Recent Increase in Prices of Property in Brazil: There Exist or Property Bubble?

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Abstract: The 2008 financial crisis was the epicenter well defined. Focused on mortgage-backed securities the U.S. housing market and had its base in the said sub-prime customers, causing months and years later a ripple effect and a global economic recession, whose severity remains increasing with uncertain duration, adjustments toward the massive losses of banks, governments and thousands of people. Heavy monetary interventions of central banks were launched, especially in the U.S. and Europe, hoping to stimulate lending, consumption and income. However, the global economy and fragile, the mass of money injected into the global economy to bail out economies, eventually causing inflation property in some countries, including Brazil by large imbalance conducts economic policy between countries. For technical frameworks formed from the monetary theory of bubbles, the paper shows that: (i) is Brazil with contaminated property prices, (ii) there is a history major who formed the real estate bubble in Brazil arising from national and international front combined, begin to generate a dynamic not healthy for consumers and the industry, (iii) there are internal and external risks to the real estate bubble in Brazil to cool between 2014-2017, (iv) the Brazilian government can take preventative measures to make the price of real estate is not a factor that hinders the macroeconomy in the coming years. Finally, the paper presents proposals for the housing bubble does not deflate rapidly in Brazil.

Keywords: housing bubble, financial crisis, finance

1. Introduction

When reading the monetary theory of bubbles and watching the events that took place / in the Brazilian and global economy, especially in the United States, it is clear that there are clear grounds for inferring the existence of the phenomenon "money bubble price" in real estate in Brazil. To understand how the housing bubble in Brazil formed after 2008, it is necessary to analyze the national and international context that led to the formation of rapidly rising prices.

We start from the background that led to the formation and subsequent bursting of U.S. housing bubble. In its secondary effect, the U.S. real estate bubble caused monetary imbalances between emerging and developed economies. Conducts monetary policy in developed countries, especially the United States and Europe, compared to the conduct of monetary policy in Brazil help in understanding the rapid rise in property prices after 2008. In addition to macroeconomic factors, internal and external, microeconomic factors related to consumer behavior also help to explain the phenomenon of the housing bubble. The exchange rate effect, the interest rate arbitrage between countries, country risk, the behavioral effect of household consumption, credit, wages, indicative prices of basic economics, the relationship on the rental value of the property assets in set are very relevant information to infer about the recent formation of the Brazilian real estate bubble.

Highlight the effect of Brazil's macroeconomic policies affecting income to the employee and the broad credit given to consumers after 2008, including credit policy. Present the risks prominent real estate bubble

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in Brazil stop growing and, in the extreme case, to deflate so mild, medium or strong. In particular, we map the risks internal, external and combination of both. This work seeks to map evidence that the housing bubble in Brazil and there is at an advanced stage.

Divided the work into 7 sections, besides this introduction (section 1): section 2 presents the theory of price bubbles whatsoever; Section 3 reports the American bubble that burst in 2007/2008, section 4 reports the internal antecedents and external to the formation of the housing bubble in Brazil, section 5 presents the current stage of the housing bubble in Brazil, section 6 shows the risks internal, external and combination of both that can make a real estate bubble in Brazil stop growing and even deflate it, and finally, in Section 7 indicate, yet simply, suggestions and an agenda of proposals and studies for the construction industry in order to protect the industry from possible serious problems in the near future.

2. Theory of Bubbles

Defined price bubble of any kind and / or sector of the economy as a rapid increase in prices over the normal price historical or critical and in short time. As a result, at some point of time, there may be a deflationary phase, also said deleveraging phase. A bubble arises when several market mechanisms and human behavior force a correction of improper asset inflation. Under normal circumstances, the supply and demand evolve dynamically related to demographics, technology, productivity, income and prices of a given asset. Distortions between supply and demand of a good can result in incorrect assignment of prices by market. So we have diverse background to the formation of bubbles of any kind, namely: (i) derived price bubble of credit, (ii) price bubble derived demand above normal, (iii) price bubble derived from the supply; (iv) a combination of three. These are exemplified in background map of the different species of bubble, Figure 1. We take the normal trend, green line, as the average historical prices. The future value of an asset is expected to follow around this price trend, the absence of adverse shocks.

![Figure 1 - Map of the Different Species of Bubbles](source: D'Agostini(2013))

In price bubble derived demand, blue line, we have the theory of intertemporal choice of consumption that explains well the foundation bullish price. Here, when players decide to purchase many of the same well and at the same time end up causing the effect of transferring a significant part of future demand for the present. Anticipate future consumption, and by expectations of future consumption, end up compressing the purchases in a short period of time. This poor temporal distribution of consumption, so explosive, it
generates a price bubble derived demand. Consumption occurring at present is therefore less prone to generate consumption in the future, if there is population growth, increase in real wages, productivity and new technologies.

Price bubble in the credit derivative, red line, there is an additional component to the player's income buyer and / or seller. Here the interest rate of the system is a key factor over time because, mathematically, the more interest you will need more money in the future and, therefore, in a second phase, more inflation will be generated if there is a feedback loop of debt payments the system. Certainly the increase of credit on both the supply and demand side quickly generate upward price effect. The problem here is the quality of the credit, because this generates debts for payment in future moments, including a lot of times, with long duration.

The credit quality of banks depend on the irrationality of lenders in the market and also consumers who suffer from money illusion. By the first agent, the banks, the analysis of credit scoring in times of abundant liquidity is not followed so prudential and end to cede credit above the statistical threshold for consumers which has a budget constraint. Likewise, consumers act irrationally by taking one or more credits to simultaneously acquire various goods. And yet, consumers can not individually bargain for lower interest rates in an environment of debt accumulation.

Derived in the bubble supply, dotted green line, occurs by induction of provider of real estate, manufacturing, retail sellers, the misuse of resources because most do not realize that the future demand was compressed into the present. They therefore over-estimate demand, expand the inventory to sales at present, expand investment projects and providing end often offer a level significantly above the normal level, misled by dramatic changes in macroeconomic fundamentals. During the bubble supply, usually the technical result is a faster rate of exchange of assets, causing speculation. In real estate, the sale of land that was considered an input to production, can be a good example. In the phase of disinflation bubble supply, there is excess capacity that can not be sold in a short period of time. The result is a waste of capital. This is probably the most damaging consequence of such a bubble destroys the productive capacity and distribution of an improperly in a specific industry or the economy of a country. There is therefore a derivative of disinflation voltage behavior due to substantial oversupply. The result may even be enough to put suppliers in insolvency.

In Figure 1, the bubbles of demand, supply, credit, or a bubble of demand combined with credit bubble or a bubble of supply combined with credit bubble or a bubble of supply / demand to supplement credit at both ends part of consumption is transferred to this (region B), which is inflation of a sector above inflation usual economy. The adjustment towards the normal trend of prices and historically observed phenomenon of asset deflation occurs in the future time, limited by the region A.

Moreover, price bubbles are connected with evaluations dramatic upward classes of assets (housing, commodities, consumer durables, shares of companies listed on the stock exchange) and end at some point, for deflating macro and microeconomic issues combined. Market housing and durable consumption goods like cars, the disinflation process usually occurs by the derivative with respect to the debt financed and household indebtedness on income. The credit scoring used incorrectly (such as margin accounts for stocks above a desired threshold - in Brazil somewhere around 30%) is the catalyst fuel to inflate and then deflate bubbles by high debt and inability to pay the mortgage in the future. The higher the price, the higher the demand, because, paradoxically, ensures participants that future reassessments are expected. Information asymmetry becomes common.

The situation changes completely during the disinflation of assets, where even the most prudent consumer of such asset may have difficulty in obtaining credit. The credit, so abundant in the expansion phase of the bubble becomes very short during the deflation phase. The tight credit during deflation of the bubble
occurs because the default of loans and / or default occurs, rising business risk. Including credit for a particular asset class may be stalled for a long period. Figure 2 shows theoretically 4 phases of a bubble of any kind.

The first phase, called the stealth phase, is the phase of the smart money. Business opportunities are detected, from a set of measures implemented by the central government to foster the growth of an industry. In phase 1, the price of an asset any remains, on average, around the historical price key. The second phase, called the awareness phase, is the phase where big institutional investors enter the market seeking investment of funds in the financial markets and capital through launching financial products like equity, derivatives and / or debentures as liabilities. The price of the asset starts to peel off on the price history.

**Figure 2 - The four phases of an asset bubble of any kind**

Phase 2 is a phase of conscious investment in attracting investors bidders species bears within the state of mind or spirit animal, a la Keynes (1936). At this stage there is small portion of investors speculators. The production and supply are magnified with higher frequency compared to previous periods. Occurs the first sales phase mass that feeds back the price system and also the level of attention behavioral seller and the buyer are low with respect to future risks. The third phase, called manic phase, is the phase in which prices go up really quickly and in short time. The price is well off strongly critical of the price observed in past periods. In phase 3, institutional investors can attract mass audiences for some (s) kind (s) of thrust (s) as the expansion of credit, the income policy of the government, the incorporation of derivative products in the financial market and ensuring behavior given by the seller to the buyer that the market is excellent and will grow considerably in the next periods. In phase 3, the agents microeconomicamente plaintiffs end up being deceived.

There is greed for business to grow and multiply rapidly to generate returns promised to investors obtained in phase 2 and also to the producers in the market. Existing credit expansion and rising incomes, the euphoria of consumers can continue to rampantly contagious effect on prices. Consumers themselves, on the demand side, realigned the system because there is a component of greed, money illusion and the observation that prices skyrocket. There are opportunities to earn quick gains in the environment in which prices rise uncontrollably.
Initially, in phase 3, the applicants cost to understand why the price goes up quickly, because the supply of credit, rising incomes and increasing the supply of good. The excitement takes hold of both sides of both the offeror and the applicant. Here another phase of product sales are earned. At the end of phase 3, there is a price paradigm, called the new paradigm. The suppliers and demanders are questioned on the subject "rising prices." The questioning of prices arise because of past periods, even within the phase 3 training price bubble, there were very high profit margins of the offeror or return to the capitalist rentier financial market, compared with other financial assets.

Questions on pricing paradigm are often found in conversations between suppliers and demanders, the day-to-day, namely: "Prices continue to rise strongly in the same magnitude as in previous periods?"; "How high prices will continue to rise?" , "What is the maximum price", "prices have risen sharply and are too expensive to be true?"; "Prices will settle at the level currently observed"; "Because the speed of sales on the stock greatly diminished quickly if the economy is in full employment or near him? ". The end of the manic phase, called new paradigm, reveals a different behavior of economic agents in relation to past periods contained in the same phase. The behavioral change indicates that there will be adjustments within a period not very distant, since the prices are too high. At the moment new paradigm, the end of phase 3, the prices do not grow as fast as previous periods, stop growing and become stable and a certain level.

The fourth phase, called the blow off phase of price, is the phase of the disaster macroeconomic prices. There spreading chain of problems caused by rapid increase in prices of one or more sectors to macroeconomics. In phase 4, the behavior of concern emanates maximum for governments, investors, applicants and bidders. Also, in phase 4, there may be bursts bubble weak, medium, strong and very strong as the level of leverage in the industry, consumers and the economy as a whole are.

The movement disinflation depend heavily on prudential measures a central government takes during phase 3, just before its completion. The government plays a crucial role in economic policy measures to contain the spread of the crisis installed in a particular sector. The chaotic state of asset deflation settles quickly according to the kind of bubble identified (credit, offer, demand or combinations). There is even a contagion effect to other sectors of the economy, unemployment and the sectoral limit the economy emerge quickly widespread unemployment. A mass of workers fail to honor commitments of debt. Renegotiations are extremely harmful to banks that gave loans. The financial market and capital, if any derivatives products end up with part of the toxic products and the lack of dynamism of a particular sector or group of sectors, credit dries before filling and migrate to other forms of investments slowly and unevenly. There fragility financeira la Minsky and the market in which deflation occurs it takes a long time to restore. Including, depending on the leverage and later the deleveraging process, the price of certain products in an industry eventually even falling below the historical average. Several companies are idle. These companies are dormant and / or suffer the solvency fixed cost structure and cost of credit established to offer products, widely accepted in phases 2 and 3.

3. American Real Estate Bubble

This section will try to understand the real estate bubble in the United States, before the four phases of the bubble described in the previous section. Seek to link the American bubble burst with the start of phase 3 of the housing bubble Brazilian (section 4). It is argued that the immediate cause of the crash of the housing bubble in the U.S. residential sector, in 2007, was the 2008 financial crisis. The bursting of the U.S. housing bubble was caused by the widespread acceleration of loan delinquency, translated immediately to a depreciation of the value of active safety of products derived from the real estate known as Mortgage Backed Securities (MBS). After the price spike in 2006, the real estate market in many U.S.
states began to decline sharply. Demyanyk (2008) and Demyanyk (2009) show indeed a strong link between depreciation in house prices in the United States and the fulfillment of residential mortgages.

Demyanyk (2008) explain that subprime mortgages began to get very risky since 2001. This risk, however, was masked by the rapid appreciation of housing prices because it allowed to terminate the old mortgage and lead a new mortgage through refinancing and new payments, higher than previous periods. Only when the payments of cash flows of mortgages have become expensive for the consumer, with returns zero or negative, the rising costs of refinancing, there was room for a spectacular pattern of very high rates of default, aberrant and abnormal in the United States, from mid 2006 to 2007. The microeconomic problem resided in the rate of growth of income of American families over the rate of credit growth. From 1998 to 2007, the growth rate of income of the American worker and the rate of credit growth were positive, but the rate of growth of labor income rose much less than the rate of credit growth.

The explanation of the financial crisis of 2008 based on the fall in property prices is only one factor. Besides the relative income growth and credit growth on income, the fall in house prices in the U.S. and the collapse of the financial crisis occurred as part of a larger set of events, all linked together, primarily explained by micro and macroeconomic factors. In this respect, the U.S. housing bubble was derived largely by (a): (i) easy access to a large amount of liquidity as a result of active monetary policy of the U.S. Federal Reserve, expansionary fiscal policy through public spending and income American worker growing less than the rate of credit growth, (ii) the innovations observed in engineering financial products, (iii) major rating agencies failed risks and polluted the financial market, (iv) poor supervisory rules and regulations financial market and capital combined with models of liquidity and capital adequacy for banks, according to the Basel II agreement, and (v) the behavior of American families who lived the phenomenon of money illusion, irrationality and euphoria.

3.1. Access to a large amount of liquidity

The decisive problem for the expansion of the real estate prices in the U.S. was the reduction of the interest rate the Fed funds rate of 6.5% pa in 2000 to values around 0.75% pa to 1.5% pa between 2003 and 2004. With expectations of low interest rates in the years after 2002/2003, American families increased the number of mortgage payments negotiated with post-fixed interest. In 2003 and 2004, the U.S. increased their spending in parallel with interest rates still low. Few months ahead, in the middle of 2003/2004, interest rates in the U.S. market began to rise in order to increase the funding by the government. Here, the upward movement of interest rates after 2003 was problematic because American families were indebted to the mortgage payments on floating-rate interest.

Given the upward movement of interest rate contracts microfundamentados U.S. and post-fixed in interest rates, the housing market has suffered a wave of retro-feeding bullish price for refinancing by the same banks foreclosed home earlier. At the same time, families began an unprecedented process of debt fast on the actual income earned, causing the movement of dynamic optimization from 2006/2007, when the great mass default. In 2006/2007, there was no technical support in credit scoring for the growth rate of the worker's wages grew less than the growth rate of consumption via debt thus generating chaotic motion of default.

3.2. Innovations observed in financial engineering products

At the end of the 90s and the beginning of the last decade observations were numerous innovations in financial engineering. New instruments and derivative financial products such as collateralized debt obligations (CDOs), asset securitization products such as Mortgages-Backed-Securities (MBS), other derivatives and debt instruments issued by credit banks were duly issued as a novelty in the market.
financial and capital. These products were purchased by the ease financial market conditions, risk, liquidity and return.

The active safety, MBS, which are a set of packaged mortgages that create a stream of payments over time to its holders, assisted in understanding the serious liquidity problem of investment banks in 2008. MBS payments occurred because there were a chain of payments and receipts, payments for which are extracted by the services of interest and flow of debts incurred by borrowers of home ownership. If the borrower does not honor the commitment and collateralized default exists above a certain level, the effect chain and / or Domino spreads quickly to other agents embedded in the model and it holds such products.

As there has been exponential growth in the nominal market value of all MBS issued between 2002-2007, the strong correlation with the real estate prices (which only went up) and the expected appreciation residential collapse in prices this financial product, justified as an indication of the money bubble in the financial system. The detail is that MBS could dramatically amplify and spread rapidly to all types of markets (money, bonds, stocks and real estate around the world), the size of the U.S. housing bubble burst. Sornette, Woodard (2009) comment that the CDOs (Collateralized Debt Obligations) grew from $ 150 billion in 2004 to about $ 500 billion in 2006. Due to excessive optimism, the cumulative nominal CDOs grew to 26 trillion dollars at the end of 2007. CDOs generated great returns for investors in the U.S. and around the world thanks to the effect of "chemical reaction called illusion" caused by a wave of innovation in financial products sold to "minimize the risks of default", diversification distance and socialization of returns.

Innovations in engineering financial products include CDOs, other derivatives and debt instruments of loan. These products are widely purchased by insurance companies, mutual funds, unit trusts, investment funds, commercial banks, investment banks, pension fund managers, private banking institutions. As the CDO's and MBS's are derivatives of payments at the end of origin by borrowers of home ownership, when the default rate soared, deflation estate began, and in 2006, holders of CDO's and MBS's began to suffer rapidly heavy losses. As a result, many financial institutions who hold positions of minimum capital requirements, a la Basel II, found themselves with insufficient equity capital, leading to bankruptcies, broad processes of mergers and acquisitions or redemptions of financial firms (eg Citibank) and not financial (eg General Motors) by governments..

3.3. Risk rating agencies failed

There was failure of rating agencies to consider risk roles derived from the U.S. housing market grade AAA or AA, both with low default risk and investment grade. Thus, CDO's, MBS's and mortgage-backed derivatives of the U.S. housing market were largely purchased by investment funds conservatives such as pension funds and insurance companies with low risk exposure. There was no transparency of credit rating methodologies with greater precision the degree of risk of financial products created by financial institutions. The risk rating agencies gave AAA credit notes for the main MBS sold, and these sometimes exhibited increased default rates than expected.

To provide the classification of a given CDO or MBS, the major rating agencies have used quantitative statistical models based on Monte Carlo simulations to predict the likely default probability for the underlying mortgages and derivatives. Vasiliki-Veldkamp (2009), for example, show that the problem is that the odds patterns fed to the calculations were based on historical default rates derived from the years 1990-2000. By doing so, statistical models a la Monte Carlo were very inaccurate because not captured by time series past, the movement actually occurred years later, ie, the possibility of a global collapse of the housing market and the subsequent strong correlation with the default. The big problem is that the new financial instruments, modern complex by their nature, had not in previous periods any "benchmark" practical and could negatively or positively impact the global financial system.
Another situation that occurs today: the risk rating agencies are for-profit companies. Thus, due to the excessive length of revenue goals, maximizing consulting fees, or because the issuer of the financial product could be buying agencies to "win" a rating of better risk, there are still problems for the global financial system and have not yet no specific solution. Vasiliki-Veldkamp (2009) show that there may be incentives to bias credit notes disclosed by risk rating agencies. There may be manipulation and classification of financial assets in order to affect asset prices. Even sometimes buyers / sellers of assets are aware of the games played by the financial product issuer and rating agency.

3.4. Supervision and regulation of financial markets

According Poser (2009) the decline in regulatory effectiveness and enforcement began four decades ago by the inability to pass legislation on the derivative products of the financial system. Poser (2009) comments that Alan Greenspan, former Fed Chairman and supported by Treasury Secretaries Rubin and Summers were convinced by the U.S. Congress to make the fateful decision not to approve any legislation to oversee the development and use of financial derivatives. This fact led the trajectory of U.S. real estate bubble burst and the ensuing global financial crisis in September 2008, on the occasion of the bankruptcy of Lehman Brothers. After being a supporter of the effectiveness of self-regulation of financial markets, Greenspan (2007) writes that the bankers were the villains. The results of banks in terms of profits depend increasingly on their ability to transact assets and no more generation and load assets. Another situation is the radical change in the profile of banks that become organizers and originators of financial assets (credit card, loans to buy cars, mortgages, securitization), which are sold in the capital markets for non-bank institutions (pension funds, insurance companies, investment funds and hedge funds), which are still poorly regulated.

Reducing the role of banks in monitoring and evaluation of credit quality is also a serious problem. Hedge funds and lack of regulatory limits. Hedge funds or hedge fund aims to increase the income of the fund through transactions structured, or in other words, perform operations to protect other operations contracted. The classical operation of a hedge fund is to buy papers with good prospects and make hedging or protection against negative fluctuations in prices of securities by selling short other asset positions where prospects are worse. Profits are extraordinary when the strategy is confirmed. From the point of view of legislation Basel II (BIS, 2006), hedge funds can make any type of financial transaction, at any time, in any market, anywhere in the world and without restrictions on the amount of resources. Inspired by the model transformation of mortgages into tradable assets, MBS's the Government National Mortgage Association (Ginnie Mae), banks have developed new financial instruments, called structured financial products. These products made possible the secondary market for loans that did not exist (not loan had the attribute of liquidity). So the banks started to prioritize off balance sheets operations (derivatives) and create different types of special purpose companies (SPC), such as structured investment vehicles (SIV) for processing of their loan portfolios, thus reducing the capital requirements set forth by the Basel Accord (BIS, 2006).

3.5. Behavior of U.S. households

By behavioral phenomenon of money illusion, U.S. consumers, while making the refinancing of the property, not viewing that over time, the large rise in property prices, could reduce the purchasing power of nominal wages (if they are not corrected vis a vis the estate inflation), thereby preventing the honor installments over the duration of the financing. Also, to some extent, believed that prices would rise irrationally and without any kind of dynamic behavior of downtime, maintenance of price or readjustment downward movement by deflation of assets.
4. Background of Property Bubble

The start of phase 3 of the housing bubble in Brazil, mania phase coincides with the beginning of phase 4 of the U.S. real estate bubble, blow off phase of price. Between 2007 and 2008, it is observed that real estate prices in the U.S. fell by around 31% between 2007-2009. In the same period, the price of real estate in Brazil continued the upward movement and faster than in previous periods. The period blow off phase of price in the U.S. housing market and the beginning of the manic phase in Brazilian real estate market is shown in Figures 3 and 4, when comparing the General Index of Commercial Real Estate Market in Brazil (IGMI-C) with Shiller 20 Index of the residential real estate market in the United States, both base 100 in 2000. Comparing Figure 3 with Figure 2 (Section 2), phase 3 of the American bubble starts in 2003/2004, just at the beginning of the upward movement of interest rates by the Fed and the phase 4 starts in 2007 with the phenomenon of deflation and real estate default of payments.

Figure 3 - Evolution of Shiller Index 20 in the U.S. and in Brazil IGMi-C, base 100 = 2000

Source: Bovespa e Bloomberg.

In Brazil the bubble of demand, supply and credit, combined between 2007-2012 forming stage 3 or mania phase of the housing bubble. The price of property after 2007, measured by IGMC-I take off a lot of different price indices in Brazil, as the IPCA, INCC and IGP. As Figure 4, Note the upward movement of prices of real estate well above inflation usual / basic economics. The C-IGMI fits very well to a polynomial curve and exponential curve, while inflation indicators IPCA, INCC and IGP fit well to a linear curve. In Brazil, the beginning of phase 2 of the housing bubble coincides with the National Financial System Reform, even in 2003. In this phase, from 2003-2007, there is also the opening of capital from various builders and / or developers in the financial market. In phase 3 of the Brazilian real estate bubble, mania phase, we see the existence of behavioral phenomena of euphoria and money illusion consumer real estate and construction sector. In phase 3, also, there is expansion of the real estate purchase by the public funded in part by the implementation of the Federal credit program for the sector called "Minha Casa, Minha Vida" with large duration and lengthening of debt maturities (up to 35 years). In the external sector, there is a liquidity trap in the United States, Japan and Europe with large print programs monetary operations with long-term securities (twist) and crisis of sovereign debt in the Euro zone.

Also in 2011 and 2012, the paradigm of prices is more evident in the Brazilian real estate market. For example, the classic questions about the investor the opportunity to buy or not to buy real estate is more evident, as well as articles written in major newspapers of the country. In 2011 and 2012, the rate of sales on the stock slows down in several cities in the country. Construction projects related to financial markets and capital are shelved. There is sale of land by builders by wide margin spread between buying and selling in order to make cash flow. In the first three years of phase 3, between 2007/2009, a mass of land was acquired in various capitals and the interior, in order to have an input to production. Also observed in Figure 4, there is an inflection point in the curve of prices of real estate in Brazil, from 2007/2008. There
is a rapid increase in prices in short period of time and a greater detachment curve estate prices in relation to an imaginary line average between 2000-2007 and also in relation to the inflation indicators.

**Figure 4 - Evolution of Inflation Indicators IGMI-C, IGP, INCC, IPCA in Brazil, base 100 = 2000**

![Figure 4 - Evolution of Inflation Indicators IGMI-C, IGP, INCC, IPCA in Brazil, base 100 = 2000](image)

Source: D’Agostini (2013).

But what are the reasons for the contamination of the Brazilian real estate sector with high property inflation seen mainly from 2007/2008 until 2012? To understand this phenomenon we need to understand (i) as the U.S. housing bubble burst in 2007, culminated in the fall of Lehman in 2008 and spawned the monetary transmission effect to the world, (ii) what happened in the Brazilian economy in the period in which the bubble American formed and what happened after the 2008 crisis, (iii) the interpretation of the financial crisis to lead U.S. monetary policy through the Federal Reserve (FED) and the interpretations of the crisis to lead the Brazilian monetary policy by the Central Bank of Brazil (BCB), (iv) the programs of the Brazilian government with respect to labor income and the evolution of indebtedness income through credit lines. Therefore, the background to the formation of the housing bubble in Brazil are related to the internal phenomena of the Brazilian economy and the problems faced by the United States during the fourth phase of the U.S. housing bubble.

The first antecedent to the formation of the third phase of the housing bubble in Brazil is the monetary policy of the Fed and "liquidity trap" after the crisis of the U.S. housing bubble compared with the monetary policy of the Central Bank of Brazil (BCB). D'Agostini (2013) comments that the large difference in conduct monetary policy caused imbalance and financial fragility with movements in the Brazilian real estate market financialization (occurs also in other emerging countries - see Figure 13, section 5). According to D'Agostini (2013), after 2008 in Brazil, the rate cut was gradual and the U.S. interest rate cut was incisive and dramatic. As shown in Figure 5, the Selic rate moved up 13.75% (Jan / 2009) to 8.00% pa (May 2013), down 5.75 basis points or 41.82%. In U.S. interest rates fell from 5.25% to 0.25% per year in a few months (down 5 basis points), approximately 95%. Expanded so the arbitrage between interest rates in Brazil versus USA economic crisis environment.

The second antecedent who assisted in the formation of Brazil's real estate bubble in the exchange rate, Figure 6. The depreciation of the dollar (2009-2012) and before the real capital inflows in the country, with initially modest capital controls, aided the upward movement of property prices. International
investors, given the large arbitrage interest rates and favorable for investments in Brazil have significant returns, both by interest and by partial exchange.

Figure 5 – Fed Funds Rate versus SELIC in %

Source: Central Bank of Brazil e Federal Reserve.

Figure 6 - Exchange Rate U.S. $ / U.S. $ and £ / €: training aid housing bubble after 2007/2008

Source: Central Bank of Brazil

The third antecedent to the formation of the housing bubble, coupled arbitrage interest rate and the depreciation of the euro and U.S. dollar against the real, especially after 2008 is the risk rating of Brazil (Table 1). An improvement to investment grade in April 2008, just when the United States faced a number of difficulties in real estate and in macroeconomics, just before the bankruptcy of Lehman Brothers. Ie, skepticism aside, is that Brazil has improved its economy and Brazil approached more of the problems facing Europe and the United States?

Table 1 - Evolution of Brazil's credit rating by rating agencies risk

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The fourth antecedent to the formation of the housing bubble in Brazil is increasing the rate of growth of domestic consumption based on credit for the mass of workers who left the poverty line / misery and also the Brazilian middle class. The problem was the boost in credit that affected the response in household consumption. The credit relatively plentiful and relatively cheaper than previous periods, coupled with the phenomenon of money illusion and consumer euphoria quickly boosted the price of real estate. The money illusion in Brazil occurred because consumers, to take credit and closing contracts for long-term financing of the property, not viewing that over time (5-35 years), there may be chances of unemployment and inflation (including no chance increase unemployment and inflation between 2013 to 2017), which can decrease the income and purchasing power of nominal wages, if they are not corrected for inflation vis a vis real estate, thus preventing the honor installments over the duration of the funding, now with longer terms than in previous periods.

The behavioral phenomenon of euphoria and irrational consumer in Brazil occurred because there was a population with unmet demand and without access to consumption. With the increase of the mass of workers, with the programs income distribution of government, with the fall in unemployment, with the increase in real wages above the basic inflation and credit expansion by financial institutions, Brazilian families into debt because the plots fit in the "pocket" without elevated concerns with numerical calculation and / or economic crises of any kind. The euphoric and irrational behavior of consumers, the intertemporal choice of consumption at present and given that Brazilian families, in general, have little savings over the income they receive, depend fundamentally employment to honor future debts incurred now, and maintain level consumption to generate product.

Microeconomamente, begins the process of greater involvement of workers' income to pay debts, Figure 7. In 2005, the total annual real income earned by the employee, there was a commitment of the income of about 18% with debts contracted national financial system. Today, in 2013, families are almost 44% of debt on the real annual income earned and still paying high interest rates of the financial system, despite the decline in interest rates in recent years.

It should be noted that: (i) the indebtedness on income has greatly increased in 8 years, in the context of historically low unemployment in Brazil (5.6% in April 2013, compared to 12.5% in April 2004), (ii ) in the United States, when the housing bubble burst in 2007, the indebtedness of American households was very high and unemployment low and the economy was around 4.8%. Keeping the pace of decline in the growth rate of debt on income in Brazil, Figure 8, currently around 4% (still very high) in 2013 would have one income commitment to honor commitment to the national financial system close to 46% in 2014 and close to 51% in 2015, close to 56%.
Figure 7 - Evolution of depreciation, interest, and debt services of Brazilian families with the financial system, in % annual real income earned, 2005-2013

Figure 8 - Growth rates accumulated in 12 months of household indebtedness on income, the payment of interest on income, debt service and income on debt repayment on income, 2005-2013

Another interesting precedent for blister formation is the expansion of credit over GDP, total credit to individuals and housing (Figure 9). Although participation of credit to the real estate industry's total loans is low, close to 6.5% in 2013 - but it is growing fast - and second-Paula Correia-Oreiro-Basil (2010) and D'Agostini (2010) there is strong expansion of credit over GDP. The credit was 23% of GDP in 2003 and in April 2013 is 53.5%). The strong expansion of credit over GDP means that, both for families or a single sector and in a short time, as the economy still operates with high interest rates (despite the gradual decline in recent years), there will be increased borrowing of economic agents, including the families who purchase credit to finance cars, buildings, appliances, electronics and consumer non-durables. After 2003, the growth rate of credit expansion is greater than the growth rate of GDP. Also, the growth rate of household credit is greater than the growth rate of income.
Another important factor is the relationship unemployment, income growth and real estate inflation. Despite the drop in the unemployment rate over the years - in April 2013 at around 5.6% - the growth rate of average income of employed persons (inflation of labor) did not follow the growth rate of real estate prices (inflation of real estate assets) that, in general, are funded in the long term. As the growth rate of wages of employed persons did not follow the growth rate of inflation of real estate, means that there is a loss of purchasing power of the worker's salary in relation to property assets over the years. The gap between inflation worker income and inflation of real estate, which increases every year since 2003, so far, is masked by the credit. This, in turn, feeds back the money illusion of consumers. In seven years, the National Index of Construction (INCC) grew 73% and revenue growth of average real effective wages of people employed full Brazilian grew only 24%.

Thus, between 2003-2010, but especially after 2008, considered the start time of the irrational price, with employment and nominal wages relatively higher than previous periods, the money illusion took hold of the population had access to mortgage credit and also other credit lines as cars, appliances and credit card. Keeping the same dynamics, there is not any long-term equilibrium between the INCC average yield effective real wage of employed persons (see Figure 10). The real estate market has inflated their prices relative to wage inflation and that there is a mismatch, an hour is masked by credit expansion and families into debt in the financial system with the acquisition of various types of consumer durables and non-durables.

Interesting account which complements the relationship wages versus inflation Inflation construction, Figure 10, is the number of months of working with typical average salary needed to purchase 1 m². Figure 11. In January 2008, in São Paulo, it was necessary to work 2.9 months to buy 1 m² and Rio de Janeiro, 3.8 months. In November 2011, in São Paulo, this indicator increased to 5.99 months and in Rio de Janeiro, 7.49 months. The salary increased by four years, but the purchasing power of wages of workers in relation to real estate prices halved. Other cities in the country are also a trajectory of loss of purchasing power of wages in relation to 1m², namely: Curitiba, Porto Alegre, Belo Horizonte, Recife, Vitória, Manaus, Florianópolis, Salvador, Natal, Fortaleza and Brasilia. In other capitals and cities of the country there is also evidence that this phenomenon exists. There are indications that there is mismatch between wages versus housing prices and therefore the housing bubble and the expansion of prices, during phase 3, is being sponsored by the then fed credit (2008-2013).
After 2008 in Brazil, the irrationality of the market, information asymmetry, greed and animal spirits, *a la Keynes*, created a speculative move extra homeownership. Agents buy estate in the plant at a cost that they believe to be relatively low, then sell at a higher price and outside the fundamental price in the future. Again the money illusion, now with unreasonable expectations that prices will always rise, feed back the real estate system. Until now, the economic agents who have invested in this modality had no surprises regarding their expectations of gain. This fed and still feeds the inflation of real estate, with 2013 one year with inflated price or price bubble. The price of real estate in 2013 is an illusion because the rapid increase in prices occurred between 2008 to 2012 is a chaotic state and unbalanced in the context of abundant credit and expensive reality of the wages of the population and household indebtedness to the domestic financial system.

Between 2008-2011, the agent became more routine economical to buy the property at the plant just to resell it a year or two later, certain that he closed the deal, the only possible trajectory for the price is the chaotic state positive inflation estate. For those who buy real estate in 2012 and 2013 will not have the same profitability. Over the years, the buildings are still being funded and they are still in the expansion
phase. But funding focuses on the current price is not the fundamental price, ie, the current price contains a contamination “bubble” price. Thus the "new consumer" real estate funds a well contaminated by “bubble” price. The rate of profit or return the builder and real estate investors were high relative to other financial assets and nonfinancial after 2008.

How to rent to the price of the asset property, Figure 12, we can say that the return has been decreasing over the past years. There was inflation in rents, inflation was the real estate asset, but first grew less than the second, and the monthly return for many months, even lost to savings accounts. Also it should be noted that inflation in rents increased more than inflation in wages of Brazilian workers, meaning that there will be future restrictions to the continued inflation of rents, unless wages are fixed vis a vis. As the rates of growth of rental prices - inflation - rose more than the growth rate of wages of employed persons in Brazil, once again we have that there may be an increase in household debt relative to wages they receive. And the expansion of credit, again, is fed back to the engine house prices. Translating the not too distant reality, real estate prices and rents are maximized and the quoted prices than the population can not afford the current salary levels and the intertemporal consumption choice they made. It is the final stage of Phase 3, called the new price paradigm. This will make the prices, many of the properties, as rents, wages have or own dynamic adjustments. The first two adjustments to price maintenance or down and the second with upward adjustments. At some point there will be a balance adjustment.

Figure 12 - Rental Price on Assets Property: the return of the Estate Assets in terms of rent, 2008-2011


5. Bubble Real Estate in Brazil

Emerging countries in UN reports (2010,2011) and IMF (2010, 2011), Brazil is among the countries that need to worry about the process of expanding the real estate bubble and asset bubbles in financial markets. The phenomenon of widening interest arbitration in relation to interest Americans, after 2008, also occurs in several countries and helped in the formation of housing bubbles and / or local credits, all theoretically in phase 3 of training.

According to the IMF (2010, 2011) on a list of countries, Figure 13, should worry too much about the phenomenon of bubble, derived from the U.S. monetary expansion. The Brazil tops the list of those countries which most need to worry about the phenomenon. In the evaluation of the IMF (2010, 2011) and UN (2010, 2011) the resources injected in rich countries during 2009 and 2010, especially in the United States and the Eurozone, have largely been exported and disposed to emerging countries that are capital
gains above the United States and Europe and with relatively lower risk than previous periods. According to the OECD (2010) there are indications that non-negligible portion of the money injected by the Europeans and Americans and they should circulate in local economies to tackle the problems of sovereign debt, would have been channeled into other emerging and developing. Still, according to IMF (2010) and some evidence suggests threaten strengthen an increasing tendency to create and increase asset bubbles in equities market, the real estate market in emerging countries and an appreciation of the currencies of emerging countries in relation to the dollar and the euro, namely: (i) monetary stimulus measures in the United States and Europe, (ii) the maintenance of a perverse interest rate earned on the Treasury bonds close to zero in the short run and the dramatic fall of the remuneration of titles U.S. sovereign long-term operation twist by calling (iii) the fiscal problems in developed economies, especially in the peripheral countries of the Eurozone like Greece, Ireland, Portugal, Spain, Cyprus and Italy, and (iv) rates Interest still high in developing countries, especially in Brazil.

**Figure 13 - Countries with real estate bubble in the world with well developed stage 3 and / or 4 starting phase**

Source: Adapted from IMF report (2011).

Brazilian families never funded so many buildings, cars and white-line as the four-year (2008-2012). The real estate industry has lived between 2008-2012, the best time in recent history. Banks discuss alternative resources to fund the expansion because the savings account may soon not have enough resources to maintain the growth of credit to the sector. Today, most of the money to finance real estate comes from savings (about 74%). However, the growth rate of savings deposits do not follow the growth rate of the real estate financing market. Here a question for future alternative funding real estate is: will financial institutions develop products such as "ABS" or "MBS" made in Brazil?

Correlate to this question, there have been some degree of legal certainty. Obtained with the change of legislation promoted in 2004, instituted the mechanism of liens that facilitates the repossess of property in case of default. Collateral for financial institutions, but of no avail if there is a massive problem in the coming periods, arising from the international front, national and / or combination of both. In Brazil, some measures in the fourth. quarter of 2010, called macroprudential measures, the recent cycle of falling interest rate Selic from the second half of 2011, the sharp decline in interest rates in 2012 of public banks (Caixa Economica Federal and Banco do Brazil), changes the rules of savings, capital controls most incisive adopted in 2011 and early 2012 suggest that the government is concerned with controlling the expansion and fate of the credit bubble forming loans and assets, household debt on real income earned and the likely problems that will come from Europe, the United States and China in the coming periods.

Interesting situation and assist in the process of deflation of real estate assets is the lengthening of financing for up to 35 years (as of June 2012). The stretch of real estate debt, which on average is almost
14 years (FIFE-ZAP, 2012), allowed the reduction of the monthly installments that somehow is related to the phenomenon of money illusion consumer real estate financing such asset even with high interest rates. The program "Minha Casa, Minha Vida", implemented by the federal government in 2009 had its contribution to inflate real estate prices, to increase the ceiling limit for funding in 2010/2011. Among the segments estate, homes financed by the "Minha Casa, Minha Vida" and serving the population with the lowest incomes is presented the highest inflation per square meter.

The increase in the purchasing power of the population and the rise of almost 40 million Brazilians to Class C could also be a problem a little further. These people were shopping, consumption via credit and intertemporal choice of present consumption. The growth rate savings class average was lower than the growth rate of consumption and this, in turn, was greater than the growth rate of wages. At first, the increase in the purchasing power reduced delinquency in the country while also spurred an increase in the rate of credit growth. Reduced the probability of default by the increase in the wage bill. Household debt on income was low (Figure 7) and now, the second time, 2012/2013, this indicator is worrying. Worrying because it is of paramount importance to maintain the same population employed. Worrisome because wages do not have the same growth rate in previous periods. The population, which improved income, increased the level of consumption and raised the level of debt on income will, in the coming years a severe test.

Maintaining employment, increase household income and improvement in Brazil's Gini coefficient, an indicator that income distribution; needs to improve a lot and faster if the country did not want to feel the paradigm of property prices, given as end of phase 3 of the bubble and the beginning of phase 4, deflation process. The Brazilian real estate bubble is felt by consumers who are looking for real estate. Overall, in late 2010 and especially in 2011 and 2012, if you make a questionnaire for the Brazilian population plaintiff of property, the likely response is: (i) is very expensive, (ii) wages do not keep pace of price growth property, (iii) purchases are made because credit is still sick and lengthening of payment.

This would be the phase of the paradigm of prices, ie, the consumer begins to realize that real estate is too expensive for the country's reality. This paradigm will generate a phase adjustments in the sector. Sales velocity falls, the excess supply, something that began to occur in 2012 in various regions of the country. Today, given the current rates of default of the financial system, household income, indebtedness on income, unemployment and interest rates still high, if there is a reversal of the unemployment rate from the current level of 5 8% to levels close to 7% to 7.5%, and the concrete situation that can occur if there is a new global financial crisis, Brazilian families have serious problems to honor commitments, as they are now indebted. The real estate sector will further reduce the speed of sales and discount opportunities will begin to appear more frequently. It is difficult to measure when such a situation occurs, but between 2013-2017 there is a perception that this may occur if the Brazilian government does not take prudent measures and control for real estate.

Another serious problem for the industry is the lack of labor because there are many buildings at the same time and rising wages in the sector: plasterer, carpenter, mason and other service items were increases well above the national average wage. There are problems in the delivery of materials. With the lack of manpower and delays in specific materials, caused by the housing boom, the number of records in PROCON various regions of the country increased considerably because there are delays in delivery works so above normal. With rising costs and the recent lack of dynamism for passing prices to retail real estate, construction companies need to manage the high cost of production inputs and labor. The land, which were seen until recently as inputs, these various parts of the country are obstacles to building projects by the high cost of m2 and the difficulty of passing on to the consumer. Even the price of the land sometimes prevents buildings because the transfer price for the next period will be more difficult for the relationship wages inflation, inflation of the property, interest still high and higher household debt with the national financial system.
Several construction companies listed on the São Paulo that launched IPOs to capture the great mass of money for various real estate projects, and so widespread entered the second phase of the housing bubble in Brazil. And during the third phase of the housing bubble in Brazil during 2011 and especially in 2012, several construction companies listed on the stock exchange sell land to cash flow and minimize financial problems. Many construction companies listed on the stock exchange are problems with profitability. The high gains between 2008-2010 revert strongly in 2011 and 2012. Among the segments in the market of the stock exchange (Bovespa), in 2011 and 2012, the construction sector was the most affected. Great construturas listed on the stock exchange lost much market value and stock prices plummeted in 1 year.

6. Why Real Estate Bubble?

We can say that we are in a housing bubble in Brazil, in phase 3 and very close to the moment of new paradigm, correlated primarily by increasing liquidity in the global financial market. Rising prices in the Brazilian property market, Chinese and South African and other countries (Figure 13) describe a situation that is similar in terms of "liquidity" of what happened in the U.S. (1998-2008), but also in Spain, Ireland and Portugal (deflation from 2009-2012). Every bubble, regardless of the industry in which they form, has a cause: increased money supply, especially when this increase is the reduction rate constant interest rates and for long terms (developed countries).

With a possible new international crisis arising from pressures in the sovereign debt market of European peripheral countries or the lack of U.S. economic recovery, increases the likelihood of credit market stop growing or grow at lower rates we observe today, meaning, therefore, the lack of support for the continuity of the rising prices of real estate assets in Brazil. The question is: when the Brazilian real estate bubble will cool down or get deflation? When you enter in phase 4 of the housing bubble? There are risks internal and external combination of both for this to occur. It is a fact that increased the odds of a new international financial crisis, arising from indebted peripheral European countries and/or the United States. It is a fact that Brazil will face trouble cointegrate the growth rate of wages of employed persons, the growth rate of the price indices of real estate, the ratio of the rate of growth of credit in relation to the wages of workers and increasing household debt middle class in relation to their incomes.

When a bubble generated by the expansion of money and/ or credit begins, this expansion must at least maintain the same rate or to accelerate to keep the bubble forming and growing. Any more prolonged slowdown in credit expansion will cool the bubble, given the wage rigidity in the short term. Thus, if an economy suffers strong credit expansion during short time, which is the case of the Brazilian economy, and this expansion gave rise to one or several credit bubbles in different sectors, this expansion will have to give rates increasing to prevent deflate the bubble. It is not necessary that the credit contract it, just that it will grow at a slower rate and the bubble will inflate or even begun to deflate. Alternatively, just have a higher unemployment in the next period (from the current 5.8% to 7.5%, arising from the importation of the international financial crisis in the near future to then increase the default of those who are paying their installments in easy installments (usually here in Brazil the fixed rates).

In the U.S., the bubble began to form in 1997. With the recession that began in late 2000 and the September attacks, the basic interest rate of the U.S. economy fell from 6.5% to 1%, remaining at that level until mid-2003/2004, when the Fed began process of raising interest rates to reach 5.25% pa in June 2006. During this time interval, with exceptionally low interest rates, there was the largest expansion phase of the housing bubble in the U.S. sub-prime market. The interest rate remained at 5.25% from June 2006 until the end of 2007, exactly when the problems in the sector were explicit. Was the rise in interest rates that the Fed dried up credit, increased the risk of borrowing by households on wages and burst the American bubble. Therefore, relying on the assumption and the antecedents discussed in this paper, there is a Brazilian real estate bubble in open formation and expansion in phase 3 4 possible.
We can say that the Brazilian real estate bubble, there will be cooled and bigger problems between 2013-2017. She will be cooled or even burst while the Fed keeping interest rates in the U.S. economy close to 0 (predictions 2014 at 0.25% pa) Allied policy of the Central Bank of Brazil to maintain high interest rates, although successive declines occurred in the last year, now at 8% pa and still very high! On the international front, we have the following high risk:

- United States: (i) liquidity trap with very low interest rates in the short and long term, (ii) twin deficits (Balance of Payments Deficit Fiscal Deficit x) with dynamic inconsistency (iii) unemployment nearing 7.8% and still at high levels, (iv) possible new crisis in real estate prices (effect W) by delays in judicial foreclosures (v) strangulation of the health system, (vi) low financial sector regulation and (vii) exposure of American banks in the European sovereign debt;

- Europe: Eurozone stands before the heavy public debt crisis, no end date, with fiscal adjustments being deployed (falling wages, higher taxes, increased time to retire) the costs of high rates of rejection by the population (large stoppages and strikes, routine in recent months). Italy, Greece, Spain, Portugal and Cyprus will continue to present major problems, including the banking system. There are no definitive solutions and practical answers to the unprecedented crisis;

- China: major trade partner of Brazil, gives clear signs of slowing. This deceleration will certainly impact on economic activities of many countries, including Brazil.

In domestic front, we have the following high risk: (i) strong expansion of credit / GDP (even with low credit real estate), (ii) strong growth in household debt relative to their wages, (iii) the pace of wage growth in the last nine years has not kept pace growth of real estate prices and / or indicators of changes in prices of real estate as the National Index of Construction, the INCC (iv) the inflow of speculative capital arbitration arising from interest rate (the interest rate in Brazil is very high by the standards of developed and emerging countries) causes are likely to cambias more serious problems in the future, contaminated the level of employment. This in turn can increase the default of those who acquired credit and decrease the "euphoria" of buying a new well for the long term, (v) the tax reform need (to be revised and simplified), (vi) the strong rate Brazilian GDP growth, recorded in 2010, based on the increase of credit can not be sustained in the coming years by the lack of investment in gross fixed capital formation of domestic savings, the new cycle low dynamic consumption given the budget constraint that is committed to debt payments in the recent past, (vii) the exchange problem that impacts the price of real estate, (viii) greater odds of increased rates of delinquencies sectors such as the automobile that the effect chain, can also affect the real estate industry.

7. Outline of Proposals

This section aims to after naming the background to the formation of the housing bubble in Brazil and the possible risks eminent in the near term, name, albeit simplistically some proposals and research agenda for future implementations sector economic policy. Consider:

- Control of capital in real estate: perhaps it would be of great value to contain the housing bubble, deploy a tax "extra" on properties that are bought in the plant and that are sold during construction or shortly after delivery of the keys. Given the initial starting point of a building, the property sold before the next 5 to 7 years could receive over-rate in profit. Likewise, specific land in the process of buying / selling has high speed, should be over-taxed. Land purchased in order to resell in a short time, less than 3 years, for example, must also be over-taxed if the resale occurs effective;

- The Central Bank should rapidly decrease Selic interest rate and also the interest rate of financing of real estate. Here the government currently adopts measures to lower interest rates for loans, through their public banks, but interest rates are still very high for the term of debt financing.
• Consumers who buy real estate property in more than one least 3-5 years must pay a fee for over-purchase;
• Restrict strongly credit for people who have debts with automobiles;
• Readjustment of Urban Real Estate Tax (property tax) in Brazilian cities in relation to their market value. Today there is a big difference between the market value declared and actual amount paid for the property. The government should implement measures that correlate the assessed value of the property with the actual value of the property, not exceeding a certain value;
• Contain strong credit expansion on GDP, the expansion of credit in the financial system, reduce the indebtedness of households with macroprudential measures more forceful;
• Consider a way to obtain funding for the Brazilian real estate sector, in such a way that the market will expand and grow in a healthy way. Could even create financial products through studies of financial products that did not work in the world, such as MBS and CDOs, such that "one learns from the mistakes of others";
• Improve the policy of income distribution of the population, improving purchasing power of wages and worker's estate refinance hired between 2008-2012 with a lower interest rate.

References


