

**INFLUENCE OF INVESTORS' MONITORING ON EQUITY MUTUAL FUNDS' PERFORMANCE**

**INFLUÊNCIA DO MONITORAMENTO PELOS COTISTAS NA PERFORMANCE DE FUNDOS DE INVESTIMENTO EM AÇÕES**

**INFLUENCIA DEL MONITOREO POR PARTE DE LOS INVERSIONISTAS EN EL DESEMPEÑO DE FONDOS DE INVERSIÓN EN ACCIONES**

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**ABSTRACT**

This paper analyzes the effect of investor monitoring on the performance of equity investment funds. For that purpose, we analyze the relationship between fund performance, measured using four-factor Alpha, and a set of control variables and monitoring proxy variables. We used monthly data for 1.317 funds, from January 2005 to April 2015. We organized the sample data into two subsamples, retail and institutional funds, to compare the performance of those funds whose clienteles presents, in principle, different monitoring capacities. Institutional funds presented superior performance compared to retail funds measured by net annual return as well as by four-factor Alpha. The variables *investment*, measured as the minimum initial investment requirement, and *type of manager* were statistically significant in the retail funds sample. The results show that greater capacity to monitor fund manager behavior could diminish the occurrence of activities against investor's interests, which is one of the main contributions of this research.

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**Key-words:** Equity investment funds; Monitoring; Performance; Retail investor; Institutional investor.

## RESUMO

Este artigo analisa o efeito do monitoramento exercido pelos cotistas no desempenho dos fundos de investimento em ações. Para isso, foi analisada a relação entre o desempenho dos fundos, mensurado pelo Alfa de Jensen, com um conjunto de variáveis de controle e variáveis *proxy* de monitoramento. Foram utilizados dados mensais de 1.317 fundos de ações, de janeiro de 2005 a abril de 2015. A amostra foi reorganizada em duas subamostras, fundos *retail* e fundos institucionais, para comparar o desempenho dessas duas clientelas com capacidades de monitoramento, em princípio, diferentes. Os resultados indicam que os fundos institucionais apresentaram *performance* superior à dos fundos *retail* mensurado tanto pelo retorno líquido anual médio como pelo alfa de Jensen. Verificou-se, ainda, que as variáveis *investimento*, mensurado pelo valor mínimo de aplicação inicial, e *tipo de gestor* mostraram-se significativas na amostra de fundos *retail*. Essa evidência estaria de acordo com o princípio pelo qual uma maior capacidade de monitorar o comportamento do gestor do fundo diminuiria a ocorrência de atividades que venham prejudicar os interesses dos investidores, o que é uma das principais contribuições do trabalho.

**Palavras-Chaves:** Fundos de investimento em ações; Monitoramento; Desempenho; Investidor de varejo; Investidor Institucional.

## RESUMEN

Este artículo analiza el efecto del monitoreo realizado por los inversionistas en el desempeño de fondos de inversión en acciones. Para eso, fue analizada la relación entre el desempeño de los fondos, medido por el Alfa de Jensen, con un conjunto de variables de control y variables *proxy* de monitoreo. Fueron utilizados datos mensuales de 1.317 fondos, de enero del 2005 a abril del 2015. La muestra fue reorganizada en dos sub-muestras, fondos *retail* y fondos institucionales, para comparar el desempeño de esas dos clientelas con capacidades de monitorear en principio diferentes. Los resultados indican que los fondos institucionales presentaron *performance* superior a la de los fondos *retail*, medido tanto por el retorno neto promedio anual así como por el Alfa de Jensen. Pudo verificarse que las variables *inversión*, medido por el valor de inversión mínimo inicial, y *tipo de gestor* fueron significativas en la muestra de fondos *retail*. Los resultados muestran que una mayor capacidad para monitorear el comportamiento de los gestores de fondos podría reducir la ocurrencia de actividades perjudiciales a los intereses de los inversionistas, lo cual es una de las principales contribuciones del presente trabajo.

**Palabras clave:** Fondos de inversión en acciones; Monitoreo; Desempeño; Inversionista *retail*; Inversionista Institucional.

## 1. INTRODUCTION

In the previous decades, the Brazilian capital market has expanded as one of the main Latin American markets, due to a combination of several factors such as an international scenario of higher liquidity and the expansion of investments flows to emerging markets. During this period, mutual funds became a major conduit for private investment in the country. According to data from the Brazilian Association of Financial and Capital Market Entities

(ANBIMA, 2015), in December 2015 assets under management of the mutual fund industry reached R\$ 2,98 trillion, an equivalent of 58.9% Brazilian GDP for the same year. Additionally, the number of shareholders, measured as the number of banking accounts that invest in mutual funds, totaled 11.7 million, for the same period, largely exceeding the number of accounts directly investing in public and corporate securities traded on the BM&FBOVESPA (378 and 592 thousand, respectively). The importance and relevance of the mutual fund industry is therefore indisputable in the Brazilian economic scenario.

One of the possible explanations for the expansion of the Brazilian mutual fund industry, as well as its popularity among investors, would be its ability to offer the possibility to access professional investment management services, with higher expected returns or differentiated performance, to less experienced and less sophisticated investors (MILANI; CERETA, 2012). In this context, based on the assumption that investors have an interest in investing in the alternatives that generate higher profitability compared to other plausible alternatives, a great deal of academic and practitioner research has focused on measuring the performance of mutual funds (CARHART, 1997; CASTRO; MINARDI, 2009; BARRAS; SCAILLET; WERMERS; 2010; LAES; SILVA, 2014). However, another set of studies applied an alternative approach based on the analysis of possible explanations to the performance differences emerging in funds offered to different clienteles (LAKONISHOK; SHLEIFER; VISHNY, 1992; DEL GUERCIO; TKAC, 2002; JAMES; KARCESKI, 2006; SANEMATSU, 2013; SALGANIK, 2016).

The classification of mutual funds according to their clientele consider two broad categories: retail funds, those offered to smaller, less sophisticated investors; and institutional funds, which are those especially created to larger and more experienced investors such as institutions (pension funds, sovereign funds, endowment funds, etc.) and qualified investors. According to Sanematsu (2013), an advantage of studying mutual funds based in that segregation is that allows researchers to observe the possible effects of investor monitoring in two populations with different capacities to undertake such activity.

Previous studies have emphasized the relationship between level of investor knowledge and experience, also called sophistication, and fund management characteristics. The most important topics studied are the existence of differentiated marketing strategies for each clientele (CHRISTOFFERSEN; MUSTO, 2002; GIL-BAZO; VERDÚ, 2009; BERGGRUN; LIZARZABURU, 2015), strategic fees distribution (GIL-BAZO; VERDÚ, 2008; DEL GUERCIO; REUTER, 2014) and incentive to take more risky decisions for risk-insensitive investors (JAMES; KARCESKI, 2006; SALGANIK, 2015).

In this context, the aim of the study is to analyze the influence of investor monitoring on the performance of equity investment funds. The approach adopted was similar to that employed by James and Karceski (2006), in which different measures of fund performance were related, using multiple regression models, to control variables, like fund size and management fees, and proxy variables of investor monitoring. Those variables were minimum initial investment required, type of fund manager, bank-sponsored funds and whether or not the fund had the ANBIMA seal of regulation and best practices.

The study focuses on Brazilian equity investment funds defined, by the CVM's (Brazilian Securities and Exchange Commission) rule no. 555, as those with more than 67% of their net asset value (NAV) invested in stocks. We collected monthly data for 1,317 funds, 503

were retail funds, and 814 institutional funds, from January 2005 and April 2015. To estimate fund performance we analyzed both net and gross fund returns. Net returns were calculated using monthly share data for each fund, while the gross returns were estimated by adding back management fees. However, other costs like performance fees and brokerage costs were not take into account. Additionally, we estimated Jensen's alpha as a measure of risk-adjusted return using Carhart's (1997) four-factor model.

We found a statistically significant difference in the performance of the two sub-samples. Specifically, the net annual return of institutional funds was 0.15% greater than retail funds, over the 10-year period. However, when analyzing gross returns we observed that retail funds yielded, on average, 10% per year, while institutional funds earned just 8.93%. A possible explanation for those results, like highlighted in previous studies, could be the existence of less favorable management fees structure for retail funds that reduces the net return earned by the investor. In addition, regarding the risk-adjusted performance, our evidence confirms that the better performing funds were those offered to institutional investors.

Jensen's Alpha estimated by pooled regressions using annual net returns indicated that, on average, the institutional funds reached superior performance during the whole period. When analyzing the results of individual regressions, it was observed that very few funds presented abnormal returns. Furthermore, our findings pointed out the existence of more positive-alpha funds in the sub-sample of institutional funds.

To test whether the differences among funds' performance may be due to different monitoring capabilities, we regress the estimated alphas for individual funds on a set of variables representing various fund characteristics including proxy variables of investor monitoring. The results present evidence in favor of the positive effects of monitoring in fund performance, but with higher incidence in the retail funds sample. Regression results reveal a positive and significant (at the 5% level) relationship between fund performance and the size of initial investment requirement. This finding is consistent with increased investor monitoring of fund performance for funds with larger initial investment requirements. Similar results were found for the variable type of fund manager, which may indicate that investors monitor more closely funds managed by third parties and not directly by the institutions that structured the fund.

Our evidence on fund performance and investor monitoring provides another explanation for the observed differences between performance of retail and institutional funds. We argue that such results can be explained by different monitoring capabilities, due to the distinct levels of sophistication between investors. As pointed out in previous studies (GILBAZO; VERDÚ, 2009; SANEMATSU, 2013; SALGANIK, 2015), this characteristic could incentive behaviors like strategic cost allocation and lower incentives to pursue generating alpha strategies in the managers of such funds.

The rest of the paper is organized as follows. The next section presents a brief review of relevant literature on the relationship between investor monitoring and fund performance. Section 3 discussed the data and methodology used in this study. Section 4 presents and discusses the results and possible explanations for those findings. Section 5 concludes the article by presenting some final considerations.

## 2. LITERATURE REVIEW

According to Lynn (2013), monitoring can be defined as any form of participation, directly or indirectly, at the level of the individual, a company or an entire industry, in the management or accomplishment of an activity. The author states that monitoring can be carried out through a set of different activities like frequent information gathering, voting and active intervention in management activities. In the context of investment management, Lynn (2013) calls this *shareholder activism* or *active investment*. However, this last term must not be confused with the investment management strategy opposed to buy-and-hold, or passive strategy.

Several studies that have addressed this phenomenon have made distinctions between retail investors and institutional or qualified investors (JAMES; KARCESKI, 2006; PALMITER; TAHA, 20008; SANEMATSU, 2012; BERGGRUN; LIZARZABURU, 2015; SALGANIK, 2016;). Thus, the expected differences between these two types of investors, in terms of sophistication, experience and market knowledge, would allow us to study the effects of monitoring on fund performance.

Sanematsu (2012) argues that the study of investor monitoring activities is another approach in assessing the effects of agency problems in the mutual fund industry. According to the author, performance differences in funds cater to investors with distinct monitoring capabilities could, in principle, present evidence on the differential effects of agency costs. The basic argument is that fund managers behave differently according to the investor's ability, and interest, to oversee activities and decisions regarding investor's interests. In this context, one aspect that could influence manager's behavior is the retail investor low-sensitivity to adjusted-return measures (ALEXANDER; JONES; NIGRO, 1998; BARBER; ODEAN; ZHENG, 2005; GIL-BAZO; VERDÚ, 2009).

Del Guercio and Reuter (2014) went on to empirically demonstrate that the observed differences in the performance of funds with different clienteles could evidence the existence of contrary incentives in the mutual fund industry. According to the authors, fund managers are encouraged to seek higher risk-adjusted performance, as measured by Jensen's alpha, as long as the fund's shareholder is sensitive to this performance metric. In this way, the increased performance of this fund would be rewarded with greater inflows of investor's money. Nevertheless, funds offered to individual investors that are less sensitive to sophisticated measures but seek higher net returns, do not offer incentives for managers to generate higher alphas, which is why they perform poorly. Therefore, the authors conclude that differences in investor sophistication, directly related to their ability to monitor manager behavior, would be a possible explanation for this phenomenon. Similar conclusions have been made by other studies like James and Karceski (2006), Gil-Bazo and Verdú (2009) and Salganik (2015).

Commonly, it is assumed that individual investors face significant research and information costs (GOETZMANN; PELES, 1997; SIRRI; TUFANO, 1998; BARBER; ODEAN; ZHENG, 2005). This may partially explain why the selection of funds is often based on past performance, although historical results do not accurately predict the future funds' performance (GRUEBER, 1996; CARHART, 1997). However, this may not be the case for qualified investors. Lakonishok and Shleifer (1992) argue that in the case of institutional

investors and large private investors, it is generally assumed that they are better informed than smaller investors due to economies of scale (research and information costs) and their continued presence in the market. According to the authors, lower research costs should lead to different and presumably more sophisticated investment selection criteria.

Regarding the *proxy* variables used for capturing the effects of investor monitoring in fund performance, in addition to differentiate funds by its clientele, researches have used different measures. One approach is to analyze the differences in fund corporate governance structures (GUERCIO; HAWKINS, 1999; WARNER; WU, 2011; SOARES; MILANI, 2015). Another methodology studies the effects of characteristics like the relationship of the fund with a commercial bank, bank-sponsored funds; and the relationship between the administrator and the fund manager (JAMES; KARCESKI, 2006).

Guercio and Hawkins (1999) analyzed the influence of indirect monitoring mechanisms on pension funds. The authors pointed out that the adoption of corporate governance best practices codes by fund management companies increases the possibility for investors to participate in the general management of their wealth. They found that those factors were positively correlated with the fund performance. Chou and Wang (2011) found similar results. Warner and Wu (2011) studied the characteristics of an investment funds sample classified by de degree of independence of their board of directors. They found that a greater degree of independence is associated with lower incidences of activities indicative of agency conflicts, such as unjustified increases in the remuneration of managers and changes in the conditions for obtaining remuneration for the performance achieved.

James and Karceski (2006) proposed two other variables that could capture the different levels of investor monitoring, type of fund manager and the relationship of the fund with a commercial bank. The external manager, that is, the manager who is not part of the fund management institution, is, in principle, subject to greater monitoring by the investor. According to the authors, this type of manager does not have the institutional support that the fund administrator offers, if the management is done internally. The investors, therefore, would perceive this independence between the two agents as possible detrimental of their interests. Aware of this situation, investors would have a greater interest in monitoring the performance of the fund managed by an external manager. Similar relationship is expected in bank-sponsored funds. James and Karceski (2006) claim that investors of bank-sponsored funds are attracted to the professional and solid-institution image that commercial banks offer and advertise. Therefore, the fact that investors are convinced by the attractiveness, experience and expertise advertised could diminish their interest in monitoring their investments in these bank-sponsored funds. Evidence supporting that argument comes from the analysis of the impact of marketing activity in the mutual fund industry (SIRRI; TUFANO, 1998; ALEXANDER; JONES; NIGRO, 1998; BARBER, B; ODEAN; ZHENG, 2005).

### 3. METHODOLOGY

To be consistent with prior research, we follow James and Karceski's (2006) procedure. First, to examine the performance of retail and institutional funds, we form equally weighted portfolios based on fund type – retail of institutional. Next, we estimate 4-factor model of stock

returns for each portfolio of funds. The intercept, 4-factor Alpha, measures risk or factor-adjusted performance. To test whether the performance differences among funds is statistically significant, we regress the estimated alphas on a set of variables representing various fund characteristics including investor monitoring proxies, fund category, minimum initial investment requirement (MIIR), type of fund manager, if the fund is bank-sponsored and whether the fund has the ANBIMA seal of corporate governance best practices.

Overall, James and Karceski's (2006) model objective is to determine if the proxy variables that tried to capture investor's monitoring capacity are significant to explain the performance of the fund and, additionally, if this behavior is observed in the clientele that, in principle, presents greater sophistication and monitoring capacity: Institutional investors. If the performance - monitoring relationship is confirmed, the results would indicate differences in performance related to the type of investor

### 3.1 Data

Data on open-end equity funds was collected from the Brazilian Financial and Capital Markets Association (ANBIMA) information system, version 4.3. Our sample includes monthly data of 1,317 funds classified according to the following ANBIMA categories: Dividends, Ibovespa active, Ibrx active, Small caps, Sustainability/governance and Stocks free. The period was from January 2005 to April 2015, adding up 124 months of data.

To track only funds with active management and overall strategies based on equities, we exclude from our sample funds of funds, tracker/index funds and sectorial funds. Additionally, in order to avoid the occurrence of the survivorship bias, we did not exclude funds that ceased to exist during the period. These funds, in theory, should be amongst the worst performers, and by discarding them, we could be overestimating the performance of each fund category.

Once data for our sample was collected, we classified each fund as institutional or retail. Chart 1 summarizes the criteria used to categorize each fund.

**Chart 1:** Description of each sub-sample of funds

Sub-sample	Description
Retail funds	Funds that does not specify any restriction to the type of investor that can participate and whose MIIR is lower than R\$300,000
Institutional funds	Funds with investor profile restrictions, offered only to qualified, restricted or institutional investors.

Observations: The amount of the minimum initial investment requirement (MIIR) established for each sub-sample was defined in accordance with the CVM instruction n. 409 – article 109 “Definition of qualified investor”

Source: Created by the authors

Table 1 shows the number of funds that were included in each sub-sample, retail or institutional, for each fund category, according to the ANBIMA classification.

**Table 1:** Number of funds according to the ANBIMA classification 2005 - 2015

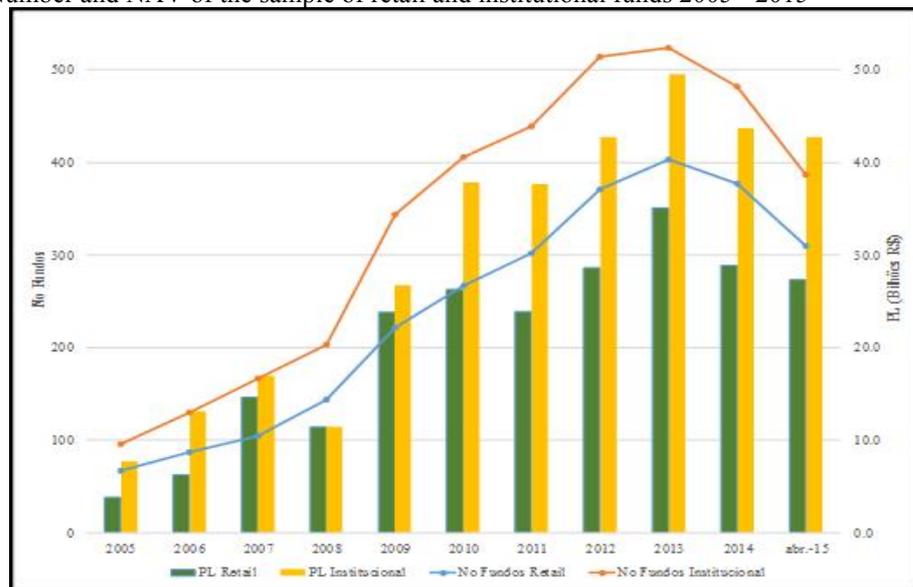
Class	Retail		Inst.		Total
	Number	(%)	Number	(%)	
Dividends	45	61,6	28	38,4	73
Ibovespa active	123	36,6	213	63,4	336
Ibrx active	49	23,8	157	76,2	206
Small caps	26	65,0	14	35,0	40
Sust./governance	9	64,3	5	35,7	14
Stocks free	251	38,7	397	61,3	648
Total	503	38,2	814	61,8	1317

Source: Created by the authors based on the research data

According to table 1, it can be noted that a larger proportion of dividends, small caps and sustainability/governance funds had retail investors as a target. On the other hand, Ibovespa active (63.4%), Ibrx active (76.2%) and Stocks free (61.3%) funds showed greater preference for institutional investors.

Figure 1 shows the number of funds and total net assets for retail and institutional funds by year. It can be noticed the continuous growth in the number of funds, as well as the resources under management until the year 2007. The following year, 2008, there was a significant outflow of investor's wealth in both retail and institutional funds. A possible explanation is the occurrence of the 2008 global financial crisis that negatively impact the Brazilian mutual fund industry lowering its performance. That, ultimately, induced investors to withdraw their money. However, this adverse effect was not observed in the evolution in the quantity of funds, since they continue to increase. The actual decrease in the number of outstanding funds occurred four years after the crisis, which may indicate an internal cause, Brazilian economic crisis, rather than an international event.

**Figure 1:** Number and NAV of the sample of retail and institutional funds 2005 - 2015



Source: Created by the authors based on the research data

We used the CDI rate as risk-free rate, following the recommendations of Oda (2007) and Oliveira and Pacheco (2010). According to Oda (2007), the risk-free rate at which funds can borrow and apply resources is precisely the CDI rate. Oliveira and Pacheco (2010) argue that the CDI rate represents the largest reference of the basic cost of opportunity of financial operations in Brazil. In relation to the returns of the market portfolio, we used data from the Ibovespa and Ibrx-100 indexes when needed, since both indexes are used as benchmark portfolios in our sample of funds. Data for the risk-free rate and market portfolio return was collected from the Economatica®.

According to Gil-Bazo and Verdú (2009), and Del Guercio and Reuter (2014) one possible explanation for the difference in performance between retail and institutional funds may be distinct cost structures. Table 2 shows the number of funds grouped in intervals according to management fee charged by each fund. It is noteworthy that if a fund presented variations in the management fee during the period, we estimate the average rate to carry out this classification. Nevertheless, since the ANBIMA information system did not provide exact information about performance fees, we estimated which fund included or not cost in their total expenses rate. In this case, the last information provided by the system was adopted to categorize each fund. Finally, brokerage costs were not included since information about portfolio structures and rebalancing dates was not easily accessible.

### 3.2 Methodology

To examine the performance of retail and institutional funds we begin by estimating each fund's average annual net return using monthly data, according to the equation 1.

$$R_{i,t} = (P_{i,t} - P_{i,t-1}) / P_{i,t-1} \quad (1)$$

where,  $R_{i,t}$  is the monthly return of fund  $i$  at time  $t$ ,  $P_{i,t}$  is the fund's share price at time  $t$ , while  $P_{i,t-1}$  is that value at time  $t-1$ . To estimate gross returns it was necessary to adjust net returns results to include costs and expenses related to the fund management (equation 2). Net return is adjusted by adding back fund's management fees, as defined in Castro and Minardi (2009).

$$R_{gross} = R_{net} + ((1 + \text{management fee})^{(1/12)} - 1) \quad (2)$$

Performance differences may be explained by funds following different, perhaps more risky, investment strategies. To investigate this issue, we measure risk-adjusted performance using Carhart's (1997) 4-factor model, as detailed in equation 3.

$$R_{i,t} - R_{f,t} = \alpha + \beta[R_{m,t} - R_{f,t}] + S[SMB_{i,t}] + S[HML_{i,t}] + S[MOM_{i,t}] + \varepsilon_{i,t} \quad (3)$$

where, in each period  $t$  ( $t = 1$  to  $124$ ),  $R_i - R_f$  is the excess return of the fund  $i$  in relation to the risk free rate;  $\alpha$  is the intercept or Jensen's alpha (which represents the excess return on the factors);  $R_m - R_f$  is the excess return on the market portfolio,  $SMB$  (*small-minus-big*) is the return on a self-financed portfolio long in small stocks and short big stocks, as measured by its market capitalization;  $HML$  (*high-minus-low*) is the return on a portfolio long on stocks that

have high book-to-market ratios financing this position by going short on stocks that have low book-to-market ratios; *MOM (momentum)* is the return on a portfolio that is long on previous 12-month winners and short on previous 12-month loser stocks, and  $\varepsilon_{i,t}$  is the regression residual.

The factor's estimation followed procedures similar to Fama and French (1993) and Carhart (1997). The procedure has two basic steps: (i) apply a set of conditions/exclusions to the sample of stock's data, (ii) construct the portfolios and rebalance them each semester, weighted by the market value of the stocks.

To carry out the proper estimation of the risk factors, according to Carhart (1997), the following exclusions were necessary: 1) stocks that did not present data for a eleven-month period previous to the portfolio construction; 2) shares with no market value (MV) on December 31 and June 30 for each year; 3) shares of companies that did not had positive shareholder's equity in December for each year; 4) stocks of companies in the financial sector. This last exclusion stems from the influence that financial leverage has on the book-to-market ratio and, also, from the fact that debt does not have the same character in non-financial companies.

In each semester, the stocks that passed the cutoff criteria were rank according to their market value. Those that were above the median were classified as big (B), and those that were below as small (S). This first classification allows us to construct the first two portfolios that form the SMB factor. In each of those portfolios, the stocks were also ordered according to their book-to-market ratio, and divided into three groups, according to the following breakpoints: the firms with the highest 30% ratios were categorized as high (H), those with the lowest 30% ratios were classified as low (L), the remaining firms were considered medium (M). To obtain the book value of a stock, the company's shareholder's equity was divided by the number of outstanding shares. If a company possessed both common and preferred stocks, we considered the asset value classification for each security separately, thus enabling the two types of stocks of the same company to be in different portfolios. At this point, we construct three new portfolios for each of the two initial ones, adding six portfolios.

The contribution made by Carhart (1997) to the three-factor model of Fama and French (1996) is the inclusion of the momentum factor as develop by Jegadeesh and Titman (1993). To estimate this factor we classify each stock according to the cumulative return of the past eleven months. Those stocks that performed above the median were considered winners; the remaining stocks were classified as losers. Finally, in June of each year, after the three previous steps, we had twelve portfolios.

We estimated stock returns on a continuous basis based on each stock price adjusted for dividends. The SMB size factor premium was obtained as the arithmetic mean of the monthly returns of the small and big portfolios. Similarly, the premium for the HML factor was estimated as the difference between the arithmetic mean of high and low portfolio's monthly return. The momentum factor premium was estimated as previous done for the SMB and HML factors. The descriptive statistics of the Carhart (1997) factors are available upon request.

After the construction of the Carhart factors, we regress equation (3) to estimate the mean alphas for each fund, individual regressions, and for each sub-sample. To estimate the mean performance of institutional and retail funds we conducted pooled regression treating each fund category as equally weighted portfolios.

To analyze the relationship between investor monitoring and fund performance, we construct a multiple regression model, as in James and Karceski (2006) that relates the risk-adjusted fund performance, measured by Jensen's alpha, with a set of fund's characteristic variables and monitoring proxy variables. These variables were also used in previous studies (MALAQUIAS; EID, 2012; FERREIRA et al., 2006; JAMES, KARCESKI, 2006; CHOU; NG; WANG, 2011; EVANS; FAHLENBRACH, 2012). However, we applied some adjustments to allow its application in the Brazilian context, specifically in the case of the analysis of the corporate governance structure of the funds (ANBIMA seal of corporate governance best practices). Table 2 details the variables used in the performance - monitoring model

**Chart 2:** Definition of the model variables

Variable	Proxy	Estimation	Expected relationship*
Perf			
Risk-adjusted fund performance	Jensen's Alpha	4-Factor model as in Carhart (1997) based on fund's net return.	Dependent variable
Tad			
Costs related to fund management	Management fee	Annual management fee adjusted for monthly estimations	-
TPf			
Performance fee	<i>Dummy</i>	1: fund charges performance fee; 0: fund does not charge performance fee.	+
Size			
Fund size	Net asset value (NAV)	Natural logarithm (ln) of fund's NAV.	+/-
Invest			
Minimum initial investment requirement	MIIR	Natural logarithm (ln) of the minimum initial investment requirement	+
Inst			
Type of fund	<i>Dummy</i>	1: Institutional fund; 0: Retail fund.	+
Gestor			
Type of fund manager	<i>Dummy</i>	1: Internal fund manager, 0: External fund manager.	-
Bank			
Relationship with a commercial bank	<i>Dummy</i>	1: Bank-sponsored fund; 0: Not a bank-sponsored fund.	-
Seal			
Proxy of corporate governance best practices	<i>Dummy</i>	1: Fund accredited with the ANBIMA seal; 0: Fund is not accredited with the ANBIMA seal.	+
Year			
Each year of time horizon	<i>Dummy</i>	Dummy variable for each of the year in the analysis period	+/-
TipoFund			
		Dummy variable for each of the	+/-

Fund's classification	ANBIMA	<i>Dummy</i>	ANBIMA fund classes: Dividends (Div), Ibovespa Active (Ibo), Ibrx active (Ibrx), Sust/governance (Sust), Stocks free (livre) and <i>small caps</i> (small)
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Observations.: \*Relationship observed in previous studies or expected from the theoretical point of view.  
Source: Created by the authors

We evaluate the explanatory capacity of the independent variables using a model, equation 4, we define as performance – monitoring model.

$$Perf_i = \beta_0 + \beta_1 Tad_i + \beta_2 TPf_i + \beta_3 Tam_i + \beta_4 Invest_i + \beta_5 Inst_i + \beta_6 Gestor_i + \beta_7 Banco_i + \beta_8 Selo_i + \beta_9 Ano_i + \beta_{10} TipoFund_i + \varepsilon_t \quad (4)$$

In equation 4, the dependent variable is Jensen's alpha of retail and institutional funds, and the independent variables are the determinants of fund performance, as described in Chart 2, and  $\alpha$  being the interception. The underwritten  $i$  refers to each year of the analysis period;  $\varepsilon$  is the regression random error.

#### 4 ANALYSIS AND DISCUSSION OF THE RESULTS

In table 2 - panel A, we show a considerable difference between the management fees of retail and institutional funds. These results could evidence the existence of a less favorable cost structure for retail funds, being higher rates charged for a larger proportion of funds, compared to institutional funds. The vast majority of institutional funds, 94.8%, charge fee rates lower than 2%. However, only 62.9% of the retail funds in our sample are in the same interval. In addition, higher rates affect retail funds in greater proportion, since 14.2% of the funds in that sample charge rates above 3% annually, when only 1.5% of institutional funds charge similar fees. In relation to the number of funds that charge performance fees, table 2 - panel B, a slightly higher proportion of retail funds (45.1%) include this cost compared to the institutional fund sample (41.6%).

**Table 2:** Distribution of funds by management and performance fee, by sub-sample 2005-2015

	Retail funds		Institutional Funds	
	Number	(%)	Number	(%)
<i>Panel A: Management fee</i>				
0% - 1%	155	30,8	588	72,2
1% - 2%	161	32,1	184	22,6
2% - 3%	115	22,9	30	3,7
3% - 4%	56	11,1	7	0,9
Above de 5%	10	1,9	2	0,2
Total	503	100	814	100
<i>Panel B: Performance fee</i>				
Yes	227	45,1	339	41,6
No	276	54,9	475	58,4
Total	503	100	814	100

Source: Created by the authors based on the research data

Table 3 contains summary statistics of return measures (gross and net) and fund's characteristics like net asset value (NAV), management fee and minimum initial investment requirement (MIIR) for our sample of retail and institutional funds.

In relation to mean annual gross returns, retail funds (panel A) earned, on average, 1.07% above institutional funds (panel B). However, despite lower gross results, the average annual net return for institutional funds (8.15%) is slightly higher than the average net return for retail funds (8%). While the similarity in net returns is suggestive of similar performance for the underlying portfolios of both retail and institutional funds, the considerable differences in gross returns may be indicative of less favorable cost structure for retail funds. Institutional funds have significantly lower expenses than retail funds. As shown in table 3, the average management fee rate for institutional funds is 0.77%, while for retail funds is 2.03%, 126 basis points higher.

Another potential explanation for the inferior net performance of retail funds is perhaps they have larger portfolio turnover resulting in larger transactions costs. While turnover may be a noisy measure of transactions costs (WERMERS, 2000), these preliminary results do not suggest that the return differences results from a greater propensity by retail funds to trade. This evidence point out the existence of economically significant differences in expenses and performance between fund categories that needs to be analyzed in future research.

**Table 3:** Descriptive statistics of net and gross returns, management fee, MIIR and NAV for each sub-sample 2005-2015

	Mean	Median	Min	Max	Standard deviation
<i>Panel A: Retail funds</i>					
NAV*	95,17	29,69	5,00	2.843,96	208,11
MIIR**	28,41	5,00	0,00	300,0	56,57
Management fee (%)	2,03	2,00	0,00	8,00	1,36
Annual gross return (%)	10,00	7,09	-83,78	186,17	24,20
Annual net return (%)	8,00	5,48	-85,31	180,67	24,17
<i>Panel B: Institutional funds</i>					
NAV*	101,60	40,09	5,00	2.944,00	204,75
MIIR**	541,95	10,000	0,00	25.000,00	1.603,88
Management fee (%)	0,77	0,50	0,00	6,00	0,80
Annual gross return (%)	8,93	6,41	-64,44	163,36	22,60
Annual net return (%)	8,15	5,84	-65,44	163,36	22,66
Ibovespa index	12,08	5,96	-36,88	74,5	31,13
CDI rate (%)	0,92	0,87	0,48	1,65	0,25

Observations.: \*Data expressed in millions of reais. \*\*Data expressed in Thousand of reais.  
Source: Created by the authors based on the research data

It is noteworthy that, as shown in table 3, on average none of the fund categories, retail or institutional, outperformed the benchmark market portfolio, the Ibovespa index. This evidence is similar to that obtained on previous studies (MALKIEL, 1995; GRUBER, 1996; CARHART, 1997; MALAQUIAS; EID, 2012; LAES; SILVA, 2014), who have demonstrated that, on average, equity mutual funds does not achieve returns higher than those obtained in passive-managed funds. Even though this evidence may indicate that funds failed to provide returns that could justify the additional costs that their active management strategy involves, it does not imply that none fund achieved a higher performance.

According to James and Karceski (2006), although the average return of institutional and retail funds are similar despite substantial differences in management fees, this may be explained by institutional funds following less risky investment strategies. Therefore, to investigate this issue, it is necessary to estimate risk-adjusted performance. Additionally, to compare fund's performance excluding management expenses, we estimate Jensen's Alpha using the gross excess return of each fund. In this way, we can conduct a more in-depth analysis of the relationship of these costs with fund's performance.

Table 4 provides summary statistics of the individual OLS regressions for the 1317 funds. The intercept, or Jensen's alpha, was estimated using both net and gross fund's excess return. The excess market return (MKT) was significant for the vast majority of retail and institutional funds, and very close to 1 on average. On the other hand, the excess return on the book-to-market portfolio (HML) was significant in only 15.1% and 14% of the retail and institutional funds, respectively. When analyzing the results for the momentum (MOM) factor, it can be observed that a considerable percentage of fund's excess return in each category (35,4% retail and 29.6% institutional) were sensitive to this factor. This result would indicate that many fund managers try to exploit the differential of returns between winning and losing stocks as a regular investment strategy.

**Table 4:** Individual regressions of the excess return of each fund against Carhart's four factors– summary statistics.

Coefficient	Sig.	Mean	Min	Max	Std. Dev.
<i>Panel A: Retail funds (503 funds)</i>					
Alpha(%) net	101	-0,088	-3,608	2,503	0,716
Alpha(%) gross	113	0,070	-3,403	2,544	0,704
MKT	470	0,727	-0,399	1,353	0,252
SMB	172	0,172	-0,619	1,812	0,256
HML	76	-0,036	-0,889	2,130	0,211
MOM	178	0,136	-0,883	1,407	0,246
<i>Panel B: Institutional funds (814 funds)</i>					

## Influence of Investors' Monitoring on Equity Mutual Funds' Performance

Alpha(%) net	133	-0,052	-6.113	8,133	0,842
Alpha(%) gross	153	0,016	-5,948	8,299	0,843
MKT	762	0,725	-0,746	2,075	0,241
SMB	206	0,111	-1,587	2,031	0,289
HML	114	-0,047	-1,378	1,333	0,214
MOM	233	0,118	-1,038	0,278	2,053

Observations: The "Significant" column gives the number of funds in that sub-sample that presented statistically significant (5% significance level) alphas..

Source: Created by the authors

The net alphas were, on average, negative for all funds, but smaller for retail funds (-8.8%, in annualized terms) than for institutional funds (-5.2%). However, results are contrary when gross excess returns are used as dependent variable. The annual difference in adjusted returns between these two groups of funds is 54 basis points favoring retail funds. Moreover, that difference is larger than the difference in management expenses, especially for retail funds. These results provides additional evidence supporting the difference in costs structure for retail and institutional funds and the possible existence of strategic cost allocation (GIL-BAZO; VERDÚ, 2008; DEL GUERCIO; REUTER, 2014).

Table 5 provides a more detailed description of the alphas. For the retail fund sub-sample (panel A) net return alphas were distributed in a fairly symmetrical way around zero, with almost equal number of significant alphas being positive and negative. On the other hand, institutional funds presented substantially more positive statistically significant alphas than negative ones, which may indicate overall better performance. Nevertheless, estimations turned out to be considerable different for gross-return alphas.

**Table 5:** Significance analysis of Jensen's alpha by sub-sample – individual regressions

	Net return		Gross return	
	Total	Sig.*	Total	Sig.*
<i>Panel A: Retail funds (503 funds)</i>				
Positives	247	47	320	82
Negatives	256	54	183	31
<i>Panel B: Institutional funds (814 funds)</i>				
Positives	448	74	490	107
Negatives	366	59	324	46

Observations: Estimations done at the 5% significance level.

Source: Created by the authors

According to the data, after adjusting returns for management fees, the number of retail positive-alpha funds almost doubled while the number of negative-alpha funds reduced by 57,4%. However, that effect is remarkably less severe in the sample of institutional funds, with

an increase of only 34% in the number of positive-alpha fund and a similar reduction in the negative ones. This finding is consistent with increased impact of cost structure in retail funds which leads to considerable variations when management fees are added back to estimate gross returns.

Gil-Bazo and Verdú (2009) argues that there are two possible explanations to analyze the relationship between management costs and the performance before-fees or gross return. According to the authors, such results may be biased due to the exclusion of relevant variables in the regression model that tries to explain this relation. A second argument points out that such evidence responds to the strategic allocation of costs by fund manager. In this case, fund manager would allocate management costs according to investor's sensitivity to this factor. According to previous studies (GRUBER, 1996; BARBER; ODEAN; ZHENG, 2005; DEL GUERCIO, REUTER, 2014; SALGANIK, 2016) many individual investors hold significant positions in high expense mutual funds and are unaware of the exact costs charged to manage their wealth. Consequently, this phenomenon could encourage fund managers to allocate higher costs in the funds aimed to this type of investors.

Christoffersen and Musto (2002) presented a similar argument showing that investor-insensitive funds set higher expense ratios than those funds offered to investors that are more sophisticated. Such result could respond to a strategy applied by fund management firm to compete for the considerable resources of institutional investor by lowering management costs. However, that strategy could incentive fund managers to allocate higher expenses to cost-insensitive individual investors in order to avoid losses.

The considerable presence of more negative-alpha but positive net returns in the retail funds industry is also documented by Del Guercio and Reuter (2014). According to the authors, these results could indicate that fund managers change their behavior, and consequently their investment decisions, guided by the performance measured that their clients find relevant, even if they are not in the best of their interest, like risk-adjusted return instead of gross return.

Table 6 compares the performance of each fund category based on the excess net return. Institutional funds earned an average monthly excess return of 0.106% while retail funds had a considerable lower average excess return of 0.03%. The annual differences in returns between these two groups of funds is 91 basis points?, which is above the difference in average annual management expenses (approximately 126 basis points). However, the alpha coefficient for the retail fund sample is not statistically significant, while the institutional funds risk-adjusted performance is significant at the 1% level.

**Table 6:** Results of pooled regressions using monthly net returns to estimate excess return. 2005 - 2015

Fund	Alpha (%)	MKT	SMB	HML	MOM	Adjusted R <sup>2</sup>
<i>Retail</i>	<b>0,030</b> <b>(1.57)</b>	0,769 (169.33)	0,175 (25.56)	-0,052 (-8.72)	0,159 (19.94)	0,679
Institutional	0,106 (6.76)	0,748 (108.61)	0,126 (22.04)	-0,056 (-10.71)	0,133 (19.66)	0,682

Observations: t-statistics are in parentheses. Asterisks indicating significance levels were not included since all variables were significant at the 1% level, except retail fund's alpha.

Source: Created by the authors

The evidence presented in table 6 is in line with previous research (GRUBER, 1986; CARHART, 1997; CASTRO; MINARDI, 2009) that demonstrated that management expenses end up diminishing the possible gains obtained by applying active management strategies. Nevertheless, this negative effect is greater in the sample of retail funds. Moreover, while higher expenses explain some of the performance differences, results indicate that the poor performance of retail funds may arise from differences in performance in the stocks these funds invest in. Assuming that the 4-factor model is well-specified, the poor relative performance of retail funds suggests that the managers of these funds are either consistently selecting underperforming stocks or engaging in value destruction through excessive transaction costs and other not specified costs defined as soft dollars. James and Karceski (2006) defines soft dollars as the bundling of research costs and in some cases the cost of distribution/marketing into a single commission for the retail client.

Unfortunately, according to James and Karceski (2006), it is difficult to empirically test the existence of soft dollar brokerage cost because they are not specifically reported. However, an analysis of gross return performance can indicate how managers allocate these costs between institutional and retail funds. Even if fund managers allocate brokerage and other costs on a prorated basis between the two fund categories, unless the benefits are also allocated on a prorated basis, performance differences will arise. Table 7 provides the results of the 4-factor Carhart (1997) based on gross excess returns.

**Table 7:** Pooled regressions using gross returns to estimate excess return - results. 2005 - 2015

Fund	Alpha (%)	MKT	SMB	HML	MOM	Adjusted $R^2$
<i>Retail</i>	<b>0,198</b> <b>(10.33)</b>	0,769 (169.69)	0,176 (25.74)	-0,049 (-8.45)	0,159 (19.98)	0,680
Institutional	0,169 (10.62)	0,748 (180.49)	0,125 (21.95)	-0,057 (-10.78)	0,133 (19.62)	0,682

Observations: t-statistics are in parentheses. Asterisks indicating significance levels were not included since all variables were significant at the 1% level.

Source: Created by the authors

Table 7 evidences the considerable difference between fund's performance when using gross excess returns. In this case, the average monthly excess return of retail funds is 0.198% statistically significant at the 1% level. Moreover, contrary to previous findings, institutional funds underperform their retail peers by 34 basis points, on annual terms. These results provide additional evidence to support to the argument of performance difference due to strategic cost allocation between retail and institutional funds. Also, that differential could arise because of distinct incentives to generate alpha (DEL GUERCIO; REUTER, 2014)). In addition, we argue

that such difference can be related to differences in investor's profile. If monitoring of fund performance is related to investor's capability to do so, we expect more net benefits will be allocated to funds more intensively monitored, according to the chosen proxy variables.

If investor monitoring activities influence fund performance, then we expect positive relationships between variables that indicates greater incentives to closely monitor fund and their risk-adjusted performance. We investigate this issue by regressing the estimated net-return alphas of each fund category on a set of variables representing fund characteristics and investor monitoring proxy variables.

**Table 8:** Regression of the model *performance-monitoring* using Jensen's alpha as dependent variable- 2005 - 2015

Variable	Retail funds (1)	Institutional funds (2)	All funds (3)
Intercept	-0,0166*** (-3,33)	-0,0078 (-1,29)	-0,0117*** (-3,13)
TAd (%)	-0,0880*** (-3,83)	-0,0193 (-0,68)	0,0603*** (-2,82)
TPf	-0,0022*** (-2,98)	-0,0003 (-0,44)	0,0007 (-1,51)
Size	0,0009*** (3,54)	0,0004 (1,19)	0,0006*** (3,01)
Gestor	-0,0012** (-1,98)	0,0004 (0,55)	-0,0002 (-0,49)
Invest	0,0003*** (3,28)	-0,0001** (-2,18)	-0,0004 (0,94)
Bank	0,0019 (1,61)	-0,0038 (-1,52)	-0,0004 (-0,38)
Seal	-0,0003 (-0,20)	0,0047* (1,79)	0,0018 (1,32)
Inst			0,0002* (1,70)
<i>Dummy</i> Dividends	-0,0002** (-1,98)		
N. observations	503	813	1317
Adjusted R <sup>2</sup>	0,104	0,025	0,021

OBS.: T-statistics are in parentheses, the asterisks \*, \*\* and \*\*\* refer to the significance levels of 10%, 5% and 1%, respectively. Coefficients estimated by OLS regressions with Newey-West standard errors robust to heteroscedasticity and autocorrelation.

Source: Created by the authors

Table 8 provides regression results of the performance – monitoring model. Column 1 reports three negative significant relations, management fee (Tad), performance fee (TPf), manager type (Gestor); and two positives, fund size (Size) and minimum initial investment requirement (Invest) between retail funds performance and fund characteristics.

The statistically significant negative relationship between fund's performance and management expenses is observed in the retail sample. This finding is consistent with the

economically significant difference in management fees between fund categories. Carpenter (2000) argues that a possible effect of incentives for portfolio managers (like performance fees) is an increase in the use of riskier strategies that produces returns with higher variance compared to benchmark security. The author concludes that such incentive motivates managers to take positions in riskier investments that may adversely affect their portfolios performance, as well as increase their tracking error.

In relation to fund's size, our findings are consistent with previous studies (GRINBLATT; TITMAN, 1989; CASTRO; MINARDI, 2009; MALAQUIAS; EID, 2012) that documented the relationship between higher NAV and better performance. According to the authors, large mutual funds present several advantages relative to small ones. First, they can benefit from economies of scale. Larger funds are able to spread fixed expenses over a larger asset base, and have more resources for research. Additionally, managers of large funds can obtain positions in beneficial investment opportunities not available to smaller market participants, as well as negotiate smaller spreads (FERREIRA et al., 2012). Nevertheless, the absence of a statistically significant relationship in the institutional fund sample presents a challenge. Chen et al. (2004) argue that as funds become larger marginal returns become lower, so funds suffer diseconomies of scale. The authors show that those funds suffer an overinvestment in research, due to the absence of additional attractive investment alternatives, which may lead them to invest in small and more illiquid stocks. This could be an explication for the results observed in the institutional funds since there are, on average, slightly bigger than retail funds. This small difference could reduce the statistical significance positive relation between fund size and performance, but not being large enough to create a negative effect.

As shown in column 1 of table 8, the risk-adjusted performance of retail funds is positive and significant correlated with the size of the initial investment requirement. This finding is consistent with increased investor monitoring of fund performance for funds with larger initial investment requirement (JAMES; KARCESKI, 2006). However, that relation is not observed for institutional funds. As noted earlier, another investor oversight proxy variable was statistically significant, type of manager. The variable coefficient indicates that, on average, retail funds managed internally, the firm that created the fund also undertake management activities, underperform those with external fund managers. We attribute these results to the assumption that in such cases, funds managed by the firms that created them, investors have lower incentives to monitor their performance. The remaining two monitoring variables, *bank* and *seal* showed signals contrary to expected, but the evidence is weak and not statistically significant.

This evidence points towards differences in investor's profile. Alexander, Jones and Nigro (1998), Evans and Fahlenbrach (2012), and Salganik (2015) attribute similar results to differences in investor's sophistication. According to the authors, considerable differences in sophistication (knowledge and experience), investment objectives and search costs could signal the existence of different investment and monitoring criteria applied by each fund clientele. Therefore, these differences could incentive distinct behaviors, in terms of selection criteria and monitoring activities, which could explain the different sensitivities to the selected monitoring proxy variables.

In sum, the strong response of retail funds performance to some of the monitoring proxy highlights the relevant differences in investor's profile between fund's clienteles. This evidence has the potential to uncover the causes of the significant lower performance of retail funds compared to institutional funds.

## 5 CONCLUSIONS AND FINAL CONSIDERATIONS

Institutional investors, considered sophisticated or qualified investors, have, in principle, a greater capacity to monitor fund performance as well as fund manager behavior than the general investors do. Because of this greater monitoring capacity, qualified investors can influence fund manager behavior to avoid undertaking activities detrimental to their interests.

The main objective of this research was to analyze the influence of investor monitoring in the performance of equity investment funds. To this end, we estimated the performance of a sample of investment funds categorized according to their clientele. This criteria was adopted to differentiate funds by shareholder's monitoring abilities. In this sense, as applied in previous studies, funds were classified into two categories: funds that cater individual investors, or retail funds, and funds whose target clients were institutional investors, institutional funds.

It was possible to verify that retail funds underperform institutional funds in both net return and risk-adjusted terms and that such differential was statistically significant. However, results were contrarian when analyzing performance measures based on gross returns. In addition, results of our performance-monitoring model showed statistical significant relationships between retail fund's performance and some investor monitoring proxy variables. Our findings suggest better investment conditions (lower management fees and better performance) for institutional investors, which is consistent with the argument of the positive relationship between increased investor monitoring capabilities and fund performance. This evidence is consistent with previous arguments explaining that differences, such as increased agency problems in retail funds (SANEMATSU, 2013), existence of strategic cost allocation structures (GIL-BAZO, VERDÚ, 2008) and differences in incentives for fund manager's according to fund's clientele (DEL GUERCIO; REUTER, 2014). Our results adds empirical evidence supporting the importance of investor monitoring activities in determining equity investment fund's performance (JAMES; KARCESKI, 2006).

In summary, our evidence shed new light on the study of the determinants of equity funds performance and more importantly, on the relevant influence that investor's characteristics and sophistication produce in fund manager behavior and ultimately, in fund's performance.

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