THE MIDDLE - INCOME TRAP IN BRAZIL: ECONOMICS CHALLENGES ON ROAD TO DEVELOPMENT

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Resumo: O objetivo deste artigo é o de discutir o problema da "armadilha da renda media" no Brasil e sobre quais seriam os meios para superar este constrangimento econômico. Para tanto, utilizamos o conceito de "armadilha da renda media" desenvolvido por Gill & Kharas (2007). Este conceito destaca o fato de que certas economias conseguem sair de uma situação de baixa renda com relativo sucesso, valendo-se de amplos recursos naturais e de baixos salários, mas quando a renda per capita aumenta, perdem estas vantagens comparativas, mas não conseguem desenvolver novas habilidades para saltar para outro estágio de desenvolvimento, caindo nessa "armadilha". Por conta disso, muito da estagnação verificada no Brasil, desde 1980, decorre dessa incapacidade em se inserir em cadeias produtivas globais com produtos com maior conteúdo tecnológico, de forma a absorver mão-de-obra mais qualificada e melhor remunerada.

Palavras-chave: armadilha da renda média, economia brasileira, estagnação, pontos de estrangulamento

Abstract: The aim of this article is to discuss the problem of "middle-income trap" in Brazil and about what would be the ways to overcome this economic constraint. Therefore, we adopt the concept of "middle-income trap",created by Gill & Kharas (2007). This concept highlights the fact that certain economies can overcome a situation of low income relatively easily, making use of abundant natural resources and low wages, but when per capita income increases, they lose these comparative advantages, and fail to develop new skills to skip to another stage of development, falling in this “trap”. Because of this, much of the stagnation in Brazil, since 1980, is result of this inability to enter into global production chains with higher added value goods, in order to absorb more skilled workforce and high wages.

Keywords: the middle-income trap, the Brazilian economy, stagnation, bottlenecks

1 INTRODUCTION

The concept of “middle income trap” is relatively recent. Economists of the World Bank introduced it into the academic debate. A country falls into the middle-income trap by raising its per capita income (and their labor costs) without, however, increasing proportionallyits productivity. When it reaches this stage, production costs become high to compete with low-income countries in markets of intensive hand labor. On the other hand, it does not organize its supply side based on productivity gains, higher added value and higher technological content to compete with more developed countries. Squeezed between these two poles, the economy in question is threatened by stagnation or regression in its level of industrialization.

This problem is characteristic of developing economies that organized industrialization strategies throughout the twentieth century. For a poor country to reach the middle income level is relatively easier than jumping on the stage of middle income to high income. The industrialization based on import substitution, which allowed the takeoff of the economy in question, occurs in the lower segments of the technological complexity in which the handling of modern technologies can be done without extensive training of the workers. However, to achieve a higher level of income this country should incorporate new skills in its work force, which requires a higher level of qualification of manpower, better infrastructure and greater social cohesion around a national development project.

Gill and Kharas published, in 2007, the first discussion that relates the loss of momentum of middle-income economies. They made an analysis of the challenges facing the development of the Asian economies, noting that some countries have managed to make the leap forward, like Taiwan, Hong Kong, Singapore and South Korea as others, such as Indonesia, Malaysia, Philippines and Thailand found it difficult to achieve higher income levels falling into the trap of middle income. In 2011, Kharas and Kohli deepened this thread, trying to clarify the concept and also indicating actions that could minimize the effects of the middle-income trap. Also in the World Bank, Agénor and Canuto (2012) sought to reflect on the phenomenon emphasizing the issue of productivity and public policy, as follows:

> *"Fundamentally although it agrees on the productivity slowdowns being the source of these traps, it differs from the existing literature in terms of the reasons why productivity growth may be constrained, and what type of public policies can be implemented to promote a broad-based innovation strategy and escape the middle-income trap. We emphasize interactions between three determinants of productivity growth: individual decisions to acquire skills, access to different types of public infrastructure, and knowledge network externalities - which we define the possibility that a higher share of workers with advanced levels of education has a positive impact on their performance, that is, their ability to take advantage of existing knowledge".*

Note that the discussion of the middle-income trap is closely related mainly to microeconomic aspects, giving little attention to other aspects that undoubtedly influence the performance of each country.

Looking at the experience of countries that have fallen into the trap of middle income, it appears that Latin America is the region in which this phenomenon manifests itself most dramatically. As highlighted by Eva Paus (2011):

> *"Many Latin American countries today are caught in the middle -income trap. On the one hand, they can no longer compete with low-wage countries in standardized products. On the other, they cannot compete with countries with greater capabilities in more technology-intensive goods and services. The reason: many governments have never developed the policies and institutional environment to make the leap to high-tech industrial or economic development - what is often referred to the industrial policy.*

2 EVIDENCES OF MIDDLE -INCOME TRAP IN BRAZIL

When analyzing the performance of the Brazilian economy in the period 1960-2012, particularly regarding the evolution of GDP and GDP per capita, we identify three periods with very striking features: the first, from 1960 to 1980, characterized by high growth rates, the second from 1980 to 2002, characterized by stagnation, and the third from 2002 to 2012, when there are signs of renewed growth in income.

2.1 GDP and per capita income (1960-2012)

Between 1960 and 1980 the growth of the Brazilian per capita income was 146% in constant dollars. This period was characterized by the efforts of the Brazilian government to construct a vertically integrated industrial structure in the country. In the preceding thirty years (1930-1960), the Brazilian economy has overcome the effects of the international crisis, which began in 1929, to make the transition from an economy geared to the export market, mainly exporting agricultural commodities such as coffee, sugar or cocoa and importing consumer goods manufactured to an economy turned inward, whose engine was the process of import substitution of manufactured goods.

In the period 1960-1980, there was a strong process of industrialization based on capital goods (steel, oil, electricity, heavy chemicals) and consumer durables (cars, electronics, appliances). Figure 1, shows the growth rates of GDP in the period 1960-1980:

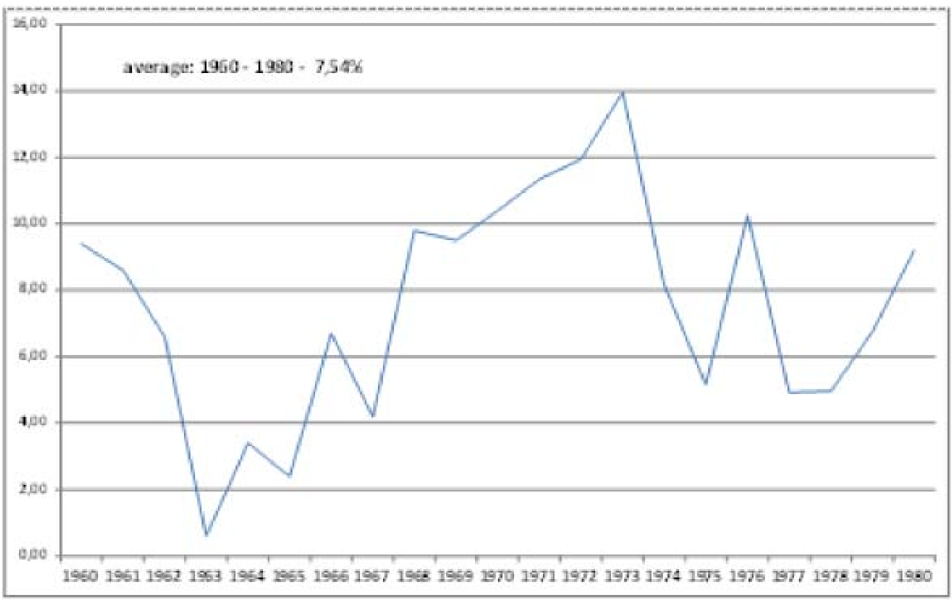

Figure 1 - GDP – 1960 – 1980 – Annual Average = 7,54%
Source: Ipeadata: www. Ipeadata.gov.br.

Notwithstanding the high degree of fluctuation in economic activity, experiencing the crisis of raw materials in the 1960s and the two oil shocks in the 1970s, the economy grew at an annual average rate of 7.54%. Industrialization progressed rapidly in capital and durable consumer goods sectors, making the Brazilian economy most integrated and also one more complex economy. The impact of this process can be found by reading Figure 2, which shows the evolution of Brazilian per capita income in this period. In constant dollars, the GDP per capita in this period grew 146%.

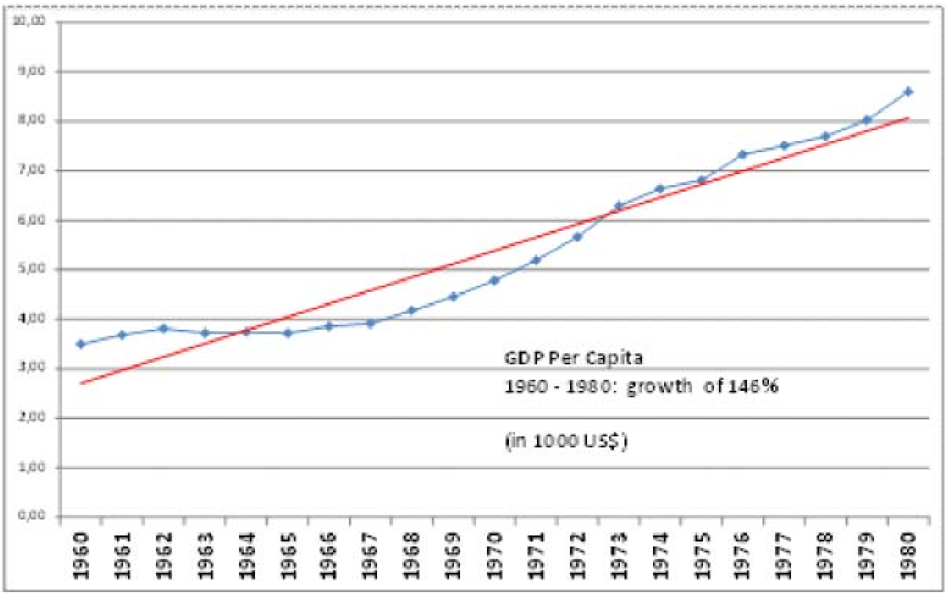

Figure 2 - BRAZIL: PER CAPITA INCOME RATE - 1960-1980
Source: Ipeadata: www.ipeadata.gov.br.

In the period 1980-2002, the Brazilian economy has been shaken by a series of shocks, both internal and external, that almost stagnated the per capita income. During this period, the average growth rate of the GDP was 2.39 %, very close to the rate of population growth and, therefore, the per capita income grew by only 4.5% over 22 years. From the point of view of external shocks, it is worth mentioning the crisis of external debt due the change of monetary policy of the United States (1980-1983) and the effects of Mexico moratorium on the international credit market (1982), the moratorium of Brazilian external debt between 1987 and 1988, a series of financial crises that shook the economy of developing countries in the 1990s: the 1991 Sterling crisis; the 1994/95 Mexican Peso crisis, the 1997/98 Asian crisis; the 1998 Russia moratorium; the 1999 devaluation of the Brazilian real and Turkish lira, and, in 2001 , the convertibility crisis in Argentina. Internally should be mentioned the political crisis which contributed to the downfall of the military rule (1982-1985), the fiscal crisis of the Brazilian State (1980-1999), the runaway inflation and the failure of heterodox stabilization plans (1986 -1994), internal impacts of adjustment policies inspired by the Washington Consensus (1990-2002). Figures 3 and 4 describe how the pattern of fluctuation of the product and also the per capita income for the period.

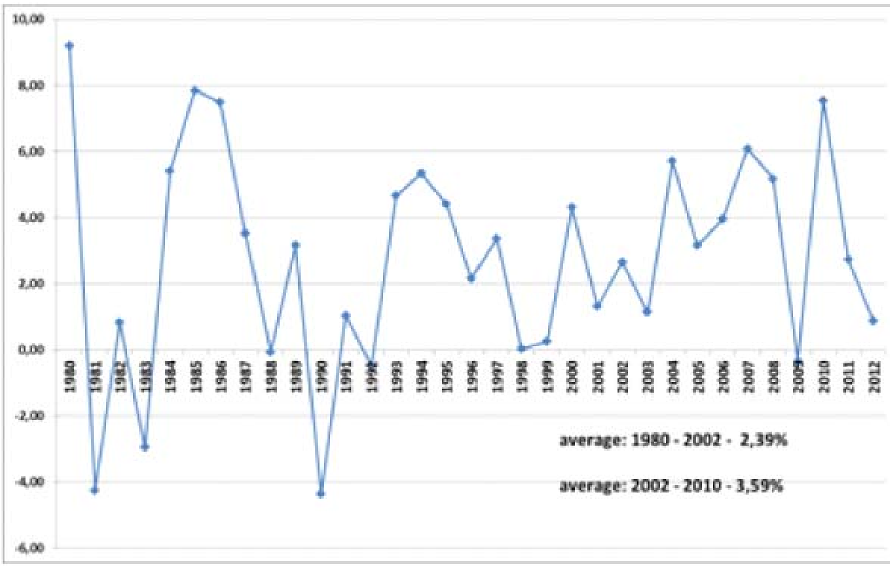

Figure 3 - GDP – 1980 – 2012 – Annual Average
Fonte: Ipeadata: www. Ipeadata.gov.br.

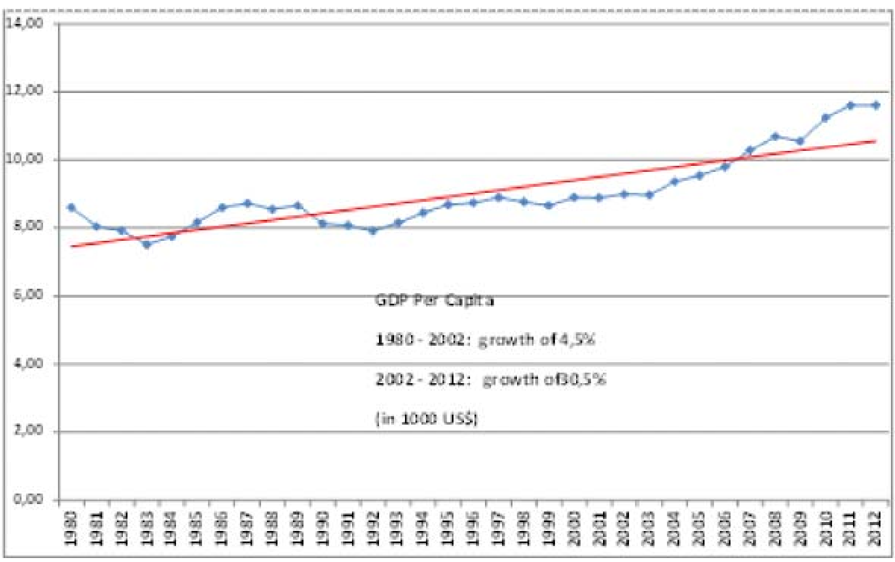

Figure 4 - BRAZIL: PER CAPITA INCOME RATE - 1980 - 2012
Fonte: Ipeadata: www. Ipeadata.gov.br.

The period from 2002 to 2012 reflects a moment when it is observed an improvement in the evolution of the indicators, with an annual average growth rate of GDP of 3.59% and an overall growth of 30.5 % of income per capita. While not abandoning the assumptions of macroeconomic orthodoxy, based on the tripod: inflation targets, primary surplus and fluctuating exchange rates, which in theory are responsible for low growth rates, the economy showed some dynamism. What was different were the guidelines implemented by the government of the Workers Party aimed to increase the household consumption, to reduce income disparities and boost domestic economic groups. This involved a favorable external environment during the period from 2003 to 2008, with significant appreciation in commodity prices, largely due to the increased Chinese demand, besides tomanage successfully the most traumatic effects of the financial crisis that started in 2008 and ongoing. However, the economic foundations that could prompt a leap in the development process changed little.

2.2 External Sector

Further evidence on the middle-income trap regards external vulnerabilities recorded in the period 1980-2002. The Brazilian economy has shown constant deficits in itscurrent account, depending on the inflow of foreign capital to cover itsbalance of payments, as described in Figure 5. The problem is related less to the balance of trade and more to the cost to make the payment of the foreign debt, loans and other services such as remittances of profits, royalties, freight and insurance, traditionally underfunded.

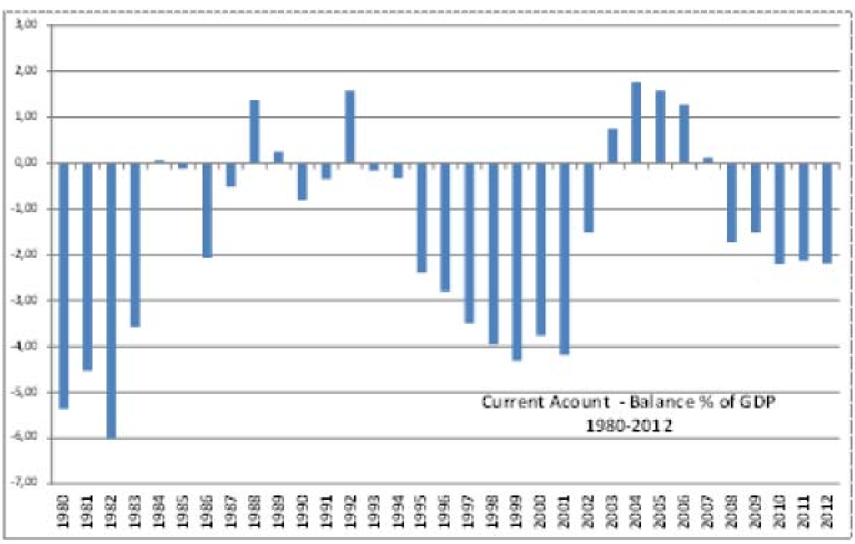

Figure 5 - Current Account – 1980 – 2012 – Balance- % of GDP
Fonte: Ipeadata: www. Ipeadata.gov.br.

Because of this, the country has shown a great dependence on foreign capital to close its accounts. In principle, part of these funds arrived into the country in the form of Foreign Direct Investment. During the period of privatization (1991-2000) much of the foreign capital went for “non-tradable” sectors, namely public utilities such as telecommunications, transport and distribution of electricity and gas. Besides not generating a flow of foreign currency, this investment profile tends to create a future vulnerability, since the profit remittances should be made in convertibly currency, that is, in US dollars.

If the inflow of productive capital was not enough to cover the deficit of current accounts, the government could attract speculative short-term capital through higher interest rates. Considering only the period from 1998 to 2008, it was observed that the interest rates offered were substantially higher than any international standard, something that solved a problem of short-run but created problems of major consequence for the medium or long term.

In times of speculative attacks, as in January 1999, the basic interest rate was 45% per year, revealing the external fragility of the country. When the interest rate hike was not enough to ensure the rollover of external liabilities, the country was forced to seek help from the International Monetary Fund that in return for loans required a program of highly recessionary adjustment. So it was during the 1980s, and was repeated in 1998, 1999 and 2002. See in Figure 6 the evolution of the interest rates of the Brazilian debt securities.

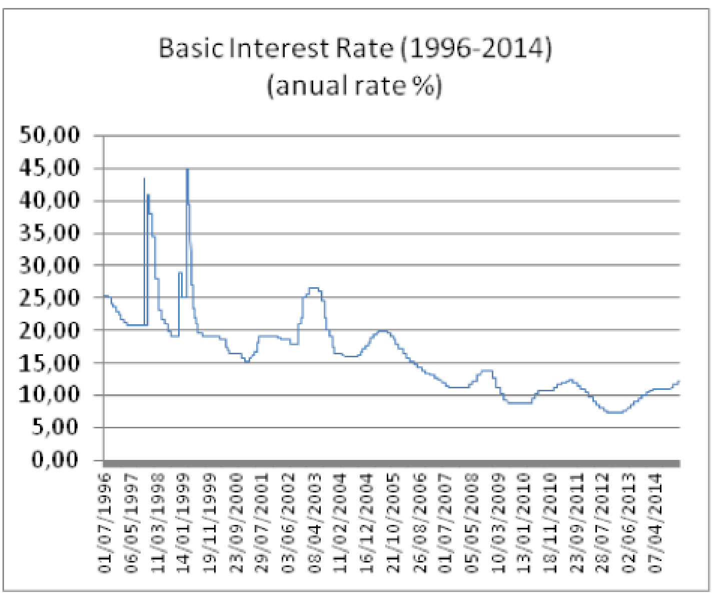

Figure 6 - Basic Interest Rate– Jan/1996- Sept/2014
Source; Brazil Central Bank: www.bcb.gov.br.

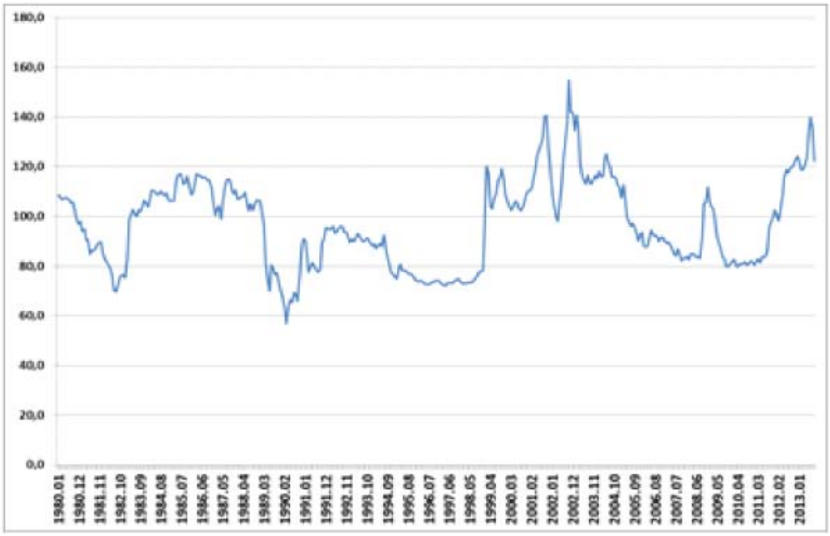

Figure 7 - BRAZIL: Effective Exchange Rate - jan/1980 – set/2013 – index – 2005=100
Source: Ipeadata: www. Ipeadata.gov.br.

The external vulnerability is also reflected in the inability to plan the economy in the longer term. An essential factor in ensuring the competitiveness of industrial exports of a country is its exchange rate. Relative predictability of future performance provides economic agents the basic framework within which its activities can thrive. When looking at Figure 7, we note the erratic profile of the exchange rate and also its inconsistency in terms of outlining a strategy of industrialization.

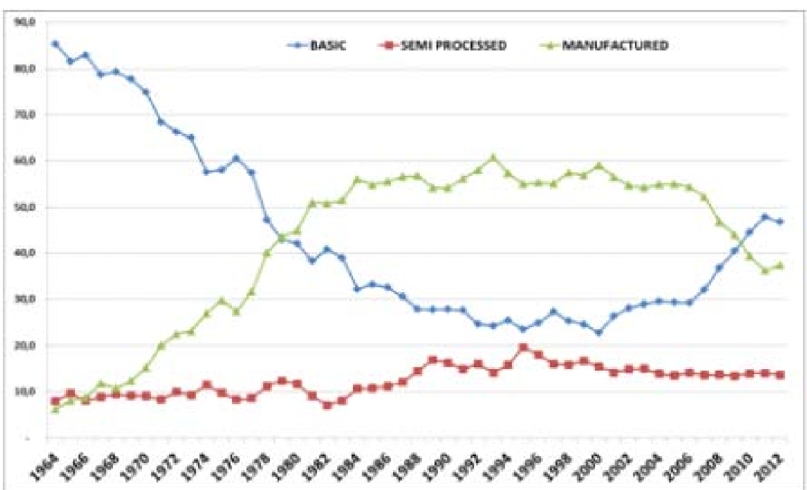

Figure 8 - Exports by Value Added – 1964 – 2012
Source. MDIC. Estatísticas de Comércio Exterior

From the point of view of the foreign trade, the products less susceptible to variations in the exchange rates are commodities, since the prices are set internationally by commodities and futures stocks exchanges. The exchange rate could indicate higher or lower profitability of exporters, but it is not decisive for who exports soybeans, corn, sugar, coffee or iron ore, since the level of aggregate demand is the most important factor determining the price. The same cannot be said of consumer goods manufactured.

From the analysis of figure 8, it can be seen that there has been a strong weakening of exports of higher value added. The share of basic goods in the agenda, which reached a minimum in 2000, has gained momentum and supplanted the export of manufactured goods in 2010.

It is important to add a relevant fact: the majority of Brazilian exports of manufactured goods are made by subsidiaries of multinational companies operating in Brazil. Among the 50 largest exporting groups in Brazil, 23 are multinational companies, of which 16 are industrial groups linked to sectors such as automotive, oil and gas, shipbuilding and heavy equipment.

In addition to the loss of momentum in industrial exports, we note the large import penetration in the Brazilian market of industrialized goods, surpassing exports, as verified in Figure 9.

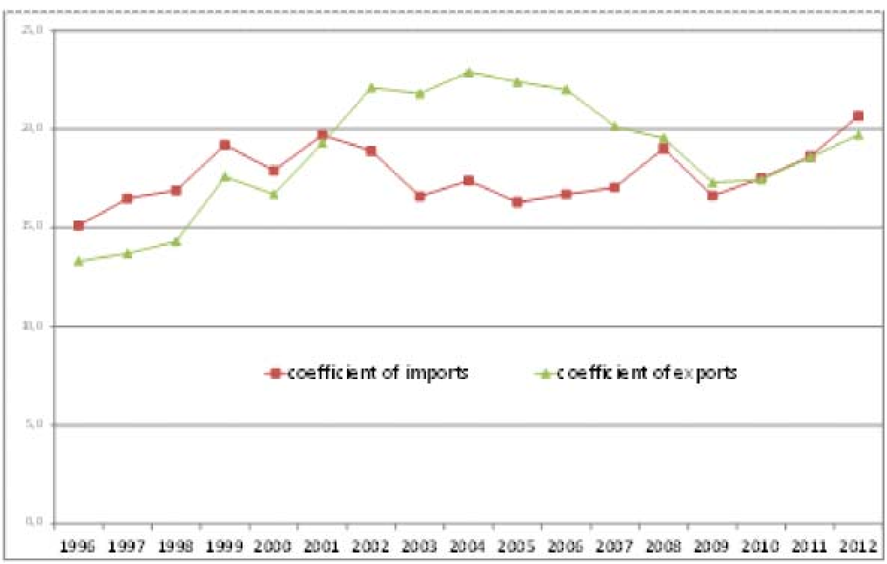

Figure 9 - The imports and export coefficients of industrial output - 1996-2012
Source: Ipeadata: www. Ipeadata.gov.br

As can be seen by analyzing the external accounts and the great weakness of foreign trade, the country has failed to boost its presence in the world economy in order to obtain greater benefits in higher technology and higher value-added sectors. On the other hand, there is the weight of imports in the domestic market, strongly challenging local enterprises throughout the country.

2.3 Investments

Further evidence of the slowdown in the economy, in the period 1980-2002, can be seen in the low level of investment and fixed capital formation in Brazil. Figures 10 and 11 provide information on capital formation in the period of greatest economic growth (1960-1980) and stagnation (1980-2002), respectively.

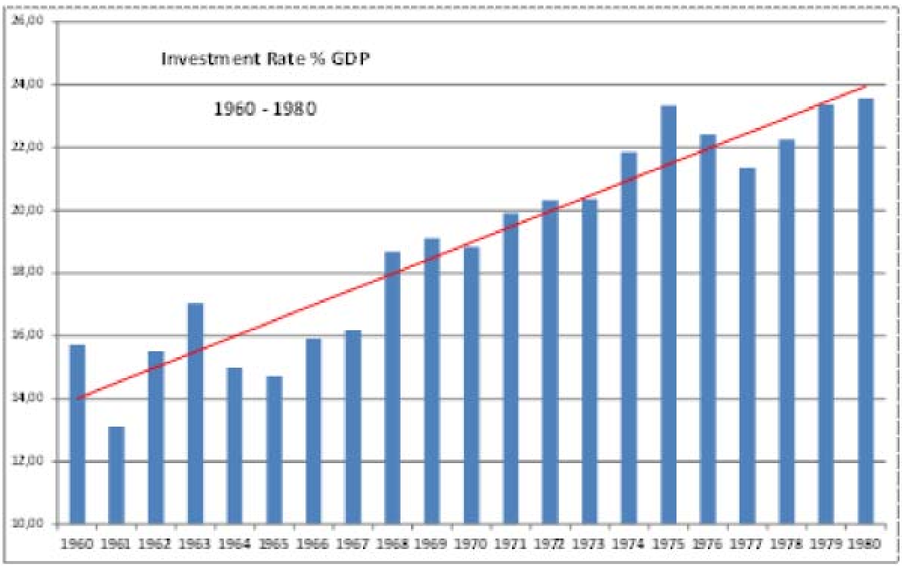

Figure 10 - INVESTMENT RATE – 1960 – 1980 – % of GDP
Source: Ipeadata: www. Ipeadata.gov.br.

As can be seen in figure 10, in the period of stronger growth, the gross investment rate of capital formation reached 23%, as in the 1970s, when the average economic growth stood at 8.8% per year. Although it a high percentage by Brazilian standards, this investment rate is relatively low compared to the levels of Asian countries during the “take- off”, like Japan in the 1950s, South Korea in 1990 and China since the beginning of the Reform and Opening process in the late 1970s.

However, when compared with the period of stagnant growth (Figure 11), we observe a downward trend in the rate of investment to the lowest level in 2003, when it fell below 16%. There is a hot debate about the reasons of so feeble investment rates in Brazil. For the period in discussion, things like the recessive policies imposed by the IMF in the 1980s, the fiscal crisis of the state, the hyperinflation in the period 1985-1994, the deflationary policies of the stabilization process initiated in 1994, the implementation of policies of the Washington Consensus and the financial crises that swept more strongly the peripheral countries are at the roots of low economic growth and low investment. To this it must be added other constraints also mentioned, such as high interest rates that inhibited private investment and the low capacity of investment of the government.

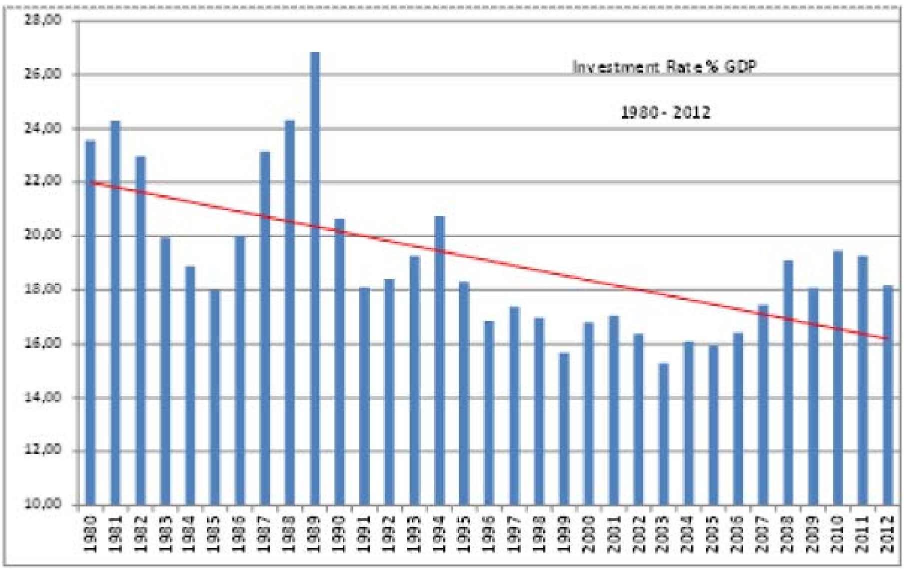

Figure 11 - INVESTMENT RATE – 1980 – 2012 – % of GDP
Fonte: Ipeadata: www. Ipeadata.gov.br.

As consequence of low capacity to create domestic savings, Brazil finds itself, in another aspect, dependent on foreign capital flows, which ultimately prevent the adoption of bolder economic policies to accelerate the development process, facing the loss of sovereignty in such a sensitive area such as the handling of international transactions.

3 STRUCTURAL CONSTRAINTS TO DEVELOPMENT

Done this brief report on the events that characterize Brazil fall into the trap of average income from the debt crisis in the early 1980s, we will discuss the structural aspects of this problem. Also because there are certain intrinsic characteristics to Latin American economies that have no explanation only in the economic conjuncture, but reflect the very essence of the formation of the countries of the region since the colonial period.

3.1 The Weight of History

Since its formation, in the colonial period, the Brazilian economy has been structured to meet the external demands first of major European Metropolis and, latter, of the industrialized countries in general. The economic model was to produce large-scale tropical products, taking advantage of the vast territory and the favorable climate conditions. The scarce factor was labor, but the problem was solved by means of slavery, first of natives, latter the Africans, a process that fed a large commercial gear in the South Atlantic. The model remained untouched even with the independence of Brazil, in 1822. Only in 1888 slavery was abolished, but in practice the great mass of freed people was not incorporated in the formal labor market, living as a sub-class in the interstices of the Brazilian society, without property rights and formal jobs in the cities, which consequences can be seen even today in fact that generally the poorest people are of darker skin that the richest.European and Japanese immigrants, already salaried workers, replacedslaves of African origin in the most dynamic areas of the economy such as coffee plantations.

Between 1889 and 1930, during the First Republic, the economy continued to reflect the economic model inherited from the colony, with the large-scale production of tropical products for export, among which stood out coffee, sugar, cocoa and rubber. Only with the great world depression that began in 1929, the model has undergone a transformation since the country could not maintain their standard of consumption after a great fall in the volume and prices of exportable goods. Facing the need to internally produce the goods that were previously imported, the process of import substitution industrialization began in Brazil after 1930. In that moment, due to the 1930 Revolution, a political movement that displaced partially the traditional landlords from central power, industrialization became a state goal and an official policy of the government, and the new groups that controlled the state apparatus, more linked to urban life, not only created incentives for domestic industrial production, as also sought to create a new industry that could give impetus to the process.

Between 1930 and 1960, the country expanded its domestic market, experienced a rapid process of urbanization, created the steel and oil industries, and attracted foreign firms producing consumer goods of greater technological complexity, such as cars, appliances, electronics and medicines. The military dictatorship installed in 1964, not slowed this process. Through preferential treatment to foreign companies, public investments in infrastructure, acceleration of urbanization andthe compression of wage costs (by eliminating the labor organization), it created the conditions for the big leap of growth in the 1970s, known as the “Brazilian miracle" period. It is precisely in the period from 1960 to 1980 when the process of rapid growth that contributed to the rise of the country to the "club" of middle-income countries and when exports of manufactured goods outweigh the sales of agricultural commodities and minerals. However, due to the aforementioned lack of domestic savings and, overall, the secular deterioration of terms of trade of the commodities exported by Brazil and, consequently, the ever greater dependence of foreign exchange to import equipment, oil and other industrial inputs, the great engine of this growth was the external debt that later would block this process for over two decades.

Despite showing significant advances, accelerated growth was not able to overcome the huge regional and income disparities in the country. The stagnant regions of the country were the sources of cheap and disqualified labor that crowded the outskirts of major urban centers like São Paulo and Rio de Janeiro. On the other hand, did not eliminate the dependence of capital and technologies coming from the rich countries, since multinational companies that had closed their "black boxes" controlled the most technology-intensive sectors.

The successive external shocks that prevented the development of Brazil, since 1980, only made matters worse by removing the state resources that could improve social indicators in the country and build the necessary infrastructure to facilitate the growth spurt. Brazil remains one of the countries with the highest income disparity in the world, still reflecting the inequality created by a slave society, as shown in Figure 12 that depicts the income gap through the Gini coefficient:

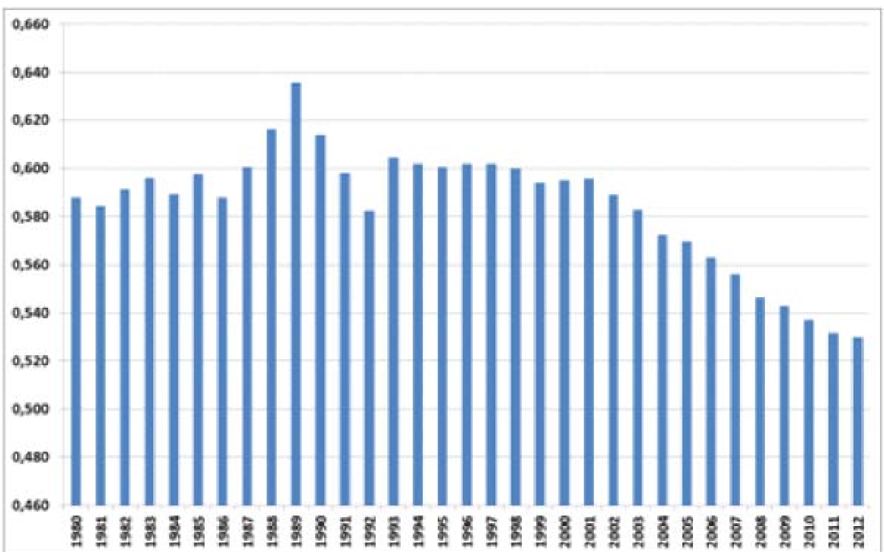

Figure 12 – Gini Coefficient – 1980-2012 –
Source: Fonte: Ipeadata: www. Ipeadata.gov.br.

The data that were bad at the beginning of the 1980s became worse due to the impact of external debt that choked the country for 20 years following the crisis. The effects of external bottlenecks have spread to the domestic economy in the form of recession, fiscal crisis and hyperinflation, whose strongest impacts fall on the poorest families. Not coincidentally, the year in which the index had its worst result, the monthly inflation rate in December 1989 hit 80 % per month.

In addition to negatively impact the rates of savings and investment, as previously mentioned, the high inflation was also a reflection of a very oligopolistic market structure, since the orthodox policies to combat inflation, by higher interest rates couldn't affect the interest of large multinational companies that controlled the internal market. In practice, after a fall in demand, companiesraise the prices to maintain profit rates in order not to compromise their balance sheets. This is reflected even today, as prices of major consumer goods in Brazil are situated on a level far above the world average. A car that is sold in the U.S. market for US$ 15,000.00 in Brazil is sold at twice the price. Other oligopolistic sectors such as electricity and telecommunications repeat such practices in their respective markets. This situation not only compromises the capacity of population to consume, but these higher costs are reflected in the entire production chain, affecting industrial competitiveness.

3.2 The Institutional Weight

The Brazilian institutional structure reflects the difficulty encountered by the popular classes in breaking the hegemony of the traditional elites. The independence process in Brazil was led by the heir prince of the Portuguese Crown, which guaranteed the permanence of the preceding economic structure and also a greater dependence of the hegemonic power of the time, England. Over nearly 200 years of history, the country has not witnessed the adoption of any comprehensive reform that could break the unequal structure created during the colonial period.

The most significant example concerns the enormous concentration of land in the hands of a few families in Brazil. A comprehensive land reform that would give farmers the means to increase their income never happened in Brazil. Unlike experiences of successful industrialization, as in France, United States, Japan, South Korea and Taiwan, Brazildidn't create an internal market based on the popular consumption by dividing the farmland. Currently, the rural area in Brazil is a large demographic void. The best lands are cultivated by means of modern techniques for highly capitalized agricultural enterprises. The land of poorer quality not adequate for profitable cultural remains, in the most part, as unproductive estates or equality unproductive small farms that are not viable economically.

From a political standpoint, the power of the Brazilian *"haute bourgeoisie"* (bankers, landlords and industrialists) despite all the efforts of the leftist ruling parties to tip the balance to poorremain strong.Even after the election a former metalworker and trade union leader for the presidency of the country, in 2002, the real power continues concentrated in the hands of a conservative plutocracy that controls large farms, banks, industries and media. All initiatives hitherto attempted to democratize society and force the rich to share their income either through land reform or through a progressive tax reform face great resistance from these conservative groups.

Since the 1980s, precisely when occurs the stagnation of the real economy, consolidates the hegemony of a fraction of the Brazilian bourgeoisie linked to financial capital, local and international. The logic of economic policy came to be determined by the interests of the rentier capital. Any policy that seeks to accelerate economic development that implies costs for the financial sector is tackled with vigor. Therefore, the pressure from organizations such as the IMF and the World Bank, or private organizations as "rating" agencies or media groups, forces the "rebel" government to return to the course of policies considered "responsible", precisely those that stifle production and consumption to benefit the rentiers.

The judiciary is another source of contention in the development process. In seeking to control the coercive power of the state, which was extrapolated during the military dictatorship, the 1988 Constitution created instruments to veto actions of the Executive. A prosecutor or a judge of first instance may block the construction of a hydroelectric plant of $ 10 billion alleging environmental issues that were previously resolved by the Executive, enough for this demand of a small non-governmental organization (NGO). This practice is repeated in the political disputes among the three levels of government. A state-level environmental agency can block a federal work claiming insignificant details. Both problems cited could earn larger contours depending on how the media groups are positioned opposite the question. The fact is that many of the infrastructure bottlenecks that block the development of the country are not overcome due the opportunistic actions of interest groups that seek to take advantage of the institutional weaknesses of the country.

But as much asthese groups linked to financial capital try to impose their agenda, there are strong resistances from the people and progressive political forces.The recent Latin American history abounds with examples.

After the implementation of liberal policies of the Washington Consensus, the vulnerability of the economies of the region increased, the international competitivenessof these economies declined, strategic sectors of productionwere denationalized and the consequence of all this was the social chaos that eventually led to the powermore leftist leaders as Lula da Silva in Brazil, Evo Morales in Bolivia, Nestor Kirchner in Argentina and Hugo Chavez in Venezuela.

In countries where the large income gap is secular, rulers need to organize social policies that provide minimal social cohesion. From the point of view of capital accumulation, the resources that go to health, education or welfare miss for infrastructure projects or to finance private groups. Somehow, for politicians trying to survive in the electoral market, short-term goals overlap to long term. Comparatively with countries that have not yet organized universalistic public policies on education, health and welfare, where the capacity of government investment is significant and the power of pressure of society is lower, the investment capacity of the Brazilian state is negligible, even with load of taxes that reaches 36 % of GDP.

3.3 Lack of Competitiveness

The lack of competitiveness of the Brazilian economy is not the work of a government or of a generation. It is a reflection of the structural problems mentioned above. Firstly deserves the poor quality of Brazilian education. It is not only related to lack of investment, which does not cease to be true, but a culture that was created in the midst of unsophisticated production processes, such as large-scale tropical agriculture. Why to give a better training to a person on condition of a slave? What would be the value of a largest technical training if the individual does not receive any advantage through productivity gains? How to leave in the hands of slaves instruments for more sophisticated work that could be broken on purpose? It is worth remembering, for example, that the most exquisite refinement processes of sugar produced in Brazil, between the sixteenth and eighteenth centuries were made in Belgium or the Netherlands. Moreover, in a society where free people were few, the craft and manufacturing activities were suppressed and that cultural life was controlled by the most retrograde Catholicism, which was the stimulus to develop technological teaching or even create universities? This applies to the period when the country was a colony but still remained after the independence. It was easier to send the children of the local elite to form in Europe. Added to this the fact that the stimulus to reading thatexisted in Protestant societies, due to the reading of the Bible, did not occur in Brazil. The priests had the monopoly of interpretation of the Bible and Catholic rites rendered in Latin. To get an idea of the size of the Brazilian cultural backwardness, the first Brazil's university was established in the twentieth century, while the first that was established in the Americas was the University of San Marcos, in Peru, in the sixteenth century. As can be seen in Figure 13, Brazil has a percentage well below the OECD average in terms of the amount of people with higher education.

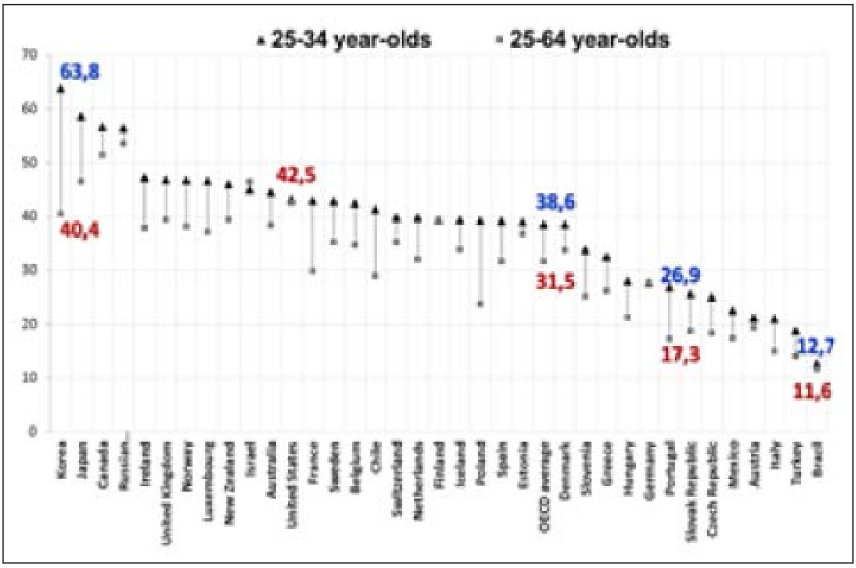

Figure 13 - % Of the population having completed higher education – 2011
Fonte: OECD (2013), Education at Glance, Indicador C.A1

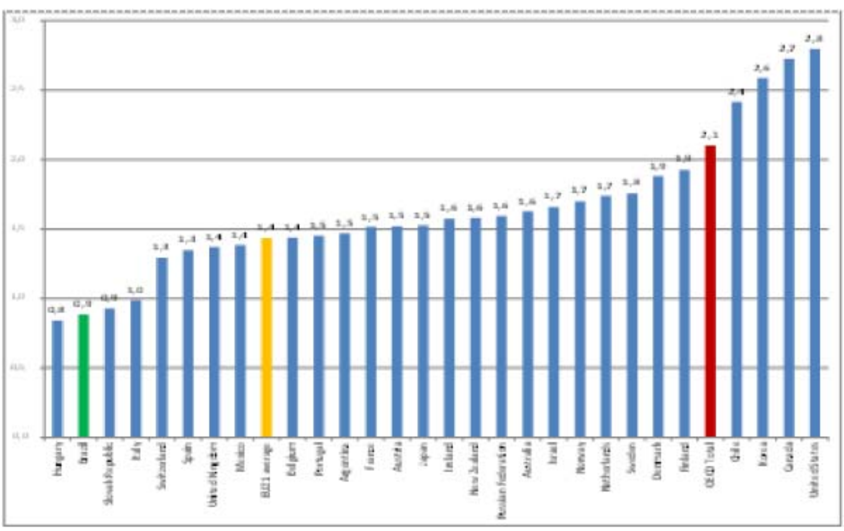

Figure 14 - Spending in Higher Education as% of GDP (2010)
Fonte: OECD (2013), Education at Glance, Indicador C.A1

According to information contained in Figure 14, the level of investment in higher education in Brazil is less than half the OECD and only one third of the total invested by the United States. This information strongly impacts the level of investment in R & D, as the national average in relative terms is less than half of South Korea average.

Another fact worth mentioning is that the structure of Brazilian society in rare moments was marked on the merits: the rule was the privilege. Although the construction of a society with high social mobility, Brazil has not yet created a national mindset that relates success to individual effort. The distribution of wealth and better jobs is more related with the position of the individual's family within the social order than personal merits. Only in the late nineteenth century, influenced by positivist ideas, began to concern with technique training and improvement of productivity levels in the country. It is in this context thatarise the first party groups to promote industrialization that doubting the ability of the free market in creating the conditions of progress, bet on a more active attitude in the state.

This environment was unfavorable for the emergence of an entrepreneurial culture, understood here within the Schumpeterian perspective. Disincentives to literacy, technical development and meritocracy, fruit of ahierarchical society marked by the privileges and the personal relations blocked the creative spirit of individuals. It is worth noting that this phenomenon is not exclusively Brazilian but characteristic of Latin American societies dominated by Catholic culture.For information, there is no Latin American of Iberian origin thathas been awarded the Nobel Prize in the field of Science.

These structural elements are related to the absence of Brazilian companies in segments of greater technological complexity. It is clear that more effort in science and technology education can mean an improvement in the levels of productivity of a country. However, when the effort of management training does not occur simultaneously to a planned development process, the economy tends to waste their resources, since the top end talent attracted by well-paying jobs in the industrialized countries, the so-called “ brain drain “. Even when it succeeds in the development of innovative cutting-edge industries, multinational groups to acquire them simply closing them, as happened with some of the Brazilian industrial automation industry in the 1980s and 1990s (Martins , 2003).

As a result, Brazil did not create world-class companies in sectors with higher technological complexity. There are exceptions, as in the case of Embraer, the Brazilian multinational airplanes producer, but few relate to the sectors in which Brazil has comparative advantages (sun, earth and underground), as in the production of animal protein, cellulose, iron ore or orange juice. Unfortunately the production of these goods, however important they are to the trade balance, is still insufficient for the country to go to higher income levels, thus managing to escape the middle income trap.

In the following section, we discuss how the Brazilian government has sought to overcome the challenges described briefly here. We will focus on the ongoing policies of the government of President Dilma Rousseff.

4 CHALLENGES TO BRAZILIAN DEVELOPMENT: BRAZIL WILL BECOME A RICH COUNTRY?

The concept of the middle-income trap is associated with the concept of convergence. According with this idea, it would be possible for developing countries, since they adopt the right policies, converge to the same standards of income of developed countries. This debate has been very intense in recent years and has been fixed in the analysis of the factors that prevent this convergence, namely the lack of infrastructure for science and technology, lack of openness to trade, the institutional weaknesses and poor quality of education.

Before we get into the analysis of how the government of President Dilma Rousseff has been facing these bottlenecks, it is worth briefly discussing the concept of convergence and to what extent it applies to Brazil today.

The concept of convergence gained strength after the crisis of 2008 when rich countries, notably the United States and the European Union, have stopped growing or even shrunk the size of their economies, while developing countries remained growing at steady pace, leading to the prediction of academics, consultants and experts that the large emerging economies, especially the BRICS countries, outstrip rich countries until the mid- twenty-first century. The Chinese economist Hu Angang, in his famous book “China 2030”, for example, states that since the early 1990s the world has been experiencing a third wave of global growth. Between 1990 and 2030, the world is expected to grow at a rate of 3.5 % per year, thanks mainly to the growth of China and India, which lead this third global wave of global growth. The previous two waves of growth - the two golden ages of capitalism - have first occurred between 1870 and 1930, when the world economy grew at a rate of 2.1% per year, the second wave occurred in the period 1950-1973, during which global growth was 4.9 % per year. What differs, however, the first and second waves from this third one, according to proponents of the theory of convergence is that in the first and second waves the growth would have been given mainly in developed economies since the Industrial Revolution, leading to a large divergence of incomes among the few countries that industrialized and the rest of the world that stuck in colonialism and underdevelopment meshes. Already at this third stage, we would be witnessing a great convergence, mainly thanks to the rapid growth of China and India and other large emerging economies such as Brazil and Russia. Another well-known author who argues for convergence is Michael Spence (The Next Convergence, 2011) for whom:

> "The huge asymmetries between advanced and developing countries have not disappeared, but they are declining, and the pattern for the first time in 250 years is convergence rather than divergence."

According to the author, this is reflected even in the way poor countries began to be called over time: late for the underdeveloped, then "Third World", suggesting total separation, then "less developed" suggesting a temporary situation, evolving, after a while, for the terms "developing economies " and more recently "emerging economies", a term coined by the Dutch economist Antoine van Agtmael, in 1981, when he was at the International Finance Corporation (IFC, an arm of the World Bank private) sector.

Such optimistic views in relation to developing countries is contrasted today by a pessimistic current, among which we find the Indian economist Ruchir Sharma, author of "Breakout Nations: In Pursuit of the Next Economic Miracle". According to this author, the era of the BRICS ended, with the exception of China, which keeps its forced march in the direction of development. This way we could be seeing the resumption of the pattern of divergence between rich economies and developing countries. In a recent article (The decline in emerging markets), Sharma calls misleading the idea of convergence. According to the author:

> "Beyond China, GDP growth of emerging countries in the last two years has not exceeded the United States.Convergence paused for a wide range of them and, after losing ground for much of the past decade, U.S. participation in world GDP has stabilized, since 2011, by 23%, while the emerging markets, except China, stabilized at 19 %".

According to the author, some of the biggest stars in the last ten years, such as Brazil, Russia and South Africa, are currently growing at a slower pace than in United States, which leads him to conclude that these countries actually are "disconverging". According to the author, convergence is not exactly difficult to sustain due to the middle-income trap, but to "development traps " that can expel countries from the path of convergence at any income level. According to the author, in some cases, development traps can drag newly made rich back to the ranks of middle-income countries, as happened with Argentina and Venezuela in the last century. The periods of growth spurt are often misinterpreted as a sign that developing countries are successful in their effort to climb the scale of development. Many emerging markets depend heavily on commodities to make the bulk of their exports and grow at the convergence speed only when commodity prices are high. The commodity prices have risen 160% in the 1970s and the number of countries that were rapidly reaching the West increased. In the 1980s and 1990s, when commodity prices have stagnated, the number of countries in rapid convergence dropped to just 11. After commodity prices doubled in the 2000s, we had another golden age of convergence, when 37 countries achieved development at an accelerated pace. But economies drawn on commodities, such as Russia and Brazil, tend to distance themselves from developed economies so commodity prices begin to fall. According to the World Bank, from 101 middle-income economies, in 1960, only 13 became and still remain with high income in 2008: Singapore, South Korea, Spain, Greece, Equatorial Guinea, Hong Kong, Mauritius, Ireland, Israel, Japan, Portugal, Puerto Rico, and Taiwan. Of those 13, only Equatorial Guinea is an economy dominated by commodities.

Even Agtmael, creator of the concept of emerging markets, believes that*"people were very excited about the prospects for the BRICS. Had an exaggerated euphoria and now there is a disappointment that in many ways is exaggerated"*.In the case of Brazil, whose annual growth rate currently revolves around 2% per annum, the author believes that there are some factors that led to a change in perception of a different economic reality.

> "The first is that, in some measure, Brazil has always been dependent on growth in China, which also influences the rates. Be the iron ore or soy, most of the production goes to China. When growth slows in China, Brazil's growth slows. The second factor is that when things are going well, people feel good and spend money. They started spending money and some people spend too much. Then there was a credit boom. When this occurs, the central bank begins to worry and acts. The result is less growth. These two factors are well known, but there is a third that seems to have received less attention: the discovery of gas and oil shale in the U.S. This means that the pre-salt reserves have become less attractive".

For Jim O'Neill that coined the term BRIC, the prospects of the group remain favorable, despite the slowdown in growth in these countries in recent years. For him, the prospects for China follow quite positive, while Brazil and India have chances to turn the game with relative ease. For O'Neill, Brazil is not difficult to re-accelerate the pace of economic expansion to the house from 4% to 5%. According to O'Neil:

> "Brazilian growth is highly cyclical. People need to remember that even with the weak expansion of the first three years of this decade it is actually stronger than it was in the first three years of the past decade" (cf. Lamucci, 2014).

What these views have in common is the fact that they adopt the size and growth rates of GDP and GDP per capita as a proxy for development, which is not necessarily true. In a recent interview with China Daily (China Daily European Weekly, Jan 17-23, 2014), the Chinese economist Hu Angang said:

> "We don't really care about per capita GDP. We care about how to catch up with U.S. in terms of life expectancy, education and health care. The thing about the per capita GDP is that it looks good on the outside but it is not a critical indicator of the well being of the people of the country".

In a recent article in The New York Times entitled "Brazil may have the answer" the business columnist Joe Nocera commenting about another article published in The Economist about the Brazilian economy entitled "The Deterioration" question:Whose economy runs better, really?The U.S. economy whose GDP growth in the fourth quarter of 2013 was 4%, due to the large increase in productivity, but whose unemployment rate will not fall below 7%, thanks in part to these productivity gains, or the Brazilian economy, who despite a growth of around 2%, remains at levels close to full employment?

> "In other words, Brazil's admittedly leftist government doesn't spend a lot of time worrying about growth for its own sake, but rather connects it with alleviating poverty and growing the middle class. Thus, it has a high minimum wage, for instance. It has laws making it exceedingly difficult to fire a laggard employee. It controls the price of gasoline, helping to make driving affordable. And most of all - at least from the point view of the American - for the last 10 years Brazil has had a program called Bolsa Familia, which essentially hands money to mothers living in poverty. In return, they have to ensure that their children go to school and avail themselves of health care services. There is no question that Bolsa Familia has been

> enormously effective in reducing poverty. By contrast here in the United States, Congress just refused to extend unemployment insurance. The farm bill envisions cutting back on food stamps. Various other programs to help the poor or the unemployed have been reduced. Even those who oppose such heartless cuts assume that once the economy comes back all will be well again. Growth will take care of everything. Thus in America we tend to to view economic growth less as a means to an end in itself. (...) What is the point of economic growth in nobody has a job?".

Brazil's President, Mrs. Dilma Rousseff said recently that the main aim of economic development must be always improvement of living conditions and that isn't possible to separate the two concepts.And indeed, as highlighted by the author of the above-mentioned article:

> "Brazil is a country that has seen income inequality drop over the last decade drop. Unemployment is at near records lows. And the growth of the middle class is quite stunning. By most estimates, up-ward of 40 million have been pulled out of poverty in the last decade, extreme poverty, says the government, has been reduced by 89 percent. Per capita income has continued to grow even the GDP growth has slowed".

Evidently the Brazilian government keeps alert to the problems hindering the faster and better quality growth of the Brazilian economy. Great efforts have been made in recent years with the goal of improving transport and telecommunications infrastructure. Education has been the object of special attention from the government, including the allocation of 75% of royalties to be raised by the government with the exploration of oil in pre-salt to the improvement of basic education.According to the former Brazilian Minister of Education, Mr. Aloizio Mercadante: *"Our estimate for the next 30 years is an increase of R$ 368 billion in investment in education, at least, may come to U.S.$ 500 billion, or half a trillion dollars."* (G1, 11/09/2013).

The fact, however, is that the Brazilian economy is increasingly dependent on commodity exports, particularly iron ore, oil and soybeans; only 3.3 % of Brazilian exports have high added value. This is a problem only partially answered by the concept of "middle income trap" and may have more to do with the current international division of labor. Brazil has made great efforts in order to put the countryin a better position in the current international division of labor, including investing many resources on eliminating poverty, improving basic education, as mentioned above, and general living conditions of the people. To stimulate the Brazilian industry the government has resorted to numerous measures, including reducing taxes and offering subsidized interest loans to businesses to make investments in modernization and innovation. Yet spending on R &D in Brazil are only 1 % of GDP, against 4.4% in Israel, 3.7% in South Korea, 3.6% in Japan and 2.7 % in the United States. The Brazilian public university system has also been an issue for the federal government: new federal universities have been created and thousands of new professors were hired in recent years. A government program called ProUni offers grants to millions of students who did not get places in public universities, to study in private schools of higher education. Another federal program, called "Without Borders", aims to send Brazilian 500,000 graduate students, especially in the areas of technology and hard sciences, to conduct postgraduate studies abroad. Despite all these efforts, by now, only 12% of the population between 25 and 34 have a university degree, compared with 63 % in Korea, 56 % in Japan and 41 % in the United States. The number of researchers in Brazil is 1,190 per million inhabitants, behind Russia that has 2,581 and China, with 1,303. The percentage of engineers in the total of graduates is only 4 %, compared to 23% in Korea and 19% in Japan. The knowledge of Science and Mathematics of the average 15 year-old student in Brazil is the same as that of the preteen Chinese student from Shanghai and is also behind the youngsters of other countries. The position at the PISA ranking of Brazilian students in mathematics are 57th and is the annual public spending per student is $ 2.700, even behind Chile that spends $ 3.200 per student, not to say United States that spends $11.800. Most public schools in Brazil are poorly equipped and require investments to receive students on a full-time basis. Only 0.6 % has science lab, 15 % have library and IT classroom, 44 % have only basic infrastructure, such as water and energy, but do not have computes and 14 % only have one classroom - 87 % in the Northern and Northeastern regions.

The lack of infrastructure is a major problem in Brazil. The Brazilian government has spared no effort to invest in the expansion and improvement of the highway and railway, modernization of ports, improving the telecommunication system and increasing energy supply, through an investment program of the federal government called PAC (Growth Acceleration Program). This investment program began in 2007, in the second term of President Lula, and continues in government of President Dilma Rousseff. In the first cycle, the forecast of investment was R$ 657 billion, and now the PAC 2 investments totaled R$ 955 billion by 2014.

The airports in the biggest Brazilian cities, up to supply the demand of the Football World Cup in 2014 and the Olympics in Rio de Janeiro in 2016, are being expanded and modernized. All the cities that hosted the games of the FIFA Football World Cup got the 4G mobile technologies. Despite all these efforts, Brazil is still the 84th country in internet speed, with an average speed of 2.7 Mbps. Brazil has the slowest average internet among countries like Argentina (2.8 Mbps), Azerbaijan (2.9 Mbps), Kazakhstan (3.5 Mbps), Colombia (3.0 Mbps), Ecuador (3.6 Mbps) and Iraq (3.1 Mbps). This low average speed in Brazil is due to the fact that millions of poor people, benefited by social inclusion programs of the government, are been connected to the Web at low speed because the fares charged by privatecompanies that offer telecommunications services in Brazil are between the most expensive in the World. Brazilhas a low rate of population connected by the best technology: 0,01 fiber optics connections by 100 inhabitants, against 21,6 in South Korea and 17,7 in Japan.

Another important problem that hampers the competitiveness of Brazilian enterprises is the tax system. The Brazilian tax system is one of the most complicated in the world. A company in Brazil spends on average 2.600 hours per year with tax red tape, against 177 in Russia, 243 in India and 318 in China. The tax rate at around 36% of GDP is too high for a country of average income as Brazil. For businesses, the tax burden in Brazil corresponds on average to 68 % of income, compared to 51 % in Russia, 63 % in India and 64 % in China. But unfortunately, there isn't too much that the Brazilian government can do to solve the problem of tax bureaucracy. Brazil is a federative country with three levels of government - federal, state and municipal. The federal government that, by constitutional provision, passes a great amount for states and municipalities collects the most part of the taxes. All attempts to simplify the Brazilian tax system in the last 25 years have been frustrated by the crossed vetoes of the states that would lose revenue with the reform.The reduction of the tax burden, in turn, is virtually impossible. Only the social security expenses consume 9.1% of GDP, that is, one quarter of the total collection. The high interest on the public debt consume, in the form of primary surplus, something around 3% of GDP. The quality of public management is weak. Unfortunately, Brazil could not even form a competent bureaucracy truly committed to the development. Improvements in this area have also occurred with efforts at all levels of government to improve the quality of management and control of public spending, but there is still plenty to do.

CONCLUDING REMARKS

Is not easy to a country like Brazil overcome the underdevelopment and become a rich nation. Likewise, it is also difficult to overcome the middle-income trap without great efforts and sacrifices. We can change the future but it is impossible to get rid of the past. For better or for worse,History matters.The huge income inequality that marks the country, as mentioned above, is an important factor thathampers thenational development, since in a society as unequal as Brazil is very difficult to set up a national project embraced by all. To make matters worse the national elites have never had a clear project of independent development of the country, behaving almost always as minority partners from outside interests.The household consumption represents more than 60% of Brazil's GDP and investment less than 18%. The problem is that to consume it is necessary to produce and to produce it is necessary to give as much value toinvestment and production as to consumption.

To overcome the "middle income trap" it's necessary to avoid the easier way of "Credit-Commerce-Consume"that marked the recent history of Brazilian economyand to follow the harder one of "Investment-Industry-Income". Without a strong industry that produces manufactured innovative products with higheradded value, demands better educated workers, more sophisticated services and creates better paid jobs in the industry itself and in the industrial and personnel services sectorsit's impossible to think about to overcome this trap or to avoid to fall in it.

REFERENCES

Agénor, P. R; Canuto, O. (2012). "**Middle-Income Growth Traps**." World Bank Policy Research Working- Paper 6210. Available in: http://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-6210

BANCO CENTRAL DO BRASIL. **Economia e Finanças**. Available in: http://www.bcb.gov.br/?economia .

CHANG, Ha-Joon (2004). **Chutando a escada - a estratégia do desenvolvimento em perspectiva histórica**. São Paulo: Unesp.

G1 (11/09/2013). **Royalties vão injetar R$ 368 bilhões na educação em 30 anos, diz ministro**. Available in: http://g1.globo.com/educacao/noticia/2013/09/royalties-vao-injetar-r-368-bilhoes-na-educacao-em-30-anos-diz-ministro.html.

Gill, I. S.; Kharas, H. (2007) **An East Asian renaissance : ideas for economic growth**. World Bank. Available in: http://siteresources.worldbank.org/INTEASTASIAPACIFIC/Resources/226262-1158536715202/EA_Renaissance_full.pdf.

HU ANGANG. **Real potential underestimated. China Daily European Weekly**, Jan 17-23, 2014. Available in: http://europe.chinadaily.com.cn/epaper/2014-01/17/content_17240786.htm

HU ANGANG ET ALL (2013) **China 2030**. Springer e-book. English Edition.

IPEADATA. Séries Macroeconômicas. Available in:http://www.ipeadata.gov.br/

Kharas, H.; Kohli, H. (2011). What Is the Middle Income Trap, Why do Countries Fall into It, and How Can It Be Avoided? **Global Journal of Emerging Market Economies**. September 2011 vol. 3 no. 3 - 281-289

LAMUCCI, S. (2014) "**Conceito do BRIC ainda é valido, diz O"Neil**". Valor Econômico; 28/1/2014. Available in: http://www.iica.int/Esp/regiones/sur/brasil/Lists/clipping/DispForm.aspx?ID=9691

MARTINS, Regina dos Santos Alegre (2003). **O Brasil na terceira revolução industrial**: a automação de base microeletrônica em setores manufatureiros (1985-2000), Tese de Doutorado. USP – FFLCH. Ano de obtenção: 2003.

MINISTÉRIO DE C, T & I (2012). Estratégia Nacional de Ciência, Tecnologia e Inovação2012 – 2015. Available in: http://www.mct.gov.br/upd_blob/0218/218981.pdf

NOCERA, J (2014). Does Brazil Have the Answer? NYT, jan./20/2014. Available in: http://www.nytimes.com/2014/01/21/opinion/nocera-does-brazil-have-the-answer.html

OCDE. Education at a Glance 2013. OECD Indicators. Available in: http://www.oecd.org/edu/eag2013%20(eng)—FINAL%2020%20June%202013.pdf

PAUS, Eva. (2011). Latin America's Middle Income Trap. America´s quarterly, winter 2011) Available in: http://www.americasquarterly.org/node/2142

SHARMA, Ruchir (2012). Breakout Nations: In Pursuit of the Next Economic Miracles. W. W. Norton & Company. New York

SPENCE, M. (2011) The Next Convergence: The Future of Economic Growth in a Multispeed World. Farrar, Straus and Giroux. New York.