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Brazil's economic growth and real (div)convergence from a very long-term perspective (1822-2019): An historical appraisal*

Crescimento econômico brasileiro e real (di)convergência na perspectiva de muito longo prazo (1822-2019): Uma avaliação histórica

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RESUMO: A reconstrução da histórica econômica do Brasil desde a independência por Portugal (1822) pode levar a uma nova compreensão do seu crescimento econômico. A ideia enraizada de que o Brasil podia ter feito mais implica a necessidade de se analisar cada fase do seu desenvolvimento. Neste artigo, nós fornecemos uma perspectiva do crescimento econômico brasileiro e seu processo de real convergência no muito longo prazo (1822-2019). Por um lado, esta revisão indica que as mudanças estruturais observadas na metade do século XX foram cruciais em promover o crescimento e a real convergência do país ante países tecnologicamente avançados. Por outro lado, as condições institucionais precárias e a deficiência na formação de capital humano são fatores críticos subjacentes a inabilidade do Brasil em estabelecer um crescimento econômico robusto e sustentável desde tempos coloniais.
PALAVRAS-CHAVE: Crescimento econômico; real convergência; Brasil; muito longo prazo.

ABSTRACT: The reconstruction of the economic history of Brazil since independence from Portugal (1822) may lead to a new understanding of its economic growth. The deep-rooted idea that Brazil could have done better means there is a need to delve into each phase of its development. In this paper, we provide a very long-run perspective (1822-2019) of Brazil's economic growth and process of real convergence. On the one hand, this review indicates that structural changes observed in the middle of the 20th century were crucial in promoting

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the country's growth and real convergence with technologically advanced countries. On the other hand, poor institutional conditions and deficient human capital formation have emerged since colonial times as critical factors underlying Brazil's inability to establish robust and sustainable economic growth.
KEYWORDS: Economic growth; real convergence; Brazil; very long run.
JEL Classification: N10; N16; O40.

1. INTRODUCTION

A former Portuguese colony, Brazil is the largest country in Latin America as well as one of the largest in the world in terms of territorial size and population. Records of the Gross Domestic Product (GDP) place Brazil in the eightieth position in the world ranking (IMF, 2018), even though its per capita level differs substantially. In 2018, Brazil occupied the 80th position in terms of GDP per capita based on Purchasing Power Parity (PPP) rates, far from some of its continental neighbors, such as Chile (56th), Mexico (63rd), and Argentina (64th). The scenario is even worse when compared with the benchmark United States (10th), or its alma matter Portugal (42nd).

The picture of the country that emerges not only underscores its precarious position regarding per capita income, but also some rather inconsistent periods of economic growth. Despite the ability for high growth rates (from 1960 to 1980, the real GDP grew on average by 7.5% annually), Brazil has faced significant challenges in its efforts to promote robust and sustainable growth, and its long-term economic performance has been disappointing (Arbache and Sarquis, 2017).

The ups and downs of Brazil's economic growth has garnered substantial scientific attention from economists, and a set of quantitative studies have analyzed some of the key determinants of Brazilian economic performance, such as inflation (Araujo et al., 2018), balance-of-payment constraints (Vieira and Holland, 2010; Alencar and Strachman, 2014; Lélis et al., 2018), financial and trade liberalization (Bresser-Pereira et al., 2020), structural change (Oreiro et al., 2018), and political instability (Campos et al., 2020). Although these analyses are highly relevant and provide insights to better understanding Brazilian backwardness, they focus mainly on relatively short and contemporary periods (except for Campos et al., 2020, who embraced a very long time span), which means that these studies place particular emphasis on explaining deceleration/acceleration events, but have missed a great deal of potential information provided by much longer periods.

Additionally, qualitative, descriptive accounts of Brazil's economic history are available mainly in book format (Furtado, 1987; Hudson, 1998; Abreu et al., 2014; Bresser-Pereira, 2017). These studies generally focus on a structural perspective, attributing Brazil's laggardness to an unstable balance of payment, the high weight of commodities in the export basket, and the detrimental, premature deindustrialization process after the 1980s.

Even though these studies occasionally agree on some determinants that have hindered Brazilian economic performance (e.g.,, premature deindustrialization; balance-of-payment constraints), others present divergent conclusions (Carvalho and Carvalho (2019) vs. Araujo et al. (2018) or Alencar et al. (2018) vs. Jesus et al. (2018)). The disagreements are hard to disentangle, and the mixed results require delving even further into Brazil's economic history.

To date and to the best of our knowledge, the studies addressing Brazilian performance have overlooked some critical factors underlying the economic growth of emerging economies (EE), such as the role of human capital formation (Wang et al., 2020), and their institutional conditions (Vianna and Mollick, 2018).

Another overlooked issue is whether Brazil has managed to achieve or is in the process of achieving real convergence with the developed countries. Most of the literature on real convergence has focused on the processes of real convergence within the country (Ferreira, 2000; Lima et al., 2010; Dapena et al., 2017). The present study focuses on Brazil's real convergence regarding other Latin American countries, and more developed countries, such as Portugal, the UK, and the US, measured by real GDP per capita, retrieved from Maddison Project Database (2020).

In this paper, we aim to fill these gaps in the literature by providing a structured qualitative/ narrative review of Brazil's economic growth from a very long-run perspective (1822-2019), highlighting the critical factors underlying its economic performance, summarized by periods (adapting Maddison's (1992, 2000) proposal)[1] – The Empire (1822-1889); The Oligarchic Republic (1889-1930); The developmentalist era (1930-1980); The Crisis period (1980-1990); and The Neoliberalism phase (1990-2019)[2] – and sets of growth determinants (cf. Sala i Martin et al., 2004; Bruns and Ioannidis, 2020) – Macroeconomic (in)stability; International trade; Resources and dynamic capabilities (human capital, research and development, and innovation); Sectoral specialization patterns/structural change; and Institutions (law, culture, politics, transparency). Furthermore, the lack of studies providing a very long-term perspective of Brazil's real convergence, vis-à-vis technologically advanced countries, is likely to enrich the debate.

From a scientific point of view, an analysis of a very long-run time span should provide insights into understanding the factors underlying Brazilian economic growth and its catch-up (or falling behind) processes. According to Maddison (1995), the more we "zoom in" the lens on the past, the more we have instruments to forecast for years ahead. In a similar manner, the information retrieved from these accounts

[1] Even though the discovery of Brazil in 1500 (up to 1822) constitutes an important part of Brazilian history as Portuguese colony, the per capita growth in this phase was low and in line with the rest of the world (Maddison, 2001). Thus, we dismiss this phase.

[2] The period 1980 onward could be considered the Neoliberalism phase. However, since some authors (e.g.,, Saad-Filho, 2020; Medeiros and Trebat, 2021) contend that from1980 and 1990 Brazil experience a decade-long transition with external debt crisis, and it was in the 1990s onward that liberal policies and denationalization actually began we decided to split 1980-2019 into two distinct phases: the Crisis period (1980-1990), and the Neoliberalism phase (1990-2019).

provide valuable guidelines for governments to implement their policies and foster effective economic growth (Bergheim, 2008).

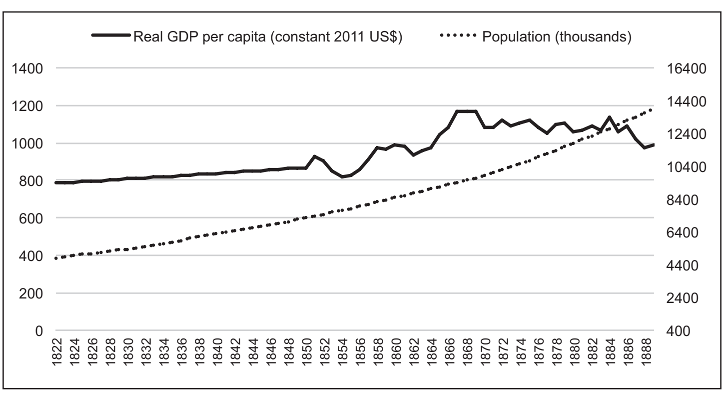
The paper is structured as follows. Section 2 discusses Brazil's economic evolution, divided into five periods. Section 3 concludes, presenting the main findings of this descriptive, very long-run account, and addressing potential avenues for future research.

2. THE LONG-TERM ECONOMIC DEVELOPMENT OF BRAZIL: A DESCRIPTIVE ACCOUNT

2.1. The Empire (1822-1889)

Not only was the year of 1822 a significant landmark in Brazilian history, with the declaration of independence, but the 1820s also brought a period of low economic growth to an end in most of the world (Maddison, 2001). While the advance of technology and higher economic growth rates were achieved after the 1820s in some countries, such as the UK and US, the Brazilian per capita income did not increase significantly (Maddison, 2001). We found a modest per capita annual rate of 0.35% from 1822 to 1889. The small advance in the real GDP in this period (1.96%) was accompanied by a population growth of 1.61%, meaning near stagnation in per capita terms (Figure 1).

Figure 1: Real GDP per capita (left axis) and population (right axis), 1822-1889[3]



The end of the colonial era also brought independence in strategic economic sectors, since Brazil was able to create its banking system and to have its own cur-

[3] All the figures in the present articles which depict the GDP per capita and population were constructed by the authors based on data from the Maddison Project Database (2020). Some missing values were retrieved from Coatsworth (1978), 1822-1849, and from World Bank Database, 2015-2019. Additionally, the figures containing the convergence ratios consider 9 Latin American countries, notably Argentina, Bolivia, Chile, Colombia, Cuba, Mexico, Peru, Uruguay, and Venezuela.

rency (Maddison, 1992). These new amenities helped the Brazilian government to adopt a strategy to pay off debt and finance expenditure: money printing. In a book about Brazil's economic growth, Furtado (1987) contends that this mechanism led to the duplication of the country's available currency in the first decade after independence. Consequently, and according to Leff (1972), the imperial era was a period of chronic inflation.

Brazil's nonviolent independence did not mean without damaging the colony's wealth. Since 1808, Portugal was forced by Britain to allow Brazil to trade with the rest of the world, and the former country was in no position to obstruct this arrangement due to its large debt to the English nation. Independence in 1822 came with a treaty that Brazil would assume a 1.4 million pounds sterling of debt owed to Britain and an indemnity totaling 600.000 pounds sterling owed to the Portuguese crown (Hudson, 1998). Thus, the Empire era started with the first period of Brazilian foreign debt, which comprehends the years following independence until a funding loan in 1931 (Abreu, 2006).

Although the debt to Britain was large due to the financial compensation paid for independence, the spread of the Brazilian central government and non-government loans also refers to the need to develop infrastructure, railway and port facilities, in order to improve the transportation of Brazil's primary goods. With the close links to Great Britain, Brazil was obligated to certain trade agreements since 1810, which favored the former country with an import tariff of only 15% ad valorem (a tax of 24% was applied to goods from the rest of the world, and 16% to Portuguese products). Considering this limitation, the government faced financial difficulties until the end of the agreement in 1844, when Brazil was able to raise the general tariff level, at least for manufactured goods (Furtado, 1987).

Even though the government did not require large inputs to sustain its daily activity, the main instrument to finance these expenditures was import tariffs, which justified the adoption of protectionist policies. These policies were implemented after 1840 and helped stimulate domestic manufacturing and boost the linkage between export growth and industrialization (Leff, 1972).

In the absence of a significant merchant class in Brazil, agriculture was the principal avenue for economic development in the nineteenth century (Leff, 1972). The agricultural landlords took advantage of abundant Brazilian natural resources and the slave labor force to boost their production. The country's crops were concentrated on coffee in the Southeast, and sugar and cotton in the Northeast (Furtado, 1987).

Indeed, the imperial period mostly favored the domestic agricultural sector, which may explain the low levels of per capita growth compared to the world standard (Maddison, 2000). This backwardness may be explained by a lack of significant changes in the traditional plantation economy during this period or considerable improvements in manufacturing activities (Fishlow, 1980). In the same vein, Leff (1972) attributes the Brazilian meager performance in nineteenth century to the low rate of technical progress, and the low level of technology. Also justifying the relative underdevelopment is Brazil's late industrialization; in contrast to other advanced nations, namely the US, that observed the emergence of the industrialization process in the XVIII-XIX centuries (Clark et al., 2008), Brazil only experienced the capitalist industrial revolution between 1930 and 1980 (Baer, 1978; Fonseca and Salomão, 2017)

If a country does not experience a certain level of complexity in its manufacturing sector and relative technological autonomy, resting its development on the domestic market is not a sustainable option. Therefore, the only alternative is to explore international trade (Furtado, 1987). In the first decade of the imperial period, the sugar crops from the Northeast were the export leaders, followed by cotton and coffee, the latter representing only 18% of the total export revenue (Furtado, 1987). According to Hudson (1998), there was a sharp rise in coffee production in the following decades, and its share in exports increased from 50% in 1841-1850 to 59.5% in 1871-1880, which put Brazil in a near monopoly position on the world coffee market (Maddison, 1992).

In contrast with the vast natural resource such as land, the labor shortage was a constraint to landowners and farmers. Slavery had been abolished in most countries all over the world, and Brazil was being pressured to end slave labor as well, a decision which came into force in 1888. The resulting lack of labor made the government advance with legislation to encourage immigration in 1870, which benefited production and landowners (Hudson, 1998).

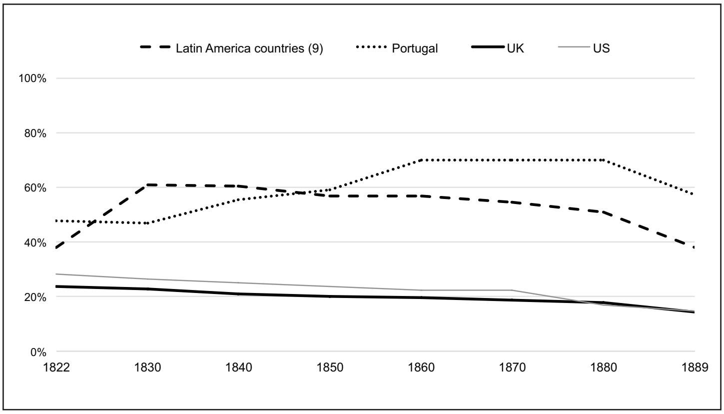
Although most of immigrants came from European countries (from 1820 to 1890, 876.980 people emigrated to Brazil, 87% were from the Catholic countries of Portugal, Spain, and Italy), they constituted mostly illiterate and unskilled labor (Zanella et al., 2003). This, together with African slavery explains Brazil's meager human capital stock. According to Leff (1972), given the schooling system's poor conditions and the effect of rapid population growth, in 1877, only 7% of the cohort aged between 7 and 11 years had been enrolled in primary school.

The structure of Brazil's political and administrative system during the imperial period was properly established after the 1824 Constitution, where four powers – the executive, the legislative, the judicial, and the moderating power – were the nation's organizational drivers (Zanella et al., 2003). Another important feature of the Brazilian Constitution was the adoption of Catholicism as the religion of the Empire. Such a strong imposition had consequences both for the government, where non-Catholics were not eligible for employment, and for society, because the policies to boost immigration labor favored mostly Catholic countries, as mentioned previously. Furthermore, throughout Brazilian history, the rural landowners/rural elite oligarchies were a driving force behind this complex arrangement. They were more than just the country's dominate class, they were part of the government, even if indirectly.

This first period of the independence era was marked by low economic growth in Brazil. The records on the standard of living are also low in comparison to countries like the US and the UK (in 1889, Brazil's GDP per capita represented less than 20% of the GDP per capita of the UK). Indeed, the Brazilian economy lagged the English-speaking nations from 1822 to 1889. Furthermore, as can be seen in Figure

2, Brazil diverged from some other countries within Latin America in real terms after the 1830s.

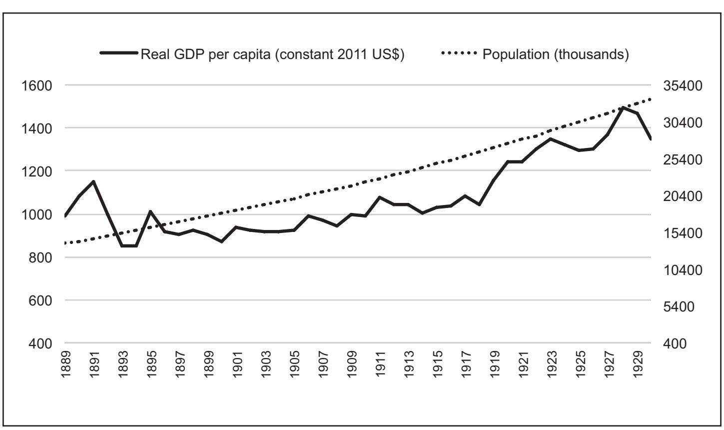
Figure 2: Evolution of Brazil's real convergence indicator, 1822-1889



2.2. The Oligarchic Republic (1889-1930)

During most of the nineteenth century, the Brazilian economy developed at relatively low rates. However, at the end of the monarchy, the proclamation of the Republic in 1889 breathed new life into Brazil, which embarked on a path of rapid economic growth (Figure 3). The oligarchic republic period was marked by an annual GDP growth rate of 2.92%, also followed by a sharp rise in population (2.17%) due to mass immigration. In per capita terms, the rate recorded in this period, 0.76%, surpassed the Empire era.

Figure 3: Real GDP per capita (left axis) and population (right axis), 1889-1930



Coupled with the arrival of European immigrants and the abolition of slavery, the new paid labor class prompted a sharp rise in the emission of paper currency, which until then had been mostly printed to pay government debts (Furtado, 1987). In hindsight, the country experienced long-term inflation even at the end of nineteenth century. In the same vein, inflation disrupted the normal mechanism of the exchange rate, which fell faster in this period and helped to boost even further the domestic price of coffee, hence stimulating production (Maddison, 1992).

In the first period of the Republic, Brazil bolstered its primary goods exports, such as rubber, sugar, tobacco, and cotton, and was responsible for 75% of the world's coffee production. However, as competition rose, prices fell constantly, forcing the government to devalue the Brazilian currency. According to Leff (1969), the *mil réis* depreciated 80% against the pound sterling between 1889-1920. Therefore, when the price of imported goods rose, the Brazilian government faced lower consumption and less revenue from import taxes (Hudson, 1998).

From 1898 to 1902, under the policies of the new Minister of the Treasury, Joaquim Murtinho, the Brazilian economy drafted a deflationary plan that reduced money supply, pushed prices down, doubled the export value, thus reducing pressure on the balance of payments. Equally important, the funding loan of 1898 and the gold standard established in 1900 marked a recovery in the external balance and restored the trust of foreign investors (Furtado, 1987).

The following years were prosperous, and many commercial banks were founded, which helped to boost credit, therefore favoring both rural producers and factory owners. The coffee sector benefited from the credit facilities and was able to broaden its supply due to the land and labor surplus available throughout the country. However, demand did not follow the trend in supply, and coffee surplus contributed to raising the price of commodities. The elite producers, based chiefly in the state of São Paulo, led a convention in 1906 (known as *Convenção de Taubaté*) to establish a policy of coffee "valorization", which faced some resistance from the federal government. Regardless, however, the power of coffee growers was reinforced until 1930 (Furtado, 1987).

The Brazilian market, set by Britain as its main trade partner in the nineteenth century, started to attract the interest of another English-speaking nation, the United States. Hudson (1998) states that, in 1926, 50% of all products were exported to the US, and by the 1920s, 35% of total Brazilian foreign debt was in US dollars.

As the human capital increased, Brazil also became more urbanized and, though far from satisfactory, more educated (Leff, 1969; Hudson, 1998). From 12.4% in 1889, the percentage of the cohort aged 7-11 years enrolled in schools rose to 39% in 1930. Secondary schools (aged 11-17 years) and higher education (aged 18-21 years) were introduced late in Brazil, and according to the records in 1930, 1.7% and 0.063%, respectively, were enrolled in these levels of schooling (Leff, 1969).

Associated with the difficulty in accessing foreign industrialized products and the transition to a period of credit facilities, the manufacturing sector experienced economic expansion and an embryo of what would come to be called the "Import Substitution Industry" (ISI) emerged in the middle of the twentieth century (Furtado, 1987). Indeed, Fishlow (1980) highlights the rapid growth of the manufacturing sector, especially textiles, between 1906 and 1912.

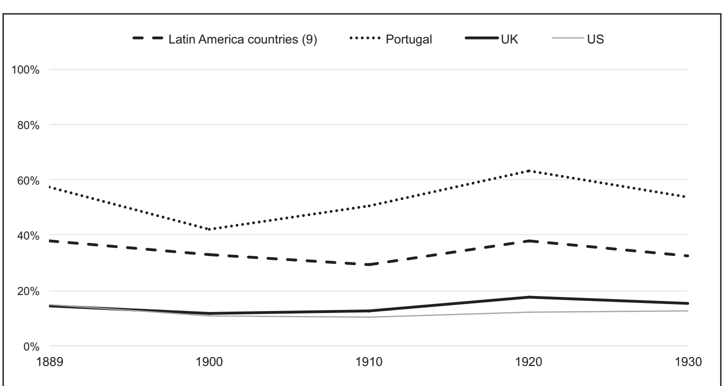
According to Leff (1969), rather than damaging the commodity exports, the protectionist policies applied in Brazil in 1900, mainly the high tariff rates, and the barriers to importation between 1905 and 1908, helped to boost both industrial development and coffee production, in essence suggesting that they were complementary and mutually supported.

The Brazilian republic was a regime born of a coup d'état rather than accidentally. The military forces assumed moderate power until the new constitution was passed in 1891, when the imperial regime was totally dissolved. The rural elite oligarchies gained the official command of the political system, thus reinforcing their power at state level (Hudson, 1998).

In this new organizational system, authority was no longer centralized in federal terms, but rather the states gained politic and financial autonomy (Furtado, 1987). The first republic is well known for the "*Voto de Cabresto*" (Vote Corralling) or "*Coronelismo*" (Colonelism), the highest form of corruption in this period, rooted in illegal arrangements among the political power and the oligarchic elites (Biason, 2019). Moreover, many divergences in interests resulted in political instability since the imperial era, and economic pressure on the salaried middle class, which led to social disorder and military uprising. The civil war in the Southern State of Rio Grande do Sul (1893-95), the Armed Revolt in Rio de Janeiro (1891, 1893-94), and the "*Canudos*" war in the Northeast state of Bahia (1896-97), underscored Brazilian instability at the end of the nineteenth century (Furtado, 1987).

Even though the Brazilian economy performed better in the oligarchic republic than in the previous period, in real terms, its GDP per capita represented less than 20% of the GDP per capita of the English-speaking nations (Figure 4). The dynamics of the new regime were not sufficient to recover and to catch-up with either the UK or the US, nor with Portugal and some other Latin American countries.

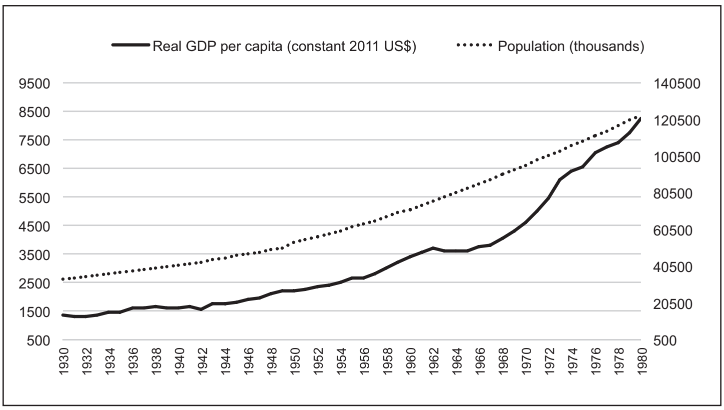
Figure 4: Evolution of Brazil's real convergence indicator, 1889-1930



2.3. The developmentalist era (1930-1980)

The period that succeeded the Great Depression was a milestone in the history of Brazilian development. This period is widely studied due to Brazil's extraordinary economic performance (Figure 5), recording a GDP per capita growth rate of 3.69%. In the developmentalist era, as it is commonly known, Brazil reached GDP growth never seen before (6.32% annually compounded rate), and an average population growth of 2.63%.

Figure 5: Real GDP per capita (left axis) and population (right axis), 1930-1980



Marquetti et al. (2019) highlight two sub-periods of significant economic boom: 1) 1955-1960, GDP per capita growth of 4.91%, with a rapid industrialization process, a Plan of Goals coordinated by the state, and investments from national and foreign capital; and 2) 1968-1973, GDP per capita growth of 8.48%, accompanying an international boom associated with fiscal and monetary policies under the military dictatorship in Brazil.

According to Fishlow (1980), the Brazilian "miracle", as the second economic boom became widely known, was also linked to distinct strategies adopted after the military coup of 1964: 1) more integration with international markets; 2) greater centralized fiscal capacity; 3) monetary correction; 4) institutional reforms; and 5) structure of subsidies.

Nassif et al. (2020b) stress that the leverage of the budding heavy industries, resulting in the growth of labor productivity, and the subsequent economic growth boom were a result of several protectionists policies adopted under the second term of Getulio Vargas' government (1950-1954), and Juscelino Kubitschek's administration (1956-1960). Bresser-Pereira (2020), notwithstanding, argues sustain that the policy's success of Brazil in this period was due less to policy's protectionist character and more to the fact that policymakers used intuitively import taxes and/or the multiple exchange systems to neutralize the Dutch disease, which were fundamental for industrialization and rapid growth over these fifty years (1930-1980).

The period of rapid economic growth also gave rise to a rapid inflationary process. From the mid-1950s onward, there was a period of accelerating inflation. According to Marquetti et al. (2019), such an inflationary process is associated with balance-of-payment constraints and the consequence devaluation of the exchange rate. They also argue that most of the developing countries, especially in Latin America, had a history of medium to high inflation rates until the early 1990s.

Since the mid-1960s, the export volume increased about 10%, which helped to lead a balance surplus in 1965 and 1966. When some foreign capital started to dry up in the same period, it provoked ongoing balance of payment crises, and accounts for a balance deficit of 2.3% in GDP, between 1971 e 1973 (Fishlow, 1980). In like manner, the external debt registered at 10% of the GDP in 1967 and 17% (US$ 14.9 million) in 1973. After this year, the external indebtedness continued to rise and reached even higher rates. Brazil recorded an external debt of US$ 55.8 million in 1980.

The labor class became more empowered during this period, seeking a better future as the population continued to grow beyond the capability of the state to improve the educational system. Therefore, the literacy rate was low in comparison to other Latin American countries, and even lower than the level of the fast-growing Asian countries (Maddison, 2000). Although this may be true, illiteracy generally decreased more than 60% among the population aged between 10 and 29 years from 1950 to 1976.

Although the coffee cycle (1850-1930) was an important and relevant factor in the Brazilian economy, its export receipts stagnated after 1953, given way to the changes that were about to come. From 1932-1939, Brazil's manufacturing sector grew more than 10%, and by 1939, it employed about 9.5% of the labor force (Fishlow, 1980). According to Mateo (2018), the industry share in Brazilian GDP during the developmentalist era went from 25% to 44%, whereas agriculture fell 10% in the same period. The power of the domestic market also helped to boost the Brazilian industry, where capital goods were supplied some 61% by locals, especially from 1947-1949 (Leff, 1969).

After the Great Depression, the productive structure of the Latin American countries had changed, having the policies applied contributed to this pattern. After the 1950s, they experienced very progressive arrangements greatly influenced by the structuralist economists of that time, such as the Argentine Raul Prebisch and the Brazilian Celso Furtado, who contributed to establishing the ISI strategy from that period until the 1980s.

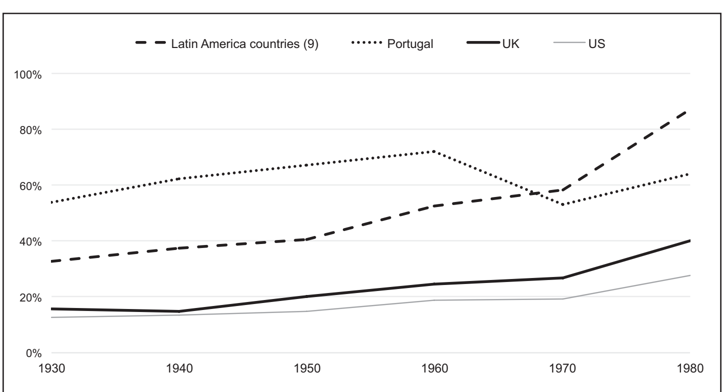
According to Arestis and Baltar (2019), the ISI period (1950-1980) was a landmark in the Brazilian economy, with high growth rates and a diversified manufacturing industry. The ISI strategy, as the name suggests, involved policies aimed at increasing the demand for domestic products, raising the import tariffs, and subsidizing new industries to meet this demand, as well as helping to boost exports of manufactured goods rather than of commodities and primary products (Nassif et al., 2020b). Actually, these and other "protectionist" policies (e.g.,, export subsidies) were intuitively adopted by policymakers in a way to neutralize the Dutch disease (a common problem faced mainly by exporter of commodities countries, such as Brazil) to guarantee equal conditions of competition to the manufacturing companies (Bresser-Pereira, 2021).

Apparently a well-succeeded strategy, the ISI policies had some peculiarities in Brazil, such as the presence of foreign direct investment (FDI) mostly from multinational enterprises. In contrast with other EE that adopted similar policies (e.g.,, Singapore, China), the openness to FDI inflows was not based on technology transfers or even research and development arrangements. The lack of selectivity in the multinational enterprises and, to some extent, the heavy protectionist policies created some imperfections in the ISI strategy (Nassif et al., 2020b). In the same vein, Cabral et al. (2017) claim this model was incapable of propelling technological progress and delivering a mature, efficient national innovation system.

Brazilian development in this period, like in several Latin American countries, was supported by resources from developed countries, through long-term foreign loans, under flexible international interest rates (Nassif et al., 2020b). In such a context, international shocks had a direct effect on the country's economy, which in fact occurred between 1979 and 1982 (the international interest rate shock). Consequently, foreign interest rates rose so sharply that the loans became almost unpayable, leading to a profoundly severe crisis in the 1980s (the external debt crisis) that affected many of the Latin American countries, including Brazil (Carvalho and Carvalho, 2019).

It is not only the high rates of economic growth that reflect the extraordinary performance of Brazilian development after the Great Depression, but also the real convergence, as shown in Figure 6. In the previous period, these rates were either stagnated or decreasing, differently from the developmentalist era. After 1940 and mostly due to the industrialization process, Brazil's growth converged to the more highly developed countries such as the US and the UK. The sharp convergence with other Latin American countries after the 1970s may be related not only to this performance but also to the oil shock crises, especially in Mexico.

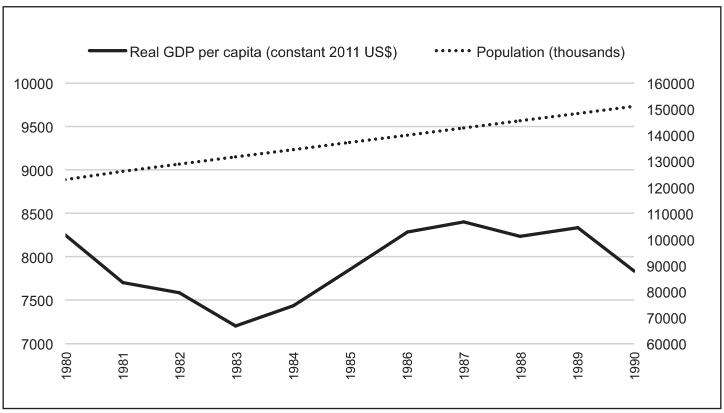
Figure 6: Evolution of Brazil's real convergence indicator, 1930-1980



2.4. The Crisis period (1980-1990)

The buoyancy of the developmentalist period started losing steam in the 1980s, in a period set by transition and austerity (Medeiros and Trebat, 2021). The 1980s was marked by the end of the accelerated growth process and the start of a crisis decade due to external debt, and high and inertial inflation regime (Feijó and Lamônica, 2019; Bresser-Pereira, 2021). Indeed, this decade (1980-1990) is widely known as the “lost decade”, where the per capita decreased 0.50% on average, and population and GDP rates increased almost as much as in imperial period (1.58% and 2.08%, respectively) – Figure 7.

Figure 7: Real GDP per capita (left axis) and population (right axis), 1980-1990



From 1980 to 1994, Brazil experienced very pronounced macroeconomic instability due to uncontrolled hyperinflation. To fight this situation, the government decided to increase interest rates, which led to the appreciation of the national currency (Mateo, 2018; Araujo et al., 2018). The import of medium – and high-technology manufactured goods became more attractive, slowing down the industrialization process and upsetting the balance of payment. To further “heat up” the economy and stimulate domestic demand, the government printed money in an uncontrolled manner such that inflation reached four-digit annual rates (2737% in 1990) (Marquetti et al., 2019).

The high inflation rates observed between 1981 and 1994 can be explained, according to several authors, by the theory of inertial inflation (Arida and Lara-Resende, 1985; Bresser-Pereira and Nakano, 1987; Simonsen, 1988). The latter sustains that extensive use of indexation had created a feedback mechanism so strong that supply shocks, such as the oil-price surges, automatically carried over into permanent increases in the level of inflation (i.e, inflation is inertial), rendering monetary and fiscal policies ineffective as the inertia rendered inflation unresponsive to demand (Cati et al., 1999). In fact, this was especially true in Brazil in the beginning of the 1980s.

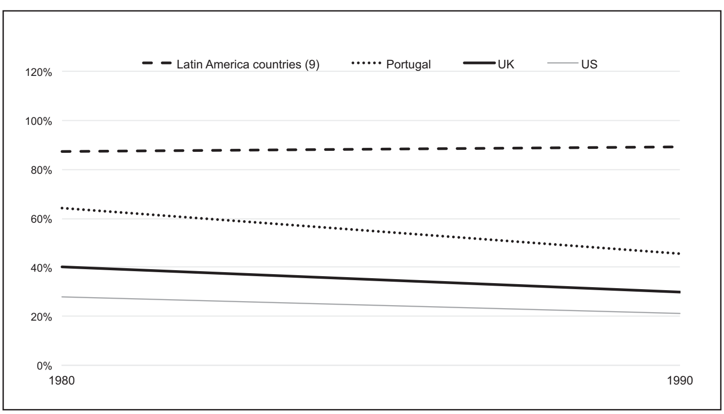
Hudson (1998) argues that, during the 1970s and 1980s, the system of primary and secondary schools was restructured, and the colleges and universities rapidly expanded attending nearly all states with federal universities, which results with the sharp increase in graduate study.

Over this decade (1980-1990), the productive sectors went through significant change. Agriculture and industry suffered, respectively, a reduction of about 10%-7% and 45%-32% in their share of GDP, whereas the service sector went from 45% in 1980, to 60% in Brazilian GDP added value in 1990 (de Lourenço and Cardoso, 2018), chiefly associated with low productivity and low-skilled labor (Nassif et al., 2020b). These numbers evidence the deindustrialization process that Brazil was exposed to from 1980 onwards, and even though this is still not consensual, it could be pointed out as one of the real causes of economic stagnation in this period (Marquetti et al., 2019).

The 1980s was a period of recovery from military rule and the shift to democratic governance in Latin America as a whole.[4] After resumed a democratic regime in 1985, the new federal constitution (that is in force until today), drawn up in 1988, established the supreme and fundamental laws of the Brazilian state.

The period of foreign debt crisis, and chronic hyperinflation brought economic stagnation to Latin America in general. Therefore, the real convergence/divergence graph (Figure 8) accurate illustrates this fact. On the other hand, Portugal, the UK, and the US seem to follow the same trend, which Brazil was diverging from.

Figure 8: Evolution of Brazil's real convergence indicator, 1980-1990



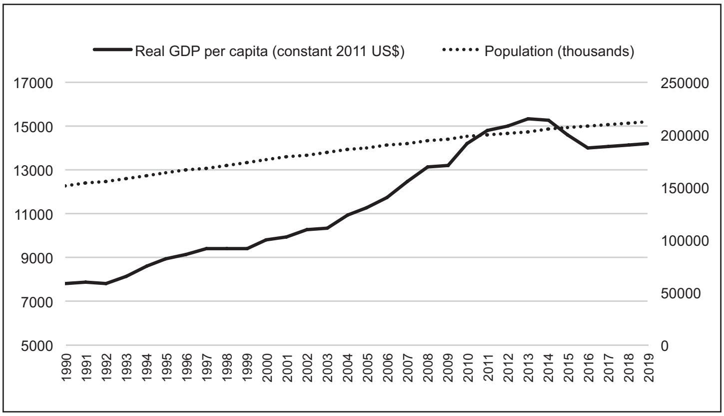
2.5. The Neoliberalism phase (1990-2019)

From the beginning of the 21st century, the recovery from stagnant times seemed to be evident (Figure 9), at least until 2014, when economic crises, political events and corruption scandals changed the sharp trend of growth (Padula and Albuquerque, 2018). On average, between 1990 and 2019, the GDP per capita growth rate

[4] The military dictatorship in Brazil lasted from 1964 to 1985.

was 2.07%. Even though recording a meagre level, in a sub-period (2003-2010) ruled by the left-wing party, *Partido dos Trabalhadores* (PT; Workers' Party) under the presidency of Luiz Inácio Lula da Silva, Brazilian performance showed an average annual rate of GDP per capita growth of 4.63%.

Figure 9: Real GDP per capita (left axis) and population (right axis), 1990-2019



The 1990s was marked by the start of liberalization process, as well as a period of deregulation governed by the Brady Plan and the Washington Consensus (Feijó and Lamônica, 2019; Bresser-Pereira, 2021). These economic policies were the drivers behind the neoliberalism agenda, which led Brazil to reduce the state's role in economic activity, consequently decreasing public investment and the capacity to keep the industrial infrastructure updated (Arestis and Baltar, 2019).

The end of the 20th century sets the adoption of a very orthodox arrangement of monetary, fiscal and exchange rate polices (Araujo et al., 2018). After 1999, a set of measures was created to guide economic policies in the country. The three main policies of the plan, better known as the "Macroeconomic Tripod", are: an inflation-targeting regime; a floating exchange rate; and targeting primary fiscal surpluses (Nassif et al., 2020a). These new policy arrangements, or New Macroeconomic Consensus (NMC), has been managed in a very stringent and orthodox manner, according to Nassif et al. (2020a).

Apparently due to the Macroeconomic Tripod regime adopted in 1999 and the Real Plan in 1994,[5] the inflation rate during the last few decades achieved low levels (6.26%, on average). Nevertheless, this was not possible without some costs to society. Bresser-Pereira (2015) warned of some perverse effects caused by the Macroeconomic Tripod regime, like the high levels of the interest rate, the overvaluation of the exchange rate, and the increasing current account deficits. In like

[5] The Real Plan (Plano real) established the creation and adoption of a new currency, the Brazilian Real. In fact, this plan was crucial to zeroing the memory of the system and breaking down the inertia in the inflation process (Arida and Lara-Resende, 1985).

manner, Nassif et al. (2020a) state that the inflation-targeting regime (one of the "three legs" of the Macroeconomic Tripod regime), has jeopardized the sustainable, long-term economic growth in Brazil.

For a better understanding of the Macroeconomic Tripod, Nassif et al. (2020a) distinguish three phases, following the establishment of the regime in 1999: 1) up to 2005, the responsible agents learned how to manage the very tight monetary and fiscal policy arrangements; 2) the second phase (2006-2011) was marked by more flexibility regarding those policies, a gradual reduction in the interest rate, and low levels of inflation; and 3) in the last phase, which started in 2012, inflation rose again, and the government was unable to properly coordinate the monetary and fiscal policies.

After 2002, a new wave of state intervention took place in Brazil driven by the PT Party, which lasted until 2015. The respectable economic results of the first two terms (2003-2010) were mostly boosted by the 185% increase in the international commodity prices, the main Brazilian export product (Spolador and Roe, 2013). Exports went back to being the key player of the economic growth engine in the country, expanded 115% between 2000 and 2005, prompted chiefly by the growing Chinese market (Cabral et al., 2017).

From 2003 and 2010, Brazil experienced the effective overvaluation of the exchange rate, which contributed to substitution between national and import inputs in the domestic market (Machado et al., 2018). Furthermore, the 2008 financial crisis and the collapse of the commodities bubble helped to depress the export sector and slow down investments (Bresser-Pereira, 2015). Some would note that the Brazilian export basket is excessively specialized in natural resources products (which increased 50% between 2000 and 2014) and, as a developing country, tends to suffer from external shocks and chronic overvaluation of the exchange rate (Bresser-Pereira, 2015; Feijó and Lamônica, 2019).

Despite the adoption of similar monetary and fiscal policies as the previous period, the twenty-first century started with the strong administration of distributive policies. The government's main idea was that Brazil had become a mass consumer society, and spending on education, health and social welfare programs fostered consumerism. These programs were able to lift almost 30 million people from poverty, to increase the real minimum wage, and the per capita household income (Bresser-Pereira, 2015). In addition, unemployment declined and the growing participation in the formal labor market contributed to increasing the GDP per capita around 30% and 50%, in the last decade (Nassif et al., 2020b).

Hudson (1998) argues that, in 1990, 19% of the total population below the age of fifteen was illiterate, which apparently could be explained by changes in spending, shifted from primary education towards colleges and universities. In 1993, the high school system totaled 893 institutions, and in 1995, expenditures on universities were twice those of basic education (Hudson, 1998). From 2000 to 2009, Brazil had one of the largest increases in education expenditure, which resulted in the better quality of education (Haddad et al., 2017).

According to data from the IPEA, in 1999 the average years of schooling was

3.8 for adults aged over 25 years. In 2014, the same age group had attended almost 8 years of schooling, on average. The massive support for advanced studies was also the rule in this period, and from 2000 and 2019, the number of private and public higher education institutions increased from 1180 to 2608 (IBGE, 2001, 2020).

The premature deindustrialization and "servicification" after the 1980s had its echoes in the present period and the share of the manufacturing sector in GDP continued to fall, achieving only 10% in 2015 (Arbache and Sarquis, 2017). On the other hand, Oreiro et al. (2018) highlight the increased level of capacity utilization and investment share from 2003 onward, proposing there was some acceleration and contribution to the Brazilian economy. The positive impact spread mostly in the agricultural and mining sectors, leaving behind the most technologically advanced sectors, hence increasing even further the technological gap between Brazil and, for instance, the US (Oreiro et al., 2018).

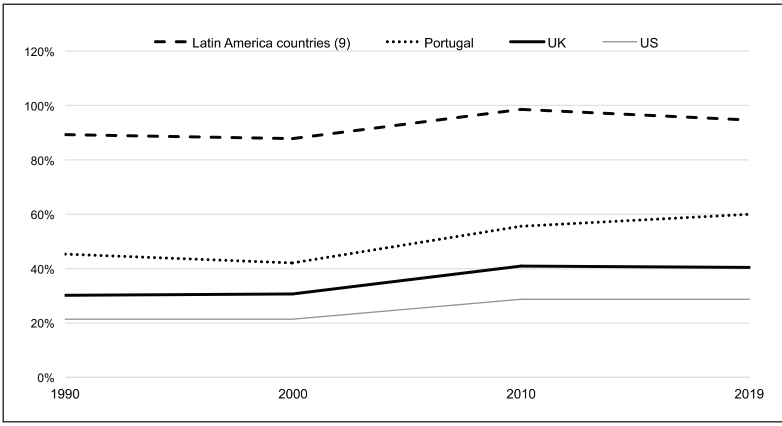
The last thirty years are marked by diversified arrangements in the political arena. After the return of democracy in 1985, some of the best-known right-wing parties alternated in the Brazilian presidency until 2002, when a former union leader, Luiz Inácio Lula da Silva, was elected for the PT, a left-wing party struggling for power since 1980 (Onbaşi, 2020). Lula ruled the country for eight years (two complete mandates) and was followed by another PT politician, Dilma Rouseff. Rousseff did not finish her second term in office, and after an impeachment process in 2016, she was replaced by the vice-president, Michel Temer, returning the country's "power" to a right-wing party. Temer ruled the country from 2017 to 2018, when new elections voted the far right-wing and former military officer, Jair Bolsonaro, into executive office.

A traditional problem that has long afflicted Brazil, corruption scandals have involved several authorities and large companies (Jucá et al., 2016). For instance, in 1992, the sitting president Fernando Collor was charged and impeached after several accusations of massive corruption (Fleischer, 1997). Many other corruption scandals were investigated, or rather uncovered in the 1990s. One of the reasons was the lack of effective monitoring and independent agencies to fight against bribery, tax fraud, or other illegal operations within public administration (Fleischer, 1997).

During the PT administration, Brazil implemented new laws and regulations, and made efforts to uphold the independence of judicial institutions to fight against corruption (Onbaşi, 2020). However, the measures applied were not sufficient, and an old, deeply rooted trait of the Brazilian political economy (close collaboration between private companies and political leaders) came to light and revealed significant corruption scandals that would destabilize even further the political institutions in Brazil (May et al., 2019).

In the 21st century, the Brazilian economy reaped the benefits of the commodity boom and the flush of foreign capital investments, improving the standard of living of the population, at least until 2014, when several institutional instabilities arose. With inflation under control, it was possible to maintain the external accounts balanced. A more open country along with the overvaluation of the national currency meant imports were boosted, dragging the deindustrialization process down even further. Moreover, low-skilled services took precedence and dampened the possibility of a path to a more modernized, technological, and industrialized country, as can be seen in the real convergence indicator (Figure 10), especially from 2000 to 2010.

Figure 10: Evolution of Brazil's real convergence indicator, 1990-2019



3. CONCLUSION

The aim of this paper was to zoom in the lens on the past and to provide a structured narrative review of some critical factors (e.g.,, inflation, human capital formation, institutional instability) that have bolstered or weakened Brazilian economic growth over a very long-run (1822-2019), as well as provide support to understand the process of real (div)convergence.

The transition to the group of developed countries is a long-run process (Nassif et al., 2020b), and, in the past 200 years, Brazil seems to have more periods of falling behind than catching up with the most advanced countries, such as the UK and the US, or even its *alma mater* Portugal. It was only in the middle of the 20th century that Brazil started to present a positive, rapid trend of real convergence, more precisely from 1950 to 1980. Nevertheless, the lack of a sustainable growth path, which means long periods of fast growth, is one of the difficulties of Brazil in closing the per capita income gap with developed countries.

From our long-run analysis through the lens of Brazilian history, it was possible to pinpoint some determinants often related to its economic performance.

Macroeconomic instability forced the government to apply several policies to re-establish the balance of the public accounts, such as the adoption of a new currency, the *Real*, in 1994, after four previously unsuccessful changes, and the 'Macroeconomic Tripod' policies, in 1999. *Inflation* has followed a controlled path but between the developmentalist and Neoliberalism period, when the government misgoverned its monetary policies in a completely undisciplined manner, and the country was unable to curb the inertial inflation process, achieving chronic levels (e.g.,, 2737% in 1990). Far from satisfactory, the 'Macroeconomic Tripod' policies and other monetary arrangements brought confidence and economic growth in the first years of the 21st century. Indeed, the chief result is the acknowledgement that the government and central bank's fiscal and monetary actions, respectively, must be planned for the long-term in a more coordinated manner bearing in mind the mistakes and successes of the past.

Regarding International trade, we can highlight two determinants: *Import tariffs* and *degree of openness*. Both variables reflect the country's openness to external markets. Throughout Brazil's independent history, the average value of the tariffs imposed on foreign products decreased sequentially, while the degree of openness increased, although not substantially until this century. The protectionist policies were always applied to contain import consumption and boost industry within the country. To some extent and along with the neutralization of the Dutch disease, it helped to diversify the manufacturing industry and raise the exports of more value-added products. One of the imperfections of these polices is that they prevented the transfer of technology and advanced research and development arrangements from more developed economies, which became even harder to compete with.

With respect to one of the features that most defined the EE, deficient human capital formation (Wang et al., 2020), Brazil has invested in the ability to promote quantitatively and qualitatively better, more comprehensive education to its citizens. The progress made after the developmentalist period, probably associated with some affirmative policies in this domain, was the most significant in Brazilian history, when the *illiteracy rate* dropped to nearly one fourth of the total population aged 15 years and above. On the other hand, in 2018, Brazil had an illiteracy rate of 6.77%, far more than other similar EE, such as Argentina (1%), China (3.16%), Mexico (4.62%), Russia (0.27%), and Uruguay (1.3%) (World Bank Database). These numbers highlight the backwardness of Brazilian human capital formation, and governments' inability to improve the educational system, also neglected in the economic debate regarding its importance in promoting economic growth in Brazil.

Few structural changes can be identified throughout these 200 years. The abundant Brazilian natural resources such as land always contributed to boost the primary sector of the economy, being the focus of the oligarchic elites. This abundance, along with the slave labor force until 1888, inhibited the agricultural landlords from properly investing in technology, training, and more automatic systems to increase productivity. The manufacturing activities started to grow substantially only after 1905, when some barriers to importation helped to boost industrial development (Leff, 1969). Some other assertive policies and investments propelled the manufacturing sector in Brazil during the developmentalist phase, thereby contributed to it being considered one of the most dynamic economies in the world (Marquetti and Porsse, 2014). Even though *Employment in the Primary Sector* (percentage of total employment) has been decreasing over time, the premature deindustrialization process and "servicification" observed after the 1980s could be associated with the country's difficulty to converge to the technologically advanced countries and achieve a higher level of development (Arbache and Sarquis, 2017; Oreiro et al., 2018).

The poor condition of Brazilian institutions can be observed especially in the instability of its *Political Regimes*. The variable plays a key role in the economy and could deliver long-lasting benefits if the country had strong and efficient institutions (Olaniyi and Oladeji, 2020). Just like other EE, Brazil performed very poorly in the sector and its independent history is beset by political imbalances and crises, such as coups d'état (1889, 1964), impeachments (1992, Fernando Collor; 2015, Dilma Rousseff), and dictatorship regimes (1930-1934, Getulio Vargas; 1937-1945, Getulio Vargas; 1964-1985, military government). Along with constant political instability, Brazil suffers from deep-rooted *Corruption* issues. Since colonial times, corruption has emerged as a result of a political life of very low moral stature and assumes different aspects and meanings. Between 1822 and 1930, the illicit activities lay in the political systems, from 1930 until the end of the military period (1985), corruption was associated to social phenomena, and finally, after the return to democracy, it became systemic and governed the way institutions operated, distorting their public credibility (Biason, 2019).

The overall picture of the Brazilian economic performance is far from satisfactory and one of the possible causes can be easily associate to the instability of formal (*Political Regimes, Corruption*) and informal (*Customs, Religion*) institutions of the country throughout its history. As mentioned by Bernardelli and Michellon (2018), it is of the utmost importance to relate economic growth to cultural factors, language, religion, and customs, since many facts indicate their direct and significant influence on people's way of life and the development processes of countries. Considering this, for the Brazilian case we can observe a constant decline in the affiliated Catholic members throughout history, especially the more dogmatic and fundamentalistic players inside the government.

The discussion on economic growth and its proposed determinants has been a continuous and significant academic endeavor (Law et al., 2020). This paper has attempted to summarize Brazil's economic growth from a very long-run perspective (1822-2019), in a structured qualitative and narrative review that encompasses three main contributions, at the theoretical, empirical, and policy levels. First, at the theoretical level, although the literature is rich in high-quality quantitative papers analyzing Brazilian economic performance, as well as some long-view descriptive accounts in book format, this study proposes a novel and encompassing framework of Brazil's economic history, highlighting key factors of its absolute and relative performance since independence, organized by periods and sets of determinants. Second, at the empirical level, it explores and assembles substantial information, as well as high-quality analyses and a comprehensive panorama of the evolution of the key determinants. Finally, at the policy level, this paper intended to offer some guiding lines, highlighting government policies to promote robust and sustainable economic growth, especially around neglected but urgent determinants: institutional conditions and human capital formation.

Complementing the descriptive analysis performed with a quantitative, causality approach of the determining factors which underlie the performance of the Brazilian economy would undoubtedly constitute a challenging and important avenue for further research.

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