



Mutual fund managers stock preferences in Latin America

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ABSTRACT

In this paper, we observe the preferential characteristics of mutual fund managers when investing in Latin America. The main objective was checking the hypothesis that foreign managers prefer companies with characteristics that amplify its visibility, in other words, that reduce information asymmetry, a possible explanation for the existence of home bias. For this purpose, we observe mutual fund positions based on shareholders list of the companies listed at the stock exchanges of the countries of the sample in three different periods (June 2008, 2009 and 2010). Our findings go along with the hypothesis of home bias. Relevant variables of this literature that reinforces international exposure – i.e. international listing (ADRs), analyst coverage and exporting – were significant. Additionally, our findings suggest that international listing (ADRs) plays an important role in foreign mutual fund managers' decisions for Latin America, most due its characteristics (i.e. liquidity and market size). The study also revealed the preferences of domestic fund managers located in Latin America and found evidence that these managers behave differently from foreign mutual fund managers, as they expand their selection towards a market portfolio and do not focus on stocks with visibility characteristics.

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1. Introduction

According to ICI (*Investment Company Institute*), world mutual funds industry has reached US\$ 24.7 trillion in 2010, growing 108% since the beginning of the decade. The biggest players in this segment were represented by the United States (48%), Luxemburg (10.2%), France (6.6%), Australia (5.9%) and Ireland (4.1%). However, growth was much higher at emerging markets. ICI numbers show that the industry had grown about 660% in those markets, while the industry located at developed markets grew only 96%. This fact could be attributed to a greater foreign capital flows and better economic environment, including relaxed regulatory framework. Table 1 shows mutual funds industry and its evolution in the last decade.

Numerous studies had shown the gains with portfolio internationalization. Besides the increase of markets correlation in periods of economic growth and economic integration, as verified by Goetzmann, Li, and Rouwenhorst (2005), mutual fund managers try to expand its options with stocks located at other regions. However, as pointed by Lewis (1995), the proportion of foreign assets retained by those managers is small, not sufficient for asset diversification as proposed by modern portfolio theory. This bias, denominated *home bias*, was observed in several studies about investment decisions in developed countries.

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Kang and Stulz (1997) observed that foreign investors in Japan prefer to allocate their resources in big companies or with higher levels of export sales. This issue matches the idea that foreign investors prefer investing in companies that they know about. So, information asymmetry could be pointed out as a driver for *home bias*. Dahlquist and Robertsson (2001) found similar results when studying foreign investors at Sweden.

Despite the growth of mutual fund industry in emerging markets, there is limited evidence on how foreign mutual fund managers allocate their capital through stocks in those regions, especially in Latin America. Previous studies (Covrig, Lau, & Ng, 2006; Ferreira & Matos, 2008) focused on industry located at developed countries, and found that mutual fund managers have preferences for larger stocks (higher market value), with bigger liquidity and with some aspects related to visibility, like ADR listing and analyst coverage.

This paper embodies this issue for Latin America. The main objective here is to test the hypothesis that foreign mutual fund managers, when investing in Latin America, prefer companies with characteristics that generates a greater level of visibility. For this purpose a database was constructed consisting of mutual fund holdings (domestic and foreign funds) from listed companies in Latin America countries for three different periods (2008, 2009 and 2010). A model was proposed showing the preferences of foreign mutual fund managers when picking stocks, as given by firms' characteristics.

This paper is divided as following: Section 2 makes a short brief of earlier studies; Section 3 describes the data; Section 4 explains the

Table 1

Asset distribution in World Mutual Fund Industry. This table shows the assets value (in billions of dollars) registered by mutual fund industry in last decade. Upper part of table shows the 10 biggest participants of this industry in 2010 and its evolution through first decade of 21st century. Lower part of the table registered the fractions of each continent. A reflection here about Luxemburg and Irish should be done. According to Khorana, Servaes, and Tufano (2005), these countries are different from the others as they are finance centers where funds are based, but not negotiated. Therefore, a relevant part of these assets is from other countries located around the world. The percentage numbers represent the participation of each country/region on total assets.

Source: ICI Factbook (2010, 2007).

In billions of dollars												
Country/region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	% Growth
US	6965	6975	6390	7414	8095	8891	10,398	12,002	9604	11,120	11,821	69.72%
% Share	58.67%	59.85%	56.43%	52.78%	50.12%	50.07%	47.68%	45.93%	50.76%	48.45%	47.86%	
Luxemburg	747	759	804	1104	1396	1636	2188	2685	1861	2294	2513	236.34%
% Share	6.29%	6.51%	7.10%	7.86%	8.64%	9.21%	10.03%	10.27%	9.83%	9.99%	10.17%	
France	722	713	845	1148	1371	1363	1769	1990	1591	1806	1617	123.99%
% Share	6.08%	6.12%	7.46%	8.17%	8.49%	7.67%	8.11%	7.61%	8.41%	7.87%	6.55%	
Australia	342	334	356	518	635	700	864	1193	841	1199	1456	325.74%
% Share	2.88%	2.87%	3.15%	3.69%	3.93%	3.94%	3.96%	4.57%	4.45%	5.22%	5.89%	
Irish	137	192	250	360	468	546	855	951	720	861	1014	639.69%
% Share	1.15%	1.65%	2.21%	2.57%	2.89%	3.08%	3.92%	3.64%	3.81%	3.75%	4.10%	
Brazil	149	148	97	172	221	303	419	615	479	784	980	560.07%
% Share	1.25%	1.27%	0.85%	1.22%	1.37%	1.71%	1.92%	2.35%	2.53%	3.42%	3.97%	
United Kingdom	361	317	289	397	493	547	755	897	505	729	854	136.67%
% Share	3.04%	2.72%	2.55%	2.82%	3.05%	3.08%	3.46%	3.43%	2.67%	3.18%	3.46%	
Japan	432	344	303	349	399	470	579	714	575	661	786	81.83%
% Share	3.64%	2.95%	2.68%	2.49%	2.47%	2.65%	2.65%	2.73%	3.04%	2.88%	3.18%	
Canada	280	268	249	338	414	491	566	698	416	565	637	127.88%
% share	2.35%	2.30%	2.20%	2.41%	2.56%	2.76%	2.60%	2.67%	2.20%	2.46%	2.58%	
China	N/A	N/A	N/A	N/A	N/A	N/A	N/A	434	276	381	365	N/A
% Share								1.66%	1.46%	1.66%	1.48%	
North America (ex-Mexico)	7244	7243	6639	7753	8509	9382	10,964	12,701	10,020	11,685	12,458	71.97%
% Share	61.02%	62.14%	58.63%	55.19%	52.68%	52.83%	50.27%	48.60%	52.96%	50.91%	50.44%	
Latin America	180	190	137	217	272	369	506	723	562	900	1129	527.47%
% Share	1.52%	1.63%	1.21%	1.54%	1.68%	2.08%	2.32%	2.77%	2.97%	3.92%	4.57%	
Europe	3296	3168	3463	4683	5640	6002	7804	8935	6231	7546	7903	139.77%
% Share	27.77%	27.18%	30.58%	33.33%	34.92%	33.80%	35.78%	34.19%	32.93%	32.87%	32.00%	
Asia and Pacific	1134	1039	1064	1361	1678	1939	2456	3678	2038	2715	3067	170.49%
% Share	9.55%	8.92%	9.39%	9.69%	10.39%	10.92%	11.26%	14.08%	10.77%	11.83%	12.42%	
Africa	17	15	21	34	54	66	78	95	69	106	142	736.92%
% Share	0.14%	0.12%	0.19%	0.25%	0.33%	0.37%	0.36%	0.36%	0.37%	0.46%	0.57%	
Total	11,871	11,655	11,324	14,048	16,153	17,757	21,809	26,132	18,920	22,953	24,699	108.06%

methodology; Section 5 brings on the results achieved, and; Section 6 we conclude the paper.

2. Literature review

According to the basics of modern portfolio theory, investors should diversify their portfolios around the world in order to achieve the best relation risk-return. French and Poterba (1991) pointed out that this premise does not occur, and investors prefer to allocate a bigger part of their resources in home based assets. This characteristic was also observed by Lewis (1995), and it was denominated *home bias puzzle*. However, the explanations for the theory emerge from the analysis of asset selection by foreign investors.

Kang and Stulz (1997) explained the existence of this phenomenon by two categories. The first one was related to explicit and implicit barriers. Explicit barriers were those that focused in capital flows reduction, as a capital control form (investment restriction or higher taxes for foreign investors). French and Poterba (1991) and Cooper and Kaplanis (1994) argue that these effects were not sufficient to explain portfolio allocation, as investors should continue to diversify their portfolios searching for higher expected return assets. Edison and Warnock (2008) argue that the increase in capital flows driven to stocks is connected to the reduction of those explicit barriers. Aggarwal, Klapper, and Wysocki (2005) verified that the existence of explicit barriers generates a negative impact in assets allocations in US mutual funds when investing in emerging countries.

The second category (implicit barrier) is related to those that were not visible. Two classes are important: political risks and information asymmetry. Kang and Stulz (1997) argue that investors could find difficult scenarios in illiquid markets, capable of sudden changes in political framework. Therefore, it would be preferable liquid markets.

The other class of implicit barrier, information asymmetry, says that investors look for companies which they know about. Coval and Moskowitz (1999) found evidence that geographical proximity between companies and the investors is important for asset selection. Merton (1987) and Huberman (2001) argue that investors prefer to put their money in familiar companies. Dahlquist, Pinkowitz, Stulz, and Williamson (2003) and Aggarwal et al. (2005) verified that foreign investors prefer to maintain smaller positions in stocks located at countries with low corporative governance and also prefer stocks from big companies. Both factors above amplify asymmetry information.

Other approach taken by Kang and Stulz (1997) is related to portfolio diversification. If foreign investors diversify their portfolio, they should invest in stocks with negative correlation to the main assets in their portfolios. Therefore, the direction of these investments should be for less liquid assets or smaller companies.

To test this hypothesis, Kang and Stulz (1997) observed foreign investors' holdings in Japanese companies during 1975 and 1991. They found evidence that those investors do not hold a full portfolio (based in the main index of the stock exchange), and do not invest in companies with bigger expected returns. Their results have shown that

companies with large market capitalization, great leverage, low non-systematic risk, with high returns in the last year and high export levels, increases foreign investors disposition in investing.

Similar results were found by Dahlquist and Robertsson (2001) when studying foreign investors' preference in Sweden, between 1993 and 1997: large market capitalization, positive performance of the stock and low non-systematic risk (measured by cash position presented by the company) explain holding levels. They went a step further: analyzed the preferences for large companies and showed that foreign investors are inclined to prefer those that are exporters and that present greater liquidity (as measured by turnover).

In both cases, the preferential characteristics that appeared to be relevant reflect the idea that investors, when investing in foreign countries, try to distribute their resources in companies that present at least a contact with foreign markets, or that possess greater visibility.

However, mutual fund managers should be able to get out these traps. Grinblatt and Keloharju (2000) and Seasholes (2000) argue that international fund managers would be more sophisticated and possess better tools for selecting assets around the world. Therefore, the differences between investors' class should be made clear.

The first studies to analyze fund managers' preferences did not distinguish the geographic market. Falkenstein (1996) analyzed US mutual fund holdings during the years of 1992 and 1993. He found that large market capitalization, volatility, liquidity, news and price of the stock were significant explaining total holding position of the mutual funds on the stocks. The characteristics presented positive correlation with the holdings, reinforcing the idea that investors prefer large and liquid stocks. Gompers, Ishi, and Metrick (2001) achieve similar results for large institutional investors (at least US\$ 100 - millions) during 1980–93.

Aggarwal et al. (2005) analyzed investments located at emerging markets, made by 114 US mutual fund managers. Their results showed that those fund managers prefer to allocate their resources in companies with high growth, small leverage and with bigger analyst coverage. North-American investors also prefer companies with ADR and good corporate governance.

Covrig et al. (2006) have found results for preferences of mutual fund managers (foreign and domestic) from 11 developed countries. For both classes, liquidity and return on equity were significant. Moreover, their results show that foreign mutual fund managers prefer companies with visibility characteristics, relying on significance from exporting, ADR listing and analyst coverage. Ferreira and Matos (2008) encountered similar results for a little bigger database (27 countries). They still have found a higher level of investment in stocks being part of MSCI Index.

By selecting developed countries for the sample, Covrig et al. (2006) tried to limit the surging of explicit barriers (the countries selected in their sample do not possess control capital politics) and limited it to those with more liquidity. Their results, however, were not different from the first ones, suggesting that the second class of implicit barriers (information asymmetry) has a bigger relevance. The convergence of the studies suggests the existence of *home bias*, even though capital flows pointed to other markets.

3. Data description

The database used in this paper was structured in four steps. The countries selected to represent Latin America were: Argentina, Brazil, Chile, Colombia, Mexico and Peru. Together they represent approximately 99% of the market value of the region (Table 2). Then, the companies located in those countries, but only those with available data in the Bloomberg and Thomson Reuters system, which are listed in the stock exchanges were selected.

The second step was the capture of the information related to the stocks/companies from Bloomberg system. Those characteristics will

Table 2

Market value of the public companies located at sample countries. Table 2 shows total market value of public companies located at selected countries (in dollars). Also, it delivers total market value of Latin America assets. Numbers show that selected countries hold about 99% of total market value of the region. The percentage numbers represent the share of each country on total value.

Source: Bloomberg, author.

Region/country	2008	2009	2010
Latin America	2,379,282,915,623	1,646,525,569,935	2,089,452,515,785
Argentina	51,249,087,525	29,538,908,444	43,102,744,161
% Part.	2.15%	1.79%	2.06%
Brazil	1,366,407,945,843	871,379,581,767	1,119,870,709,668
% Part.	57.43%	52.92%	53.60%
Chile	187,638,481,761	185,027,538,199	229,176,291,671
% Part.	7.89%	11.24%	10.97%
Colombia	102,210,423,749	99,425,604,791	129,598,910,207
% Part.	4.30%	6.04%	6.20%
Mexico	557,646,088,723	380,220,914,993	481,582,412,248
% Part.	23.44%	23.09%	23.05%
Peru	85,954,771,223	56,682,631,338	65,231,611,746
% Part.	3.61%	3.44%	3.12%
Selected countries	2,351,106,798,824	1,622,275,179,533	2,068,562,679,702
% Part.	98.82%	98.53%	99.00%

be detailed later on. The third step was compiling the data from shareholders list, downloaded from Thomson Reuters system and structured from official documents made available by the companies to regulatory filings. For this analysis it was gathered data from June for the years 2008, 2009 and 2010. Joining the data together was the last step. Table 3 shows the market value of selected companies and compares it with total market value in the countries of the sample.

3.1. Stocks'/companies' characteristics

Based on earlier studies, selected characteristics are considered important for decision making of mutual fund managers. It was entitled as basic characteristics those that are related to the balance sheet of the companies and market activities. The second set of observed

Table 3

Market value of the sample. Table 3 shows market value of companies selected for the study. Using all listed companies was not possible, as data was not available. The selected companies represent around 85% of total market value of the countries. The percentage numbers show the share of each country sample in total market value of selected countries.

Source: Bloomberg, author.

Region/countries	2008	2009	2010
Total market value of selected countries	2,351,106,798,824	1,622,275,179,533	2,068,562,679,702
Argentina	39,881,594,090	31,085,562,914	27,121,343,337
% Part.	1.70%	1.92%	1.31%
Brazil	1,145,997,870,799	784,268,631,827	1,056,104,391,367
% Part.	48.74%	48.34%	51.05%
Chile	175,744,319,404	158,146,123,762	154,638,903,836
% Part.	7.47%	9.75%	7.48%
Colombia	31,545,390,629	83,136,769,643	122,076,899,010
% Part.	1.34%	5.12%	5.90%
Mexico	479,638,043,832	336,134,139,788	437,839,843,836
% Part.	20.40%	20.72%	21.17%
Peru	41,612,737,555	25,302,760,486	39,145,848,381
% Part.	1.77%	1.56%	1.89%
Selected companies	1,914,419,956,309	1,418,073,988,419	1,836,927,229,768
% Part.	81.43%	87.41%	88.80%

Table 4

Characteristics of stocks/companies. Table 4 describes companies'/stocks' characteristics used in modeling. The data was collected for the fiscal second quarter of 2008, 2009 and 2010 for all companies in the sample. The variables were presented in dollar terms, in order to establish a pattern for comparison. Source: author.

Characteristics	Description	Purpose	Reference
<i>Basic</i>			
Total assets (<i>TotalAssets</i>)	Total value of companies' assets	It can be considered a <i>proxy</i> for size for the companies. The objective is testing whether fund managers observe this variable in their decision	Aggarwal et al. (2005)
Cash (<i>Cash</i>)	Total cash position and/or available positions for trade	A large cash position should motivate fund managers to maintain a large holding in the stock, as companies would be able to pay large dividends or make new investments	Ferreira and Matos (2008)
Total debt/total equity (<i>TotDebtEquity</i>)	Leverage	Leverage is relevant as a measure on a non-systematic risk. It would be expected that there is a lower holding position in high leverage companies	Kang and Stulz (1997) Dahlquist and Robertsson (2001) Aggarwal et al. (2005) Covrig et al. (2006) Ferreira and Matos (2008)
Return on equity (<i>ROE</i>)	Net Income in last 12 months divided by equity	ROE measure the profitability of a company. It would be expected that fund managers maintain bigger positions in companies with higher ROE	Falkenstein (1996) Aggarwal et al. (2005) Covrig et al. (2006) Ferreira and Matos (2008)
Price-to-book (<i>PB</i>)	Stock price divided by equity	Fund managers should prefer companies with low price-to-book ratio, as it measures a growth potential of the company	Kang and Stulz (1997) Gompers et al. (2001) Dahlquist and Robertsson (2001) Aggarwal et al. (2005) Covrig et al. (2006) Ferreira and Matos (2008)
Total stock return (<i>Ret_US</i>)	Return of stock prices in the last 12 months, measured by closing price	Some fund managers rely on stock returns when investing. The idea is verifying the existence of <i>momentum</i> or if they prefer companies which stocks had performed badly in the last 12 months	Falkenstein (1996) Dahlquist and Robertsson (2001) Aggarwal et al. (2005) Ferreira and Matos (2008)
Market value (<i>MKTCAP</i>)	Market value of the companies	Market value represents the size of a company	Falkenstein (1996) Kang and Stulz (1997) Gompers et al. (2001) Dahlquist and Robertsson (2001) Covrig et al. (2006) Ferreira and Matos (2008)
Volatility (<i>VOL</i>)	Volatility of the stock returns in the last 360 days	Measure the risk of a stock	Falkenstein (1996) Kang and Stulz (1997) Gompers et al. (2001) Covrig et al. (2006)
Beta (<i>Beta_US</i>)	It measures correlation between weekly returns of stock prices and the main indexes of countries stock exchanges	Beta establishes a relation between the stocks and markets and represents the systematic risk of a stock.	Falkenstein (1996) Kang and Stulz (1997) Dahlquist and Robertsson (2001) Aggarwal et al. (2005)
Liquidity (<i>Liquidity</i>)	Measured as the average of daily trades in the last six months by the number of outstanding shares of the companies	Liquidity is relevant in asset selection, as it determines the possibility of negotiation of an asset in the needed time	Falkenstein (1996) Gompers et al. (2001) Dahlquist and Robertsson (2001) Aggarwal et al. (2005) Covrig et al. (2006) Ferreira and Matos (2008)
Days of Negotiation (<i>Days</i>)	It represents the age of the stock in stock exchange	The objective here is verifying whether the fund managers prefer companies with a long history or not	Falkenstein (1996) Gompers et al. (2001)
Price of the stock (<i>Price</i>)	Stock price	Some studies show that fund managers have aversion for stocks with low price. This variable was used to see if this aspect proceeds for Latin America	Falkenstein (1996) Gompers et al. (2001)
<i>Visibility</i>			
Analyst coverage (<i>Cover</i>)	Number of analysts that cover companies' stocks	This characteristic reflects the concept of range of companies' stocks	Aggarwal et al. (2005) Covrig et al. (2006) Ferreira and Matos (2008)
ADR (<i>dadr</i>)	<i>Dummy</i> that represents whether a company has ADR program or not	Earlier studies show that investors prefer companies with ADR programs. The concept here is to verify if this is true for Latin America	Dahlquist and Robertsson (2001) Aggarwal et al. (2005) Covrig et al. (2006) Ferreira and Matos (2008)
<i>Visibility</i>			

(continued on next page)

Table 4 (continued)

Characteristics	Description	Purpose	Reference
Exporter (<i>e</i>)	<i>Dummy</i> that represents if a company fits in exporting sectors (basic materials and industry)	Some studies show that exporting companies are preferred by foreign investors, as they have their visibility increased by other markets share	Kang and Stulz (1997) Dahlquist and Robertsson (2001) Covrig et al. (2006) Ferreira and Matos (2008)

characteristics was entitled visibility characteristics, and focused in the visibility of the companies to the rest of the market. Both sets were extracted from Bloomberg system. For homogeneity effect, all variables were converted to US Dollar. Table 4 makes references to characteristics used in the analysis, and their bibliographic reference.

3.2. Mutual funds' holdings

The database presents information of stocks holdings in the six countries from 4964 mutual funds in 2008, 4740 in 2009 and 5252 in 2010. It provides other information such as the name of the fund, base country, number of stocks of each company that each fund invests, and the date of these holdings. However in this database it was not possible to verify the mandate of the funds, nor its investment style.

Mutual funds in the database were classified in domestics and foreigners. The rule for this was: if the fund had the same origin from its assets, then it would be classified as domestic; if not, it would be classified as a foreign fund. The analysis of data registered a curious situation: there were no domestic funds for Peru and Colombia. For those cases, we excluded from estimation the data from these countries. Table 5 shows some data relative to the funds encountered on the study.

4. Methodology

The main objective of the model was to capture preferences for foreign mutual fund managers when picking stocks in Latin America Markets. To reach that, a similar structure used by Falkenstein (1996) was adopted, observing holdings from mutual funds on each stock. Those holdings were defined as dependent variable. The characteristics mentioned before were defined as independent variables.

Primarily, the data was analyzed in quintiles, in the same pattern as observed by Kang and Stulz (1997) and Dahlquist and Robertsson (2001). In this step, the objective was verifying in which level of the characteristics there was a bigger position of the funds (domestic or foreign).

The second step was building the models. Two different models were proposed based on earlier studies. The first one was very similar to those proposed by Kang and Stulz (1997), Dahlquist and Robertsson (2001) and Covrig et al. (2006). It was considered as the only basic characteristic on a panel data. The idea was verifying whether foreign fund managers observed the same characteristics when investing in Latin America.

The second panel has a different format. The objective is to propose a model more auspicious for the region. In this model we included characteristics connected to visibility in the markets (as cited before). Therefore this model tests the hypothesis that mutual fund managers prefer stocks with visibility characteristics. Still, we used *dummies* to represent countries to verify if fund managers act differently when diversifying stocks inside Latin America. The same model was applied for domestic funds, in order to analyze whether domestic mutual fund managers has the same preferences from foreign mutual fund managers or not.

4.1. Model structuring

The following methodology was used in order to find the holdings of the funds, where:

Y (*Holdings*): is the dependent variable and comprehends the investment level of foreign mutual funds (*HoldF*) or domestic funds holding (*HoldD*)

$$Holdings_t^i = \sum_{m=1}^M \frac{\text{Total number of shares retained from stock } i \text{ by the fund } m \text{ at date } t}{\text{Shares outstanding of the company } i \text{ at date } t} \quad (1)$$

The *m* index represents mutual funds, while *i* comprehend stocks listed at stock exchanges from the countries in the sample. The *t* index represents the date of data collection.

Based on these holdings we elaborate a model that is very similar from the earlier studies, including the analyst coverage characteristic, *dummies* representing countries and two of visibility variables (ADR and exporting). The difference in this model from other studies was the inclusion of interactions between visibility *dummies* and basic characteristics. These interactions provided information on how the holdings respond when both characteristics were present at same time. The model equation was structured as following:

$$Holdings = \sum_{n=1}^N \beta_n X_n + \sum_{p=1}^P \gamma_p D_p + \sum_{v=1}^V \gamma_v D_v + \sum_{n=1}^N \sum_{p=1}^P \theta_{np} X_n D_p + \sum_{n=1}^N \sum_{v=1}^V \theta_{nv} X_n D_v + \sum_{p=1}^P \sum_{v=1}^V \theta_{pv} D_p D_v \quad (2)$$

Where:

- X_n basic characteristics of companies/stocks and visibility variable analyst coverage;
- D_p country *dummies* (there were five dummies representing Argentina, Chile, Colombia, Mexico and Peru). Brazil has been used as reference because of its relevance;
- D_v exporting and ADR *dummies* (visibility *dummies*).

The next section brings on the results achieved with the models.

5. Results

In this section the results from the models are observed. The first approach is related to the basic characteristics of stocks and the level of investment from foreign mutual funds, as given by quintiles, in the same manner as proposed by Kang and Stulz (1997) and Dahlquist and Robertsson (2001). In subsections 5.1.2 and 5.1.3, the panel models relative to foreign mutual funds are the main theme. In Section 5.2, domestic mutual fund results are presented.

Table 5
 Statistics of mutual funds of the sample. Table 5 shows statistic related to mutual funds presented in the database. By the end of June for the years of 2008, 2009 and 2010 there were 4964, 4740 and 5252 mutual funds that possess holdings of the stocks of the sample, respectively. Total market value retained by those funds reached US\$ 1.25 billion, with 31.2% in domestic funds and 68.8% in foreign funds. The domestic data for Colombia and Peru was not available in Thomson Reuters and, therefore, it was not considered in these calculations. The numbers here are dollar adjusted.
 Sources: Thomson Reuters, Bloomberg, Author.

	Period	Number of mutual funds		Market value retained by mutual funds		Number of countries of funds	Average market value retained by mutual fund		Number of companies of the sample	Average companies per mutual fund		Median companies per mutual fund	
		Domestic	Foreign	Domestic	Foreign		Domestic	Foreign		Domestic	Foreign	Domestic	Foreign
Argentina	2008	51	295	83,410,614	3,288,966,063	24	1,635,502	11,149,038	30	8.8	2.6	9	1
	2009	50	211	83,136,368	231,634,646	23	1,662,727	1,097,795	28	9.9	2.4	11	1
	2010	54	223	177,759,991	443,293,659	23	3,291,852	1,987,864	29	9.4	2.1	11	1
Brazil	2008	817	2543	134,641,581,847	250,248,030,632	38	164,799,978	98,406,618	162	16	5.3	13	2
	2009	943	2993	85,212,766,317	203,687,453,067	39	90,363,485	68,054,612	201	19.9	6.5	15	2
	2010	930	3453	111,866,999,522	250,263,830,321	40	120,287,096	72,477,217	209	21.9	7.2	16	2
Chile	2008	142	475	15,690,526,075	4,179,551,097	27	110,496,662	8,799,055	112	15.1	4.2	9	2
	2009	108	655	8,129,999,598	8,119,187,798	26	75,277,774	12,395,707	101	18.1	4.1	15	2
	2010	108	616	20,255,874,042	11,241,146,601	28	187,554,389	18,248,615	95	17.8	4	14	2
Colombia	2008	N/A	49	N/A	176,926,400	10	N/A	3,610,743	11	N/A	2.4	N/A	1
	2009	N/A	91	N/A	181,721,620	15	N/A	1,996,941	15	N/A	2.3	N/A	1
	2010	N/A	108	N/A	348,478,212	17	N/A	3,226,650	15	N/A	2.9	N/A	1
Mexico	2008	78	2112	5,647,176,885	55,881,918,013	36	72,399,704	26,459,241	44	17.6	3.3	16.5	2
	2009	74	1657	2,630,630,026	19,773,794,511	33	35,549,054	11,933,491	49	16.2	3.7	15	2
	2010	2049	5,962,623,516	48,984,671,254	36	76,443,891	23,906,623	52	17.6	3.9	16	2	
Peru	2008	N/A	479	N/A	1,524,230,277	26	N/A	3,182,109	26	N/A	1.9	N/A	1
	2009	N/A	583	N/A	1,390,550,919	27	N/A	2,385,165	22	N/A	1.7	N/A	1
	2010	N/A	637	N/A	2,068,120,287	29	N/A	3,246,657	30	N/A	1.6	N/A	1

5.1. Foreign mutual fund managers

5.1.1. Quintile analysis – basic characteristics

In order to verify the relation between companies' characteristics and the level of holdings from foreign mutual funds, a table was built with all the basic characteristics captured by the database and the sum of the holdings of mutual funds in each stock. The sample was then ordered by characteristics and separated by quintiles. Table 6 shows the average from each characteristic and the level of holdings from mutual funds for each quintile.

The observed results suggest the existence of a positive relation between foreign fund holdings and the size of companies, measured by market capitalization and in a minor extent with the total assets. For example, in the first case, in the quintile of the minor companies (Q1), the average is around at US\$ 115.41 million, while mutual fund holdings reaches 1.64%; in the opposite side (Q5), the average market value number is US\$ 26.2 billion, while mutual fund holdings reaches 11.09%. The results for the variable Liquidity also brought evidence from a positive relation with fund holdings. Other characteristics as cash position, beta and price showed similar behavior.

These results were also observed by Kang and Stulz (1997) and Dahlquist and Robertsson (2001). In fact, the last ones argue that these characteristics are relevant in reducing information asymmetry, and that they are important in stock picking. However, other important characteristics behaved differently from the other studies. The characteristics related to firm performance (price–book value and return on equity) did not show a clear relation, but, instead, a higher dispersion from the funds.

These preliminary results point that the behavior of foreign mutual fund managers may run from the basic finance theory, that investors are looking for companies which bring bigger returns expectancy. In general, the numbers show that there is no such thing as bargain search for Latin America (aspect that could be valued by a bigger acquisition of companies with low price-to-book) and no worries about investing in companies with higher level of shareholders return. Therefore, one

Table 6
Foreign mutual funds holdings vs. basic characteristics.
Source: Author.

	Quintile					Average	N
	Q1	Q2	Q3	Q4	Q5		
Foreign mutual funds holdings	7.93%	6.88%	5.78%	7.62%	8.03%	7.25%	1143
Ret_US	– 52.15%	– 23.84%	– 1.39%	23.78%	99.62%	9.14%	
Foreign mutual funds holdings	5.16%	7.27%	8.12%	7.76%	8.37%	7.33%	1118
PB	0.68	1.19	1.66	2.43	14.57	4.09	
Foreign mutual funds holdings	1.89%	5.33%	7.89%	9.87%	10.98%	7.19%	1165
Total Assets	184.28	654.86	1,639.81	4,754.29	70,065.15	15,459.68	
Foreign mutual funds holdings	3.92%	6.02%	6.81%	8.04%	11.22%	7.20%	1164
Cash	1.12	8.11	28.01	105.99	3,462.93	718.88	
Foreign mutual funds holdings	5.98%	7.55%	7.57%	8.85%	8.13%	7.61%	1033
Sales growth 12 m	– 18.91%	1.64%	11.26%	21.86%	133.33%	29.64%	
Foreign mutual funds holdings	4.53%	7.37%	9.08%	8.00%	7.64%	7.32%	1143
TotDebtEquity	4.47	27.83	53.62	89.52	424.62	119.80	
Foreign mutual funds holdings	4.55%	6.54%	9.63%	9.21%	7.68%	7.52%	1103
ROE	– 13.42	6.54	12.90	20.38	40.81	13.40	
Foreign mutual funds holdings	1.64%	4.72%	7.88%	10.53%	11.09%	7.17%	1157
MktCap	115.41	429.18	1,102.08	3,312.94	26,222.15	6,226.62	
Foreign mutual funds holdings	2.29%	7.60%	9.39%	8.12%	8.46%	7.17%	1155
Vol	26.65	38.25	47.39	57.77	85.23	51.06	
Foreign mutual funds holdings	2.75%	6.98%	7.66%	7.92%	10.37%	7.13%	1176
Beta_US	0.44	0.65	0.79	0.96	1.21	0.81	
Foreign mutual funds holdings	1.04%	2.48%	6.56%	9.65%	15.97%	7.13%	1142
Liquidity	0.02	0.11	0.25	0.46	0.98	0.36	
Foreign mutual funds holdings	9.66%	7.22%	2.95%	6.96%	6.33%	7.09%	1173
Days	6.83	7.83	8.05	8.07	8.17	7.76	
Foreign mutual funds holdings	1.94%	4.18%	8.38%	9.93%	11.45%	7.17%	1157
Price	0.27	1.29	3.30	8.16	21.59	6.91	

Table 7

Panel A results: foreign fund managers.
Source: author.

		Coefficients	P-value	Std error
Basic characteristics	Ret_us	–0.0073	0.0800	0.0041
	PB	–0.0130	0.4690	0.0179
	TotalAssets	–0.0053	0.6950	0.0134
	Cash	0.0001	0.9810	0.0025
	SalesGrowth_12m	–0.0011	0.4820	0.0016
	TotDebtTotEquity	–0.0006	0.9020	0.0046
	ROE	0.0026	0.4480	0.0035
	MktCap	0.0277	0.1010	0.0169
	Vol	–0.0164	0.0890	0.0097
	Beta_us	–42.9380	0.0030	14.4151
	Liquidity	0.0468	0.0130	0.0188
	Days	–0.0120	0.4110	0.0146
	Price	–0.0064	0.7760	0.0226
	_cons	35.1980	0.0030	11.7960
	R ² – adjusted		0.064	
	Observations		861	

should expect that foreign fund managers have preferences connected to visibility. This subject will be the approach of the next sections.

5.1.2. Panel A – rereading from earlier studies

In this first panel, we have tried to recreate models constructed in earlier studies. Basic modeling was done with basic characteristics as independent variables, similar to those used by Kang and Stulz (1997) and Dahlquist and Robertsson (2001). For this part, Hausman test has indicated that fixed effects would produce better results. Like other studies, visibility characteristics were out.

Table 7 brings the results of foreign mutual fund managers. Only two characteristics (beta and liquidity) were relevant for p-value < 0.05. For the first, a negative relation was encountered, reflecting the idea that fund managers prefer companies with lower systematic risk; the second one showed a positive relation with the level of holdings, indicating that managers look for more liquid stocks.

The model has shown that characteristics like volatility and total return were significant for $p\text{-value} < 0.10$, with a negative relation with the level of the holdings. These signals indicate that foreign fund managers prefer stocks with lower volatility and worst returns in the year before the measure. The next section brings a model with a better approach for Latin America.

5.1.3. Panel B – proposed model for foreign mutual funds

This panel incorporated all basic characteristics and tried to test the hypothesis that foreign mutual fund managers prefer stocks with characteristics that reduce information asymmetry. For that, characteristics that are connected to asset visibility were used. The estimation was done in two steps. Primarily a model with all characteristics presented in the paper (basic characteristics, visibility characteristics, countries dummies and interactions between dummies and all characteristics) was elaborated. Random effects were used, as Hausman test did not reject null hypothesis for the model ($p\text{-value} = 0.092$). The second step was taking out an interaction with $p\text{-value} > 0.10$ and, then, main variables. For the last, the only remaining variables were those that showed significance.

Table 8 shows the results obtained by the panel. The characteristics market value, beta and liquidity have confirmed the positive relation verified in quintile study, being significant for $p\text{-value} < 0.05$. Total assets variable was significant only for $p\text{-value} < 0.10$, but negatively with holding levels. This issue deconstructs observed relation given by the quintiles. The variable Days of Negotiation was also significant, suggesting that foreign mutual fund managers do prefer newer companies. This characteristic could be related to countless number of IPOs launched in those countries during the last decade. Other characteristics did not show significance for explaining the level of the holdings.

For the other hand, all visibility characteristics appeared to be significant for $p\text{-value} < 0.05$. The variables Analyst Coverage, ADRs listing and Exporter showed positive relation with holdings level. This issue goes right in the same direction as Merton (1987) and Huberman (2001) reinforce the idea that foreign managers do not diversify their investments when investing in determined market, in contrary, select those companies based in its contact or knowledge.

Table 8
Panel B results: foreign fund managers.
Source: author.

		Coefficients	P-value	Std error
Basic characteristics	TotalAssets	-0.0062	0.0560	0.0032
	MktCap	0.0130	<0.0001	0.0035
	Beta_us	0.0369	0.0140	0.0150
	Liquidity	0.0405	0.0010	0.0122
	Days	-0.0144	0.0060	0.0053
Visibility characteristics	cover	0.0172	< 0.0001	0.0034
	dadr	0.1172	0.0120	0.0466
	dme	0.0491	0.0170	0.0205
Country dummies	dm1—Argentina	0.6746	< 0.0001	0.1421
	dm2—Chile	-0.0270	0.0010	0.0083
	dm3—Colombia	-0.0621	< 0.0001	0.0161
	dm4—Mexico	0.0403	0.0700	0.0223
	dm5—Peru	-0.0368	0.0080	0.0140
Interactions between basic characteristics and country dummies	dm1xroe	-0.0260	0.0020	0.0084
	dm1xvol	-0.1601	< 0.0001	0.0358
	dm4xpb	-0.0276	0.0950	0.0166
Interactions Between basic characteristics and visibility dummies	dadrxret_us	-0.0225	< 0.0001	0.0064
	dadrxpb	-0.0248	0.0180	0.0105
	dadrxroe	0.0159	0.0010	0.0048
	dadrxvol	-0.0421	< 0.0001	0.0114
	dadrxliquidity	0.1267	< 0.0001	0.0161
	dmexbeta_us	-0.0703	0.0020	0.0231
	_cons	0.0728	0.0820	0.0419
R ² – Adjusted		0.1204		
Observations		934		

The results observed here corroborates with those found by Kang and Stulz (1997) about preferences of foreign investors by exporter companies. Here, besides the positive relation between exporting and holdings levels, interactions have revealed that foreign mutual fund managers also prefer companies with lower betas (lower systematic risk).

However results related to ADR listing were contradictory. Kang and Stulz (1997) did not find evidence that international listing amplify holdings from foreign investors. Covrig et al. (2006) found evidence that this characteristic is part of fund managers' preference. The results found in the model leverage the importance from this characteristic. For companies with ADRs the dynamics of holding levels was quite different. The interactions between companies with ADRs and the basic characteristics produced a series of relevant variables. For example: interactions between total return, price-to-book, ROE, liquidity and volatility were significant, and showed that foreign mutual fund managers do prefer companies with low returns in the last 12 months, with a bigger capacity of growing (low price-to-book), higher return on equity, and even higher liquidity assets and lower volatility.

The analysis of those characteristics demand a better knowledge about the company, thus it indicates that the connection between companies and markets is relevant for the process of portfolio selection of foreign mutual fund managers, reducing the so called information asymmetry.

Country dummies were also an issue tested by the model. Brazil was selected as reference, as it represented about 50% of the market value of the sample. The dummies were significant, and the equations for Chile, Colombia and Peru registered lower intercepts (funds do have smaller holdings in those countries than in Brazil), while Argentina and Mexico registered higher ones (for Mexico, the coefficient has produced significance for $p\text{-value} < 0.10$, which indicates that the result could be similar than that registered in Brazil). At last, some interactions between countries and characteristics were significant. For Argentina, the interaction with ROE showed a negative relation with the level of the holdings, and for Mexico, price-to-book was negatively correlated with holdings level, but only for $p\text{-value} < 0.10$.

5.2. Domestic fund managers

5.2.1. Quintile analysis – basic characteristics

For comparison, the same quintile studies for domestic fund managers were elaborated. Table 9 shows the average quintile for companies' characteristics and level of fund holdings.

Results show differences from those registered with foreign managers. Primarily, there were no clear relations given by the analysis of the quintiles, in other words, the holdings of domestic fund managers appear to have a higher dispersion between basic characteristics. This aspect goes on opposite direction than that registered by Falkenstein (1996) and Covrig et al. (2006), that shows clearer preferences from domestic mutual fund managers for stocks' characteristics. Thus, quintile analysis indicates a possible preference for stocks with lower market capitalization, differently from foreign mutual fund managers and also from earlier studies.

This dispersion could be explained by the maintaining of a market portfolio by the domestic fund managers, in search for a better risk-return proposition, or by the reduction of information asymmetry reflected by the analysis of qualitative aspects that could reinforce the fundamental of the investment. The next section brings on the panel model for domestic fund managers.

5.2.2. Panel C – proposed model for domestic mutual funds

The panel constructed for foreign mutual fund managers had the objective of testing the hypothesis that visibility characteristics were relevant in selecting stocks. For this panel, the objective was similar. It was preceded in the same way. A random effects model

Table 9
Domestic mutual funds holdings vs. basic characteristics.
Source: author.

	Quintile					Average	N
	Q1	Q2	Q3	Q4	Q5		
Domestic fund holdings	6.60%	6.44%	5.72%	6.32%	7.08%	6.43%	1051
Ret_US	−47.03%	−21.16%	−3.07%	18.07%	91.13%	7.54%	
Domestic fund holdings	5.49%	6.35%	7.46%	7.17%	5.80%	6.45%	1028
PB	0.68	1.18	1.64	2.41	15.36	4.24	
Domestic fund holdings	6.29%	7.00%	8.04%	5.44%	5.00%	6.36%	1071
Total assets	177.47	648.17	1,652.31	4,836.69	74,815.26	16,410.81	
Cash	1.11	7.80	26.55	98.80	3,632.23	753.30	
Domestic fund holdings	6.22%	6.70%	6.83%	6.85%	6.37%	6.59%	960
Sales growth 12 m	−18.49%	1.99%	11.25%	20.97%	123.55%	27.86%	
Domestic fund holdings	6.32%	5.34%	6.92%	7.09%	6.30%	6.39%	1049
TotDebtEquity	4.88	29.42	54.92	91.25	448.38	125.44	
Domestic fund holdings	4.63%	5.80%	6.79%	7.57%	7.48%	6.45%	1016
ROE	−13.98	6.45	12.68	20.01	40.89	13.19	
Domestic fund holdings	5.24%	8.50%	6.69%	6.29%	5.12%	6.37%	1064
MktCap	109.33	411.15	1,045.84	3,260.26	27,256.54	6,397.04	
Domestic fund holdings	6.91%	5.93%	6.98%	6.00%	5.93%	6.35%	1062
Vol	22.32	33.79	41.72	51.26	76.83	45.16	
Domestic fund holdings	6.28%	7.40%	5.33%	6.11%	6.65%	6.35%	1079
Beta_US	0.18	0.45	0.67	0.92	1.28	0.70	
Domestic fund holdings	2.17%	4.36%	6.35%	7.18%	12.27%	6.47%	1045
Liquidity	0.02	0.12	0.28	0.49	1.00	0.38	
Domestic fund holdings	6.03%	6.30%	5.57%	6.27%	7.04%	6.34%	1076
Days	6.82	7.82	8.04	8.06	8.17	7.75	
Domestic fund holdings	5.04%	4.79%	7.62%	7.02%	7.38%	6.37%	1064
Price	0.27	1.37	3.47	8.38	21.12	6.91	

was used, as Hausman test has indicated (p -value = 0.94). Table 10 shows the results.

Visibility characteristics were not significant. This aspect differs from the result from foreign investors, indicating that the reduced information asymmetry implies in a higher diversification within assets that does not need to be connected with other markets. Their interactions with dummies were also not significant.

Results pointed significance for four basic characteristics: market capitalization, volatility, liquidity and days of negotiation. First two variables showed negative relation with the level of holdings, while the last ones were positively related. Volatility, liquidity and days of negotiation showed compatible results when compared with other studies, in other words, domestic fund managers prefer companies with low risk, higher turnover and older.

However, when compared with foreign mutual fund managers, the variables market capitalization and days of negotiation presented opposite directions. The first one suggested that domestic mutual fund managers had preferences for smaller capitalization companies.

Table 10
Panel C results: domestic fund managers.
Source: author.

		Coefficients	P-Value	Std Error
Basic Characteristics	MktCap	−0.0073	<0.0001	0.0019
	Vol	−0.0317	<0.0001	0.0060
	Liquidity	0.0534	<0.0001	0.0076
	Days	0.0188	<0.0001	0.0052
Visibility characteristics	Visibility characteristics were not significant			
Country dummies	dm1 – Argentina	−0.0715	<0.0001	0.1421
	dm2 – Chile	−0.1532	0.0010	0.0083
Interactions between basic characteristics and country dummies	dm2xmktcap	−0.0260	0.0030	0.0042
	dm2xbeta_us	0.0519	0.0230	0.0229
	dm4xdays	−0.0057	0.0000	0.0012
	_cons	0.0728	0.0820	0.0419
	R ² – adjusted		0.0416	
	Observations		1032	

As observed by Dahlquist and Robertsson (2001), this characteristic has a connection with company visibility and in this case it can suggest that domestic investor is not worried about information asymmetry. The same, however, could not be inferred for days of negotiation. Domestic fund managers prefer older companies, those that have at least some quarters presenting their results for markets.

Country dummies show that domestic fund managers act differently. For Argentina and Chile, intercepts are lower than in Brazil. This lower participation could be attributed to the countries fund industry itself or a stronger diversification of portfolios. Interactions show that Chilean fund managers invest in companies with even lower market capitalization and with high betas. At last, the interaction between Mexico dummy and days of negotiation was significant and presented a negative correlation: Mexican fund managers prefer younger companies when compared to Brazilian managers.

6. Conclusions

The discussion about preferences of mutual fund managers in Latin America has been introduced by this paper. Using an exclusive dataset, comprised with companies' shareholders list and by its characteristics, we observed which ones would be relevant in portfolio selection. Our findings show evidence that some characteristics from *home bias* literature were significant. International exposure is particularly important for foreign mutual fund manager as it reduces information asymmetry. Therefore, characteristics like international listing (ADRs), analyst coverage and exporting were significant when modeling stocks preference of foreign mutual fund managers in Latin America.

We also found evidence that foreign fund managers prefer companies with higher market capitalization, liquidity, beta and with lower age. The interactions from the model, however, suggested that international listing (ADRs) plays an important role in stock picking. When selecting companies with ADRs, managers focus in broader characteristics. Its presence generates a more detailed analysis of the asset, by reducing even more its information asymmetry. Results show that this characteristic implies in selecting companies with lower price-

to-book, lower returns in the last 12 months and lower volatility. In other hand, it shows that foreign mutual fund managers prefer companies with high return on equity. The preference for companies with ADR programs may be related to Latin America characteristics, like lower liquidity, companies' size and/or exchange risks. These characteristics were part of implicit barriers from *home bias* theory.

In domestic scope, the paper brought evidence that Latin fund managers act differently from foreign ones. When investing, they do not focus on companies with a higher level of visibility, thus they extend their presence over a higher number of companies. The results on characteristics pointed to investments in companies with lower market capitalization, lower volatility, higher liquidity and age.

Therefore, the objective of the paper was reached. The hypothesis that foreign mutual fund managers in Latin America prefer companies with characteristics that produce greater visibility could not be rejected. Obtained results open new fields of studies in Latin America, mainly related to fund managers (for example, do hedge fund managers act in the same way?), or checking the behavior of companies with mutual funds as being part of controlling group. These analyses are relevant for Latin America, as it drives companies' managers in searching for higher shareholder value.

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