Report
DYNAMO 69
1.2011

Installments

Throughout this year, articles in the international press argued that Brazil would be headed towards a subprime financial crisis, similar to the one in the United States. As credit in the country has grown at accelerated rates in recent years, the red flag was supposedly raised by the "exorbitant" amount of privately-held debt. Published in top-tier newspapers, the stories resonated[1].

From our end, we have closely monitored the unfolding of the discussions. The subject is of paramount importance, not only due to the impact that such an event could have on the economy and, consequently, in our investment portfolio, but also because we have an important investment in Itaú Unibanco, a player directly involved in the issues surrounding credit in the country. Therefore, we think it is pertinent to write about the issue. Not only from the macro perspective, predominant in the analysis, but also from our usual micro bias.

Like other market participants who have had the opportunity to express their view, we disagree with the opinions articulated by the writers who started the controversy. The idea here is to synthesize and organize these comments and thoughts. To this end, we reproduce the good arguments from analysis already available, collect empirical evidence of various published studies[2], scrutinize the sources of primary data, inquire executives and experts, and finally distill all these impressions and information through the filter of our internal discussions.

Basically, the argument of the articles in the press is constructed as follows:

- In Brazil, the combination of a rapid expansion of domestic credit and of high interest rates produces the perverse effect of an excess of consumer debt service burden. Brazilians commit around 24% of their annual income to pay debts. In the U.S. financial crisis, American consumers "blew up" with a commitment of only 14% of income.
- With leading indicators of credit under stress, Brazil would theoretically be on the verge of a subprime crisis, similar to the one in the U.S.
- The system is heading for a crash as evidenced by the increase in non-performing loans, the best indicator of households' financial capacity saturation.
- The credit bubble threatens the soundness of our financial and banking system. Proof of this is the recent evidence that smaller banks are facing difficulties.

We find flaws in each of the above statements. In our view, they seem hasty inferences that don't resist a more careful analysis. Our initial idea was simply to refute them with some quick rebuttal points. We failed to do so. The text became too long and we decided to split the material into two "installments" in order to keep the standard size of our Reports. Thus, in this first part, we attempt to make a few comments about the nature of the American crisis, and then we draw a parallel with the reality of credit in Brazil. The next Report analyzes the foundations of stability of our banking system and finalizes updating our positive view on our investment in Itaú Unibanco. As the issues are intertwined, in order not to lose the reading sequence, we chose to delay the first part, so that we could send both letters together.

Credit there

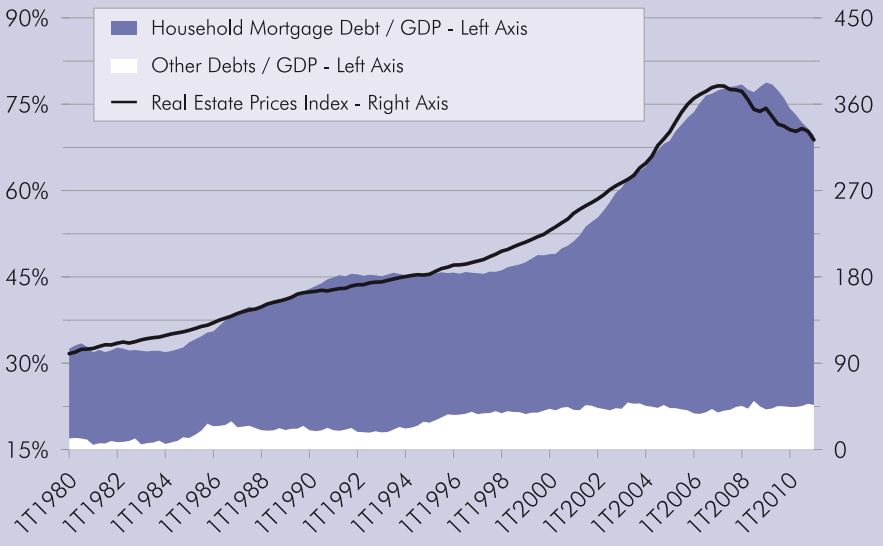
The thesis that the financial crisis in the United States was due to an unsustainable growth of household debt service burden is far from a consensus. Several recent analyses point to the sharp drop in housing prices as the main cause of problems faced by the financial sector. This is because credit growth happened due to lending against property. This model became hostage to the inherently self-perpetuating cycles of credit expansion and appreciation of the underlying asset. Rising real estate prices not only produced a wealth effect on homeowners, but also allowed them to extract a greater volume of loans from assets offered as collateral. As the value of the pledged asset appreciated, individuals had no problem in increasing their mortgage debt. Many even seized the opportunity to make a down-payment on a second home.

With the support of historical data, the widely-held belief at the time was that a drastic fall in housing prices nationwide would be an extremely unlikely event. Hence, it would be possible to reduce the credit risk by securitizing mortgages originated in different geographies and packaging them in a single product

1 *Marshall, P. Brazil may be heading for a subprime crisis. Financial Times, 02.21.2011, and Marshall. P., Rajpal, A. Brazil risks tumbling from boom to bust. Financial Times, 07.04.2011.*

2 *As usual, the full bibliographic references of the sources cited can be found on our website http://www.dynamo.com.br/narbibliog.asp*

CHART 1



Source: Federal Reserve, Dynamo.

to be sold on the secondary market[3]. Interestingly, in this case, the psychology of typical exuberant markets that "this time is different", was interpreted as "this time in no way it will be different" [4].

From this point on the story is well known: a spiralling house prices, inflated by a misalignment of interests of the agents involved in the origination, packaging and certification of mortgages, by a permissive behavior by some investors with little risk aversion, leniency of regulators, excess liquidity in the system with low interest rates for an extended period, combined with an unprecedented use of leveraged strategies. When housing prices began to fall, the underlying asset (artificial) used as collateral for the credit collapsed, and the wealth effect changed direction. The system moved to default and quickly contaminated other market segments.

As mortgages account for most of the debt of American households, there is a clear correlation between the outstanding debt of households and the behavior of home prices over time (Chart 1)[5].

More intriguing and less talked about is the fact that while the total amount of debt grew wildly in the period preceding the crisis, financials flow statistics, namely household's debt service burden showed little variation[6]. Looking from one end to another, in 1980 the outstanding debt of U.S. households to GDP was 50%; it currently stands at 92%. In the same period, the percentage of income required to service financial obligations went from 16.04% to only 16.39%. Hence, a significant growth in debt and almost negligible growth in financial flow. This was only possible for two reasons: i) lower interest rates - in 1980, with high inflation, the 30 year mortgage interest rate was 15.5%, it currently is 4.8%, ii) sophistication of financial instruments used by the U.S. mortgage market, which resulted in a unique ability to extract income from the property over time, as previously mentioned.

The Chart 2 illustrates this point. While total household debt doubled in the period, with a sharp acceleration from 2000 onwards, the servicing of financial obligations by these households, captured by the FOR ratio, remained stable. At the same time, interest rates trended downwards, which helps explain the outstanding/servicing debt dynamics.

Thus, to invoke causality in a statement that *"US consumer "blew up" when the debt service burden hit 14%"* seems naive[7]. Likewise, almost as a corollary, it also cannot be said that it was the excess of debt service burden that caused the wave of mortgage defaults and foreclosures. There are several high quality empirical studies that point in this direction. Guiso (et al, 2009) suggests that the main reason for owners to abandon their homes is the presence of negative home equity, in other words, when the value of the property falls below the total outstanding debt. This happens even if the property owners are able to afford the payment of installments. That is, once again, the most important variable is not the flow of household financial obligations, but the remaining outstanding debt of the property, ultimately determined by the behavior of home prices. Even in the presence of moral and social hazard for individuals to opt for a strategic (not financial) default, it is the size of the negative home equity the main ingredient in the homeowner's decision to quit paying the mortgage. Foote (et al, 2008) argues that the evidence of the Massachusetts market shows that "*household-level cash flow problems are, by themselves, unlikely to cause widespread foreclosures*", suggesting that the wave of foreclosures in the region was caused by the

3 *In the United States, mortgage assets traded in the secondary markets (mortgage backed securities) accounted for about 60% of outstanding mortgages (Keys 2008).*

4 *In a testimony before the U.S. Congress, the CEO of Standard & Poor's, explaining the company's actions, said: "Why did these ratings on mortgage-backed securities perform poorly? Put simply, our assumptions about the housing and mortgage markets in the second half of this decade did not account for the extraordinarily steep declines we have now seen. Although we did assume, based on historical data stretching back to the Great Depression, that these markets would decline to some degree, we and virtually every other market participant and observer did not expect the unprecedented events that occurred" (Sharma, 2009).*

5 *A relevant question is the direction of causality, in other words, whether it was the expansion of credit that led to the increase in home prices or rising home prices that pushed credit. It is a highly complex issue and statistical studies find evidence in both directions. To Zywicki (2009), macroeconomic elements combined in an environment of depressed interest rates, help fuel the race to increase home prices early in the cycle. Thereafter, the appreciation of property prices stimulated all forms of mortgages, including subprime.*

6 *DSR (debt service ratio) and FOR (financial obligations ratio) are statistics provided by the Federal Reserve Board. The first consists in an estimate of the ratio of debt payments on outstanding mortgage and consumer debt to disposable personal income. The second one adds auto lease payments, homeowner´s insurance, and property tax payments.*

7 *The author was probably referring to the DSR statistic. We prefer to use the FOR as it is more comprehensive.*

negative home equity derived from the decline in house prices.

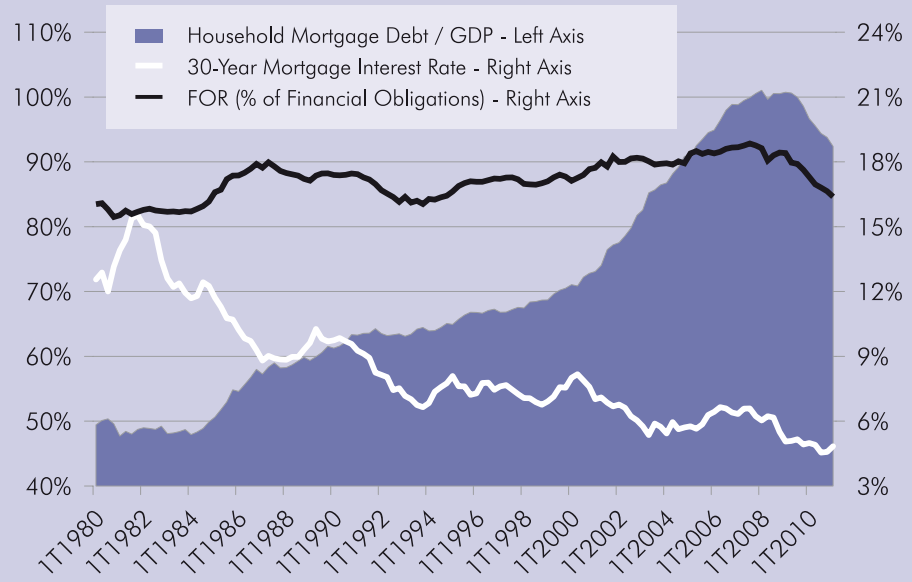
Credit here

An important part of the confusion embedded in these recent statements regards the Brazilian market. In our view, these are simplistic analogies, indicative of a lack of knowledge of the dynamics and evolution of the domestic financial system. Banking has peculiar characteristics. It is a local business and at the same time nuclear, since it embeds and pervades the entire economy.

To understand it properly requires a comprehensive analysis that considers the institutional context of the country, the history of formation and development of the sector, the dynamics of local competition, the control structure and the design of incentives of each relevant player, the nature of political intervention and the bias of regulatory actions, the tax system, corporate governance standards, and so on. Ignoring local specificities and simply importing experiences from other geographies seems like a risky proposition. The parallel United States-Brazil is full of examples.

Early on, the banking sector in Brazil was populated by government-owned institutions. The foundation of the current Banco do Brasil dates back to 1853 and Caixa Econômica Federal began its operations in 1867. The 'modern' basis of the financial system was established by the institutional reform of 1964/65, which established the National Monetary Council (Conselho Monetário Nacional) and the Central Bank of Brazil (Banco Central do Brasil). At the time, there was a clear choice to follow the European model, where banks are the main agent of the financial system, operating in every form of intermediation. Another important institutional change in Brazil was in 1995 with Proer / Proes (program to encourage the restructuring and strengthening of the national financial system), which increased the oversight powers of the Central Bank, imposed strong penalties on owners and managers of financial institutions and promoted a system clean-up by encouraging banking mergers[8]. That is, with respect to the structure of the financial system, Brazil has made clear choices: banks should play an important role and government, while it also regulates, actively participates in the sector through the state-owned banks. The result, perhaps unintentional, of this long history of interventions is manifested through a high concentration of our banking system.

CHART 2



Source: Federal Reserve, Dynamo.

In the U.S., public policies seem to have gone in the opposite direction. The intervention in the American financial system was, from the early stages, predominantly to limit the size of financial institutions. That was the spirit of the McFadden Act (1927) that limited banks to opening branches only in their home states and the Glass-Steagall Act (1934) which formally separated commercial banking and investment banking activities. In the interpretation of Mark Roe (1994): *"Fragmentation of finance can thus be seen not as a stray piece of history but as necessary part of American government and society. (...) My point is that through politics the United States chose to fragment financial institutions"*. So, not surprisingly, the U.S. financial system is characterized by a high level of fragmentation. Commercial banks are regional and investment banks compete with numerous other types of financial intermediaries.

It was only by the end of the 1980s, with the movement of deregulation, that the U.S. banking sector experienced greater freedom of action. Several previous restrictions were removed, for example, by the Riegle-Neal Act of 1994, when acquisitions of inter-state institutions were permitted. Recently, in response to the financial crisis, we watched a more active role from the FED encouraging greater bank concentration, such as the transactions between Wachovia-Wells Fargo and JP Morgan-WaMu. However, even with the wave of bank mergers, there were about 11,500 in the period from 1980-2005 (see D'Arista 2009), the banking industry in the U.S. is still very fragmented. The five largest banks hold 37% of the deposits, while in Brazil the five largest commercial banks, three private (Bradesco, Itaú Unibanco and Banco Santander) and two state-owned (Banco do Brasil and Caixa Econômica Federal), hold 76% of deposits.

The concentration of financial intermediation in Brazil makes it easier for the Central Bank to control and supervise the market. Verticalized, banks offer an extensive portfolio of financial

8 *We had the opportunity to comment on this topic, of the utmost importance, in Dynamo Report n. 60:* "under the respective rules, the net worth of officers and board members of financial institutions are blocked in cases of litigation, losses arising from negligent management, or filings for bankruptcy. This rule is retroactive for up to five years as of the close of the respective board member's/director's term of office and remains in force throughout the entire course of the judicial inquiry that, in Brazil, can take many years. There is no doubt that, since they impose greater discipline on management, our domestic institutional rules in this area provide greater protection to minority shareholders of banks, something that clearly is not the case in the US. In addition, it brings a sort of barrier to entry to new comers, by imposing additional penalties over unsuccessful entrepreneurs."

TABLE 1

	Auto	Payroll	Mortgage	Credit Card Revolving	Overdraft	Personal Loans
% of Household Debt	18%	18%	17%	4%	4%	9%
Interest Rate	30%	28%	13%	205%	185%	50%
Losses	5%	3%	1%	57%	24%	11%
Duration (days)	559	569	4.443	31	22	569

Source: Central Bank, Dynamo.

products to different types of customers. In a single credit card transaction, for example, these big banks can play the role of the issuer, card network, acquirer, cardholder and merchant funding, banking domicile of the depositor and of the retailer / service provider. In this case, the bank has total control of the operation from beginning to end, charging for each step, aside from capturing potential synergies and economies of scale along the value chain, as well as accumulating intelligence about the enormous amount of information that runs through their system[9]. This organic and panoramic view of the industry places the large banks in a privileged position to develop products / services or even to stimulate new patterns of behavior. For example, credit card sales with interest-free installments. An innovation of the local market, this is now a widespread practice in retail, which allowed changes in the consumption profile of the cardholder, while only marginally increasing the risk to the bank. With the same credit limit already pre-approved, the customer leverages spending, financed ultimately by the retailer, who often returns to the financial institution to cash-in on receivables from the credit card sale in order to meet his needs for working capital. That is, through this creative mechanism, the very exposure banks have to cardholders becomes collateral for the retailer to take on credit, allowing financial institutions to earn additional revenue.

This control of the financial cycle composed by the knowledge of the customer profile and their financial behavior, allows a better calibration of the credit portfolio by the banks. Hence the ability to segment loan terms, translated into interest rates adjusted for each category. The high spreads in Brazil must be partly understood in this context as a reflection of the technical diligence of the system, adjusting the price of money depending on the risk profile of each category[10]. The table below illustrates this point:

The view that credit in Brazil *"is being pushed by the banks at high rates to consumers who ultimately won't be able to service the debt"*[11] fails to capture this reality. Higher rates just bring discipline to the system, ensuring that risk is being priced properly. Credit bubbles and banking crises usually result from extended periods of mispricing of risk by providers of capital. These excesses tend to breed under a permissive regime of low interest rates, a reality that has long not been true in Brazil.

Precisely for the fact that defaults on revolving loans, credit cards and overdraft facilities have been historically high in Brazil, banks charge high interest rates in these segments. The increased risk in these categories disproportionately distorts the average rate of consumer credit. Just as a hypothetical exercise, if we remove these two segments, which have short duration periods, between 20 and 35 days, and which are normally used to deal with occasional credit needs, the volume weighted average interest rate falls from 47% to 30%. Another way to look at it would be to imagine what would happen if individuals in Brazil no longer used revolving credit (credit card and overdraft) and instead funded their spending with regular consumer credit, by the way a practice that some banks are already beginning to stimulate. That alone would save 15% of average wage commitment (see Gartner et al, 2011).

It is unquestionable that the recent expansion of credit in Brazil is happening at a fast pace, an average annual growth rate of 22% since 2003, which by itself raises doubts about its sustainability. However one must qualify isolated statistics. The advance of credit comes with some positive structural trends (Chart 3): institutional improvements that allowed a major expansion of the base in lower risk categories, longer duration and declining spreads, among other measures still on the way[12], all of this in an environment of real income gains, healthy labor markets, shift from informal to formal employment, bancarization and macroeconomic stability. Hence, although the total household debt in Brazil is increasing, the income commitment to service that debt has advanced at a significantly slower pace, remaining at around 24% since 2004. [13]

9 *It is worth pointing out that as a legacy of a long period of high inflation, banks in Brazil had to invest heavily in technology and today are globally recognized for the quality of their information systems.*

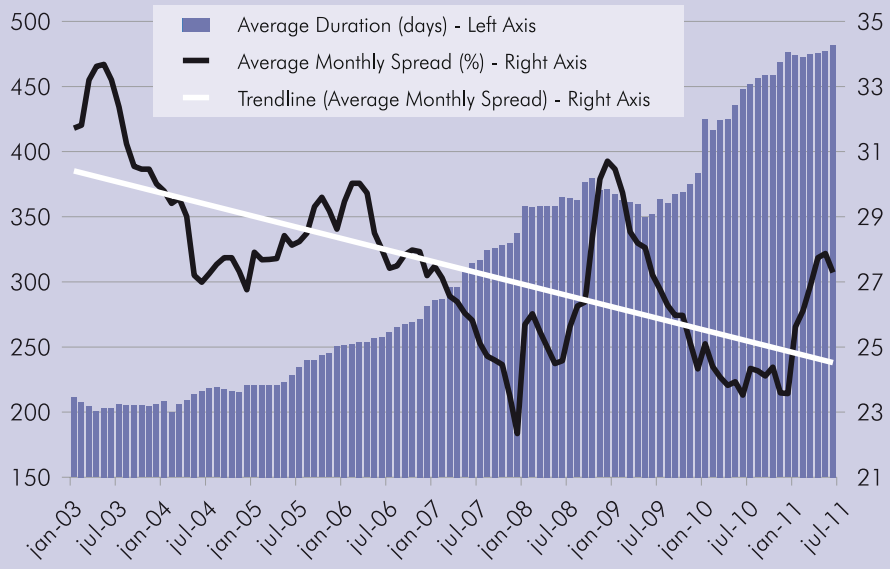
10 *Brazil´s passive coexistence with high interest rates for a long time is an intriguing topic, highly relevant, but beyond the scope of this Letter. There are numerous variables that could explain the puzzle. On the macro side: inflation, risk premium, economic activity. On the micro level: non-performing loans, administrative costs (supposedly less efficient state-owned banks), taxes, among others. More prosaic explanations may be cited, such as Brazilians´ unusual pattern of preferences, rooted in socio-cultural aspects and even the moral hazard effect of inflation, which in the past, ended up solving ex-post the problem of financial irresponsibility by the borrowers.*

11 *Marshall, note 1, FT 07.04.2011.*

12 *The positive credit bureau for consumers was instituted by a provisional measure by the federal government in December 2010, and when implemented should contribute to reduce the system's asymmetry of information.*

13 *The statistic of income commitment in Brazil should be adjusted to our reality, where a significant part of the population does not have access to banking products and the level of informality of the economy is still high. Aside from that there are technical issues in the methodology of this metric which does not consider, for example, interest income, dividends and rental income. On the other hand, it also does not include credit card spending with interest-free installments or the payment of principal from revolving credit lines.*

CHART 3



Source: Central Bank, Dynamo.

Some examples help illustrate the argument of institutional improvement. In 1997, through the law 9.514, Brazil created the concept of "fiduciary alienation" that allows the lender to take back the property in case of a default. When court decisions started to endorse the purpose of the law, private banks finally entered the mortgage market. It is true that this period coincided with a reduction in interest rates, but the fact is that in just over a decade, this market, which was virtually nonexistent before, already accounts for 17% of the total household debt, or approximately 4.2% of GDP[14].

Another legal framework approved by Congress, this time in 2003, was the law that governs payroll lending, where payments on the loan are deducted directly from the person's paycheck. In practice, the risk associated with this type of credit is transferred to the employer and no longer solely dependent on the behavior of the borrower. For no other reason, about 85% of this type of loan is granted to civil servants, many with contractual job stability assured. The average default rate of this group is around 3%, compared to 11% for other types of personal loans without the paycheck guarantee. Payroll lending now represents about 18% of total consumer credit (excluding housing). [15]

Auto financing also took off after a new legal framework came into play. Under the reform of the Civil Code in 2002, the fiduciary alienation of automobiles was established, as well as rules for the certification of registration that allows the electronic control of the origin and the legal situation of the vehicle. Since then the volume of auto financing jumped from R$ 26 billion to R$ 158 billion, representing 18% of total credit today, with relatively low default rates.

In the period of 2007 to 2010, 68% of growth in loans to individuals in Brazil was generated by the three segments mentioned above: payroll, auto and housing. Not coincidentally, precisely where the most significant institutional improvements occurred.

The U.S. financial crisis, fueled by the rising prices of real estate assets, had its origin in the nuts and bolts of the U.S. mortgage market, and pushed by perverse incentives among the various players in the chain. In Brazil, it is true that credit is expanding at high rates, but the basis and the dynamics of this growth is built on sound fundamentals. In this Report, we quickly placed the banking sector in its historical context, illustrated some peculiar practices that we have here, such as interest-free installments, as well as remembered the recent institutional advances of our credit market, emphasizing the differences between the models of the two countries. In the next one, we will deepen the analysis, presenting the reasons why we do not believe that Brazil is on track to a banking crisis or in the vicinity of a credit bubble. In the end, taking advantage of the context, we update our views of our investment in Itaú Unibanco.

Rio de Janeiro, 26th August, 2010.

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14 *This fact illustrates and reinforces the thesis that credit expansion is generally associated with the "power of creditors", or in other words, with the institutional framework that brings comfort to those that offer credit. (Djankov 2005).*

15 *Since the labor market in Brazil is booming and there are no signs of a slowdown on the horizon, credit backed by employment is good news. However, it is worth pointing out that employment in Brazil is accompanied by various welfare benefits and social security obligations. Thus, unemployment fosters an impact that is double negative: loss of income and increased spending in order to maintain the same level of benefits.*

DYNAMO COUGAR x IBX x IBOVESPA
Performance up to July/2011 (in R$)

Period	Dynamo Cougar	IBX médio	Ibovespa médio
60 months	161,6%	74,9%	69,8%
36 months	54,2%	-4,6%	-4,2%
24 months	73,9%	23,9%	20,7%
12 months	22,8%	6,6%	0,2%
Year to date	-2,0%	-9,9%	-15,4%

NAV/Share on July 30th = R$ 295,701875517

DYNAMO COUGAR x FGV-100 x IBOVESPA
(Performance – Percentage Change in US$ dollars)

Period	DYNAMO COUGAR*		FGV-100**		IBOVESPA***	
	Year	Since 01/09/93	Year	Since 01/09/93	Year	Since 01/09/93
1993	38,8%	38,8%	9,1%	9,1%	11,1%	11,1%
1994	245,6%	379,5%	165,3%	189,3%	58,6%	76,2%
1995	-3,6%	362,2%	-35,1%	87,9%	-13,5%	52,5%
1996	53,6%	609,8%	6,6%	100,3%	53,2%	133,6%
1997	-6,2%	565,5%	-4,1%	92,0%	34,4%	213,8%
1998	-19,1%	438,1%	-31,5%	31,5%	-38,4%	93,3%
1999	104,6%	1.001,2%	116,5%	184,7%	69,5%	227,6%
2000	3,0%	1.034,5%	-2,6%	177,2%	-18,1%	168,3%
2001	-6,4%	962,4%	-8,8%	152,7%	-24,0%	104,0%
2002	-7,9%	878,9%	-24,2%	91,7%	-46,0%	10,1%
2003	93,9%	1.798,5%	145,2%	369,9%	141,0%	165,4%
2004	64,4%	3.020,2%	45,0%	581,2%	28,2%	240,2%
2005	41,2%	4.305,5%	30,8%	790,7%	44,1%	390,2%
2006	49,8%	6.498,3%	43,2%	1.175,8%	46,4%	617,7%
2007	59,7%	10.436,6%	68,4%	2.048,7%	73,4%	1.144,6%
2008	-47,1%	5.470,1%	-50,1%	973,3%	-55,5%	453,7%
2009	143,7%	13.472,6%	151,9%	2.603,3%	144,0%	1.250,7%
2010	28,1%	17.282,0%	15,2%	3.013,2%	6,2%	1.334,5%

2011	DYNAMO COUGAR*		FGV-100**		IBOVESPA***	
	Month	Since 01/09/93	Month	Since 01/09/93	Month	Since 01/09/93
JAN	-4,8%	16.456,3%	-2,2%	2.946,5%	-4,0%	1.276,5%
FEB	2,9%	16.940,3%	0,3%	2.955,9%	1,3%	1.293,7%
MAR	7,7%	18.255,9%	4,1%	3.081,0%	4,0%	1.349,7%
APR	3,4%	18.871,4%	2,6%	3.163,0%	-0,2%	1.347,4%
MAY	0,4%	18.941,9%	-0,8%	3.135,9%	-3,1%	1.302,0%
JUN	-0,5%	18.842,8%	-2,3%	3.060,0%	-1,9%	1.275,3%
JUL	-3,7%	18.136,5%	-5,0%	2.901,8%	-5,6%	1.198,7%
Year to date	4,9%	18.136,5%	-3,6%	2.901,8%	-9,5%	1.198,7%

Average Net Asset Value for Dynamo Cougar (Last 12 months): R$ 1.450.798.763,00

(*) The Dynamo Cougar Fund figures are audited by Price Waterhouse and Coopers and returns net of all costs and fees, except for Adjustment of Performance Fee, if due.
(**) Index that includes 100 companies, but excludes banks and state-owned companies. (***) Ibovespa average.

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DYNAMO

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