

# Infrastructure—how it is in Brazil

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### Introduction

Infrastructure, as a significant economic indicator, provides a mixed impression to me in my two-weeks tour in Brazil. At last semester, I took an Economic course about Latin America Economy taught by professor de Melo Caldas. This class inspired me to research Latin American economy regarding its characteristics and situations. One important thing from my learning of Latin American Economy is the infrastructure gap in Latin America, which undermines the production gains and ultimately the economic development. Comparing to 99% ratio of paved roads in Europe, the rate is much worse in Latin America countries (20%), which also falls below the global average. The unpaved road is detrimental to regional transport, as it not only increases the time of transportation but also raises the possibilities of traffic accidents. Moreover, Latin America faces an awkward situation regarding its trade with the United States, which is the burden of potential business because of under-developed infrastructure. As an international student from China, the economic study in the United States always inspires me to compare various financial strategies in different countries, and to explore how distinctive the outcomes could be. One of my confusions is the opposite economic situations between China and Brazil, though there are multiple similarities between these countries, such as bureaucracy and market size. Brazil, one of the biggest countries in the western hemisphere, is a good representation of economic development in Latin America. From the trips to Sao Paulo, Manaus, and Rio De Janeiro, I experienced the efficiency of transportation by roads and flights, and how maintained those transportation facilities are. The strike of the truck driver also gives me an overview of adverse effects from paralyzed road transportation, which is by far the essential way of traffic in Brazil. On the other hand, the study of infrastructure in Brazil helps me to shape my understanding of economic development, and how much potential, concerning regional trade, social welfare, and sustainable growth, a country could exploit from its infrastructural development.

### Backgrounds

Infrastructure is a public good, which means its development depends mainly on government funding. Therefore, the research of infrastructure developments in Brazil implies research on Brazilian government, and how it was functioning in the history. Speak of the history of Brazil, one of the critical elements in the evolution of social and financial systems. This evolution can be represented by an economic pendulum, which shifts between the domination of state and the domination of the market. Before 1980's, the country played a critical role in the Import Substitution Industrialization (ISI) program, in which government provided public utilities and operated heavy industries. Such effort was based on the sacrifice of the national deficit, and led to a sharp increase of public debt, which caused a recession and forced authorities to reform. After 1980's, the pendulum moved to a market economy situation, which was characterized by privatization and deregulation. One significant reform in the infrastructure was the privatization of telecom service. Many state-owned companies were becoming privately-operated. Because of market competition and profit incentives, telecom service became cheaper and more effective, benefiting people in the society. With various reforms of its monetary policy, including issuing a new currency that successfully survived the hyperinflation, Brazil seems to start heading back to its track of economic development.

Despite the recent transformation of its economy, Brazil is still facing an uncertain and inconsistent economic performance. The financial crisis in 2016 was a significant recession to the Brazilian economy, and infrastructure developments of Brazil have continuously suffered from decreasing and imbalanced funding, which deepens the infrastructure gap and maintenance problems.

### Summary

Within two weeks of the study abroad program in Brazil, I have experienced the transportation system in Brazil. Overall, the air service is quite impressive, while the roads and railways still need improvements on construction and maintenance.

**Air:** Brazil has a well-developed infrastructure in its Air transportation. There are 21 international airports and 50 major commercial airports in the country, and the annual passengers of air are more than 115 million. At the day of departure, we took a flight operated by United Airlines from Chicago O'Hare international airport to Sao Paulo Guarulhos Airport, the busiest airport in Brazil and South America. During the trip in Brazil, we had two other domestic flights from Sao Paulo to Manaus and from Manaus to Rio De Janeiro. The operation of the airport in Brazil is well, and it was easy for us to find the desk to check in or find the bus at the shuttle center. The shops and restaurants in these airports are well-organized and offer excellent services.

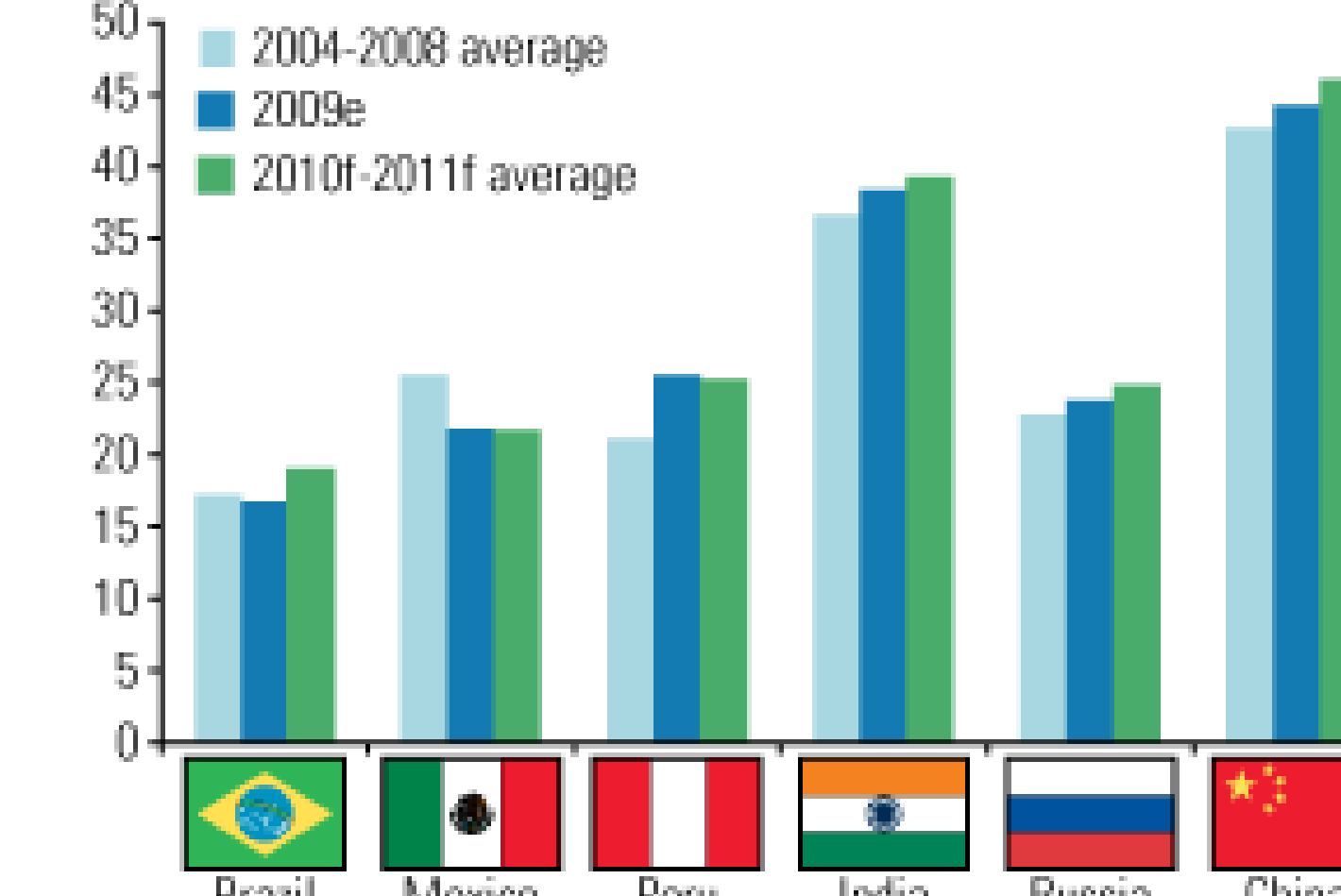
**Roads:** Roads are the primary way of passengers and freight transportation in and around Brazil. However, the maintenance and coverage of paved roads are remained to be improved. In 2016, only 6 percent of the roads in Brazil is paved. Due to the fiscal crisis in the 1980s, the infrastructure investment in Brazil has been shrinking continuously, and the economic crisis in 2016 may even worsen the situation. The mismanagement and lack of road maintenance are more evident in rural areas. Traffic lights are rare in small streets in Manaus, while pedestrians are crossing the roads as they want. During the trip to Urubu River, we had a 3-hour road trip with 50 minutes transfer by boat. The road trip was unpleasant because of many road holes caused by rain, which slows down the traffic and increases the risks of traffic accidents. More surprisingly, the direct distance from Manaus to our camping sites only takes half of the time if we travel by same road speed. At Sao Paulo, roads are maintained but too narrow for large traffic volume, causing a traffic jam at rush hours.

**Railways:** Brazil has a lengthy history of rail transport, which started in the 1800's. Although it is proven that freight transport by railroads is more efficient (30 percent cheaper) than by paved roads, rail transportation only handles 21 percent of total freight, comparing to 61 percent of total freight handled by road transportation. Similar to the case in the United States, railroads are not the significant means of passenger transport, and Brazilian people choose airplanes as long-distance traffic. We never had a chance to experience the long-distance railroads, which limits my perception of how efficient railroad system in Brazil is.



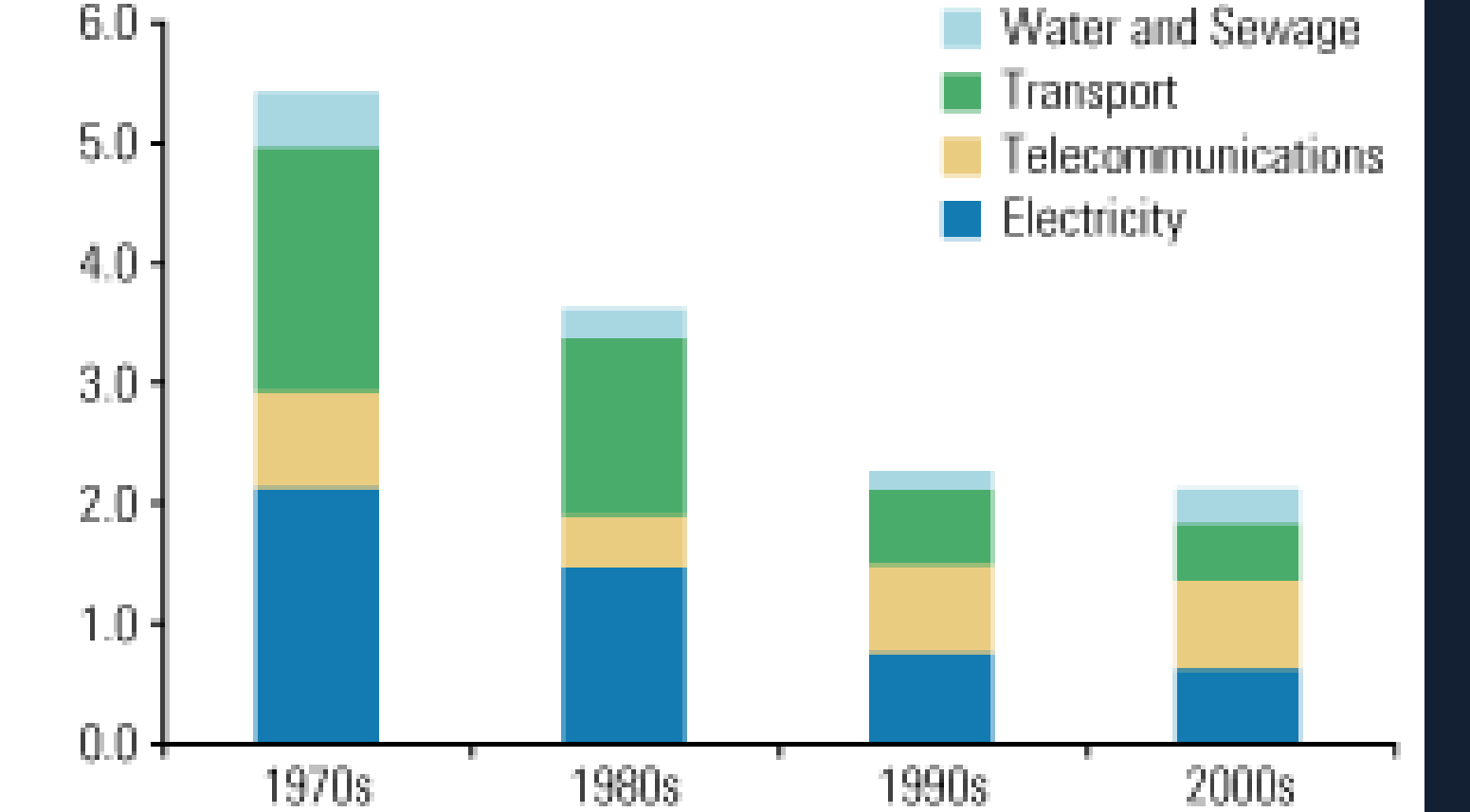
### Brazil Needs to Ramp Up Its Infrastructure Spending

Investment-to-GDP ratio as a % of GDP



Source: Standard and Poor's, Morgan Stanley LatAm Economics \*e = Estimate, f = Forecast

Brazil's Infrastructure investment as a % of GDP



Source: World Bank, IPEA, BNDES (see Bielchowsky 2002, Blyde, Castelar Pinheiro, Daude and Fernandez-Arias 2007, and Frischtak 2007)

### Potential

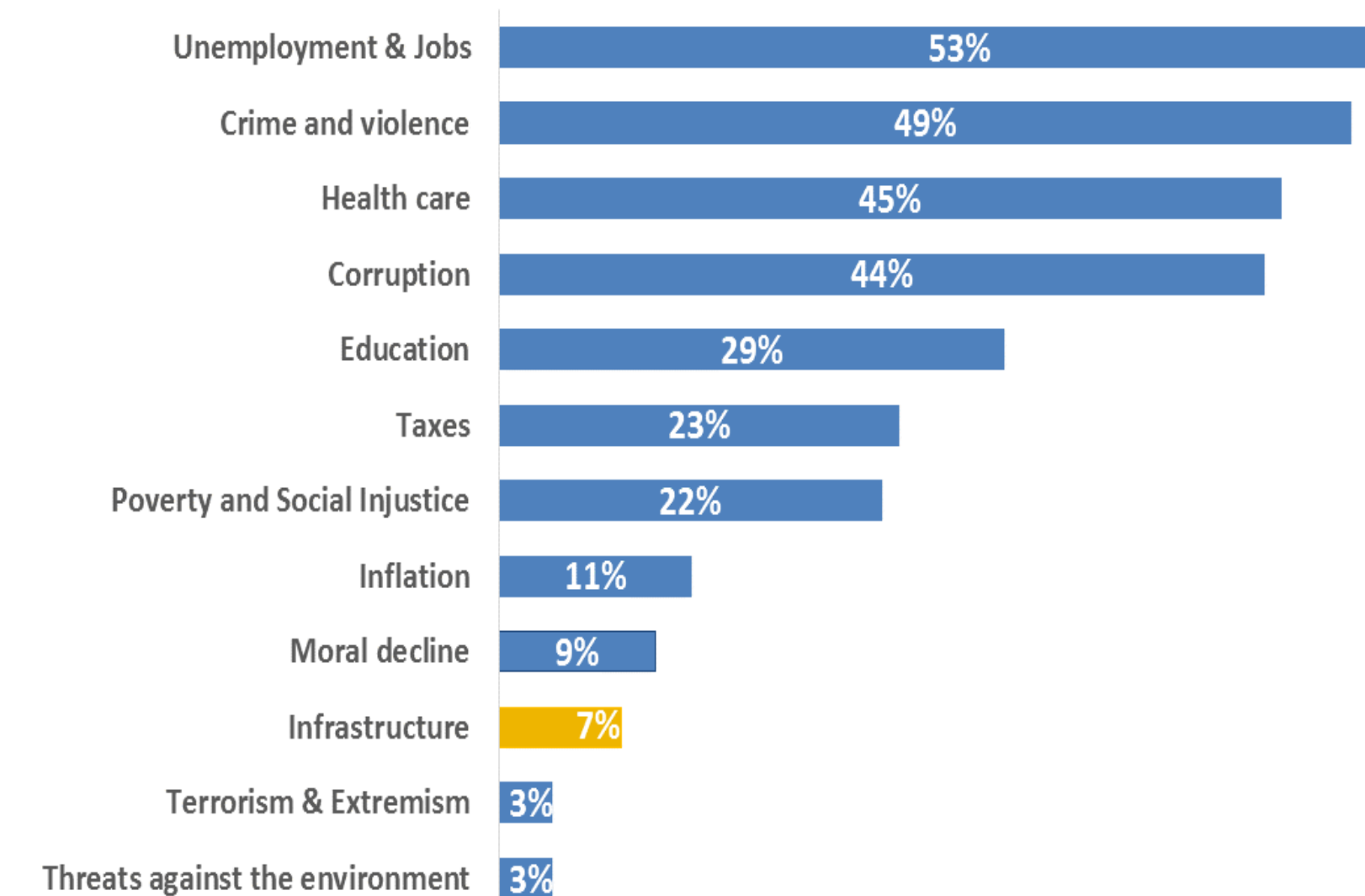
To solve the infrastructure problem in Brazil is no easy feat, which contains the improvement of the funding program, the reform of government institution, and the participation of private investment.

An essential problem in infrastructure is the lack of funds and priority. The economic crisis in 2016 reset economic growth and significantly reduced available funds for the government. Without proper maintenance, the aging of critical facilities such as roads will bring much trouble to the freight transportation, which highly depends on roads in Brazil. To raise more funds for infrastructural maintenance, the government should extend its tax base and reduce tax rates. Moreover, the development of infrastructure is not a top priority in Brazil, comparing to unemployment and crime rates. A reassessment is required since the infrastructure is a merit good that benefits more than people imagine and needs more attention from its major investor—the government. Corruption is a historical issue in Brazil because it interrupts government planning and reduces public benefits. As an implication of corruption, the bureaucracy complicates working process and decreases the effectiveness of the government. Reform of government institution is a solution to eliminate corruption by creating a more transparent government. However, the implementation process may be harder and longer due to the prolonged backgrounds of corruption in Brazil.

From my study of Latin American Economy, the meaningful reform in infrastructure is to create a public-private partnership program, which provides profit opportunities to create incentives for private investments. Private investments in infrastructure may seem unique since the infrastructure is a public good at the most time, but individual intervention could be an essential origin for funds. Nevertheless, the negotiation is underdeveloped, and the partnerships may not guarantee consistent outcomes if there is no consensus among government and private investors.



### Infrastructure is not a priority in Brazil today!



Ipsos Global @divisor poll conducted January 20 - February 3, 2017 among 18,557 global respondents

### Conclusions

At Sugarloaf Mountain, a conversation between Daniel and Professor Petry caught my attention. "Rio hasn't changed that much" Professor Petry expressed his impression of Rio De Janeiro to Daniel. "Change" is the word that Brazilians are eager to obtain, but still hard to achieve. Inside the country which is still struggling with corruption and poverty, infrastructure may be of no importance at all. Despite the great depression from the economic recession and many other social problems, Brazilians still stay optimistic about their lives. The real solution for Brazil may be as simple as a change with optimism to the future.

Good luck to Brazil, and all Brazilians.

### Resources

<http://chartsbin.com/view/37627>  
<https://www.brazil.org.za/brazil-infrastructure.html>  
<https://www.export.gov/article?id=Brazil-Transportation>  
<https://www.saopaulo-airport.com/>

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