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**FINANCIAL FRAGILITY, INSTABILITY AND THE BRAZILIAN
CRISIS: A KEYNES-MINSKY-GODLEY APPROACH**

*FRAGILIDADE FINANCEIRA, INSTABILIDADE E A CRISE
BRASILEIRA: UMA ABORDAGEM KEYNES-MINSKY-GODLEY*

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Financial Fragility, Instability and the Brazilian Crisis: a Keynes- Minsky -Godley Approach

By

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How Brazil's "boom" went to "bust"? A Keynes- Minsky -Godley Approach

Abstract: Prior to 2007 the Brazilian economy experienced significant economic growth and improvement in economic conditions. The global financial crisis triggered policy and regulatory responses to deal with the collapse of the financial systems of a number of developed countries and the spread of systemic risk in the global financial system and the impact on real economy performance. In this regard, the resilience and stability of Brazil's economic and financial systems have received attention as they navigated relatively smoothly through the 2007-2008 global financial crisis. Even though following these events policy-makers and economists have pointed to the robustness of Brazil's economy and its resilience to the global financial crisis by focusing on conditions that existed in the U.S. financial system prior to the "subprime" crisis, they completely overlooked the importance of the destabilizing effects of stability on financial structures and the growing financial fragility of the Brazilian economy. In particular, after a decade of significant growth and improvement in economic conditions, the aftermath of the financial crisis of 2007-2008 led to a fundamental change in the Brazilian economic environment. This paper attempts to provide an alternative view of the Brazilian crisis demonstrating the relevance of Hyman P. Minsky's work to understanding the current Brazilian economic crisis, including the limits to external finance and the inadequacy of structural adjustment policies to stabilize the economy. In particular, this article uses a Keynes-Minsky-Godley's approach to analyze Brazil's worst economic crisis since the 1930s.

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1. Introduction

Building on Keynes' investment theory of the cycle, Minsky's work suggests that the structure the economy becomes more fragile over a period of tranquility and prosperity. That is, endogenous processes breed financial and economic instability. While Minsky adopted Keynes' "investment theory of the cycle", he added a financial theory of investment, with a detailed exposition of the theory in his book *John Maynard Keynes* (1975), which put at the forefront the interrelation between investment decisions and the financial structure designed to allow economic units to take positions in assets by issuing debt. In this regard, debt accumulation is at the core of Minsky's instability theory. His financial theory of investment incorporated Kalecki's approach in which aggregate profits are created, mostly, by the autonomous components of demand (Minsky 1986, 1989). One can add to this analysis Godley's three balances approach, which explores the interlinkages between the government sector, the private sector, and the external sector. This means that a surplus must be matched by an equal deficit and flows accumulate to stocks.

In this regard, Godley's framework sheds light on the identification of financial fragility at the macro level, in which, to accumulate financial wealth, the private sector (firms and households) needs to spend less than its income. This can be accomplished through a combination of government budget deficits and current account surpluses. This framework is then incorporated into Minsky's theory of the business cycle to analyze Brazil's current crisis. In particular, Minsky's framework not only sheds light on how to detect unsustainable financial practices, but the position adopted in this paper is that the current Brazilian crisis does fit with Minsky's instability theory.

This paper attempts to demonstrate the existence of endogenously generated instability in the Brazilian economy, which has created frequent and systemic financial crises. Brazil's current crisis is not due to unsustainable policies; the country's problem is systemic. The reliance on external finance for development creates financial instability and frequent crises. That is, the mainstream approach, based on the economics of scarcity, assumes that developing countries need to attract foreign capital inflows to finance investment, sustained by the false belief that development requires

external finance. Not only there is no theoretical support and empirical evidence to support this view but the application of this policy has contributed to net negative transfer of resources and has created financial instability and frequent crises.

This paper aims to provide an alternative interpretation of the Brazilian crisis as a result of endogenous process, which created destabilizing forces, reducing margins of safety and increasing financial fragility. As Minsky put it "stability is destabilizing". The success of traditional stabilization policies over substantial periods has created endemic financial fragility and rising external private indebtedness, causing the deterioration of current account and the fiscal balance. The pursuit of structural stabilization policies, in an attempt to produce a fiscal surplus, causes further deterioration of fiscal deficits and government debt followed by the collapse of economic activity. To break this cycle requires monetary sovereignty and domestic demand led development.

The next section aims to briefly discuss Keynes' investment theory of the business cycle and Minsky's financial theory of investment. I then incorporate Godley's financial balances approach and Minsky's financial instability hypothesis to analyze the current crisis that was driven by unsustainable corporate sector deficit spending. The next section adopts a Keynes-Minsky-Godley's approach to, then, analyze Brazil's current crisis. The following sections discuss the implications of the adoption of structural adjustment policies. This is followed by an alternative proposal, paying particular attention to domestic demand-led policies, to break out the vicious cycle of endemic instability aggravated by the reliance on external finance to promote development.

2. Keynes' Investment Theory of The Business Cycle and Minsky's Instability Theory

While Keynes' investment theory of the business cycle is well known to require further exposition, Chapter 17 of Keynes's *General Theory* (Keynes 1964) details his approach to money, by incorporating Keynes' liquidity preference theory of asset prices –

enabling us to look at the marginal efficiency of capital (or the investment decision determining the marginal efficiency of capital) as applying to every possible investment decision[2]. We can, then, analyze at the micro level the individual decisions to invest in the production of capital goods, individual decisions to use these capital goods in order to provide employment, and individual decisions in terms of financial investments. Thus, every decision to use current income in order to produce future income can be applied to every type of speculative activity (broadly defined in terms of spot-forward prices).

If we can conceive these returns for every kind of activity we can also analyze these returns in terms of their own-rates of own-interest (Kregel, 1996, 1999, 2010), in which every particular investment decision produces an interest rate (or a rate of return) in terms of itself[3].

Different types of commodities or different types of investments will have different own-rates of own-return that are determined by different factors. These own-rates of own-interest are distinguished by three different components: $q - c + l$. Some assets produce a physical return q of productive goods measured in terms of themselves, while most assets held through time have a wastage or carrying cost (c) and some assets have a liquidity premium l. The total return of every asset, measured in terms of itself, is given by those three particular factors, i.e. by $q - c + l = \left(\dfrac{F_w - S_w}{S_w} \right)$. "They are defined as the forward price of…wheat in terms of wheat less the spot price as a proportion to the spot price" (Kregel, 1996, p.275)

In general, investment in capital goods (physically productive assets) will generate a (q-c) return while liquid assets, such as money, have relative low carrying costs and most of their return comes from l - the greatest liquidity premium is attached

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[2] Wray (1992) has shown how the theory of liquidity preference and the endogenous money approach may be integrated.

[3] Keynes presents the own-rate of own-return as follows: "For there is a definite quantity of (e.g.) wheat to be delivered a year hence which has the same exchange value to-day as 100 quarters of wheat for 'spot' delivery. If the former quantity is 105 quarters, we may say that the wheat-rate of interest is 5 per cent per annum; and if jt is 95 quarters, that it is minus 5 per cent per annum. Thus for every durable commodity we have a rate of interest in terms of itself;—a wheat-rate of interest, a copper-rate of interest, a house-rate of interest, even a steel-plant-rate of interest." (Keynes, 1964 p.222)

to money[4]. We need to adjust these returns by *a,* which is the expected appreciation (or depreciation) of any asset relative to what is taken as the unit of account (or unit of comparison/measurement), i.e. money[5]. This is the equivalent of the forward discount or premium. Thus, we can look at the returns of all the different investment decisions in terms of the total return as a way of representing the spot-forward price framework[6].

In equilibrium the demand price of all assets will be such that the total returns will be equalized as measured by $q - c + l \pm a$. This can be used to calculate the marginal efficiency of every asset, money included. Hence, the marginal efficiency of capital applies not only to existing capital stocks but to all individual investment decisions. As is well known, there will be no tendency toward market clearing equilibrium; instead, the tendency in a monetary economy is that the system tries to produce equilibrium toward equalization of the total expected rates of return.

If there are in the system some rates of return that are greater than any other rates of return – it means that $q - c + l + a > i$ (where *i* is the marginal efficiency of money or return on money) then individuals will choose to invest their money into those assets that provide the highest rates of return. Equilibrium would occur when the relative advantages of all types of investments had reached equality between the return on money and the rate of return for every other asset in the economy[7].

This framework can be applied in terms of different investment projects in which the own-rates of own-return will be different across different types of

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[4] For a steel plant the value of *l* is going to be zero and the *q* is going to be dominant, for holding commodities then the value of *q* is going to be zero and the *c* factor is going to be dominant and the *l* factor is going to be zero. In the case of money (or an asset in which *l* is greater than its carrying costs), the *q* factor is going to be zero, the carrying costs is going to be almost zero and its liquidity premium is going to be dominant (money has a return that is determined by its liquidity premium, or its user cost). The rate of return on money does not fall when there is an increase in the demand for money. If an individual engages in a spot-forward transaction in terms of wheat, its carrying costs are the primary determinant of its return. The return of holding wheat over time produces no real income and requires storage, insurance and so on, i.e. carrying costs *c* are negative.

[5] Since we take money as our unit of measurement/ comparison this means that the *a* factor on money is going to be set at zero (this also shows the importance of money as the unit of account in the decision making system independently of its role in the transaction process).

[6] Kregel (1996) has argued that we can think about these returns as being the futures price relative to the spot price for every asset so that the framework of spot-forward prices are always explicitly present in this argument.

[7] In the absence of an asset like money (liquidity greater than it carrying costs and zero elasticity of production, and substitution), equilibrium would be reached where all rate of returns would converge to zero, a point in which capital no longer is kept scarce.

investments and will be brought to equality by the spot-forward premium that is represented by the *a* factors[8] [Kregel, 1996, 2009b]. If output is expanding, it can do so through adjustments of the *a* factors which create backwardation (changes in the spot price relative to the futures price create the possibility to invest today at the spot price to be able to sell at positive forward price)[9].

This process comes to a stop when those *a* factors stop moving, meaning that the spot-futures prices no longer create backwardation. In order to undertake investments in assets that have (*q-c*) returns relative to money, it is necessary to create a position of backwardation in which the futures price is below the expected spot price. This is the required condition for increasing investments so that the entrepreneur is able to produce goods today (by making investment today) at a cost that is less than what is expected to earn in the future.

From this perspective, there is nothing to stop investment decisions from producing full employment. What is required is that the *a* factors are increasing so that futures prices are increasing relative to spot prices. In this context, there is no problem of scarcity because if the system is always equating relative returns then investors are going to be investing in these returns until they are driven down to zero[10].

However, in a monetary economy there is something that blocks this process. "For it may be that it is the greatest of the own-rates of interest [usually money] which rules the roost" (Keynes 1964, p.223) It is the existence of money (or an asset whose liquidity premium is greater than its carrying costs) that blocks this process. The own-rate on money *l* sets the standard return in a monetary economy; it is likely that the rate

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[8] This same argument was also used in the *Tract on the Monetary Reform* and it was applied in *The General Theory* as the operation own-rates of own-interest will determine the level of output (see Kregel 2010).

[9] As Keynes put it, "let us suppose (as a mere hypothesis at this stage of the argument) that there is some asset (e.g. money) of which the rate of interest is fixed (or declines more slowly as output increases than does any other commodity's rate of interest); how is the position adjusted? Since $a_1 + q_1$, $a_2 - c_2$ and l_3 are necessarily equal, and since l_3 by hypothesis is either fixed or falling more slowly than q_1 or $- c_2$, it follows that a_1 and a_2 must be rising. In other words, the present money-price of every commodity other than money tends to fall relatively to its expected future price. Hence, if q_1 and $- c_2$ continue to fall, a point comes at which it is not profitable to produce any of the commodities, unless the cost of production at some future date is expected to rise above the present cost by an amount which will cover the cost of carrying a stock produced now to the date of the prospective higher price." (Keynes, 1964, p.228)

[10] Keynes emphasized that capital has a return because it is scarce and not because it is physically productive. In a monetary system makes no difference whether investment is productive or non productive in the physical sense.

of returns on all other assets will come into equality with the return on money before the economy achieves the full employment level[11]. When money is in a position of backwardation the rate of return on money does not fall as fast as the rate of return of other assets[12].

Keynes' overlooked contribution: user costs

For Keynes (1964), firms will invest in productive assets as long as the expected rate of return on the capital asset exceeds the costs of acquiring them. The marginal efficiency of capital involves forward-looking investment decisions in terms of two general factors: the demand price and the supply price of capital goods. The demand price is the present value of the discounted expected future cash flows (net proceeds) of an investment project. In order to find the present values, we discount the future cash flows, net of running expenses, at the opportunity cost of capital with respect to equal-risk (or comparable risk characteristics) alternatives.

The net present value (NPV) method is the present value of future cash flows (C_t) discounted by the appropriate market interest rate minus the initial cost of the investment (C_0). In order to calculate the NPV it is necessary to forecast cash flows and to estimate the opportunity cost of capital over the investment project life. This means that not only investors have to formulate expectations about future cash flows but also that they have to form expectations about future interest rates. As Keynes put it, "it is by

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[11] It should be clear that, "If by money we mean the standard of value, it is clear that it is not necessarily the money-rate of interest which makes the trouble… the same difficulties will ensue if there continues to exist any asset of which the own-rate of interest is reluctant to decline as output increases." (Keynes 1964, p.229) If it was not because of the special characteristics of money, production would proceed until the economy reached full employment because it would always be possible to redirect employment to produce more asset that requires labor. But the problem is that there is an asset (i.e. money) that does not require labor in its production so that when the demand for it is higher than the demand for other things labor cannot be put to work. "Unemployment exists because men want the moon" (Keynes 1964, p.235)

[12] Keynes restates the process of convergence as follows: "We should have said that it is that asset's rate of interest which declines most slowly as the stock of assets in general increases, which eventually knocks out the profitable production of each of the others,—except in the contingency, just mentioned, of a special relationship between the present and prospective costs of production. As output increases, own-rates of interest decline to levels at which one asset after another falls below the standard of profitable production;—until, finally, one or more own-rates of interest remain at a level which is above that of the marginal efficiency of any asset whatever." (Keynes 1964, p.229)

reason of the existence of durable capital equipment that the economic future is linked to the present". (Keynes 1964, p.146) This is a system in which expectations of future conditions determine present decisions[13].

In *The General Theory*, the supply price represents a major innovation in Keynes' theory of investment. Keynes introduced the notion of user cost, which includes the expectations of future conditions, as the component of the supply price. What determines the supply price is the marginal prime cost plus the user cost. The prime costs of using a commodity today is the sum of the factor costs (F), which in this case is the current market value, plus the user cost (U) – the benefit which will be sacrificed by its current use so that P = F + U. Thus, the decision to use an asset today means that the cost of using it is, in fact, foregoing the ability to profit from holding the commodity and selling it at a future date.

If an entrepreneur expects the price in which she can sell the output to rise then it is rational not to operate the plant today. If the entrepreneur decides to operate the plant today and prices, in fact, rise then the entrepreneur incurs losses. Thus, expectations are introduced in the supply price because the investor always have to take into account the potential profit or loss that s/he can make by deciding to operate the plant or not operate the plant. These decisions (to invest and operate the plant) are going to determine the level of employment and output today (Kregel 1996, 1998, 1999, 2010).

In other words, the decision to operate a plant today precludes the possibility of holding the plant idle and starting its operation at some future date[14]. The decision to

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[13] The use of NPV method still poses some problems such as the fact that future cash flows cannot be predicted even when it is possible to generate objective probabilities, i.e. the net proceeds of an investment are not perfectly known. Second, choosing the appropriate discount rate involves predicting changes in the future path of interest rates considering the riskiness of each individual project [Kregel 1999]. Third, as Kregel (1999) and many finance theorists have argued the NPV method ignores the value of management flexibility (or embedded options in investment projects). For instance, it does not take into account decisions to postpone (or defer) a project, decisions to expand, or decisions to abandon a project. It becomes then necessary to deal with future possible investments (options) embedded in investment projects.

[14] As Kregel (1999) noted, this idea goes back to the short period theory of prices which was determined by the expectation of the price that the investor will get for the commodities that s/he will buy or sell today at the future date so that if an investor is a holder of commodities or excess stocks the decision that has to be made is whether s/he is going to sell today (s/he would be using them) and buy doing that s/he would preclude the ability to sell them tomorrow (or at some future date). The argument behind the impact of prices on excess stocks was determined by individual expectations of the movements of prices. If the spot price is $100 and if the price tomorrow increases to $110 the investor has implicitly taken a loss implied by the decision to sell the commodity at $100 rather than holding today and sell it tomorrow.

use (or operate, or consume) an asset or money today precludes the option to do it at some future date and the cost of this decision will be determined by the gain or loss that an investor could have made by having refrained from using the commodity today. If an investor decides to sell the commodity today relative to selling it tomorrow, it will produce a loss (gain) since the investor could have held the commodity and sold it at a higher (lower) futures price rather than selling it today at a lower (higher) price. In other words, the prime cost of using the commodity is given by the factor cost plus the user costs (option premium), therefore:

$$\begin{cases} P = F + U & \text{if } S_0 < E[S_0] \rightarrow U = \text{price of a call option} \\ P = F - U & \text{if } S_0 > E[S_0] \rightarrow U = \text{price of a put option} \end{cases}$$

If spot prices are expected to be higher in the future, user costs will be positive being equivalent to a call option written at a strike price equal to the spot price prevailing when the decision to use (or sell) the commodity is taken. On the other hand, if spot prices are expected to be lower in the future, user costs will be negative being equivalent to a put option written at a strike price equal to the spot price prevailing when the decision to use (or sell) the commodity is taken.

While Minsky incorporated in Keynes' model a financial theory of investment, Minsky pointed out that that, in a modern capitalist economy, firms' financing decisions involve internal (retained earnings plus depreciation) and external funds (equity and bond issuance; short and long-term borrowing - bank debt).

In Minsky's work, he extended Keynes' investment theory of the cycle to add the financial theory of investment to demonstrate that, in a modern capitalist economy, investment decisions have to be financed and the liability structure created due to those investment decisions will generate endogenous destabilizing forces. His theory of the business cycle, grounded on his financial theory of investment, shows that a capitalist economy is inherently unstable due to the interconnectedness of balance sheets of economics units and cash flows. From this perspective, while the financial system in a capitalist economy plays a key role to provide the financing to business to promote the

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Thus, the cost of using the commodity today would be present value of the loss that the investor incurred from selling today rather than selling tomorrow at a higher price. [Kregel, 1999]

real capital development of the economy and it also plays a key role creating destabilizing forces.

3. Destabilizing Effects of Stability and Declining Margins of Safety

Central to Hyman P. Minsky's financial instability hypothesis was that periods of economic stability and economic progress lead to dynamic internal changes characterized by hedge, speculative, and Ponzi financial positions (see Minsky 1975, 1982, 1986). Minsky (1986) focused on the destabilizing effects of stability and declining margins of safety. The purchase of assets through the issuance of debt is core to his financial instability theory. He pointed out that periods of growth and tranquility validates expectations and existing financial structures, which change the dynamics of human behavior leading to endogenous instability, increasing risk appetite, mispricing of risky positions, and the erosion of margins of safety and liquid positions. That is, over periods of prolonged expansion fragility rise, exposing the economy to the possibility of a crisis. This rise in financial fragility, in turn, has the potential to lead to a slowdown in economic growth, stagnation or even a recession.

Minsky argues that continued success encourages and enables more investment, which in turn creates more income through the traditional spending multiplier and profits - as shown by Kalecki-Levy's profit equation - but it also increases the magnitude of risk underpricing. Minsky argues that during economic expansions, market participants show greater tolerance for risk and forget the lessons of past crises so firms gradually move from safe financial positions to riskier positions.

For instance, during an expansion led by an investment boom, profits tend to increase. The profit boom affects behavior and allows firms to meet outstanding financial commitments. During this phase of the expansion both firms and lenders are willing to expand their balance sheets by increasing leverage.

This is a rational response of economic units to increasing profit opportunities and represents a voluntary decline in the margins of safety. As the expansion of credit growth continues, investment goes up because firms are more optimistic about future

economic conditions. As the economic expansion proceeds fueled by the expansion of credit growth, the economy gets increasingly unstable.

This process is self-fulfilling in both directions, that is, firms' investment increase aggregate profits, inducing them to invest even more creating a positive feedback loop. On the other hand, if firms become pessimistic about future economic conditions they will cut back investment, which in turn decreases income and profits so firms cut investment even more.

Minsky's view of the capitalist system puts at the forefront of the conceptual framework the interconnectedness of balance sheets and cash flows and the creation of endogenous instability. In modern economies, private endogenous liquidity grows during booms and these IOUs represent future financial commitments that must be met as they fall due. This means that economic units have to generate enough cash flows over time to validate their debt commitments.

In this regard, Kregel (2014), building on Minsky, has suggested a framework that focuses on macroeconomic and microeconomic aspects to financial fragility and provision for liquidity so that economic units can meet their near-term obligations. At the macro level, Minsky- Kalecki- Levy's profits equation and Godley's sectoral balances approach provide an alternative approach to understanding what determines stability and provide insight into the dynamics of the adjustment process. Government spending can be seen as an injection of monetary instruments into the non-government sector, providing that which is necessary to pay taxes along with desired net savings of that currency. This is the so-called "vertical relationship" between the government and non-government sectors (Mosler and Forstater 1999; Wray 1998). At the micro level, Minsky's categorization of debt units - hedge, speculative and Ponzi – along with his *Financial Instability Hypothesis* shed light on the endemic financial fragility, the relationship between stability and destabilizing forces underlying capitalist debt structures, and boom-bust cycles of market economies. In this framework, at the macro level, government deficits create cash and are needed to provide liquidity to indebted economic units, while at the micro level cash flows can be generated by operating, financing and investment activities.

For instance, business firms issue IOUs to finance the acquisition of capital assets and banks purchase firms' liabilities by issuing their own IOUs (e.g., demand deposits). These IOUs represent future financial commitments that must be met as they fall due. For business firms, the use of productive capital and investment assets usually generates cash flows. For households, their main sources of cash inflows are wage and salaries from employment, investments such as rents, dividends, bonds, mutual funds, etc.).

Economic units can also sell assets to finance their operations. This requires an orderly and liquid secondary market in continuous balance between buyers and sellers to avoid that falling prices trigger a debt deflation process. This reduction in the value of assets relative to liability commitments results in insolvency of economic units.

Thus, in Minsky's framework, declining margins of safety and rising risky positions are a normal outcome of capitalist market processes so the analysis of current and the estimation expected cash flows of an economic unit, financial instruments used to generate cash - and the balance sheet and cash flow interconnectedness among bank and non-bank financial institutions - are crucial for the identification of robust financial structures, potential Ponzi structures, and significant systemic risks (Minsky 1975: 152). In this environment, financial institutions are tempted to adopt leveraged-growth strategies to expand their balance sheets increasing interest, credit, and liquidity risks triggering internal dynamic changes that results in increasing fragility and instability in the economy.

It means that the detailed analysis of cash flows provides a better indication of financial fragility and instability. It shows how cash is generated and how reliable those sources of cash are under different economic scenarios, exposing whether flows of cash are due to income producing activities, flows from portfolio holdings, or flows from the sale of assets or the issuance of new liabilities (Minsky 1972: 147). It measures the sources and amounts of cash money into and out of financial institutions helping identifying sustainable, unsustainable practices, and Ponzi schemes.

4. Recent Developments in the Brazilian Economy

Over the past three decades the Brazilian economy has shown a sharp decline in real GDP followed by a quick recovery (figure 1). Though each crisis had its idiosyncratic features - see for instance Kregel 1999 and more recently De Paula et al (2015) - Brazil's current crisis has challenged economists to explain its causes and how to deal with its consequences (Safatle 2015, De Paula et al 2015).

For instance, a growing consensus has emerged in Brazil blaming Rousseff's "new economic matrix" policies for the country's worst financial crisis since the Great Depression (Romero 2016). After a modest growth in 2014, Brazil's economy contracted by 3.8% in 2015 and is expected to shrink by 4 % in 2016. Though Brazil is already dealing with its worst economic downturn in 25 years, the economy is headed towards the worst economic downturn since the Great Depression, that is, Brazil hasn't experienced two consecutive years of GDP contraction since the Great Depression.

Figure 1. GDP annual real growth (% p.y) at market prices, reference 2000
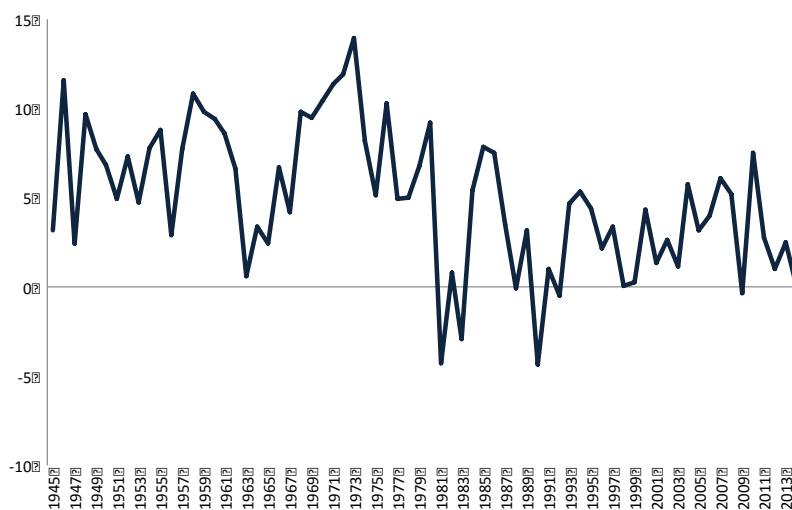
Source: IBGE

This is not the first time the Brazilian economy has experienced a boom and bust cycle. Its recent experience shows that the "Brazilian miracle" of the 1960-1970s was followed a bust in the 1980s and the introduction of the real plan in 1994 ended with the financial crisis of 1999 (Kregel 1999). The 2000s led to a unique economic environment

conducive to Brazilian economic expansion and improvement in economic conditions for the majority of people (Kregel 2009).

The Lula administration's policies that expanded aggregate demand occurred during this ambiguous period leading to fortuitous outcomes. In spite of a growing consensus that Brazil navigated relatively smoothly the 2007-2008 global financial crisis by implementing a series of countercyclical policies - see Barbosa 2008; De Paula et al 2015; Ferrari-Filho et al 2014, Silva and Harris 2012; Rezende 2015 - Brazil's policy response to the Euro crisis has been criticized for being too late, poorly designed, and too small to bring about economic growth (De Paula et al 2015).

Prior to the economic crisis of 2007-2008 the Brazilian economy experienced extremely favorable external conditions such as increasing global demand for emerging market exports and rising financial flows to emerging markets (Kregel 2009). Some critics of the Brazilian government argued that the boom in commodity prices, buoyant eternal demand, and massive foreign flows into Brazil's economy was solely due to external tailwinds, which fueled the positive economic performance during the last decade. This group tended to overlook domestic policies designed to foster private demand.

Brazilian economic policymakers, by contrast, proudly pointed to government policies designed to boost growth. Even though following these events policy-makers and economists have pointed to the robustness of Brazil's financial system and its resilience to the global financial crisis by focusing on conditions that existed in the U.S. financial system prior to the "subprime" crisis, they overlooked the importance of the destabilizing effects of stability on financial structures, the development new sources of instability and the need to redesign the regulatory structure to continually meet its objectives of financial stability and in providing finance for development.

To be sure, the positive economic performance was driven by both domestic and external factors. Under the Lula administration, the Brazilian economy grew generating jobs, raising real incomes (minimum wage increases, income transfer programs), reducing poverty and income inequality[15]. Prior to the crisis, banks (public and private) have roughly doubled their lending as a share of GDP increasing consumer loans

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[15] For further details see for instance Barbosa (2008) and Arestis, De Paula and Ferrari-Filho (2008).

(Rezende 2015a). Moreover, following the global financial crisis, public investment increased (PAC I and II, long term investment funding via BNDES) and housing financing increased (My House, My Life) to meet Brazil's investment needs and to act as a counter cyclical tool to offset the decline in private demand (Rezende 2015).

Even though the administration moved in the right direction in an attempt to shift its development strategy to domestic demand-led growth, it committed a strategic error by intervening in the economic with government initiatives that were too small, poorly designed, followed by ad hoc decisions in an attempt to fine-tune the economy and generate improvements in the nation's economic outlook, partly due to the belief that it lacked the financial resources to foster sufficient domestic demand.

5. The Impacts on the Brazilian Economy of a New Global Structure

It has already being suggested that the conditions that prevailed prior to the 2007-2008 GFC, which benefited developing economies, were characterized as a bubble and the positive conditions [16] experienced by developing economies are unlikely to return. Kregel (2009) characterized

> the evolution of developing countries in the New Millennium as a "bubble", for if the US economy was experiencing a financial bubble the counterpart of that bubble was the extremely beneficial conditions in developing countries and in particular in Latin American emerging markets…we cannot foresee a return to the extremely positive conditions experience by developing countries in the recent past virtually all of the positive performance that led to achieving the Brazilian dream of meeting the target of the BRICs appear to be linked to a financial model and financial flows that is not likely to be reestablished. The degree of leverage that had become normal in developed country financial institutions will not return, the leverage generated by financial derivatives

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[16] Improved external accounts and a surge in capital inflows contributed to the appreciation of the exchange rate and domestic asset prices.

will now be couched in much stronger margin requirements. This will not only mean lower asset prices but lower global demand for emerging market exports and thus reduced financial flows to emerging markets including the BRICs…there is general similarity across all BRIC economies for they all depend on expanding demand through increasing global trade and global imbalance financed by global financial flows. (Kregel 2009:353)

This view is also present in a report released by UNCTAD

Prior to the Great Recession, exports from developing and transition economies grew rapidly owing to buoyant consumer demand in the developed countries, mainly the United States. This seemed to justify the adoption of an export-oriented growth model. But the expansion of the world economy, though favourable for many developing countries, was built on unsustainable global demand and financing patterns. Thus, reverting to pre-crisis growth strategies cannot be an option. Rather, in order to adjust to what now appears to be a structural shift in the world economy, many developing and transition economies are obliged to review their development strategies that have been overly dependent on exports for growth. UNCTAD, Trade and Development Report, 2013, p.1-2

The bubble period showed a remarkable turnabout of the current account balance, from a deficit to a surplus position (figure 2).
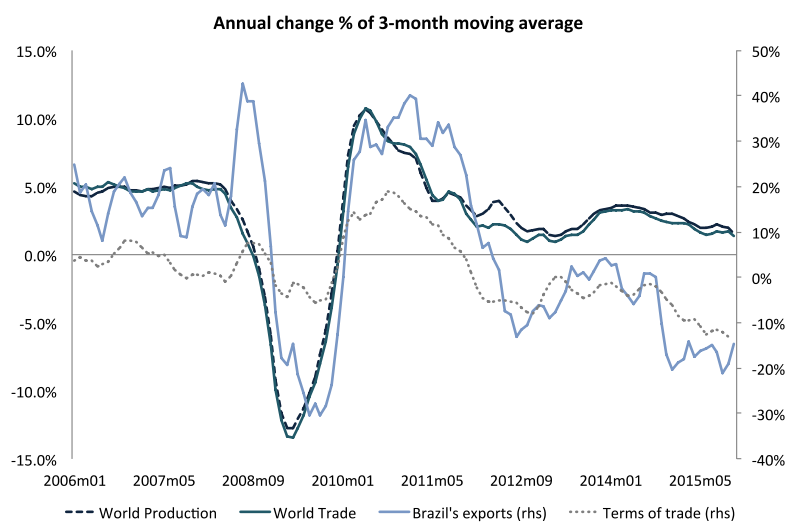
Figure 2. Current account and trade balance (% of GDP)
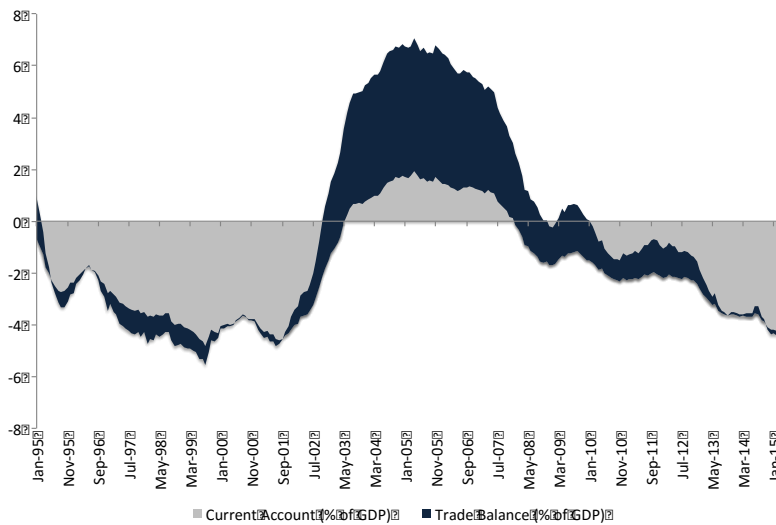
Source: IBGE

The consequences of the crisis were clear. Global financial markets and U.S. households started deleveraging thus producing a new global structure impacting global trade, industrial production, and finance (figure 3).

Figure 3. World Trade and Industrial Production

Source: CPB Netherlands, Brazilian Central Bank (BCB), Funcex

The 2007-2008 global financial crisis, and its immediate impact on the financial and real sectors, triggered policy responses to deal with its consequences. Although the

policy response produced a quick increase in world trade an production, which contributed significantly to Brazil's export growth and terms of trade during this time period (figure 3), since 2010, there has been a sharp decline in world trade and production and a reversal of Brazil's terms of trade (figure 4).

Thus, the contribution of net exports to economic growth declined substantially since 2011 (figure 3). Moreover, while the commodity price boom improved the terms of trade (figure 4), the sharp decline in global commodity prices has slowed output growth among commodity-dependent economies (IMF WEO 2015).

Figure 4. Commodity Price Indices (2005 = 100) and terms of trade
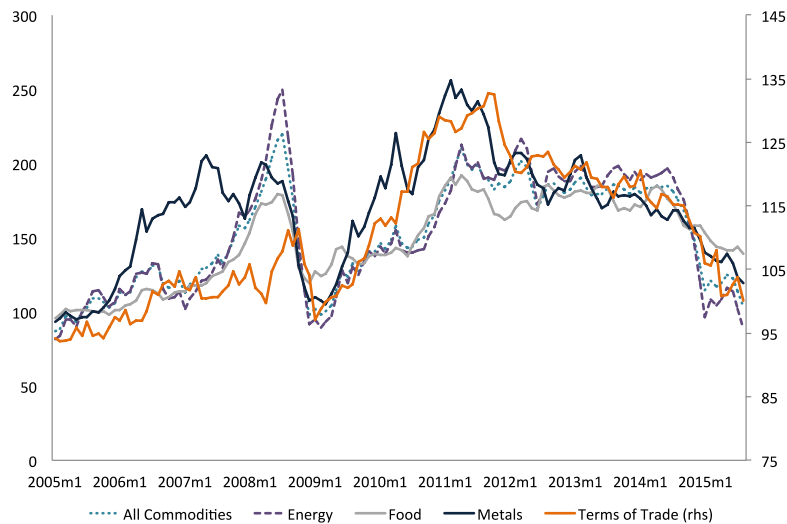
Source: IMF, WEO, Oct. 2015, Funcex

In spite of Brazil's relative success dealing with the immediate consequences of the crisis, since the aftermath of the 2007-2008 global financial crisis emerging-market economies, and Brazil in particular, have underperformed. With the Chinese slowdown, resource exporters, including Brazil, faced the consequences of declining commodity prices. The pre-crisis development strategy supported by export-led growth and the excessive reliance on external finance reached its limits. The combination of a slowdown of a powerful driver of global growth, changed external conditions, and failure to implement policies to support domestic demand growth contributed to end Brazil's boom with a bust.

The impacts of the crisis in Brazil, in particular, were substantial. It moved from a current account surplus equal to 1.25 percent of GDP in 2006 to a deficit equal to 3.6 percent of GDP in 2013 being third-largest deficit economy (after the US and UK) in the world according to a recent IMF report (table 1).

Table 1. Global imbalances

**Table 4.1. Largest Deficit and Surplus Economies, 2006 and 2013**

	2006				2013		
	Billions of U.S. Dollars	Percent of GDP	Percent of World GDP		Billions of U.S. Dollars	Percent of GDP	Percent of World GDP
				1. Largest Deficit Economies			
United States	−807	−5.8	−1.60	United States	−400	−2.4	−0.54
Spain	−111	−9.0	−0.22	United Kingdom	−114	−4.5	−0.15
United Kingdom	−71	−2.8	−0.14	Brazil	−81	−3.6	−0.11
Australia	−45	−5.8	−0.09	Turkey	−65	−7.9	−0.09
Turkey	−32	−6.0	−0.06	Canada	−59	−3.2	−0.08
Greece	−30	−11.3	−0.06	Australia	−49	−3.2	−0.07
Italy	−28	−1.5	−0.06	France	−37	−1.3	−0.05
Portugal	−22	−10.7	−0.04	India	−32	−1.7	−0.04
South Africa	−14	−5.3	−0.03	Indonesia	−28	−3.3	−0.04
Poland	−13	−3.8	−0.03	Mexico	−26	−2.1	−0.03
Total	**−1,172**		**−2.3**	**Total**	**−891**		**−1.2**
				2. Largest Surplus Economies			
China	232	8.3	0.46	Germany	274	7.5	0.37
Germany	182	6.3	0.36	China	183	1.9	0.25
Japan	175	4.0	0.35	Saudi Arabia	133	17.7	0.18
Saudi Arabia	99	26.3	0.20	Switzerland	104	16.0	0.14
Russia	92	9.3	0.18	Netherlands	83	10.4	0.11
Netherlands	63	9.3	0.13	Korea	80	6.1	0.11
Switzerland	58	14.2	0.11	Kuwait	72	38.9	0.10
Norway	56	16.4	0.11	United Arab Emirates	65	16.1	0.09
Kuwait	45	44.6	0.09	Qatar	63	30.9	0.08
Singapore	37	25.0	0.07	Taiwan Province of China	58	11.8	0.08
Total	**1,039**		**2.1**	**Total**	**1,113**		**1.5**

Source: IMF, World Economic Outlook database.

Source: IMF WEO, October 2014, p.118

Meanwhile, the underlying force from the demand side was sustained by a sharp increase in private credit (figure 5), which ultimately, led the private sector from a surplus position to a deficit, that is, total private expenditure exceeded private disposable income, which implied a rapid build up in indebtedness of the private sector. In particular, the Brazilian economy experienced rising private sector leverage relative to the growth of government securities (figure 5). As is well known, growth strategies based on private sector deficits are unsustainable (Minsky 1975, 1982, 1986).

Figure 5. Net Public and Private Sector debt as a percentage of GDP
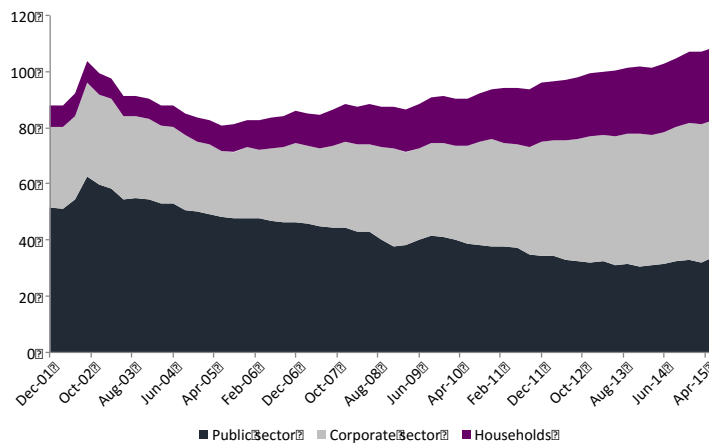
Source: BIS, BCB, author's own elaboration

To sum up, key policy makers failed to see the obvious. U.S. demand, financed by the deregulated US financial system and shadow banking institutions, made trade the engine of global growth and the rest of the world responded by adopting policies of export-led growth.

The exceptionally positive performance of the Brazilian economy during the New Millennium characterized by high growth rates, external surplus balance, rising foreign direct investment flows, rising employment levels, and improving debt burdens of the public sector were the counterpart of deregulated developed country financial systems, which drove asset prices up such as commodity prices improving developing country terms of trade, allowed rising private sector debt thus supporting the demand for imported goods, and generated a positive carry trade resulting in short term capital flows to emerging markets (Kregel 2009, p.5).

However, following the Great Recession, the combination of substantial U.S. private sector deleveraging and shrinking the U.S. current account deficit led to a sharp decline in the demand for emerging market exports due to structural changes in international markets (figure 6). As an export led growth strategy requires at least one nation to run current account deficits, the absence of robust external demand (figure 6) and the conditions that prevailed before the 2007-2008 global financial crisis, required a shift in Brazil's development strategy towards the domestic market to fill the spending gap.

Figure 6. Global current account balances (% of world GDP)
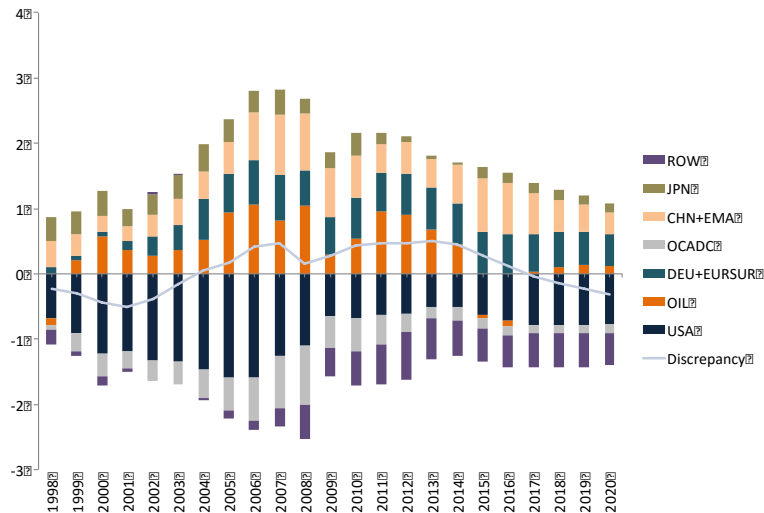
Source: IMF WEO, October 2015

6. Sectoral Financial Balances in the Brazilian Economy: Godley's basic macroeconomic accounting identity

Following national income accounting, in a closed system, the surplus of one sector must be mirrored by another sector running a deficit. That is, following account identities and stock-flow consistency, we find that the surplus of the non-government sector equals the deficit of the government sector. Moreover, government deficit spending adds to the non-government sector's net financial assets, where the nongovernment financial balance equals the domestic private sector financial balance plus the balance of the rest of the world, that is, flows accumulate to stocks changing net financial wealth.

It follows that if the non-government sector desires to run surpluses, the government sector must run a budget deficit. It is also useful to distinguish between currency issuer (the federal government) and currency users (that is, the nongovernment sector which is comprised of the domestic private sector and the external sector). If the government sector runs a deficit then the nongovernment sector accumulates net savings.

In this regard, Godley's three-sector balance approach, grounded on accounting identity, shows the interaction between the government sector, the domestic private sector- households and firms-, and the foreign sector[17]. In the aggregate, if one sector runs a surplus at least one sector *must* run a deficit. The sum of all balances, that is the private sector, the government sector, and the foreign sector must equal to zero. We get Domestic Sector Balance + Government Sector Balance + External Sector Balance = 0.

By rearranging terms:

Domestic Sector Balance = - Government Sector Balance - External Sector Balance

Or

Domestic Sector Balance = Government budget deficits + Current account balance

When the government sector deficit spends it creates private sector surplus, all else equal, while a government surplus destroys nongovernment sector's net nominal wealth. In order for the private sector to continually run surpluses, then either the government or the foreign sector must run a deficit, that is from the identity we get the following:

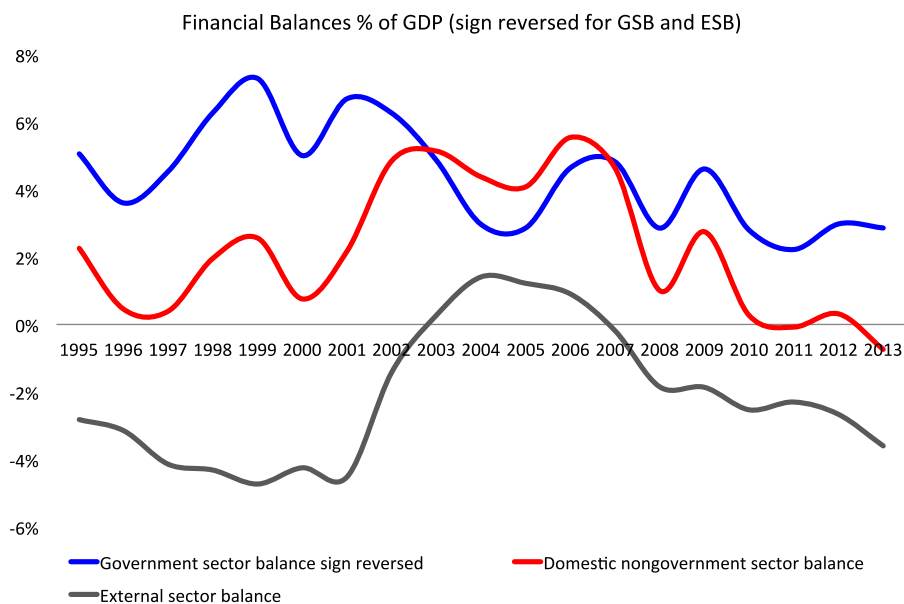Domestic Private Sector Surplus = Public Sector Deficit + Current Account Surplus

We can distinguish the beginning of the new millennium for Brazil's economy between two periods: one characterized by the U.S. financial bubble that contributed to the creation of current account surpluses in emerging economies until the onset of the

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[17] From national accounting identities, dross domestic product (Y) equals the sum of consumption expenditures (C) , investment (I), government purchases (G) and net exports (X - M) that is $Y = C + I + G + (X$ - $M)$. We know that $S = I + G$ - $T + CA$, rearranging the terms we get: that S - $I = G$ - $T + CA$ where $(S – I)$ the private sector balance equals the government balance plus the current account balance.

GFC and the other initiated in 2007 characterized by a persistent deterioration of Brazil's current account deficits.

During the bubble phase, the domestic private sector ran an average surplus balance equal to 4.8% of GDP from 2002 to 2006 as a result of the combination of current account surpluses (average 0.5% of GDP) and government fiscal deficits (4.3% of GDP). It allowed the net acquisition of financial assets by the domestic private sector to exceed the net issuance of liabilities, which translated into rising net financial wealth in the private sector (figure 7). This period was marked by a significant expansion of real incomes, credit growth, domestic demand and GDP growth, and declining unemployment rates to historical low levels (see Arestis et al 2008).

Figure 7. Financial Balances % of GDP

Financial Balances % of GDP (sign reversed for GSB and ESB)

Government sector balance sign reversed
Domestic nongovernment sector balance
External sector balance

Source: IBGE, CEI, author's own elaboration

Following rapid economic growth in the years preceding the 2007-2008 global financial crisis, there was a sharp increase in aggregate profits. That is, as the economy experienced an investment boom, profits increased along with investment, which influenced expectations and encouraged more investment.

During this period net profits sharply increased (figure 8) and have been on an upward trend causing a wave of optimism about future sales and profits thus stimulating investment in new capital goods, that is, profits were the main driver of the surplus in the non-financial companies sector balance.

For instance, the median return on equity (ROE) for the 500 largest companies increased to 12.7%, on average, during the 2003-2006 period while profits jumped to R$ 90 billion. This increase in realized profits and growing profit expectations influenced investment decisions. It is worth noting that the median (ROE) for the 500 largest companies during 1995-2002 was equal to, on average, 4.3%. The ROE almost tripled compared to the 1995-2002 average.

Figure 8. Net profits and profitability
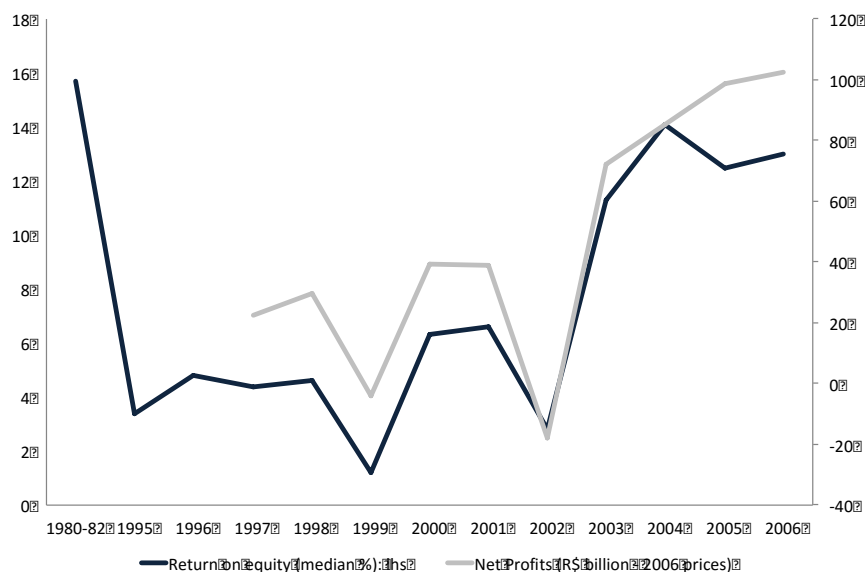
Source: Campelo Jr., 2007

However, as discussed in the previous section, the conditions that prevailed prior to the 2007-2008 GFC, which benefited developing economies, were characterized as a bubble and the positive conditions[18] experienced by developing economies are unlikely to return (Kregel 2009, p.5). Given changes in the global trade structure, rising domestic

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[18] Improved external accounts and a surge in capital inflows contributed to the appreciation of the exchange rate, which harmed the competiveness of domestic industries and its export capacity, and domestic asset prices contributing to a consumption boom.

private sector (foreign and domestic currency) debt, and declining budget deficits, from 2007 to 2013, the domestic private sector ran an average financial balance equal to 1.2% of GDP, the external sector an average deficit equal to 2.1% of GDP, and the government sector posted an average deficit equal to 3.3% of GDP. We can use the sectoral financial balances (figure 9) to analyze the following scenarios using a device suggested by Robert Parenteau (Kregel 2009).

Figure 9. Sectoral Financial Balances - % of GDP (1995-2013)
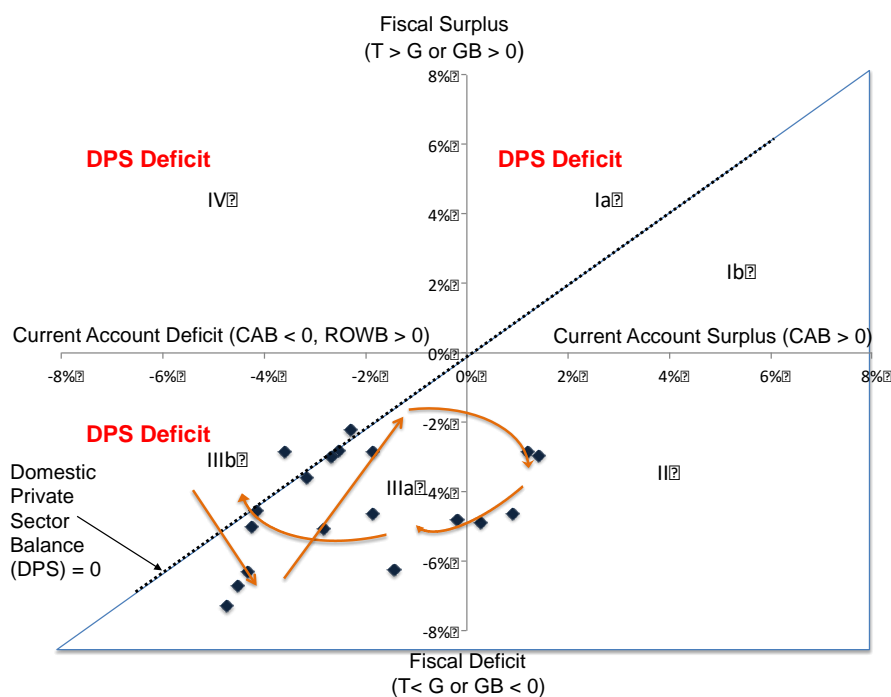
Source: IBGE, CEI, Authors' own elaboration

The bubble phase allowed the Brazilian economy to run unprecedented current account surpluses and the government sector ran a fiscal deficit. Thus the domestic private sector balance was in a surplus position. This situation is depicted in quadrant II in the figure 9.

However, the financial instability created by the reliance of external finance - given by Domar's condition (Kregel 1999, 2004) - generates negative net transfers, which removed profits and income from the private sector. After the global financial crisis there was a sharp reversal of the current account balance into a deficit, which

reduced the domestic private sector balance' the surplus (quadrant IIIa). This brings us to the second period, which has been characterized by a reversal of favorable conditions since the onset of the 2007-2008 GFC, that is, Brazil has been experiencing since 2007 deteriorating current account deficits increasing to 3.6% of GDP in 2013 from 0.2% in 2007. We are now on Quadrant IIIb on figure 9.

With the deterioration of current account deficits to 3.6% of GDP in 2013 from a surplus of 1.25% in 2006 and the rigidity of the fiscal balance, that was equal to 2.9% in 2013, then this means that the private sector was running a deficit, which is depicted in quadrant IIIb. That is, the net issuance of liabilities exceeds the acquisition of financial assets by the domestic private sector so the private sector was dissaving. This is an unstable financial profile that Minsky characterized as Ponzi in which net debt outstanding grows. For this financing regime to remain viable requires rising asset prices and can persist as long as lenders are willing to refinance principal and interest payments.

However, a reversal of the conditions necessary to support Ponzi units leads to the sale of assets by economic units to raise cash to meet their outstanding commitments, which can trigger a Fisher-type debt deflation process. If the private sector's desire to net save increases, then fiscal deficits increase to allow it to accumulate net financial assets. This requires a countercyclical movement of the federal budget to support cash flows and central bank intervention to stabilize the price of financial assets.

The disaggregation of the private sector among households and firms shows that, in 2007, the corporate sector turned into a deficit and since then, with the exception of 2009 when its balance was equal to 0.1% of GDP, its balance position deteriorated to a deficit equal to 2.9% of GDP in 2013 – that is, fixed investment and investment in inventories have exceeded internally generated funds generated by firms (figure 10).

Figure 10. Financial Balances by institutional sector as a percentage of GDP
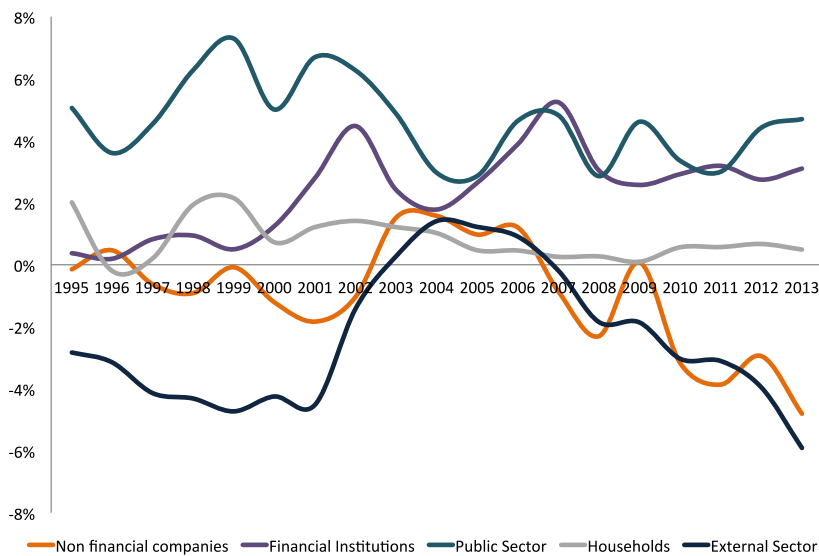
Source: IBGE, CEI, authors' own elaboration

Though the household sector has accumulated record debt-to-income burdens (figure 11), to some extent this household debt was sustained by a small positive balance (figure 10) – i.e., the household sector generated a surplus, spending less than its income[19].

Figure 11. Household indebtedness and debt service ratios
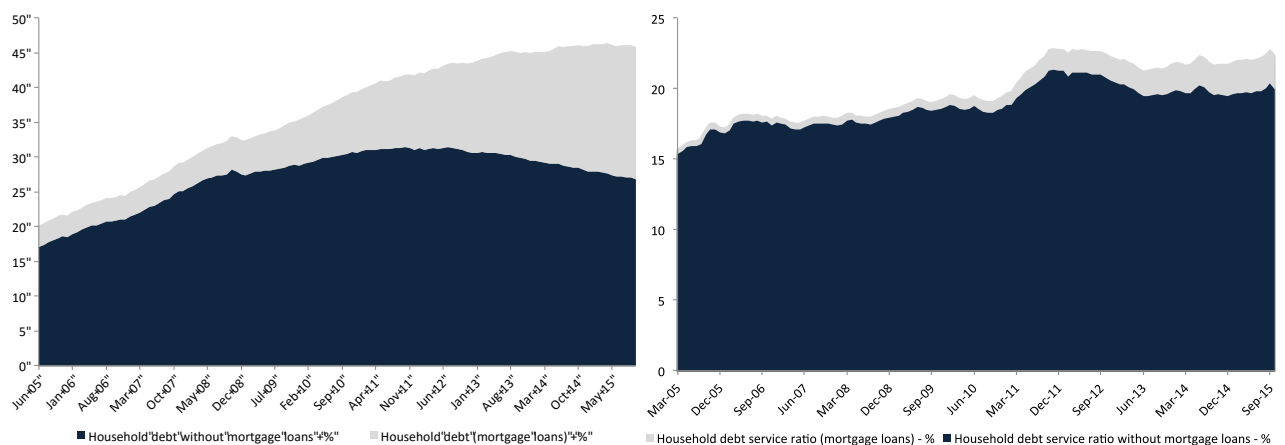
Source: BCB

[19] Even though the government has been trying to reduce indexing in the economy, they introduced a formula, through the enactment of law 12.382/11, to readjust the minimum wage in Brazil that depends on prior-year inflation plus the level of GDP growth from the last two years. To be sure, it allowed real incomes to go up by doing this, but it also reintroduced an inertial component to changes in the price level in Brazil.

While the household sector has continually spent less than its income – households' sector surpluses – in contrast, the corporate sector is a net debtor since 2007, receiving less income than it spends. The corporate sector balance declined from 1.2% of GDP in 2006 to -2.9% of GDP in 2013. These are significant amounts. This sharp reversal in the corporate sector balance in this period influenced the motor for the expansion of the Brazilian Economy, which was driven by unsustainable corporate sector deficit spending (figure 12).

Figure 12. Corporate sector balance as % of GDP
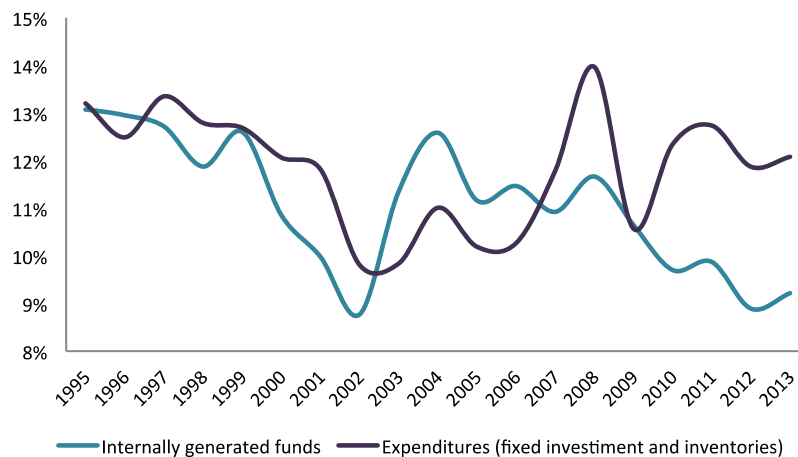
Source: IBGE, CEI, authors' own elaboration

While there was a significant decline in internally generated funds available to corporations, its expenditures remained at a very high level exceeding internally generated funds, the use of borrowed funds increased, suggesting a change in firms' investment behavior. That is, the non-financial sector balance deficit in recent years was the result of new fixed capital investment exceeding undistributed earnings. It is apparent that an increase new fixed capital investment is inversely correlated with the non-financial sector balance.

As this happens, the net flow of credit into the corporate sector increased and the level of debt to GDP was rising all the time (figure 13). Because since 2007 firms have been running large deficits (with the exception of 2009 due to a small decline in current

account deficits and increase in the budget deficit position), its indebtedness sharply increased[20] (figure 13 and 14).

Figure 13. Non-financial private sector debt as % of GDP


— Brazil : rhs — China : lhs
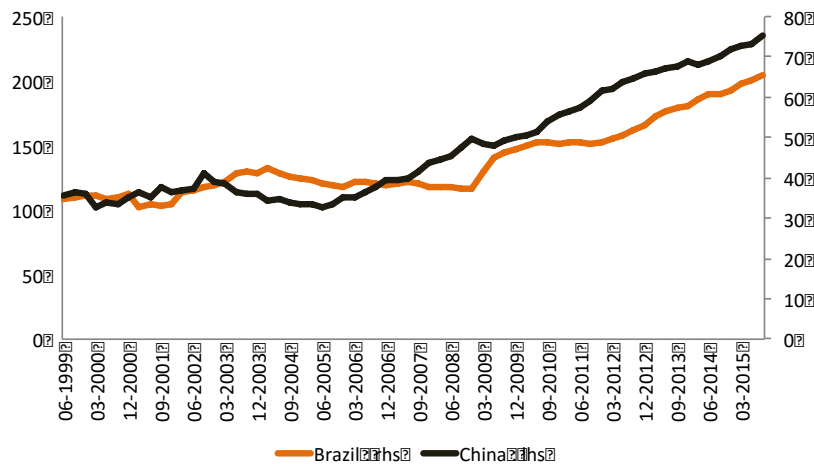
Source: BIS, authors' own elaboration

This means that while internally generated funds declined, the corporate sector was borrowing at an increasing pace (figure 13 and 14). Though the conventional analysis stress that non-financial corporations indebtedness should not be a cause of concern, since it is not high by international standards, and it showed an improvement in their debt profile, they overlook the impacts of rising debt levels firms' debt servicing capacity.

Figure 14. Private sector debt as % of GDP

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[20] For the sake of comparison, non-financial private sector debt growth in Brazil increased at a rate similar to debt growth in China, which is already dealing with the consequences of an asset price bubble fueled by credit.
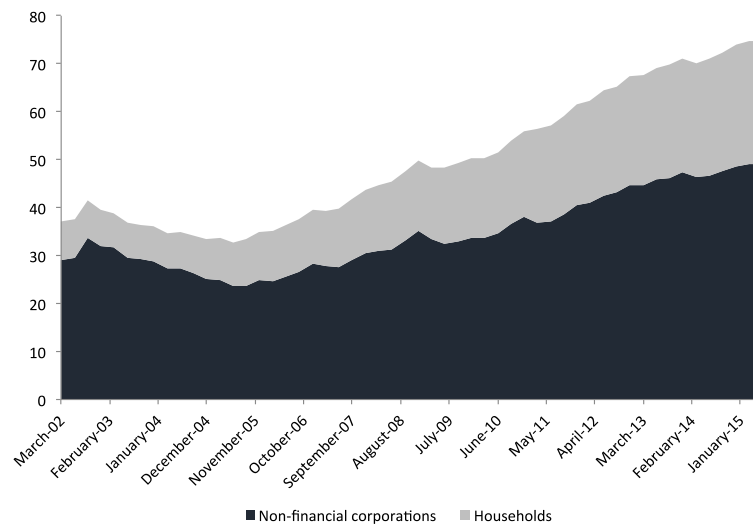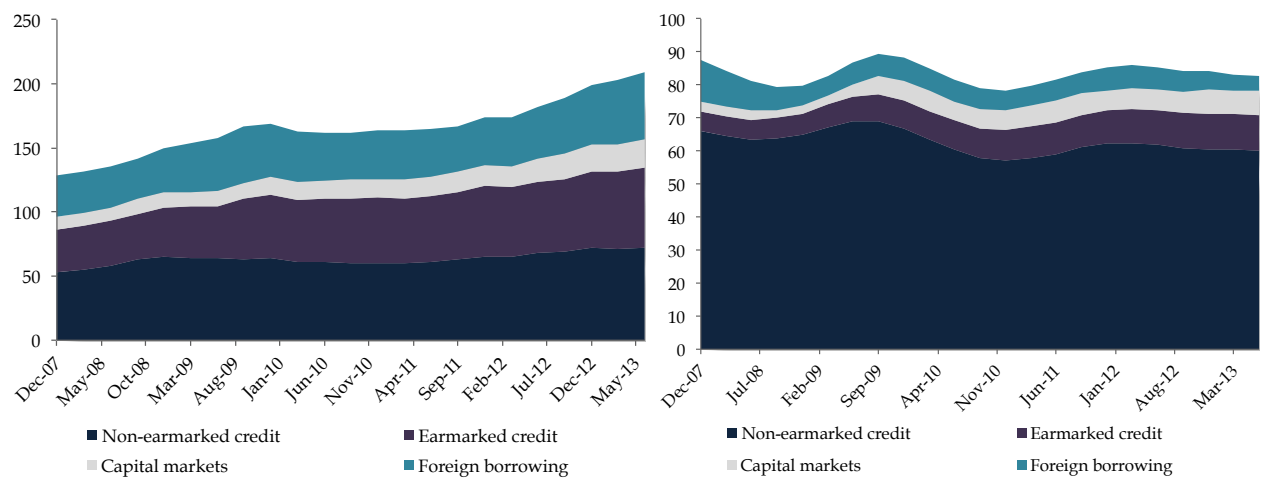
Source: BIS

For instance, non-financial companies indebtedness relative to gross operating surplus increased to 209% in June 2013 from 128% in 2007, while the debt service ratio slightly declined from 87.5% in 2007 to 82.75% in June 2013 (figure 15). As this happened, non-financial companies have lengthened their debt maturity and lowered the average interest rate paid by increasing their reliance on subsidized government credit (mostly due to loans extended by Brazil's national development bank -BNDES) and foreign borrowing. In Brazil, earmarked rates are lower than market rates (bank loans and domestically issued bonds - figure 16).

Figure 15. Corporate indebtedness as share of gross operating surplus and debt service ratio[21]

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[21] It includes bank loans, bonds, and foreign borrowings

Source: BCB, REF September 2013

While non-financial companies' debt has been increasing at unsustainable levels, debt-service ratios remained somewhat stable due to the reliance on BNDES borrowing and low cost foreign debt. Though Brazilian companies increased their reliance on local bond markets, the high level of local rates (figure 16) compared to low rates in international markets and BNDES' lending rates have encouraged non-financial companies to borrow funds abroad and to take more BNDES debt (Bastos et al 2015).

Figure 16. Debentures nominal yield by rating and Swap Pré-DI- (2-YR) (% p.y)
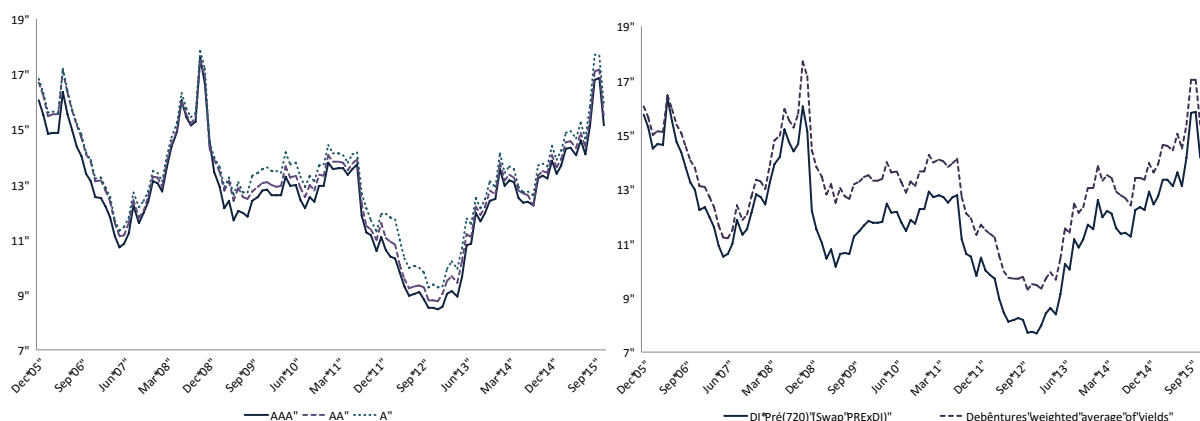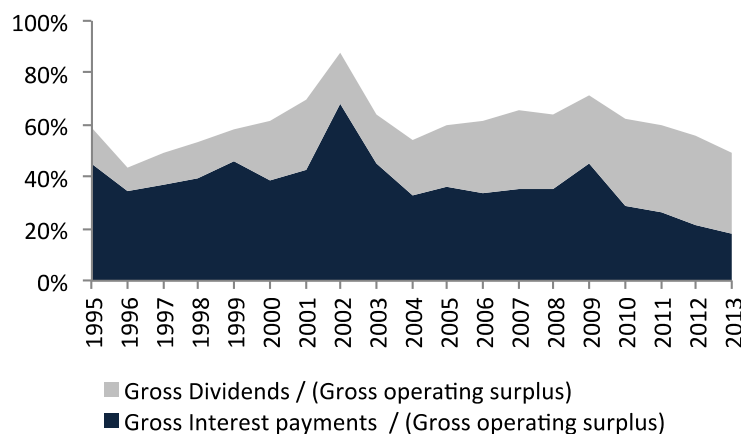

Source: CEMEC 2015, author's own elaboration

To sum up, the private sector's deficit is entirely due to firms' expenditures that greatly exceed their incomes. While lower borrowing costs attracted companies to

increased their reliance on foreign borrowing and BNDES financing – contributing to lower their interest expenses– companies raised their dividends payments (figure 17 and 18). Though corporate earnings have been much lower than they have been in the past, income payments on assets, particularly through dividend payments, relative to gross operating surplus have sharply increased (figure 18).

Figure 17. Non-financial companies gross dividends and interest payments as a share of gross operating surplus
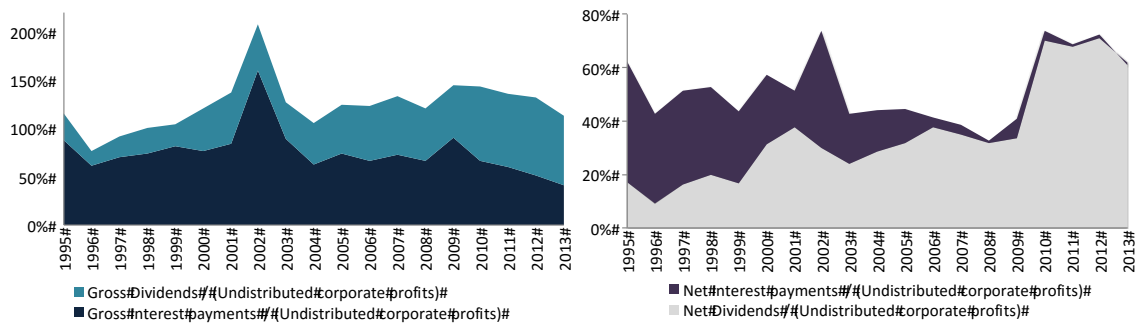

Source: IBGE, CEI, authors' own elaboration

Dividends absorbed, on average, 68% of undistributed corporate profits earnings during 2010-2013 (figure 18). As this happens, and aggregate corporate profits declined, this translated into a sharp decline in retained earnings. This reduction in corporate funding affected firms' investment in productive capabilities - with unsurprising results. Moreover, this increase in dividend payments to other sectors had a weak impact on the economy[22].

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[22] Article 202 of law no. 6,404/76 – known as "The Brazilian corporate law", requires the payment of mandatory dividends, which should be at least equal to 25.0% of a company's net income. Note that the Provisional Measure 627/2013, enacted into law no. 12.973/2014 on May 14, 2014, among other things, mandated that "under the new law, dividends from profits generated between January 1, 2008, and December 31, 2013, that are greater than the amount calculated using the Tax Balance Sheet are not subject to tax. In the original version of PM 627, this rule was limited to dividends paid by November 12, 2013, if the company made an election to apply the new law from January 1, 2014. The new law removes this limitation." (PWC 2014, p.2). This suggests that while corporate profits are subject to taxation, dividends based on earnings are tax exempt.

Figure 18. Non-financial companies gross dividends and interest payments as a share of undistributed corporate profits

Source: IBGE, CEI, author's own elaboration

Relatively high aggregate dividend payments contributed to lower undistributed earnings to record lows in 2012. While low stock market values (figure 19) have contributed to lower wealth positions, companies increased dividends paid by to other sectors (figure 18).

Figure 19. Ibovespa in USD and BRL/USD exchange rate

Source: BCB

Though during the boom years, a large share of investment was financed by enterprise internally generated funds compared to the use of external funds. As the expansion got underway, firms were willing to increase the use of external funds to

finance investment, which led to riskier financial profiles and declining cushions of safety.

With the deterioration of the current account balance removing profits, via the Minsky-Kalecki-Levy's profit equation, financial positions moved to riskier financial profiles. The combination between declining internally-generated funds and rising local and foreign borrowings changed the composition of investment financing and deteriorated financial profiles. Just like in Minsky's model, it is apparent the increase in the use of external funds (overindetedness) and the sharp decrease in the share of internally-generated funds in financing investment (figure 20).

Figure 20. Non financial companies and households investment financing % of total
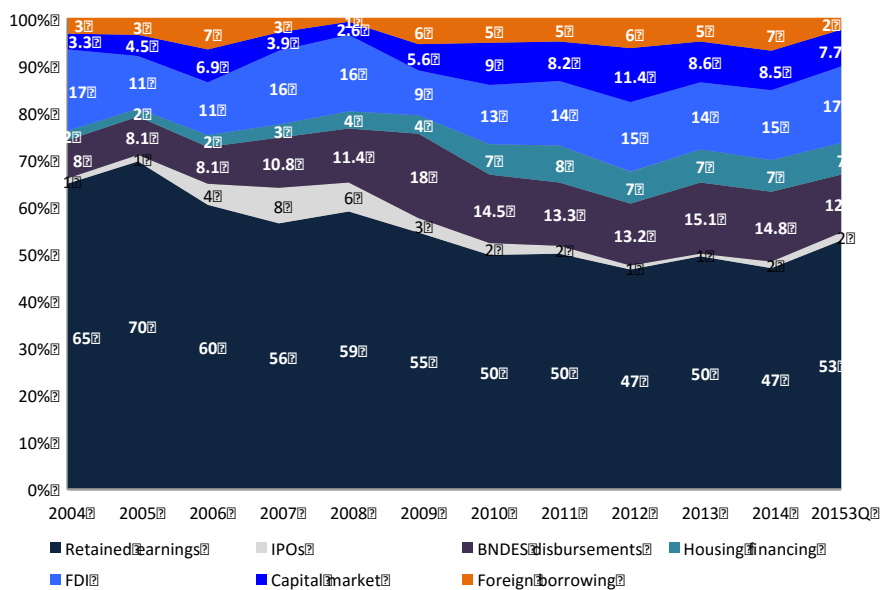
Source: CEMEC 2016

Though it is evident that BNDES' loans to firms contributed to reducing their lending costs, the sharp increase in BNDES' balance sheet has led to growing criticism of its policies (see Rezende 2015). In particular, it has been argued that its lending to corporations at subsidized rates did not translate into higher investment rates.

Much of this discussion is misplaced, while BNDES' lending contributed to lower firms' interest payments, in spite of their rising leverage, its policies work

primarily by reducing the supply price of capital by reducing firms' borrowing costs.

The development bank does not have tools to influence the demand price of capital. In this regard, for this policy to be successful in increasing investment, it requires rising the demand price of capital - that is, the present value of the discounted expected future cash flows (net proceeds) of an investment project relative - to the supply price.

The appropriate policy response should have stimulated the demand price (by increasing it) and the supply price (by reducing it). That is, it requires a coordinated policy action between the Treasury and BNDES in which fiscal policy influences the demand price of capital (by increasing it) while BNDES influences the supply price (by reducing it). This means that policy should be designed to supporting domestic demand and reducing firms' lending costs.

While BNDES' policies prevented firms that were still in the speculative stage from shifting to Ponzi positions and contributed to lower the supply price of capital, as already discussed by Keynes, in this situation, reducing the supply price alone is insufficient to bring about an increase in investment without proper fiscal policy. This implicitly required the policy coordination with the Treasury to stimulate investment. This is aggravated by the decline, in recent years, in the demand price of capital, which was falling faster than the supply price[23].

This does not mean that BNDES's policies were mistaken. Without such policies investment would likely be even lower. However, while the government implemented policies to reduce investment costs – Rousseff's "new economic matrix" – not surprisingly, it did little to offset the decline in corporate profits and the decline in gross fixed capital formation. This government response attempted to stimulate investment by reducing the supply price of capital, but this policy failed to prevent a sharp decline of investment because the demand price of capital – that is, expected future cash flows (net proceeds) of an investment project – was falling faster than the supply price.

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[23] This will be discussed in more detail in the following sections.

7. International Dimensions of Financial Fragility: external capital flows as a basis for development policy

The reliance on external finance and the persistence with the adoption of "Washington Consensus" and structural adjustment policies to deal with macroeconomic imbalances have added another layer of financial fragility and instability in the Brazilian economy. It has already been suggested that Minsky's analysis of financial fragility can be applied to developing countries that rely on international financial markets (Kregel 2004, p. 7).

As discussed in the previous section, Brazilian firms have sharply increased borrowings in local markets and abroad. The accumulation of net financial wealth by the foreign sector - created annually through current account deficits – added another layer of financial fragility. In Minsky's framework, endogenous processes lead to changes in cash flow commitments and balance sheet structures of economic units, which translates into declining margins of safety causing a shift in their financial profiles from hedge, to speculative and Ponzi positions.

While the accumulation of international reserves by emerging economies has received much attention as a strategy of self insurance against balance of payment crisis (Carvalho 2009), the role played by public banks, and BNDES in particular financing capital goods thus reducing firms' reliance on foreign capital, has been overlooked. The IMF report noted that "The National Development Bank of Brazil (BNDES) provided substantial funding to Brazilian companies through loans and equity injections after the global crisis. This is likely to have contributed to lower bond issuance amongst Brazilians [Non-Financial Companies] NFCs than it would otherwise have been the case." (Bastos et al 2015, ft, 6).

In this regard, Brazil's public banks have countered financial instability dampening the effects of procyclical behavior of private sector bank lending during the past financial crisis (Barbosa 2010; Rezende 2015). There is also another impact that has received less attention, that is, lending in domestic currency avoids currency mismatch in funding domestic investment. In fact, among the lessons we can draw from Brazil's 1980's debt crisis and the Asian Crisis in 1997 (Kregel, 1998a, 1998b, 1999) is

to reduce foreign currency exposure. Because domestic firms borrowed in foreign currency they became exposed to increases in foreign interest rates and domestic currency depreciation relative to the borrowed currency. For instance,

> A rapid increase in external financing (much of which was not used for import substitution at all), such as the one that occurred in the 1970s, places a heavy burden on a country's balance of payments that can only be financed by increased foreign borrowing. This appears to have been the case in Latin America in the 1970s as increased borrowing was used to meet increasing debt service in a sort of Ponzi scheme. The process remained sustainable until the October 1979 Volcker surprise in U.S. monetary policy that increased the interest payments on foreign borrowing and caused an appreciation of the dollar that increased the domestic burden of dollar denominated loans and, at a stroke, drove most countries to insolvency…
>
> the policy [external financing] became untenable in the face of the insolvency created by the large external claims and the failure to recognize this insolvency through default. The reforms that were introduced in a number of highly indebted economies in Latin America at the end of the 1980s were thus promoted by the industrial countries to avoid default that would have rendered the developed country lending banks insolvent given that their exposure to Latin America was a multiple of their capital. After attempts to generate external surpluses sufficient to meet external obligations and avoid default led to a sharp decline in growth and placed political stability in jeopardy, the Brady Plan sought a combination of debt relief and the creation of conditions that would allow the indebted countries to return to international capital markets to borrow the funds needed to meet the remaining debt service. (Kregel 2008: 8-9)

Financing domestic development through external financial flows has led to increased fragility and persistent financial crisis in which debt denominated in foreign currency created currency mismatch that - combined with rising U.S. interest rates and exchange rate depreciation - increased the debt service and the burden of foreign currency loans. These put the country in a "Ponzi" position, which resulted in a Minsky-Fisher type debt-deflation process. These countries were also subject to reversals of capital flows and decline in domestic activity.

Moreover, even in the absence of such factors there is no reason to believe that access to international capital markets will necessarily be accompanied by an increase in investment in fixed capital assets to allow for the real development of the economy if the liabilities issued by the private sector in capital markets are not being used for the acquisition of productive assets.

Even though Brazil's accumulation of reserves provides another cushion of safety to stabilize external financing – the country is a net foreign creditor (excluding intercompany lending) and its export earnings have covered a significant portion of its debt servicing needs over the past five years (Rezende 2015a) - this margin of safety has been declining due to increasing external obligations, in particular by nonfinancial companies (figure 21).

Figure 21. Brazil's external debt and international reserves (US$ billion)
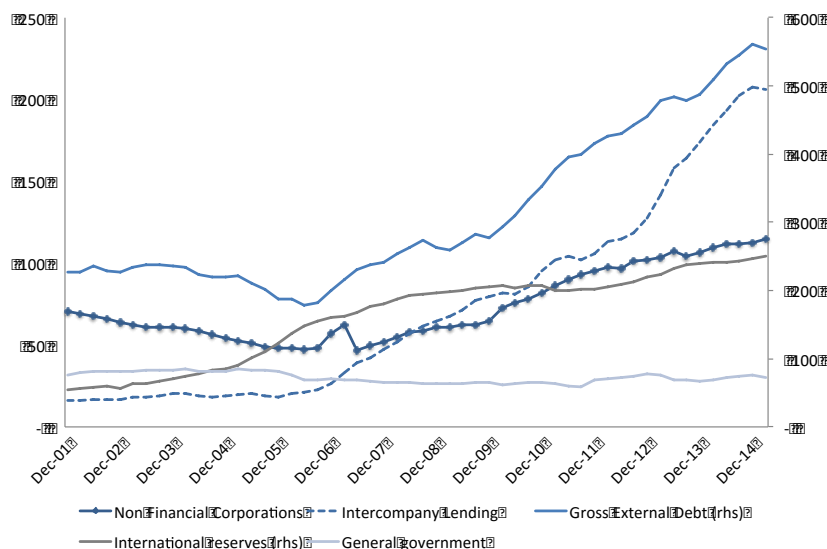

Source: Central Bank of Brazil

For instance, following Brazil's upgrade to investment grade status by Standard & Poor's and Fitch in 2008, low interest rates in global financial centers since the aftermath of the 2007-2008 global financial crisis have pulled Brazilian non financial companies to tap international markets (figure 22 and 23).

During this period, Brazilian corporate issuers have sharply increased their external borrowing through foreign subsidiaries (see for instance Bastos et al. 2015; Avdjiev et al., 2014), in which investment-grade corporate bonds witnessed strong issuance (figure 23). Moreover, low or negative bond risk premium in advanced economies have pushed investors' demand for higher-yielding assets (Shin 2013; Turner 2014).

Figure 22. Brazil: International debt securities outstanding (in billions of US dollars) and Foreign Direct Investment and Company Equity in Brazil, 1999–2015 (in billions of U.S. dollars)
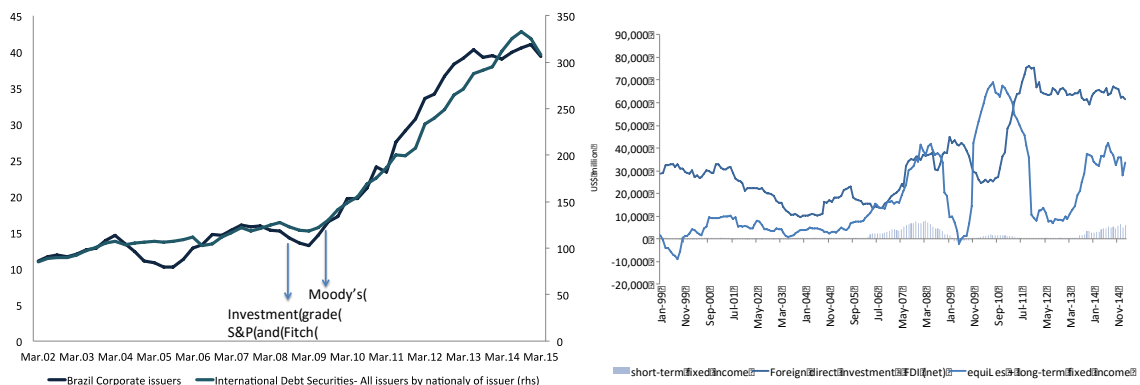
Source: BIS securities statistics table 12A and 12D; Banco Central do Brasil

Figure 23. Non-financial companies debt issuance by issuer's rating grade (US$ billion)

Brazil
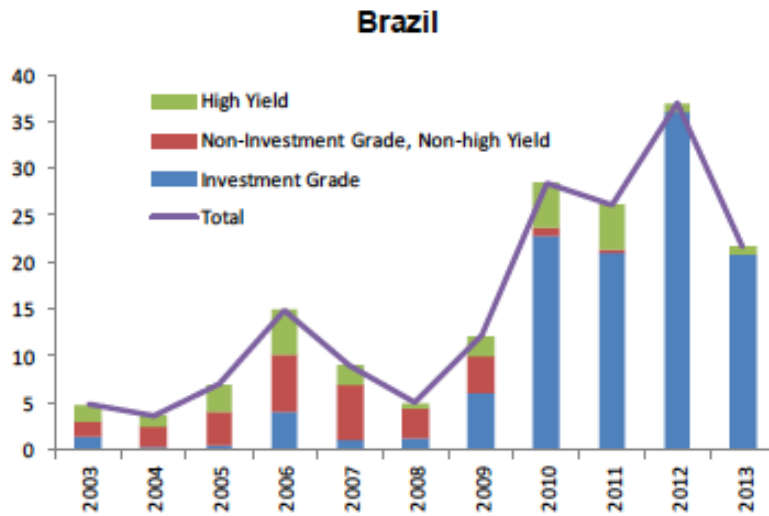
Source: Bastos et al 2015

Corporate bond issuance through foreign subsidiaries boosted intercompany loans and foreign direct investment. This point has been recognized in a recent International Monetary Fund (IMF) report, which has pointed out that

> "intercompany loans accounted for some 60 percent of total FDI in 2014. Interestingly, about 60 percent of total intercompany loans is made up of loans to Brazilian foreign investors extended by their own subsidiaries. A likely cause for such loans is the large offshore debt security issuance by foreign incorporated subsidiaries of Brazilian parent companies…The striking correlation between offshore issuance by non-financial corporations and intercompany loans to Brazilian foreign investors suggests that the majority of offshore issuance indeed returns to Brazil in the form of FDI (an inflow of intercompany loans resulting from such offshore issuance can be regarded as carrying a risk profile more similar to portfolio debt than other types of FDI inflows)." (IMF 2015a, 48)

Contrary to the conventional belief that FDI is the least risky form of foreign borrowing, FDI flows carries significant risks and creates structural instability into the system, because it "is not an unconditional gift; it is financing provided against the expectation of profit earnings and the eventual repatriation or relocation of the

investment" (Kregel 1996, 58). FDI flows are a source of financial fragility and have the potential to turn into Ponzi schemes causing an endogenous deterioration of the current account balance and disruptions in the foreign exchange market thus threatening exchange rate and macroeconomic stability.

Interestingly, even though non-financial companies sharply increased dollar denominated bond issuance abroad since 2008, a recent study by the (IMF) has shown "that stepped up bond issuance was mostly aimed at re-financing rather than funding investment projects, as firms extended the average duration of their debt while securing lower fixed-rates, reducing roll-over and interest rate risks. The shift towards safer maturity structures has come at the expense of a leveraging-up in foreign-currency-denominated financial debt" (Bastos et al 2015).

The foreign sector accumulated private domestic debt by persistent current account deficits, that is, it accumulated net financial wealth, which then causes subsequent portfolio adjustments. Because foreign direct investment inflows[24] create future commitments in the form of debt service causing deterioration in the current account balance, increasing capital flows have contributed to foreign imbalances increasing the deficit on the services balance thus rising current account deficits. Not surprisingly, the reliance on external financing has created a deficit on the factor services balance of the current account (figure 24 and 25).

Figure 24. Foreign Direct Investment and Current Account (US$ billion)

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[24] Note that "There has been a long-standing difference between nationality-based and residency-based foreign bond placements in Brazil. However, the difference between the two measures has widened substantially after 2009, which coincided with the post-global crisis environment of ample liquidity. The growing wedge between residency and nationality criteria since 2010 has coincided with stepped up efforts from the Brazilian government to mitigate currency appreciation pressures through capital control measures (figure A5). In particular, between early 2011 and early 2012, the government progressively increased the maturity of the debt issued abroad subject to foreign exchange taxation. Because foreign subsidiaries are non-residents from a balance of payments perspective, they would not be subject to the tax unless the proceeds were repatriated. Interestingly, issuance through Cayman Islands has increased after the tax tightening, and reduced after the tax loosening between 2010 and 2012. In addition, FDI intercompany loans (one possible repatriation channel of the proceeds from foreign issuance) have increased after tax loosening as well, while portfolio and FDI-equity stabilized." (Bastos et al 2015, p. 15)
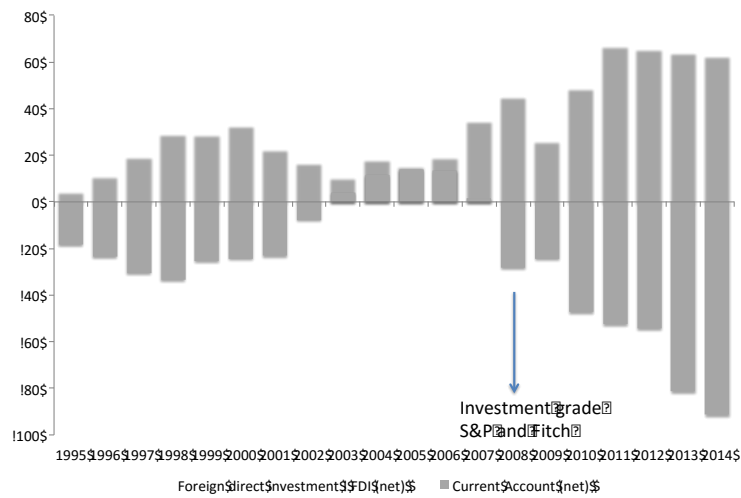
Source: BCB

Figure 25. Factor services account balance (US$ billion) and current account balance
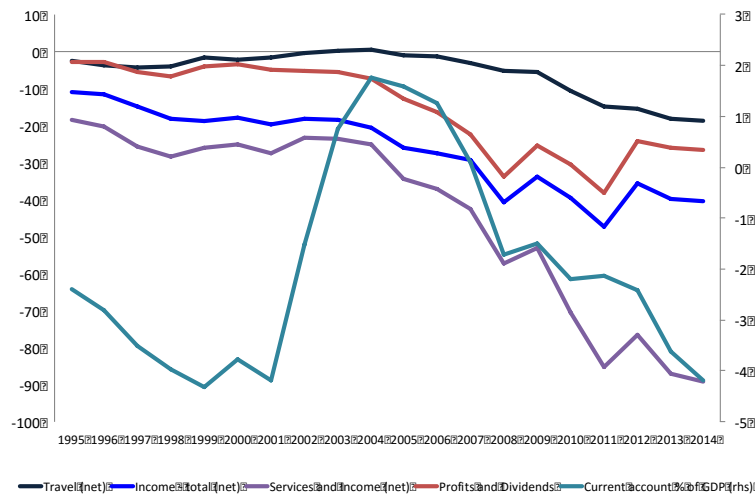
Source: BCB

FDI growth has been linked to increasing remittances of profits and dividends and debt service on intercompany loans, which are draining profits out of the domestic economy. The factor services account balance has shown deterioration, as the accumulation of current account deficits (figure 25) require rising net capital inflows thus being equivalent to a Ponzi investment scheme (see for instance, Kregel 1996, 2004). A reversal of international factors such as negative real short-term interest rates

interest rates in advanced economies and investor's risk appetite for emerging market assets created a potentially disruptive force in emerging market economies.

8. Where Do Profits Come From?

While in a Keynes-Minsky-Godley approach, the sectoral balances approach shed light on understanding all financial flows within the economy, Minsky-Kalecki-Levy's Profits equation, shows the macroeconomic origins of aggregate profits, that is, in aggregate, we get the following:

$P = I + Gov_{def} + NX + C_p - S_w$

Where P equals aggregate profits; I = investment; Gov_{def} = the budget deficit; NX = the current account surplus; C_p = spending out of profits; S_w = saving out of wages

While Kalecki-Levy profit equation shows how profits are generated at the macro level (that is, firms cannot increase aggregate profits by slashing wages), at the micro level firms compete for profit flows. By decomposing firms' return on equity formula, then we get the following:

$$\text{Return on equity (ROE)} = \left(\frac{\text{Profits}}{Equity}\right) = \left(\frac{Profits}{Assets}\right) \text{x} \left(\frac{Assets}{Equity}\right) = \text{ROA} \times \text{Leverage}$$

The return on equity (ROE) equals return on assets (ROA) times leverage, where ROA = Profits / Total Assets; and Leverage equals (Assets / Equity), that is, total assets divided by shareholders' equity. The return on asset is useful to analyze how effectively firms are converting their investments into profits. If we expand the return on assets formula we get the following:

$$\text{Return on assets (ROA)} = \left(\frac{\text{Profits}}{Assets}\right) = \left(\frac{Profits}{Revenues}\right) \text{x} \left(\frac{Revenues}{Assets}\right)$$

In Keynes's model, profit seeking behavior drive capitalists to undertake investment and production with a view for profits. This means that the production activity is organized and directed by firms according to their profit expectations and their decision-making is based upon the uncertain future behavior of markets. That is, the process of aggregation in *The General Theory* takes place considering the factors that are determined by (q-c), i.e. decisions to invest in instrumental capital goods, non

instrumental capital goods such as investment in housing, buildings and so on. That is, to induce investment the demand price must exceed the supply price of capital.

This brings us to the question of why haven't businesses invested more. Brazilian companies faced declining aggregate profits and return on assets (figure 26).

Figure 26. Publicly traded and closed companies profits and profitability
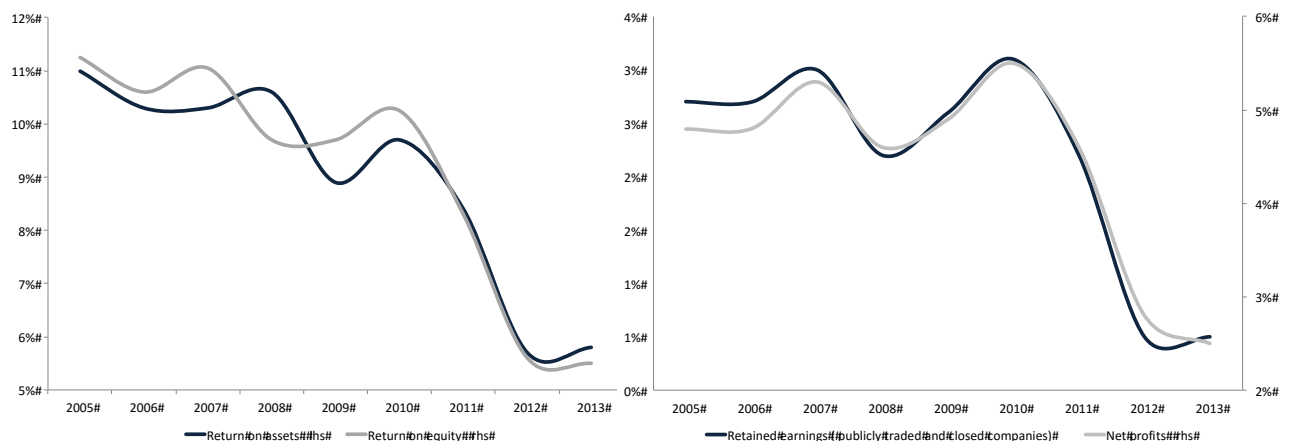
Source: CEMEC, author's own elaboration

During economic expansions, high profits and retained earnings can finance new investment boosting economic activity. As this happens, at the macroeconomic level, rising current account deficits put a downward pressure on aggregate profits. This is aggregated by capacity effects given by the "Domar problem", that is, the additional capacity created by a constant level of net investment further increases the demand gap to fully mobilize resources. The combination of rising current account deficits, slowdown in investment growth and budget deficits took a toll on corporate profitability.

In particular, rising current account deficits put a downward trend on profits, decreasing it by a substantial amount (figure 26). During this period worker's saving was positive (average of 0.3% of GDP from 2007-2013), which also put a downward pressure on profits. Falling profits caused the sharp decline on returns on assets, which given leverage ratios, reduced ROE (figure 26). Hence corporate earnings (and profitability) are much lower than they have ever been in the past. Declining aggregate

profits influenced profitability indicators such as the return on invested capital (figure 27).

Figure 27. Return in invested capital and weighted average cost of capital
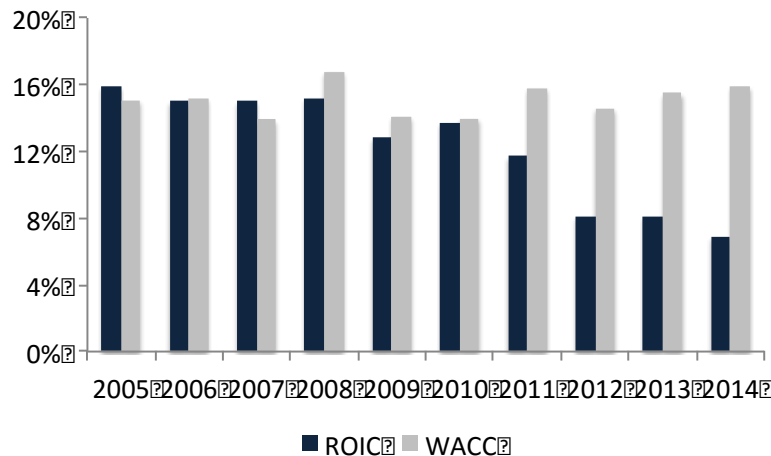

Source: CEMEC 2015a, author's own elaboration

The drive for profits makes economic units to work, increase and maintain their profitability through a combination of rising leverage and return on assets. The rapid expansion of private credit over the past 10 years was a double-edged sword: it contributed to support demand and returns on equity but it deteriorated firms' cushions of safety. Because aggregate profits and margins have been compressing and returns declining, investment grew at a slower pace along with declining profit expectations and increased risk perception.

While Keynes investment theory suggested that investment will proceed as long as the marginal efficiency of capital is greater than the interest rate, the recent experience in Brazil shows declining aggregate profits and profitability and increasing leverage among non-financial companies and households, resulted in deterioration of confidence (figure 28). Falling profits and falling business confidence put a downward pressure on investment growth (figure 29). While economists and market pundits have raised the question of why Brazil's economic performance deteriorated in the aftermath of the 2007-2008 global financial crisis (figure 30 and 31), this happened because

aggregate profits and returns collapsed during this period while there was a debt overhang.

Figure 28. Confidence Index (FGV) – seasonally adjusted
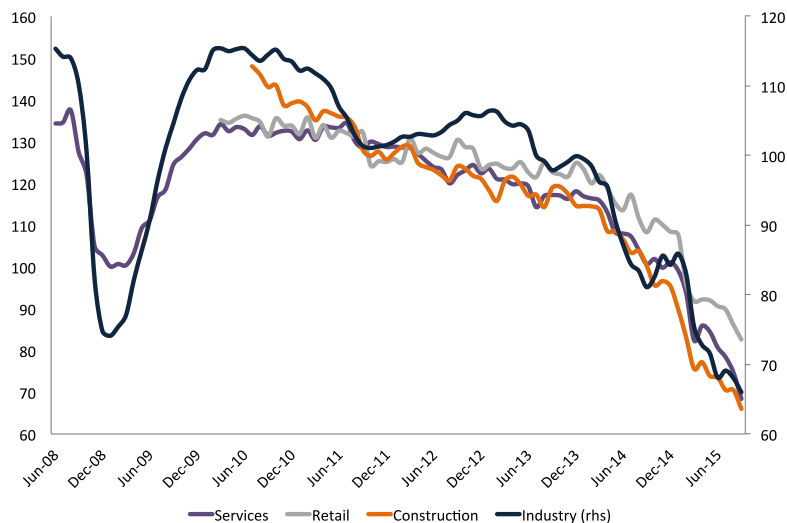
Source: BCB

Figure 29. Business cycle: fixed investment and GDP growth (four-quarter moving average of year-over-year change)
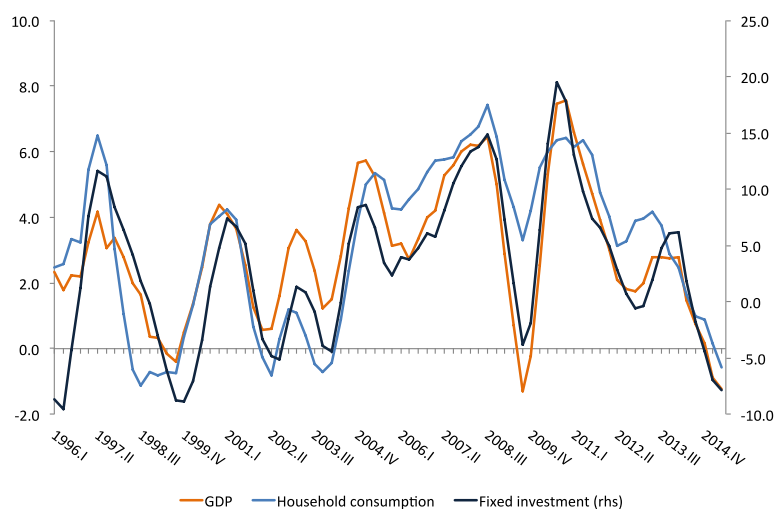
Source: IBGE

Figure 30. Industrial production index – s.a. (2002=100)

Figure 31. Capacity utilization – manufacturing industry (FGV) - %
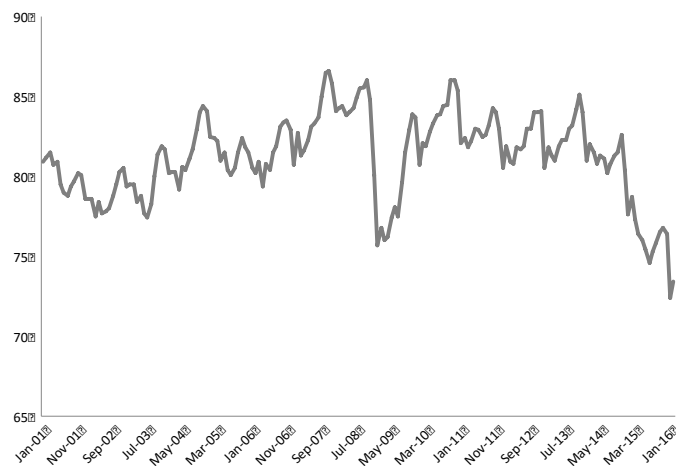
While the conventional argument has pointed to falling commodity prices and fiscal expansion as the cause of Brazil's 2014-15 recession (Bresser 2015), it was the failure to sustain aggregate profits and expected future profitability along with declining cushions of safety that has sharply reduced the return on assets, which pushed the demand price of capital below the supply price, thus reducing investment.

With the collapse in commodity prices in 2014 and a widespread corruption case that affected public and private investment, they finally knocked off the economy and

drove the country into a major recession in 2015. That is, Keynes-Minsky's investment theory of the cycle seems to fit the Brazilian economy.

This is a Minsky's crisis in which during economic expansions market participants show greater tolerance for risk and forget the lessons of past crises so economic units gradually move from safe financial positions to riskier positions and declining cushions of safety.

The dynamics of Brazil's current crisis can be summarized as follows: the Brazilian experience shows that while the household sector balance was in a surplus (spending less than its income), firms ran increasingly large deficits (with the exception in 2009 when the government adopted stimulus measures, which generated large enough government deficits that more than offset the current account deficit). The business sector as a whole is in deficit, so the private sector's deficit is entirely due to firms' expenditures that greatly exceed incomes.

However, an expansion fueled by private sector deficit spending lead to the over indebtedness of the private sector. In Brazil, the combination between growing current account deficits along with the overindebtedness of the business sector have generated record private sector deficits. Though the private sector deficit as a whole was not in deficit until 2011, as the household sector, as a whole, was not in deficit during the entire period. That is, the private sector's deficit spending was entirely due to firms' expenditures that greatly exceed their incomes. This increase in nonfinancial corporate sector indebtedness was, in turn, accommodated by domestic bank credit and bond issuance in the domestic and foreign markets.

Following Brazil's upgrade to investment grade status by Standard & Poor's and Fitch in 2008, low interest rates in global financial centers since the aftermath of the 2007-2008 global financial crisis have pulled Brazilian non financial companies to tap international markets. During this period, augmented by the perception that the nation was one of the most promising economies, Brazilian corporate issuers have sharply increased their external borrowing.

That is, the increase in non-financial corporate indebtedness was accommodated by domestic credit expansion and debt denominated in foreign currencies including a

strong inflow of foreign direct investment – which reinforced the tendency to generate current account deficits through profit and dividends remittances and the debt service.

The surge in capital inflows along with the accumulation of international debt by non-financial companies during the boom years, worsened the tendency towards the deterioration in the foreign account caused by the outflows created on the factor service account – represented by debt service and profit and dividends remittances. Alongside the business sector deficit spending for a long period of time, the combination between the deterioration of trade and the current account balances and the reliance on external funding added another layer of endemic economic instability. In this regard, there was a self-reinforcing cumulative process that continued to reinforce the tendency towards deterioration in the external accounts, which was similar to a Ponzi scheme.

As this happens, investment started to grow at a slower pace, both the trade balance and the current account balance deteriorated, workers' saving remained positive – and with Brazil's oil company faced with lower oil prices, rising debt, and a massive corruption scandal – Petrobras, which was a major public investment driver, cut is investments in 2014 and 2015 (figure 32) generating ripple effects throughout the economy. These forces put a downward pressure on aggregate profits. Along with it, firms experienced declining returns on assets and attempted to increase their return on equity by using borrowed funds.

Figure 32. Petrobras CAPEX – USD billion
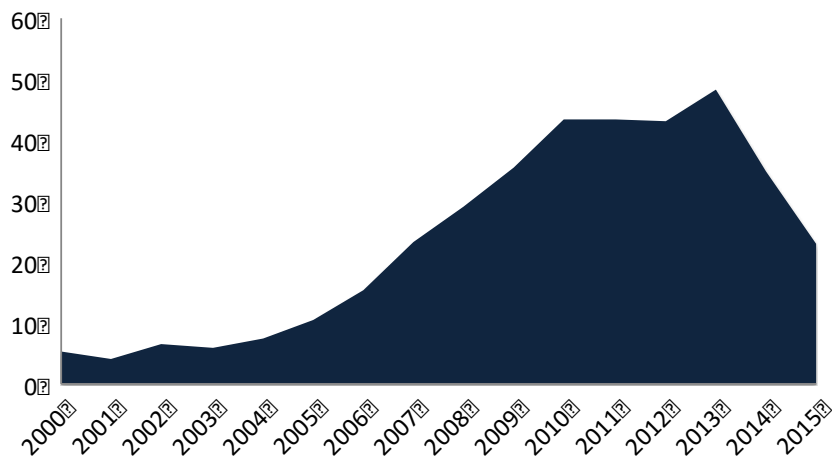
Source: Petrobras

9. The Failure of Structural Adjustment Policies

With the Brazilian policy response to the 2007-2008 Global Financial Crisis, Lula's second term (2006-2010) introduced a more flexible primary budget surplus target to respond to the state of the economy. During this period, private debt accelerated relative to GDP along with the shift from a surplus balance to a private sector deficit so that the underlying structural weaknesses in the Brazilian economy – the overindebtedness of the business sector, and in particular, private external debt accumulated through capital inflows.

As Brazil navigated relatively smoothly through the 2007-2008 Global Financial Crisis, which led to a fast recovery in 2010, the central bank diagnosed an overheating economy and initiated a series of interest rate hikes from 8.75% in April 2010 to 12.50% in July 2011 and also led to an early withdrawal of policy stimulus in 2011. The government proposed a R$ 50 billion spending cuts and the monetary authority introduced a series of macroprudential measures to curb credit growth and dampen risk in the financial system (see Da Silva and Harris 2012).

As a result, Brazil's economic growth was sharply reduced in 2011 and 2012. Rousseff's first term was characterized by the the so-called, "New Economic Matrix", a policy initiative [25] aimed at reducing real interest rates, Brazil's tax burden, and promoting exchange rate depreciation to improve the competitiveness of the Brazilian economy and lift economic growth. This policy aimed at reducing investment costs and support profit margins.

Rousseff's first term from 2010-2014 was marked by an attempt to replace the neoliberal macroeconomic policy "tripod", that is, floating exchange rate, primary surplus targets, and inflation targeting, which was established during former president Fernando Henrique Cardoso's second term to get assistance from the International

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[25] See Mantega (2013) for more details. While the conventional belief points to state-based intervention and rising gross public debt as the cause of Brazil's current crisis (Romero 2015), they overlook the growth of financial fragility in the Brazilian economy.

Monetary Fund (IMF) to deal with Brazil's 1998-99 currency crisis [26] . This macroeconomic policy framework was reinforced during former president Luiz Inácio Lula da Silva's first term from 2002-2006 (see Arestis et al 2008).

The Brazilian federal government also announced an ambitious investment program based on public private partnerships and concessions to the private sector in key areas such as logistics, energy, and oil and gas. Moreover in an attempt to reduce Brazil's well-known high tax burden, stimulate economic activity, and keep inflation under control, former Finance Minister Guido Mantega introduced a series of tax cuts (figure 33). The government authorized the Treasury to provide loans to its public banks to allow them to support the investment program.

Figure 33. Tax Reliefs and Exemptions (% of GDP)
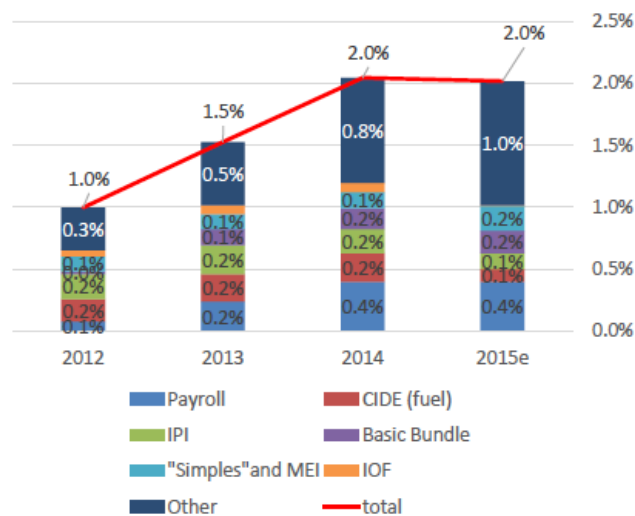
Source: The Ministry of Finance, 2016a

Though ad hoc tax breaks caused fiscal revenues to decline it was too small and poorly designed to influence the demand price of capital, stabilize aggregate profits, and promoting a substantial economic growth. By reducing the policy interest rate and using public banks as a policy tool, it was believed that Brazil would initiate a new phase of economic growth.

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[26] The establishment of a target for the primary fiscal surplus would bring about a decline of gross public debt in relation to GDP to build investors' confidence in the government ability to meet the debt service.

However, those measures did not succeed in reversing the negative trend in fixed investment spending growth. Though there have been attempts to explain the causes of this dismal performance of fixed investment spending, as discussed in the previous sections, the conventional analysis overlook the impacts of declining aggregate profits, rising indebtedness of the private sector, and falling demand price of capital assets relative to the supply price.

Though the government response attempted to stimulate investment by reducing the supply price of capital, not surprisingly, this policy failed to prevent a sharp decline of investment because the demand price of capital – that is, expected future cash flows (net proceeds) of an investment project – were falling faster than the supply price.

With the exchange rate devaluation since 2011, aggravated by the US Federal Reserve's "taper tantrum" in May 2013, it was followed by monetary policy tightening in Brazil (figure 34) in attempt to stabilize the exchange rate, control inflation, and curb capital outflows.

Figure 34. Average Selic rate (% p.y) and average cost of domestic (DFPD) and federal public debt (FPD)
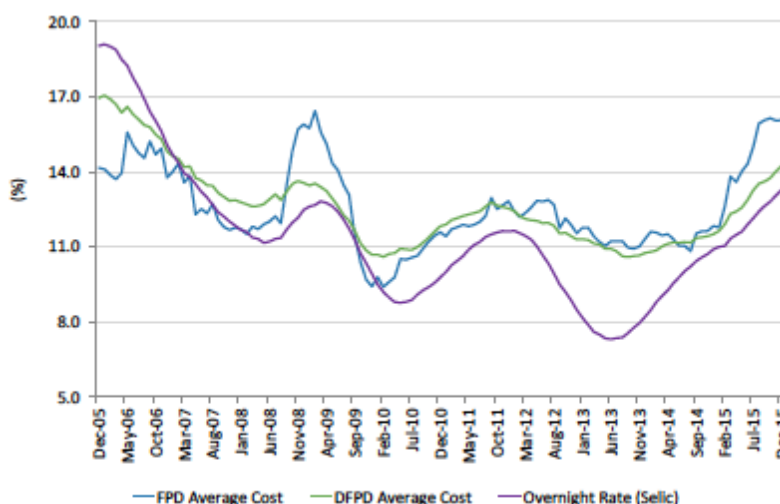
Source: Ministry of Finance 2016

The current administration faced fierce attacks in the previous election cycle from anti-Worker's Party groups and right wing media arguing that the current crisis is a failure of government due to its actions and interventions, not the normal operation of the free market. With the introduction of policy stimulus through ad hoc tax breaks for selected sectors seen as a failure to boost economic activity and the deterioration of the fiscal balance (figure 35) - which posted a public sector primary budget deficit in 2014 after fifteen years of primary fiscal surpluses - opponents argued that that government intervention was the problem. It provided the basis for the opposition to demand the return of the old neoliberal macroeconomic policy tripod and fiscal austerity policies.

Figure 35. Government balance % of GDP (accumulated in 12 months)
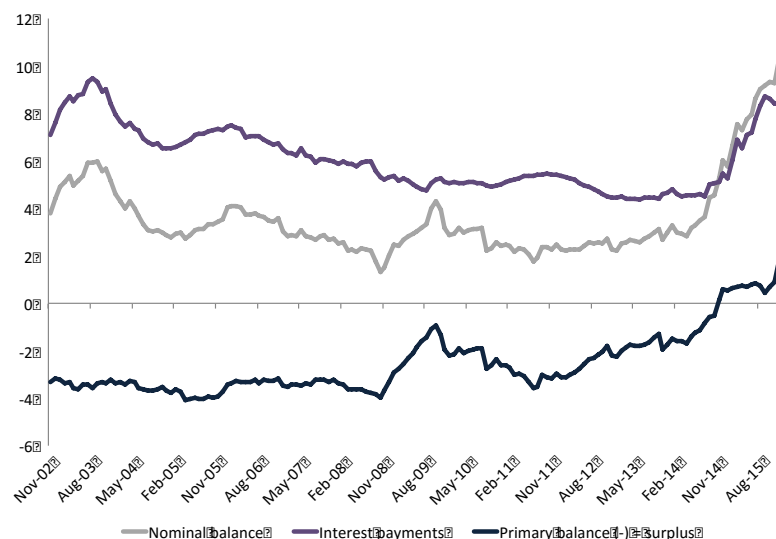
Source: BCB

Following a narrow election victory in 2014, the Rousseff administration moved sharply in the direction of fiscal austerity, causing policy to drift back to the "normal" neoliberal proscriptions despite the success of earlier progressive policies. The tight election reflected the perception of a downward trend of the nation's economic outlook augmented by news that Brazil's economy has fallen into recession in the first and second quarters of 2014. This outcome did not look like the election the Workers' Party expected. Brazil's unemployment rate has hit record lows, real incomes have increased, bank credit has roughly doubled since 2002, it has accumulated US$ 376 billion of

reserves as of October 2014 and it has lifted the external constraint. The poverty rate and income inequality have sharply declined due to government policy and social inclusion programs, it has lifted 36 million out of extreme poverty since 2002. Moreover, the resilience and stability of Brazil's economic and financial systems have received attention as they navigated relatively smoothly through the 2007-2008 global financial crisis.

So, what happened? The reason is fairly obvious, in the aftermath of the global financial meltdown, policy makers misdiagnosed the magnitude of the crisis, the changing circumstances because of it, and ended up withdrawing stimulus policies too early. This was aggravated by the failure to make an effective transition to promote domestic demand strategies and the collapse in commodity prices, which affected commodity-producing countries (figure 36). With the slowdown of global demand – particularly from China – the end of the commodity price cycle, negative terms of trade effects, changes in global financing conditions, the Brazilian economy entered in a recession spiral. In particular in 2014 and 2015, it was the collapse in business investment spending that pushed the Brazilian economy into its worst recession in 25 years.

Figure 36. Brazil GDP, China GDP and commodity prices
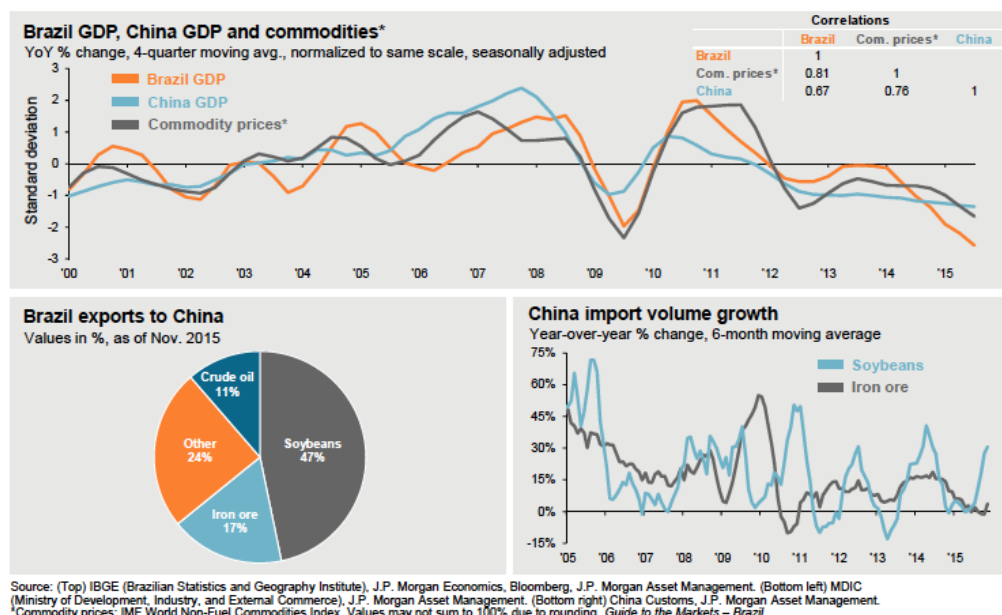
The perceived failure of stimulus measures opened up space for critics, such as the main centre-right opposition party, to blame Ms. Rousseff's administration as being excessively interventionist leading the Brazilian economy to perform poorly during the past four years. It fueled Mr. Neves campaign to convince anti-Rousseff voters he could get Brazil's economy back on track.

10. What Should Brazil do?

The Brazilian current crisis fit with Minsky's theory. The traditional response to a Minsky crisis involves government deficits to allow the non-government sector to net save. That is, if the private sector desire to net save increases, then fiscal deficits increase to allow it to accumulate net financial assets. The sharp increase in budget deficits in 2015 comes as no surprise. Rezende (2015a) simulated

> "a scenario in which we have rising government deficits to offset current account deficits, to allow the domestic private sector balance to generate financial surpluses. In this case, in the presence of current account deficits equal to 4% of GDP, to allow the private sector to net save 2% of GDP, it would require government deficits equal to 6% of GDP. If the private sector is going to save 5% of GDP (equal to the 2002-2007 average pre-crisis) and a current account deficit equal to 4% of GDP then we must have an overall government budget in deficit equal to 9% of GDP. Given the current state of affairs, government deficits of this magnitude might be politically unfeasible right now. (Rezende 2015a)

In 2015, Brazil's budget deficit increased from 2.0% in 2008 to 10.3% in 2015. Though government deficits support incomes (cash flow, and portfolio effects) and stabilizes profits, the bad composition of government budget, that is, virtually the entire

deficit is due to interest payments, it did little to sustain employment. With the primary budget balance swung to deficit and credit rating agencies' decision to downgrade to Brazil's sovereign debt to junk status put Ms. Rousseff under growing pressure to cut public spending.

While Brazil's credit rating cut to junk increased firms' funding costs making international financial obligations more costly for local firms, these circumstances were exacerbated by a reversal of favorable external conditions and a deterioration of domestic factors including a premature withdrawal of stimulus that led to poor performance by the Brazilian economy and created an opening for critics of Brazilian economic policy who characterized it as too interventionist. This affected the Brazilian political process and led to a change in Brazilian policy in the direction of austerity. The response was based on the traditional approach (structural adjustment policies) grounded on the "Washington Consensus". To constrain domestic demand and keep imports down through the imposition of fiscal austerity and tight monetary policy (figure 37). By reducing the domestic absorption, it undermines domestic activity and creates unemployment. The result was obvious, fiscal deficits and government debt kept rising and incomes, employment, and production collapsed.

Figure 37. A Minsky Crisis and "Washington Consensus" Crisis (1995-2013 average)
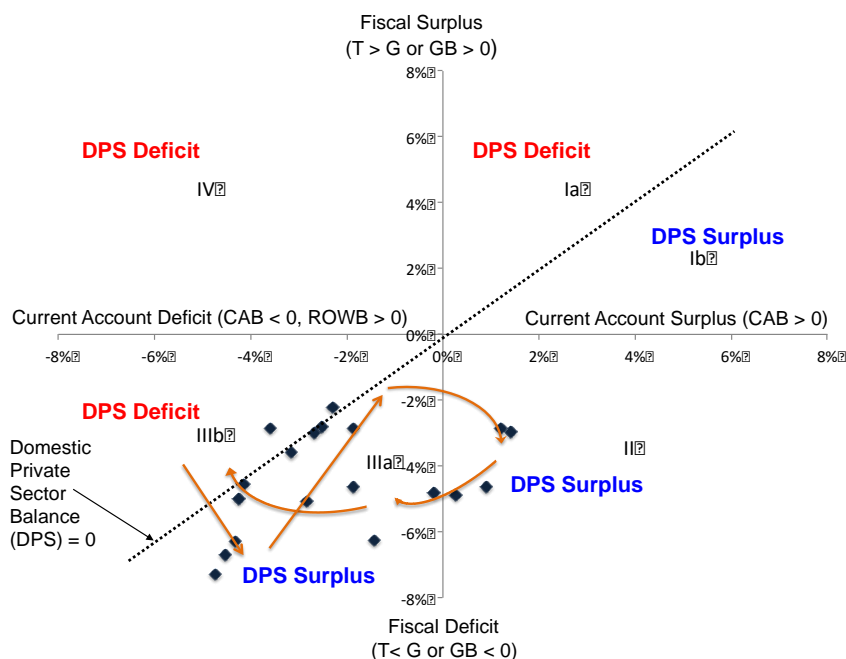

Source: author's elaboration

As discussed in the previous section, the Brazilian economy is trapped in a vicious dynamic cycle moving from quadrants: IIIa ⬜ II ⬜ IIIa ⬜ IIIb ⬜ IIIa. This is the result of endogenous process, which combined with the reliance on external financing, high interest rates designed to attract international investors and fight inflation led to an overvalued currency, damaging the competiveness of domestic industries and its export capacity. The reliance on capital flows not only failed to increase productive investment (Bastos et al 2015), but it produced rising external private indebtedness and chronic current account deficits. The more successful in attracting capital flows and generating returns, the more fragile will be the current account position (chronic current account deficits). That is, as the economy grows, it exposes the limits to external finance and the endemic financial fragility created by the success of domestic stabilization policies and it produces a structural influence on the composition of payment flows and the country's export capacity.

As this happens, the economy tends to move toward current account deficits, which will generate an "external drag"—that removes profits of firms—causing a recession. It has already being suggested that the limits to external finance is given by the Domar's condition (Kregel 2004, 2009), that is, capital flows should increase at a rate at least equal to the rate of interest paid on the foreign lending. The Domar's condition is similar to a Ponzi scheme, which is inherently unstable. In this regard, Brazil's current crisis is similar to "Washington Consensus crisis", that is, the reliance on capital flows as a source of development finance has led to the real appreciation of the currency, rising foreign capital inflows, rising external private indebtedness, chronic current account deficits, and increased exchange rate volatility.

Note that the movement from quadrants IIIb to IIIa is aggravated by the attempt to impose structural adjustment policies, which resembles a "Washington Consensus" crisis forcing a substantial decline in real wages and increase in unemployment (figure 38). Even though Brazil's current crisis is not really a financial sector crisis, Brazilian security prices were impacted generating rising interest rates on Brazilian debt and the collapse in the value of Brazilian debt in investors' portfolios. A Minskyan policy response would have required the central bank's action to support asset prices, however,

the central bank decided not to act. Only the Treasury intervened occasionally to stabilize securities prices (see Ministry of Finance 2016).

Figure 38. Unit Labor cost (ULC-US$ - June/1994=100) and the unemployment rate
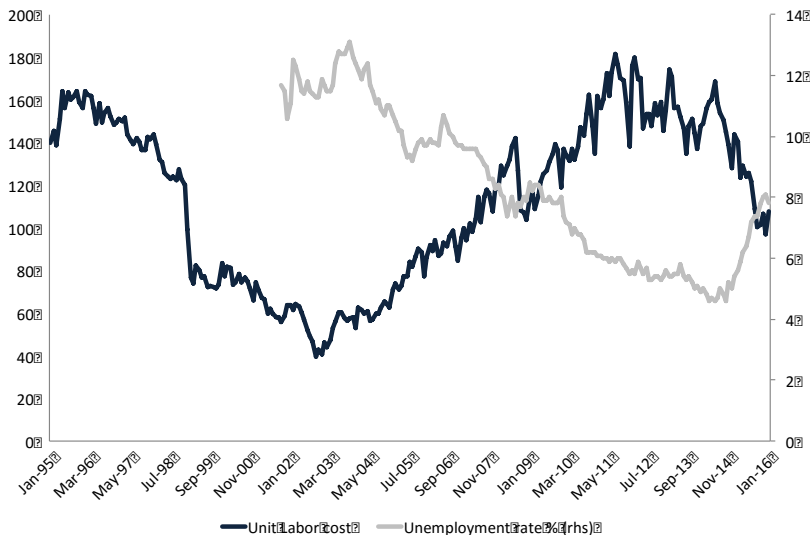
Source: BCB

The Policy Implications

In spite of overwhelming evidence that austerity policies failed where it was implemented, It is ironic that mainstream economist have proposed fiscal austerity to pave the way for economic growth. In Brazil there was a virtual consensus towards fiscal tightening. The most likely scenario is that Brazil will continue to run current account deficits in the foreseeable future, say equal to the post crisis average equal to 2% of GDP.

If policymakers narrow the nominal budget deficit to zero in the next administration (Fraga 2016) then the private sector must run a deficit equal to 2% of GDP (equal to the current account deficit). The private sector deficit (spending more than its income) is dangerous to macroeconomic stability and unsustainable. If the domestic private sector wants to run a surplus (spending less than its income) then the government balance must be above the current account deficit (figure 39).

Figure 39. Sectorial financial balances and traditional policy goals

Traditional Policy Goals: Reduce domestic absorption, eliminate fiscal deficits, attract capital flows and improve trade balance

Fiscal Surplus
(T > G or GB > 0)

DPS Deficit

Politically desired but requires structural changes to promote export capacity. Impossible to sustain this position given current structure of the economy

Current Account Deficit (CAB < 0, ROWB > 0)

Current Account Surplus (CAB > 0)

Politically not desired due to "chronic fiscal and external deficits". It leads to imposition of fiscal adjustment policies to reduce government deficits and domestic absorption

DPS Surplus

Fiscal Deficit
(T< G or GB < 0)

The policies proposed by fiscal hawks fail to recognize the risks: fiscal austerity poses the danger of recession and even default by indebted households and business. Moreover, contrary to the conventional view, there is no reason to believe that cutting public spending will automatically increase private spending. To be sure, an attempt to impose fiscal austerity at this point, will lead to further declines in output, employment, and private spending, thus amplifying the direct effects of government cutbacks and limiting the ability of businesses and households to generate strong cash flows to service their financial obligations, stimulate production and create employment.

Policymakers and market pundits must understand that one sector's financial position cannot be viewed in isolation. They must realize the links between public sector deficits, domestic private sector surpluses, and current account deficits. This is not to say that we should run fiscal deficits forever nor that they cannot be inflationary but following fiscal rules blindly without determining the impacts on the private sector balance can be dangerous to growth and stability.

Much of the concern about public finance in Brazil centers around reducing the public debt burden and debt sustainability. However, a sovereign government, which issues its non-convertible currency, is not subject to the same constraints that business, local states, and households face (Rezende 2009). The Brazilian government issues its

own currency, the Real, and has the power to levy and collect taxes denominated on its liability. As in the case of other sovereign countries, it can always service its debt denominated in its currency.

However, Brazilian policymakers feared the news of a credit rating downgrade, in particular in an election year. They have been operating under the wrong paradigm. Counter to the deficit hysteria view, affordability isn't an issue because the federal government can always meet their debt obligations denominated in their own currency. Ratings agencies are still clueless on their assessment of default risks of sovereign currency issuing governments. Contrary to the conventional view, in spite of credit downgrades and growing public debt demand for government securities in 2015 was the highest in 8 years (figure 40)!

Figure 40. Domestic federal public debt (DFPD) refinancing; issuances and redemptions in 2015
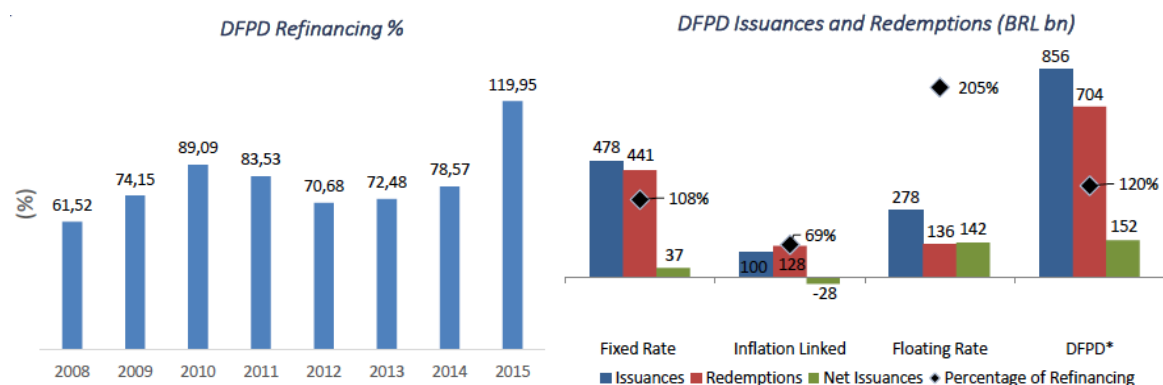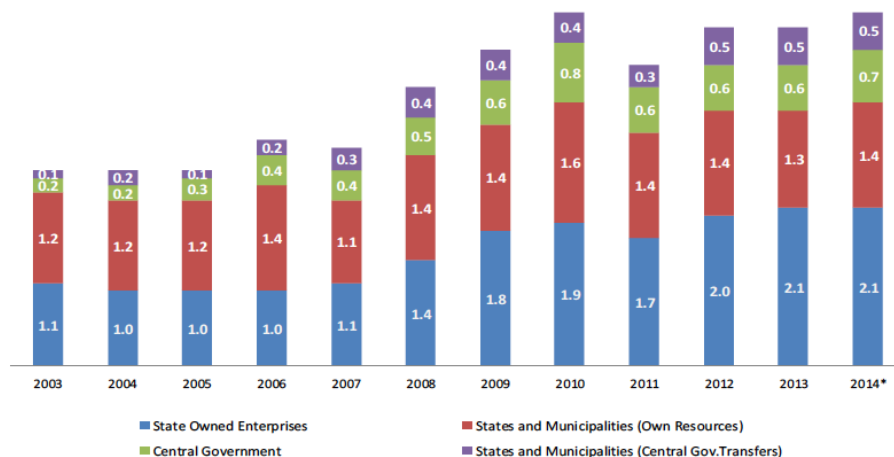

Source: Ministry of Finance 2016

Recent CRAs warnings and downgrades on Brazil's sovereign credit rating miss the point that Brazil has attained monetary sovereignty. It is the sole issuer of a nonconvertible currency (Reais). It cannot be forced by currency users to default on its domestic debt denominated in local currency.

Are there policy alternatives?

Brazil needs to effectively make the transition to a development strategy based on domestic demand from dependence from foreign demand and finance. Even though Brazil has a transition policy in place primarily based on public investment, the Growth Acceleration Program (PAC I and II) and a broad program of concessions, it is struggling to shift its development strategy to foster domestic demand growth from one designed to attract external capital and build on external demand.

The Growth Acceleration Program (PAC I and II) notwithstanding, Brazil's federal public investment public investment is unusually low given Brazil's infrastructure bottlenecks and investment needs (figure 41 and 42).

Figure 41. Public Investment (% of GDP)

Source: Ministry of Finance 2016a.

There is ample policy space to promote private and public infrastructure investment, in which public banks – in particular the national development bank – and private domestic capital markets should play a major role financing the supply side of this program.

It is well known that government spending can contribute to productivity lowering private sector costs and through investment in key areas such as infrastructure, health and education, and research and development. Brazil needs to shifts its policy to mobilize domestic resources and adopt an investment-oriented growth strategy. There is

ample space for policy to promote infrastructure investment (public and private in Brazil (figure 41). For instance, the world economic forum ranks Brazil's infrastructure 114th out of 148 countries (WEF 2013). Even the IMF is calling for an infrastructure push by developing economies (see IMF 2015a).

Figure 42. Total infrastructure stock (% of GDP)

1 For Brazil, road data contains all of transport. Brazil stock revised significantly upward to 46–54% from an earlier published version based on longer time series showing 2-3x higher investment rates in the 1970s and 1980s compared to the 1990s and 2000s. The estimate shown is based on data provided courtesy of Dr. Armando Castelar.
SOURCE: ITF; GWI; IHS Global Insight; various national statistics; McKinsey Global Institute analysis

Source: Mckinsey 2013, p. 13

It is crucial to increase government-sponsored infrastructure investment projects as the current rate of federal investment in infrastructure is small compared to Brazil's investment needs. Brazil is well known for its high tax burden. It should use the fiscal powers of the federal government to increase government deficit on both fronts, that is, increasing federal government investment in infrastructure and tax cuts for households and firms by simplifying its tax system and providing tax cuts on production, employment, and income. It can close Brazil's housing gap by 2018 through the expansion of the government program My home, My life.

It can implement a national job guarantee program to foster job creation for those willing to work (see Minsky 1965, Tcherneva and Wray 2007, Wray 2007, Mitchell and Wray 2005 for a detailed exposition of Minsky's proposal for the employer of last resort program). In this program no worker would get paid less than the minimum wage and those able and willing to work would be employed thus reducing the social costs of unemployment and poverty. Contrary to the conventional belief that a

job guarantee program would be inflationary, it can be designed to ensure that the deficit spending is at the right level to ensure and maintain full employment by setting a wage anchor and acts like a buffer stock of the unemployed. The program can be designed not only to provide on the job training but also to increase labor force qualification and the productivity of unemployed workers, which works as an increase in the labor supply. Among its benefits, it reaches social targets by mobilizing resources for additional social services to be provided by the community with gender, racial, and regional effects.

This government initiative can be targeted directly to those unemployed workers "at the bottom" of the income distribution leading to improvement of dignity of those that have been denied the opportunity for social inclusion. Moreover, the percentage of the population living in poverty or extreme poverty would be significantly reduced.

Rather than an obsessive concern over budget deficits, the current debate should be over whether Ms. Rousseff's administration could have gotten more. However, the current administration put itself in a position in which the stimulus measures were too small, short-lived, and poorly designed to deal with the challenges posed by the biggest financial meltdown after the Great Depression and this policy initiative is now seen as a failure. As long as policymakers believe that the federal government faces a budget constraint due to the inappropriate application of the household budget constraint to a sovereign government, there will be resistance to adopt an alternative policy. As argued before, they miss the important point that Brazil cannot be forced by markets to default on its domestic debt. It has attained monetary sovereignty, that is, it issues its own non convertible currency. It remains to be seen whether these policies will be implemented.

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