

FUNDAÇÃO GETULIO VARGAS
ESCOLA DE ADMINISTRAÇÃO DE EMPRESAS DE SÃO PAULO

Abraham Bragança de Vasconcellos Weintraub

**The Performance of Open-end Brazilian Fixed Income Mutual Funds for
Retail Clients**

SÃO PAULO - SP

2013

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Dissertação apresentada à Escola de Administração de Empresas de São Paulo, da Fundação Getúlio Vargas, em cumprimento dos requisitos para obtenção do título de Mestre em Administração Empresas.

Área de concentração: Finanças

Orientador: Prof. Dr. Arthur Ridolfo Neto

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2013

Weintraub, Abraham Bragança de Vasconcellos.

The Performance of Open-end Brazilian Fixed Income Mutual Funds for Retail Clients / Abraham Bragança de Vasconcellos Weintraub. - 2013.

63 f.

Orientador: Arthur Ridolfo Neto

Dissertação (MPA) - Escola de Administração de Empresas de São Paulo.

1. Fundos mútuos de renda fixa. 2. Investimentos. 3. Finanças - Métodos estatísticos. 4. Poupança e investimento - Brasil. 5. Tesouro direto. I. Ridolfo Neto, Arthur. II. Dissertação (MPA) - Escola de Administração de Empresas de São Paulo. III. Título.

CDU 336.763

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Dedico este trabalho ao meu grande amor
Daniela e aos lindos frutos desse nosso amor
Isabella, Theodoro e Amandinha.

Agradecimentos

Agradeço a Deus por ter me abençoado com a saúde e o espírito que tenho, por ter me dado a família que constituí, por ter colocado em minha trilha amigos em abundância e ter me dado a força para superar meus desafios. Agradeço pela fé que tenho para enfrentar as tempestades, pois elas nunca são eternas, e pela humildade em saber que a bonança é efêmera. Agradeço a Deus pela vida.

Quanto aos muitos amigos, diante desta dissertação, destaco o Professor Arthur que ao longo deste último ano pude constatar que, além de um grande orientador, é uma excelente pessoa.

The Performance of Open-end Brazilian Fixed Income Mutual Funds for Retail Clients

Abstract

From a financial perspective, this dissertation analyzes the Brazilian mutual fund industry performance for an average retail client. The most representative funds for the local population, that are the fixed income open-end ones, will be selected and their performance will be measured aiming to answer if clients of this industry obtained a proper return over their investments in the period between August 2010 and August 2013. A proper return will be understood as the preservation of the purchasing power of the individual's savings, what is achieved with a positive performance of a mutual fund after discounting taxes, administrative fees and inflation.

After obtaining an answer for the previous question, this dissertation will explore a possible alternative solution: Tesouro Direto, that is an example of a financial approach that could foster the disintermediation between savings and investments through electronic channels. New electronic platforms, with a broader scope, could be utilized to increase the efficiency of funding productive investments through better remunerating Brazilian savings. Tesouro Direto may point towards a new paradigm.

Keywords

Financial research, investment's performance, mutual funds; statistical modeling, Electronic Platforms of Investment (Tesouro Direto).

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1. Introduction

Since the beginning of this century, the major central banks have consistently implemented an expansionary monetary policy in order to avoid a global depression. As a consequence, it is possible to find many countries with negative real interest rates. Indeed, the global economy has been dealing with an environment never observed since the end of World War II. The overnight interest rate has been close to zero in most of the developed economies, while inflation was kept at previous levels, around 2%.

In Brazil, the consolidation of the local monetary stabilization reinforced this global trend. Previously, there was a hyperinflation process, as described in The First 12 month of the Real from Ministério da Fazenda: “Taking the average of the five indices published by different research institutes, the inflation rate had reached 758.59% in the first half of 1994. This represented an average monthly inflation of 43.1%, equivalent to an annual rate of 7271.84%”. Less than twenty years later, the same indices have indicated an annual inflation around 6%. This allowed Brazilian Central Bank to practice, for the first time, an anti-cyclical monetary policy to maneuver the country through 2008/2009 global crises. From December 2008 to July 2009, the local interest rate was cut in 500 bps from 13.75% to 8.75%. More recently, on October 10th, 2012 the local interest rate was reduced to 7.25%, achieving the lowest nominal level ever observed since the creation of the Brazilian Central Bank.

Suddenly, some local investors had to face a situation quite usual for Americans or Europeans where, eventually, their fixed income investments could not perform well enough to preserve the purchasing power of their financial capital. As ANBIMA indicates, at least 4.3 million Brazilians are clients of the local mutual fund industry. For the most part of them, the available products are the ones offered by the retail bank staff at the branch where they already have a personal account. Thus, the most relevant question here is if these funds are adding value for their clients, with the preservation of the real value of their savings by delivering a net performance, after fees and taxes, above inflation.

In the United States of America, where nominal interest rates have been close to zero for most part of this century, there is a sizable amount of academic work, specialized material and financial articles that indicate how has been the performance of the mutual fund industry regarding value creation for their clients. Some material with similar approach and results has been produced in other countries such as Canada, Israel, and some nations in Europe.

Brazilian mutual fund industry has been the scope of research in many different aspects and forms, as it will be presented during this dissertation. However, we did not find an academic

work aiming specifically at the performance of open-ended fixed income mutual funds for retail clients. The present dissertation will show how has been the efficiency of this popular investment alternative for the local middle class. The analysis will be based in a sample of the 70 most relevant open-ended fixed income mutual funds available for retail clients. This selected sample of mutual funds belong to different asset management companies controlled by the six largest retail banks in Brazil: BB DTVM; ITAU UNIBANCO; CAIXA FEDERAL; BRADESCO; BEM (acquired by Bradesco in 2004); BANCO SANTANDER; HSBC. This group is represented by two institutions with foreign capital control, two listed banks controlled by Brazilian capital and two state owned banks.

Finally, two alternatives will be analyzed, through a simulation of similar investments. The first will be the performance of a traditional savings account. The other one will be an investment at Tesouro Direto, which is an electronic platform that allows retail clients to directly buy Brazilian Treasury Bonds. Evidently, both simulations will consider all the costs, taxes and in the Tesouro Direto case, a liquid and conservative bond portfolio with a short tenure.

2. Literature Review

2.1 Economic and Financial Background

Even before the industrial revolution, a continuous flow of financial developments and creative solutions have been allowing the evolution of the capitalism in Europe and Americas. The History of mutual funds is an example of this capability of financiers to create value, curbing down risks and fostering real investments in enterprises. Unfortunately, History is also rich in examples of how this entire creative strength can become a weakness due to a lack of good rules and wise governance, and excess of greed combined with leverage. Global economy is passing through a technological revolution, while it is dealing with the hangover of its respective financial bubble. As a consequence of these two vectors, ten years from now we might see a totally different financial market.

It is important to stress that this process of deep transformation in the global economy will not be concentrated in Europe and North America as in the previous cycles. Many emerging markets are catching up and closing the gap between the most advanced countries. Volatile and unstable regions in the past are now leading part of the progress, as Jim O'Neill¹ forecasted when he created the BRICs concept. This has been happening in economies overall, however, it is also occurring in different segments of the economy or in specific industries, such as in the technological front, as it is described in 2008 by Mohsen Khalil and Charles Kenny at their paper "The Next Decade of ICT Development: Access, Applications, and the Forces of Convergence". Brazil, the B of the BRICs, with its now stable economy and its reliable institutions, is an opportunity that paramount in Latin America.

Based on this global scenario, the background of this dissertation is the Brazilian economic environment that might emerge with the impacts of a lower structural interest rate combined with the expansion of life expectancy. The focus will be on the necessity of changing how local families manage their financial portfolio and how solid are their plans for retirement, bearing in mind that Brazilian middle class will live much longer and will not have any more one of the world highest real interest rates to boost their future income (Weintraub, 2003).

¹ "Building Better Global Economic BRICs". Goldman Sachs Economic Annual Report. 2001 was the origin of the acronym that refers to the countries of Brazil, Russia, India and China. It has come into widespread use as a symbol of the apparent shift in global economic power from the developed G7 economies towards the developing world.

2.2 A Brief History of the Mutual Fund Industry

It is possible to envision ancient European merchants, proto-venture capitalists, concerned with hazards that could destroy all their capital or a considerable part of their investments at once. Having this picture in mind, it is easy to imagine Athenians citizens at Agora anxiously expecting the return of their ships and, consequently, the return of their money. The idea of pooling resources and spreading risk using a basket of closed-end investments may be around for many centuries. There is a kind of dispute among historians (Loader, 2007) to register which could be considered as the first investment fund: some will mention the closed-end investment companies launched in the Netherlands in 1822 by King William I as the first mutual funds, while others point to an investment trust assembled in 1774 by the Dutch merchant Adriaan van Ketwich.

The present dissertation will move apart from this dispute and not focus on which was the first investment fund, who was the responsible for the idea and when or where it was launched. The most important fact for our research is to recognize that economic and political stability, a reliable legal framework and a minimum rule of law composed an environment that allowed this new solution for an old problem to achieve a huge success. By the middle of the 19th century, the primitive mutual fund concept was implemented across Western Europe and was making its way to the United States of America. The Boston Personal Property Trust, formed in 1893, is considered (Anderson, Born and Schnusenberg, 2010) as the first closed-end fund in the United States. Other Financial History researchers (Sasidharan and Mathew, 2008) also mention the creation of the Alexander Fund in Philadelphia in 1907 as an important land mark in the evolution toward a modern mutual fund structure. The Alexander Fund had semi-annual issues and pre-established rules that allowed investors to request and withdrawal their quotas in cash. In the United States, before the stock exchange Crash of 1929 and the Great Depression of the 1930s, there were 700 closed-end funds. Most part of these mutual funds, as banks or any other leveraged financial structure, were wiped out of the map by the stock market crash; only a small proportion of them managed to survive.

During the 1930s, United States started to reshape from ashes its financial market. Institutions were created to regulate and to overview the activities of the financial agents and a legal framework to rule the proper function of financial enterprises. The major aim was to avoid a similar crisis in the future and these Government regulators began to notice the importance of

the mutual fund industry in that context. As an example of this movement, there was the passage of the Securities Act of 1933 and the enactment of the Securities Exchange Act of 1934², that resulted in the creation of the Securities and Exchange Commission (SEC). This started the setup of a series of measures to settle in place safeguards aiming to protect investors. Mutual funds were compulsorily demanded to be registered with the SEC and to provide a standardized disclosure to the agency and to investors. The Investment Company Act of 1940 put in place additional regulations that required more mandatory disclosures and pursued to minimize conflicts of interest.

This present research considers the safeguard measures of the 1930s as a landmark for the creation of a modern mutual fund industry. Previously, there was a systemic risk for the overall activity, an absence of strong safeguard rules to guide asset managers and a lack of transparency. The major risk was not the return on capital but the return of the capital. After the Second World War, these new conditions and a favorable economic environment allowed the blossoming of a modern mutual fund industry. At the beginning of the 1950s, financial markets, and more specifically the fund industry, overcame their 1929 peak (Anderson, Born and Schnusenberg, 2010).

The trend was maintained throughout the 1960s, when hundreds of new funds were launched in the market. Nevertheless, the mutual fund industry was impacted by the bear market of 1969 and the public appetite for mutual funds was cooled down by the stagflation period of the 1970s. At that time there were approximately 360 funds with \$48 billion in assets (Sasidharan and Mathew, 2008).

In some aspects, the absence of economic tonus in the end of the 1960s and during the 1970s resembles some characteristics of the present scenario: for an average investor, the financial real profitability on a personal portfolio was dismal. Overall, in the 1970s, financial investments had even some years of negative real returns due to high inflation. It is important to mention that it was in this period that mutual fund industry started to be scrutinized by financial analysts, showing that very few mutual funds performed well enough to justify their fees. Previously, there was almost an absence of proper academic production aiming specifically to understand structural reasons for dismal net performance.

While the first single index measure was developed by William Sharpe in 1966, it was only in 1970 that Irwin Friend, Marshall Blume and Gene Crocket did the first major study to consider both risk and return in examining mutual fund performance (Elton and Gruber, 2011).

² Obtained in February 10th, 2013 at <http://www.sec.gov/about/laws/wallstreetreform-cpa.pdf>

“They divided funds into low, medium and high risk categories where risk was defined alternately as standard deviation and beta on the S&P 500 Index. They then compared the return on funds in each risk category with a set of random portfolios of the same risk”.

The year of 1971 was described as one of the foundation pillars of the next phase (Bogle, 2010), when William Fouse and John McQuown of Wells Fargo Bank created what is considered the first index fund. Thus, in the 1970s these financial researches pointing to the lack of performance in traditional funds, the potential demand for alternative products and the new concept of index funds, triggered the start of a new approach over this activity: passive management investment funds with lower administrative fees. After becoming a reference in terms of research in this area, John Bogle himself would use his knowledge and all these circumstances to foster the creation of the Vanguard Group, a mutual fund powerhouse renowned for low-cost index funds. According to Reuters³, Vanguard Group is nowadays the largest U.S. mutual fund manager. Thus, since the 1970s, with no systemic risk in the horizon any longer, the industry became more and more concerned with efficiency/costs and the trend has not been interrupted. For instance, The Economist, at the October 6th 2012 edition, pointed to the North America situation in the article “The battle to cut costs causes a rift between Vanguard and MSCI⁴”. In this specific case, aiming cost reduction, Vanguard announced it would stop using MSCI, that was replaced by FTSE (a British rival) for foreign stocks and University of Chicago’s Centre for Research in Security Prices (CRSP) for American shares.

³ Thomson Reuters Corporation. October 2nd, 2012

⁴ MSCI Inc. is a large global provider of investment support tools to asset managers and investment funds, offering a menu of products and services ranging from indices, portfolio risk and performance analytics, to governance tools.

2.3 Present International Situation

According to the Investment Company Institute, worldwide mutual fund assets had \$24.7 trillion under management at the end of 2010. United States was barely responsible for more than 50% of the global activity, with 15,000 mutual funds accounting combined assets of \$13.1 trillion. For North America, mutual funds play an important role in household finances, being responsible for 23% of household financial assets. Their role in retirement planning is also overwhelming, with more than half of assets in 401(k) plans and individual retirement accounts invested in mutual funds.

Thus, it is natural that public, media and academy would more and more put focus in the Mutual Fund Industry, with special attention to high fees, costs and low performance. In a nut shell, the majority of the academic critics that will be mentioned below by this dissertation tried to verify if the market for mutual funds is really competitive. They also tried to quantify all fees (as there are complains of hidden fees charged in a not transparent way), and the difficulty for investors to compare, negotiate or reduce these costs. The main line of research that will be mentioned during this dissertation argues that the most effective way for investors to raise returns is to invest in passive index funds with low expense ratios. The rationales backing the argument are the lower costs derived from a slimmer management, controlling and administrative structures, combined with the fact that the average active mutual fund performs below the respective financial market index.

Among the academic work focusing these points, the present dissertation highlights “The relation between price and performance in the mutual fund industry” (Gil-Bazo and Ruiz-Verd, 2009); “Mutual Fund Performance: Measurement and Evidence” (Cuthbertson, Nitzsche and O’Sullivan, 2010); “Identification and Performance of equity mutual funds with high management fees and expense ratios” (Haslem, Baker and Smith, 2007); “Holders of the public pension strings: governance and performance of public retirement systems” (Mitchell and Useem, 1997). “Advice on Mutual Fund Selection” (Nanigian, 2012); and “Fees for shareholders of international mutual funds” (Rao, Das and Boudreaux, 2012).

Barring this perspective in mind, a supportive point for the major research line is the quantitative evidence that active funds are consistently outperformed by the passive benchmarks. One of the most comprehensive studies has been conducted for more than ten years by Standard & Poor: SPIVA (Standard & Poor's Indices Versus Active). Its

methodology compares funds' performance versus their respective style indices, showing asset-weighted and equal-weighted averages, including survivorship bias correction to account for funds that may have merged or been liquidated and showing style consistency for each style group across different time horizons.

Table 1

Five-Year League Tables (% U.S. Equity Funds bellow the Comparison Index)

Category	Comparison Index	2006/2011	2001/2006
Large-Cap Growth Funds	S&P 500 Growth	80.20	57.18
Large-Cap Core Funds	S&P 500	67.93	75.43
Large-Cap Value Funds	S&P 500 Value	36.71	90.74
Mid-Cap Growth Funds	S&P MidCap 400 Growth	90.70	88.06
Mid-Cap Core Funds	S&P MidCap 400	86.87	75.00
Mid-Cap Value Funds	S&P MidCap 400 Value	75.58	75.53
Small-Cap Growth Funds	S&P SmallCap 600 Growth	85.64	91.98
Small-Cap Core Funds	S&P SmallCap 600	71.43	76.47
Small-Cap Value Funds	S&P SmallCap 600 Value	57.78	62.65

Source: S&P Indices for 12/01-12/06; S&P Indices, CRSP for 12/06-12/11

Table 2

Five-Year League Tables (% Fixed Income Funds bellow the Comparison Index)

Category	Comparison Barclay's Index	2006/2011	2001/2006
Gov. Intermediate Funds	Intermediate Gov. Bond	93.62	89.8
Government Long Funds	Long Government Bond	66.67	70.19
Government Short Funds	1-3 Year Gov. Bond	66.67	75.51
General Intermediate Funds	Intermediate Gov./Credit	96.77	65.81
General Short Funds	1-3 Year Government/Credit	60.54	69.51
High Yield Funds	Capital High Yield	96.06	84.44
Mortgage Securities Funds	Mortgage-Backed Securities	75.00	85.71
Global Income Funds	Capital Global Aggregate	72.41	63.33
Emerging Markets Debt	Capital Emerging Markets	66.67	47.37

Source: S&P Indices for 12/01-12/06; S&P Indices, CRSP for 12/06-12/11.

The counter-argument, normally presented by retail financial institutions, is that this is a highly competitive market with low entrance barriers for new players. Thus, the fees reflect the value that investors attribute to the service provided. In addition, they mention that fees are clearly disclosed and there is a strong legislation to protect clients / investors.

Finally, there is a subdivision among financial research and academic papers indicating that asset management companies controlled by retail banks have consistently lagged in terms of returns to mutual fund investors when compared with the performance of independent asset

management companies (Matallin-Saez, Soler-Dominguez and Tortosa-Ausina, 2012). There are some structural characteristics that were pointed, from lack of focus to higher costs, to explain that worse performance from retail banks asset management companies (Hao and Yan, 2012). As presented in Appendix I, fee oriented services should not be a priority to the average retail bank, because most part of the financial market revenues (87% in Brazilian case) comes from credit activities.

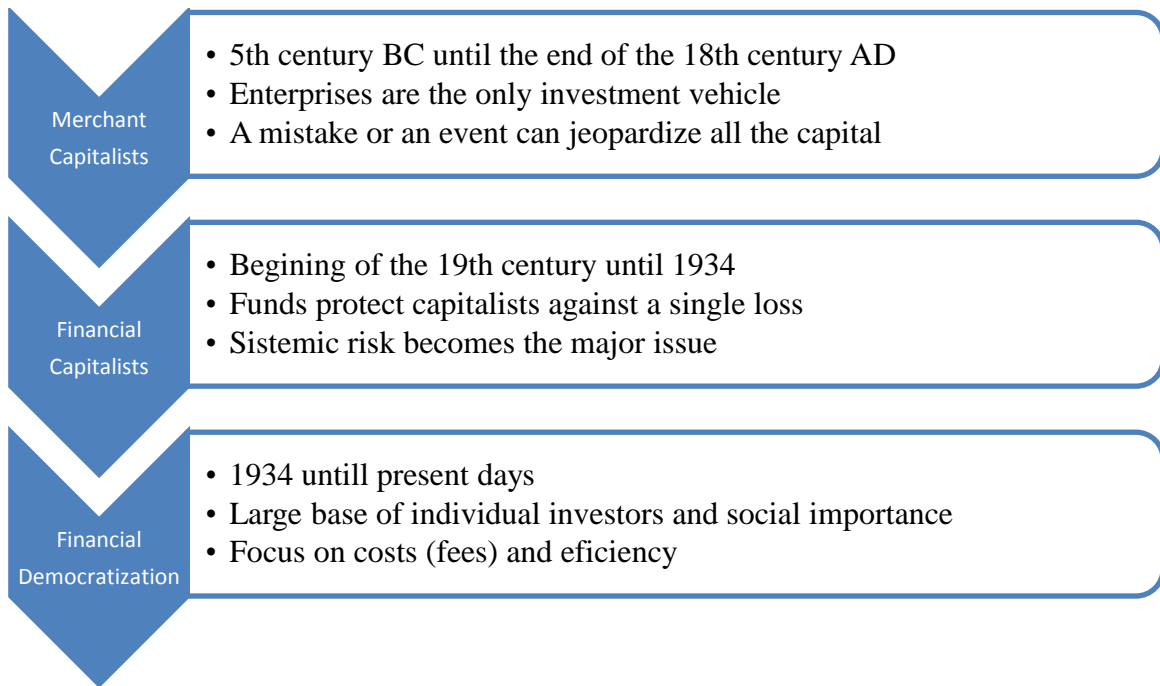
Despite the fact that many reasons may be responsible for the problem that funds distributed by retail banks have been presenting a lower performance than independent ones, there is at least one clear consequence: from a social perspective, these retail institutions are the most important participants in the industry due to their broad penetration among middle income families. Boutique asset management products are high end services that are not accessible to these regular investors and, apparently, private bank clients have not complained as intensively in the last few years.

Thus, almost as a constant result, financial research and academic production in North America has been pointing towards a dismal situation for clients in US and Canada. The bibliography previously mentioned in this dissertation is just a sample of this movement that has been gaining momentum. Actually, in the last couple of years, after fees and taxes, the situation for clients and investors in these countries has deteriorated with net performance close, or in many cases below, the inflation rate. This scenario has found echoes abroad, as many countries are dealing with the same global situation of low growth and excess of monetary stimulus.

However, the most recent event is the fact that not only specialized finance research or academic papers are aiming at this subject. As the mutual fund and the pension fund industry has a broad basis with an important social impact, the problem has echoed in the media, with many articles targeting this situation in newspaper, journals and other publications to the common public - not exclusive to academic scholars or financial pundits anymore.

Newspapers, for instance, are very present. Tim Grant wrote "Mutual fund churns can damage investments" at Pittsburgh Post-Gazette (PA); 6/8/2012. And Alison Griffiths "Don't pay fees for poor-quality mutual funds"; "Fees eat up mutual fund gains"; and "Fees can destroy mutual fund returns"; Articles at Toronto Star (Canada), 6/4/2012; 1/27/2012; and 1/23/2012. Hilel Koren at Globes (Israel), "Securities Authority cuts mutual funds fees"; 7/3/2012. Even in Brazil the media is in the initial stages of being aware to the problem, as was indicated at O Estado de São Paulo "Mudanças inadiáveis na previdência privada" in 9/4/2012.

Investment base evolution



2.4 The Social Importance of Mutual Fund Activity in Brazil

Ibope, a Brazilian pollster, has indicated a profound transformation scenario with long run remarkable consequences: the ratio of Brazilians (18 or older) without financial investments fell from 65% to 51%. This poll was sponsored by Anbima⁵ and was released on May 18th of 2011. “Poupança” (saving account) still prevails over other investment instruments; nevertheless, the most sizable relative movement was noticed among mutual fund retail investors, which number increased from 2.4 million in 2005 to 4.3 million in 2011, as demonstrated in Table 3.

According to Linder Theory of Overlapping Demands (1961), if Brazil develops further and becomes wealthier, the number of local families accessing mutual funds might increase in a more intense pace than the GDP growth ratio. Linder Theory specifies that customers’ preferences are strongly determined by income levels and a nation’s income level per capita establishes the types of goods and services that will be demanded more intensively. For instance, Brazilian demand for automobiles, mobile phones, white line and other durable goods should increase at a relative slower pace from now on, when compared to the overall economy, meanwhile, demand for more sophisticated goods and services, as education, health services, mortgage and other financial services, will speed up. For the Brazilian financial market this trend can be already perceived, as described in Appendix II. Specifically for mutual fund industry, between 2005 and 2011, the investment approach of local families became more sophisticated as demonstrated in Tables 3 and 4: the most important investment instruments, for the local middle class, have become mutual funds and, its twin brother, the pension funds.

⁵ In October of 2009, Andima merged with Anbid and changed its name to ANBIMA (Associação Brasileira das Entidades dos Mercados Financeiro e de Capitais).

Table 3

Types of Investment owned by Brazilians* (%)

	2005	2011
Savings Account	35	44
Private Pension Plans	2	7
Mutual funds	4	7
Shares	-	3
Time deposits (CDB)	2	3
Hypothecary bonds	-	1
None	65	51

Source: Ibope / Anbima* 18 or older

Some financial magazines indicate that this expansion is not happening exclusively in Brazil. Other emerging markets have presented the same kind of movement. Market Watch, a financial newspaper, highlights that “Retail mutual funds are gaining rapid popularity in emerging markets to Brazil, China and India”. BusinessWeek, a business newspaper, was more specific about the fast expansion of mutual industry funds that is “Homing in Brazil” (Young, 2009).

Table 4

Who are the Mutual Fund investors?

PNAD ^{6*}	Monthly income	2005	2011
4%*	R\$ 19,200.00 or more	10%	21%
2%*	R\$ 9,600.00 till R\$ 19,200.00	22%	34%
7%*	R\$ 4,800.00 till R\$ 9,600.00	30%	22%
47%*	R\$ 1,200.00 till R\$ 4,800.00	24%	12%
40%*	Less than R\$ 1,200.00	5%	2%

Source: Ibope / Anbima; *Participation among Brazilians 18 or older

The Mutual and Pension funds are concentrated from middle to top of the social ladder: less than 15% of investors own more than 85% of the financial resources. Nevertheless, despite the improvement in recent years, even these members of the local middle class/elite are not properly informed about the service offered by the financial institutions. Part of the explanation could be justified by the past “generous” local interest rates that allowed clients to not be concerned about the fees.

⁶ Pesquisa Nacional por Amostra de Domicílio from IBGE is an annual national household sample survey that gives a more recent perspective for the complete Brazilian Census, that is a nationwide survey done every ten years. This specific PNAD is for the year 2009.

Table 5

How much is the minimum annual management/administrative fee?

	2005	2011
Till 0.9%	7%	14%
1% to 3%	15%	33%
3% or more	17%	39%
Do not know	62%	16%

Source: Ibope / Anbima

Obs: This question was only asked to mutual fund investors

It is also shocking in Ibope/Anbima's poll that, among mutual fund investors, only 69% knew that the bonds, the shares or the other assets in their mutual fund are their property and do not belong to the asset management company. It is true that this awareness increased from 63% in 2005. Finally, in terms of misinformation, the investors have also a poor knowledge regarding taxation.

Table 6

Which are the taxes over mutual funds?

	2005	2011
Income Tax	59%	65%
IOF	40%	53%
CPMF	39%	-
Others	5%	8%
None/Do not know	23%	19%

Source: Ibope / Anbima

Obs: This question was only asked to mutual fund investors

This situation may be originated by many different causes and, so far, it is only possible to imagine some untested hypotheses. For instance: Brazil had its economy stabilized only in 1994 and local families are still in a learning curve on how to properly manage their savings and investments; Interest rates were so high that almost any fixed income investment would give a proper return; Brazilian income per capita was in a much lower level, not allowing local families to access more sophisticated financial alternatives for their investments.

However, in a more sound basis, it is possible to notice that part of the explanation lies on how the information is obtained and where the decision process is taken. Retail bank managers are still the biggest influence when clients are choosing their investment portfolio. Definitely, this process at a retail bank branch, during a meeting to discuss the mortgage,

refinancing an auto loan or a credit card limit, arouses some conflict of interest. The perception that Brazil should improve the investment environment is supported by other researchs, as “Conflitos de interesses entre investidor e administrador de fundos: evidências e mecanismos de controle no Brasil” (Wilner, 2000).

Table 7

How the investment information is obtained?

	2005	2011
Retail bank manager	54%	43%
Newspaper	45%	31%
Journals/Magazines	17%	12%
TV/Radio	17%	13%
Electronic (banks/home brokers)	22%	39%
Mailing	15%	7%
Friends/relatives	10%	10%
Independent broker	2%	4%
Banking central adviser	-	5%
Do not know	2%	3%

Source: Ibope / Anbima

Obs: This question was only asked to mutual fund investors

It is important to notice that an improvement in the information of clients occurred simultaneously with the relative decrease in the influence of bank manager *vis-à-vis* the increase of electronic sites: 27% mentioned to search financial information alone in the internet. This specific question that was not even asked in the previous poll of 2005.

Another interesting aspect is the increase of the intention to use mutual funds as part of the resources for retirement. This specific mention grew from 5% to 20%. Brazilians are getting more conscious and concerned about how to plan for retirement and mutual funds are being used as an alternative. Evidently, for PGBL and VGBL – private pension plans that are similar to American 401(k) and IRA programs – the answer, which was not in the poll, should be close to 100% as they are fully dedicated to retirement planning. All this information supports even further the social/economic importance of having a financial industry capable of delivering the results expected by Brazilian families.

2.5 Present Brazilian Situation and Local Research

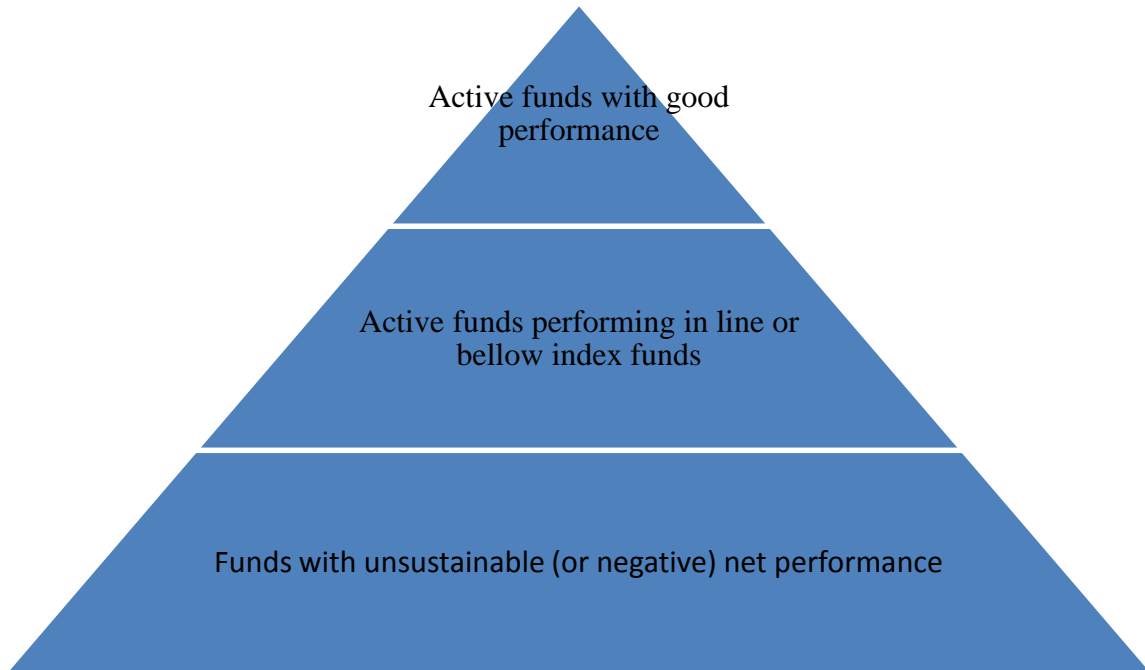
Many papers in Brazil have been analyzing who gets the lion's share of the fund industry: asset managers (administrative / management fees), government (taxes), or clients. It is important to notice that we found works from analysts, academics and researchers that have been aiming at the overall activity, that is the mutual fund industry *per se*; and there are articles targeting the major two segments: fixed income and equities. However, despite a broad perspective or a more focused one, the results are consistently similar towards an unfavorable trend to clients.

The selected works that have analyzed the overall activity are: “Análise de desempenho de fundos de investimento no Brasil: como seus administradores adicionam valor?” (Suaide, 2001); “Desempenho de fundos multimercados” (Malaquias, 2012); “Market timing e avaliação de desempenho dos fundos brasileiros” (Leusin; 2008); “Avaliação da performance dos fundos mútuos de investimento” (Manassero, 1986); and “Avaliação da performance dos fundos de investimento no contexto Brasileiro” (Milani, 2011).

More specifically to fixed income funds, as the most representative segment of the industry, this dissertation highlights: “O desempenho de fundos de renda fixa e o índice de renda de mercado” (Alvarez Vilella and Câmara Leal, 2008); And for equities: “Avaliação de performance de fundos mútuos de ações” (Alves, 1989); “Análise de desempenho de fundos de investimento em ações brasileiros” (Oliveira, 2008); and “Análise de desempenho de fundos mútuos de ações”, (Diniz, 1997).

Despite the fact of not being considered part of the mutual fund industry, the situation of pension funds finds many similarities, as it is described at “Análise de Desempenho dos Investimentos dos Fundos de Pensão no Brasil” (Baima, 1998); “Gestão e Desempenho dos Fundos de Pensão; Management and Performance of Pension Funds” (Rabelo, 2005); and “As filosofias de investimento e o desempenho dos fundos abertos de previdência complementar: um estudo descritivo” (Silva, 2011).

Does Brazil Mutual Fund Industry performance resemble the North American one?



The basic idea in this dissertation is to import and to adapt concepts that have been used and to verify if local mutual fund industry is adding enough value to clients. In the long run, a sustainable financial service should be favorable to all stakeholders.

3. Methodology

3.1 The Decision Making Process to Save and Invest

The Theory of Intertemporal Choice (Fisher, 1930) is considered by the academy as the first economic work to highlight how individuals rationally choose between obtaining something now or to postpone the consumption in order to maximize their lifetime satisfaction. The idea was further developed with Life Cycle Income Hypothesis (Brumberg and Modigliani, 1954), where individuals plan their consumption and savings to smooth their lifestyle cycles over their entire existence. Modigliani points that an average economic agent tends to have a high marginal propensity to consume during young adulthood through indebtedness, borrowing from the future, decreasing the consumption / income ratio during the middle-age years, and starting to dis-save after retirement.

The academic framework was complemented by the Permanent Income Hypothesis (Friedman, 1957), where it is stated that an individual consumption patterns is majorly determined by his permanent income perception, rather than the temporary income. In other words, a transitory change in income has little effect on consumer spending behavior, resting on permanent income the leveler for consumption patterns, that is determined by the composition of all individual's assets; physical (shares, bonds, property, etc.) and human (education, experience, etc.). These physical and human assets affect the personal perception about ability to earn income in the long-run, establishing an ideal saving/consumption ratio regarding present income in the short-run.

Individually, the saving/invest act will be fostered if a rational economic agent has the confidence that his effort will be rewarded in the future with an increase in the purchasing power of his wealth. An efficient financial market with good financial alternatives for families to invest their economies can stimulate individuals to save more. Collectively, this might become a stable source of funding for productive investments that can foster the long term potential economic growth. On the other side, a country with dysfunctional financial solutions could jeopardize the Gross Fixed Capital Formation (GFCF), not allowing the fulfillment of its respective potential growth.

3.2 The Financial Modeling

In order to achieve a proper balance between a relevant amount of funds, with a critical mass in terms of financial volume under management and a reasonable temporal series for each fund from the selected sample, we decided to analyze the performance of the industry from August 2010 to August 2013, which would comprehend a total of 36 monthly observations. Each selected fund will have its respective performance compared in net terms, with all taxes and fees already discounted. We obtained at ANBIMA's and at Bloomberg's databanks the performance of the funds already discounted from all fees (administrative, management, performance, etc). Regarding taxation, there are two different taxes charged over investments at mutual funds: 1st - IOF (Imposto sobre Operações Financeiras) is a Tax over Financial Operations charged only when investments are not kept for more than 30 days, thus it is not applicable for our dissertation; 2nd – Income Tax, that has a local methodology known as “Come Cotas” (withholding or retention tax) specific for fixed income investment funds.

The Brazilian Receita Federal (Internal Revenue Service) considers two categories for fixed income open-end mutual funds: Short term has a portfolio with an average tenure shorter than 365 days; and Long term, which should have a portfolio with an average tenure longer than 365 days. For both categories, an investment kept for a period until 180 days will be charged at 22.5% over the gains and, above 180 days, the rate is reduced to 20%. However, only for Long term fixed income investment funds, there are two more possible rates: 17.5% for periods from 361 to 720 days and 15% for investments kept more than 720 days. As we are covering 36 month, our analysis will consider only the 20% rate for the Short term funds and 15% for the Long term ones.

The reason for the nick name Come Cotas (withholding or retention tax) comes from the way the income tax is charged: semiannually, on the last day of May and November, the tax value correspondent to the observed gain is deducted. This happens by reducing the amount of shares of the respective fund at the individual's account. Whenever there is redemption, either total or partial, the calculation considers the positive difference between the shares value on the date of this withdraw and the value charged at the last “Come Cotas”. All this procedures were considered in our analysis since the period covered ranges from August 2010 to August 2013.

Thus, each fund will have analyzed a time series that represents its respective net nominal performance, with August 2010 being the initial capital invested, presented in terms of base 100, and August 2013 as its final net composed performance plus this initial capital. As a hypothetical example, if a specific fund would have 126 at August 2013; this would represent a net (from fees and taxes) nominal return of 26% during these 36 months, or 8% in annual terms. Another hypothetical example would be, if a fund shows the figure of 97 at August 2013; this would represent a net nominal loss of 3% during these 36 months, or a negative performance of 1% per year.

Nevertheless, as it was previously explained, the decision to save should be affected not only by the perspective of a net nominal gain, but by the expectations of having an increase in the purchasing power of these savings. Individually, the net nominal performance should be compared with a basket of goods and services that the decision maker could demand immediately or consume latter. The change in the price of a basket of goods and services is the definition of inflation. Returning to the example of the fund with an hypothetical 26% of net nominal return during these 36 months, and adding a 6% annual inflation, the net real return would be 2% per year. Thus, the decision of saving and investing in this fund for these three years would result in the increase of 6% in the purchasing power of these savings. Thus, the decision maker would have a benefit in postponing the consumption. On the other hand, if the inflation would hypothetically accumulate 30% in these three years, to reduce the savings rate and to increase the present consumption could become the most rational decision. Evidently, there are many more variables in this decision making process as risk aversion, life expectancy, the existence of a welfare state, etc.

Regarding the kind of inflation index that will be utilized to achieve the real performance, the economic theory indicates that the right alternative is a CPI (Consumer Price Index) due to the fact that the “cost of opportunity” for individuals to save is to postpone their satisfaction with the act of consumption. As an economic agent, this individual decides to save at the present and invest in a mutual fund instead of consuming a specific good or demanding a service immediately. As rational agents, the large majority of these individuals should expect to increase or at least maintain the purchasing power of their savings. Thus, as we are aiming an overview of the local mutual fund industry and we are comparing funds offered to all Brazilians, a CPI collected across the country will give a much sounder basis to analyze the results.

The three most influential CPI indexes in Brazil are the Índice Nacional de Preços ao Consumidor Amplo (IPCA) from Instituto Brasileiro de Geografia e Estatística (IBGE); the Índice de Preços ao Consumidor do Município de São Paulo (IPC) from Fundação Instituto de Pesquisas Econômicas (FIPE); and the Índice de Preços ao Consumidor (IPC) from Fundação Getulio Vargas (FGV) – that is a component of the Índice Geral de Preços / General Price Index (IGP). The IPC from FIPE is not qualified as a proper alternative for this study due to the fact that it is a regional index for the city of São Paulo. Both IPCA from IBGE and IPC from FGV have a national scope. However, during the last twenty years, IGP FGV (and as a consequence the IPC FGV) has been consistently losing importance and space as a benchmark for the economic agents. For instance, nowadays, the Brazilian National Treasury Bonds (NTNB) indexed to inflation (similar to USA TIPS) are linked to IPCA. It is a different situation from the 1980s and the beginning of the 1990s, when the IGP FGV was prevalent in the financial market and among the contracts between economic agents. Plus, mutual funds that will be the scope of this dissertation will have a considerable part of their portfolio in bonds indexed to IPCA. Thus, these are the arguments to support the decision to use the IPCA to achieve the real performance of the funds in this dissertation.

We will also compare the net nominal performance of each fund with the overnight interest rate (100% of CDI), with the Savings Account performance (Poupança) and with a simulated acquisition of two sorts of Treasury Bonds: the NTNB 2014, that is an inflation indexed bond similar to the US TIPS; and the NTNFB 2014, that is a floating bond. Evidently, that would be a buy and hold strategy with the same time frame of the funds' analysis.

All the inflation statistical series are available at the IBGE data bank and at the Brazilian Central Bank. The performance of each selected fund, the Brazilian Treasury Bonds (NTNs), the overnight interest rate and the Savings Account (Poupança) performance were obtained at ANBIMA, at Bloomberg and at IBGE's databank.

Finally, as can be noticed in the presented bibliography, this methodological approach is consolidated in the academy, as well as it is extensively utilized in the financial market. There is no new statistical development or econometric framework being studied in this dissertation. The financial scope, where all this methodological approach will be utilized, with the respective social and economic impacts, is the real target and the academic frontier, where we did not find similar studies in Brazil.

3.3 The Sample Selection

Baring in mind the scope of this dissertation, it was not a surprise that no high end product from independent asset management companies or from financial boutiques, with a small and limited number of investors, was selected to be analyzed. We discovered that they are not relevant in relative financial volumes. As a matter of fact, in the sample that was analyzed we only found mutual funds from asset management companies that belong to the top largest financial conglomerates with operations in Brazil. Quite obviously, with their 54 million client⁷ basis, retail banks prevail in terms of accessing potential investors with their sales force.

As it was obtained in February 2013 at the ANBIMA's database, the mutual fund industry in Brazil had R\$ 2,333,971 million under management, with the following composition:

Table 8

Segmentation of the Mutual Fund Industry

	(R\$ million)	(% total)
Short Term	R\$ 111,076.02	4.8%
Referenced DI	R\$ 249,789.03	10.7%
Fixed Income	R\$ 743,586.84	31.9%
Multimarket	R\$ 472,408.26	20.2%
Exchange rate	R\$ 760.23	0.0%
External Debt	R\$ 640.15	0.0%
Equities	R\$ 207,337.44	8.9%
Retirement Individual Plans (401 K)	R\$ 298,558.14	12.8%
Exclusive or Closed	R\$ 6,102.74	0.3%
FIDC	R\$ 62,502.63	2.7%
Real Estate	R\$ 28,156.23	1.2%
Participações	R\$ 90,852.79	3.9%
Off Shore	R\$ 62,200.97	2.7%

The three selected categories were the Short-Term, Fixed Income and Referenced DI that, according to the survey provided in Table 8, represent 47.4% of the total fund industry in

⁷ Pesquisa Ciab FEBRABAN 2012 is a nationwide survey about the financial system organized by Brazilian Banks Federation.

Brazil. These three categories comprise a total financial volume of more than R\$ 1.1 trillion. Just as a reference, the Brazilian GDP in 2012 was estimated by IBGE at R\$ 4.4 trillion. So we will deal with a financial volume that corresponds to 25% of Brazilian GDP.

Curto Prazo (Short Term) Funds

Table 9

Asset Managers - Short Term Funds

Manager	(R\$ Millions)	% total
BB DTVM S.A	71,962.1	64.8%
SANTANDER	12,050.7	10.8%
CAIXA	10,678.5	9.6%
ITAU UNIBANCO	6,119.6	5.5%

In February 2013, there were 131 funds in the Short Term category at ANBIMA's Database. The total amount of funds in the segment reached R\$ 111,076 million and was concentrated in 4 major Asset Managers that were responsible for 90% of this total financial volume. These 4 companies had 14 funds in the Short Term category, however, excluding the closed funds for new investments or the restricted ones (ANBIMA defines restricted fund as one that has a shareholder with more than 50% of the total participation) and the funds with less than 36 monthly observations, we obtained 6 funds that could be analyzed.

Table 10

Selected Short Term Funds

Short Term Funds	Asset Management	PL (R\$1,000) Feb/2013
FI CURTO PRAZO	SANTANDER	5,639,544
BB TOP CP 2 FI DE CP	BB DTVM	14,196,602
ITAU CURTO PRAZO FI	ITAU UNIBANCO	4,011,433
ITAÚ CUSTÓDIA CP FI	ITAU UNIBANCO	225,110
Extra Premium II CP FI	ITAU UNIBANCO	9,208
RT ENTERPRISE CP FI	ITAU UNIBANCO	1,595,943
TOTAL		25,677,840

DI (Floating) funds

Table 11

Asset Managers - Floating Funds

Manager	(R\$ Millions)	% total
BRADESCO	67,360.6	27.0%
ITAU UNIBANCO	53,568.7	21.4%
BB DTVM S.A	37,306.4	14.9%
SANTANDER	25,110.3	10.1%
HSBC	24,007.3	9.6%

The ANBIMA's Database contained 438 funds in the DI category, totaling R\$ 249,789 million. The top 5 managers amounted 83% of total resources, concentrated in 85 funds. Excluding the funds that were closed or restricted (ANBIMA defines restricted fund as one that has a shareholder with more than 50% of the total participation) or the ones with less than 36 monthly observations, the scope is reduced to 35 funds. Nevertheless, there are two specific funds from Boavista⁸ / Bradesco with an irrelevant financial volume and a behavior that could distort the sample. Due to that, they will be excluded from the sample as well, reducing the number of DI funds that will be analyzed to 32.

⁸ Banco Boavista was a financial institution based in the city of Rio de Janeiro. During the 1990s, the bank was swallowed by a financial turmoil and was acquired by Banco Interatlântico, a partnership between the Portuguese Espírito Santo Financial Group, the French Credit Agricole and the Brazilian family Monteiro Aranha. This group also failed to solve the problems of the bank that was finally sold to Banco Bradesco in the year 2000. These two funds are part of this heritage and should not be characterized as a typical fund that is regularly offered to retail clients.

Table 12

Selected Floating Funds

DI (Floating) fund	Asset Management	PL (R\$1,000) Feb/2013
FI ESPECIAL II REF. DI	SANTANDER	62,796
FI PROFIT REF. DI	SANTANDER	569,402
FI REFERENCIADO DI	SANTANDER	17,103,389
FI TIT. PUBLIC. REF DI	SANTANDER	2,573,411
BESC REF. DI INST. FI	BB DTVM	13,844
BECSUPER - FI REF. DI	BRADESCO	56,285
FI R DI Cd Pv LP Maxim	BRADESCO	43,268
FI REF DI FED. EXTRA	BRADESCO	3,316,192
FI REF. DI HIGH	BRADESCO	8,221
FI REF. DI SKY	BRADESCO	65,731
BRAM FI REF. DI FED. II	BRADESCO	1,777,740
BRAM FI REF. DI RUBI	BRADESCO	18,990,850
RENBEC - FI REF. DI	BRADESCO	2,488
FI REF DI BRAZIL	HSBC	341,807
FI R DI Cd Pv LP Execut.	HSBC	7,199,467
FI REF DI LP Tit. Publicos	HSBC	1,418,287
FI REF DI CASH	HSBC	1,851,958
FI REF DI CASH II	HSBC	1,949,964
FI REF DI LP	HSBC	10,411,950
ITAU B REF DI FI	ITAU UNIBANCO	48,043
ITAU CAIXA REF DI FI	ITAU UNIBANCO	6,271
GIPFEL FI REF DI Cd Pv	ITAU UNIBANCO	488,073
ITAU INST REF DI FI	ITAU UNIBANCO	322,759
LION REF DI FI	ITAU UNIBANCO	13,038
PERFIL REF DI FI	ITAU UNIBANCO	1,036,689
ITAU REF DI FI	ITAU UNIBANCO	13,914,838
REF DI SOVEREIGN FI	ITAU UNIBANCO	48,859
Soberano REF DI LP FI	ITAU UNIBANCO	4,696,891
SPECIAL REF DI FI	ITAU UNIBANCO	8,898,199
Unibanco Cash DI FI REF	ITAU UNIBANCO	233,457
Unibanco INST DI FI REF	ITAU UNIBANCO	281,368
Unibanco TOP DI FI REF	ITAU UNIBANCO	9,151,154
TOTAL		106,896,690

Renda Fixa (Fixed Income) Funds

Table 13

Asset Managers - Fixed Income Funds

Manager	(R\$ Millions)	% total
BB DTVM S.A	205,288.9	28%
ITAU UNIBANCO	126,430.7	17%
CAIXA	107,750.7	14%
BRADESCO	78,220.5	11%
BEM (BRADESCO)	57,684.6	8%
SANTANDER	35,003.7	5%

There were 1122 funds at the ANBIMA's Database recorded as Fixed Income, and they had a total of R\$ 743,586.84 million in assets under management. The 6 biggest asset managers hold 82% of the total volume, under 665 funds. Again, from this group it was taken the closed and restricted funds (ANBIMA defines restricted fund as one that has a shareholder with more than 50% of the total participation) or the ones with less than 36 monthly observations, what limited the pool to 32 funds to be analyzed.

Table 14

Selected Fixed Income Funds

Fixed Income Funds	Asset Management	PL (R\$1,000) Feb/2013
Consenso FI RF Cd. Priv.	SANTANDER	58,217
FI Ded. Saúde Supl. ANS	SANTANDER	349,056
FI SAS CASH RF	SANTANDER	104,422
FI Córdoba RF Créd. Priv.	SANTANDER	119,133
BB BESC RF CLASSE FI	BB DTVM	36,475
BRADESCO FI RF INR	BEM	8,224
FI RF MAPFRE IGPM	BEM	79,275
MAPFRE RF SUPER FI	BEM	337,796
BECMAXI - FI RF	BRADESCO	20,914
FI RF D S Saúde Sup ANS	BRADESCO	286,640
FI RF PRATIGI	BRADESCO	4,819
FI RF DURATION	BRADESCO	308,883
FI RF EMPRESA	BRADESCO	220,397
FI RF TARGET I	BRADESCO	959,449
FPSO FI RF Créd Priv	BRADESCO	9,381
PRIVATE FI RF	BRADESCO	322,778
VITORIA FI RF Créd Priv	BRADESCO	45,374
FI RF Crédito Privado VR	BRADESCO	131,949
FI RF IRF M 1	BRADESCO	593,198
FI RF IRF M 1 Tit. Public.	BRADESCO	103,071
FI SUCUPIRA RF	CAIXA FEDERAL	180,562
ALPHA INVEST RF FI	ITAU UNIBANCO	9,244
HSBC FI RF GATEWAY	ITAU UNIBANCO	140,117
CRISTAL RF FI	ITAU UNIBANCO	39,829
FRANCES RF FI	ITAU UNIBANCO	16,686,405
Invest. Grade RF Cd Pv FI	ITAU UNIBANCO	532,924
PERFIX RENDA FIXA FI	ITAU UNIBANCO	201,856
PERFORMANCE RF FI	ITAU UNIBANCO	5,549
Private Cd Dif RF CP FI	ITAU UNIBANCO	2,307,791
ITAU RENDA FIXA FI	ITAU UNIBANCO	7,089,520
RF CP Mast. Active Fix FI	ITAU UNIBANCO	5,827,603
TASMANIA REF IPCA FI	ITAU UNIBANCO	197,783
TOTAL		37,318,634

Thus, the sample to be analyzed is restricted to 70 funds from six different institutions: BB DTVM; ITAU UNIBANCO; CAIXA FEDERAL; BRADESCO; BEM (acquired by Bradesco in 2004); BANCO SANTANDER; HSBC. These group is composed by two institutions with foreign capital control, two listed banks controlled by Brazilian capital and two state owned banks. Again, these 70 funds are open mutual investment instruments available to retail clients with portfolios based, directly or indirectly, in the internal local currency sovereign debt, and they all have at least 36 monthly uninterrupted observations.

3.4 Performed Results

Among the 70 fixed income investment funds selected for this analysis, none of them had a negative nominal performance. Even a monthly negative result was a seldom event with only 14 observations in a universe of 2628 monthly results (36 months and 73 funds). Actually, the worst performance in the sample was slightly below inflation and it was the only case where a fund was not capable to preserve the purchasing power of the clients against IPCA during these three years. The average return was 26.14% and the median was 26.24% with a standard deviation of 2.79%. Thus, measured against the 19.77% of IPCA inflation during the period, it is possible to say that no systematic destruction of value occurred during these three years.

The most likely outcome for a regular client from a retail bank that would invest in a fixed income fund was an increase in the purchasing power of his savings at an average of 1.7% per year. Among the 70 funds in the sample, 53 stayed in a range between 1% and 2%. The second most likely scenario would be a performance between 2% and 3% per year, with 11 funds in this segment. Then we had 2 funds with a real return above 3% per year, where it was also concentrated the negative monthly results observed in the sample. At the lower end, 3 funds had a performance above inflation, however, below 1% per year of real return. And, as it was previously mentioned, only one fund performed slightly below inflation, with minus 1% of real return per year. Among these 4 funds with lower results, there was not even a single month with negative nominal returns.

Table 15

Performed Results

Real Performance per Year	Number of Funds	Participation
Performance < 0%	1	1.4%
0% < Performance < 1%	3	4.3%
1% < Performance < 2%	53	75.7%
2% < Performance < 3%	11	15.7%
3% < Performance < 5.5%	2	2.9%
Total	70	100.0%

Thus, the vast majority of funds, after charging all fees and taxes, managed to preserve the purchasing power of Brazilian families' financial portfolio during the analyzed period. It is also worth to mention that the performance was reasonably homogeneous.

4. Tesouro Direto

Tesouro Direto (Direct Treasury) is an electronic platform that allows individuals to buy small amounts of Brazilian Treasury Bonds directly from the Federal Government. Investments can start from R\$ 30.00 and in September 15, 2013 there were 10 different bonds available as described in table 15.

Table 16

Bonds Available at Tesouro Direto

Indexed to IPCA	Tenure
NTNB Principal 150519	05/15/2019
NTNB 150820	08/15/2020
NTNB Principal 150824	08/15/2024
NTNB 150535	05/15/2035
NTNB Principal 150535	05/15/2035
NTNB 150850	08/15/2050

Prefixed	Tenure
LTN 010116	01/01/2016
LTN 010117	01/01/2017
NTNF 010123	01/01/2023

Indexed to Selic (overnight) Floating	Tenure
LFT 070317	03/07/2017

Source: Brazilian National Treasury, Ministério da Fazenda

This electronic platform was implemented on January 7, 2002 by the National Treasury, in partnership with BMF&BOVESPA, the local stock exchange, and the Companhia Brasileira de Liquidação e Custódia (CBLIC), a Brazilian clearing house. Tesouro Direto allows individuals to purchase Treasury Bonds from anywhere, through internet, and the investors receive the proceeds of the application in their banking account, previously specified, at the expiration of the paper or they can also sell them prior to maturity to the National Treasury on Wednesdays at their market value. Before this electronic platform, small investors would buy bonds only indirectly, through the acquisition of mutual funds quotas.

Regarding taxation in Brazilian treasury bonds, for investments that are kept up to six months in the individual portfolio, the rate is 22.5%, decreasing to 20% between six months and one year. From one year and two years the income tax is 17.5% and over a two-year period the rate is reduced to 15%. About the transactional costs, a customer at Tesouro Direto can implement an investment strategy spending less than 0.58% per year, which is the average of 0.28% charged by the Brazilian Securities (Table 16) to allow the brokerage access to Tesouro Direto and 0.3% per year charged for custody of securities on the BM&FBovespa.

Table 17

Brokerage access to Tesouro Direto

Security	Administrative Fee
CGD INVESTIMENTOS CVC S/A	0,00%
CORVAL CVM S.A.	0,00%
EASYNVEST - TITULO CV S.A.	0,00%
H.COMMCOR DTVM LTDA	0,00%
SPINELLI S.A. CVMC	0,00%
TULLETT PREBON BRASIL S.A. CVC	0,00%
UBS BRASIL CCTVM S.A.	0,06%
OCTO CTVM S/A	0,10%
SOCOPA SC PAULISTA S.A.	0,10%
SLW CVC LTDA.	0,19%
ALFA CCVM S.A.	0,20%
ALPES CCTVM S.A.	0,20%
ATIVA S.A. CTCV	0,20%
CAPITAL MARKETS CCTVM LTDA.	0,20%
GRADUAL CCTVM S/A	0,20%
ICAP DO BRASIL CTVM LTDA	0,20%
INTERFLOAT HZ CCTVM LTDA.	0,20%
MIRAE ASSET SECURITIES BRASIL	0,20%
PLANNER CV S.A	0,20%
RENASCENÇA DTVM LTDA	0,20%
AGORA CTVM S/A	0,23%
BANRISUL S/A CVMC	0,25%
BRASIL PLURAL CCTVM S/A	0,25%
CITIGROUP GMB CCTVM S.A.	0,25%
CLEAR CTVM LTDA	0,25%
COINVALORES CCVM LTDA.	0,25%
CORRETORA SOUZA BARROS S.A.	0,25%
FATOR S.A. CV	0,25%
INDUSVAL S.A. CTVM	0,25%
MAGLIANO S.A. CCVM	0,25%
MAXIMA S/A CTVM	0,25%

NOVINVEST CVM LTDA.	0,25%
PAX CVC S/A	0,25%
PRIME S.A. CCV	0,25%
SITA SCCVM S.A.	0,25%
TALARICO CCTM LTDA.	0,25%
TOV CCTVM LTDA	0,25%
WALPIRES S.A. CCTVM	0,25%
XP INVESTIMENTOS CCTVM S.A.	0,25%
BANESTES DTVM S/A	0,30%
ELITE CCVM LTDA.	0,30%
GERAÇÃO FUTURO CV S.A.	0,30%
H.H. PICCHIONI S.A. CCVM	0,30%
HSBC CTVM S.A.	0,30%
INTERBOLSA DO BRASIL CCTVM	0,30%
J. SAFRA CVC LTDA.	0,30%
MUNDINVEST S.A. CCVM	0,30%
NOVA FUTURA DTVM LTDA	0,30%
PETRA P. TRADER CTVM S.A	0,30%
SCHAHIN CCVM S.A.	0,30%
UNILETRA CCTVM S.A.	0,30%
VOTORANTIM CTVM LTDA	0,30%
BES SECURITIES DO BRASIL CCVM	0,35%
ESC. LEROSA S.A. CV	0,35%
GERALDO CORREA CVM S.A.	0,35%
UNIBANCO INVESTSHOP S.A.	0,35%
AMARIL FRANKLIN CTV LTDA.	0,40%
CAIXA ECONOMICA FEDERAL	0,40%
NSG POSITIVA DTVM	0,40%
SANTANDER CCVM S/A	0,40%
SENSO CCVM S.A.	0,40%
SOLIDEZ CCTVM LTDA	0,40%
UM INVESTIMENTOS S.A. CTVM	0,40%
ITAÚ CV S/A	0,45%
ADVALOR DTVM LTDA	0,50%
BB BANCO DE INVESTIMENTO S/A	0,50%
BRADESCO S/A CTVM	0,50%
CODEPE CV S.A.	0,50%
CORRETORA GERAL DE VC LTDA	0,50%
ESCRITORIO RUY LAGE SCT LTDA.	0,50%
ITAÚ CV S/A	0,50%
OLIVEIRA FRANCO SCVC LTDA.	0,50%
SOLIDUS S/A CCVM	0,50%
BANCO DAYCOVAL	2,00%

Source: Brazilian National Treasury, Ministério da Fazenda

As it was mentioned during this dissertation, a hypothetical investment portfolio was simulated as a potential alternative for clients of fixed income mutual funds. The aim is to compare the results if an individual would have acquired National Treasury Bonds in a simple and very conservative approach. Thus, we selected three categories of Brazilian Treasury bonds: 1st - the NTN-B (Notas do Tesouro Nacional, série B) that is an inflation linked bond (IPCA) similar to the American TIPS (Treasury "inflation-protected security"); 2nd - the LFT (Letras Financeiras do Tesouro) that is a floater bond linked to the Brazilian overnight interest rate SELIC (Sistema Especial de Liquidação e de Custódia), that is similar to the LIBOR, which target is defined by the Brazilian Central Bank at the COPOM (Comitê de Política Monetária) meetings; 3rd - LTN (Letra do Tesouro Nacional), that is a traditional bullet bond with the entire face value being paid on the maturity date.

In order to turn the strategy simpler to be analyzed, we opted for the series of NTNBs and LFTs that incorporates the coupon in the principal, having both being paid at once on the maturity date and not periodically. Thus, at the end of August 2010, this imaginary investor would have acquired a NTN-B (principal) 2015 and a LFT 2014, with respective tenures at May 15th, 2015 and March 7th, 2014. For these bonds, as they would be carried for more than two years, the investor would have to pay an income tax of 15% over his eventual gain. For the LTN, as there was no three year tenure bullet bond, the investor would have to buy a LTN 2011, wait for its payment at July 1st, 2011 and then swap the investment to the LTN 2014, with tenure at January 1st, 2014. The consequence would be a higher income tax of 20% for the LTN 2011, as it would stay in the investor's account for more than 6 months and less than a year. For the LTN 2014 the taxation would be 15% as it would be carried for more than two years. All the data and information was obtained at the Tesouro Direto data bank (<https://www.tesouro.fazenda.gov.br/tesouro-direto>).

An investor that had acquired a NTN-B (principal) 2015 at the end of August 2010 and sold it at the end of August 2013 would have a gross nominal profit of 48.09%. From this figure, we should discount 15% of income tax. There is also a cost of 0.58% per year over the total value of the bond. In net terms, the investor would obtain a gain of 38.7%, what represents a real gain of 15.8% when discounted the inflation of 19.77% measured by IPCA during this period. Thus, the NTN-B investment would result in a real gain of 5% per year. Among the 70 mutual funds in the sample, only one had a higher performance.

If we change the exercise to an investment in a LFT 2014, the results would be a gross nominal profit of 29.45%. If we discount 15% of income tax and 0.58% per year for the Tesouro Direto costs, there would be a net nominal gain of 25.03%. This represents a net real

gain of 4.4% when considered the IPCA variation of 19.77%. Thus, the LFT investment would result in a real gain of 1.44% per year, what is a higher performance than 16 of the mutual funds in the sample.

Finally, regarding an LTN investment approach, the gross nominal gain for the 2011 bond would be 9.2% until its maturity at July 1st, 2011. Then, it should be taken 20% as income tax and one year of Tesouro Direto costs, reducing the net nominal gain to 6.8%. The total capital would be reinvested immediately in a LTN 2014. By the end of August 2013, this second bond would have performed another 31% as a gross profit that, considering two years for Tesouro Direto costs and a 15% of income tax, would achieve a total net nominal gain of 25%. Combining both bonds, the total net nominal gain for the three year period would be 33.6%, what represents a net real gain of 11.6% above IPCA for the period or 3.7% per year. Compared to the 70 mutual funds in the sample, only two had a higher performance.

A simple and very conservative portfolio that combines in equal parts these three categories of Brazilian Treasury bonds would have achieved a net nominal performance of 32.5% in the period, allowing a 10.6% gain above inflation in the period or 3.4% per year. Only two funds in the sample would perform better than this.

Table 18

Portfolio Results at Tesouro Direto

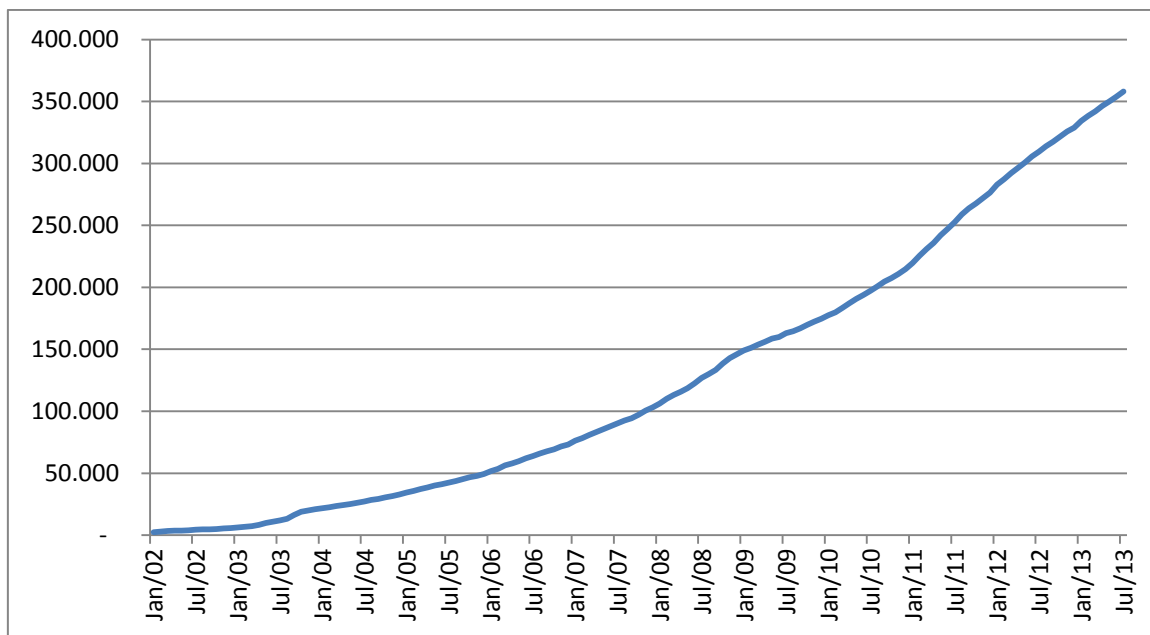
Treasury Bond	Net Nominal Gain	Real Gain	Real Gain per year
NTN-B	38.7%	15.8%	5.0%
LFT	25.0%	4.4%	1.4%
LTN	33.6%	11.6%	3.7%
Combined	32.5%	10.6%	3.4%

Basically, this is the reason for the success of this electronic platform. According to the Balanço do Tesouro Direto - Julho 2013, a monthly report from Brazilian National Treasury, in twelve years of existence, it has achieved at the end of July 2013 a total of 357,914 registered investors with a portfolio of R\$ 10 billion, composed by 5.3% of bonds maturing within one year; 52% with maturities between one and five years; 13.2% correspond to bonds with maturities between five and ten years; and 29.5% with a tenure longer than ten year time. It is important to mention that, if we had done the same simulation with a ten year perspective and utilized the average portfolio of the registered investor at the Tesouro Direto, that has a much longer tenure, the returns obtained would be considerably higher. Apparently, more and

more people have been gradually discovering how to increase the performance of their financial portfolio for the long run.

Chart 1

Evolution of registered investors at Tesouro Direto



Source: Brazilian National Treasury, Balanço do Tesouro Direto 2013 Jul – Tabelas

Finally, it must be stressed that an initiative such as Tesouro Direto is an example that a deeper and more structural change in this part of the financial market could foster savings and investments, allowing the economy to increase its structural potential long term growth ratio. Just as an inspiring idea, the creation of a legal framework to stimulate the assembling of a more developed electronic platform of investment, also dedicated to provide solutions to companies or infrastructure projects and not only to Federal Government, could allow the disintermediation between savers and investment opportunities. As a consequence, these platforms would increase the efficiency of funding productive investments through better remunerating Brazilian savings. Basically, banks would stay focused on credit and these “new” structures would target investment funding and savings correlated activities. To support this perspective of reshaping the financial market, two more arguments could be highlighted: the coming new Basel III rules; and the global credit crisis hangover that banks will have to keep

dealing with. Banks, due to their core activity, are capital intensive, and have their Return on Equity (ROE) almost entirely defined by the spread and delinquency ratios. Fees are not relevant when compared with overall revenues of the financial market (Appendix I) and these electronic platforms of investment, similar to Tesouro Direto, would not jeopardize their *status quo*.

5. Poupança

According to information obtained from the website of Caixa Economica Federal (CAIXA), the origins of Brazilian Savings Account is merged with the startup of CAIXA itself as a financial institution. The bank was established primarily to collect deposits of Brazilians, especially the most underprivileged, those from the bottom of the social ladder. This association can be noticed in the Decree No. 2,723, of January 12, 1861, which created the Caixa Econômica da Corte (Royal instead of Federal). In Article 1, the Emperor Dom Pedro II, from the Bragança family, wrote: "The Caixa Econômica established in the city of Rio de Janeiro (...) has the aim to receive deposits at 6% of interest rate, from the small savings of the poorer classes and to ensure, under warranty of the Imperial Government, the faithful restitution of belonging to each investor, whenever he claims for (...)". This level of rate was reinforced in the Decree No. 5594 of April 18, 1874 where it was stated that annual interests would not be more than 6%, and each year a new level, below 6%, would be established. Since the XIX century, CAIXA and Brazilian Government have used many times this 6% reference to settle the interest rate to the savings accounts.

The focus on the lower levels of the social ladder was also a constant concern and reference to CAIXA and the Government, as it became evident in two moments: Law No. 2040, from the year 1871, allowed slaves to save money, through donations, bequests and inheritances, or income derived from any kind of work, and to deposit it in a saving account at CAIXA; 44 years later, Decree No. 11820 of December 15, 1915, opens the possibility for a married woman to have her own saving account, unless she was expressly forbidden to do so by her husband.

During the initial phase of the inflationary process that haunted Brazil for three decades, the Law No. 4380, from August 21, 1964 established the "monetary correction" (Correção Monetária) to savings counts deposits. On practical terms, the Brazilian Central Bank would indicate an index to compensate at least part of the inflation impact, adding this index variation to the previous annual interest rate of 6% (0.5% per month). The Law 8177 of March 1, 1991, changed the name of "monetary correction" (Correção Monetária) to "Reference Rate" (Taxa Referencial - TR).

Finally, on May 3, 2012, the Provisional Measure 567 (a law that is enacted by the Executive), stated that the resources in the Savings Accounts would begin to be remunerated as follows: While the Selic (overnight) rate is kept above 8.5% per year, Savings Accounts would continue to be remunerated with TR + 0.5% per month; However, whenever the Selic rate is equal to or lower than 8.5% per year, the compensation shall be 70% of the effective Selic. The reason for this change was a side effect from the reduction on the local interest rate that, whenever below 8.5%, turns Poupança more attractive than the majority of the mutual funds. The pressure from the mutual fund industry prevailed.

The conclusion that can be perceived is that since its beginning, the Poupança was not designed to be attractive. It was created to be barely acceptable by the lower levels of the social ladder and not intended to be offered to the upper middle class. Whenever there was a threat of becoming more attractive than most part of the funds available to retail customers, due to the decline of local interest, there was a broad articulation to change the rules. Thus, the performance of Poupança was in the past and should be in the future structurally lower than most part of the mutual funds offered by the large retail banks, as it was planned. During the period analyzed by this dissertation, the nominal result obtained was 21.8% during the 36 months. As Poupança is a tax shielded investment, the real result compared to inflation was 1.7% for the period or 0.6% per year. Only three funds from the sample would have a poorer performance. The only real positive aspect is the volatility, which is much lower than any other investment option.

6. Return & Risk

6.1 Sharpe Ratio Analysis

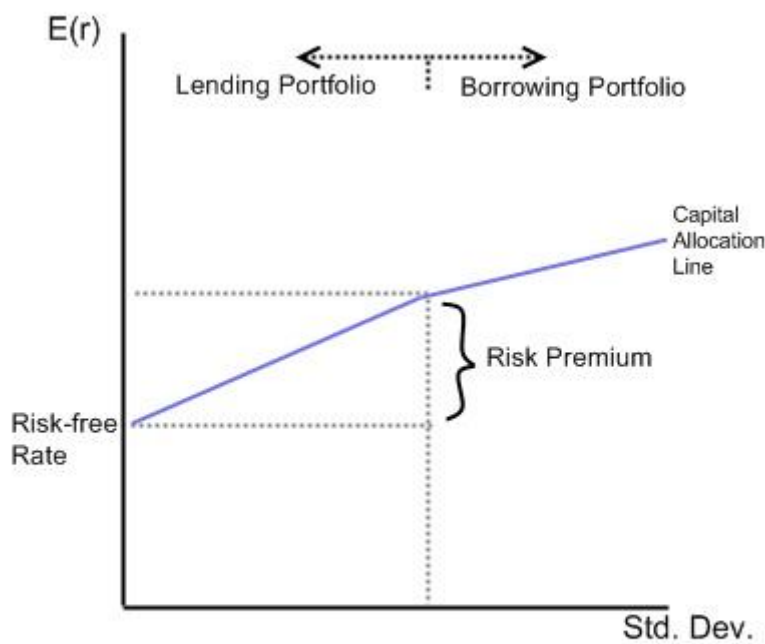
Harry Markowitz, at Modern Portfolio Theory (MPT), assumes that individuals are risk averse. Thus, between two alternatives that offer the same expected return, investors will prefer the less volatile one, accepting an increase on risk only if compensated by higher expected returns. The MPT was initially presented in the 1950s and developed through the 1970s, since then some theoretical and practical criticisms have been raised against it, ranging from evidence that financial returns do not follow a Gaussian-symmetric distribution to concerns that correlations between asset classes are not fixed. Other more nihilistic critics aim at evidence that investors are not rational and markets may not be efficient.

This dissertation will move apart from all this polemic and accept the prevalent theoretical methodology where it is possible to establish some reference as a “risk free” benchmark and compare the asset in terms of the return and volatility against it. As we are dealing with the Brazilian fixed income mutual fund industry, the most utilized “risk-free” benchmark by the industry is the average daily rate of the Certificados de Depósitos Interbancários (CDI - Interbank Certificates of Deposit). These overnight deposits between banks are utilized to regulate the short term liquidity in the financial system, where institutions may seek resources or invest surplus funds. These transactions are negotiated to be compensated in the next day and the average daily rate of CDI is used as a reference for the cost of money (interest). Therefore, this rate is also used as a benchmark to measure the performance of local fixed income mutual funds.

When a risk-free asset (the CDI in our dissertation) is introduced, it is possible to establish a line named as the efficient frontier. It is tangent to the hyperbola at the pure risky portfolio with the highest Sharpe ratio (that is a risk-adjusted performance ratio, described in the next page). Its horizontal intercept represents a portfolio with 100% of holdings in the risk-free asset; the tangency with the hyperbola represents a portfolio with no risk-free holdings and 100% of assets held in the portfolio occurring at the tangency point. This efficient line is called the capital allocation line (CAL), with the following formula:

$$E(R_C) = R_F + \sigma_C \frac{E(R_P) - R_F}{\sigma_P}.$$

P is the risky portfolio, F is the riskless portfolio, and C is a combination of portfolios P and F. The slope of the capital allocation line is similar to the incremental return of the portfolio to the proportional increase of risk. Thus, the slope of the capital allocation line is called the reward-to-variability ratio because the expected return increases continually with the increase of risk as measured by the standard deviation



There are many indicators of investment risk that apply to the analysis of stocks, bonds and mutual fund portfolios: alpha, beta, r-squared, standard deviation, the Sharpe ratio, etc (Elton and Gruber, 2011). All these metrics are intended to determine the risk-reward parameters of different investments. Specifically, Sharpe Ratio is the prevalent reference for fixed income mutual funds. Developed by William Sharpe, the ratio measures risk-adjusted performance and it is calculated by subtracting the risk-free rate of return (36 month CDI average in this case) from the rate of return of an investment (the average of 36 month for each mutual fund) and dividing the result by the investment's standard deviation of its return (36 month of each mutual fund performance) and multiplying by the square root that annualizes the parameter (12 for our case, as we are analyzing monthly observations). Finally, it is important to

mention that all calculations were done using the performance of the funds after all fees but before the income tax.

$$S_y = (y - CDI) / \sigma_y * \sqrt{12}$$

Basically, the Sharpe ratio is a parameter to compare the potential return and risk of a specific investment compared to another similar alternative, having a risk-free possibility in the scenario. The greater an investment's Sharpe ratio, the better its risk-adjusted performance.

Table 19

Return and Risk

Fund	Sharpe	Performance before taxes	Performance after taxes
Extra Premium II CP FI	-5,51	20,4%	16,1%
RENDBEC - FI REF. DI	-2,97	24,9%	20,9%
BECMAXI - FI RF	-2,95	25,3%	21,2%
Poupança (Savings Account)	-12,96	21,8%	21,8%
ITAU CUSTÓDIA CP FI	-0,85	29,5%	23,1%
FI REF. DI HIGH	-1,41	28,1%	23,6%
BECSUPER - FI REF. DI	-1,23	28,7%	24,0%
BRADERSCO FI RF INR	-0,95	28,9%	24,2%
FPSO FI RF Créd Priv	-1,03	29,2%	24,5%
FI CURTO PRAZO	0,09	31,4%	24,6%
RT ENTERPRISE CP FI	0,09	31,4%	24,6%
ALPHA INVEST RF FI	-0,78	29,4%	24,6%
ITAU CURTO PRAZO FI	0,13	31,5%	24,6%
BB TOP CP 2 FI DE CP	0,13	31,5%	24,7%
BESC REF. DI INST. FI	-0,76	29,6%	24,8%
VITORIA FI RF Créd Priv	-0,86	29,5%	25,0%
FI RF PRATIGI	-0,59	29,9%	25,0%
FI Ded. Saúde Supl. ANS	-0,59	30,0%	25,1%
ITAU CAIXA REF DI FI	-0,49	30,1%	25,2%
FI REF. DI SKY	-0,53	30,1%	25,2%
FI RF D S Saúde Sup ANS	-0,48	30,2%	25,3%
HSBC FI RF GATEWAY	-0,42	30,4%	25,4%
CRISTAL RF FI	-0,41	30,4%	25,4%
FI REF DI LP Tit. Publicos	-0,39	30,4%	25,5%
PERFORMANCE RF FI	-0,34	30,5%	25,5%
Unibanco Cash DI FI REF	-0,33	30,5%	25,5%
FI REF DI BRAZIL	-0,33	30,5%	25,5%
Consenso FI RF Cd. Priv.	-0,16	30,9%	25,8%
Soberano REF DI LP FI	-0,17	30,9%	25,8%

FI REF DI FED. EXTRA	-0,13	31,0%	25,9%
ITAU B REF DI FI	-0,10	31,0%	25,9%
FI RF EMPRESA	-0,07	31,1%	26,0%
REF DI SOVEREIGN FI	-0,06	31,1%	26,0%
LION REF DI FI	0,01	31,3%	26,1%
GIPFEL FI REF DI Cd Pv	0,05	31,3%	26,2%
BB BESC RF CLASSE FI	0,05	31,4%	26,2%
FI REF DI CASH	0,08	31,4%	26,3%
FI REF DI CASH II	0,08	31,4%	26,3%
BRAM FI REF. DI FED. II	0,12	31,5%	26,3%
FI ESPECIAL II REF. DI	0,11	31,5%	26,3%
Unibanco INST DI FI REF	0,12	31,5%	26,3%
FI TIT. PUBLIC. REF DI	0,14	31,5%	26,4%
FI SAS CASH RF	0,20	31,7%	26,5%
CDI	n.a.	31,2%	26,6%
PRIVATE FI RF	0,23	31,8%	26,6%
FI RF Crédito Privado VR	0,25	31,8%	26,6%
Unibanco TOP DI FI REF	0,26	31,8%	26,6%
PERFIX RENDA FIXA FI	0,27	31,8%	26,6%
FI RF TARGET I	0,26	31,8%	26,6%
ITAU INST REF DI FI	0,29	31,9%	26,6%
FI Córdoba RF Créd. Priv.	0,33	32,0%	26,7%
FI RF DURATION	0,36	32,1%	26,8%
FI RF IRF M 1	0,25	32,1%	26,8%
FI RF IRF M 1 Tit. Public.	0,25	32,1%	26,8%
FI REF DI LP	0,43	32,2%	26,9%
FI PROFIT REF. DI	0,45	32,2%	26,9%
ITAU REF DI FI	0,46	32,2%	26,9%
FI R DI Cd Pv LP Execut.	0,48	32,3%	27,0%
Private Cd Dif RF CP FI	0,50	32,3%	27,0%
FI SUCUPIRA RF	0,45	32,5%	27,1%
SPECIAL REF DI FI	0,68	32,7%	27,3%
PERFIL REF DI FI	0,81	32,9%	27,5%
FI REFERENCIADO DI	0,75	32,9%	27,5%
BRAM FI REF. DI RUBI	0,78	33,0%	27,6%
FI R DI Cd Pv LP Maxim	0,76	33,0%	27,6%
Invest. Grade RF Cd Pv FI	0,81	33,1%	27,6%
MAPFRE RF SUPER FI	0,36	33,2%	27,7%
FRANCES RF FI	0,93	33,4%	27,9%
ITAU RENDA FIXA FI	1,01	33,4%	27,9%
RF CP Mast. Active Fix FI	1,67	34,7%	29,0%
Portfolio Tesouro Direto	1,10	41,0%	33,6%
TASMANIA REF IPCA FI	0,36	43,1%	36,1%
FI RF MAPFRE IGPM	2,83	48,6%	40,3%

It is interesting to notice that funds with the lowest performance had a high negative Sharpe ratio. Thus, they were consistently running below CDI, at a relatively stable pace, and their lower results were not derived from a singular event in a specific month. Poupança (Savings Account) may be the best example, as it is programmed to run at a specific level below CDI. Again, as there are funds with different levels of taxation, it should be mentioned that calculations were done with each respective performance before income tax. On the other extreme, the top performers were consistently running above CDI at a reasonable stable pace. Finally, it is worth to mention that our hypothetical portfolio from Tesouro Direto had a high Sharpe ratio, indicating that its superior performance was not a result from a specific month or was concentrated in a short period.

6.2 CDI versus SELIC as the Brazilian “risk-free” benchmark

Taking the CDI as the “risk-free” benchmark may be common sense for the participants of the local financial market. The Brazilian fixed income mutual fund industry utilizes the CDI simultaneously as the beacon and the compass; it is the universal benchmark and not only a “risk-free” paradigm. From performance to volatility, everything is measured against the CDI. However, the overnight deposits between banks (CDI), done to regulate the short term liquidity in the financial system, are far away from being a risk free business. Whenever an institutional problem arouses, a premium over the specific credit is immediately demanded. If the problem is big enough to spark systemic concerns, this premium increases considerably. The rate from the Sistema Especial de Liquidação e de Custódia (SELIC) could be considered more fitted to be a “risk-free” benchmark.

According to the Brazilian Central Bank (BCB), the SELIC rate is the price negotiated for the overnight loans between banks that have Brazilian Treasury Bonds deposited as collaterals at the SELIC (Special System for Settlement and Custody). Thus, the SELIC rate reflects the cost of the money for bank loans that are supported by the risk of having to compensate a federal government bond. The SELIC rate target is set by the BCB at the Monetary Policy Committee (COPOM) meetings and, normally, the difference between the CDI and the SELIC is marginal. For instance, to the time frame of this dissertation, the total premium accumulated at the CDI over the SELIC was less than 0.2% in the 36 month or less than 0.07% per year.

Specifically for the Sharpe analyses, as we were measuring the relative performance between funds and we were also trying to capture a higher or a lower accumulated result derived from a consistent strategy or a specific event, replacing CDI for SELIC rate does not change the overall outcome. The Sharpe Index may increase marginally; however, the rank among funds and alternative investments (Poupança or Tesouro Direto) does not change at all.

Table 20

Rank using Sharpe (CDI) versus Sharpe (SELIC)

Fund	Sharpe CDI	Sharpe SELIC
Poupança	-12,96	-13,32
ITAU EXTRA PREMIUM II CP FI	-5,51	-5,64
RENDBEC FI REFERENCIADO DI	-2,97	-3,10
BECMAXI FI RENDA FIXA	-2,95	-3,08
BRADESCO FI REF DI HIGH	-1,41	-1,53
BECSUPER FI REFERENCIAD DI	-1,23	-1,36
BRADESCO FPSO FI RF CP	-1,03	-1,17
BRADESCO FI RENDA FIXA INVES	-0,95	-1,06
BRADESCO VITORIA FI RF CP	-0,86	-0,99
ITAU CUSTODIA CURTO PRAZO CA	-0,85	-0,99
ALPHA INVEST RENDA FIXA FI	-0,78	-0,90
BB BESC REF DI INSTITUCIO FI	-0,76	-0,89
BRADESCO FI REND FXA PRATIGI	-0,59	-0,71
SANTANDER FI DEDICADO SAUDE	-0,59	-0,72
BRADESCO FI REFERENC DI SKY	-0,53	-0,66
ITAU CAIXA REFERENCIADO DI F	-0,49	-0,60
BRAD FI RF DED SET SAUD SUP	-0,48	-0,60
ITAU GATEWAY FI REF DI	-0,42	-0,55
ITAU CRISTAL RENDA FIXA FI	-0,41	-0,54
HSBC FI REF DI LP TIT PUBLIC	-0,39	-0,51
ITAU PERFORMANCE RF FI	-0,34	-0,45
UNIBANCO CASH DI FI REF	-0,33	-0,45
HSBC FI REFERENCIADO DI BRAZ	-0,33	-0,46
ITAU SOBERANO REF DI LP FI	-0,17	-0,30
FI CONSENSO RENDA FIXA CREDI	-0,16	-0,28
BRAD FI REF DI FEDERAL EXTRA	-0,13	-0,25
ITAU B REFERENCIADO DI FI	-0,10	-0,22
BRADESCO FI RF EMPRESA	-0,07	-0,21
ITAU SOVEREIGN REFERENCIADO	-0,06	-0,19
ITAU LION REFERENCIADO DI FI	0,01	-0,11
ITAU GIPFEL FI REF DI CR PRV	0,05	-0,08
BB BESC RENDA FIXA CLASSE FI	0,05	-0,07
HSBC FI REFERENCIADO DI CASH	0,08	-0,05
HSBC FI REFERENCIADO DI CASH	0,08	-0,05
SANTANDER FI CURTO PRAZO	0,09	-0,05
RT ENTERPRISE CURTO PRAZO FI	0,09	-0,04
FI REFEREN DI SANT ESPEC II	0,11	-0,01
BRAM FI REFER DI FEDERAL II	0,12	-0,01
UBB INST DI FI RF	0,12	-0,01
ITAU CURTO PRAZO FI	0,13	-0,01
BB TOP CP 2 FI CURTO PRAZO	0,13	0,00
SANTANDER FI REF DI TIT PUBL	0,14	0,02
FI RENDA FIXA SAS CASH	0,20	0,08
BRADESCO PRIVATE FI RF	0,23	0,11
BRAD FI RENDA FIXA CREDITO P	0,25	0,12
BRADESCO FI RENDA FIX IRF-M1	0,25	0,17
BRADESCO FI RENDA FIX IRF-M1	0,25	0,17
BRADESCO FI RF TARGET I	0,26	0,13

UNIBANCO TOP DI FI REFERENCI	0,26	0,14
ITAU PERFIX RENDA FIXA FI	0,27	0,15
ITAU INSTITUCIONAL REF DI FI	0,29	0,16
SANTANDER FI CORDOBA RF CRP	0,33	0,20
BRADESCO FI RF DURATION	0,36	0,24
MAPFRE RENDA FIXA SUPER FI	0,36	0,31
TASMANIA REFERENCIADO IPCA	0,36	0,35
HSBC FI REFERENCIADO DI LP	0,43	0,31
SANTANDER FI PROFIT REF DI	0,45	0,32
BRADESCO FI RF SUCUPIRA	0,45	0,35
ITAU REFERENCIADO DI FI	0,46	0,33
HSBC FI REF DI CRP LP EXECUT	0,48	0,36
ITAU PRIV CRED DIF REN FIX	0,50	0,38
SPECIAL REFERENCIADO DI FI	0,68	0,55
SANTANDER FI REFERENCIADO DI	0,75	0,63
BRADESCO FI REF CRED PRIV LO	0,76	0,64
BRAM FI REF DI RUBI	0,78	0,66
ITAU PERFIL REFERENCIADO DI	0,81	0,67
ITAU INV GRADE RF CRD PRV FI	0,81	0,69
ITAU FRANCES RENDA FIXA FI	0,93	0,81
ITAU RENDA FIXA FI	1,01	0,88
Portfolio Tesouro Direto (NTNB+LFT+LTN)	1,10	1,07
UNIBANCO PRIV ACT FIX RF CRP	1,67	1,53
FI RF MAPFRE IGPM SOBERANO	2,83	2,79

7. Conclusions

The emergence of mutual funds at the end of the eighteenth century can be considered a landmark in terms of risk mitigation for venture capitalists, fostering industrialization in the Western Hemisphere. Later, in the second half of the twentieth century, after the creation of mechanisms that curbed down systemic risk, the focus migrated towards the performance of these investment funds. In recent decades, in North America, there was a massive academic production demonstrating that management fees were disproportionately high when compared to the efficiency of the funds in terms of providing real returns to the investors.

In Brazil, based in the analysis of the sample selected for this dissertation, with 70 of the most prominent fixed income investment funds available to retail clients, there had been no systematic destruction of value during the three years that were analyzed. The most likely outcome for a regular client from a retail bank that would invest in a fixed income fund was the preservation of the purchasing power of his savings. As a matter of fact, only one fund in the sample performed slightly below inflation in the mentioned period. Most funds delivered a net annual return around 1.7% above the inflation measured by IPCA, more specifically, 91.4% of the sample provided a net annual return within the range from 1% to 3% higher than the variation of the IPCA. Finally, it must be stressed that 2.9% of the funds had a net annual performance exceeding 3% in real terms (above inflation).

Indeed, most part of the mutual funds was capable to preserve the real value for their clients' savings. Nevertheless, the simulation with the acquisition of National Treasury Bonds demonstrated that even a simple and very conservative approach delivered better results. If, instead of funds, the client had acquired a portfolio with a floater federal bond, an inflation linked bond, and a bullet treasury bond, for the same three year period, the net result would be 3.4% above inflation, already discounting taxes and fees.

Therefore, for periods of one or two years, the impact of an eventual 1% or 2% higher performance than an average fund may not be as significant. However, over 20 years or more, the difference becomes substantial. For instance, an individual that opts for a "do it yourself strategy", buying and rolling continuously 3 to 4 year tenure treasury bonds, could retire with 50% more capital when compared with a situation where the same investment would be done through a fixed income mutual fund. Thus, investment funds do not seem to be the best alternative for a long term strategy. However, they exceed an even more popular approach,

done by 44% of Brazilians: Savings Account. This has delivered less than 0.48% per year above inflation.

Finally, this dissertation suggests as a potential focus for future research a similar study on exclusive or closed-end funds, verifying if they have the same performance of retail open-end funds. It would also be interesting to analyze the funds dedicated to private pension plans such as PGBLs and VGBLs, analyzing if these active asset management structures, assembled for the long run, can add value to their customers.

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9. Appendix I

Fee revenues are relatively marginal to banks

As a first glance, even a pundit observer would arouse questions if the overall mutual fund industry is delivering a satisfactory performance to its average customer. The recent panorama and the future perspective have not helped as well, with the net profitability tending to be consistently close or even below inflation. And this is happening *urbi et orbi*, as the movement described has been happening in different countries for more than a decade. However, it is important to stress that this situation does not result from some conspiracy or predatory approach of financial institutions or, more specifically, banks.

According to Koyama and Takeda,⁹ around the world fees are not relevant when we analyze total revenues of the financial industry. Regarding fund fees, the contribution to the overall revenues is marginal in relative terms. Credit is the central aspect of the financial industry. Thus, discussing portfolio allocation with a bank is simply a lack of scope. The major concern of a bank regarding a client will be the long term credit, mortgage, credit card limits, etc.

Evidently, the nominal amounts and some strategic aspects of the mutual fund business justify the efforts of the financial institutions in assembling their asset manager units, as Lin Jwo Shiow describes at his thesis “Análise do papel de fundos de investimento no modelo de negócios dos bancos de varejo no Brasil. Aplicação nos casos de Itaú e Bradesco”. Retail banks do care about their asset management companies as, in terms of costs, the effort to assemble an operation is diluted if the client will be accessed by the retail bank platform.

The financial system in Brazil, and more specifically local banks, are much more concerned with corporate credit exposure or the expansion of its client basis to lower levels of the social ladder (aiming class D) than to settle the best investment approach to clients from class A, B and C. Thus, meanwhile the very high end of Brazilian clients can access better solutions through private banking platforms or investment boutiques, mass affluent and middle class clients are left behind. Again, it is just a matter that their investments are not a top priority. Thus, initiatives like Tesouro Direto should be highlighted and replicated, since they could increase the final return of families' savings without harming the overall profitability of the financial system nor jeopardizing the industry *status quo*.

⁹ Relatório do Banco Central do Brasil de Economia Bancária e Crédito 2007, Capítulo IX

Table 21

Financial Market Fees as a ratio to total revenues (%)

Countries	2001	2003	2005
Average	11	14	14
Czech Republic	14	23	23
Swiss	20	25	22
Poland	11	22	19
Sweden	13	17	18
Italy	13	15	16
Slovakia	9	12	16
Spain	12	15	16
Austria	12	15	16
Denmark	12	15	16
Finland	9	13	15
France	9	12	14
USA	11	14	14
Brazil	11	12	13
Norway	8	10	12
Germany	9	11	11
Luxemburg	n.a.	9	11
Ireland	11	12	9
Netherland	11	12	9
South Korea	5	8	8
Belgium	5	6	7

Source: Brazilian Central Bank - Relatório de Economia Bancária e Crédito 2007, Capítulo IX, page 164.

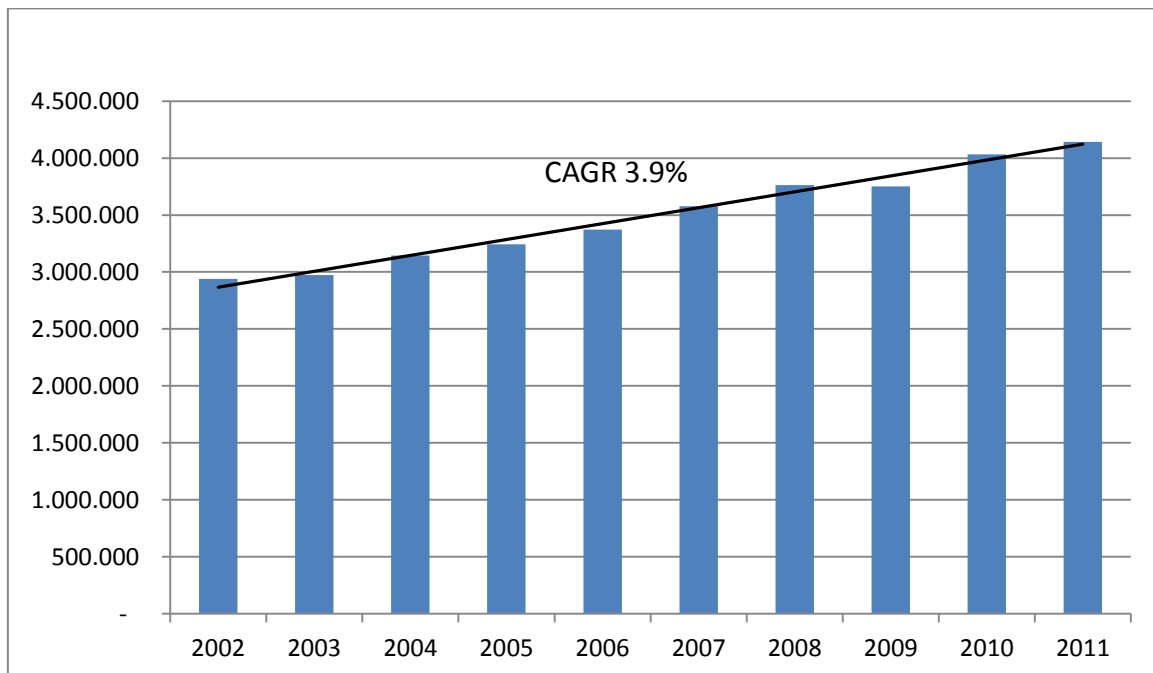
10. Appendix II

Financial services in Brazil have a high income elasticity of demand

Brazilian economy had an average annual growth ratio of 3.9% between 2002 and 2011, meanwhile the pace of expansion of local citizens with banking accounts has been 8% per year. Internet banking has presented a much stronger annual rate expansion: 18% between 2002 and 2011. This is one of many examples that, as the local economy expands and Brazilian families become wealthier, their ideal consumption basket of goods and services will change towards a more sophisticated balance. It is very likely that more value added financial services in Brazil will maintain a positive income elasticity of demand. For instance, according to FEBRABAN¹⁰, internet banking ratio in Brazil reached 46% in 2011, compared with 56% in UK, 54% in USA and 50% in Germany. Specifically for mutual fund industry, according to Anbima/Ibope, the number of mutual fund retail investors increased from 2.4 million in 2005 to 4.3 million in 2011. This represents an annual increase of 10.2% between 2005 and 2011.

Chart 2: National accounts – BCB¹¹/IBGE¹² data bank

Brazilian GDP R\$ million – constant prices of 2011



¹⁰ Federação Brasileira de Bancos; Pesquisa Ciab FEBRABAN 2012, O Setor Bancário em Números

¹¹ Brazilian Central Bank <http://www.bcb.gov.br/?INDECO>

¹² Instituto Brasileiro de Geografia e Estatística http://www.ibge.gov.br/home/estatistica/indicadores/pib/pib-vol-val_201203_9.shtm

Chart 3

FEBRABAN¹³ - **Brazilians with a bank account (million / 2002-2011)**

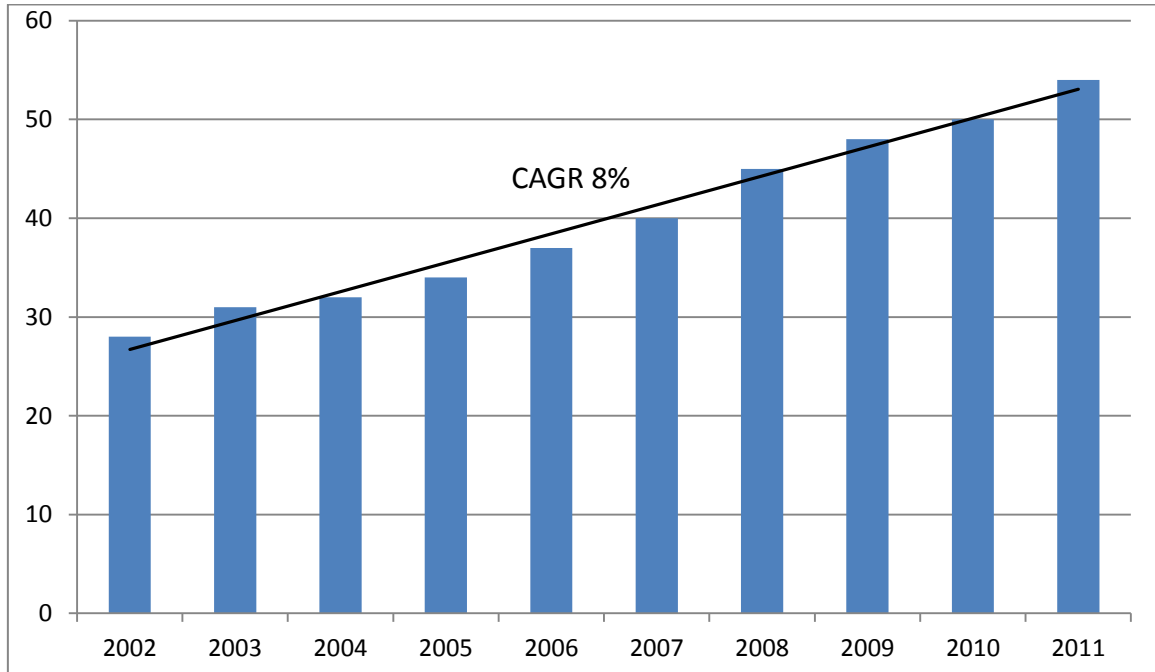
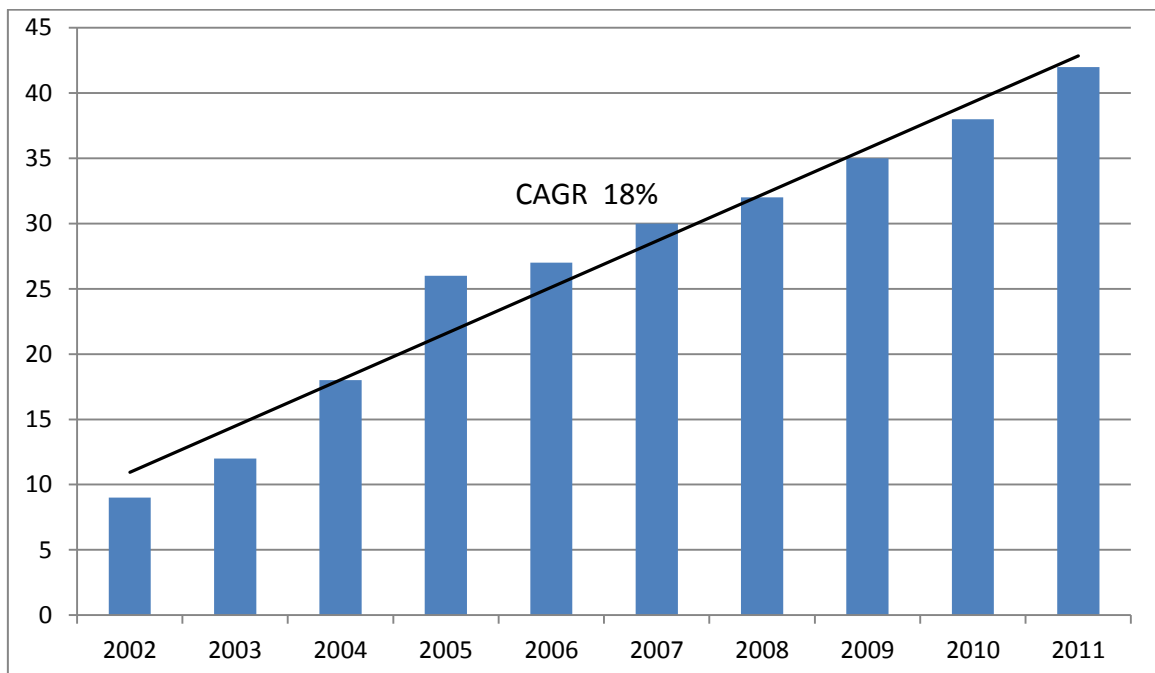


Chart 4

Personal Banking Accounts with Internet Banking (million / 2002-2011)



¹³ Federação Brasileira de Bancos; Pesquisa Ciab FEBRABAN 2012, O Setor Bancário em Números