

Brazil's Lack of Growth*

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Abstract

This paper studies Brazil's recent growth performance. The last four years have been characterized by record high commodity prices, low international interest rates, and robust global demand. Nevertheless, Brazil's growth during Lula's first term has been disappointing. Our counterfactual exercises suggest that, if the world had continued to grow at the same pace as in the late-1990s, GDP growth during Lula's first term would have been lower than under Cardoso's administration. Related to this finding, evidence indicates that Brazil still presents a low level of human capital stock, a high level of expropriation of private investment, and unsecured property rights. The good news is that Brazil's institutional underdevelopment also suggests that the country can grow faster. In fact, studies have shown that the impact of reforms might be sizeable at such stage. Given the lag between the implementation of reforms and the materialization of their effects on productivity, Lula's administration might not benefit from these reforms – but the country surely will.

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“It is high time for Brazil to seize its future. The world’s fifth-most-populous nation needs a long term vision for its economy, as well as a commitment at all levels of government to implement measures that could lead to a dramatic increase in productivity.” (Elstrodt, Laboissière, and Pietracci, 2007, p. 93)

1 Introduction

Brazil’s growth performance since the early 1980s has been lackluster. After several decades of high growth in per capita Gross Domestic Product (GDP), the Brazilian economy went through a long period of stagnation and slow growth. For instance, between 1950 and 1979 the average annual growth rate of Brazil’s per capita GDP was 3.8 percent, while the same indicator grew at an average annual rate of 0.6 percent between 1980 and 2003.¹ At the latter rate, Brazil’s per capita GDP would double in 116 years, and would only reach South Korea’s *current* per capita GDP in about 150 years. The situation has improved slightly between 2003 and 2006, when Brazil’s per capita GDP grew at an average annual rate of 0.9 percent, but still much slower than most emerging market economies.²

This pattern of growth in the second half of the 20th century is not only observed in Brazil.³ Most of Latin American countries experienced a period of high growth

¹Source data from Maddison (2006) and Heston, Summers, and Aten (2006).

²Based on World Bank (2006) and it does not take into account the recent revision in the calculation of GDP in Brazil. With this revision GDP per capita annual growth between 2003 and 2006 increases by roughly one percentage point.

³According to Pritchett (2000), from 1960 to 1992 there were about 16 countries in the world that had growth rates in per capita GDP higher than 1.5% before a structural break (around mid-1970s), but afterward growth fell to less than 1.5 percent, although it remained positive. Such behavior of per capita GDP is characterized by Pritchett (2000) as a plateau, and the classical example is

from 1960 to 1980 and an economic slowdown from 1980 to 2003. An exception is Chile in which per capita GDP grew at a higher rate in the last two decades of the 20th century than in the period from 1960 to 1980 (see Solimano and Soto (2006) and Figure 1). Figure 4 shows that trended growth rate of GDP in Brazil started to decrease in mid-1970s, and this was also observed in the world economy. However, while the world economy started to grow at high rates again in the 1990s, growth in Brazil remained modest.

It is important to briefly describe the background policies adopted by the Brazilian economy in the second half of the 20th century. The period from 1950 to 1980 was characterized by the Import Substitution Industrialization (ISI) policies.⁴ According to Kohli (2004), the government used protectionism instruments,⁵ public subsidies and some direct participation (state-owned enterprisers) to promote industrial growth. From 1950 to 1980 the Brazilian economy grew at very high rates and diversified its industrial base. *“But it was a base also characterized by capital scarcity and outdated and overused technology, requiring the support of either the state or foreign actors for sustained development”* (Kohli, 2004, p. 129). In the 1970s Brazil continued to encourage a debt-led strategy that transferred the burden of high growth to future generations. This debt became unsustainable, especially when the debt crises of the 1980s hit the economy. The period from 1980 to the beginning of the 1990s was characterized by several *heterodox* attempts to control (hyper)inflation that resulted in a long period of low and volatile growth (see Figure 4). Inflation was finally brought

Brazil.

⁴See Baer (2001) for a more detailed description of the Brazilian economy. The ISI period started in the 1930s in Getúlio Vargas first presidential term. See Baer (2001) and Kohli (2004).

⁵Some of these instruments were: tariffs and non-tariffs barriers, such as the outright ban on the importation of several goods (*lei do similar nacional*). Brazil’s industrialization process also had a high participation of foreign capital.

down in 1994. In the 1990s Brazil went through market-oriented economic reforms: It followed the world trend towards privatization and liberalization and opened the economy (i.e., the trade and the financial sector), exposing domestic producers to outside competition. Recently, Brazil has implemented some microeconomic reforms, such as the one that changed the bankruptcy law. Despite a short cyclical recovery and some efficiency gains, the post-reform period failed to fulfill the growth expectations.⁶

In this article we study the following questions: Why is growth low in Brazil? What are the policies that can raise economic performance in the country? The investigation of these questions is important for at least three reasons: (i) Though Brazil is not a poor country, it has a lot of poor people. Poverty has been decreasing in the last decade, however, data from Instituto de Pesquisa Econômica Aplicada (IPEA) show that still about 30 percent of the population lives below the poverty line. Therefore, faster growth might help the country to reduce poverty. (ii) Pushed by high growth rates of large developing economies (e.g., China and India), the world in the last years is growing at high rates again (see Figure 4). This has boosted commodity prices (such as iron ore and soya) and exports in Brazil. In addition, international interest rates are at low levels and there is high liquidity in international financial markets. This is particular important because authors (e.g., Klenow and Rodríguez-Clare (2005)) have shown that a country growth rate depends on other countries growth. Given the *world-wide* actual economic environment it seems even

⁶Ferreira and Rossi (2003) provide evidences that trade liberalization strongly improved productivity. Their estimates suggest that the observed tariff reduction in the 1990s brought a 6 percent estimated increase in total factor productivity growth rate and a similar impact on labor productivity. Using Engel curves, de Carvalho-Filho and Chamon (2006) estimated that per capita household income in metropolitan areas from 1987 to 2002 increased by about 4.5 percent per year, which is much higher than the estimated GDP per capita growth rate.

more critical to understand Brazil's recent economic performance. What would be the effects of an *world-wide* economic slowdown on the Brazilian economy? Finally, as argued before, (iii) in the 1990s Brazil went through important market-oriented economic reforms, but the post-reform sluggish growth has give support to some analyst that think that the solution is to go back to old-style ISI and state-owned enterprisers.⁷ Therefore, it is important to make a careful diagnosis of the growth constrains of the Brazilian economy to shed some light on what policies are needed to promote steady growth and development.

This paper proceeds as follows: Section 2 compares Brazil's growth experience over the long run and short run with some other successful emerging market economies. It also studied the impacts of a world-wide economic slowdown on the Brazilian economy. It shows that this impact might be sizeable. Section 3 studies the Brazil's growth constraints, highlighting the importance to keep the microeconomic reforms on the government agenda. Section 4 concludes.

2 Some International Comparisons

2.1 Long-run comparisons

It is important to compare the growth experience of the Brazilian economy with some other successful emerging market economies that caught up with the industrial leaders in the second half of the 20th century. In particular, we use two Asian countries and one Latin American economy. They are: South Korea, Taiwan, and Chile. Figure 1

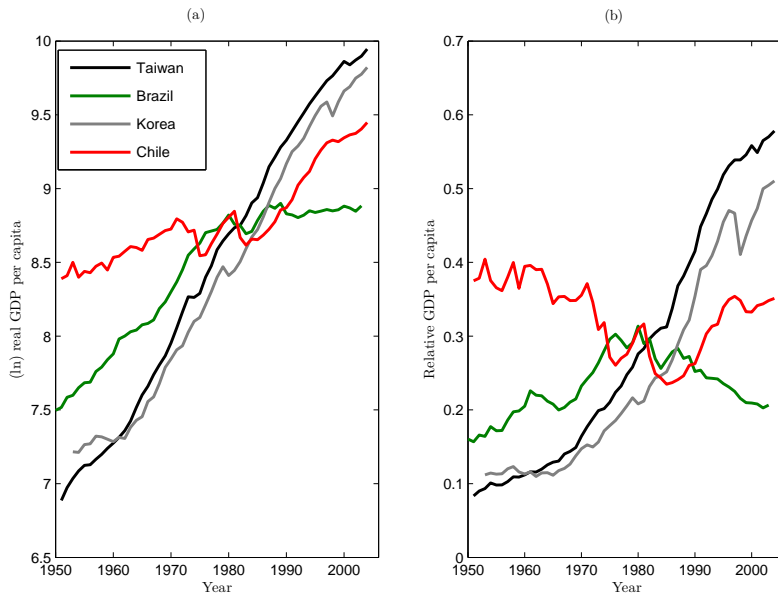
⁷This is not only particular to Brazil. Countries experience a period of low economic growth just after the reforms. For the New Zealand case see, for instance, Evans, Grimes, Wilkinson, and Teece (1996).

panel (a) shows the evolution of the logarithm of the real GDP per capita for Brazil and these three economies. Observe that South Korea and Taiwan had a similar pattern of sustained high growth in the period (Figure 1 panel (a)) and as a result they caught up with the industrial leader (Figure 1 panel (b)). For instance, in 1950 per capita income in South Korea was roughly 10 percent of the per capita income in the United States. Actual per capita income in South Korea is about 50 percent of what is observed in the United States. The Chilean economy had a growth experience that is opposed to what is observed in Brazil. From 1950 to mid-1980s per capita income growth was modest in Chile, but from mid-1980s on growth was steady and per capita income is nowadays about 35 percent of what is observed in the United States. Despite the strong catch up from 1950 to 1980, we notice that Brazil's actual output per capita relative to the United States level is roughly the same as it was about 50 years ago. Per capita income in Brazil is about 20 percent of that in the United States. It is not our goal to explain in details the difference in growth performance of these four economies.⁸ Rather than that, we seek to explain the actual growth constraints of the Brazilian economy.

We now compare the performance of the Brazilian and the world economy. Figure 2 shows the Brazilian and the world GDP (panel (a)) and per capita GDP (panel (b)) from 1950 to 2003. Observe that from 1950 to 1980 Brazil's GDP per capita caught up with the world economy, but since then the world has been growing at a faster rate than the Brazilian economy (see also Figure 4). GDP and growth of GDP has also been more volatile in Brazil than in the world (see Figure 3 and panel (b) of Figure 4). The standard deviation of the percentage deviations in world GDP is about 29

⁸See Kohli (2004) for a comparative study of the Brazilian and Korean industrialization process. For a study of South Korea and Taiwan see Rodrik (1995). Finally, De Gregorio and Lee (2003) provide a comparative study of Latin America and East Asia.

Figure 1: Panel (a): Logarithm of the real GDP per capita (chain series). Panel (b): Real GDP per capita relative to the United States level. Source: Heston, Summers, and Aten (2006).



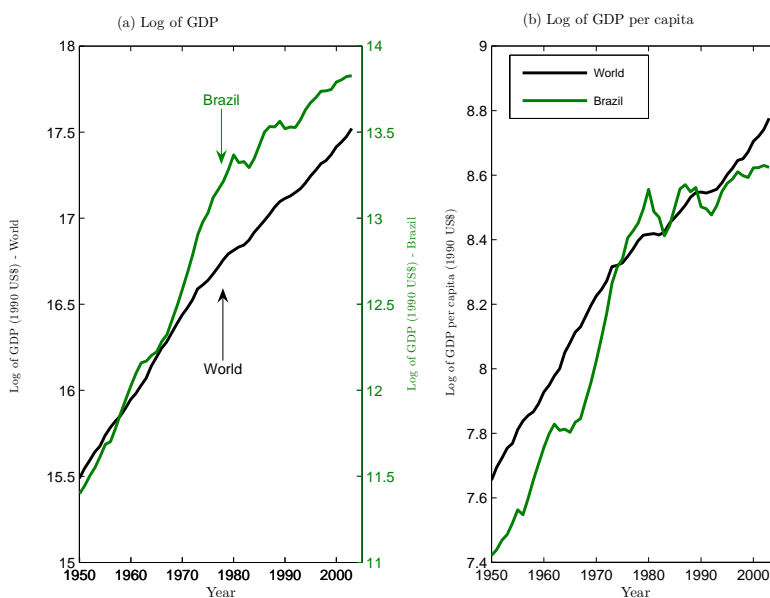
percent of that of Brazil's GDP. Interestingly, Figure 3 shows that from 1950 to 1970 GDP in Brazil and in the world correlated negatively, while the two series correlate positively from 1970 to 2003.⁹ It is also worth to notice in Figure 3 that the control of inflation in mid-90s is associated with a decrease in the amplitude of fluctuations in Brazil's GDP.

2.2 Short-run comparisons

We now investigate the recent growth performance of the Brazilian economy. Figure 5 panel (a) shows the Kernel density estimate of the average growth rate of real GDP in

⁹The correlation coefficient between the two series is -0.21 from 1950 to 1969 and 0.52 from 1970 to 2003.

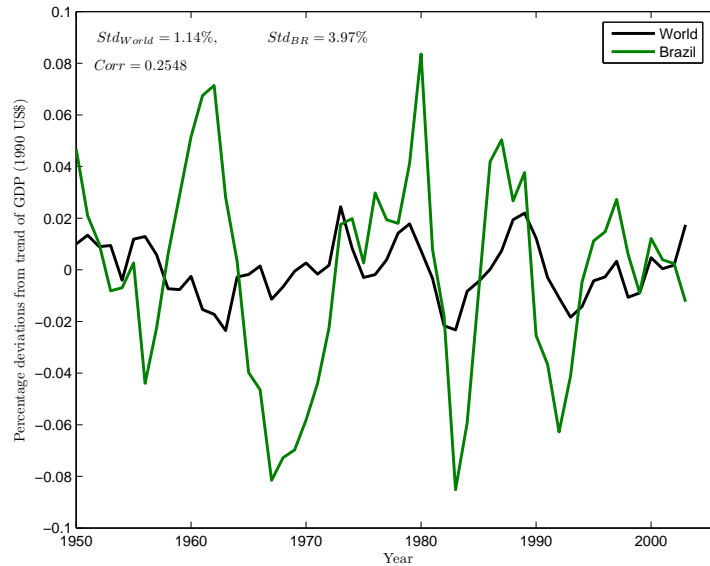
Figure 2: Log of GDP (1990 US\$) and GDP per capita in Brazil and in the world.
 Source: Maddison (2006).



about 170 economies from 2002 to 2005. In Figure 5 panel (b) we plot the cumulative distribution of growth rates in the world. According to the World Bank (2006), GDP in Brazil grew in this period at about 2.4 percent per year. As we can observe, this is below the mode observed among 170 countries in this period, which is roughly 5 percent. In fact, Figure 5 panel (b) shows that from 2002 to 2005 only 30 percent of the countries in the world grew at lower rates than the Brazilian economy. This is critical because we are including all industrialized countries, which in general are in their balanced growth path and do not grow at high rates, and countries in civil wars, such as Haiti and Zimbabwe, in which GDP shrank in the period.

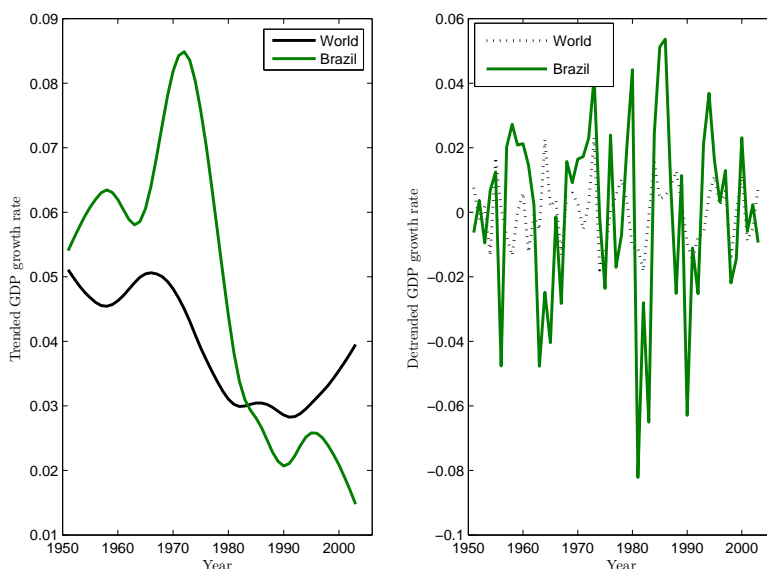
Table 1 shows that the growth of real GDP in Brazil contrast to the strong recent performance of the other three “BRIC” countries: Russia, India, and China. While from 2002 to 2005 average annual growth rate was 6.42 percent in the “BRIC”

Figure 3: Percentage deviations from GDP (1990 US\$) in Brazil and in the world. Source: Maddison (2006). Series were detrended using the Hodrick-Prescott filter. Penalty parameter $\lambda = 100$.



countries, Brazil had the lowest growth. The Brazilian growth rate of GDP is almost one third of the average growth rate in “BRIC” countries and about one fourth of the Chinese economy. In this period, the Brazilian economy has been growing at a rate lower than that observed in Latin America and just a bit higher than what is observed in OECD countries. However, population growth is much higher in Brazil than in industrialized countries. Therefore, in per capita terms growth has been lower in Brazil than in industrialized countries.

Figure 4: Trended and Detrended Growth rate of GDP (1990 US\$) in Brazil and in the world. Source: Maddison (2006).

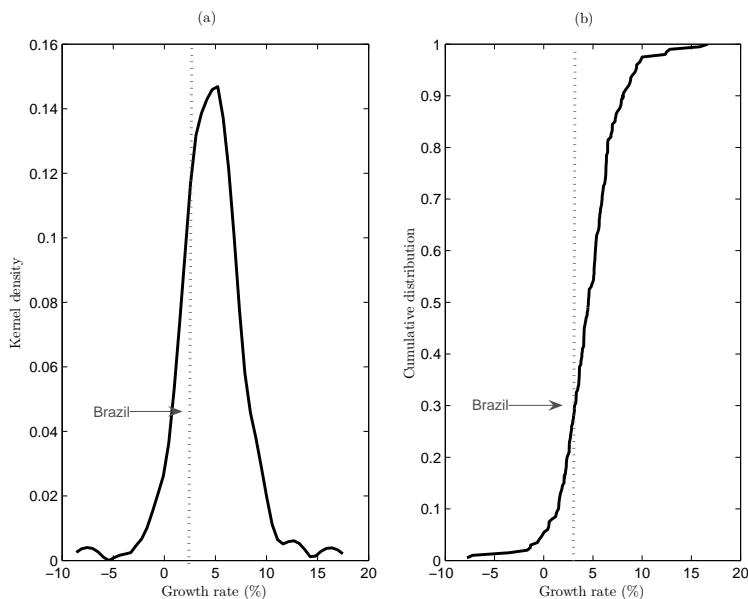


2.3 The consequences of a world-wide growth slowdown on Brazil's growth

Recent research on growth and development has highlighted the role of international knowledge externalities on long run growth (see Eaton and Kortum (1999) and Klenow and Rodríguez-Clare (2005)) and on the interdependence of cross country growth rates. One interesting issue is about the effects of a world-wide growth slowdown on Brazil's growth performance. The recent years have been characterized by a time of record high commodity prices, low interest rates, and robust global demand. The puzzle, as suggested by Velasco (2005), is: Why doesn't Brazil (and Latin America) grow more? What would be the consequences of a world-wide slowdown on the Brazilian economy?

Here we use Maddison (2006) data on the world and Brazilian growth rate of

Figure 5: Panel (a): Kernel density of the average growth rate of real GDP from 2002 to 2005. Panel (b): Cumulative density of the average growth rate of GDP from 2002 to 2005. Source: World Bank (2006).



GDP from 1950 to 2003 to estimate how the average world-wide growth affects the Brazilian economy. Let y_t be the growth rate of real GDP in Brazil in year t and let x_t be the world growth rate of real GDP (minus the Brazilian GDP). We estimate the following equation:

$$y_t = \alpha + \gamma y_{t-1} + \beta x_t + \epsilon_t. \quad (1)$$

We run two regressions: One without the lagged dependent variable ($\gamma = 0$) and another with the lagged dependent variable.¹⁰ 2 contains the estimated coefficients. The first column uses Ordinary Least Squares (OLS) procedure for the regression without the lagged dependent variable. Observe that the Durbin-Watson test indicates the presence of serial autocorrelation. In such cases, OLS procedures yield

¹⁰We add another lag its coefficient was not statistically different from zero.

Table 1: Growth rate of real GDP from 2002 to 2005: Selected countries and regions.

Source: World Bank (2006).

Country (Region)	Growth rate of GDP (%)
BRIC	6.46
Brazil	2.42 (3.1)
Russia	6.41
India	7.24
China	9.77
Latin America	2.87
Chile	4.65
OECD Countries	2.31
United States	3.16

Value in parentheses corresponds to the revised version of the growth rate of real GDP.

inefficient estimators. In the second column, we use Prais-Winsten iterations to correct for the presence of serial autocorrelation. However, observe in Figure 6 panel (a) that such model does not provide a good fit of the data. The third column of Table 2 reports the OLS results with the presence of the lagged dependent variable. Notice that the null hypothesis of no serial autocorrelation is not rejected, and the model has a good fit of the data (see Figure 6 panel (b)). Observe also that in this regression all estimated coefficients (except the constant term) are statistically different from zero at 95 percent confidence level.

We now use the estimated coefficients of Table 2 column 3 to make some counterfactual exercises:

- i. What would Brazil's growth of GDP be if there is a world-wide GDP growth

Table 2: Dependent Variable: Brazil's Growth rate of GDP. Ordinary Least Squares and Prais-Winsten regressions. T-Statistics are in parentheses. *,** mean significant at 90 and 95 confidence level, respectively.

	Specifications		
	OLS	Prais-Winsten	OLS
$growth_{World}$	1.094** (2.66)	0.680* (1.81)	0.837** (2.36)
$growth_{BR}(-1)$			0.444** (3.65)
Constant	0.0049 (0.28)	0.020 (1.19)	-0.006 (-0.44)
Durbin-Watson Test	1.165	2.134 \diamond	2.212
R-Squared	0.14	0.06	0.33
Number of Obs.	53	53	52

\diamond Durbin's h test.

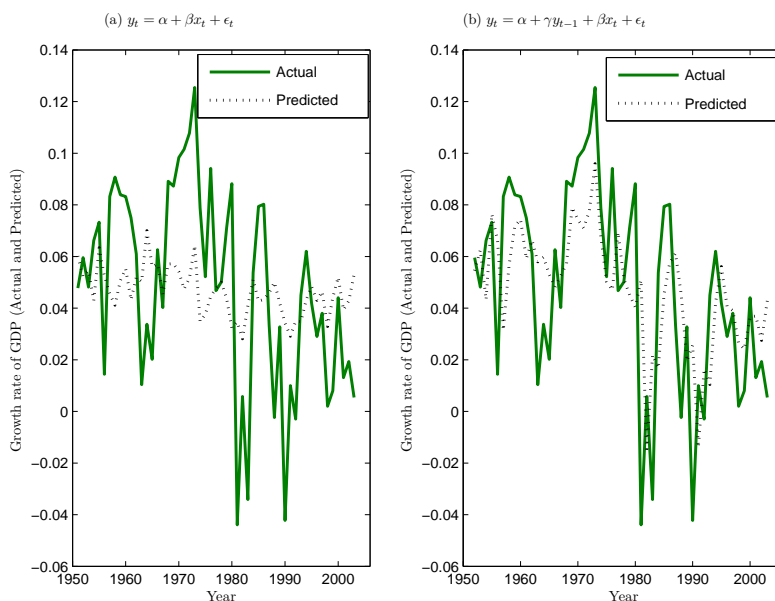
slowdown of one percentage point?

More specifically,

- ii. What would Brazil's growth of GDP during Lula's first term have been if the rhythm of world-wide GDP growth were similar to the one observed during the Cardoso administration?

According to World Bank (2006), the world GDP grew in the last four years (2003-2006) at an annual rate of 4.1 percent. During Cardoso's first (1995-1998) and second (1999-2002) terms the world-wide GDP grew at 3.1 and 2.6 percent per year,

Figure 6: Growth rate of GDP (1990 US\$) in Brazil: Data and predicted values.



respectively. During the whole Cardoso administration, world-wide GDP grew at 2.9 percent per year. This is about 1.2 percentage point lower than Lula’s first term administration.

Table 3 contains the counterfactual exercises. It shows that Brazil’s growth of GDP during Lula’s first term would have been about 70 percent lower than its realized growth rate if world-wide growth of GDP were similar to what was observed during the Cardoso administration (counterfactual exercise *(iii)*). In particular, Cardoso’s second term was a period characterized by a number of emerging market crises (e.g., Russia and Argentina crises) that affected negatively the Brazilian economy. If average world growth were similar to this turbulent period Brazil’s GDP growth during Lula’s first term would have been roughly 60 percent of its realized growth rate (counterfactual exercise *(ii)*).

Observe that, either we use the old series of Brazil’s GDP or the new revised

Table 3: Counterfactual exercises based on Table 2 column 3. Source: World Bank (2006) and Instituto Brasileiro de Geografia e Estatística (IBGE).

	Brazil's annual GDP growth rate (%)	
	<i>Base year 1985</i>	<i>Base year 2000</i>
Realized		
Cardoso's first term	2.57	
Cardoso's second term	2.10	
Cardoso's whole administration	2.34	
Lula's first term	2.70	3.35
Counterfactual		
(i) World-wide GDP growth similar to Cardoso's first term (1995-1998)	$0.72 \times 2.70 = 1.97$	$0.72 \times 3.35 = 2.51$
(ii) World-wide GDP growth similar to Cardoso's second term (1999-2002)	$0.60 \times 2.70 = 1.62$	$0.60 \times 3.35 = 2.01$
(iii) World-wide GDP growth similar to Cardoso's administration (1995-2002)	$0.68 \times 2.70 = 1.84$	$0.68 \times 3.35 = 2.28$

version, counterfactual GDP growth during Lula's first term would have been lower than the corresponding period during Cardoso's administration. Notice that a 2.28 percent growth of GDP would imply in Brazil a per capita GDP growth of 1.18 percent. At this pace, per capita income doubles in every 60 years. Now we turn to our understanding of Brazil's growth constraints.

3 Brazil's Growth Constraints

It is a much easier task to show that growth in Brazil has been disappointing in the last years than to identify Brazil's major growth constraints in order to define effective growth promoting policies. Larry Summers in his 2003 Godkin Lecture at Harvard University posited that:

“The rate at which countries grow is substantially determined by three things: their ability to integrate with the global economy through trade and investment; their capacity to maintain sustainable government finances and sound money; and their ability to put in place an institutional environment in which contracts can be enforced and property rights can be established. I would challenge anyone to identify a country that has done all three of these things and has not grown at a substantial rate.”

According to Rodrik (2005) such recommendations are principals that countries should follow, but **there is not an unique** mapping from a determined set of policies that reach such economic principles. Policies and institutions are constrained by local formal and informal rules, and preferences. In addition, governments face political limitations, which makes relevant the definition of policies and reforms that have higher potential to promote sustained growth.

Unless the economy is facing an unstable macroeconomic crises, it is not so trivial to identify which policy should a country undertake. It is clear that good macroeconomic policies, such as fiscal and monetary stability, make investors more confident and thereby help entrepreneurs to raise investment and productivity (see Bruno and Easterly (1998)). However, the experience from Brazil (and other Latin American countries), which made substantial progress in handling its macro economy in the 1990s, shows that macro stability is not enough to raise sustained productivity

growth.

In a recent article Hausmann, Rodrik, and Velasco (2007), analyzing the Brazilian economy, argue that

“Brazil suffers from an inadequate business environment, high taxes, high prices for public services, low supply of infrastructure, insecure property rights and judicial enforcement and inadequate education relative to some best practice benchmark.”

(Hausmann, Rodrik, and Velasco, 2007, p. 19)

A similar diagnosis is also found in Cavalcanti, Magalhães, and Tavares (2008). However, Hausmann, Rodrik, and Velasco (2007) posit that

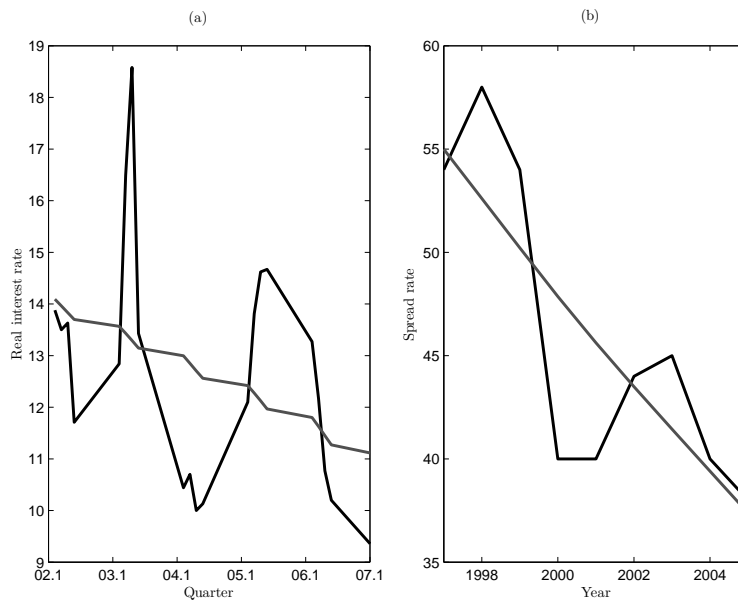
“[Policy makers should] discard them as priority areas for policy reform. This is because all these factors should depress private investment by keeping private returns low. But in spite of the sub-par atmosphere, private returns are very high and investment is constrained by the inability of the country to mobilize enough domestic and foreign savings to finance the existing investment demand at reasonable interest rates.

Is that the case? Figure 7 shows that both the real interest rate (panel (a)) and the spread rate (panel (b)) have been decreasing in the last years in Brazil. Observe that in January of 2003 the real interest rate in Brazil was about 19 percent and in January of 2007 it decreased by half, reaching 9 percent per year. A similar pattern is observed in the spread rate of the lending rate and the deposit rate.¹¹ However, despite the decrease on the real interest rate, spread rate, and country risk, investment

¹¹Recently, country risk in Brazil reached its lowest historical level. Total debt over GDP has also been decreasing over time. Moreover, Brazil in the last 4 years has run a current account surplus which suggests that investment has not been constrained by the inability of the country to mobilize saving to finance investment.

in Brazil remained relatively stable in the last years around 20 percent (see Figure 8).¹² Therefore, it does not seem that investment is constrained by the inability of the country to raise funds. We believe that Brazil has now a fair international credit record to mobilize foreign funds. We believe that investment is low in Brazil because part of it is not privately appropriated due to high taxes, heavy bureaucracy, and uncertainty.

Figure 7: Realized and trended real interest rate and spread rate in Brazil. The real interest rate is the nominal interest rate determined by the Central Bank minus the expected inflation rate. Source: Central Bank of Brazil. The spread rate is the difference between the lending and the deposit rate. Source: International Financial Statistics.

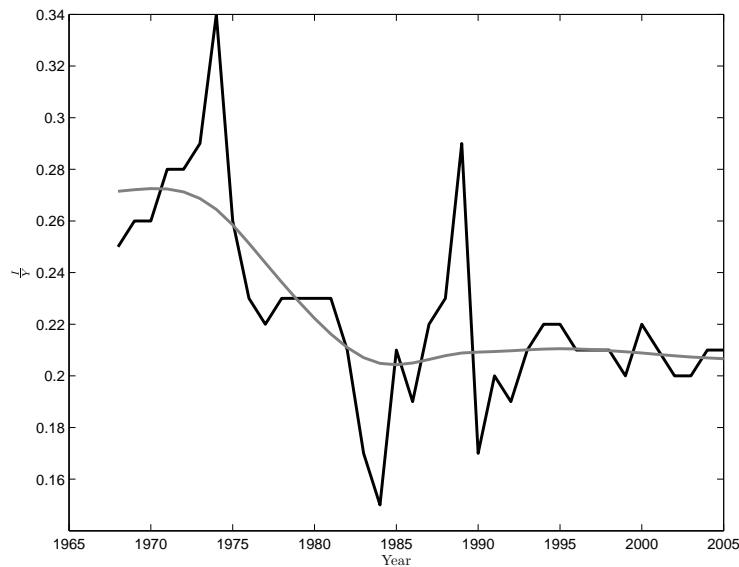


Cavalcanti, Magalhães, and Tavares (2008) investigate the effect of improvements

¹²The investment rate is about 22 percent in Chile, 30 percent in South Korea, 27 percent Taiwan, and 20 percent in the United States.

in institutions in Brazil's economic performance. They consider data from different institutions which indicate the regulatory costs of "doing private business", such as those related to bankruptcy law, start up costs, employment rigidity and the expropriation of private investment. It can be observed that Brazil presents a lower level of institutional development than Chile, Taiwan, South Korea, and also Argentina. For instance, they show that the bankruptcy and collateral laws are much more effective to facilitate credit in Chile than in Brazil. As a result, the total private credit to output ratio is roughly two times higher in Chile than in Brazil. Brazil's low institutional development is also an important indicative that it can grow faster. The potential impacts of institutional reforms are quantitatively important.

Figure 8: Realized and trended investment rate in Brazil. Source: International Financial Statistics.



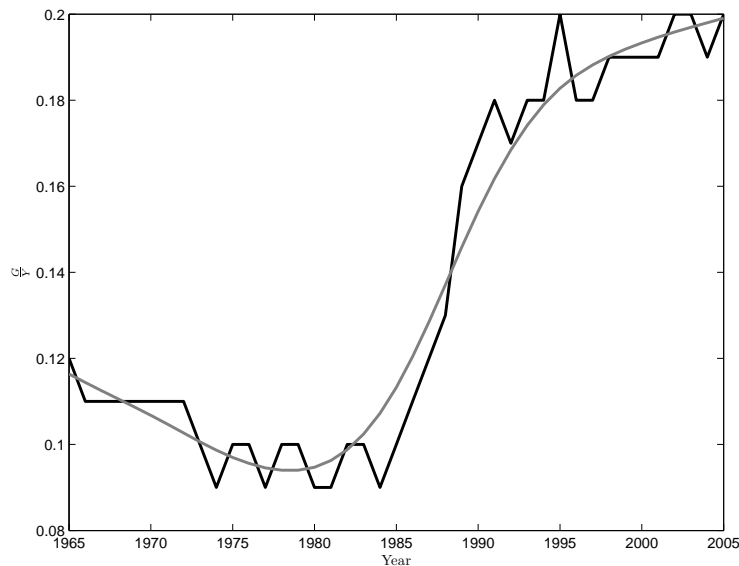
It is important to highlight that the investment rates do not correlate strongly with growth rates. The investment rate is better to explain differences in levels than in growth rates (see Klenow and Rodríguez-Clare (2005)). Growth is more

related to technical progress. Therefore, even if the investment rate does not increase, microeconomic reforms might still be able to increase Brazil's growth by increasing the intensity of the use of available factors of production and by increasing technical progress. Below we describe some of these reforms.

3.1 Government and Tax Reform

Although the investment rate has been at low and constant level over time in Brazil, government consumption as a share of GDP has had an opposite behavior. Figure 9 shows the behavior of government consumption over GDP in the last 40 years. Observe that it increased at a strong rate in the end of the 1980s.

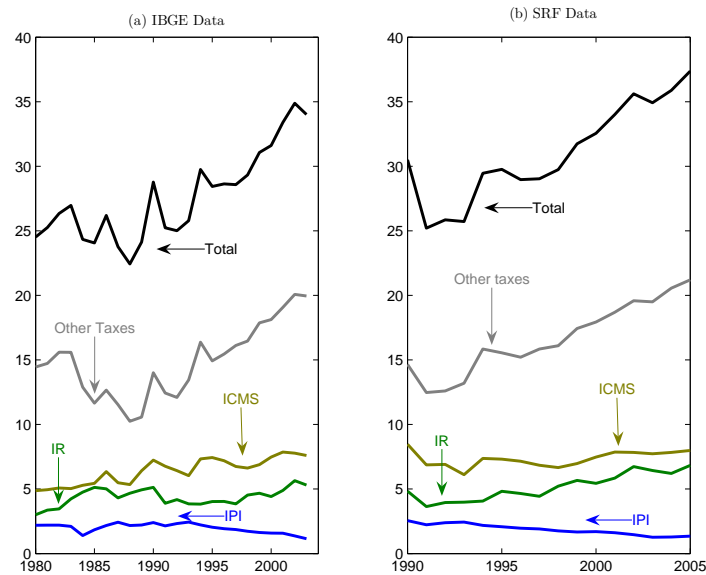
Figure 9: Government consumption over GDP. Source: International Financial Statistics.



Consequently the tax burden has been also increasing in Brazil over time. Figure 10 shows that the increase in tax burden in Brazil is due mainly to the increase in

revenue of “other taxes”. They are mainly taxes on financial transactions (CPMF and IOF), and social security contributions, such as PIS and COFINS. They were introduced to finance health care and federal government transfers.

Figure 10: Brazil’s tax burden as a share of GDP. Source: Instituto Brasileiro de Geografia e Estatística (IBGE) and Secretária da Receita Federal.



Brazil’s heavy tax burden is similar to that of some industrial countries.¹³ High taxes and low enforcement generates informality. As a result, a large share of activities in Brazil is produced outside the realm of government regulation. Data from the World Bank shows that the informal sector as a share of GDP is about 40 percent in Brazil, while in Chile it is roughly 20 percent. According to Capp, Estrodt, and

¹³According to the World Bank (2006) the tax burden in Chile is roughly 18 percent of GDP, in South Korea it is about 25 percent, which is similar to what is observed in the United States. Moreover, Baer and Galvão Jr. (2007) give strong evidence that both the tax burden and government expenditures favor the higher income classes, which means that the country’s fiscal system has a relatively low redistributive impact.

Jones Jr. (2005) the informal sector in Brazil is one of the main barrier to increase productivity in the country (see also Elstrodt, Laboissière, and Pietracci (2007)). The reason is that companies gain cost advantages by operating in the informal sector, however, they in general achieve lower productivity than formal firms. Antunes and Cavalcanti (2007) provide a formal model which shows why informal entrepreneurs emphasize low scale firms. They also provide simulation results which show that reforms that simplify bureaucracy and decrease tax burden might have a sizeable impact on productivity.

It is clear that, given Brazil's level of development, the country is an outlier in terms of government size, tax burden, and the size of the informal sector. A supply-side reform aimed to decrease taxes and rationalize government spending is needed.¹⁴ This is particularly important now, since both the ratio of total debt over GDP and interest rates are decreasing in the country. Therefore, a tax cut would make the government less tempted to increase current spending. A decrease in current government spending might also have positive effects on the provision of public infrastructure, which Brazil is in need.

A related reform is the one of the social security system. Brazil's social security system has undergone a series of reforms since the late 1990s. Despite all reforms, the social security deficit is still about 4 percent of GDP and is projected to increase over time (see Giambiagi and de Mello (2006)). Therefore, further reform is still needed to ensure the sustainability of this system over the long run.

¹⁴Given the high tax evasion in some sectors, simple Laffer curve argument suggests that the government could cut taxes in such sectors without a necessary decrease in public revenues.

3.2 Brazil's Recent Bankruptcy Reform

Brazil was in need of a bankruptcy reform. The average time in insolvency proceedings in Brazil is about twice what is observed in Chile (see World Bank (2005)), and total credit over GDP in Brazil is roughly half of what is observed in Chile (see World Bank (2006)). After roughly 10 years in the Congress¹⁵ a new bankruptcy law was finally approved in December 2004. The old law gave first priority to workers, second to the tax authorities and thirdly to creditors. The new legislation gives priority to creditors while limiting payments to workers. This new law improved also liquidation and reorganization procedures. It also provides the possibility of extra-judicial agreements (see Araujo and Funchal (2005)).

In a related article that investigates the impact of bankruptcy and judiciary reforms, Antunes, Cavalcanti, and Villamil (2008) show that the effects of such reforms on credit to output ratio and per capita output are sizeable for some Latin American economies. They show that financial market imperfections explain a significant part of the gap relative to the United States in per capita income for some Latin American countries (e.g., Brazil, Mexico, and Argentina) and Transition Economies (e.g., Russia and Poland). In particular, credit market imperfections account for roughly 64 percent of the difference in output per capita between the U.S. and Brazil.

Although Brazil's total credit over GDP is about 35 percent (a little lower with the new GDP methodology), it has been increasing in the last four years and it certainly has potential to increase further. However, it is not only the written law that is important. The judiciary is crucial to enforce the law. Therefore, it is essential to improve the efficiency of the judiciary system to increase the effectiveness of the law.

¹⁵Although this reform was approved in Lula's first term, it also had important progress in Cardoso's second term. See the appendix of the working paper version of Araujo and Funchal (2005).

Studies have shown that the impact of such reforms on output per capita and total credit are sizeable.

3.3 Brazil's Labor Market Rigidity

One of the main supply side factors that restrict the growth potentialities of the Brazilian economy is its labor market rigidity. According to data from “doing business” of the World Bank, the employment rigidity index (which combines the difficulties of hiring and firing in a given country) in Brazil is higher than the Latin American average.¹⁶ The legislation protects inside formal workers (but, as also a consequence, almost half of the labor force works in the informal sector (OECD (2006))) and are guided, predominantly, by social objectives with adverse effects on economic efficiency.

Businessmen in the country have pointed out that the current labor market legislation, which dates back from the 1950s and 1960s, is one of the main constraints for growth (e.g., CNI (2006)). The labor market rigidity increases the cost of operating in the formal sector, decreasing therefore productivity and firm size, as discussed previously. It also has adverse effects on labor effort, since firing costs are high and workers receive some benefits in case of unjustified dismissal (e.g., *Fundo de Garantia do Tempo de Serviço*). In fact, if Brazil's goal is to raise the potential of economic growth it should make a better use of its labor factor by deregulating it. See Cavalcanti, Magalhães, and Tavares (2008) for some quantitative estimates of labor market reforms on output and investment in Brazil.¹⁷

¹⁶The cost of hiring in Brazil is about 26.8% of the worker's salary, compared to 17% in Korea, and 3.4% in Chile. The cost of firing in the country is 165.3% in terms of weekly wage. This number is 51.3% in Chile and 90% in Korea.

¹⁷Evidences for New Zealand show that the unemployment rate decreased and productivity growth increased sharply after a labor market deregulation (Evans, Grimes, Wilkinson, and Teece (1996)).

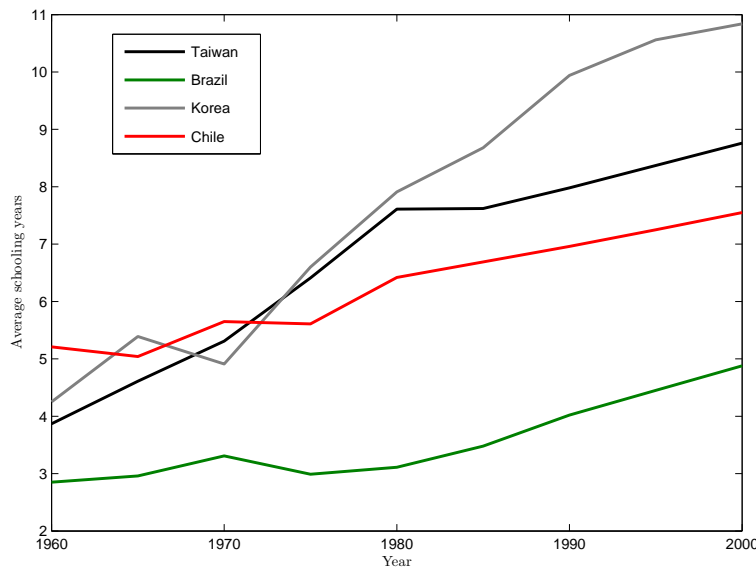
3.4 Human Capital Accumulation

There exists a large literature which shows that public education is favorable for growth because it increases the level of human capital and at the same time it tends to produce a more even income distribution (e.g., Galor and Zeira (1993)). More egalitarian societies are also associated with less social conflicts and individuals have a lower tendency to report themselves happy when inequality is high (e.g., Alesina, DiTella, and MacCulloch (2004)). Then, why some countries do not adopt and implement a compulsory and efficient public educational system? Sokoloff and Engerman (2000) show how the “elite” of some countries protected their *status quo* by investing poorly in primary schooling or/and by erecting barriers in the right to vote and other privileges. It might be that education is related to social status and therefore the elite might oppose the development of a strong public education system or any reform that would threaten their political power.¹⁸ This seems to be the case in Brazil.

Figure 11 shows the average years of schooling in the population 15 years and older for Brazil, Chile, Korea, and Taiwan. It is clearly in this figure that compared to Chile, Korea, and Taiwan (and other successful East Asian countries such as Singapore) human capital accumulation was not a priority in Brazil from 1950 to 1980. Recall that this was a period of rapid industrialization and high growth rates in the country. Since the 1990s, education attainment has an upward trend in Brazil. However, the country still lags behind in education: Average years of schooling in Brazil is less than half of what observed in South Korea.

¹⁸Alexopoulos and Cavalcanti (2006) show that that one of this social status might be the specialization of skilled workers in high-paid jobs and the abundance of unskilled workers in the production of some cheap “home goods” in the market, such as painting and cleaning a house, babysitting and/or cooking. They show that, depending on the level of inequality, the elite might oppose policies that improve the education system even if there is no tax increases to finance such policies.

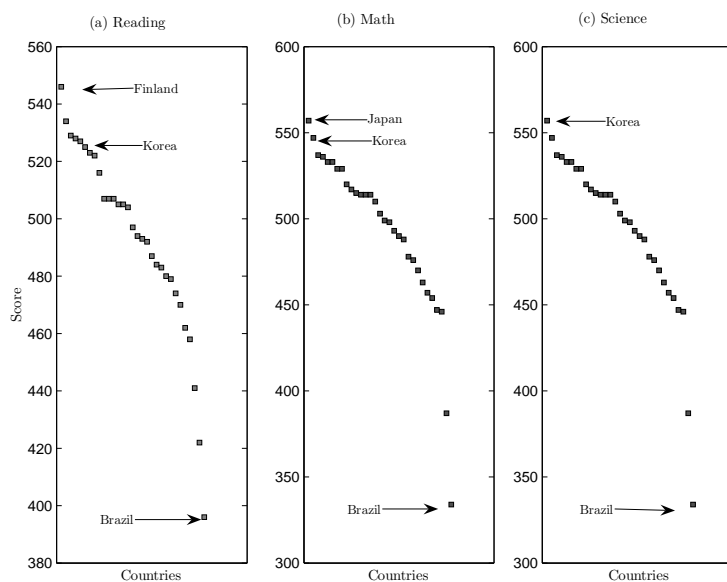
Figure 11: Average years of schooling in the population 15 years and older. Source: Barro and Lee (2000).



Brazil lags behind not only in the “quantity” of human capital, but according to the international evidences the quality of education is also poor in the country (see Figure 12). In the 2000 Programme for International Student Assessment (PISA), which is the most comprehensive international assessment of educational outcomes to date, Brazil had the lowest score among 31 countries in all subject: reading literacy, math literacy, and science literacy.

Using standard level accounting exercises Pessôa (2006) shows that about two-third of the difference in income per capita between Brazil and Korea is explained by the educational gap of these two countries. Education explains about the same of the difference in output per capita between Brazil and Chile and Brazil and Taiwan. Although there were some recent improvements in human capital accumulation in Brazil, the country surely needs to increase its effort to keep its population more

Figure 12: International comparison: Results from PISA 2000.



years on school and improve the quality of education. Again, the effects of such reform on development might be sizeable.

3.5 Does Brazil Need an Industrial Policy?

One of the most controversial and bloodiest debate in development economics is about the role of industrial policies to promote growth and development. By industrial policies we follow Pack and Saggi (2006) to define them as government *“intervention or policy that alter the structure of production in favor of sectors that are expected to offer better prospects for economic growth.”* There are many arguments in favor of industrial policies, such as: the infant industry, knowledge spillovers, and coordination failures arguments.¹⁹ It is not our role to discuss the details of each one here (see

¹⁹There are also some criticism for industrial policies. Some authors (e.g., Baldwin (1969)) claim that market failures that justify government interventions might be solved not by industrial policies (such as trade protection, differentiated taxes, or direct subsidy), but by correcting such market

Pack and Saggi (2006) for details and references).

In economics we cannot use laboratory experiments to determine the impacts of different policies and institutions on economic development. We cannot, for instance, keep all “other” factors constant and adopt some industrial policy in one place and market oriented policy in another to compare the growth results after some years.²⁰ Only in this way we would be able to evaluate the effectiveness of the two policies to promote growth and development.

Several developing countries implemented industrial policies, such as subsidized loans, variable taxes and differentiated tariffs to promote industrialization of some specific production sectors. However, countries and regions - Latin America and East Asia - had divergent development path. The important question is: Was the difference in the path of development between East Asia and Latin America due to differences in the industrial policy? Or was it due to other policies?²¹ It is important to highlight that economic fundamentals were sharply different in East Asia and Latin America. Besides their industrial policies, East Asian countries have a history of stable macroeconomic policies and fiscal discipline. They also invested heavily in education and in public infrastructure. In Brazil, macro stability occurred in middle 1990s, the country lags behind in public infrastructure, taxation and bureaucracy are heavy, and the stock of human capital is low as well as the quality of education.

failures (e.g., policy towards the functioning of the credit market).

²⁰In the real world, however, there are various historical incidents that come close to the concept of a “natural experiment”. Some examples are the divergent path of North and South Korea, East and West Germany, and Hong Kong and mainland China. Countries with the same geography and historical background that were divided for political reasons and followed divergent economical paths.

²¹One of the main difference was that industrial policy in East Asia was exported oriented while in Latin America it was characterized by ISI policies.

Therefore, it is hard to determine whether the industrialization policies in East Asian countries would have had long run success in the Brazilian economy.²²

4 Concluding Remarks

The world in the last four years is growing at high rates and this has boosted commodity prices (such as iron ore and soya) and exports in Brazil. In addition, international interest rates are at low levels and there is high liquidity in international financial markets. Despite all that, Brazil's growth in Lula's first term has been disappointing. Our counterfactual exercises suggest that if the world were growing at a rhythm similar to the Cardoso administration (first term, second term, or the eight years period), then GDP growth during Lula's first term would have been lower than the period under Cardoso's administration.

Brazil went through important market-oriented economic reforms, but the post-reform growth has been lackluster. This poor economic performance has raised the issue of whether Brazil should keep reforming its economy. In particular, our diagnosis shows that the country should remove the micro level barriers that slowdown productivity growth. Brazil still presents a low level of human capital stock, a high level of expropriation of private investment, and unsecured property rights. However, Brazil's low level of institutional development is also an important indicative that it can grow faster. Studies have corroborated our view that the potential impacts of some institutional reforms on the country's development might be sizeable.

However, the impact of institutional change on development is delayed (e.g., Fer-

²²See Canêdo-Pinheiro, Ferreira, Pessôa, and Schymura (2007) for an important discussion of industrial policies in Brazil.

nandez and Rodrik (1991)). In fact, Méon, Sekkat, and Weill (2007) have shown that the full impacts of institutional reforms on productivity show after approximately five to six years. Therefore, Lula’s administration is benefiting from reforms taken in Cardoso’s administration and might be constrained by the reforms not taken. In addition, there are always winners and losers from reforms. Consequently, those who lose their *status quo* might erect barriers to institutional change (see Parente and Prescott (2000)).

Reforms should be in the government agenda. Some priorities are a reform to cut taxes and government spending (e.g., social security reform), and deregulate the labor. Taxes should be cut in the sectors with high tax evasion. This might fight informality and increase productivity. Another important reform is to improve the efficiency of the judiciary system to secure investment and property rights. Efforts to increase the stock of human capital and the quality of education are also crucial for Brazil’s development. Given the lag between institutional change and their impact on development, Lula’s administration might not benefit from these reforms. But the country surely will.

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