IPEA and ABDI, 2014), [http://www.ipea.gov.br/portal/images/stories/PDFs/livros/livros/livro\\_produtividade\\_no\\_brasil.pdf](http://www.ipea.gov.br/portal/images/stories/PDFs/livros/livros/livro_produtividade_no_brasil.pdf).

<sup>30</sup> WEF, "The Future of Jobs: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution," (Geneva: World Economic Forum, 2016), [http://www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs.pdf](http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf).

sector-specific skills.<sup>31</sup> Employers cited socioemotional skills would be four times more important than technical/industry-specific skills and would be twice as important as knowledge-based skills.<sup>32</sup> This could be due to the primary types of jobs in the service industry which require more customer-oriented skills. Investing in youth to match the skills valued by employers will require increasing the amount of resources and improving efficiency and equitableness of the spending.<sup>33</sup>

A study by Laureate International Universities points out that social skills that go beyond working with technology and robots will be at a premium. Skills such as logical-reasoning, design mindset, cross-cultural competency, transdisciplinarity (creative solutions), and novel and adaptive thinking would be highly desired in the future.<sup>34</sup> This requires a more thorough teacher training requirement and greater collaboration with employers.

Technical and vocational education and training (TVET) programs such as apprenticeships and trades have been developed in Brazil to provide high quality education and skills that would transfer into the job market.<sup>35</sup> Brazil's flagship program is PRONATEC which trained nearly 8.8 million people between 2011 and 2014.<sup>36,37</sup> PRONATEC is part of a system of federal government institutions that help advance the mission of TVET programs. PRONATEC is comprised of several smaller programs, one of which is the "S system agreement" which according to the agreement, allocates part of its revenue to fund part of PRONATEC. The "S system" consists of the National Industrial Training Service (SENAI), the National Transportation Training Service (SENAT), National Rural Training Service (SENAR), the National Commercial Training Service (SENAC), and others. It consists of 2,800 vocational training institutions and trains more than 700,000 people annually across Brazil to prepare the next generation for the evolving demands in the workforce.<sup>38</sup> Only SENAI and SENAC are a part of this agreement. Many have argued that PRONATEC has not proven itself cost-effective and has failed to display evidence of its effectiveness. Given its total expenditures account for less than 1 percent of Brazil's GDP, they have little evidence of their results, in terms of short- and long-term employability and productivity.<sup>39</sup>

In addition to the education and skill-building needs, another added challenge in Brazil is job-matching between job candidates and employers. Brazil has a public employment exchange (labor market intermediation system) via the SINE (Sistema Nacional de Emprego - the Brazilian Public Employment Program), which helps to match youth and the poor to jobs. One shortcoming of the system is that it lacks adequate financing. It currently receives 2 percent of the overall federal spending (not including state

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<sup>31</sup> Marina Bassi, Matias Busso, Sergio Urzua, and Jaime Vargas, "Skills, Education and Employment in Latin America," (Washington, DC: IDB, 2012), 21, <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=36714455>.

<sup>32</sup> Ibid.

<sup>33</sup> OECD, "Investing in Youth: Brazil," (Paris: OECD, 2014), <http://www.oecd.org/publications/investing-in-youth-brazil-9789264208988-en.htm>. According to the World Bank, the total government expenditure on education as a percentage of GDP in 2013 was 6 percent. See: The World Bank, "Government expenditure on education, total (% of GDP)," (Washington, DC: The World Bank, 2013), <https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS?locations=BR>.

<sup>34</sup> Data analyzed by Laureate International Universities, originally based on data collected from RAIS/CAGED. See: "Perfil do Município," MTE, [http://bi.mte.gov.br/bgcaged/caged\\_perfil\\_municipio/index.php](http://bi.mte.gov.br/bgcaged/caged_perfil_municipio/index.php); "Ipeadata," IPEA: <http://www.ipeadata.gov.br/>; "Confederacao Nacional da Industria," CNI, <http://www.portaldaindustria.com.br/cni/en/national-confederation-industry-brazil/>.

<sup>35</sup> See: <https://unevoc.unesco.org/go.php?q=more+about+What+is+TVET&context>.

<sup>36</sup> Ministério da Educação "Pronatec," Brasil Governo, 2011, <http://portal.mec.gov.br/pronatec>.

<sup>37</sup> Joana Silva, Rita Almeida, and Victoria Strokova, "Sustaining Employment and Wage Gains in Brazil: A Skills and Jobs Agenda," (Washington, DC: The World Bank, 2015),

<https://openknowledge.worldbank.org/bitstream/handle/10986/22545/9781464806445.pdf?sequence=5&isAllowed=y>.

<sup>38</sup> André Portela Souza, Lycia Lima, Amanda Arabage, Juliana Camargo, Thiago de Lucena, and Sammara Soares, "Vocational Education and Training in Brazil," (Washington, DC: IDB, June 2015),

[https://publications.iadb.org/bitstream/handle/11319/6996/Vocational\\_Education\\_Training\\_Brazil.pdf](https://publications.iadb.org/bitstream/handle/11319/6996/Vocational_Education_Training_Brazil.pdf).

<sup>39</sup> Silva, Almeida, and Strokova, "Sustaining Employment and Wage Gains," 73.

spending) on active labor market programs (i.e. government programs designed to increase employability), while OECD countries receive 10 percent on average.<sup>40</sup> A second shortcoming of SINE is that few Brazilians use it, and it does not place many of its registered job seekers: only 12 percent get a job versus 36 percent in Mexico and 48 percent in the United States.<sup>41</sup>

Sometimes employers have difficulty finding the right people for jobs because they do not connect to digital platforms. Based on a survey by LinkedIn, Brazil underutilizes professional networking platforms which are important tools for employers and employees to connect to the right candidate to the right job.<sup>42</sup> These digital technologies have the potential to transform work in the next 5 years. Beyond job matching, they can improve the speed of work, automation of work, and specialization.<sup>43</sup>

Brazil also has an apprentice law (*Lei do Aprendiz*) since 2000, which is designed to encourage companies to hire youth and offer them hands-on experience.<sup>44</sup> To be eligible, at least 5 percent (up to 15 percent) of a company's workforce requiring formal training can be hired under these contracts and workers must take part in work skills programs at organizations certified by the Ministry of Labor.<sup>45,46</sup> Additionally, the law created a payroll subsidy program by capping employer contributions to the job-separation fund at 2 percent instead of the 8 to 8.5 percent rate of other workers.<sup>47</sup> However, only 23 percent of these apprenticeships slots get filled, and only 50 percent are then hired as permanent employees.

#### **INFORMALITY AND LOW JOB PRODUCTIVITY**

Adding to the challenges of providing meaningful job opportunities and education for young Brazilians, the growth of the informal economy needs to be monitored. The informal economy accounted for 38 percent of employment in 2017.<sup>48</sup> Many workers that lack education are employed in this sector with low paying opportunities. In 2016, the average income for persons over the age of 16 in Brazil in the informal economy was \$329 and in the formal sector the average income was double at \$687.<sup>49</sup>

Low labor productivity (value added per employee) has been a problem in Brazil even in growth years. In recent years, there has been a decoupling of labor productivity with the minimum wage. While the minimum wage in Brazil has increased between 2003 and 2014 by an average of 68 percent, the productivity rate per employee increased by only 21 percent.<sup>50</sup> By comparison, Brazil's productivity

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<sup>40</sup> Ibid., 114.

<sup>41</sup> Ibid., 117.

<sup>42</sup> Estera Barbarasa, Jacqueline Barrett, and Nicole Goldin, "Skills Gaps or Signaling Gap?" S4YE & LinkedIn, June 2017, <https://www.s4ye.org/sites/default/files/2017-09/LinkedIn%20Report.pdf>.

<sup>43</sup> Data analyzed by Laureate International Universities, originally based on data collected from RAIS/CAGED. See: "Perfil do Município," MTE; "Ipeadata," IPEA; "Confederacao Nacional da Industria," CNI.

<sup>44</sup> Claudia Sepulveda, "A Snapshot of Youth Training Programs in Brazil and the Dominican Republic," The World Bank, January 20, 2013, <http://blogs.worldbank.org/jobs/snapshot-youth-training-programs-brazil-and-dominican-republic>.

<sup>45</sup> Ibid.

<sup>46</sup> Carlos Henrique L. Corseuil, Miguel Nathan Foguel, Gustavo Gonzaga, and Eduardo Pontual Ribeiro, "The Effects of a Youth Training Program on Youth Turnover in Brazil," REAP Rede de Economia Aplicada, June 2012, 10, <http://reap.org.br/wp-content/uploads/2012/06/042-The-Effects-of-a-Youth-Training-Program.pdf>.

<sup>47</sup> Ibid.

<sup>48</sup> Pedro Renaux, "Informalidade aumenta e continua a reduzir o desemprego," IBGE, October 21, 2017, <https://agenciadenoticias.ibge.gov.br/agencia-noticias/2012-agencia-de-noticias/noticias/17508-informalidade-aumenta-e-continua-a-reduzir-o-desemprego.html>.

<sup>49</sup> IBGE, "Síntese de Indicadores Sociais".

<sup>50</sup> Mariana Ceratti, "Productivity: A Key Issue for Fighting Poverty in Brazil," The World Bank, August 24, 2016, <http://www.worldbank.org/en/news/feature/2016/08/24/brazil-increase-productivity-share-prosperity>.

represents around 25 percent of the average labor productivity in high-income countries.<sup>51</sup> Brazil has become wealthier in many ways, but it became overall less competitive.

### REGIONAL AND SOCIAL INEQUALITIES

Despite the social welfare policies enacted in the past, there are still vast differences in employment, education and poverty across states in Brazil. Even with economic growth and public policy investments, the northeastern states are relatively poor and lack quality education and workforce skills. The northeastern states have the lowest enterprise formalization rate, even though formalization increased 43.1 percent in Brazil in the last ten years.<sup>52</sup>

Besides regional disparities, there are also disadvantaged populations in Brazil that lack economic opportunities. Indigenous groups, people with disabilities, African-Brazilian populations, people living in rural areas, and women have significant economic disparities, including racial discrimination following Brazil's prolonged history of slavery.<sup>53</sup> With indigenous populations, much of the conflict revolves around land ownership and strained resources. One of the largest indigenous populations, the Guaraní, are facing challenges with human rights violations, discrimination, resource depletion, and lack of land demarcation leading to violence.

There are gender gaps as well: Brazilian male workers are paid 50 percent more than females, that is 10 percentage points above the OECD average.<sup>54</sup> Poor mothers with children lack support to enter the labor market—in 2013 only 15 percent of low-income families had access to child care compared with 40 percent of wealthy families; this is a potentially limiting factor for women joining the workforce.<sup>55</sup>

Brazil has seen a decline in the working poor. In 1995 the working poor made up 18.8 percent of the total workforce population (ages 15 and older), but in 2013, that number decreased to 5.1 percent.<sup>56</sup> According to the last survey conducted in Brazil by the United Nations Development Programme (UNDP) in 2014, the population was considered to be in multidimensional poverty, meaning the population with deprivations in health, education, and living conditions stood at approximately 5 million people.<sup>57</sup>

Despite declining poverty rates, income inequality remains high in Brazil compared to other countries in the region—the Gini coefficient stood at 51.1 out of 100 in 2016 (with 100 being the highest incidence of inequality).<sup>58</sup> Inequality is particularly visible in urban settings where unsanitary conditions and slum housing (or *favelas*) surround the booming downtown centers.

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<sup>51</sup> Ibid., 37.

<sup>52</sup> Jeff Bridgford and Gustavo Gandara, "Trade Union Involvement in Skills Development: Brazil," (Geneva: ILO, 2017), [http://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/---ifp\\_skills/documents/publication/wcms\\_585697.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_585697.pdf).

<sup>53</sup> As of 2016, 47.7 percent of the population was white (brancos), 43.1 percent are mulatto (pardo) which is origins of mixed ethnicities, 7.6 percent are African-Brazilians (pretos), 1.6 percent are Asian, and 0.4 percent are indigenous. See: "Brazil," FITA, <http://fita.org/countries/brazil.html>.

<sup>54</sup> OECD, "Employment Outlook 2017: Brazil," (Paris: OECD, 2017), 2, <https://www.oecd.org/brazil/Employment-Outlook-Brazil-EN.pdf>.

<sup>55</sup> Silva, Almeida, and Stokova, "Sustaining Employment and Wage Gains".

<sup>56</sup> UNDP, "Working poor at PPP\$3.10 a day (% of total employment)," (New York: United Nations, 2016), <http://hdr.undp.org/en/indicators/153706>.

<sup>57</sup> UNDP, "Multidimensional Poverty Index-developing countries," in "Human Development Report 2016," (New York: United Nations, 2016), [http://hdr.undp.org/sites/default/files/2016\\_human\\_development\\_report.pdf](http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf).

<sup>58</sup> UNDP, "Income inequality, Gini coefficient," (New York: United Nations, 2016), <http://hdr.undp.org/en/indicators/67106>.

Brazil has made efforts to improve the standing of disadvantaged groups through an affirmative action policy. The recent disability rights law requires that public institutions place priority to individuals with disabilities in work, health, education, and other services.<sup>59</sup> Brazil has a quota system whereby companies with more than 100 employees are required to employ a percentage of persons with disabilities proportional to the total number of employees, ranging between 2 to 5 percent.<sup>60</sup> While Brazil has a good legal framework, the implementation of its policies is not as effective in the private sector as it is in the public sector. Companies may hire these individuals to meet the quota, yet do not use them for their skills or oftentimes there is a lack of qualified applicants. Companies hire unqualified applicants anyway to fill the quota and avoid a fine.<sup>61</sup>

## **BARRIERS TO COMPETITIVENESS**

Among the challenges that the Brazilian economy faces that trickle down to the labor market include the need to increase productivity and the competitiveness of the economy.<sup>62</sup> The “Custo Brasil”, or “Brazil Cost”, refers to a range of issues that affect Brazil’s competitiveness and make it costly for business to operate in Brazil which include a complex tax system, poor infrastructure, an unpredictable regulatory and legal system and an inefficient bureaucracy.<sup>63,64</sup>

Corporate tax rates in Brazil are higher than OECD countries and other countries in the Latin America region and stand at 34 percent.<sup>65</sup> Moreover, nonwage labor costs such as labor taxes, unemployment funds, and social insurance remain high compared to international standards: representing 33 percent of the costs of labor in the case of Brazil versus 20 percent for the average OECD countries.<sup>66</sup> Coupled with a high turnover in the labor force, this is a deterrent for employers to hire workers and make the necessary investments in innovation and skilling programs.

The recent labor reforms passed in October 2017 are a first step to modernize Brazil’s archaic labor laws. These reforms tackled union membership, court litigation, and flexible work arrangements.<sup>67,68</sup> The reforms introduced more flexible arrangements such as allowing corporations to hire freelance workers. Two substantial changes that the new legislation introduced are the elimination of compulsory union dues

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<sup>59</sup> Human Rights Watch, “World Report 2017,” (New York: Human Rights Watch, 2017), [https://www.hrw.org/sites/default/files/world\\_report\\_download/wr2017-web.pdf](https://www.hrw.org/sites/default/files/world_report_download/wr2017-web.pdf).

<sup>60</sup> Marcello Della Monica Silva, “Quota for Disabled People in Brazil: An Update of The Current Situation Faced By The Companies,” Mondaq, December 17, 2014, <http://www.mondaq.com/brazil/x/361216/employee+rights+labour+relations/Quota+For+Disabled+People+In+Brazil+An+Update+Of+The+Current+Situation+Faced+By+The+Companies>.

<sup>61</sup> Angelico Law, “Court Ruling Loosens Disabled Worker Quotas for Employers,” Angelico Advogados, July 5, 2016, <http://www.thebrazillawblog.com/court-ruling-loosens-disabled-worker-quotas-employers/>.

<sup>62</sup> UNCTAD, “Country Paper: Overview of the services sector in Brazil,” (Geneva: UN Conference on Trade and Development, May 2016), [http://unctad.org/meetings/en/Presentation/c1mem4\\_2016\\_p202\\_Country%20paper\\_Brazil\\_en.pdf](http://unctad.org/meetings/en/Presentation/c1mem4_2016_p202_Country%20paper_Brazil_en.pdf).

<sup>63</sup> WEF, “Brazil Competitiveness and Inclusive Growth Lab Report,” (Geneva: World Economic Forum, March 2018), [http://www3.weforum.org/docs/WEF\\_43923\\_Brazil\\_COMP\\_Lab\\_report\\_2018.pdf](http://www3.weforum.org/docs/WEF_43923_Brazil_COMP_Lab_report_2018.pdf).

<sup>64</sup> Klaus Schwab, “The Global Competitiveness Report 2017-2018,” (Geneva: World Economic Forum, 2017), 70, <http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf>.

<sup>65</sup> Deloitte, “Corporate Tax Rates 2018,” (Deloitte Global, 2018), <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-corporate-tax-rates.pdf>.

<sup>66</sup> Silva, Almeida, and Strokova, “Sustaining Employment and Wage Gains,” 92.

<sup>67</sup> The Economist, “An overhaul of Brazilian labour law should spur job creation,” The Economist Group, July 20, 2017, <https://www.economist.com/news/business/21725321-michel-temers-reform-has-teeth-overhaul-brazilian-labour-law-should-spur-job-creation>.

<sup>68</sup> In the mid-1900s, Mussolini became heavily involved in labor law negotiations with Brazil to promote his international prestige and to protect the large population of Italian immigrant laborers’ that came to the country in the early 1900s. See: David Aliano, “Brazil through Italian Eyes: The Debate over Emigration to São Paulo during the 1920s,” (Torino: Fondazione Giovanni Agnelli, 1989), [www.altreitalie.it/ImagePub.aspx?id=78449](http://www.altreitalie.it/ImagePub.aspx?id=78449).

and the ability of firms to negotiate directly with employees on certain labor issues (such as termination). Other reforms in the 2017 legislation included employees being able to negotiate employment contracts directly with management (without union involvement, if earning below a certain salary), and regulating work from home.<sup>69</sup>

Although these changes created big controversies with the labor unions, it is also providing an opportunity for unions to rethink their business model. The reforms will force these institutions to be more competitive and provide better services for workers. According to the TMG group, over 15,000 unions existed in Brazil (receiving \$680 million) in 2013 while the United Kingdom had 168 unions, Denmark 164, and Argentina 91.<sup>70</sup> Moreover, labor reform is expected to bring down the number of labor lawsuits. Brazil currently has on average 11,000 labor lawsuits a day compared to France with 60,000 lawsuits per year, Chile with 40,000, and Japan with 10,000.<sup>71</sup>

Inadequate infrastructure is another factor limiting business in Brazil, according to the 2017 World Economic Forum Global Competitiveness Report.<sup>72</sup> Brazil ranks 72nd out of 138 economies for the quality of its infrastructure, ahead of neighboring Argentina but far behind Mexico at 57th. Between 2003-2013, Brazil has spent significantly less on infrastructure than its BRICS counterparts (Figure 3).

Growth in cities is also pushing the boundaries for the provision of infrastructure and basic services. Brazil is highly urbanized (86 percent of the population) as of 2016.<sup>73</sup> The urban population is projected to increase by 19 percent between 2010 and 2030.<sup>74</sup> Drivers of urbanization include aspirations for better health care, employment, and education opportunities. With already overcrowded slums, (referred to as *favelas*) both inside and on the outskirts of cities such as Rio de Janeiro and São Paulo, there is a need for improved infrastructure and job opportunities for populations moving from rural areas to cities. Cities are not prepared to accommodate the large populations of individuals moving from rural areas.

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<sup>69</sup> Cleber Venditti da Silva, Mattos Filho, Veiga Filho, Marrey Jr., and Quiroga Advogados, “Brazil: Overview of Recent Labor Reforms,” Society for Human Resource Management, August 21, 2017, <https://www.shrm.org/resourcesandtools/legal-and-compliance/employment-law/pages/brazil-labor-reform.aspx>.

<sup>70</sup> Marco Sottovia, “Understanding Brazil’s Labor Reform,” TMF Group, <https://www.tmf-group.com/en/news-insights/articles/2017/september/brazil-labor-reform/>.

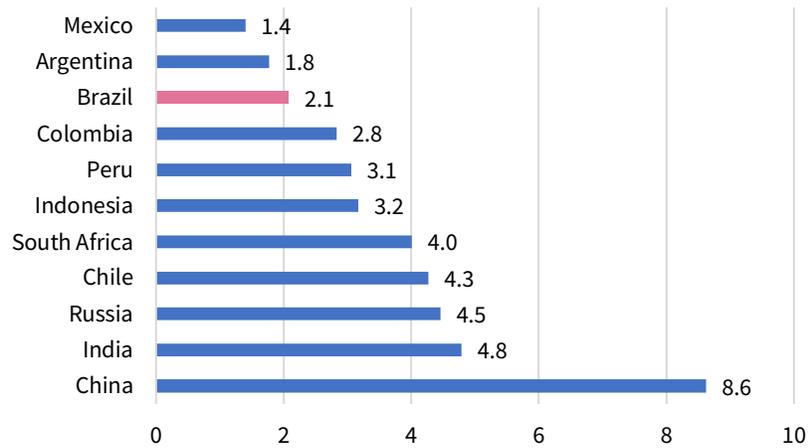
<sup>71</sup> Ibid.

<sup>72</sup> Schwab, “Global Competitiveness Report”.

<sup>73</sup> The World Bank, “Urban population (% of total),” (Washington, DC: The World Bank, 2016), <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=BR>.

<sup>74</sup> UNESCO, “BRICS: Building Education for the Future,” United Nations, 32, <http://unesdoc.unesco.org/images/0022/002290/229054e.pdf>.

**Figure 3: Infrastructure Spending as a Percentage of GDP: 2003-2013**



Source: The World Bank<sup>75</sup>

In the last year, President Temer has instituted a program aimed at reviving Brazil's infrastructure and realizing its potential. This program consisted of a \$12.7 billion infrastructure concession plan for investment in roads, port terminals, railways, and power lines.<sup>76</sup> The biggest challenge remains funding. The immense amount of public funds needed to support social security prohibits the Brazilian government from investing in the necessary infrastructure needs.

### *Future Drivers of the Brazilian Labor Market*

#### **AGING POPULATION**

Brazil's is undergoing a demographic shift that will have repercussions for the job market. The fertility rate in Brazil fell below the replacement level in the mid-2000s—this slow population growth trend will continue. Currently, Brazil's old-age dependency ratio is about 7 workers for every pensioner, but its projected to fall to 2.8 workers for every pensioner by 2050.<sup>77</sup> This means that there will be less workers to support an aging population (Figure 4).<sup>78</sup> The declining entrants into the labor market will put a strain on retirement systems if not properly managed.

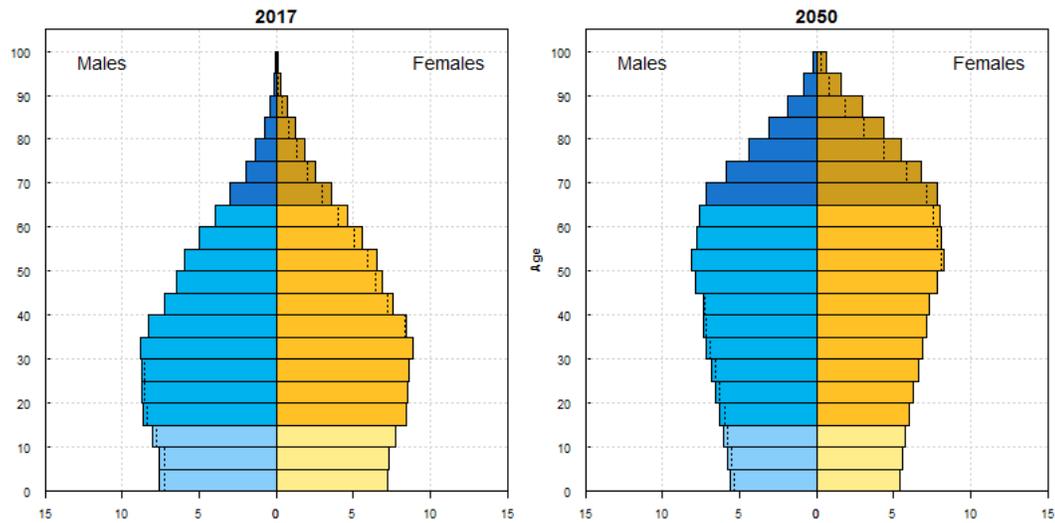
<sup>75</sup> Martin Raiser, Roland Clarke, Paul Procee, Cecilia Brinceño-Garmendia, Edith Kikoni, Joseph Kizito, Lorena Viñuela, "Back to Planning: How to Close Brazil's Infrastructure Gap in Times of Austerity," (Washington, DC: The World Bank, 2017), <http://documents.worldbank.org/curated/en/386151499876913758/pdf/117392-REVISED-PUBLIC-Back-to-Planning-How-to-Close-Brazil-s-Infrastructure-Gap-in-Times-of-Austerity-with-cover-page.pdf>.

<sup>76</sup> Anthony Boadle and Leonardo Goy, "Brazil's Temer launches 45 billion reais infrastructure concession plan," Reuters, March 7, 2017, <https://www.reuters.com/article/us-brazil-politics-infrastructure/brazils-temer-launches-45-billion-reais-infrastructure-concession-plan-idUSKBN16E2MP>.

<sup>77</sup> Gwynn Guilford, "Brazil's Demographic Nightmare is Just Beginning," Quartz, March 17, 2017, <https://qz.com/934552/brazil-faces-a-demographic-nightmare-as-the-task-of-supporting-its-growing-ranks-of-seniors-falls-on-a-rapidly-shrinking-number-of-workers/>.

<sup>78</sup> Ibid.

**Figure 4: Brazil's Age Distribution, 2017 and 2050**



Source: UN DESA<sup>79</sup>

The life expectancy for Brazilians is now 71.6 years for men and 78.8 years for women. By 2041, it is expected that both men and women will live, on average, past 80 years of age.<sup>80</sup> However, in most of Brazil's workforce, the average age of retirement is 55. This poses a fiscal challenge in terms of the sustainability of the formal social security system. A declining birth rate and an aging population has also given rise to a new social security reform debate.

The aging trend also poses a moral and social challenge since the elderly live longer, yet they might not have access to formal pension or retirement funds. More than 11 percent of GDP is allocated for social security spending and this figure is expected to grow to 26 percent by 2050.<sup>81</sup> Pension spending is an area that has long needed reform.<sup>82</sup> The current labor law reforms for retirement are in progress, but no legislation has yet passed. The reform calls for increasing the age limit on retirement and evaluating the number of years employees contribute, both changes aim to reduce government spending.<sup>83</sup> This will impact the aging population by reducing their pension intake upon retirement and by increasing the number of years they will have to work.<sup>84</sup> Since this is not a popular decision, it will take several attempts in legislation to produce a law that adequately meets expectations.

Moreover, an aging population will also require higher health investments and services for the "care economy." The government does not provide significant institutional care for its elderly populations. The majority of the aging population resides with family members. There are training courses for family

<sup>79</sup> UN Department of Social and Economic Affairs, Population Division, "Demographic Profiles Based on the World Population Prospects: The 2017 Revision," (New York, NY: United Nations, 2017), <https://population.un.org/wpp/Graphs/DemographicProfiles/>.

<sup>80</sup> World Population Review, "Brazil Population 2018," World Population Review, <http://worldpopulationreview.com/countries/brazil-population/>.

<sup>81</sup> Alfredo Cuevas and Izabela Karpowicz, "The Urgent Case for Pension Reform in Brazil," IMF, December 1, 2017, <https://www.imf.org/external/np/blog/dialogo/120116.pdf>.

<sup>82</sup> The World Bank, "Central government debt, total (% of GDP)," (Washington, DC: The World Bank, 2016), <https://data.worldbank.org/indicator/GC.DOD.TOTL.GD.ZS?locations=BR>.

<sup>83</sup> Kenneth Rapoza, "Brazil's Social Security Reform Set To Fail Again," Forbes, December 11, 2017, <https://www.forbes.com/sites/kenrapoza/2017/12/11/brazils-social-security-reform-set-to-fail-again/#495116f34a7f>.

<sup>84</sup> Ibid.

members to receive instructions for proper care, but this can create increased financial burden on caregivers.

Without reforms to offset the impact of aging, public spending on health is expected to increase from 4.6 percent of GDP in 2015 to 5.6 percent of GDP in 2025.<sup>85</sup> Fiscal sustainability can go hand in hand with caring for the elderly if a social security reform is adopted and new work opportunities are generated in these sectors.

As the country undergoes this demographic transition, Brazil must enact policies to sustain social security benefits in preparation for its aging population. This demographic trend also provides an opportunity for growth in related industries such as health care. Creating meaningful and gainful employment opportunities for the working population will be necessary to confront the demographic changes the country faces.

### **TECHNOLOGY, AUTOMATION AND INNOVATION**

Adding to demographic transition and social challenges in Brazil is the risk of automation displacing jobs. McKinsey's research estimates that technically half of employees' input in Brazil could be automated, with manufacturing, transportation, and warehousing as key sectors with the highest potential for automation. However, this does not mean that the jobs in these sectors would disappear overnight. If the costs and benefits of automation, and regulatory and social issues are factored in (i.e. technological adoption), then only 14 percent of such jobs could be displaced by 2030.<sup>86</sup>

The productivity and employment of many Brazilian sectors could also benefit from advancements in technology. Brazil has seen a rise of tech start-ups and stronger investment in the country. As a result, many companies have headquartered their South American operations in São Paulo, including Uber and Airbnb. While Brazil had more than 2,000 start-ups as of 2016 (60 percent concentrated in São Paulo) it has low start-up and entrepreneurship rates compared to other countries.<sup>87</sup> Despite the presence of tech start-ups the levels of innovation remain stagnant. The Global Innovation Index (GII) analyzes 127 countries, using a wide range of metrics to classify how innovative a nation is. The study's criteria include evaluating investment in information and communications technology (ICT), government online services' presence and online participation, presence of global research and development (R&D) organizations in the country, and total number of patent applicants. Brazil ranks 69 out of 127 overall and seventh in the regional classification, despite being the largest economy in Latin America.<sup>88</sup> By 2010, low-technology products represented more than 40 percent of Brazil's exports, which is the same share as in 1996, while the number of high-technology products had decreased continuously from a high of 15 percent in 2000.<sup>89</sup> The challenge for Brazil's innovation and technological growth is the lack of skilled individuals in the field. The tech-talent shortage will impact Brazil's short-term growth in this sector.

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<sup>85</sup> Alfredo Cuevas, Izabela Karpowicz, Carlos Mulas Granados, and Mauricio Soto, "Fiscal Challenges of Population Aging in Brazil," IMF, June 2017, <https://www.imf.org/~media/Files/Publications/WP/2017/wp1799.ashx>.

<sup>86</sup> McKinsey Global Institute, "Preparing Brazil for the Future of Work: Jobs, Technology and Skills," McKinsey & Company, March 13-15, 2018, <https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Future%20of%20Organizations/Preparing%20Brazil%20for%20the%20future%20of%20work%20jobs%20technology%20and%20skills/MGI-Future-of-Work-Brazil-Briefing-note.ashx>.

<sup>87</sup> OECD Development Center, "Start-up Latin America 2016: Building an Innovative Future," OECD, October 20, 2016, <https://www.oecd.org/dev/americas/Startups2016-Assessment-and-Recommendations.pdf>.

<sup>88</sup> Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent, "The Global Innovation Index 2017: Innovation Feeding the World," (Ithaca, Fontainebleau, and Geneva: Cornell, INSEAD, and WIPO, 2017), <https://www.globalinnovationindex.org/gii-2017-report>.

<sup>89</sup> UNESCO, "BRICS: Building Education".

Moreover, according to the Global Entrepreneurship Monitor (GEM) 2018, Brazil also ranks low in terms of its entrepreneurial framework conditions. Brazil ranks second to last, only ranking higher than Guatemala, in the Latin America and the Caribbean region in terms of governmental support policies for entrepreneurial conditions.<sup>90</sup> In terms of taxes and bureaucracy, the perceived opportunity for 2017 was lowest for Brazil in the surveyed LAC region.<sup>91</sup> In the Global Entrepreneurship Index (GEI) 2018, Brazil ranks overall 98 out of 137 countries.<sup>92</sup>

There are government programs that aim at fostering growth of SMEs in Brazil. There are several programs administered through the Ministry of National Integration, Ministry of Planning Development and Management, Ministry of Industry, Foreign Trade and Services, the Ministry of Foreign Affairs, and the Ministry of Science Technology, Innovation and Communications which utilize different tools including: working capital, investment capital, value chains, business consulting, export training, export credit, innovation training, and innovation credit/grants.<sup>93</sup> The Individual Microentrepreneur program is another example of a national initiative to reduce barriers that will allow small firms to open more easily and grow.<sup>94</sup>

One program that is supporting start-ups in Brazil is the “Startup Brazil” initiative led by the Ministry of Science, Technology, Innovation and Communication.<sup>95</sup> Despite this effort in recent years, no notable change has been documented as the country continues to face political turmoil and more business-friendly reforms need to be undertaken.

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<sup>90</sup> “Entrepreneurial Behaviour and Attitudes,” Global Entrepreneurship Research Association, <http://www.gemconsortium.org/data>.

<sup>91</sup> Ibid.

<sup>92</sup> GEDI, “Global Entrepreneurship Index,” Global Entrepreneurship and Development Institute, 2018, <http://thegedi.org/global-entrepreneurship-and-development-index/>.

<sup>93</sup> Inter-American Development Bank Office of Evaluation and Oversight, “Assessing Firm Support Programs in Brazil,” (Washington, DC: IBD and IIB, November 2017), <https://publications.iadb.org/bitstream/handle/11319/8684/Assessing-Firm-Support-Programs-in-Brazil.PDF?sequence=2&isAllowed=y>.

<sup>94</sup> Joana Silva, Rita Almeida, and Victoria Strokova, “Sustaining Employment and Wage Gains in Brazil: A Skills and Jobs Agenda,” (Washington, DC: The World Bank, 2017), <http://www.worldbank.org/en/topic/education/publication/sustaining-employment-and-wage-gains-in-brazil>.

<sup>95</sup> “Accelerators,” Start-Up Brasil, 2018, <http://www.startupbrasil.org.br/acceleradoras/?lang=en>.

### 3. Future Jobs: Sectors with Employment Potential

Brazil faces a set of labor market challenges such as youth unemployment, low-quality education and skills gap, low productivity of work, and social inequalities. Technological changes and an aging population can provide added pressures to the labor market in the future, but they can also open up new sectors to employ people. Given these trends, where are opportunities for work or income generation going to come from in Brazil? In this section, we present some of the sectors that could provide more work opportunities to Brazil based on our interviews with different stakeholder and published economic reports. Brazil is a large and diverse country and the sectors presented in this section are an aggregate and not an exhaustive numeric forecast of industry and occupational trends.

Currently, the leading industries in terms of employment are wholesale and retail trade, public administration, health and education, and manufacturing, comprising nearly half of Brazil's total employment (2017).<sup>96</sup> According to the Ministry of Labor and Employment data from 2007 to 2016, the largest growth sectors were services (40 percent), commercial (35 percent), and construction (23 percent), with all sectors showing positive growth. However, this growth was not sustained given political shifts and economic troubles.<sup>97</sup> Between 2012 and 2016, the largest growth sector continued to be services, but with only 3.3 percent growth. The largest declining sector in this period was in construction with a 30 percent decrease and loss of over 12 percent of its workforce; this is likely from the economic crisis leading infrastructure investors to pull-out and a decline in government funded projects that led to unemployment and stalled infrastructure productivity.<sup>98</sup> Other declining industries during this period included extractive industries (15 percent) and manufacturing (12 percent).<sup>99</sup> Low commodity prices, declining production and investment, and slumped demand have presented problems for the industrial sector in recent years. For this reason, Brazil has been considered a post-industrial developing country and the promise for this industry to continue creating jobs for Brazilians has produced uncertainty.

These historic trends are not necessarily reflective of what the coming years of employment opportunities will look like in Brazil, but nevertheless they provide useful information. Taking the historic trends and analyzing the challenges and drivers that are impacting the Brazilian economy, we believe that health, travel and tourism, information technology (IT), and agribusiness are sectors that show the highest potential to hire people or offer better income opportunities in the near future.

#### *Health Care and the Care Economy*

Brazil's health care sector is one of the fastest growing industries in the world, employing 5 percent of the workforce (Annex A). The demographics of Brazil are driving new demands that require the health care system to evolve, including a decline in infant mortality rates, slowing birth rates, an increasingly elderly

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<sup>96</sup> ILO, "Key Indicators of the Labour Market," (Geneva: ILO, 2017), [http://www.ilo.org/ilostat/faces/ilostat-home/home?\\_adf.ctrl-state=feulnwhhm\\_45&\\_afLoop=541712228346671-!](http://www.ilo.org/ilostat/faces/ilostat-home/home?_adf.ctrl-state=feulnwhhm_45&_afLoop=541712228346671-!).

<sup>97</sup> "System of National Accounts," IBGE, 2013,

[https://ww2.ibge.gov.br/english/estatistica/economia/contasnacionais/2013/default.shtm#sub\\_economia](https://ww2.ibge.gov.br/english/estatistica/economia/contasnacionais/2013/default.shtm#sub_economia).

<sup>98</sup> Agencia IBGE, "Unemployment retreats in December, yet average rate in the year is the highest since 2012," IBGE, January 31, 2018, <https://agenciadenoticias.ibge.gov.br/en/2184-news-agency/news/19783-unemployment-retreats-in-december-yet-average-rate-in-the-year-is-the-highest-since-2012.html>.

<sup>99</sup> "System of National Accounts," IBGE.

population, and a higher life expectancy.<sup>100</sup> The current population will shift into an aging period by 2025 meaning the current working-age population will require an increase in health services in the coming years.<sup>101</sup>

Because of the aging population, the health care sector is becoming more and more relevant to policymakers. People living to an older age typically demand more health care, more care services such as nursing homes and in-home care. The automation of manual tasks in health care can be an important component of a performance improvement strategy, which can lead to an increased capacity to help people in need. However, automation and AI cannot replace the need for doctors and nurses entirely. Doctor-patient interaction remains an extremely vital component of quality health care, especially in the Brazilian culture.

Another factor that can drive growth in this sector is the emergence of a large middle class with increasing purchasing power. Some estimates suggest that public health spending per capita will grow from \$821 in 2016 to \$1,403 in the next 10 years.<sup>102</sup> Increased demand, spending, and consumption of medical services will lead to the creation of more jobs.

Technology companies have increasingly entered this space to assist in monitoring the health of elderly individuals, where there is a lack of assistance present for this population. One such company is the Digital Caretaker which acts as an emergency call bracelet to support elderly individuals who may often live alone.<sup>103</sup> The care economy can be an outlet for new business opportunities or in-home care that can help assist family members.<sup>104</sup>

Laureate International Universities evaluated the jobs and skills of the health care industry in Brazil for the future and found that some of the growing careers will be in nursing (gerontology), pharmacology, robotic surgery, bioinformatics, and chronic disease medicine.<sup>105</sup> The government has discussed plans to focus on research centers and attract local production to increase the importance of the Brazilian pharmaceutical market.<sup>106</sup> This will require a mix of knowledge, technical ability, and creativity which includes higher education degrees in pharmacology, medicine, biology, physics, psychology, and nursing.<sup>107</sup> In addition, the sector will have an increasing demand in the medical devices industry with 14,500 companies already in Brazil, 32 percent of those companies located in São Paulo. It has produced more than 225,000 indirect jobs in diagnostic and therapeutic services, and the sector helps to improve 1.1 million providers quality of care.<sup>108</sup>

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<sup>100</sup> PwC Brasil, "The Healthcare Market in Brazil," PricewaterhouseCoopers, 2013, <https://www.pwc.com.br/pt/publicacoes/setores-atividade/assets/saude/healthcare-tsp-13.pdf>.

<sup>101</sup> Ibid.

<sup>102</sup> International Trade Administration, "2016 Top Markets Report Health IT Country Case Study," US Department of Commerce, 2017, [https://www.trade.gov/topmarkets/pdf/Health\\_IT\\_Brazil.pdf](https://www.trade.gov/topmarkets/pdf/Health_IT_Brazil.pdf).

<sup>103</sup> "Relógio de Emergência," Cuidador Digital, <https://www.cuidador.digital/relogio-de-emergencia#cf>.

<sup>104</sup> AARP and FP Analytics, "The Aging Readiness and Competitiveness Report: Brazil," (Washington, DC: AARP, June 2017), <https://www.giaging.org/resources/aging-readiness-competitiveness-report-2017>.

<sup>105</sup> Data analyzed by Laureate International Universities, originally based on data collected from RAIS/CAGED. See: "Perfil do Município," MTE; "Ipeadata," IPEA; "Confederacao Nacional da Industria," CNI.

<sup>106</sup> PwC Brasil, "The Healthcare Market in Brazil".

<sup>107</sup> Ibid.

<sup>108</sup> Guilherme S. Hummel, "Brazil eHealth - Overview, Trends & Opportunities," eHealth Mentor Institute, Nov 2016, <https://www.rvo.nl/sites/default/files/2017/01/Brazil%20Healthcare%20-%20Guilherme%20Hummel.pdf>.

## *Travel and Tourism*

Travel and tourism has been an important driver of Brazil's economy, contributing approximately 7.9 percent of GDP. The sector is expected to grow in the next 10 years.<sup>109</sup> This industry employs 7.3 percent of the total workforce generating 6.6 million jobs (directly and indirectly) in 2017.<sup>110</sup> By 2027, travel and tourism is projected to create an additional 1.5 million jobs.<sup>111</sup> This sector largely employs low-skilled labor and youth populations who are entering the workforce often employed in hotels, restaurants, and tourist attractions. But it is a sector that can employ older workers as well. One of the critical skills needed is knowledge of a foreign language, especially English and Spanish.

Travel and tourism has a wide impact on the economy and development of infrastructure, cultural activities, and attractions which generate revenue.<sup>112</sup> Tourism is especially important in coastal areas and southeastern states. In the state of Santa Catarina, tourism makes up nearly 13 percent of the state's GDP and employs approximately 600,000 people. Tourism intersects with various other industries and relies heavily on the development of sectors such as infrastructure, telecommunications, and digital technologies. In 2017, the state of Santa Catarina developed a "destination app" to gather information on tourist opinions and hopes for travels in Brazil. This was meant to better understand the target audience and how to better appeal to them as an international destination.

In another 10 years, the travel and tourism sector in Brazil is expected to contribute substantially to the economic growth of the southern states. There seems to be two parallel trends happening in tourism in Brazil; one which requires digitalization in social media advertising and one which requires the mosaic of Brazil's historic culture to remain intact and appeal to future waves of tourists. The flow of people to the beaches and coastal areas has already been well established. Brazil must now focus its tourism efforts on bringing visitors to the surrounding countryside to distribute the profit wealth from tourism and prevent migration flows of people seeking tourism-related work. The goal is to allow people to stay where they are, while bringing the economic opportunities to them.

The government of Brazil must become much more invested in improving the tourism sector as an avenue toward economic growth. Government entities (such as Santur and Sol) in Santa Catarina have worked to expand the tourism industry in the area.<sup>113</sup> However, the demands for training and education in tourism go beyond the capacity of these local entities. It requires early education in tourism and hospitality-related skills, complimented by higher education career tracks which focus on this strategic sector. It also demands intensive language requirements instituted from an early age. It is rare that Brazilians are fluent in more than Portuguese—which is often seen as a prohibitive factor to increasing levels of tourism. New skills in utilizing technology to promote tourism are also needed. This is especially critical as it relates to rural areas which otherwise do not have a way of bringing tourists to their farms or vineyards. Santa Catarina supports rural and agricultural tourism and small family farming. This kind of tourism seemingly runs contrary to the emergence of the digital platform tourism economy because the idea of ecological and agri-tourism is to "disconnect", but tourists still need digital technologies to research where and how to do so.

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<sup>109</sup> WTTC, "Travel and Tourism: Economic Impact".

<sup>110</sup> Ibid, 1

<sup>111</sup> Ibid, 1

<sup>112</sup> Ibid, 1

<sup>113</sup> "Turismo: Santa Catarina," SANTUR, <http://turismo.sc.gov.br/>; "SOL," Secretaria de Estado de Turismo, Cultura e Esporte, <http://sol.sc.gov.br/>.

## *Information Technology (IT)*

The technology sector is emerging in certain Brazilian states, similar to Silicon Valley in the U.S. Although this sector is still small in terms of employment (0.5 percent of total Brazilian employment in 2016) it is a source of innovation in the country.<sup>114</sup> In the northeast of Brazil, the city of Recife is an IT hub, producing software and computer chips to the export market. The "Porto Digital" (or "Digital Port") is a technology park and innovation center in Brazil, attracting considerable amounts of foreign investments.<sup>115</sup> This is a result of a coordinated effort between companies, government and academia, the "Triple Helix" model. There are about 267 institutions operating in the area in ICT, creative industries and urban technologies, employing 8,500 people. The park is expanding to Santo Amaro and Caruaru with an estimated 20,000 people working in its territory by 2020.<sup>116</sup>

In the south, the state of Santa Catarina has five major cities, Florianópolis being one of the emerging IT hubs with more than 700 companies located there currently.<sup>117</sup> It is a growing hub for major tech companies; the state has nearly double the amount of growth as the national average for the IT sector.<sup>118</sup> To harness technology and innovation, Santa Catarina is creating a breeding ground for economic growth in this sector (Box 1). As of 2014, this sector produced 24,500 jobs in the city, primarily in internet hosting services.<sup>119</sup>

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<sup>114</sup> "System of National Accounts," IBGE.

<sup>115</sup> "Parque," Porto Digital: Parque Tecnológico, <http://www.portodigital.org/parque/about-porto-digital>.

<sup>116</sup> Ibid.

<sup>117</sup> Silvia Rosa, "Santa Catarina Emerges as Breeding Ground for Startups in Brazil," Nearshore Americas, February 8, 2016, <http://www.nearshoreamericas.com/santa-catarina-startups-tech-brazil-florianopolis/>.

<sup>118</sup> Ibid.

<sup>119</sup> DataViva, "Florianópolis - SC," DataViva, 2015, [http://dataviva.info/en/location/5sc000002/wages?menu=new-api-wage-industry-tree\\_map&url=rais%2Findustry\\_class%2Fwage%3Fcount%3Destablishment%26year%3D2014%26id\\_ibge%3D4205407](http://dataviva.info/en/location/5sc000002/wages?menu=new-api-wage-industry-tree_map&url=rais%2Findustry_class%2Fwage%3Fcount%3Destablishment%26year%3D2014%26id_ibge%3D4205407).

## BOX 1: PACT FOR INNOVATION – SANTA CATARINA

The state of Santa Catarina is home to Florianópolis and is emerging as an ecosystem of innovation and knowledge in Brazil. It has been named the state with the highest quality of life and has become a pioneer for development in the country. In October 2017, the government created a “Pact for Innovation” for Santa Catarina with the goal of making it the “State of Innovation.”<sup>120</sup> The goal of the pact is to direct resources and coordination between entities on science, technology, innovation, entrepreneurship, and education.<sup>121</sup> Each entity will focus on their scope of action within one of the four main axes, which are: knowledge and talents, capital investment and allocation, infrastructure, and networks and collaboration. By committing to greater collaboration in the region, it will stimulate coordinated actions in the ecosystem and demonstrate a strategically aligned purpose for transformation of the state.

Some of the objectives of the pact that may directly align with increasing job opportunities include: multiplying new innovative businesses and high growth potential and increasing investment in research and development. Over 30 institutions have signed on to this mission so far, but it is only in the initial phase and there is room for it to gain popularity.<sup>122</sup> The pact outlines the roles of entities such as local municipalities, government, companies, higher education institutions, schools, media, and the general citizenry. The economic progress of the state only validates the expansion of development in innovation and technology. This is a great example of the government capitalizing on strategic growth sectors in the states to promote entrepreneurship and create jobs that are aligned with market needs that will put Brazil in a strong economic position to compete globally in the technological development space.<sup>123</sup>

One opportunity that tech companies should invest in is cloud computing. According to a survey of Brazil and other countries by the Boston Consulting Group, small- and medium-sized enterprises (SMEs) that used cloud computing grew twice in scale compared to those that did not. The scalability and flexibility of the technology allows SMEs to compete in internationally competitive markets. Adopting cloud technologies in Brazil has created 2.7 million jobs and supplemented economic growth with an increase in GDP by \$120 billion.<sup>124</sup>

### *Higher Value-Added Agriculture and the Food Industry*

Since the 1960s, the agricultural sector’s contribution to the economy has declined, and in 2016 it contributed only 5.5 percent to GDP.<sup>125</sup> Yet the sector still accounts for nearly 45 percent of all of Brazil’s exports.<sup>126</sup> Today, agriculture encompasses about 33 percent of Brazil’s total land expansion.<sup>127</sup>

Brazilian agriculture is important to Brazil’s economic outlook and to global supply chains. The sector hires about 10 percent of Brazilian workers and is expected to undergo large transformations in the types of jobs

<sup>120</sup> Pact, “Pact for Innovation,” October 2017, Pact, <http://www.pactworld.org/innovation>.

<sup>121</sup> Ibid.

<sup>122</sup> Interview by Romina Bandura, Brazil, February 2018.

<sup>123</sup> Ibid.

<sup>124</sup> AfDB, ADB, EBRD, and IDB, “The Future of Work: Regional Perspectives,” (Washington, DC: AfDB, ADB, EBRD, and IDB, 2018), 91, [https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/The-Future-of-Work-regional\\_perspectives.pdf](https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/The-Future-of-Work-regional_perspectives.pdf).

<sup>125</sup> The World Bank, “Agriculture, forestry, and fishing, value added (% of GDP),” (Washington, DC: The World Bank, 2016), <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=BR>.

<sup>126</sup> Ibid.

<sup>127</sup> The World Bank, “Agricultural land (% of land area),” (Washington, DC: The World Bank, 2014), <https://data.worldbank.org/indicator/AG.LND.AGRI.ZS?locations=BR>.

it houses. In the western region, Bahia for example, has increased job opportunities by 18 percent between 2016 and 2017.<sup>128</sup> The most in-demand positions included farm managers, coordinators in technical areas such as irrigation or quality control, commercial managers, finance, contracts for operations, and sales positions.<sup>129</sup> The Chapada Diamantina and the valley of São Francisco are predicted to be the main job producing hubs for this sector.<sup>130</sup> In the future, many recruiters in the agribusiness industry have said employees will need stronger technical and specialized skills to produce greater economic return. The increase in access to education for rural poor in this sector has helped to mitigate informality, but more work will need to be done by agricultural firms to decrease informal employment.

By 2025, Brazil will possess the largest food surplus in the world.<sup>131</sup> Some of the most significant agricultural exports are soybeans, coffee, beef, poultry, corn, and sugar.<sup>132</sup> Brazilian crops are becoming more competitive, especially soybeans and corn, in which Brazil and the United States both stand as top producing and exporting countries. Modern technology and research have helped to increase crop yields and improve farming efficiency practices, leading to more exports and increased competitive advantage in this sector within the global market. While the business is growing, there are challenges revolving around sustainability, labor force participation, and policies regarding foreign multinational companies in this sector.

Hundreds of start-up technology companies have joined the agriculture sector in Brazil. While some will argue this has decreased employment and labor supply in this industry, that is not always the case. Many technology firms have developed ways for farmers to establish biological control over their crops (stopping pests and other natural elements from destroying them). Others have established weather pattern prediction mechanisms that help farmers prepare for and understand how things like climate change and extreme weather variability will impact their production outputs.

The automation of farming is expanding rapidly, and trained biotechnology professionals are in high demand. “Digital agriculture” is becoming an increasingly popular concept in Brazil. Training farmers in digital methods and practices is increasing their efficiency and improving their bottom line. There are several notable companies in this field that have already established a presence in Brazil. Precision Planting, Weather Underground, and Agrosmart are three game-changers for farming in the country.

## *Cross-Cutting Sectors*

The “sharing economy” is an important cross-cutting sector which does not necessarily offer full-time jobs with benefits, though it certainly offers income earning opportunities through a variety of digital platforms. Technology has helped to enable this environment of additional income opportunities that can facilitate stronger connections to the formal economy and an increase in personal income. According to some estimates, these digital platforms could benefit 21 million Brazilians (14.2 percent of the working-

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<sup>128</sup> CNA Brasil, “Campo de oportunidades: salários podem chegar a R\$ 25 mil no agronegocio,” Confederação da Agricultura e Pecuária do Brasil, February 15, 2018, <http://cnabrasil.org.br/noticias/campo-de-oportunidades-salarios-podem-chegar-r-25-mil-no-agronegocio>.

<sup>129</sup> Ibid.

<sup>130</sup> Ibid.

<sup>131</sup> OECD and FAO, “OECD-FAO Agricultural Outlook 2013-2022,” (Paris: OECD and FAO, 2013), [https://www.oecd.org/berlin/OECD-FAO%20Highlights\\_FINAL\\_with\\_Covers%20\(3\).pdf](https://www.oecd.org/berlin/OECD-FAO%20Highlights_FINAL_with_Covers%20(3).pdf).

<sup>132</sup> The Observatory of Economic Complexity, “Brazil Exports 2016,” MIT, [https://atlas.media.mit.edu/en/visualize/tree\\_map/hs92/export/bra/all/show/2016/](https://atlas.media.mit.edu/en/visualize/tree_map/hs92/export/bra/all/show/2016/).

age population) and add \$69 billion to its GDP. However, internet access is a barrier for 40 percent of the population.<sup>133</sup>

Creating a public policy approach to the sharing economy requires an in-depth view of the sector and its impact on the local economy. The World Resources Institute (WRI) conducted a study in which they found Brazil was among 3 other countries that had 74 different national, state, and local laws and regulations related to ride-sharing models.<sup>134</sup> It is important that while this sector develops and creates an alternative source of revenue for Brazilians the policies are aligned with the demand of services and job opportunities on the ground.

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<sup>133</sup> McKinsey Global Institute, “Preparing Brazil for the Future,” 3.

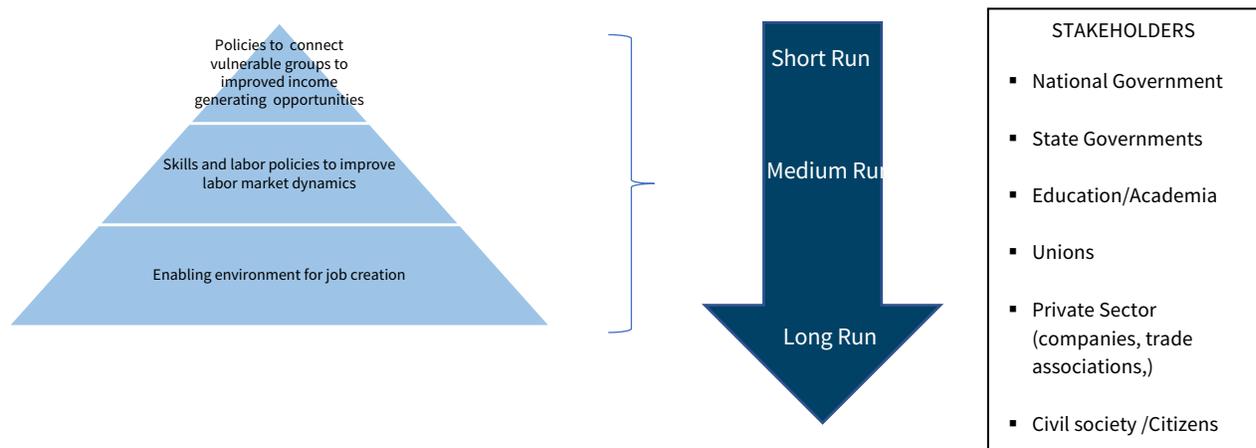
<sup>134</sup> Accenture, IFC, Uber, “Driving Toward Equality: Women, Ride-Hailing, And The Sharing Economy,” (Washington, DC and San Francisco: The World Bank Group and Uber Technologies, March 2018), <https://www.ifc.org/wps/wcm/connect/987fd54b-8d69-4d98-bb23-c62b84c3815b/IFC+DTE+Report+Final+March+1.pdf?MOD=AJPERES>.

## 4. Recommendations

There are current unresolved challenges in the world of work in Brazil that need to be addressed, such as improving education, the formalization of work opportunities, providing for an aging population, and creating economic opportunities for youth. Moreover, technology will create challenges and opportunities. Brazil's labor market needs to prepare and adapt to the future challenges.

In this concluding section, we present a series of recommendations for different stakeholders drawn from the current literature, the views of the experts interviewed, and our own analysis. While many of these items are urgently needed to restore Brazil's economy and prepare its workforce for the future, they will realistically take time to come to fruition. Some of these policies will be easier to implement while others will be more complex to design, more politically difficult to pass, and will need significant financial resources so they will require more time (Figure 5). We classified the timeline as "short-run" taking 1-2 years to implement, "medium-run" would involve 3-5 years, and "long-run" would involve a longer period of 5-10 years.

**Figure 5: World of Work – Mapping of Recommendations**



Source: World Bank<sup>135</sup> Note: Adapted from World Bank 2012

### *Short Run (1-2 years)*

#### **NATIONAL GOVERNMENT**

*Create a labor market strategy to guide the vision for the next 5-10 years.* It would be important for the next administration (to be elected in October 2018) to work with state governments and other relevant actors (academia, schools, companies and unions) in recognizing these shifting trends and establish a labor

<sup>135</sup> World Bank, "World Development Report 2013 Jobs," (Washington D.C.: The World Bank, 2012) 23, [https://siteresources.worldbank.org/EXTNWDR2013/Resources/8258024-1320950747192/8260293-1322665883147/WDR\\_2013\\_Report.pdf](https://siteresources.worldbank.org/EXTNWDR2013/Resources/8258024-1320950747192/8260293-1322665883147/WDR_2013_Report.pdf).

market strategy for the future. As it currently stands, there are several individual, isolated responses to the various facets of the shifting workforce needs. Brazil has a very capable and trained bureaucracy, but politicians need to think more strategically, with a longer-term vision of 5-10 years. Components of the strategy could include: an overhaul of the education system to meet the needs of the private sector, a review of the many active labor market programs and poverty programs that Brazil has enacted in the last 10 years, reforms to make the country more competitive, and targeting of certain sectors that could potentially offer better employment prospects or income opportunity, especially for youth or the low-skilled population groups.

*Connect and coordinate the different vocational training programs with employment exchanges (labor market intermediation), digital platforms and private sector partners.* While TVET programs have many beneficial characteristics such as short-duration courses that result in employability and productivity, some limiting factors of the system include a lack of basic education and a disconnect with private sector needs.<sup>136</sup> One key criticism of the system is that it does not meet private sector needs.<sup>137,138</sup> Coordinating with the private sector will be a key strategic priority to match training programs directly with job needs and company interests as well as linking youth directly to jobs via career guidance and training.<sup>139,140</sup> The Ministry of Labor could play a key role in policy dialogue and coordination, which could mean that Brazil's program structure improves TVET alignment to the needs of the labor market.<sup>141,142</sup>

Institutions in the system could work with private sector employers by establishing skills and jobs councils to better identify the type of occupations and skills needed, and then tailoring courses to those needs. It could also supply job seekers in the SINE with information on the highly demanded occupations and skills that employers seek, so that beneficiaries choose their occupations based on what the market demands and not only on their aspirations.

Another area of deficiency is the lack of candidates with “hands on experience.” As mentioned, the apprenticeship law is a valid initiative but overall only 23 percent of the apprentice slots get filled, and only 50 percent are then hired as permanent employees. Thus, the system has to better “speak” to the private sector. Employers can communicate what kind of technical, cognitive, and “soft skills” (i.e. interpersonal and social skills) are needed to be incorporated into training programs so that a higher percentage of youth get real apprenticeship opportunities that will then translate to longer term work arrangements.<sup>143</sup>

One way to improve the overall system would be to link the training programs (like PRONATEC) with the SINE so that once trainees complete the skilling programs they can apply for jobs. It would also be

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<sup>136</sup> Silva, Almeida, and Strokova, “Sustaining Employment and Wage Gains”.

<sup>137</sup> Rita Almeida, Nicole Amaral, and Fabiana de Felicio, “Assessing Advances and Challenges in Technical Education in Brazil,” (Washington, DC: The World Bank, 2016), <https://openknowledge.worldbank.org/bitstream/handle/10986/22726/9781464806421.pdf;sequence=1>.

<sup>138</sup> Silva, Almeida, and Strokova, “Sustaining Employment and Wage Gains”.

<sup>139</sup> The World Bank conducted a study that evaluated TVET programs in Brazil. The report discussed the need for Brazil to improve its general education system rather than focus only on TVET programs. This included integrating strategic career guidance in lesson plans, improving teacher training, improving monitoring and evaluation systems, assessing the progress of inclusion of disadvantaged groups, matching student preferences with labor market needs and skills building that supports a chosen career trajectory. See: Almeida, Amaral, and de Felicio, “Assessing Advances and Challenges”.

<sup>140</sup> Ibid.

<sup>141</sup> “Trabalho,” Ministerio do Trabalho, <http://trabalho.gov.br/>.

<sup>142</sup> Bridgford and Gandara, “Trade Union Involvement”.

<sup>143</sup> Silva, Almeida, and Strokova, “Sustaining Employment and Wage Gains,” 124-125.

important that SINE and PRONATEC coordinate and form partnerships with employers in the private sector so that there are better links with the type of skills and jobs that the private sector is seeking. SINE could expand its outreach activities with potential employers to enhance the reach of the system. This triangulation (PRONATEC-SINE-employers) could lead to better targeting of vulnerable populations (e.g. more focused training and casework) and would also result in a better matching of the open positions.<sup>144</sup>

## *Medium Run (3-5 years)*

### **NATIONAL GOVERNMENT**

*Adopt a strategy for the aging population.* The change in demographic trends presents both challenges for policymakers and opportunities for the Brazilian workforce. The aging population poses a moral and social challenge since the elderly will live longer, though they might not have access to formal pensions, retirement funds, quality care or healthcare. This is a topic that the next administration needs to think about and devise a strategy for. Without social security reforms and introducing care services for the elderly, there will be missed opportunities in terms of fiscal sustainability and jobs creation. Increasing the age limit on retirement, the number of years that employees contribute, as well as piloting portable benefits are some of the elements that can encompass a reform package, although it might not be a popular decision. Offering portable benefits (health, unemployment insurance and retirement) for contractual workers could be pursued, but a market for such providers has to be established. This needs further analysis since its applicability and enforcement might be difficult in Brazil.

*Incorporate a second or third language in school curricula, starting in primary schools.* A second language, such as learning English or Spanish, is an important skill that can improve the competitiveness of many sectors and open doors for employment.<sup>145</sup> To meet the workforce skills of the future, education institutions must train Brazilians in a second or third language (preferably international languages like English or regional languages like Spanish). The travel, tourism and hospitality sector and IT could increase their competitiveness if their employees possessed stronger language skills.

Second languages are taught in schools and became mandatory in 1996 as a formalized part of the education curriculum, and the language(s) taught are up to the discretion of the schools.<sup>146</sup> However, the teaching of a foreign language does not guarantee effective learning, and many students in Brazil have resorted to studying abroad as a better way to learn a language. Only 5 percent of the population in Brazil claim they can speak English (in 2014).<sup>147</sup> Another challenge with Brazilian teaching of a foreign language is that not every teacher is skilled in the foreign language either. Of the schools assessed in the INEP survey, in 2015 about 53 percent of teachers teaching a foreign language course had earned a higher degree compatible with that subject.<sup>148</sup> According to a study by the British Council, about 71 percent of survey

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<sup>144</sup> Interview by Romina Bandura, Brazil, February 2018.

<sup>145</sup> ICEF Monitor, "The Brazilian market for English language learning," International College of Economics and Finance, August 24, 2015, <http://monitor.icef.com/2015/08/the-brazilian-market-for-english-language-learning/>.

<sup>146</sup> Carina Silva Fragozo and Mônica Deitos Stedile Monawar, "English Teaching and Learning in Brazilian Regular Schools and Language Schools: A Study on Teachers' Belief," Canadian Center of Science and Education 1, no. 2, August 27, 2012, <https://files.eric.ed.gov/fulltext/EJ1081321.pdf>.

<sup>147</sup> ICEF Monitor, "English language learning,"

<sup>148</sup> Ministry of Education (MEC), National Institute of Educational Studies and Research (INEP), and the Board of Education Studies (DIREDD), "Relatório," (Brasília, Brazil: DIREDD, 2016), 358, <http://portal.inep.gov.br/documents/186968/485745/RELAT%C3%93RIO+DO+PRIMEIRO+CICLO+DE+MONITORAMENTO+DAS+METAS+DO+PNE+-+BI%C3%80ANIO+2014-2016/0dc50e21-3a60-444b-b7f6-1f16b8e5591f?version=1.1>.

respondents said in 2014 that they went through coursework of a foreign language in secondary education.<sup>149</sup>

## Long Run (5-10 years)

### NATIONAL GOVERNMENT

*Invest in basic infrastructure.* A significant component of Brazil's growth and productivity will depend on quality infrastructure. Without investments in infrastructure, rising sectors such as travel and tourism will also be affected. Brazil can never compete in the global market as a successful tourist or business destination unless it has more reliable infrastructure. This includes constructing and maintaining roadways, expanding electricity and internet access through the installation of power lines and cell towers, and improving sanitation foundations. The infrastructure deficit also affects education and learning outcomes. Approximately, 50 percent of schools in Brazil do not have proper sewage procedures or trash pickup.<sup>150</sup>

Brazil has begun realizing that it must attract private and foreign investors to close the infrastructure gap. China has been the first to step in and capitalize on Brazil's infrastructure vulnerabilities. In total, China and Brazil signed 14 cooperation agreements in 2017. China opened a \$20 billion infrastructure investment fund aiming to improve railroad infrastructure, linking Brazil's soy and corn producing regions to port terminals.<sup>151</sup> This not only has the potential to help Brazil's economy recover from the recession through agricultural growth, but it also benefits China as an agricultural commodity trading partner. The China Development Bank also agreed to provide its Brazilian counterpart, BNDES, with a \$3 billion credit line to allocate toward infrastructure projects.<sup>152</sup>

*Introduce policies that foster greater geographic mobility in the labor market.* Excluding migration from rural to urban areas, Brazilians in general are not very geographically mobile, in the sense that they tend to study and work in the same city they were born in. This is due in part to cultural and family ties, but if there were more enablers prompting people to take jobs in other cities, this would improve the matching of jobs to qualified candidates. Since it is likely that those with higher educations have better prospects and are therefore perceived to be more flexible, they would be more likely to move to new cities.<sup>153</sup> Lower-skilled workers without education are then less likely to move because of the lack of compatible positions, higher risks, and higher costs.<sup>154</sup>

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<sup>149</sup> British Council on Education Intelligence, "English in Brazil An examination of policy, perceptions and influencing factors," British Council, May 2015, <https://ei.britishcouncil.org/sites/default/files/latin-america-research/English%20in%20Brazil.pdf>.

<sup>150</sup> Leonardo Sales, "What can a school's infrastructure tell us about the quality of its education?" The Brazil Report, February 8, 2018, <https://brazilian.report/2018/02/08/school-infrastructure-education-brazil/>.

<sup>151</sup> Silvio Cascione, "Brazil, China open \$20 billion fund for infrastructure, tech projects," Reuters, June 26, 2017, <https://www.reuters.com/article/us-brazil-china-infrastructure/brazil-china-open-20-billion-fund-for-infrastructure-tech-projects-idUSKBN19H2NP>.

<sup>152</sup> Agencia EFE, "Brazil attracts Chinese investment for big infrastructure projects," Agencia EFE, September 1, 2017, <https://www.efe.com/efe/english/business/brazil-attracts-chinese-investment-for-big-infrastructure-projects/50000265-3367830>.

<sup>153</sup> Verônica de Castro Lameira, Eduardo Gonçalves, and Ricardo da Silva Freguglia, "Migratory effectiveness in the labor market: evidence from Brazil," ANPEC, 2016, [https://www.anpec.org.br/encontro/2015/submissao/files\\_1/i13-7fb12cee8230f4bb1f8a9552125956ff.pdf](https://www.anpec.org.br/encontro/2015/submissao/files_1/i13-7fb12cee8230f4bb1f8a9552125956ff.pdf).

<sup>154</sup> Ibid.

One big obstacle for geographic mobility is the lack of quality infrastructure, in terms of good roads, a railway system and other transportation means that allow the workforce to move more easily.<sup>155</sup> Public investment in services like public transportation can ensure low-income populations have access to all of the opportunities of the city.<sup>156</sup> In Brazil's cities there is an apparent disparity in transport access on the outskirts of the cities that contributes to greater inequality.<sup>157</sup>

Another barrier to mobility is the lack of education, and certain skills, such as a second or third language (beyond Portuguese) or even technical skills. Beyond PRONATEC, online education programs (such as Massive Open Online Courses - MOOCs) can offer other avenues to engage a broader demographic group in pursuing advanced education. At present, only 8 percent of public university students are from the poorest 20 percent of the population, despite quota systems that aim to mitigate unequal access to education.<sup>158</sup> Online education could help to admit more students from distant, poorer regions and provide a more accommodating platform for students of different educational backgrounds. Universities could also have quotas for students out-of-state to foster greater mobility.

*Strengthen basic education, improving technological use in schools, and building soft skills.* Investments in basic education in Brazil must focus on breaking traditional models of content and syllabus and fostering interactive and engaging institutions. New models of teaching must focus on encouraging teamwork and building cognitive and critical thinking skills yet supporting creativity and flexibility at the same time.<sup>159</sup> Educational exchange programs are one avenue by which these skill-sets can be adapted and improved upon. Knowledge-sharing exchanges with foreigners can help Brazil stimulate brain gain and generate new ideas.

## **PRIVATE SECTOR**

*Help develop a start-up ecosystem in conjunction with the national government.* One way to create formal jobs is through the creation of start-ups and bringing these to scale. Some of the reasons for the low start-up rates and the failure to scale up include bureaucratic barriers to start a business, cumbersome construction permits, high taxation, and restrictive labor laws. The private sector can help foster a better start-up ecosystem. Incentivizing firm growth and creating an entrepreneurial ecosystem is a joint effort that needs to be undertaken by different stakeholders.

Some of the ways the private sector may help start-up firms is to invest in the start-up ecosystem and offer technical assistance. More established firms have a larger role to play in terms of sharing experiences, offering mentorship, and helping in the development of new products, ideas, access to markets, capital, and skills. Moreover, venture capitalists can mentor the start-ups across their lifecycle and encourage collaboration among them.<sup>160</sup>

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<sup>155</sup> Ana Nassar, "Strengthening Urban Mobility Planning in Brazil," LaCoMotion, March 1, 2018, <https://www.lacomotion.com/strengthening-urban-mobility-planning-brazil/>.

<sup>156</sup> ITDP Brazil, "Mobility as Equity: Low-Income People Near Transit," Institute for Transportation and Development Policy Brazil, 2017, <https://3gozaa3xxbpb499eip30lxc8-wpengine.netdna-ssl.com/wp-content/uploads/2017/01/4.-Mobility-as-Equity-Low-Income-People-Near-Transit.pdf>.

<sup>157</sup> Ibid.

<sup>158</sup> Times Higher Education World University Rankings, "Brazilian admission quotas: successful but not enough alone," Times Higher Education, January 17, 2018, <https://www.timeshighereducation.com/news/brazilian-admission-quotas-successful-not-enough-alone#survey-answer>.

<sup>159</sup> Claudia Costin, "Education and the Future of Work" (Presentation at G20 Inception workshop), The World Bank, February 1, 2018, <https://t20argentina.org/event/inception-workshop-vision-strategies-for-2018/>.

<sup>160</sup> The World Bank, "Entrepreneurs and Small Businesses Spur Economic Growth and Create Jobs," The World Bank, June 20, 2016, <http://www.worldbank.org/en/news/feature/2016/06/20/entrepreneurs-and-small-businesses-spur-economic-growth-and-create>

## 5. Conclusions: Key Takeaways

Home to the fifth largest workforce in the world, Brazil faces several workforce challenges: high informality and low productivity jobs, social inequalities, and youth unemployment. To achieve long-term security and sustainable growth, Brazil must raise its productivity and competitiveness in the global market. To do so, the next generation of workers must be appropriately trained to meet the changing demands of the labor market.

The world of work in Brazil will continue to change over the coming decades with technology and demographic shifts creating added challenges and opportunities. Sectors such as health and care, travel and tourism, IT, and higher added value agriculture and food production have the highest potential to hire people or offer better income opportunities in the near future.

The next president to be elected in October 2018 will have the difficult task to restore Brazil's economy and lead the country into a more promising future. This huge undertaking includes preparing the Brazilian workforce for the future of work. To help in this journey, CSIS recommends the following actions:

- Create a labor market strategy to guide the vision for the next 5-10 years
- Connect and coordinate the different vocational training programs with employment exchanges (labor market intermediation) and private sector partners
- Introduce policies that foster greater geographical labor market mobility
- Adopt a strategy for the aging population
- Incorporate a second or third language in school curricula, starting in primary schools
- Continue labor reforms to adjust to the new world of work
- Invest in basic infrastructure
- Help develop a start-up ecosystem
- Strengthen basic education, improving technological use in schools, and building soft skills

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[jobs](https://d1iydh3qrvgeji.cloudfront.net/Media/Default/New%20release%20images%20and%20reports/Entrepreneurial%20India%20BV%20mid%202016.pdf); IBM Institute for Business Value, "Entrepreneurial India: How startups redefine India's economic growth," (Somers: IBM Corporation, 2016), <https://d1iydh3qrvgeji.cloudfront.net/Media/Default/New%20release%20images%20and%20reports/Entrepreneurial%20India%20BV%20mid%202016.pdf>.

## Annex A: Employment by Sector and Sub-Sector

**Figure A1: Employment, 2017**

Sector, Subsector	000's	Percentage of Total	Percentage of Sector
<b>Agriculture (Total)</b>	<b>9,377</b>	<b>10.3</b>	<b>100</b>
<b>Manufacturing (Total)</b>	<b>18,941</b>	<b>20.9</b>	<b>100</b>
Mining and Quarrying	421	0.5	2.0
Manufacturing	10,388	11.4	54.8
Utilities	813	0.9	4.3
Construction	7,319	8.1	38.6
<b>Services (Total)</b>	<b>62,526</b>	<b>68.8</b>	<b>100</b>
Wholesale and Retail Trade	17,552	19.3	28.1
Transportation and Storage	5,739	6.3	9.2
Accommodation and Food Service Activities	4,673	5.1	7.5
Financial Services	1,241	1.4	1.9
Real Estate; Business and Administrative Activities	7,299	8.0	11.7
Public Administration and Defense; compulsory Social Security	5,153	5.7	8.2
Education	6,062	6.6	9.7
Human Health and Social Work Activities	4,312	4.7	6.9
Other Services	10,495	11.6	16.8
<b>Total Employment, 2017</b>	<b>90,844</b>	<b>100.00</b>	

Source: ILO<sup>161</sup>

<sup>161</sup> ILO, "Employment by Sector - ILO Modelled Estimates" (Geneva: ILO, 2017), [https://www.ilo.org/ilostat/faces/oracle/webcenter/portalapp/pagehierarchy/Page3.jspx;ILOSTATCOOKIE=WxBFKytVeUcVpqli4uRZ7Wj-LkCbCuKSRzA6pFd\\_ve5Jq4LC4DxA!1254440622?MBI\\_ID=33&\\_adf.ctrl-state=b4j81nz66\\_4&\\_afLoop=1819736366680944&\\_afWindowMode=0&\\_afWindow](https://www.ilo.org/ilostat/faces/oracle/webcenter/portalapp/pagehierarchy/Page3.jspx;ILOSTATCOOKIE=WxBFKytVeUcVpqli4uRZ7Wj-LkCbCuKSRzA6pFd_ve5Jq4LC4DxA!1254440622?MBI_ID=33&_adf.ctrl-state=b4j81nz66_4&_afLoop=1819736366680944&_afWindowMode=0&_afWindow).

# Annex B: Methodology for Country Case Studies

CSIS prepared four country case studies in Brazil, India, Kazakhstan, and Nigeria, to do a deep dive analysis on their labor markets. The case studies analyze the current world of work in each country and the trends looming on the horizon. The case studies are divided into three parts: Part one is a general description of the challenges and main drivers that are disrupting the labor market. Part two presents the sectors that we believe will likely offer better employment and income opportunities in the next 5 years. Part three presents a set of policy recommendations across a variety of actors that would help make the labor market more dynamic and adaptable to the oncoming challenges.

During the period January through May 2018, a CSIS team traveled to these four countries and carried out a series of confidential and off-the-record interviews with a variety of stakeholders to get their perspective on the future make-up of the world of work. CSIS met with professionals in government, the academic community, companies in rising sectors (technology, tourism), traditional sectors (energy, finance, automotive), trade associations, labor unions, and NGOs. Overall, the CSIS team met over 100 institutions and 250 thought leaders in these four countries. CSIS also consulted a wide range of secondary sources and databases to conduct the case studies.

CSIS did not carry out a detailed survey, but posed a series of open-ended questions. The aim of the interviews was to get first hand perspectives from company executives, economists and thought leaders, to corroborate some of the findings from prior studies on the topic and at the same time, offer some new insights.

Interview questions included:

1. What does the future of 'work' in your country look like (5-10 years from now)?
2. What are the key drivers of change in your country (good and bad)? What are the big unknowns?
3. What do you see as the growing, stagnant, and declining sectors in your country? What type of jobs will be created? Which ones will disappear? Which will readapt?
4. How will vulnerable groups be impacted: the poor without education, workers in stagnant industries, informal sector, disabled?
5. What skills and training (higher education vs. vocational training) will be needed to meet the work needs of the future labor market in your country?
6. What's needed beyond skills training?
7. How will artificial intelligence, technology, and the increasing presence of start-up companies change the way that people will work in your country? How will these things impact job opportunities and skills needed?
8. How is your organization adapting or preparing (policies, programs, training, etc.) to meet the future of work?
9. What are your overarching recommendations to different stakeholders? How can they manage change? What's working now? What's not? What needs to change?
10. What keeps you up at night about your country? What gives you hope?

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