**Review of Economics & Finance**
**Submitted on 17/11/2017**
**Article ID: 1923-7529-2018-02-01-15**
**Hsiu-lang Chen, and Rodrigo F. Malaquias**

# Does Individual Fund Shareholder Structure Matter? A Study of Exclusive Funds in Brazil

Prof. Dr. ***Hsiu-lang Chen*** (Correspondence Author)
Department of Finance, University of Illinois at Chicago
601 South Morgan Street, Chicago, IL 60607, U.S.A.
Tel: (312) 355-1024 E-mail: hsiulang@uic.edu
Homepage: http://business.uic.edu/faculty/hsiu-lang-chen

Prof. Dr. ***Rodrigo F. Malaquias***[*]
Department of Finance, School of Business and Management, Federal University of Uberlândia Av. João Naves de Ávila, nº 2121, Room 1F-200, Uberlândia, MG 38400-902, BRAZIL
Tel: +55-34-3239-4132 E-mail: rodrigofmalaquias@gmail.com
Homepage: http://www.fagen.ufu.br/pessoa/rodrigo-fernandes-malaquias

**Abstract:** This study investigates the role of fund shareholder structure on the agency conflicts in delegated investment management. An exclusive fund is designed to receive investments from one investor only and it is unique in Brazil. Specifically, we examine equity fund managers who manage both exclusive mutual funds and traditional mutual funds in Brazil. We find that the 4-factor alpha of exclusive funds from a manager who manages both exclusive and traditional funds is higher than that of the manager's traditional funds. Furthermore, we show that a fund manager has a greater incentive to improve his/her exclusive funds instead of traditional funds when both suffer poor performance. The behavior of prioritizing shareholders of exclusive funds is particularly strong during a period when the market volatility is high.

**Keywords**: Exclusive mutual funds; Conflict of interest; Delegated investment management; Agency conflicts; 4-factor alpha

**JEL Classification**: G10, G11, G23

## 1. Introduction

### 1.1 Purpose and motivation

Agency conflicts have long been a concern with delegated investment management. The literature examines various dimensions of agency conflict at mutual funds, including risk-shifting, market timing, cross subsidization, and opacity of commission bundling (Brown, *et al*., 1996; Zitzewitz, 2003; Gaspar, *et al*., 2006; Edelen, *et al*., 2012). However, little is known about the role of fund shareholder structure on the agency conflicts in delegated investment management. This study provides new empirical evidence on the matter by exploiting the fact that fund managers

[*] Chen gratefully acknowledges the support from the Dean's Summer Research Grant Program at the University of Illinois at Chicago. Malaquias thanks FAPEMIG for the support in developing the database for this study (APQ-01265-14), and Prof. William Eid Jr. for his comments on characteristics of Exclusive Funds in Brazil. All errors remain our responsibility.

might have incentive to favor one type of investors over the other type of investors in Brazilian mutual fund industry.

Investors expect funds in which they invest to use their judgment to maximize risk-adjusted returns. However, mutual fund companies are motivated by their own profits. Further, they know that the information they possess and how they use it are not directly observable to investors (Chevalier and Ellison, 1997). They have an incentive to take whatever actions increase the total assets under management. Chevalier and Ellison (1997) show that the flow-performance relationship creates incentives for fund managers to alter the riskiness of their portfolios so they can maximize the fund inflows. Conflicts of interest can be at either the fund level or the fund family level, and it is the fund investors who are adversely affected by the distorted incentives of portfolio managers. Gaspar, *et al*. (2006) and Nanda, *et al*. (2004) document that fund family actively pursue a family strategy of "favoritism" by enhancing the performance of "high-value" or "star" funds at the expense of other "low-value" funds belonging to the same family. Nohel, *et al*. (2010) investigate side-by-side management, where the same fund manager simultaneously manages mutual funds and hedge funds, leading to the possibility of favoring hedge fund investors over mutual fund investors. Explicit and lucrative fee structures in hedge funds are more likely tempting an opportunistic manager to strategically shift returns to the benefit of hedge fund investors and the detriment of mutual fund investors.

In this study, we investigate the same fund manager concurrently manages two types of mutual funds, where one has a single shareholder while the other has multiple shareholders. Though the single-shareholder fund typically charges a low fee, it might provide brighter future business, an implicit incentive, to the fund manager. Chevalier and Ellison (1999) document that implicit incentives generated by fund managers' career concerns affect their choice of portfolio compositions and herding behavior. This study examines whether an implicit incentive, future business to the fund manager, will affect the relative performance of mutual funds managed by the same manager in the Brazilian mutual fund industry. Therefore, our study of side-by-side management in Brazilian mutual funds contributes to the literature that fund investors could be adversely affected by the distorted *implicit* incentives of the fund manager.

Brazil is one of the largest emerging economies (Black, *et al*., 2012; Eid Jr. and Securato, 2010) and the largest equity market in Latin America (Forbes, *et al*., 2016). Additionally, Brazil has a sophisticated capital market, especially when compared with other emerging economies (Chamon and Garcia, 2016). In Brazil, there is a specific kind of investment fund, called Exclusive Fund (EF), which is designed to receive investments from only one investor and known as *Fundo Exclusivo* in Brazil.[1] According to the *Comissão de Valores Mobiliários* (CVM), the Securities and Exchange Commission of Brazil, EFs receive applications exclusively from one investor. The investor must meet some conditions to invest in EFs which are designed for professional investors (CVM, 2004; 2014a; 2014b). Investors of EFs include individuals/entities that hold financial investments above ten million Brazilian Reais, financial institutions, pension funds, insurance companies, and other investment funds. Several studies on Brazilian funds have considered EFs characteristics (Berggrun and Lizarzaburu, 2015; Laes and Silva, 2014), but they do not consider potential conflicts of interest when these EF managers might also manage traditional mutual funds (TFs). Given the fact that few investment firms manage a large number of mutual funds in Brazil,

[1] Services received by investors from financial institutions which sponsor EFs include personalized and customized services, a direct channel to talk with fund manager, tax planning, and portfolio composition in line with the investors' risk profile.

quite a few fund managers concurrently manage both exclusive funds and traditional funds. This provides a rich area for studies on agency conflicts.

### 1.2 Hypotheses development

Exclusive funds typically charge lower management fees as shown in Varga and Wengert (2010), because the cost of communicating with a sole shareholder in EFs is cheaper than the cost of communicating with many shareholders in traditional mutual funds. In addition, the information is direct and more transparent in an exclusive fund because the fund manager fully understands the demand of his/her shareholder on the return-risk profile. Furthermore, exclusive funds are not subject to adverse impact of forced trades due to redemption from other shareholders. Edelen (1999) shows that mutual fund trades that are related to cash flows are less profitable than trades that are not influenced by cash inflows. As a result, exclusive funds could become dominant. On the other hand, the investors of exclusive funds are presumed to be wealthier and well-connected. The future business with exclusive fund shareholders is brighter if the fund performance is shining. Therefore, our central hypothesis is whether managers who manage both exclusive funds and traditional funds have a greater incentive to prioritize the interest of exclusive fund shareholders. An important question is the extent to which real behavior is driven by the financial incentives contained in different fund shareholder structures. To address this issue, we analyze the relation between organizational form and the behavior of the managers who manage both EFs and TFs in Brazil from May 1997 through February 2017. With a focus on the same managers, we can exclude the influence of managers with different skills on their behavior induced by different fund shareholder structures.

Our main hypotheses consist of:

**$H_1$**: The risk-adjusted performance of exclusive funds from a manager who manages both exclusive and traditional funds is higher than that of the manager's traditional funds.

**$H_2$**: When a manager who manages both exclusive and traditional funds suffers poor performance, the manager has greater incentive to improve his/her exclusive funds.

**$H_3$**: The behavior of prioritizing shareholders of exclusive funds is particularly strong during a period when the market volatility is high**.**

This study contributes to the literature about side-by-side management, where the same agent has simultaneously contracted with two different principals, leading to the possibility of favoring one principal over the other. Nohel, *et al*. (2010) examine whether an explicit incentive created by lucrative fees paid in hedge funds distorts the fund manager's fiduciary responsibility to mutual funds he or she concurrently manages. Instead, we investigate whether an implicit incentive created by potential future business from a single-shareholder fund's wealthy investor could still distort the fund manager's fiduciary responsibility to his or her other ordinary mutual funds. Note that the single wealthy shareholder pays less management fees than shareholders of other ordinary mutual funds do.

The remainder of the paper proceeds as follows. Section 2 describes our data sources and presents summary statistics. Section 3 conducts hypothesis tests on the performance of managers who manage both EFs and TFs at the same time, and provides further robustness analyses. Section 4 concludes the study.

## 2. Data

The main source of the data for this study is from Economatica database commonly used by analysts following Latin America's stock markets, government bonds, and mutual fund industry. We extract mutual fund information from Economatica since May 1997[2]. We only consider actively managed open-end equity funds whose managers manage both traditional funds (TFs) and exclusive funds (EFs) in Brazil. This study analyzes 93 fund managers who are in charge of both traditional equity funds (TFs) and exclusive equity funds (EFs). In total, our data includes 937 TFs and 225 EFs since May 1997. Based on Economatica database, we report in Table 1 number of actively managed open-end equity mutual funds (# of Funds) and our sample of equity funds whose managers manage both traditional funds (TFs) and exclusive funds (EFs) in a given year. The total net asset value (TNA in BR million) is recorded at the end of each year and adjusted by inflation. We used the Consumer Price Index (IPC – *Índice de Preços ao Consumidor da FGV*) to update these values. The sample period is from May 1997 to February 2017. The statistics for 2017 is as of February 2017.

Table 1 clearly shows that our sample of equity funds account more than 1/3 of all actively managed open-end equity funds in Brazil. Among our sample of equity funds whose managers manage both TFs and EFs, the number of EFs is more than 1/5 of number of TFs while total net asset value (TNA) under EFs management is greater than 1/4 of TNA under TFs management in recent years.

**Table 1.** Actively Managed Open-End Equity Mutual Funds in Brazil

| Year | All Equity Funds | The Sample | | | |
|---|---|---|---|---|---|
| | | Traditional Funds (TFs) | | Exclusive Funds (EFs) | |
| | # of Funds | # of TFs | TNA (in BR million) | # of EFs | TNA (in BR million) |
| 1997 | 219 | 21 | 2,602.4 | 5 | 343.8 |
| 1998 | 276 | 26 | 1,373.7 | 6 | 245.5 |
| 1999 | 323 | 28 | 3,666.9 | 7 | 583.2 |
| 2000 | 383 | 39 | 5,915.1 | 11 | 1,460.0 |
| 2001 | 440 | 48 | 4,505.4 | 13 | 1,183.9 |
| 2002 | 439 | 50 | 3,903.5 | 14 | 1,609.4 |
| 2003 | 401 | 59 | 7,286.1 | 16 | 2,710.8 |
| 2004 | 404 | 74 | 9,962.5 | 16 | 2,092.6 |
| 2005 | 430 | 95 | 12,118.1 | 24 | 3,493.3 |
| 2006 | 524 | 116 | 20,922.3 | 31 | 4,742.3 |
| 2007 | 781 | 180 | 46,747.6 | 37 | 7,098.5 |
| 2008 | 1,049 | 266 | 30,115.0 | 47 | 4,244.6 |
| 2009 | 1,167 | 348 | 59,685.3 | 64 | 9,034.5 |
| 2010 | 1,406 | 432 | 69,672.6 | 84 | 12,657.7 |
| 2011 | 1,539 | 498 | 62,098.2 | 99 | 10,747.2 |
| 2012 | 1,673 | 546 | 70,077.6 | 127 | 14,985.3 |
| 2013 | 1,893 | 739 | 91,604.1 | 168 | 17,939.0 |
| 2014 | 1,830 | 797 | 76,085.5 | 194 | 16,482.5 |
| 2015 | 1,673 | 709 | 48,361.0 | 171 | 10,615.6 |
| 2016 | 1,525 | 542 | 46,741.1 | 127 | 12,420.1 |
| 2017 | 1,520 | 523 | 50,685.0 | 123 | 13,439.7 |

[2] The Economatica was founded in 1986. Mutual fund data before 1997 is sparse and does not have total net asset value, especially for managers who manage both EFs and TFs.

We first present difference in fund characteristics between EFs and TFs. In each month we only consider equity funds whose managers manage both traditional funds (TFs) and exclusive funds (EFs). These fund managers can be considered holding two portfolios, a portfolio of traditional funds and a portfolio of exclusive funds. If a fund manager manages multiple funds in each of these two portfolios, fund net-of-expense returns are value-weighted while other variables are equally weighted up to a portfolio level. In constructing monthly value-weighted returns for each portfolio of TFs and EFs, we use a fund's total net asset value (TNA) at the beginning of each month as a weight. We use category classification of equity funds from ANBIMA shown in Appendix A to define a category to which a fund belongs. For each fund each month, we calculate category-adjusted returns, the fund's net-of-expense returns minus returns on the category to which the fund is assigned. Similarly, we calculate monthly value-weighted category-adjusted returns for each portfolio. We report the cross-sectional median and average of each variable for each portfolio and the hedge portfolio (EFs – TFs) held by these fund managers. Table 2 presents the time-series average of statistics. We test the null hypothesis that the time-series average of Median or AVG in the hedge portfolio (EFs – TFs) is zero. Only funds with at least 12 return observations are included. The asterisks of ***, **, and * indicate that the significance level is 1%, 5%, and 10%, respectively. The sample period is from May 1997 to February 2017.

**Table 2.** Difference in Fund Characteristics

| Variables | On the Basis of Individual Fund Managers | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Traditional Funds (TFs) | | Exclusive Funds (EFs) | | Hedge Portfolio (EFs – TFs) | | | |
| | | | | | Quartile Distribution | | | |
| | Median | AVG | Median | AVG | 25% | Median | 75% | AVG |
| Net-of-Expense Returns | 1.273 | 1.290 | 1.317 | 1.405 | -0.924 | 0.139** | 1.109 | 0.115* |
| Category-Adj. Returns | -0.027 | 0.010 | 0.060 | 0.074 | -0.958 | 0.106** | 1.090 | 0.064 |
| Total Net Asset Value (BR$ million) | 78.6 | 107.7 | 86.0 | 106.8 | -64.4 | 1.57 | 55.9 | -0.950 |
| Fund Ages (Years) | 6.580 | 7.121 | 3.877 | 4.191 | -5.292 | -2.965*** | 0.191 | -2.930*** |
| Expense ratios (%) | 1.920 | 2.004 | 0.407 | 0.555 | -1.992 | -1.365*** | -0.537 | -1.449*** |
| Minimum Balance of Invest. (BR$1000) | 5.1 | 54.4 | 43.8 | 162.8 | -6.773 | 21.9*** | 148.1 | 108.3*** |
| Fraction of funds having performance fees | 0.274 | 0.396 | 0.653 | 0.589 | -0.009 | 0.125*** | 0.492 | 0.194*** |
| Fraction of funds able to use leverage | 0.154 | 0.268 | 0.015 | 0.190 | -0.266 | -0.024*** | 0.066 | -0.078*** |
| Lock-up days | 5.638 | 9.635 | 5.300 | 10.84 | -1.911 | -0.085*** | 3.303 | 1.202*** |
| Fraction of funds having lock-up days | 1.000 | 0.996 | 1.000 | 0.994 | 0.000 | 0.000 | 0.000 | -0.003*** |
| Fraction of funds in a fund-of-funds structure | 0.470 | 0.450 | 0.000 | 0.134 | -0.693 | -0.372*** | -0.076 | -0.316*** |
| Number of funds per manager | 3.905 | 8.097 | 1.078 | 1.840 | -9.046 | -2.450*** | -0.426 | -6.257*** |

Table 2 shows that EFs tend to have better net-of-expense returns and category-adjusted returns. EFs are younger and require a much higher minimum balance for investment. EFs have a lower expense ratio. This is consistent with Varga and Wengert (2010) finding that EFs typically charge lower management fees because the cost of communicating with a sole shareholder in EFs is cheaper than the cost of communicating with many shareholders in traditional mutual funds.

Comparing to traditional funds, exclusive funds are less likely to engage in leverage and have a fund-of-funds structure.

Our study on shareholder structure of funds is totally different from Nanda, Wang, and Zheng (2009) study on multiple-class funds that give investors a choice among alternative load and fee structures. Though they investigate the consequences of introducing new share classes on fund flows and performance, mutual funds with multiple share classes commonly hold the same portfolio but differ in load and fee structures. However, EFs and TFs managed by the same manager in our study typically hold quite different portfolios shown in Table 3. We only consider equity funds whose managers manage both traditional funds (TFs) and exclusive funds (EFs). We classify fund assets into four classes: Brazilian stocks, Brazilian bonds, Brazilian mutual funds, and others. In Panel A, we aggregate all total net asset value (TNA in BR$ million) of all Exclusive Funds into a portfolio, and present the percentage of asset value of this aggregated portfolio allocated to each of the four asset classes. Panel B calculates the percentage of asset value of individual fund portfolios allocated to each of the four asset classes first, and presents the median and the average of each asset allocation of all fund portfolios for Exclusive Funds. In Panels C and D, we present the same statistics for Traditional Funds.

Panels B and D clearly show that on the basis of individual funds, managers who are in charge of both TFs and EFs still emphasize on stock selections in EFs but not in TFs in recent years. For example, the managers delegate a lot of assets of traditional funds to funds of Brazilian mutual funds in Year 2015 and 2016. They evidently shift strategies from doing active stock selections to passively allocating assets among mutual funds.[3] What factors drives the fund manager to pursue different investment strategies in EFs and TFs? Note that with a focus on the same managers, we have excluded the influence of managers with different skills on their investment strategies induced by different fund shareholder structures. Our study mainly investigates whether the agency conflicts could be one of the factors.

**Table 3.** Differences in Asset Allocations

**Panel A.** On the basis of the aggregate fund portfolio for Exclusive Funds

| Year | TNA (BR million) | % invested in Brazilian Stocks | % invested in Brazilian Bonds | % invested in Brazilian Funds | % invested in others |
|---|---|---|---|---|---|
| 2009 | 9,034.5 | 84.094 | 2.008 | 8.675 | 5.818 |
| 2010 | 12,227.5 | 75.649 | 2.292 | 16.330 | 5.997 |
| 2011 | 10,345.0 | 81.780 | 1.978 | 8.611 | 7.906 |
| 2012 | 14,338.7 | 81.215 | 2.484 | 9.398 | 6.885 |
| 2013 | 17,243.4 | 68.154 | 2.243 | 24.153 | 5.421 |
| 2014 | 15,838.5 | 67.571 | 1.838 | 23.844 | 6.767 |
| 2015 | 10,292.8 | 62.841 | 2.847 | 22.141 | 12.236 |
| 2016 | 12,325.5 | 56.035 | 1.805 | 27.642 | 14.559 |

[3] The majority of assets in the funds of mutual funds that TFs invest in recent years is still in Brazilian stock market. We conjecture that both EFs and TFs managed by the same manager still expose to similar risk factors that affect stocks. Our conjecture is supported by Table 5 in which we find that both EFs and TFs are explained well in the four-factor model in terms of high adjusted $R^2$ and have similar loadings on HML and MOM factors.

**Panel B.** On the basis of individual fund portfolios for Exclusive Funds

| Year | # of Funds | % invested in Brazilian Stocks | | % invested in Brazilian Bonds | | % invested in Brazilian Funds | | % invested in others | |
|---|---|---|---|---|---|---|---|---|---|
| | | Median | Average | Median | Average | Median | Average | Median | Average |
| 2009 | 64 | 95.673 | 81.810 | 0.000 | 1.387 | 0.000 | 11.276 | 2.368 | 5.942 |
| 2010 | 83 | 95.152 | 83.082 | 0.000 | 1.405 | 0.000 | 10.915 | 1.979 | 4.872 |
| 2011 | 97 | 92.449 | 78.287 | 0.000 | 1.244 | 0.000 | 14.055 | 3.596 | 6.849 |
| 2012 | 124 | 93.190 | 77.358 | 0.000 | 1.216 | 0.000 | 14.973 | 3.624 | 6.467 |
| 2013 | 163 | 90.667 | 69.138 | 0.000 | 1.057 | 0.000 | 23.708 | 3.392 | 6.198 |
| 2014 | 186 | 86.920 | 64.875 | 0.000 | 1.122 | 0.000 | 27.381 | 3.152 | 7.191 |
| 2015 | 164 | 77.294 | 58.687 | 0.000 | 1.757 | 0.000 | 25.878 | 6.660 | 14.519 |
| 2016 | 126 | 85.151 | 61.723 | 0.000 | 1.077 | 0.000 | 28.405 | 5.286 | 8.879 |

**Panel C.** On the basis of the aggregated fund portfolio for Traditional Funds

| Year | TNA (BR million) | % invested in Brazilian Stocks | % invested in Brazilian Bonds | % invested in Brazilian Funds | % invested in others |
|---|---|---|---|---|---|
| 2009 | 59,464.2 | 60.219 | 3.002 | 29.968 | 6.878 |
| 2010 | 69,399.3 | 60.240 | 1.738 | 28.901 | 9.176 |
| 2011 | 61,906.4 | 56.949 | 1.530 | 30.684 | 10.972 |
| 2012 | 69,955.0 | 54.260 | 1.365 | 31.041 | 13.682 |
| 2013 | 91,246.6 | 48.845 | 2.366 | 36.194 | 12.968 |
| 2014 | 75,770.5 | 43.759 | 1.919 | 39.379 | 15.663 |
| 2015 | 48,149.1 | 37.679 | 2.453 | 42.643 | 17.874 |
| 2016 | 46,734.8 | 44.998 | 4.125 | 38.376 | 12.920 |

**Panel D.** On the basis of individual fund portfolios for Traditional Funds

| Year | # of Funds | % invested in Brazilian Stocks | | % invested in Brazilian Bonds | | % invested in Brazilian Funds | | % invested in others | |
|---|---|---|---|---|---|---|---|---|---|
| | | Median | Average | Median | Average | Median | Average | Median | Average |
| 2009 | 343 | 77.786 | 53.776 | 0.000 | 1.408 | 2.656 | 39.162 | 1.834 | 5.896 |
| 2010 | 426 | 78.301 | 53.879 | 0.000 | 1.187 | 2.452 | 38.387 | 1.199 | 6.595 |
| 2011 | 491 | 66.472 | 50.215 | 0.000 | 1.580 | 4.346 | 39.573 | 1.626 | 8.576 |
| 2012 | 541 | 66.505 | 48.088 | 0.000 | 1.301 | 4.264 | 42.483 | 1.616 | 8.159 |
| 2013 | 729 | 46.221 | 43.247 | 0.000 | 1.342 | 12.368 | 47.444 | 0.811 | 8.082 |
| 2014 | 788 | 18.891 | 40.377 | 0.000 | 1.461 | 26.318 | 49.813 | 0.674 | 8.465 |
| 2015 | 697 | 0.000 | 37.292 | 0.000 | 1.902 | 63.274 | 50.732 | 1.102 | 10.424 |
| 2016 | 540 | 0.000 | 37.106 | 0.000 | 1.578 | 86.817 | 52.310 | 0.910 | 9.068 |

## 3. Hypotheses Tests

We next measure performance of equity funds by alphas of Fama-French 3 factors plus momentum factor. Following the procedure described at Kenneth French web site, we first construct Fama and French three factors as well as the momentum factor based on Brazilian stocks during the period from May 1997 to February 2017. The Fama-French factors are constructed using the 6 value-weight portfolios formed on size and book-to-market. SMB and HML for July of year t to June of t+1 include all Brazilian stocks for which we have market equity data for December of t-1 and June of t, and (positive) book equity data for t-1. Similarly, the factor MOM is constructed using six value-weight portfolios formed on size and prior (2-12) returns. RMRF represents the return on the main index of Brazilian stock market (Ibovespa) in excess of risk-free rate proxied by the SELIC. As a reference, we download the factor data based on US stocks from French website directly, and report the same statistics in Panels C and D. Table 4 shows the basic statistics of the 4 factors based on Brazil stocks, which are different from the 4 factors based on U.S. stocks. For example, the monthly average of RMRF is positive in the U.S. but negative in the Brazil. Also, RMRF is positively correlated with SMB in the U.S. while it is negatively correlated in the Brazil.

**Table 4.** Summary Statistics of Brazilian Risk Factors

**Panel A.** Fama-French Three Factors plus the Momentum Factor (Brazil)

| Variable | *n* | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| RMRF | 238 | -0.04 | 8.453 | -41.03 | 22.446 |
| SMB | 238 | 0.365 | 5.52 | -16.423 | 21.471 |
| HML | 238 | 0.527 | 5.725 | -16.485 | 21.322 |
| MOM | 238 | 0.017 | 6.537 | -40.124 | 18.923 |

**Panel B.** Correlation Matrix (Brazil)

| Variable | SMB | HML | MOM |
|---|---|---|---|
| RMRF | -0.508 | 0.127 | -0.341 |
| SMB | | -0.354 | 0.109 |
| HML | | | -0.112 |

**Panel C.** Fama-French Three Factors plus the Momentum Factor (US)

| Variable | *n* | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| RMRF | 238 | 0.581 | 4.555 | -17.230 | 11.350 |
| SMB | 238 | 0.246 | 3.449 | -16.880 | 21.710 |
| HML | 238 | 0.201 | 3.219 | -11.100 | 12.900 |
| MOM | 238 | 0.349 | 5.436 | -34.390 | 18.360 |

**Panel D.** Correlation Matrix (US)

| Variable | SMB | HML | MOM |
|---|---|---|---|
| RMRF | 0.245 | -0.134 | -0.297 |
| SMB | | -0.277 | 0.098 |
| HML | | | -0.205 |

For each fund manager each month we have returns for a portfolio of traditional funds and a portfolio of exclusive funds. We identify 93 fund managers who are in charge of both traditional funds (TFs) and exclusive funds (EFs). In total, they manage 937 traditional funds and 225 exclusive funds; the sample period is from May 1997 to February 2017. For each fund manager each month we have returns for a portfolio of traditional funds and a portfolio of exclusive funds. We calculate monthly value-weighted net-of-expense returns for each portfolio as well as the hedge portfolio (EFs – TFs) by a fund manager, using the fund's TNA at the beginning of each month as a weight. On the basis of individual fund managers, we regress monthly portfolio excess returns against Fama and French 3 factors plus momentum factor based on Brazil stocks. We report the coefficient estimates for each portfolio as well as the hedge portfolio (EFs – TFs) held by these fund managers. We test the null hypothesis that the coefficient is zero with one exception. This exception is that we test the null hypothesis if $\beta_{RMRF}$ equals to one in the TFs and EFs portfolios.

Table 5 shows that the median hedge portfolio generates significant and positive 4-factor alpha. The result supports our 1st hypothesis that the risk-adjusted performance of exclusive funds from a manager who manages both exclusive and traditional funds is higher than that of the manager's traditional funds. In addition, EFs and TFs have similar loadings on HML and MOM factors.

**Table 5.** The 4-Factor Alphas

| Coefficients | Traditional Funds (TFs) | | Exclusive Funds (EFs) | | Hedge Portfolio (EFs – TFs) | |
|---|---|---|---|---|---|---|
| | Median | AVG | Median | AVG | Median | AVG |
| Alpha | -0.009 | 0.011 | 0.133*** | 0.134 * | 0.047 * | 0.123 |
| RMRF | 0.784*** | 0.778*** | 0.825*** | 0.831*** | 0.028*** | 0.054** |
| SMB | 0.173*** | 0.193*** | 0.126 *** | 0.250*** | -0.031** | 0.057 |
| HML | -0.005 | 0.021 | -0.026 | 0.059 | -0.005 | 0.038 |
| MOM | 0.078*** | 0.077*** | 0.072*** | 0.075*** | -0.006 | -0.02 |
| **Adjusted $R^2$** | 0.817 | 0.784 | 0.817 | 0.778 | 0.166 | 0.227 |

**Notes:** Only funds that have at least 12 observations for monthly returns are included. The asterisks of ***, **, and * indicate statistical significance level of 1%, 5%, and 10%, respectively.

Edelen (1999) shows that mutual fund trades that are related to cash flows are less profitable than trades that are not influenced by cash inflows. Thus, the extra alpha of EFs over TFs could simply reflect that EFs are less subject to the adverse impact of net fund flows on fund performance. However, we can eliminate this plausible cause if we can show both EFs and TFs experiencing similar net fund flows, which will be examined next.

For each fund, we calculate monthly net fund flows according to Sirri and Tufano (1998). Each month a fund manager has a portfolio of traditional funds and a portfolio of exclusive funds. The value-weighted net fund flows are then calculated monthly for each portfolio, using as a weight the total net asset (TNA) value of a fund at the beginning of each month. At the end of each year we calculate the average and standard deviation of net fund flows over the prior year for each portfolio as well as the hedge portfolio (EFs – TFs) held by a fund manager. Each year we report the average and quartile distribution of cross-sectional fund manager observations for two variables, average and volatility of monthly net fund flows over the prior year. The sample period is from May 1997 to February 2017. Table 6 presents the time-series average of statistics. We test the null hypothesis that the time-series average of Median or AVG in the hedge portfolio (EFs – TFs) is zero.

Table 6 shows that both EFs and TFs experience similar net fund flows on average over years but EFs face a little bit higher volatility of net fund flows. The evidence does not support that the extra alpha of EFs over TFs is explained by different net fund flows faced by both funds.

**Table 6.** Fund Flow Analysis

| Variables | Traditional Funds (TFs) | | Exclusive Funds (EFs) | | Hedge Portfolio (EFs – TFs) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Quartile Distribution | | | |
| | Median | AVG | Median | AVG | 25% | Median | 75% | AVG |
| Average of Net Fund Flows | 0.001 | 0.010 | -0.001 | 0.010 | -0.022 | -0.001 | 0.020 | -0.001 |
| Volatility of Net Fund Flows | 0.031 | 0.060 | 0.032 | 0.072 | 0.033 | 0.067*** | 0.123 | 0.115*** |

**Notes:** The asterisks of ***, **, and * indicate statistical significance level of 1%, 5%, and 10%, respectively.

To examine which factors might explain difference in performance between EFs and TFs, we perform yearly Fama-MacBeth (1973) forecasting regressions. Therefore, Table 7 reports yearly Fama-MacBeth (1973) forecasting regression results of the 2nd-half-year performance of funds held by fund managers who are in charge of traditional funds (TFs) and exclusive funds (EFs).

**Table 7.** Fund Performance and Shareholder Structure in Fama-MacBeth Regression

| Explanatory Variables | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
|---|---|---|---|---|---|---|---|---|
| Constant | 1.622*** | 1.780*** | 1.681*** | 1.801*** | 1.392*** | 1.547*** | 1.436** | 1.559*** |
| D(CAR<0) | -1.247* | -1.531** | -1.303* | -1.522** | -1.297* | -1.581** | -1.345** | -1.572** |
| $AVG^{Flow}$ | 2.058 | 2.169 | 2.180 | 2.301 | | | | |
| $\sigma^{Flow}$ | | | | | 1.481** | 1.541** | 1.869** | 1.827** |
| D(EF) | -0.414 | -1.080** | -0.534 | -1.094** | -0.294 | -0.946* | -0.378 | -0.932* |
| D(EF) × D(CAR<0) | | 1.389*** | | 1.114*** | | 1.380*** | | 1.026** |
| D(EF) × $AVG^{Flow}$ | | | 1.055 | -0.445 | | | | |
| D(EF) × $\sigma^{Flow}$ | | | | | | | -0.287 | 1.441 |
| Ln(TNA) | -0.268 | -0.286 | -0.277 | -0.287 | -0.251 | -0.267 | -0.259 | -0.269 |
| Age | -0.067*** | -0.063*** | -0.066*** | -0.065*** | -0.056*** | -0.053*** | -0.056*** | -0.054*** |
| **AVG Adj. $R^2$** | 0.071 | 0.066 | 0.064 | 0.057 | 0.070 | 0.064 | 0.063 | 0.055 |
| **AVG # of funds** | 298 | 298 | 298 | 298 | 298 | 298 | 298 | 298 |

The dependent variable is the fund performance over the 2nd-half of each year while the independent variables are fund characteristics and performance over the 1st-half of each year. We measure a fund's performance by its category-adjusted returns (CARs), compounded monthly returns over a period for the fund minus the compounded return over the same period for the fund category to which the fund is assigned at the beginning of each period. The fund characteristics include D(EF), a dummy variable that equals one if the fund is an exclusive fund; attributes of net fund flows; a natural log of total net asset value (TNA in BR$ million); a fund's age in years. Fund's age and fund's size were included based on previous research, which indicates that these variables can be related with future performance of mutual funds (Chen, Hong, Huang and Kubik (2004); Maestri and Malaquias (2018)). We quantify attributes of net fund flows by two measures, average ($AVG^{Flow}$) and volatility ($\sigma^{Flow}$) of monthly net fund flows over the 1st-half year. We quantify attributes of net fund flows by two measures, average ($AVG^{Flow}$) and volatility ($\sigma^{Flow}$) of monthly net fund flows over the 1st-half year. Table 7 reports time series averages of the regression coefficients with Newey-West adjustment with one lag for potential heteroscedastic and serially correlated errors. The asterisk of ***, **, and * indicates statistical significance at the 1%, 5%, and 10% levels, respectively. An equity fund without data for 12 monthly returns in a given year is excluded from the yearly regression. The sample period is from January 1998 to December 2016.

Table 7 shows that a poor performing fund in the 1st-half year continues to perform poorly in the 2nd-half year regardless of models. Without considering the interactive variable of D(EF) × D(CAR< 0), Models 1, 3, 5, and 7 show that the EF status is not significantly related to the 2nd-half year performance. However, the fund manager will significant improve his/her EFs performance

over the 2nd-half year when the EFs perform poorly in the 1st-half year as shown in Models 2, 4, 6, and 8. This evidence supports our Hypothesis H2. The net sensitivity of being an EF to the 2nd-half year performance ranges from 0.020 in Model 4 to 0.434 in Model 6. The volatility of net fund flows significantly affect a fund's 2nd-half year performance but the EF status does not significantly influence the sensitivity between flow volatility and fund performance.

For a robustness check, we perform a forecasting panel regression in Table 8 that relates of the 2nd-half-year performance of funds to the 1st-half-year fund characteristics and performance. The analysis is done at a fund portfolio level with each fund in a given year representing a distinct unit of observation. Again, we only consider equity funds managed by a fund manager who is in charge of traditional funds (TFs) and exclusive funds (EFs). The dependent variable is the fund performance over the 2nd-half of each year while the independent variables are fund characteristics and performance over the 1st-half of each year. All variables are defined in Table 7. The asterisk of ***, **, and * indicates statistical significance at the 1%, 5%, and 10% levels, respectively. An equity fund without data for 12 monthly returns in a given year is excluded from the regression. In the estimation, all standard errors are adjusted for error correlations clustered by both fund manager and year according to Petersen (2009). The result is presented for the entire sample period from January 1998 to December 2016 in Panel A. In Panels B and C, we further separate the sample period into two even periods defined by Brazil market volatility. We sort yearly market return volatility based on the 1st 6-month market returns each year. Among these 19 years, we define half of them with high volatility as a high volatile period and the other half as a low volatile period.

**Table 8.** Fund Performance and Shareholder Structure in a Panel Regression

| **Explanatory Variables** | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** | **Model 7** | **Model 8** |
|---|---|---|---|---|---|---|---|---|
| | | | | **Panel A**. The Entire Sample Period | | | | |
| D(CAR<0) | -2.045*** | -2.325*** | -2.043*** | -2.324*** | -2.050*** | -2.330*** | -2.049*** | -2.331*** |
| $AVG^{Flow}$ | 0.507 | 0.439 | 0.613 | 0.597 | | | | |
| $\sigma^{Flow}$ | | | | | 0.474 | 0.455 | 0.659 | 0.659 |
| D(EF) | -0.092 | -0.816*** | -0.089 | -0.815*** | -0.087 | -0.810*** | -0.053 | -0.779*** |
| D(EF) x D(CAR<0) | | 1.589*** | | 1.595*** | | 1.583*** | | 1.596*** |
| D(EF) x $AVG^{Flow}$ | | | -0.335 | -0.500 | | | | |
| D(EF) x $\sigma^{Flow}$ | | | | | | | -0.526 | -0.581 |
| Ln(TNA) | 0.021 | 0.014 | 0.022 | 0.016 | 0.027 | 0.022 | 0.032 | 0.027 |
| Age | -0.053** | -0.051** | -0.053** | -0.051** | -0.053** | -0.051** | -0.052** | -0.050** |
| Manager Fixed Effect | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Fixed Effect | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Standard Errors Clustered by both Manager and Year | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Adj. $R^2$** | 0.074 | 0.076 | 0.074 | 0.076 | 0.075 | 0.076 | 0.075 | 0.076 |
| **Obs. (Fund-Years)** | 5,667 | 5,667 | 5,667 | 5,667 | 5,667 | 5,667 | 5,667 | 5,667 |

**Table 8. —*Continued***

| Explanatory Variables | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
|---|---|---|---|---|---|---|---|---|
| **Panel B.** The High Volatile Period | | | | | | | | |
| D(CAR<0) | -2.116*** | -2.380*** | -2.105*** | -2.379*** | -2.120*** | -2.385*** | -2.115*** | -2.385*** |
| $AVG^{Flow}$ | 0.885 | 0.850 | 1.007 | 0.999 | | | | |
| $\sigma^{Flow}$ | | | | | 0.412 | 0.401 | 0.448 | 0.447 |
| D(EF) | 0.315 | -0.307 | 0.338 | -0.305 | 0.324 | -0.299 | 0.382 | -0.240 |
| D(EF) × D(CAR<0) | | 1.690** | | 1.761*** | | 1.694** | | 1.733** |
| D(EF) × $AVG^{Flow}$ | | | -3.054 | -3.758 | | | | |
| D(EF) × $\sigma^{Flow}$ | | | | | | | -0.902 | -1.153 |
| Ln(TNA) | -0.362*** | -0.367*** | -0.366*** | -0.372*** | -0.364*** | -0.369*** | -0.365*** | -0.370*** |
| Age | 0.002 | 0.003 | 0.002 | 0.003 | 0.002 | 0.003 | 0.002 | 0.004 |
| Manager Fixed Effect | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Fixed Effect | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Standard Errors Clustered by both Manager and Year | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Adj. $R^2$** | 0.203 | 0.204 | 0.203 | 0.204 | 0.203 | 0.204 | 0.203 | 0.204 |
| **Obs. (Fund-Years)** | 1,572 | 1,572 | 1,572 | 1,572 | 1,572 | 1,572 | 1,572 | 1,572 |
| **Panel C.** The Low Volatile Period | | | | | | | | |
| D(CAR<0) | -1.557** | -1.837** | -1.564** | -1.843** | -1.559** | -1.836** | -1.557** | -1.835** |
| $AVG^{Flow}$ | -0.344 | -0.440 | -1.142 | -1.181 | | | | |
| $\sigma^{Flow}$ | | | | | 0.323 | 0.298 | 0.733 | 0.737 |
| D(EF) | -0.154 | -0.914*** | -0.162 | -0.918*** | -0.158 | -0.909*** | -0.118 | -0.872*** |
| D(EF) × D(CAR<0) | | 1.555*** | | 1.546*** | | 1.534*** | | 1.543*** |
| D(EF) × $AVG^{Flow}$ | | | 1.404 | 1.302 | | | | |
| D(EF) × $\sigma^{Flow}$ | | | | | | | -0.640 | -0.686 |
| Ln(TNA) | 0.221** | 0.215** | 0.215** | 0.209** | 0.230** | 0.225** | 0.236** | 0.231** |
| Age | -0.084*** | -0.082*** | -0.085*** | -0.083*** | -0.083*** | -0.081*** | -0.082*** | -0.080*** |
| Manager Fixed Effect | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Fixed Effect | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Standard Errors Clustered by both Manager and Year | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Adj. $R^2$** | 0.119 | 0.120 | 0.118 | 0.120 | 0.119 | 0.120 | 0.118 | 0.120 |
| **Obs. (Fund-Years)** | 4,095 | 4,095 | 4,095 | 4,095 | 4,095 | 4,095 | 4,095 | 4,095 |

Panel A of Table 8 shows the result that is consistent with what we find in the Table 7. The fund manager will significant improve his/her EFs performance over the 2nd-half year when the EFs perform poorly in the 1st-half year as shown in Models 2, 4, 6, and 8. The net sensitivity of being an EF to the 2nd-half year performance is stronger and ranges from 0.773 in Model 2 to 0.817 in Model 8. It further supports our Hypothesis H2. Furthermore, we separate the sample period into two periods defined by Brazil market volatility. When an exclusive fund experiences negative objective-

adjusted returns in the 1st-half year during which the market is very volatile, to secure future business with EF wealthy shareholders the fund manager might have to convince them that he/she can manage the portfolio in the turmoil market. As a result, the manager will utilize every means to greatly improve his/her EFs performance over the 2nd-half year. Panel B shows that the net sensitivity of being an EF to the 2nd-half year performance is much stronger and ranges from 1.383 in Model 2 to 1.493 in Model 8. This evidence supports Hypothesis H3.

## 4. Conclusion

This study investigates the role of fund shareholder structure on the agency conflicts in delegated investment management. Specifically, we examine equity fund managers who manage both exclusive mutual funds and traditional mutual funds in Brazil. An exclusive fund is designed to receive investments from one investor only and unique in Brazil. We argue that the future business with exclusive fund wealthy shareholders is brighter if the fund performance is shining. Thus, managers who manage both exclusive funds and traditional funds have a greater incentive to prioritize the interest of exclusive fund shareholders. We find that the 4-factor (Fama and French 3 factors plus momentum factor) alpha of exclusive funds from a manager who manages both exclusive and traditional funds is higher than that of the manager's traditional funds. Furthermore, we show that a fund manager has a greater incentive to improve his/her exclusive funds instead of traditional funds when both suffer poor performance. The behavior of prioritizing shareholders of exclusive funds is particularly strong during a period when the market volatility is high.

The main results of this study have implications for the literature about agency conflicts in the side-by-side management where the same agent has simultaneously contracted with two different principals, leading to the possibility of favoring one principal over the other. Not only explicit difference in fee contracts but also implicit difference in principal compositions affect the agent's behavior.

This study empirically analyzes the relation between organizational form and the behavior of the managers who manage both EFs and TFs in Brazil. Our results indicate that the fund shareholder structure could be a factor that might motivate managers to prioritize some funds (EFs) over others (TFs) when they have fiduciary responsibility to both. If we can fully understand the extent to which real behavior is driven by the financial incentives contained in different fund shareholder structures, we might be able to design a better firewall to mitigate agency conflicts in the delegated investment management. We leave this pursuit to future research.

### References

[1] Berggrun, L., and Lizarzaburu, E. (2015). "Fund flows and performance in Brazil", *Journal of Business Research*, *68*(2): 199-207.

[2] Black, B. S., Carvalho, A. G., and Gorga, É. (2012). "What matters and for which firms for corporate governance in emerging markets? Evidence from Brazil (and other BRIK countries)", *Journal of Corporate Finance*, *18*(4): 934-952.

[3] Brown, K., Harlow, W., and Starks, L. (1996). "Of tournaments and temptations: an analysis of managerial incentives in the mutual fund industry", *Journal of Finance*, *51*(1): 85-110.

[4] Chamon, M., and Garcia, M. (2016). "Capital controls in Brazil: Effective?", *Journal of International Money and Finance, 61*(March): 163-187.

[5] Chen, J., Hong, H., Huang, M., and Kubik, J. D. (2004). "Does Fund Size Erode Mutual Fund Performance? The Role of Liquidity and Organization", *American Economic Review*, *94*(5): 1276-1302.

[6] Chevalier, J., and Ellison, G. (1997). "Risk taking by mutual funds as a response to incentives", *Journal of Political Economy*, *105*(6): 1167-1200.

[7] Chevalier, J., and Ellison, G. (1999). "Career concerns of mutual fund managers", *The Quarterly Journal of Economics*, *114*(2): 389-432.

[8] CVM - Comissão de Valores Mobiliários [The Securities and Exchange Commission of Brazil]. *Instrução CVM n. 409* - August 18, 2004. Dispõe sobre a constituição, a administração, o funcionamento e a divulgação de informações dos fundos de investimento. [It regulates the establishment, management, operation and disclosure of investment funds]. [Online] Retrieved from: <http://www.cvm.gov.br>. Accessed on April 18, 2016.

[9] CVM - Comissão de Valores Mobiliários [The Securities and Exchange Commission of Brazil]. *Instrução CVM n. 554* - December 17, 2014a. Inclui, revoga e altera dispositivos na Instrução CVM nº 155 [...] e na Instrução CVM nº 539, de 13 de novembro de 2013. [It includes, revokes and changes regulations in Instructions CVM n. 155 … and in Instruction CVM n. 539 – November 13, 2013]. [Online] Retrieved from: <http://www.cvm.gov.br>. Accessed on April 18, 2016.

[10] CVM - Comissão de Valores Mobiliários [The Securities and Exchange Commission of Brazil]. *Instrução CVM n. 555* - December 17, 2014b. Dispõe sobre a constituição, a administração, o funcionamento e a divulgação de informações dos fundos de investimento. [It regulates the establishment, management, operation and disclosure of investment funds]. [Online] Retrieved from: <http://www.cvm.gov.br>. Accessed on April 18, 2016.

[11] Edelen, R. M. (1999). "Investor flows and the assessed performance of open-end mutual funds", *Journal of Financial Economics*, *53*(3): 439-466.

[12] Edelen, R. M., Evans, R. B., and Kadlec, G. B. (2012). "Disclosure and agency conflict: Evidence from mutual fund commission bundling", *Journal of Financial Economics*, *103*(2): 308-326.

[13] Eid Jr. W., and Securato, J. R. (2010). "Financial Markets Development: Evidence for Brazil, India and China". Version: August 31, 2010. Working Paper. [Online] Retrieved from: <http://ssrn.com/abstract=1669612>. Accessed on April 17, 2016.

[14] Fama, E. F., and French, K. R. (1993). "Common risk factors in the returns on stocks and bonds", *Journal of Financial Economics*, *33*(1): 3-56.

[15] Fama, E. F., and MacBeth, J. D. (1973). "Risk, Return, and Equilibrium: Empirical Tests", *The Journal of Political Economy*, *81*(3): 607-636.

[16] Forbes, K., Fratzscher, M., Kostka, T., and Straub, R. (2016). "Bubble thy neighbor: Portfolio effects and externalities from capital controls", *Journal of International Economics*, *99* (March): 85-104.

[17] Gaspar, M., Massa, M., and Matos, P. (2006). "Favoritism in mutual fund families? Evidence on strategic cross-fund subsidization", *Journal of Finance*, *61*(1): 73-104.

[18] Laes, M. A., and Silva, M. E. (2014). "Performance of mutual equity funds in Brazil - A bootstrap analysis", *Economia*, *15*(3): 294-306.

[19] Maestri, C. O. N. M., and Malaquias, R. F. (2018). "Aspects of manager, portfolio allocation, and fund performance in Brazil", *R. Cont. Fin. USP (Accounting & Finance Review - USP)*, *29*(76): 82-96.

[20] Nanda, V., Wang, J. Z., and Zheng, L. (2004). "Family Values and the Star Phenomenon: Strategies of Mutual Fund Families", *Review of Financial Studies*, *17*(3): 667-698.

[21] Nanda, V., Wang, J. Z., and Zheng, L. (2009). "The ABCs of Mutual Funds: On the Introduction of Multiple Share Classes", *Journal of Financial Intermediation*, *18*(3): 329-361.

[22] Nohel, T., Wang, Z. J., Zheng, L. (2010). "Side-by-Side Management of Hedge Funds and Mutual Funds", *The Review of Financial Studies*, *23*(6): 2342-2373.

[23] Sirri, E. R., and Tufano, P. (1998). "Costly Search and Mutual Fund Flows", *The Journal of Finance*, *53*(5): 1589-1622.

[24] Varga, G., and Wengert, M. (2010). "*The Growth and Size of the Brazilian Mutual Fund Industry*". Version: March 20, 2010. Working Paper. [Online] Retrieved from: <http://ssrn.com/abstract=1575510>. Accessed on April 19, 2016.

[25] Zitzewitz, E. (2003). "Who cares about shareholders? Arbitrage-proofing mutual funds", *Journal of Law, Economics, and Organization*, *19*(2): 245-280.

**Appendix A**: Categories of Equity Mutual Funds in the Sample and Number of Observations

| **Category** | **# obs.** |
|---|---:|
| Equities - Free | 32,395 |
| Equities - Active Index | 21,168 |
| Equities - Dividends | 4,941 |
| Equities - Value / Growth | 5,080 |
| Equities - IBrX – Active | 2,091 |
| Equities - IBOVESPA - Active | 3,094 |
| Equities - Sectorial | 3,421 |
| Equities - Sectorial - Telecommunications | 119 |
| Equities - Small Caps | 3,340 |
| Equities - Sustainability / Governance | 3,021 |
| Equities - Foreign Investment | 1,382 |
| Equities - IBOVESPA - Active - with Leverage | 408 |
| Equities - IBrX - Active - with Leverage | 23 |
| Equities - Free - with Leverage | 16 |
| Total | 80,499 |

**Notes:** We use the classification from ANBIMA, available in Economatica database, to develop this Appendix. The names of the categories were translated to English, because they are available at Economatica in Brazilian Portuguese. The sample period is from May 1997 to February 2017.