

BOARD COMPOSITION AND OPEN-END MUTUAL FUND PERFORMANCE

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## **ABSTRACT**

### **Board Composition and Open-End Mutual Fund Performance**

Dan Zhang

The mutual fund industry has grown rapidly during the past decade. In the U.S., each mutual fund that is registered with the Securities and Exchange Commission (SEC) is required to be overseen by a board of directors or board of trustees. They oversee the fund's compliance program, negotiate the fees paid for the advisors and supervise the fund performance. They manage the funds on behalf of the shareholders and is a bridge between shareholders and fund managers. So what composes a good mutual fund board? Besides fund managers' day-to-day running, could the composition and structure of the board impact fund performance? Using a large sample of open-end mutual funds, and three corresponding manually-collected databases of board of directors for 2009, 2011 and 2013, we examine whether the average board composition and diversity characteristics have an explanatory power of fund performance. We find that none of these tested characteristics is a consistently significant determinant of relative cross-sectional performance.

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## 1. INTRODUCTION

The mutual fund industry has grown exponentially in the past decade. According to the Investment Companies Institute (ICI), U.S mutual funds held assets valued at over \$15.26 trillion by June 2014. In the U.S, each mutual fund that is registered with the Securities and Exchange Commission (SEC) is required to be overseen by a board of directors or board of trustees. In general terms, the board administers the management and operations of the fund on behalf of the fund's shareholders. The board oversees the fund's compliance program, negotiates the fees paid for the services of the investment advisors and supervises the performance of the fund. As the bridge between the shareholders and the management in charge of running the fund, the board plays an essential role in mutual fund governance. So the following questions need to be addressed: What constitutes a good mutual fund board? Could the structure and composition of a board influence fund performance?

In corporate finance it is widely accepted that board composition contributes to company performance (see, e.g., Zahra and Pearce II, 1989; Hermalin and Weisbach, 2003; Berghe and Levrau, 2004; Guest, 2009). Similarly, the mix of competencies and collective intelligence within a board is expected to impact an entity's corporate governance and ultimately its performance. The literature finds that workforce diversity and board of director diversity helps to explain team performance (e.g., Murray, 1989; Williams and O'Reilly, 1998; Siciliano, 1996; Jehn, Northcraft, and Neale, 1999; Timmerman, 2000; Bar, Niessen, and Ruenzi, 2007; Hagendorff and Keasey, 2012).

Most mutual fund studies have focused on fund managers and the impact of their characteristics on fund performance (e.g., Chevalier and Ellison, 1999; Almazan, Brown, Carlson and Chapman, 2003; Gottesman and Morey, 2006; Fama and French, 2010; Bar, Kempf and Ruenzi, 2010; Berk and Binsbergen, 2012). The few studies that deal with the board composition of mutual funds concentrate almost exclusively on either a one-dimensional board structure analysis (e.g., unitary board as in Kong and Tong, 2008), director's ownership and incentives (Chen, Goldstein and Jiang, 2008; Cremers, Driessen, Maenhout and Weinbaum, 2008), board diversity (Bar, Niessen and Ruenzi, 2007) or on the board's role in negotiating fund fees (e.g., Tufano and Sevick, 1997; Ferris and Yan, 2007).

The objective of this thesis is to examine whether a link exists between the characteristics of a fund's board of directors and its performance. It attempts to answer the following two questions: First, to what extent does the composition of a board influence fund performance? Second, what board characteristics are associated with better and poorer fund performance? We conduct our analysis along two dimensions; namely, the average characteristics of a board and the extent of its diversity based on all the applicable information on board members included in documents filed with the SEC.

This thesis makes two contributions to the extant literature. The first contribution is to the literature dealing with the determinants of fund performance. We test the link between fund performance and board characteristics rather than with the expertise of fund managers. The second contribution is that we extend the literature on board structure by jointly examining various dimensions of board composition within a large sample. To the best of our knowledge, we provide the most inclusive description of board composition for mutual funds that ranges from chairman independence, director compensation, board size, to board committee meeting frequency and various board diversity dimensions.

Our overall conclusion is that no board composition characteristic has a robust impact on fund performance since we could not find a characteristic that has a consistently significant relation with fund or fund-family performance across various fund performance measures, time periods, standard error clustering methods and regression specifications. Concentrating on the sign and to a lesser extent on the significance of each estimated coefficient, we find that fund performance is positively related to board size, frequency of board committee meetings, size of board ownerships, length of board tenures, representations of independent directors and females on the board, and the number of funds overseen by boards. For a similar comparison, we find that fund performance is negatively related to the number of board committees, and has a mixed relationship with the diversity of board tenure, industrial experience and fund ownership. This can be interpreted as providing some weak support for the regulation change by the SEC that increased the required representation of independent directors on fund boards from the previous 50 to 75 percent. Thus, like a previous study (i.e., Ferris and Yan, 2007, for a single cross section), we find that the relation between board characteristics and performance found in the corporate sector does not extend to mutual funds.



The remainder of the thesis is organized as follows. Section 2 presents the hypotheses tested herein after reviewing the extant literature on the effect of board composition and the effect of group diversity on performance. Section 3 describes our sample, data collection and manipulation. Section 4 describes the different methods used in our regression analyses. All the empirical findings are presented and discussed in Section 5. Section 6 concludes the thesis.

## **2. RELATED LITERATURE AND HYPOTHESES DEVELOPMENT**

### **2.1 Board Characteristics and Performance**

We begin our literature review by first concentrating on a number of board structure variables that are computed as an average based on all the directors on a board.

#### **2.1.1 Board size**

A number of academic studies find that larger boards negatively influence corporate performance due to problems associated with communicating and coordinating the efforts of larger teams. For example, Yermack (1996) reports a negative correlation between board size and Tobin's Q, and a similar negative correlation between board size and several other accounting measures of profitability. Eisenberg, Sundgren and Wells (1998) find that board size is negatively correlated with ROA and operating margin for a sample of 900 small and mid-sized Finnish firms. Brown and Maloney (1999) report that large board size predicts lower stock price returns to acquiring firms. Tufano and Sevick (1997) and Gurico, Dann, and Partch (2003) report that mutual funds with small boards charge lower fees.

Other authors argue that board size can have positive effects on performance because more directors will provide a larger pool of expertise associated with more knowledge and skills (e.g., Herman, 1981). Zahra and Stanton (1988) find that large board size contributes to effective performance. Mahajan and Sharman (1985) conclude that small boards are related with a higher rate of bankruptcy. Since fund performance is likely to depend on expertise and the diversity of such, we expect that larger board size is related to better fund performance.

#### **2.1.2 Age and tenure**

By examining the labor market for mutual fund managers, Chevalier and Ellison (1998) find that the MBA degree is not related to fund performance while manager age and fund size are negatively related to fund performance. Gottesman and Morey (2006) find that age is generally

negatively related to performance and becomes significant when the tenure variable is excluded. If tenure is a better measure of experience than age, the negative coefficient for age may largely capture the negative stamina effect associated with older managers (Golec, 1996). In this spirit, we expect that the average age (tenure) of directors will be negatively (positively) related to fund performance.

### 2.1.3 Compensation

Higher compensation for directors may suggest better skills and effectiveness. However, some have argued that boards of directors for mutual funds fail to fulfill their monitoring and advisory roles according to the 1940 Act (e.g., Haslem, 2010). Mutual fund directors often receive significant compensation as they serve on the boards of many funds within a fund family due to the common clustered board structure. High board compensation can lead to entrenchment as a director's main aim may become the protection of their compensation for sitting on the board rather than maximizing the fund's returns for shareholders. Harford (2003) finds that the loss of directorship compensation leads independent directors to resist possible acquisitions that benefit shareholders. We expect that higher compensation, as measured by the average level of total dollar amount of cash compensation received by each director from the fund family for each board, to be negatively related to fund performance.<sup>1</sup>

### 2.1.4 Number of funds overseen

Ferris, Jagannathan and Pritchard (2003) propose a busyness hypothesis, which postulates that serving on multiple boards overcommits an individual, and as a consequence, such individuals shirk their responsibilities as directors. Motivated by this hypothesis, Ferris and Yan (2007) use a variable "number of funds overseen" to determine if directors that oversee multiple funds are either too busy to provide effective monitoring or they possess superior skills as a director. They obtain a positive coefficient estimate for this variable for two out of their four fund expense models, which provides partial evidence for director's being on too many boards and their consequent inability to provide adequate monitoring.

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<sup>1</sup> This variable enters into our regression analysis as Ln (average compensation). Other variables converted to natural logarithmic values for regression analysis are director ownership, fund age and fund size, which are shown as Ln (average ownership), Ln (fund age) and Ln (fund size), respectively.

### 2.1.5 Committee and meeting frequency

As the mutual fund industry has increased rapidly in size and complexity, the time and effort required of mutual fund directors, especially independent directors, has grown exponentially. Therefore, boards often use various committees (e.g. audit, nomination, compliance, investments) to help manage and oversee the fund's operations that are largely staffed by directors on the board. Meschke (2005) for a sample of 169 fund boards finds that lower fees are associated with smaller, professionally diverse boards whose committees meet more often. Ferris and Yan (2007) find no statistically significant relationship between committee structure and fund performance when they include separate dummy variables for the presence of a nominating, governance, audit, or pricing committee in their regressions. In our analysis, we include "number of committees" (i.e., all board committees) and the "average committee meeting frequency" based on the number of meetings each committee holds during the last fiscal year.<sup>2</sup> We expect both of these variables to be positively related with fund performance.

## 2.2 Diversity and performance

### 2.2.1 Social category and informational diversity

In the literature, researchers have proposed many theories to explain the impact of diversity on organizational process and performance. Based on a review of over 80 studies, Williams and O'Reilly (1998) identify the three most common theoretical bases for investigating the effect of diversity on team performance as: social categorization, similarity/attraction, and informational diversity and decision making.

The logic of the social categorization theory is that variations in the demographic composition (like age or gender) of work groups affect their process through, for example, conflict, cohesion and communication, and that this process in turn affects group performance. Most of the empirical research on diversity and demography tend to emphasize how individuals within groups may differ from one another and that diversity can promote the creation of cognitive biases (e.g., Riordan and Shore, 1997; Tsui, Egan and O'Reilly, 1992). According to this theory, diversity has a negative effect on a group's processes and performance.

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<sup>2</sup> A list of all committee categories in our sample is summarized in Appendix A.

Similarly, the Similarity/Attraction theory asserts that similarity on attributes (e.g. attitudes, values, demographics) will increase attraction and liking (see, Byrne, Clore, and Worchel, 1966). The basic element of this theory is straightforward: individuals who are similar in background are more likely to share common life experiences and values. So research based on this theory predicts that heterogeneity leads to decreased within-group communication which eventually negatively affects team performance (see, Barnlund and Harlan, 1963).

In contrast, the third theory (Information and decision-making theory) proposes that variation in group composition increases group resources through increases in skills, abilities, information and knowledge (see, Tziner and Eden, 1985; Bantel and Jackson, 1989; Pelled, Eisenhardt, and Xin, 1999).

Different theories often lead researchers to provide convincing but contradictory predictions of the effects of diversity on group performance. According to the empirical results, the preponderance of evidence suggests that diversity impedes group functioning and only under ideal conditions does diversity have the positive effects based on the information and decision theory. In the view of Williams and O'Reilly (1998), "diversity is a mixed blessing and requires careful and sustained attention to be a positive force in enhancing performance."

Our study includes diversity measures for gender, age, tenure and occupation. According to the diversity classification from Jehn, Northcraft, and Neale (1999), these four diversity measures fall into two general categories: social and informational. Social diversity refers to differences among group members in social category membership such as age, race, gender and ethnicity. Informational diversity refers to differences in knowledge bases and perspectives that members bring to the group. In our case, such differences arise from the different tenure and past industrial experiences of a fund's board membership. Jehn, Northcraft, and Neale (1999) expect that social (informational) diversity is negatively (positively) related to performance, which is consistent with the social categorization theory and the informational and decision making theory of Williams and O'Reilly (1998). Based on a survey of 545 employees from one household goods company, Jehn, Northcraft, and Neale (1999) find a positive relation between informational diversity (education, functional area and position in the firm diversity) and group performance and no significant negative relationship between social diversity (age and gender diversity) and performance.

Ilmakunnas and Ilmakunnas (2011) provide contrary results based on data drawn from the Finnish Linked Employer-Employee Data (FLEED) in Finland. Using both plant- and individual-level models, they find that age diversity (social category diversity) is positively and educational diversity (informational diversity) is negatively related to total factor productivity.

Focusing on gender diversity, Adams and Ferreira (2009) find that gender-diverse boards have stronger governance since female directors have better attendance records and are more likely to join monitoring committees than their male counterparts. However, the average effect of gender diversity on firm performance is negative since, on average, tough boards do not improve firm value. Since the value of tough boards depends on the strength of other governance mechanisms, increasing female quotas on boards may reduce firm value.

Bar, Niessen and Ruenzi (2007) investigate the impact of work group diversity on performance for a sample of U.S. mutual fund managers. They find that information diversity, which is measured by both tenure and educational diversity, positively affects fund performance. They find that the negative relationship between social category diversity and performance is driven by gender (and not age) diversity.

Hagendorff and Keasey (2012) examine the effect of board diversity on the performance of bank M&As. Applying measures of heterogeneity based on the occupational background, gender, tenure, and age of board members, they find that board occupational (tenure) diversity is associated with positive (negative) announcement returns. Unlike Bar, Niessen and Ruenzi (2007), Hagendorff and Keasey find that gender diversity does not lead to measurable value effects while age diversity is negatively associated with announcement returns.

Based on this literature, we hypothesize that social category diversity (i.e., gender and age diversity) are negatively associated with fund performance while tenure and occupational diversity should have a positive effect on fund performance since they give boards access to wider pools of resources.

### 2.2.2 Board independence and other diversity

The 2003 scandals involving U.S. mutual fund companies raised concerns about the effectiveness of mutual funds boards as “watchdogs of shareholders’ interests”, a term included in the Investment Company Act of 1940 (1940 Act). According to Haslem (2010): “This spotlight

on the reality of fund adviser practices revealed that the 1940 Act inadequately empowers independent directors through direct SEC regulatory oversight of fund advisers". To rebuild investor's confidence in the regulation of funds, the Securities and Exchange Commission (SEC) on June 23, 2004 passed a new rule requiring every mutual fund board to have an independent chairman and raised the proportion of independent directors from the previous 50% to at least 75%. This change has spurred fierce debate over whether such changes deemed drastic by some were necessary. Much of the academic research on boards of director focuses on inside, outside and independent directors. In the traditional corporate governance setting, Agrawal and Knoeber (1996) conclude that greater representation of outside directors on boards has a negative impact on firm performance, as measured by Tobin's Q. Coles *et al.* (2001) also find a negative relationship between the proportion of independent directors and market value added. Bhagat and Black (1999) find that board independence, proxied by the proportion of independent directors, correlates negatively with firm performance as measured by stock prices. Dalton *et al.* (1998) and Hermalin and Weisbach (2003) find no relationship between independence structure and firm performance. In contrast to these previous studies, Baysinger and Butler (1985) report that firms with a greater representation of independent directors exhibit better performance.

For the mutual fund industry, Kong and Tang (2008) report that unitary boards better protect shareholder interests and mitigate agency conflicts but that more independent boards do not lead to lower fees and do not carry out the fiduciary function better. Khorana, Tufano and Wedge (2005) report that fund (especially across-family) mergers are more likely when target funds underperform and their boards have a larger percentage of independent trustees. They find no evidence that boards with independent chairs are more responsive to shareholder interests. Using a sample of the 50 largest mutual fund families, Tufano and Sevick (1997) find that advisory fees are lower when fund boards are smaller, and comprise a larger percentage of independent directors. However, for a large sample of mutual fund families in 2002, Ferris and Yan (2007) find that neither chairman nor board independence have a significant relationship with both the probability of a fund scandal and fund performance.

Although the empirical findings are inconsistent, we are interested in examining whether the SEC changes fostered better mutual fund governance. Thus, we test the hypothesis that greater board and chair independence improve fund governance, as reflected in better fund performance.

The literature also examines other board features, such as director incentives and outside directorships. For example, the requirement by mutual fund directors to disclose their ownership in the funds they oversee is relatively new.<sup>3</sup> Chen, Goldstein and Jiang (2008) find that the ownership of mutual fund directors is positively and significantly associated with most variables that are predicted to indicate greater value from monitoring by directors. Cremers, Driessen, Maenhout and Weinbaum (2008) find that funds in which directors have low ownership stakes significantly underperform, which implies that the ownership stakes of directors do play an important role in fund performance. Thus, we expect that the average ownership level of a board is positively related to fund performance. We expect a negative relation between ownership diversity and fund performance since greater ownership diversity may proxy for more diversity in the commitment (or bonding of interest) of each board member to the fund.

Khorana *et al.* (2005) include the average number of outside directorships held by the fund's independent board members in their study of the effect of board structure on the wealth effects associated with M&As. While sitting on other boards can give a director valuable experience, sitting on too many other boards may make the member too busy to carefully scrutinize various fund decisions. Thus, we include the "proportion of directors who have other directorships outside fund family" as one of our control variables and expect it to be positively related to fund performance based on the resource view.

### **3 SAMPLE, DATA AND DATA MANIPULATION**

#### **3.1 Fund and Fund Data Selection**

Since we examine the impact of mutual fund boards as of year-end 2009, 2011 and 2013 on fund performance, we identify all open-end U.S domestic equity funds with an inception date before 2012 from Morningstar Direct. We use this inception date because we want to study the relationship between board diversity and fund performance, and the literature identifies past performance as having an impact on subsequent performance. To obtain a reliable measure of

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<sup>3</sup> "In an amendment to the exemptive rules effective January 15, 2001 (Release Nos. 33 7932; 34-43786), the SEC requires that funds disclose each director's beneficiary ownership in each fund s/he oversees, and each director's aggregate ownership of all funds that s/he oversees within a fund family in the SAI and any proxy statement relating to the election of directors filed on or after January 31, 2002" (Chen, Itay Goldstein and Wei Jiang, 2008, p. 2635). Also, see: See, "Role of Independent Directors of Investment Companies," SEC Release Nos. 33-7932; 34-43786; 1C-24816; File No. 57-23-99.

performance, each retained fund needs to have at least 24 months of return and NAV data (12 months for calculating current performance and 12 months for past performance). From the 38 different objective categories contained in Morningstar Direct based on a fund's prospectus objective, we only retain equity funds whose objective categories are: Aggressive Growth, Growth, and Growth and Income. Thus, we exclude index, bond, specialty, international money market and asset allocation funds.

### **3.2 Collection of Board Characteristics**

Since the end of 2002, the SEC requires all mutual funds to submit a Statement of Additional Information (SAI). This document, which is supplementary to a mutual fund's prospectus, contains disclosures such as the fund's financial statements, its history, policies, officers, performance measures, directors and persons who control the fund. To create a new database of board characteristics based on a sample of funds collected from Morningstar Direct, we manually search for each fund through the "Edgar mutual fund Search Tool" on the SEC official website. Because the data needs to be hand-collected and mutual fund boards are relatively stable in terms of member composition, we collect board information every other year. Specifically, we collect board characteristics data at the end of year 2009, 2011 and 2013, for all actively managed U.S. domestic equity funds for each of those years.

Specific board information collected from SAI 485APOS and 485BPOS filings for each board member include member's name, birth year, gender, whether a chairperson or not, whether independent or not, whether has directorship outside the fund family or not, the length of time served on the board, the number of portfolios in the fund complex overseen by the director, the aggregate dollar range ownership of equity securities in the fund complex, the total dollar amount of compensation received by the director from the fund complex, and past five years occupational experience. Also collected are the number of different committees each board has, and meeting frequency of each board committee.

### **3.3 Matching the Fund Sample with the Sample of Fund Board Characteristics**

The funds in the two samples could not be matched automatically. Morningstar Direct uses Sec ID to identify different share classes and all share classes of the same fund are linked together by



Fund ID while the SEC database correspondingly uses Series Number and Central Index Key (CIK). We searched the Edgar database using the name of each fund in our Morningstar Direct sample. For searches that resulted in no or several different funds, we compared the funds using other information like ticker, firm address or inception date to link each fund from the two databases.

Our final matched sample for 2009 includes a total of 4320 fund-share-class observations with adequate performance information from Morningstar Direct and available board information from the Edgar database. This 2009 sample consists of 1396 different funds for which 47 are Aggressive Growth, 1087 are Growth, and 262 are Growth and Income. Sample for 2011 includes 4143 fund-share-class observations with 1268 different funds, which include 42 Aggressive Growth funds, 999 Growth funds and 227 Growth and Income funds. The sample for 2013 includes 3799 fund share classes with 1130 different funds. It consists of 34 Aggressive Growth funds, 893 Growth funds and 203 Growth and Income funds. See Table 1 for a detailed fund family distribution.

## **4. METHODOLOGY**

### **4.1 Variable Construction and Descriptive Statistics**

#### **4.1.1 Board diversity measures**

Various ways of categorizing different types of diversity are proposed in the literature. One common distinction is between diversity on observable or readily detectable attributes such as race, age, or gender, and diversity related to less visible and underlying attributes such as education, functional background, organizational tenure, and personality characteristics (Milliken and Martins, 1996). As discussed previously, the diversity categories used by Jehn, Northcraft, and Neale (1999) are social, value, and informational diversity. Based on these categories and data availability for our sample, we use six diversity categories; namely: age, gender, independence, tenure, industry experience, and ownership. Data on each director's race and ethnicity was not included since such information was not available.

Age diversity is measured by the coefficient of variation of the ages of its board members (as in, e.g., Michaela, Alexandra, and Stefan, 2007; Jehn, Northcraft, and Neale, 1999; Pelled, Eisenhardt, and Xin, 1999). Two measures are used to measure gender diversity. The first is the percent of female directors on each board, calculated as the number of female directors divided by

the total number of directors on that board. The second is Blau’s diversity index which accounts both for the number of different categories (variety) and the evenness or balance of the distribution of board members among them (Stirling, 1998; Campbell and Minguez-Vera, 2007). Blau’s diversity index is given by:

$$1 - \sum_{i=1}^n P_i^2$$

where  $P_i$  is the percentage of board members in each category, and  $n$  is the total number of board members. The value of this diversity measure ranges from 0 to a maximum of 0.5 when the board consists of an equal number of male and female directors. Also as a two-category variable, “independence diversity” is measured by the percent of independent directors on each board and by Blau’s diversity index. The Coefficient of variation (CV) of board tenure among directors is used to measure tenure diversity (e.g., Michaela, Alexandra and Stefan, 2007; Kosnik, 1990).

Our measure of informational diversity captures diversity both in tenure and industry experience. Our measure of industry experience diversity is based on 25 different industrial categories<sup>4</sup> that are constructed from the various common general categories used by previous studies (e.g., Siciliano, 1996; Murray, 1989; Gibbs and Martin, 1962) and a more refined set of categories that are specific to the financial industry. Since initial observation revealed that most fund directors had experience only in the financial industry, we subdivided the commonly used “financial/business” category into 14 sub-classifications. As in Gibbs and Martin (1962), we use the following relatively new diversity measure to quantify the heterogeneity in industry experience among board members:

$$1 - \frac{\sum X^2}{(\sum X)^2}$$

where  $X$  is the number of persons in each of the 25 industry categories. This measure is 0.0000 when all board members are concentrated in the same industry, and 0.96 when the board members are evenly distributed though all 26 industries. Since Cremers, Driessen, Maenhout and Weinbaum (2008) and Meschke (2005) find that the ownership stakes of directors play an economically important and statistically significant role in determining fund performance, we also use this

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<sup>4</sup> Complete listing of the 26 industries is reported in Appendix A.

measure for ownership diversity based on the dollar ranges of director's ownership disclosed in the SAI.<sup>5</sup>

#### 4.1.2 Other board characteristics

Other board characteristics may also affect fund performance. Vafeas (1999) finds poor performance is inversely related to the frequency of board meetings. Simons, Pelled, and Smith (1999) argue that team or board size can influence decision making and group outcomes.

Therefore, besides our diversity measures that capture the distribution and diversification of certain board attributes, we also add variables that describe the average level of each team's characteristics, such as team size, average age, average tenure, number of funds overseen, number of independent directors, percent of members who have other directorship outside the fund complex, average level of total dollar ownership, average committee meeting frequency, and chairman independency (see Panel A in Table 2 for a complete listing). The dollar ownership of each director-fund pairing is calculated using the midpoints of the reported interval discussed previously (e.g., Chen, Goldstein, and Jiang, 2008) assuming that the upper bound of the range for reports "above \$100,000" is \$150,000. We also use the number of different committees each board has and average number of meetings held by the committees for each board during the last fiscal year.

#### 4.1.3 Fund characteristics

Our set of control variables includes the total net assets value (TNA), fund expense ratio, turnover ratio, fund age and previous fund performance. Many mutual funds have multiple share classes and Morningstar Direct lists each share class as a separate fund (identified by Sec ID). However, since each class only differs in their fees and expenses, we aggregate the different share classes into a single fund (identified by the same Fund ID). Specifically, we sum the total NAV (at the beginning of each month) of each share class to get the total NAV for the fund. The annual expense ratio for the fund is calculated as the weighted average of the MER for each fund using weights based on the TNA at the beginning of each month of each share class. Since every share class is a claim on the same underlying portfolio of investments, the turnover ratios at the fund and share class levels are the same.

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<sup>5</sup> The five ranges are: None, \$1-\$10,000, \$10,001-\$50,000, \$50,001-\$100,000, and Over \$100,000.

#### 4.1.4 Variable summary statistics

Panel B in Table 2 presents summary statistics for all variables included in our study. For all three yearly board samples, we observe that an average board is composed of 8 directors/trustees with a mean age of about 65 years old and board experience of approximately 10.7 years to 13.2 years. The annual average total fund-family compensation paid to board directors is about 124,000 USD (137,000 USD, 156,000 USD) for our 2009 (2011, 2013) board sample.<sup>6</sup> The average ownership of shares in the fund family by board members is about 98,000 USD (93,400 USD, 95,000 USD) for our 2009 (2011, 2013) board sample.<sup>7</sup> The average number of funds overseen by a board member is approximately 62 (67 and 70) for our 2009 (2011, 2013) board sample. On average, each board has approximately four different committees and each committee holds five meetings during a year. For all three annual board samples, the average percentage of independent directors on each board is 82%, and approximately 65% of the boards have an independent chairman.

As for fund characteristics, funds in all three samples have an average age of about 20 years. However, the average fund size increases from about 1044 million in 2009 to about 2077 million in 2013. The mean turnover ratio in 2009 (2011, 2013) is 92.83% (72.79%, 65.11%) with a standard deviation of 99.84% (75.21%, 73.25%). Correspondingly, expense ratios are distributed with a mean of 1.44% (1.19%, 1.14%) and a standard deviation of 2.21% (0.61%, 0.62%) in 2009 (2011, 2013). The large variation in fund characteristics like fund age, fund size (TNA), fund expense and turnover ratios suggest that they need to be controlled for when investigating the impact of board composition on fund performance.

We then examine for possible multicollinearity among our 23 potential explanatory variables to identify situations where they should not be included together in the same regression.<sup>8</sup> We calculate the Pearson correlations for each sample (Table 3) and as expected, the two measures of gender (independence) diversity are highly correlated (exceeding 0.9). Therefore, we do separate regressions for each fund performance measure, with one using percentage and the other using

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<sup>6</sup> The average compensation for an independent director on a per-fund basis is \$5731.08 in 2009, \$6767.26 in 2011 and \$8293.44 in 2013. Interested directors generally receive no compensation from being on a fund board.

<sup>7</sup> Based on the range mid-spreads, the average dollar ownership of an independent director on a per-fund basis is roughly \$12,898.27 in 2009, \$15,320.01 in 2011 and \$15,370.84 in 2013.

<sup>8</sup> Of the 23 variables, nine capture aspects of board structure, nine measure different aspects of diversity and five capture different fund characteristics.

Blau's index as the gender (independence) diversity measure. We also observe a high correlation between total fund-family compensation and funds overseen (0.76, 0.60, and 0.62 for the 2009, 2011 and 2013 samples, respectively); and between total fund-family compensation and number of committees (0.68, 0.61 and 0.60 for the 2009, 2011 and 2013 samples, respectively). The total fund-family compensation of directors is expected to increase with workload as measured by the number of committees that a director sits on and to increase with the number of within-family fund boards on which a director sits. The generally low correlation between all the diversity measures means that a board diversified in one aspect may not necessarily be as diversified in another aspect.

## 4.2 Measures of Fund Performance

To ensure that fund performance is not driven by differences in risk and/or style, we measure fund performance using five metrics. The first three metrics measure fund performance by the abnormal returns (alphas) based on the CAPM, the Fama-French 3 factor model, and the Carhart four-factor model.

The Carhart (1997) four factor model is given by:

$$R_{i,t} - R_{f,t} = a_i + \beta_i^{MKT} MKT_t + \beta_i^{SML} SMB_t + \beta_i^{HML} HML_t + \beta_i^{MOM} MOM_t + \varepsilon_{i,t} \quad (1)$$

where  $R_{i,t}$  is the net-of-fees return of fund  $i$  during month  $t$ ;  $R_{f,t}$  is the one-month T-bill rate in month  $t$ ;  $MKT_t$  is the excess return over the risk-free rate for the CRSP value-weighted index;  $SMB_t$  is the difference in returns between a small and large stock portfolio;  $HML_t$  is the difference in returns between a high and low book-to-market stock portfolio in month  $t$ ; and  $MOM_t$  is the momentum factor. When we drop  $MOM_t$  [all by  $MKT_t$ ] in equation (1), we obtain the Fama-French three-factor model [CAPM]. Data for all the factors are obtained from Kenneth R. French's website.<sup>9</sup>

The numerators of the two remaining performance metrics are the dollar- and time-weighted average returns (DWA and TWA returns, respectively) over the previous 12 months for the fund after adjusting monthly for the average return for all the funds with the same investment objective (as in, e.g., Khorana and Servaes, 2004; Meschke, 2005; and Ferris and Yan, 2007). To do so, we first find the TNA-weighted average return across all of a fund's share classes for each month, and

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<sup>9</sup> [http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html](http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html)

then the TNA-weighted average return across all of the funds with the same investment objective for each month. Second, we find the difference between these two averages for each month over the previous 12 months according to the frequency of the board characteristics data. Third, we compute the DWA and TWA of these monthly return differences over the previous 12 months for each fund. Fourth, we divide the TWA from the previous step by the standard deviation of the monthly return differences over the previous 12 months for each fund to risk adjust it.

#### 4.2.1 Regression methods

In our tests of the relation between board composition and fund performance, we use two different econometric specifications.

In the first specification, we treat each fund as a separate and independent observation using the first step of the cross-sectional approach of Fama and MacBeth (1973).<sup>10</sup> The original Fama–MacBeth method estimates a separate cross-sectional regression for each time period and then computes the average regression coefficient across time. In our case, given that we only have three separate yearly samples, we only do cross sectional regressions (the first step) for each sample.

The second econometric specification examines the relation between board characteristics and fund performances at the fund-family level. We use both the pooled OLS regression method and the first step of the Fama-MacBeth method based on the family prospectus objectives. This is the objective of the fund that has the largest TNA under the same fund family. Since both fund board characteristics and fund returns are at the fund level, we aggregate all variables to the fund-family level based on the relative proportion of TNA value that each fund represents in its fund family.

## 5. FUND-LEVEL REGRESSION RESULTS

Our empirical investigation relates fund performance to various dimensions of board composition and board diversity as well as other potentially relevant drivers of fund performance. Specifically, we estimate:

$$\begin{aligned}
 Perf_{i,t} = & \alpha + \beta_1 \cdot BoardSize_{i,t} + \beta_2 \cdot Chairman_{i,t} + \beta_3 \cdot AveAge_{i,t} + \beta_4 \cdot AveTenure_{i,t} + \\
 & \beta_5 \cdot AveFundOverseen_{i,t} + \beta_6 \cdot AveCompensation_{i,t} + \beta_7 \cdot AveOwnership_{i,t} + \beta_8 \cdot \\
 & Committee_{i,t} + \beta_9 \cdot MeetingFreq_{i,t} + \gamma_1 \cdot IndependentDiv_{i,t} + \gamma_2 \cdot GenderDiv_{i,t} +
 \end{aligned}$$

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<sup>10</sup> We use the terminology of Ferris and Yan (2007) to describe this specification.

$$\begin{aligned} & \gamma_3 \cdot \text{Directorship}_{i,t} + \gamma_4 \cdot \text{AgeDiv}_{i,t} + \gamma_5 \cdot \text{TenureDiv}_{i,t} + \gamma_6 \cdot \text{OccupationDiv}_{i,t} + \gamma_7 \cdot \\ & \text{OwnershipDiv}_{i,t} + \delta_1 \cdot \text{FundAge}_{i,t} + \delta_2 \cdot \text{FundSize}_{i,t} + \delta_3 \cdot \text{ExpenseRatio}_{i,t} + \delta_4 \cdot \\ & \text{TurnoverRatio}_{i,t} + \delta_5 \cdot \text{PreviousPerm}_{i,t-1} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

In (2),  $Perf_{i,t}$  denotes one of our five fund performance metrics (the excess return of fund  $i$  in year  $t$  based on the CAPM model (CAPM), the Fama-French Three Factor Model (FF3), the Carhart (1997) Four Factor Model (FF4), the risk-adjusted dollar-weighted average return (DWA), or the risk-adjusted time-weighted average return (TWA), respectively).  $\beta_1 - \beta_9$  are the coefficient estimates of board average characteristics,  $\gamma_1 - \gamma_7$  are the coefficient estimates of the board diversity variables, and  $\delta_1 - \delta_5$  are the coefficient estimates of the control variables. *Chairman* is a dummy variable that equals 1 when the chairman of the board is independent and is 0 otherwise. Since we use two methods to measure independence and gender diversity,  $IndependentDiv_{i,t}$  and  $GenderDiv_{i,t}$  are measured either in simple percentages, or using Blau's index (see Section 4.1.1).

We control for the logarithm of fund  $i$ 's age in years,  $FundAge_{i,t}$ , the logarithm of its total net assets in USD,  $FundSize_{i,t}$ , annual gross expense ratio ( $ExpenseRatio_{i,t}$ ), annual turnover ratio ( $TurnoverRatio_{i,t}$ ), and previous performance ( $PreviousPerf_{i,t-1}$ ) using the same method of calculation as for the dependent variable ( $Perf_{i,t}$ ). The simplest approach to estimate model (2) is to run pooled OLS regression. However, a major drawback of this method is that many fund families use unitary board structures where the same board oversees all funds in the same fund family (Ferris and Yan, 2007). As a result, the pooled regression approach may understate the standard errors and overstate the statistical significance of the coefficient estimates for the independent variables. To mitigate this problem, we use clustered standard errors. The clustering method is consistent with the clustering criteria of the Fama-Macbeth regression method: clustered by fund objective, by fund objective and fund family, or by fund family.

In the next and subsequent sections, we only discuss variables where at least five of the estimated ten coefficients (three out of five for each of the independence and gender diversity variables) are significant at the 10% level for each pair of sample year and S.E. clustering method. This allows us to assess where the coefficient estimates for any independent variable is robust to the choice of performance metric, sample, and method used to obtain clustered S.E. After

discussing the estimated coefficients for board-average characteristics that meet the number of significant coefficients criterion, we discuss the estimated coefficients for the board-diversity variables that satisfy the same criterion. We present the results for the fund-level and family-level regressions in sections 5.1 and 5.2, respectively.

## **5.1 Results of Fund-level Regressions**

The numbers of significant fund-level regression results based on our larger sample are presented in Tables 4 through 6. They are based on the detailed results presented in Appendices B-I through B-III.

The first variable that meets our minimum significance criterion is chairman independence. We expect an independent chairman to add value to board composition and to fund performance as this is required under SEC regulations. The minimum number of significant coefficients for this variable is found only in the 2009 sample when the S.E. are clustered by fund objectives. Specifically, 4 (5) out of the 10 estimated coefficients for this variable are significantly positive at the 5% (10%) level. However, we observe a negative estimated coefficient for this variable in 2011 and 2013 when the S.E. are clustered by fund objectives. More specifically, the estimated coefficients for chairman independence are negative with 1 (4) out of the 10 significant at the 10% level when the dependent variable is the FF4 excess return in the 2011 sample (DWA and TWA in the 2013 sample).

The average tenure of board members is positively related to fund returns according to the fund-level regressions with S.E. clustered by fund objectives in 2009 (6 significant out of 10) and by fund objectives and families in 2011 (8 significant out of 10). The estimated coefficient for the number of funds overseen by each director in the fund complex is positive across the three S.E. clustering methods. When the S.E. is clustered by objectives, 5 of the 10 estimated coefficients for this variable are significantly positive at the 10% level in the 2009 sample, and 9 are significantly positive at the 10% level in the 2011 sample. A significantly positive relation is observed for 6 (8) out of the 10 estimated parameters for this variable in the 2011 sample when the S.E. is clustered by families (by both fund objectives and families).

The positive estimated coefficients for the average level of total compensation from the fund family for an individual director are significant at the 1% (5%) confidence level for 4 (6) of the fund-level regressions with S.E. clustered by fund objectives. However, we observe that some of



the estimated coefficients for this variable are significant (10% level) and negative in the 2009 sample when the S.E. are clustered by fund families and by fund objectives and families. At least 8 of the estimated coefficients for directors' ownership are significant at the 10% level under each of the three clustering choices for the 2009 sample. However, we find two negative coefficients significant at the 10% level for the 2011 sample when fund performance is measured by FF3.

Counter to our expectation, the estimated coefficients for the number of different board committees are negative. All 10 estimated coefficients are significant at the 5% level for all S.E. clustering methods for the 2011 sample. Furthermore, 4 (6) out of the 10 estimated coefficients for this variable are significantly negative at the 5% (10%) level for S.E. clustered by fund objectives for the 2013 sample. In contrast, 5 (10) of the estimated coefficients for average committee meeting frequency are positive at the 10% level based on S.E. clustered by fund families for the 2009 (2011) sample. Furthermore, 6 out of 10 estimated coefficients for this variable are significant at the 10 percent level based on S.E. clustered by fund objectives and families for the 2011 sample.

Significant estimated coefficients (all positive) based on S.E. clustered by each of the three clustering methods are obtained for the percentage of independent directors for at least 4 of the 5 performance measures for the 2011 sample. Three of the 5 coefficient estimates for this variable are significantly positive at the 10% level based on S.E. clustered by fund objectives for the 2013 sample. The results are somewhat better for Blau's independent director index where 5 (3) of the estimated coefficients are significant (and positive) at the 0.10 level based on S.E. clustered by fund objectives (fund objectives and families) for the 2009 sample, 5 (5) of the estimated coefficients are significant (and positive) at the 0.10 level based on S.E. clustered by fund families (fund objectives and families) for the 2011 sample. Three of the five estimated coefficients for Blau's gender diversity index are significant (and positive) based on S.E. clustered by fund objectives and by fund objectives and families, and only for the 2009 sample.

Nine of the ten estimated coefficients for directorships outside fund family are significant (and positive) based on S.E. clustered by fund objectives for the 2013 sample. Contrary to our hypothesis according to the social category diversity theory, we find consistently positive coefficient estimates for age diversity. Significance is found for 9 (7) of these coefficient estimates for S.E. clustered by fund objectives (fund objectives and fund families) for the 2011 sample. Significance is found for 6 of the estimated coefficients for each of the three types of clustered

S.E. for board tenure diversity for the 2013 sample. Significance is found for 5 of the estimated coefficients for S.E. clustered by fund objectives and fund families for occupational diversity for the 2013 sample. While five of the estimated coefficients for ownership diversity are significant and negative based on S.E. clustered by fund family for the 2009 sample, at least 6 estimated coefficients for this variable are significant and negative based on the three types of S.E. clustering for the 2011 sample and none of the estimated coefficients for this variable are significant for the 2013 sample.

In summary, no board composition characteristic appears to be a consistent and significant driver of relative fund performance in the cross section.

## **6. FAMILY-LEVEL REGRESSION RESULTS**

In this section of the thesis, our individual observations are at the family and not fund level. Thus, our standard errors used for significance testing are clustered by fund objectives. The numbers of significant fund-family-level regression results based on our larger sample are presented in Table 7. They are based on the detailed results presented in Appendix C. Our discussion strategy is based on the one used in the previous section of the thesis and it compares the results in this section with the fund-level results based on S.E. clustered by fund objectives and fund families presented in the previous section.

In general, we find that more variables now meet our minimum significance criterion for the 2009 sample and less for the 2011 and 2013 samples. Variables that now meet the criterion for the minimum number of significant coefficients include board tenure, number of funds overseen, number of committee meetings and occupational diversity for the 2009 sample, and other directorships for the 2013 sample. Variables that no longer meet this criterion include number of board committees and board ownership diversity for the 2011 sample and tenure and occupational diversity for the 2013 sample. Variables that continue to meet this criterion include board ownership for the 2009 sample; and tenure, number of funds overseen, number of board committee meetings, and board members' independence diversity in both measures for the 2011 sample.

## **7. ROBUSTNESS TESTS**

Since performance alphas estimated using only 12 monthly observations in the FF3 and FF4 models are likely to be subject to considerable estimation error, we replicate all the regressions in sections 5 and 6 with a relatively smaller sample where each included fund share is required to have at least 48 months of consecutive return and NAV data. Therefore, all current and past performance measures for these new regressions are estimated with 24 monthly returns. The 2009 (2011, 2013) sample used for these regressions consists of 1266 (1189, 1089) funds belonging to 294 (308, 299) fund families.<sup>11</sup>

The numbers of significant fund-level regression results based on this smaller sample are presented in Tables 8 through 10 for the fund-level regressions based on the three types of clustered S.E. and in Table 11 for the family-level regressions based on S.E. clustered by fund objectives. They are based on the detailed results presented in Appendices D-I through D-III for the fund-level regressions and Appendix E for the fund-family-level regressions. We also run the pooled OLS regressions at the fund-family level without clustering the standard errors as additional robustness tests for both the larger and the smaller sample. The significant results summaries are reported in Table 12 and Table 13 for the larger and smaller sample, respectively, which are based on the full results presented in Appendix F and G, respectively.

While individual coefficient estimates change, our overall conclusion remains unchanged when we conduct fund- and family-fund-level regressions using a two instead of one year period to measure both current and past fund performance. Specifically, no board composition characteristic examined herein is a consistent and significant determinant of relative fund- or fund-family-level performance in the cross section.

## **8. CONCLUSION**

In this study, we investigate whether board composition has power to explain cross-sectional performance at the fund or fund-family level. Based on three hand-collected databases of board

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<sup>11</sup> The detailed distribution of fund families in terms of prospectus objectives in our smaller sample is presented in Table 1.

information at the end of years 2009, 2011 and 2013, we test the relationship between fund performance measured using five metrics and board composition characteristics captured by eighteen variables, and five control variables to capture fund-specific features. Moreover, our cross-sectional regression analysis is classified into two different levels, fund level and family level. Our results are based on cross-sectional regressions where the standard errors are clustered by fund objectives, fund families or both for the fund-level regressions and by fund objectives for the fund-family-level regressions.

Our overall finding is that none of the tested determinants was a consistently significant determinant of relative cross-sectional performance. The results varied depending upon the metric used to measure performance and the clustering of the standard errors used for tests of statistical significance.

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**Table 1. Distribution of fund families by investment objectives**

Panel A reports the distribution by investment objectives of the large sample in which each fund share class is required to have at least 12-month consecutive returns and NAVs. The three prospectus objectives examined are Aggressive Growth (AG), Growth (G), and Growth and Income (GI). The first column “Funds/Family” reports how many funds under each fund family are included in our sample. The second column “# in Family” reports the number of different fund families that have the corresponding number of funds included in the sample. For instance, the second row starting with 1 in the 2009 sample indicates that there are 135 different fund families with only one fund each. Among these 135 fund families, 4 are Aggressive Growth funds, 109 are Growth funds, and 21 are Growth and Income funds. The total count of each column is presented in the first row starting with “Sum”. Panel B reports a similar type of distribution for the smaller sample in which each fund share class is required to have at least 24-month consecutive returns and NAVs. The smaller samples are used for our robustness tests.

<b>Panel A: Large Sample</b>														
Sample 2009					Sample 2011					Sample 2013				
Funds / Family	# in Family	AG	G	GI	Funds / Family	# in Family	AG	G	GI	Funds / Family	# in Family	AG	G	GI
<b>Sum</b>	329	9	251	68	<b>Sum</b>	323	7	250	66	<b>Sum</b>	304	7	236	61
1	135	4	109	21	1	137	4	110	23	1	138	4	111	23
2	60	1	47	12	2	56	0	44	12	2	44	0	35	9
3	28	1	23	4	3	31	0	28	3	3	30	1	26	3
4	25	2	19	4	4	21	2	15	4	4	22	1	17	4
5	10	0	9	1	5	10	0	9	1	5	9	0	8	1
6	12	0	7	5	6	13	0	8	5	6	13	0	7	6
7	11	0	8	3	7	9	0	7	2	7	14	0	10	4
8	6	0	3	3	8	9	0	5	4	8	5	0	3	2
9	6	0	3	3	9	6	0	4	2	9	4	0	3	1
10	5	0	5	0	10	4	0	2	2	10	1	0	1	0
11	5	0	1	4	11	6	0	3	3	11	3	0	0	3
12	6	0	4	2	12	4	0	3	1	12	4	0	3	1
13	2	0	1	1	13	1	0	1	0	13	3	0	1	2
14	1	0	1	0	15	2	0	1	1	15	1	0	1	0
15	2	0	1	1	16	2	0	1	1	16	2	0	2	0
18	3	0	2	1	17	1	0	1	0	17	1	0	1	0
19	1	0	0	1	18	1	0	1	0	19	4	0	3	1
21	1	0	1	0	19	1	0	0	1	20	2	0	2	0
22	1	0	1	0	21	2	0	2	0	21	2	0	1	1
24	1	0	1	0	22	1	0	1	0	32	1	1	0	0
25	1	0	1	0	23	2	0	2	0	45	1	0	1	0
27	1	0	1	0	24	1	0	1	0					
30	1	0	1	0	25	1	0	0	1					
31	1	0	0	1	32	1	1	0	0					
33	1	0	0	1	51	1	0	1	0					
34	1	1	0	0										
36	1	0	1	0										
53	1	0	1	0										

**Table 1. Cont'd**

<b>Panel B: Smaller sample for a test of robustness</b>														
Sample 2009					Sample 2011					Sample 2013				
Funds / Family	# in Family	AG	G	GI	Funds / Family	# in Family	AG	G	GI	Funds / Family	# in Family	AG	G	GI
<b>Sum</b>	294	8	221	65	<b>Sum</b>	308	8	238	62	<b>Sum</b>	299	7	232	60
1	119	4	94	21	1	137	5	108	24	1	137	4	109	24
2	51	0	40	11	2	45	/	37	8	2	45	/	36	9
3	26	1	22	3	3	32	1	28	3	3	30	1	26	3
4	20	2	15	3	4	20	1	15	4	4	20	1	15	4
5	8	/	7	1	5	11	/	9	2	5	10	/	8	2
6	15	/	10	5	6	13	/	8	5	6	12	/	7	5
7	11	/	7	4	7	10	/	7	3	7	12	/	10	2
8	4	/	2	2	8	7	/	3	4	8	4	/	2	2
9	8	/	6	2	9	5	/	5	/	9	4	/	3	1
10	5	/	3	2	10	2	/	1	1	10	1	/	1	/
11	3	/	0	3	11	5	/	2	3	11	3	/	/	3
12	4	/	2	2	12	5	/	4	1	12	5	/	4	1
13	3	/	2	1	14	1	/	/	1	13	2	/	/	2
15	3	/	1	2	15	2	/	1	1	15	2	/	2	/
16	1	/	1	/	16	2	/	2	/	16	3	/	3	/
17	1	/	1	/	17	1	/	1	/	19	4	/	2	2
19	1	/	/	1	19	1	/	/	1	20	3	/	3	/
20	1	/	1	/	20	1	/	1	/	30	1	1	/	/
21	2	/	2	/	21	2	/	2	/	45	1	/	1	/
25	1	/	1	/	22	2	/	2	/					
27	3	/	2	1	23	1	/	1	/					
29	1	/	1	/	24	1	/	/	1					
31	1	/	/	1	32	1	1	/	/					
33	1	1	/	/	50	1	/	1	/					
48	1	/	1	/										

**Table 2. Variable definitions and summary statistics**

Panel A lists the definitions of all variables used in the regression analyses. Blau's diversity index is measured as  $1 - \sum_{i=1}^n P_i^2$ , where  $P_i$  is the percentage of board members in each category, and  $n$  is the total number of board members. Panel B presents the summary statistics (mean, median, and standard deviation) for all these variables for 1396, 1268 and 1130 funds in the 2009, 2011 and 2013 samples, respectively.

<b>Panel A: Variable definitions</b>		
<b>Variable</b>	<b>Unit</b>	<b>Description and Data Source</b>
<b>Board Structure Variables</b>		
Board Size	Persons	Number of members on each board
Average Age	Year	Average age of all of the members on each board
Average Tenure	Year	Average length of time served by all members on each board
Average funds overseen	#	Average number of funds in fund complex overseen by directors on each board
Ln (Average Compensation)	\$	Ln (Average compensation of directors' total compensation received from fund complex), based on Total compensation of each member on a board from the fund complex ÷ Number of members on that board)
Ln (Average Ownership)	\$	Ln (Average dollar amount of mutual fund shares owned by all directors on board). The dollar amount ownership is calculated by setting an individual director's total ownership in fund family as the midpoint of the reported interval, or as \$125,000 for the top interval of > \$100,000
% with other directorships	%	Percent of directors who have other directorships outside the fund family on each board
# of Committees	#	Number of different committees each board has
Committee meeting Frequency	#	Average number of committee meetings during last fiscal year
Independence of Chairman	Dummy	Dummy variable =1 if the chairperson is independent, =0 if the chairperson is interested
<b>Board Diversity Variables</b>		
% independent	%	Percent of independent directors on a board
Independent diversity (Blau's index)	0-1	Blau's diversity index
Gender (%)	%	Percent of female directors on board
Gender Diversity (Blau's index)	0-1	Blau's diversity index
Age Diversity	0-1	Coefficient of Variation = standard deviation/average
Tenure Diversity	0-1	Coefficient of Variation = standard deviation/average
Industrial Diversity	0-0.96	Using $1 - [\sum X^2 / (\sum X)^2]$
Ownership Diversity	0-0.8	Using $1 - [\sum X^2 / (\sum X)^2]$

**Table 2, Panel A. Cont'd**

<b>Variable</b>	<b>Unit</b>	<b>Description and Data Source</b>
<b>Fund-related Variables</b>		
Ln (Fund Size)	\$	Ln (sum of total assets value under management of each share class in millions of dollars)
Ln (Fund Age)	Year	Length of time until now since the inception date of the oldest share class of a fund
Expense Ratio	%	Weighted average of annual report gross expense ratios of all share classes of a fund
Turnover Ratio	100%	Annual portfolio turnover, a measure of the fund's trading activity, computed by taking the lesser of purchases or sales and dividing by average monthly net assets
CAPM	%	Annualized regression intercept of CAPM
FF3	%	Annualized regression intercept of Fama-French three-factor model
FF4	%	Annualized regression intercept of Fama-French four-factor model
DWA	%	Value-weighted average of monthly adjusted return differences between fund returns and the average return of all funds under the same investment objective, divided by the cross-sectional standard deviations of these return differences
TWA	%	Time-weighted average of monthly adjusted return differences between fund returns and the average return of all funds under the same investment objective, divided by the cross-sectional standard deviations of these return differences
Previous Performance	%	Fund performance of last year measured in the same way as current fund performance

**Table 2. Cont'd**

<b>Panel B: Summary Statistics</b>									
	<b>Sample 2009</b>			<b>Sample 2011</b>			<b>Sample 2013</b>		
<b>Board Structure</b>	Mean	Median	Std Dev.	Mean	Median	Std Dev.	Mean	Median	Std Dev.
Board Size	8.06	8	2.80	8.23	8	2.98	8.25	8.00	2.85
Average Age	65.12	65.18	0.48	65.11	65.25	4.51	64.92	65.25	4.38
Average Tenure	13.24	12.62	4.08	11.87	11.00	4.25	10.69	9.33	4.63
Ave. Funds Overseen	61.75	46.2	59.92	67.05	48.00	65.16	70.15	54.00	63.57
Ave. Compensation	123,952	122,205	92,428	137,023	138,437	100,718	155,764	152,862	109,324
Ave. Ownership -\$	98,632	103,333	41,370	93,404	109,375	36,502	95,009	110,714	35,936
Ave. % other directorships	0.48	0.45	0.31	0.52	0.50	0.30	0.53	0.50	0.29
# of Committees	3.69	3	1.81	3.76	3	1.87	3.87	4.00	1.88
Ave. Cmtee Meeting	4.65	3.67	6.99	4.35	3.6	5.33	4.40	3.50	5.39
% Indep. Chairman	0.65	-	-	0.64	-	-	0.65	-	-
<b>Board Diversity</b>									
Indep. Director %	0.82	0.82	0.11	0.82	0.81	0.00	0.82	0.80	0.10
Indep. Diver. (Blau)	0.28	0.30	0.13	0.28	0.31	0.12	0.27	0.32	0.13
Female Director %	0.16	0.14	0.13	0.17	0.17	0.13	0.18	0.17	0.13
Gender Diver. (Blau)	0.23	0.24	0.17	0.00	0.00	0.00	0.26	0.28	0.16
Age Diver. (CV)	0.12	0.11	0.05	0.12	0.11	0.04	0.12	0.11	0.04
Tenure Diver.(CV)	0.42	0.44	0.19	0.49	0.48	0.22	0.60	0.59	0.29
Occupational Diver.	0.87	0.89	0.05	0.88	0.89	0.05	0.87	0.88	0.05
Ownership Diver.	0.33	0.35	0.24	0.29	0.28	0.25	0.26	0.24	0.24
<b>Fund-related</b>									
Fund Size-\$millions	1,044.20	137.52	5,512.33	1,969.62	352.76	8,329.34	2,700.79	477.43	11,384.95
Fund Age-years	20.38	16.86	12.87	20.54	16.99	12.64	20.75	17.03	13.13
Expense - %	1.44	1.25	2.21	1.19	1.16	0.61	1.14	1.11	0.62
Turnover - %	92.83	66.84	99.84	72.79	55.00	75.21	65.11	48.00	73.25
CAPM alpha - %	0.36	0.31	0.75	-0.22	-0.18	0.46	-0.04	-0.08	0.45
3-Factor Alpha - %	0.30	0.25	0.66	-0.22	-0.19	0.48	-0.15	-0.13	0.50
4-Factor Alpha - %	0.17	0.15	0.57	-0.23	-0.17	0.56	-0.18	-0.15	0.50
DWA - %	-0.11	-0.12	0.35	0.02	0.03	0.33	-0.10	-0.07	0.35
TWA - %	-0.11	-0.12	0.37	0.02	0.02	0.34	-0.10	-0.08	0.35







**Table 3. Cont'd**

Fund Age	<b>1.00</b>													Sample size for 2013 is 1130 funds.							
Board Size	0.10	1.00																			
Chairman Independence	0.04	0.19	1.00																		
Ave. Age	0.08	0.12	0.05	1.00																	
Ave. Tenure	0.08	-0.27	-0.14	0.23	1.00																
Ave. Funds Overseen	0.02	0.47	-0.04	0.15	-0.33	1.00															
Ave. Compensation	0.07	0.56	0.19	0.22	-0.21	0.62	1.00														
Ave. Ownership	0.07	0.27	0.13	0.07	0.09	0.20	0.29	1.00													
Committees #	0.10	0.49	0.15	0.14	-0.15	0.60	0.51	0.19	1.00												
Committee Meetings	0.00	0.08	-0.07	0.07	-0.06	0.15	0.21	0.07	0.21	1.00											
Other Directorship	0.00	0.21	0.05	0.02	-0.17	0.25	0.28	-0.03	0.28	0.07	1.00										
Gender (%)	0.03	0.22	0.22	-0.17	-0.19	0.12	0.21	0.01	0.16	0.04	0.09	1.00									
Gender Diversity (Blau)	0.03	0.31	0.22	-0.16	-0.22	0.19	0.27	0.05	0.20	0.08	0.11	0.95	1.00								
Age CV	0.03	-0.12	0.05	-0.16	0.03	-0.25	-0.21	-0.10	-0.14	-0.10	-0.11	-0.07	-0.07	1.00							
Tenure CV	0.06	0.21	0.09	-0.09	-0.11	0.12	0.16	-0.09	0.09	0.09	0.06	0.25	0.29	0.03	1.00						
Industry Diversity	0.01	0.44	0.05	0.13	-0.16	0.30	0.34	0.14	0.32	0.08	0.17	0.12	0.19	-0.05	0.17	1.00					
Ownership Diversity	-0.08	-0.38	0.09	-0.10	0.03	-0.44	-0.38	-0.01	-0.39	-0.17	-0.29	-0.02	-0.08	0.15	-0.09	-0.27	1.00				
Independent (%)	0.01	0.28	0.39	0.13	-0.19	0.36	0.52	0.19	0.33	0.06	0.18	0.26	0.27	-0.20	0.08	0.21	-0.19	1.00			
Independent Diversity (Blau)	-0.04	-0.23	-0.37	-0.09	0.16	-0.33	-0.39	-0.16	-0.31	-0.03	-0.21	-0.27	-0.27	0.18	-0.07	-0.17	0.17	-0.93	1.00		
Ln (Fund Size)	0.28	0.44	0.02	0.06	-0.10	0.40	0.48	0.21	0.36	0.15	0.19	0.13	0.19	-0.08	0.18	0.23	-0.34	0.22	-0.21	1.00	
Expense %	-0.10	-0.21	0.05	0.05	0.08	-0.22	-0.27	-0.09	-0.20	-0.10	-0.10	-0.16	-0.19	0.03	-0.16	-0.15	0.21	-0.15	0.16	-0.51	1.00
Turnover %	-0.07	-0.07	0.00	-0.07	-0.02	0.05	0.03	0.01	-0.03	-0.01	-0.01	-0.07	-0.08	-0.09	-0.04	-0.07	0.12	-0.03	0.04	-0.22	0.22

**Table 4. Summarized results for fund-level cross-sectional regressions with standard errors clustered by fund objectives**

This table reports summarized results for cross-sectional regressions at the fund level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund objectives. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then using Blau’s diversity index as the independence and gender diversity measures. The result is ten regression estimates for all the independent variables with the exception of independence and gender diversity that only have five regression estimates each for each of their two measures. Coefficient estimates with consistently significant positive and negative signs are indicated by + and -, respectively, in the column labelled “Result sign”. Significant coefficient estimates with a mixture of signs are indicated by a blank cell highlighted by yellow in the same column for each cross-section. The remaining columns for each cross-section represent the number of significant coefficients at the 1%, 5% and 10% level. (Detailed results corresponding to Table 4 are in Appendix B-I.)

Variables	Pred. sign	Sample 2009			Sample 2011			Sample 2013					
		Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%
<b>Panel A: Average</b>													
Board Size	+	+	0	2	4		0	0	0	+	0	0	4
Chairman	+	+	2	4	5	-	0	0	1	-	0	1	4
Age	-		0	0	0	-	0	4	4		0	0	0
Tenure	+	+	0	4	6	+	0	0	3	+	0	0	1
Funds Overseen	+	+	0	1	5	+	0	4	9	+	0	1	3
Ln (Compensation)	-		0	0	0	+	4	6	6		0	0	0
Ln (Ownership)	+	+	2	8	10	-	0	0	2		0	0	0
Committees	+	-	0	2	2	-	0	10	10	-	0	4	6
Committee Meeting	+	+	0	0	2	+	0	0	4	+	0	0	4
<b>Panel B: Diversity</b>													
% Independent	+	+	0	0	1	+	0	0	4	+	0	3	3
Independent (Blau)	+	+	0	2	5	+	0	0	2	+	3	3	3
% Female	-	+	0	1	1		0	0	0	+	0	1	2
Gender (Blau)	-	+	0	1	3		0	0	0	+	1	2	2
Other Directorship	+	+	0	2	4		0	0	0	+	0	6	9
Age (CV)	-		0	0	0	+	0	4	9	+	0	2	2
Tenure (CV)	+	+	0	0	2		0	0	0	-	2	6	6
Occupational Diver.	+	-	0	0	3		0	0	0	-	0	0	3
Ownership Diver.	-	-	0	0	2	+	0	0	6		0	0	0

**Table 5. Summarized results for fund-level cross-sectional regressions with standard errors clustered by fund families**

This table reports summarized results for cross-sectional regressions at the fund level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund families. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then Blau’s diversity index as the independence and gender diversity measures. The result is ten regression estimates for all the independent variables with the exception of independence and gender diversity that only have five regression estimates each for each of their two measures. Coefficient estimates with consistently significant positive and negative signs are indicated by + and -, respectively, in the column labelled “Result sign”. Significant coefficient estimates with a mixture of signs are indicated by a blank cell highlighted by yellow in the same column for each cross-section. The remaining columns for each cross-section represent the number of significant coefficients at the 1%, 5% and 10% level. (Detailed results corresponding to Table 5 are in Appendix B-II.)

Variables	Pred. sign	Sample 2009				Sample 2011				Sample 2013			
		Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%
<b>Panel A: Average</b>													
Board Size	+	+	0	2	2		0	0	0	+	3	4	4
Chairman	+	+	0	1	3		0	0	0		0	0	0
Age	-	-	0	0	1		0	0	0		0	0	0
Tenure	+		0	0	0	+	0	0	1		0	0	0
Funds Overseen	+	+	0	0	1	+	0	3	6	+	0	0	4
Ln (Compensation)	-	-	0	0	1		0	0	0		0	0	0
Ln (Ownership)	+	+	0	6	8		0	0	0		0	0	0
Committees	+		0	0	0	-	8	10	10		0	0	0
Committee Meeting	+	+	0	0	5	+	0	6	6		0	0	0
<b>Panel B: Diversity</b>													
% Independent	+		0	0	0	+	0	3	5		0	0	0
Independent (Blau)	+	+	0	1	2	+	0	3	5	+	0	0	1
% Female	-		0	0	0		0	0	0		0	0	0
Gender (Blau)	-	+	0	0	1		0	0	0	+	0	0	1
Other Directorship	+		0	0	0		0	0	0	+	0	0	3
Age (CV)	-		0	0	0	+	0	2	3	+	0	2	2
Tenure (CV)	+		0	0	0		0	0	0	-	1	4	6
Occupation Diver.	+	-	0	0	1		0	0	0	-	0	0	2
Ownership Diver.	-	-	0	1	5	+	2	8	10		0	0	0

**Table 6. Summarized results for fund-level cross-sectional regressions with standard errors clustered by fund objectives and fund families**

This table reports summarized results for cross-sectional regressions at the fund level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund objectives and fund families. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then Blau’s diversity index as the independence and gender diversity measures. The result is ten regression estimates for all the independent variables with the exception of independence and gender diversity that only have five regression estimates each for each of their two measures. Coefficient estimates with consistently significant positive and negative signs are indicated by + and -, respectively, in the column labelled “Result sign”. Significant coefficient estimates with a mixture of signs are indicated by a blank cell highlighted by yellow in the same column for each cross-section. The remaining columns for each cross-section represent the number of significant coefficients at the 1%, 5% and 10% level. (Detailed results corresponding to Table 6 are in Appendix B-III.)

Variables	Pred. sign	Sample 2009				Sample 2011				Sample 2013			
		Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%
<b>Panel A: Average</b>													
Board Size	+	+	0	2	3	+	0	0	2	+	2	4	4
Chairman	+	+	0	1	3		0	0	0		0	0	0
Age	-	-	0	0	2		0	0	0	-	0	0	2
Tenure	+	+	0	0	1	+	0	0	8		0	0	0
Funds Overseen	+	+	0	0	2	+	0	2	8	+	0	0	4
Ln (Compensation)	-	-	0	0	2	+	0	0	1		0	0	0
Ln (Ownership)	+	+	0	4	9		0	0	0		0	0	0
Committees	+		0	0	0	-	10	10	10		0	0	0
Committee Meeting	+	+	0	3	4	+	2	6	6		0	0	0
<b>Panel B: Diversity</b>													
% Independent	+		0	0	0	+	0	3	5		0	0	0
Independent (Blau)	+	+	0	1	3	+	0	4	5	+	0	0	2
% Female	-		0	0	0		0	0	0		0	0	0
Gender (Blau)	-	+	0	0	3		0	0	0	+	0	0	2
Other Directorship	+		0	0	0		0	0	0	+	0	0	4
Age (CV)	-		0	0	0	+	0	2	7	+	0	2	2
Tenure (CV)	+		0	0	0		0	0	0	-	0	4	6
Occupation Diver.	+	-	0	0	2		0	0	0	-	0	0	5
Ownership Diver.	-	-	0	3	4	+	2	10	10		0	0	0

**Table 7. Summarized results for fund-family level cross-sectional regressions with standard errors clustered by fund-family objectives**

This table reports results for cross-sectional regressions at the fund-family level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund-family objectives. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then Blau’s diversity index as the independence and gender diversity measures. The result is ten regression estimates for all the independent variables with the exception of independence and gender diversity that only have five regression estimates each for each of their two measures. Coefficient estimates with consistently significant positive and negative signs are indicated by + and -, respectively, in the column labelled “Result sign”. Significant coefficient estimates with a mixture of signs are indicated by a blank cell highlighted by yellow in the same column for each cross-section. The remaining columns for each cross-section represent the number of significant coefficients at the 1%, 5% and 10% level. (Detailed results corresponding to Table 7 are in Appendix C.)

Variables	Pred. sign	Sample 2009				Sample 2011				Sample 2013			
		Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%
<b>Panel A: Average</b>													
Board Size	+	+	2	4	4	+	0	0	2		0	0	0
Chairman	+		0	0	0		0	0	0		0	0	0
Age	-	-	0	4	4		0	0	0		0	0	0
Tenure	+	+	0	2	7	+	0	0	6	+	0	4	4
Funds Overseen	+	+	0	0	6	+	0	2	8		0	0	0
Ln (Compensation)	-		0	0	0		0	0	0		0	0	0
Ln (Ownership)	+	+	5	6	10	+	0	1	2		0	0	0
Committees	+		0	0	0	-	0	2	2	+	1	4	4
Committee Meeting	+		0	4	8	+	5	7	8	+	0	4	4
<b>Panel B: Diversity</b>													
% Independent	+		0	0	0	+	0	3	4		0	0	0
Independent (Blau)	+		0	0	0	+	0	3	5		0	0	0
% Female	-	+	0	1	1		0	0	0	+	0	2	2
Gender (Blau)	-	+	0	1	1		0	0	0	+	2	2	2
Other Directorship	+	+	0	1	4		0	0	0	+	1	8	10
Age (CV)	-		0	0	0	+	2	4	6	+	0	0	2
Tenure (CV)	+		0	0	0		0	0	0		0	0	0
Occupation Diver.	+	-	0	4	5	+	0	2	2		0	0	0
Ownership Diver.	-	+	1	2	2		0	0	0	-	0	2	4

**Table 8. Summarized results for fund-level cross-sectional regressions with standard errors clustered by fund objectives for the robustness test samples**

This table reports summarized results for cross-sectional regressions for the smaller samples at the fund level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund objectives. To be included in these smaller samples, each fund share class is required to have at least 48-month consecutive returns and NAVs. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then using Blau’s diversity index as the independence and gender diversity measure. The result is ten regression estimates for all the independent variables with the exception of independence and gender diversity that only have five regression estimates each for each of their two measures. Coefficient estimates with consistently significant positive and negative signs are indicated by + and -, respectively, in the column labelled “Result sign”. Significant coefficient estimates with a mixture of signs are indicated by a blank cell highlighted by yellow in the same column for each cross-section. The remaining columns for each cross-section represent the number of significant coefficients at the 1%, 5% and 10% level. The sample size for the robustness test sample is 1266, 1189 and 1089 funds for years 2009, 2011 and 2013, respectively, (Detailed results corresponding to Table 8 are in Appendix D-I.)

Variables	Pred. sign	Sample 2009			Sample 2011			Sample 2013					
		Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%
<b>Panel A: Average</b>													
Board Size	+	+	2	7	7		0	0	0	+	5	10	10
Chairman	+	+	0	1	3		0	0	0		0	0	0
Age	-		0	0	0	-	0	2	2		0	0	0
Tenure	+	+	0	2	2		0	0	0	+	0	2	4
Funds Overseen	+	+	0	2	5	+	0	7	10	+	0	1	2
Ln (Compensation)	-		0	0	0	+	1	6	9		0	0	0
Ln (Ownership)	+	+	6	8	10		0	0	0	+	0	0	4
Committees	+	-	2	5	5	-	4	6	6	-	0	6	6
Committee Meeting	+		0	0	0	+	3	9	10		0	0	0
<b>Panel B: Diversity</b>													
% Independent	+	+	0	1	2		0	0	0	+	0	1	1
Independent (Blau)	+	+	0	1	2		0	0	0	+	0	4	4
% Female	-	+	1	3	4		0	0	0	+	1	1	1
Gender (Blau)	-	+	1	1	5		0	0	0	+	2	4	4
Other Directorship	+		0	0	0		0	0	0		0	0	0
Age (CV)	-		0	0	0	+	0	0	1	+	2	3	3
Tenure (CV)	+	+	0	0	2		0	0	0	-	0	6	6
Occupational Diver.	+	-	0	0	1		0	0	0		0	0	0
Ownership Diver.	-		0	0	0		0	0	0	-	6	6	6

**Table 9. Summarized results for fund-level cross-sectional regressions with standard errors clustered by fund families for the robustness test samples**

This table reports summarized results for cross-sectional regressions for the smaller samples at the fund level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund families. To be included in these smaller samples, each fund share class is required to have at least 48-month consecutive returns and NAVs. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then Blau’s diversity index as the independence and gender diversity measures. The result is ten regression estimates for all the independent variables with the exception of independence and gender diversity that only have five regression estimates each for each of their two measures. Coefficient estimates with consistently significant positive and negative signs are indicated by + and -, respectively, in the column labelled “Result sign”. Significant coefficient estimates with a mixture of signs are indicated by a blank cell highlighted by yellow in the same column for each cross-section. The remaining columns for each cross-section represent the number of significant coefficients at the 1%, 5% and 10% level. The fund-level sample size for the robustness test sample is 1266, 1189 and 1089 funds for year 2009, 2011 and 2013, respectively. (Detailed results corresponding to Table 9 are in Appendix D-II.)

Variables	Pred. sign	Sample 2009			Sample 2011			Sample 2013					
		Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%
<b>Panel A: Average</b>													
Board Size	+	+	0	3	5		0	0	0	+	5	8	10
Chairman	+		0	0	0		0	0	0		0	0	0
Age	-		0	0	0		0	0	0		0	0	0
Tenure	+		0	0	0	+	0	4	9		0	0	0
Funds Overseen	+	+	0	0	2	+	0	6	6		0	0	0
Ln (Compensation)	-		0	0	0	+	0	0	1		0	0	0
Ln (Ownership)	+	+	0	0	2		0	0	0	+	2	2	10
Committees	+		0	0	0	-	1	3	5	-	0	1	3
Committee Meeting	+		0	0	0	+	8	10	10		0	0	0
<b>Panel B: Diversity</b>													
% Independent	+		0	0	0		0	0	0		0	0	0
Independent (Blau)	+		0	0	0		0	0	0		0	0	0
% Female	-	+	0	0	2		0	0	0	+	0	0	1
Gender (Blau)	-	+	0	2	5		0	0	0	+	1	5	5
Other Directorship	+		0	0	0		0	0	0		0	0	0
Age (CV)	-		0	0	0		0	0	0	+	0	0	2
Tenure (CV)	+	+	0	0	1		0	0	0	-	2	5	5
Occupation Diver.	+		0	0	0		0	0	0		0	0	0
Ownership Diver.	-	-	6	6	6		0	0	0	-	0	0	2

**Table 10. Summarized results for fund-level cross-sectional regressions with standard errors clustered by fund objectives and fund families for the robustness test samples**

This table reports summarized results for cross-sectional regressions for the smaller samples at the fund level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund objectives and fund families. To be included in these smaller samples, each fund share class is required to have at least 48-month consecutive returns and NAVs. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then Blau’s diversity index as the independence and gender diversity measures. The result is ten regression estimates for all the independent variables with the exception of independence and gender diversity that only have five regression estimates each for each of their two measures. Coefficient estimates with consistently significant positive and negative signs are indicated by + and -, respectively, in the column labelled “Result sign”. Significant coefficient estimates with a mixture of signs are indicated by a blank cell highlighted by yellow in the same column for each cross-section. The remaining columns for each cross-section represent the number of significant coefficients at the 1%, 5% and 10% level. The sample size for the robustness test sample is 1266, 1189 and 1089 funds for year 2009, 2011 and 2013, respectively. (Detailed results corresponding to Table 10 are in Appendix D-III.)

Variables	Pred. sign	Sample 2009				Sample 2011				Sample 2013			
		Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%
<b>Panel A: Average</b>													
Board Size	+	+	1	3	4		0	0	0	+	6	10	10
Chairman	+		0	0	0		0	0	0	-	0	0	2
Age	-		0	0	0		0	0	0		0	0	0
Tenure	+		0	0	0	+	0	6	10		0	0	0
Funds Overseen	+	+	0	0	2	+	0	5	8		0	0	0
Ln (Compensation)	-		0	0	0	+	0	0	1		0	0	0
Ln (Ownership)	+	+	0	0	1		0	0	0	+	2	2	10
Committees	+		0	0	0	-	3	4	7	-	0	2	3
Committee Meeting	+		0	0	0	+	8	10	10		0	0	0
<b>Panel B: Diversity</b>													
% Independent	+		0	0	0		0	0	0		0	0	0
Independent (Blau)	+		0	0	0		0	0	0		0	0	0
% Female	-		0	0	0		0	0	0	+	0	0	1
Gender (Blau)	-	+	0	3	5		0	0	0	+	2	5	5
Other Directorship	+		0	0	0		0	0	0		0	0	0
Age (CV)	-		0	0	0		0	0	0	+	0	0	2
Tenure (CV)	+	+	0	0	2		0	0	0	-	3	5	5
Occupation Diver.	+		0	0	0		0	0	0	-	0	0	1
Ownership Diver.	-	-	0	4	4		0	0	0	+	0	0	2



**Table 11. Summarized results for fund-family level cross-sectional regressions with standard errors clustered by fund-family objectives for the robustness test sample**

This table reports summarized results for cross-sectional regressions for the smaller samples at the fund level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund-family objectives. To be included in these smaller samples, each fund share class is required to have at least 48-month consecutive returns and NAVs. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then Blau’s diversity index as the independence and gender diversity measures. The result is ten regression estimates for all the independent variables with the exception of independence and gender diversity that only have five regression estimates each for each of their two measures. Coefficient estimates with consistently significant positive and negative signs are indicated by + and -, respectively, in the column labelled “Result sign”. Significant coefficient estimates with a mixture of signs are indicated by a blank cell highlighted by yellow in the same column for each cross-section. The remaining columns for each cross-section represent the number of significant coefficients at the 1%, 5% and 10% level. The family-level sample size for the robustness test sample is 294, 308 and 299 families for year 2009, 2011 and 2013, respectively. (Detailed results corresponding to Table 11 are in Appendix E.)

Variables	Pred. sign	Sample 2009			Sample 2011			Sample 2013					
		Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%
<b>Panel A: Average</b>													
Board Size	+		0	0	0	+	0	2	4	+	4	6	8
Chairman	+		0	0	0		0	0	0		0	0	0
Age	-		0	0	0	-	1	2	2		0	0	0
Tenure	+	+	0	0	2	+	0	0	2	+	0	4	4
Funds Overseen	+	+	1	2	2	+	4	8	9		0	0	0
Ln (Compensation)	-		0	0	0	+	0	0	1		0	0	0
Ln (Ownership)	+	+	0	6	6		0	0	0	+	0	2	7
Committees	+		0	0	0	-	0	0	4	+	0	2	4
Committee Meeting	+	+	2	2	2	+	5	8	10		0	0	0
<b>Panel B: Diversity</b>													
% Independent	+		0	0	0		0	0	0	+	0	1	3
Independent (Blau)	+		0	0	0		0	0	0		0	0	0
% Female	-	+	0	0	1		0	0	0	+	0	5	5
Gender (Blau)	-		0	0	0		0	0	0	+	3	5	5
Other Directorship	+		0	0	0		0	0	0		0	0	0
Age (CV)	-	+	4	4	4		0	0	0	+	2	2	2
Tenure (CV)	+	+	1	4	4		0	0	0		0	0	0
Occupation Diver.	+		0	0	0	+	0	0	4	-	0	2	2
Ownership Diver.	-		0	0	0	-	0	0	3	-	0	2	9

## Appendix A. Industry and committee category list

This appendix reports the industry and committee categories used in this thesis.

Industry Category	Committee Category
Financial Service/Consultant/Analyst	Audit
Asset Management/Capital Advisory/Money Management	Executive/Operations
Closed-end Investment Company	Independent Directors
Hedge Fund	Qualified Legal Compliance
Mutual Fund/Trust (outside the fund complex)	Proxy Voting
Foundation/Institutional account/Endowment	Nominating and Fund Governance
Private-equity Fund/Venture Capital	Valuation/Pricing
Banking System/Bank-holding Company	Contract/Distribution
Real-Estate/REIT/Mortgage	Investment
Securities/Stock Exchange	Performance
Insurance/Retirement/Pension Fund	Compensation
Others with financial background (Broker/dealer/underwriter/private investor...)	Brokerage
Other business (HR Firm/Marketing...)	Communications, Service and Marketing
Accounting/Auditing	Other
Consumer Products (Retail/Wholesale)	
Legal/Law firm	
Government agency/NPO/Charitable Organization	
Educator/College/University/Research	
Medical/Healthcare	
Religious	
Technology/Communication/Internet	
Publication/Media/Writer	
Manufacturer/Engineering/Construction/Industrial Product	
Energy/Resources Exploration/Airline	
Transportation/Delivery	
Others with a non-business background (Arts/Agriculture...)	

### Appendix B-I. Full results for fund-level cross-sectional regressions with standard errors clustered by fund objectives

The tables in this appendix reports results for each cross-sectional regression at the fund level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund objectives. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then using Blau's diversity index as the independence and gender diversity measures. Panel A presents regression results for the sample of 1396 funds in 2009, Panel B presents regression results for the sample of 1268 funds in 2011, and Panel C presents regression results for the sample of 1130 funds in 2013. <sup>a</sup>, <sup>b</sup> and <sup>c</sup> refer to significance at the 0.10, 0.05 and 0.01 levels, respectively.

<i>Panel A: 2009 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0158 <sup>a</sup>	0.0118	0.0186 <sup>a</sup>	0.0147	0.0195 <sup>b</sup>	0.0159 <sup>b</sup>	0.0069	0.0057	0.0053	0.0042
Chairman	0.051	0.0787 <sup>a</sup>	0.0566 <sup>b</sup>	0.0882 <sup>c</sup>	0.0614 <sup>b</sup>	0.0907 <sup>c</sup>	0.0108	0.0214	0.0152	0.0247
Age	-0.0044	-0.0042	-0.003	-0.003	-0.001	-0.0019	-0.0041	-0.0041	-0.0034	-0.0033
Tenure	0.0092 <sup>b</sup>	0.0102 <sup>b</sup>	0.0082 <sup>b</sup>	0.0092 <sup>b</sup>	0.0022	0.003	0.0037 <sup>a</sup>	0.0039 <sup>a</sup>	0.0025	0.0028
100*Fund overseen	0.0002	0.0065	0.0729	0.0814	0.0681 <sup>a</sup>	0.0762 <sup>b</sup>	0.0269 <sup>a</sup>	0.0306 <sup>a</sup>	0.0159	0.0192 <sup>a</sup>
Ln (Compensation)	-0.0156	-0.0111	-0.030	-0.025	-0.018	-0.0139	-0.0124	-0.0109	-0.0115	-0.0101
Ln (Ownership)	0.0254 <sup>b</sup>	0.0269 <sup>b</sup>	0.0232 <sup>b</sup>	0.0247 <sup>c</sup>	0.0155 <sup>b</sup>	0.0168 <sup>c</sup>	0.0096 <sup>a</sup>	0.01 <sup>a</sup>	0.0111 <sup>b</sup>	0.0115 <sup>b</sup>
# of Committees	0.0042	0.0049	0.0044	0.0048	0.0022	0.0031	-0.0052 <sup>b</sup>	-0.0051 <sup>b</sup>	-0.0047	-0.0047
Ave. Meetings	0.0021	0.0024	0.0018	0.0021	0.0021	0.0024	0.0021 <sup>a</sup>	0.0023 <sup>a</sup>	0.0023	0.0024
<b>Board Diversity</b>										
% Independent	0.0438		0.0275		0.1374 <sup>a</sup>		0.0367		0.0058	
Independent (Blau)		0.333 <sup>a</sup>		0.3722 <sup>a</sup>		0.2477 <sup>a</sup>		0.0946 <sup>b</sup>		0.1124 <sup>b</sup>
% Female	0.1864		0.1495		0.1579 <sup>b</sup>		-0.0181		-0.0167	
Gender (Blau)		0.2463 <sup>a</sup>		0.1914 <sup>a</sup>		0.191 <sup>b</sup>		0.008		0.0138
Other Directorship	0.1077 <sup>b</sup>	0.1128 <sup>b</sup>	0.0638 <sup>a</sup>	0.0672 <sup>a</sup>	0.0194	0.0228	0.0351	0.0362	0.0406	0.0419
Age Diver. (CV)	0.2303	0.1162	0.0445	-0.097	-0.151	-0.2781	0.2838	0.2364	0.2616	0.2195
Tenure Diver.(CV)	0.1264	0.1138	0.0637	0.0529	0.0943	0.0844	0.0214	0.0194	0.0346 <sup>a</sup>	0.0322 <sup>a</sup>
Industry Diver.	-0.5656 <sup>a</sup>	-0.4893	-0.542	-0.452	-0.787 <sup>a</sup>	-0.7167 <sup>a</sup>	0.0125	0.0405	0.0333	0.0611
Ownership Diver.	-0.0914	-0.1087	-0.067	-0.084	-0.035	-0.0488	-0.0872	-0.0919	-0.0971 <sup>a</sup>	-0.1022 <sup>a</sup>
<b>Control Variables</b>										
Ln (Fund Age)	0.0294	0.0384	0.0030	0.0124	0.0369	0.0458	-0.0287	-0.0258	-0.0197	-0.0169
Ln (Fund size)	0.0094 <sup>b</sup>	0.0089 <sup>b</sup>	0.0103 <sup>a</sup>	0.0099 <sup>a</sup>	0.0035	0.0031	0.0109 <sup>a</sup>	0.0109 <sup>a</sup>	0.0087 <sup>a</sup>	0.0087 <sup>a</sup>
Gross Expense	0.0108	0.0109	0.0253 <sup>c</sup>	0.0255 <sup>c</sup>	0.0175 <sup>c</sup>	0.0178 <sup>c</sup>	0.003	0.0031	0.0005	0.0007
100*Turnover	-0.0024	0.0004	0.0038	0.0065	0.0139	0.0158	-0.0121 <sup>a</sup>	-0.0115 <sup>a</sup>	-0.0177 <sup>b</sup>	-0.0169 <sup>b</sup>
Prev. (CAPM)	0.0298	0.0304								
Prev. (FF3)			-0.036	-0.035						
Prev. (FF4)					-0.038	-0.0373				
Prev. (DWA)							-0.3418 <sup>c</sup>	-0.3415 <sup>c</sup>		
Prev. (TWA)									-0.4205 <sup>c</sup>	-0.4198 <sup>c</sup>
Adjusted R <sup>2</sup>	0.0200	0.0228	0.0332	0.0370	0.0387	0.0406	0.1203	0.1210	0.1645	0.1655

**Appendix B-I. Cont'd**

<i>Panel B: 2011 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0033	0.0042	0.0041	0.0048	0.0058	0.006	0.0069	0.0079	0.0069	0.0078
Chairman	-0.0063	0.0002	-0.0173	-0.0105	-0.0221	-0.0154 <sup>a</sup>	-0.0161	-0.0184	-0.0194	-0.0207
Age	-0.0005	-0.0007	0.0018	0.0017	0.0018	0.0021	-0.0025 <sup>b</sup>	-0.0026 <sup>b</sup>	-0.0018 <sup>b</sup>	-0.0019 <sup>b</sup>
Tenure	0.007 <sup>a</sup>	0.0067	0.0071 <sup>a</sup>	0.0068	0.0054	0.0051	0.0042 <sup>a</sup>	0.0041	0.0041	0.004
100*Fund overseen	0.0713 <sup>b</sup>	0.0704 <sup>b</sup>	0.0726 <sup>b</sup>	0.0714 <sup>b</sup>	0.10102 <sup>a</sup>	0.10079 <sup>a</sup>	0.03987 <sup>a</sup>	0.03821 <sup>a</sup>	0.03594 <sup>a</sup>	0.03438
Ln (Compensation)	0.015 <sup>a</sup>	0.0217 <sup>a</sup>	0.0159 <sup>c</sup>	0.0236 <sup>c</sup>	0.0205 <sup>c</sup>	0.0279 <sup>c</sup>	0.0113	0.0139	0.0089	0.0119
Ln (Ownership)	-0.009	-0.0096	-0.0067 <sup>a</sup>	-0.0074 <sup>a</sup>	-0.0004	-0.0011	-0.0045	-0.0047	-0.0028	-0.003
# of Committees	-0.0257 <sup>b</sup>	-0.026 <sup>b</sup>	-0.0422 <sup>b</sup>	-0.0425 <sup>b</sup>	-0.0502 <sup>b</sup>	-0.0501 <sup>b</sup>	-0.0229 <sup>b</sup>	-0.0233 <sup>b</sup>	-0.0219 <sup>b</sup>	-0.0223 <sup>b</sup>
Ave. Meetings	0.0052 <sup>a</sup>	0.0053 <sup>a</sup>	0.0026	0.0028	0.0002	0.0002	0.0037 <sup>a</sup>	0.0038	0.0038 <sup>a</sup>	0.0039
<b>Board Diversity</b>										
% Independent	0.4671 <sup>a</sup>		0.553 <sup>a</sup>		0.543		0.276 <sup>a</sup>		0.2912 <sup>a</sup>	
Independent (Blau)		-0.3152		-0.3687		-0.3442		0.2461 <sup>a</sup>		0.2482 <sup>a</sup>
% Female	-0.0007		0.0503		-0.122		-0.0074		-0.0009	
Gender (Blau)		-0.0617		-0.011	-0.0215		-0.1076		-0.0341	-0.0293
Other Directorship	-0.0158	-0.0229	-0.0275	-0.0356	-0.122	-0.0287	0.0015	-0.0025	0.0055	0.0013
Age Diver.(CV)	0.5687 <sup>a</sup>	0.5402 <sup>a</sup>	0.9008 <sup>a</sup>	0.8702	0.7865 <sup>b</sup>	0.7562 <sup>a</sup>	0.4066 <sup>b</sup>	0.4356 <sup>a</sup>	0.3924 <sup>b</sup>	0.415 <sup>b</sup>
Tenure Diver.(CV)	-0.0882	-0.0856	-0.0337	-0.0345	-0.0635	-0.0636	-0.0273	-0.0278	-0.0141	-0.0147
Industry Diver.	0.0856	0.101	0.0736	0.0884	0.2825	0.2723	0.0622	0.0586	0.0626	0.0606
Ownership Diver.	0.2028 <sup>a</sup>	0.2093 <sup>a</sup>	0.1776 <sup>a</sup>	0.1851 <sup>a</sup>	0.1717 <sup>a</sup>	0.1735 <sup>a</sup>	0.1066	0.1115	0.1047	0.1096
<b>Control Variables</b>										
Ln (Fund Age)	0.0682 <sup>b</sup>	0.0662 <sup>b</sup>	0.0637 <sup>b</sup>	0.0617 <sup>b</sup>	0.0401 <sup>a</sup>	0.0385	0.0071	0.0047	0.0023	0.0004
Ln (Fund size)	-0.0466 <sup>c</sup>	-0.047 <sup>b</sup>	-0.0552 <sup>c</sup>	-0.0558 <sup>c</sup>	-0.0515 <sup>c</sup>	-0.0518 <sup>c</sup>	-0.028 <sup>b</sup>	-0.0281 <sup>b</sup>	-0.0285 <sup>b</sup>	-0.0286 <sup>b</sup>
Gross Expense	-0.2158 <sup>c</sup>	-0.2156 <sup>c</sup>	-0.1957 <sup>c</sup>	-0.1951 <sup>c</sup>	-0.2142 <sup>c</sup>	-0.2132 <sup>c</sup>	-0.1253 <sup>c</sup>	-0.1239 <sup>c</sup>	-0.1295 <sup>c</sup>	-0.1282 <sup>c</sup>
100*Turnover	-0.1073 <sup>b</sup>	-0.1081 <sup>b</sup>	-0.076 <sup>c</sup>	-0.0761 <sup>c</sup>	-0.1011 <sup>c</sup>	-0.1006 <sup>c</sup>	-0.0513 <sup>b</sup>	-0.0516 <sup>b</sup>	-0.06194 <sup>b</sup>	-0.06227 <sup>b</sup>
Prev. (CAPM)	0.0085	0.0106								
Prev. (FF3)			0.2083 <sup>b</sup>	0.2116 <sup>b</sup>						
Prev. (FF4)					0.0761	0.0789				
Prev. (DWA)							-0.0539	-0.0538		
Prev. (TWA)									-0.0747	-0.0744
Adjusted R <sup>2</sup>	0.1274	0.1262	0.1283	0.1261	0.0933	0.0919	0.0851	0.0865	0.0926	0.0935

**Appendix B-I. Cont'd**

<i>Panel C: 2013 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0052	0.0028	0.0051 <sup>a</sup>	0.003	0.0027	0.001	0.0155 <sup>a</sup>	0.0142 <sup>a</sup>	0.0162 <sup>a</sup>	0.0148
Chairman	-0.009	-0.0079	-0.0004	-0.002	-0.0011	-0.0045	-0.0216 <sup>b</sup>	-0.019 <sup>a</sup>	-0.0283 <sup>a</sup>	-0.0263 <sup>a</sup>
Age	-0.0065	-0.0056	-0.003	-0.0022	-0.0023	-0.0014	-0.0022	-0.0018	-0.0024	-0.002
Tenure	-0.0015	-0.0011	-0.003	-0.0026	-0.0026	-0.0023	-0.0001	0.0002	0.0006	0.0008 <sup>a</sup>
100*Fund overseen	-0.0057	0.00159	0.0091	0.0149 <sup>a</sup>	0.0119 <sup>a</sup>	0.0169 <sup>b</sup>	-0.04652	-0.04195	-0.0508	-0.04658
Ln (Compensation)	0.0228	0.019	0.0085	0.0031	0.0084	0.0031	0.0102	0.0085	0.011	0.0096
Ln (Ownership)	-0.008	-0.0074	-0.0088	-0.0084	-0.0097	-0.0092	-0.0057	-0.0054	-0.0044	-0.0041
# of Committees	-0.0088 <sup>a</sup>	-0.0086 <sup>a</sup>	-0.0105	-0.0104	0.0149	0.0146	-0.0054 <sup>b</sup>	-0.0053 <sup>b</sup>	-0.0055 <sup>b</sup>	-0.0054 <sup>b</sup>
Ave. Meeting	0.0005	0.0003	0.0013 <sup>a</sup>	0.0016 <sup>a</sup>	0.0013 <sup>a</sup>	0.0015 <sup>a</sup>	0.0014	0.0012	0.0012	0.0011
<b>Board Diversity</b>										
% Independent	0.1847 <sup>b</sup>		0.2779 <sup>b</sup>		0.2483 <sup>b</sup>		0.101		0.071	
Independent (Blau)		0.2081 <sup>c</sup>		0.242 <sup>c</sup>		0.2071 <sup>c</sup>		0.1258		0.1006
% Female	0.0619		0.0931		0.0246		0.0433 <sup>b</sup>		0.0551 <sup>a</sup>	
Gender (Blau)		0.1932		0.2076		0.1535		0.1004 <sup>b</sup>		0.1153 <sup>c</sup>
Other Directorship	0.0868 <sup>a</sup>	0.0925 <sup>a</sup>	0.1008 <sup>b</sup>	0.1067 <sup>b</sup>	0.0788 <sup>b</sup>	0.084 <sup>b</sup>	0.0446 <sup>b</sup>	0.0411 <sup>b</sup>	0.0364	0.0335 <sup>a</sup>
Age Diver.(CV)	0.668 <sup>b</sup>	0.6774 <sup>b</sup>	0.2344	0.2486	0.2665	0.2902	-0.1432	-0.1459	-0.0665	-0.0671
Tenure Diver.(CV)	-0.0943 <sup>b</sup>	-0.1073 <sup>b</sup>	-0.123 <sup>c</sup>	-0.1349 <sup>c</sup>	-0.0844 <sup>b</sup>	-0.0966 <sup>b</sup>	-0.0023	-0.0083	-0.01	-0.0166
Industry Diver.	-0.7137	-0.7278 <sup>a</sup>	-0.8356 <sup>a</sup>	-0.8557 <sup>a</sup>	-0.6609	-0.6811	-0.2331	-0.2375	-0.3104	-0.3164
Ownership Diver.	-0.0171	-0.0238	0.0392	0.0334	0.0166	0.0102	-0.0202	-0.0234	-0.0212	-0.0244
<b>Control Variables</b>										
Ln (Fund Age)	0.0129	0.0159	0.0163	0.0193	-0.0049	-0.0022	-0.0147	-0.0132	-0.0237	-0.0222
Ln (Fund size)	0.0308	0.0308	0.0135	0.0136	0.0206	0.0207	-0.0039	-0.0039	-0.0014	-0.0015
Gross Expense	0.0398	0.0408	0.005	0.0058	0.0159	0.0168	0.005	0.0049	0.0149	0.015
100*Turnover	-0.0491 <sup>c</sup>	-0.0476 <sup>c</sup>	-0.0841 <sup>b</sup>	-0.0824 <sup>b</sup>	-0.0764 <sup>c</sup>	-0.0746 <sup>c</sup>	0.03796	0.03838	0.0365	0.03702
Prev. (CAPM)	-0.2862 <sup>c</sup>	-0.282 <sup>b</sup>								
Prev. (FF3)			-0.1713 <sup>c</sup>	-0.1668 <sup>c</sup>						
Prev. (FF4)					-0.2648 <sup>b</sup>	-0.2614 <sup>b</sup>				
Prev. (DWA)							0.4079 <sup>b</sup>	0.4088 <sup>b</sup>		
Prev. (TWA)									0.4026 <sup>b</sup>	0.403 <sup>b</sup>
Adjusted R <sup>2</sup>	0.08496	0.0888	0.0496	0.0525	0.0965	0.0981	0.1118	0.1137	0.1084	0.1104

## Appendix B-II. Full results for fund-level cross-sectional regressions with standard errors clustered by fund families

The tables in this appendix reports results for each cross-sectional regression at the fund level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund families. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then Blau's diversity index as the independence and gender diversity measures. Panel A presents regression results for the sample of 1396 funds in 2009, Panel B presents regression results for the sample of 1268 funds in 2011, and Panel C presents regression results for the sample of 1130 funds in 2013. <sup>a</sup>, <sup>b</sup> and <sup>c</sup> refer to significance at the 0.10, 0.05 and 0.01 levels, respectively.

<i>Panel A: 2009 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0151	0.0114	0.0187	0.015	0.0203 <sup>b</sup>	0.0167 <sup>b</sup>	0.0072	0.006	0.0056	0.0045
Chairman	0.0494	0.0776	0.0568	0.0888 <sup>a</sup>	0.0633 <sup>a</sup>	0.093 <sup>b</sup>	0.0116	0.0222	0.0159	0.0255
Age	-0.0041	-0.004	-0.0036	-0.0035	-0.0023	-0.0022	-0.0043	-0.0042 <sup>a</sup>	-0.0036	-0.0035
Tenure	0.0089	0.01	0.0083	0.0093	0.0025	0.0033	0.0038	0.004	0.0026	0.0029
100*Funds overseen	0.0049	0.0032	0.0734	0.0831	0.0739 <sup>a</sup>	0.083	0.0292	0.0332	0.0183	0.0218
Ln (Compensation)	-0.0155	-0.011	-0.0303 <sup>a</sup>	-0.0253	-0.0187	-0.014	-0.0125	-0.011	-0.0115	-0.0101
Ln (Ownership)	0.0256 <sup>b</sup>	0.0271 <sup>b</sup>	0.0232 <sup>b</sup>	0.0246 <sup>b</sup>	0.0153	0.0166	0.0095 <sup>a</sup>	0.0099 <sup>a</sup>	0.011 <sup>b</sup>	0.0114 <sup>b</sup>
# of Committees	0.0065	0.0064	0.0042	0.004	-0.0004	-0.0001	-0.0062	-0.0063	-0.0058	-0.0059
Ave. Meetings	0.0021	0.0024	0.0019	0.0022	0.0022 <sup>a</sup>	0.0025 <sup>a</sup>	0.0022	0.0023 <sup>a</sup>	0.0023 <sup>a</sup>	0.0024 <sup>a</sup>
<b>Board Diversity</b>										
% Independent	0.0466		0.0274		0.1345		0.0355		0.0047	
Independent (Blau)		0.3296		0.3741 <sup>b</sup>		0.2545 <sup>a</sup>		0.0972		0.1151
% Female	0.1742		0.1506		0.1719		-0.0125		-0.0111	
Gender (Blau)		0.2382		0.1958		0.208 <sup>a</sup>		0.0144		0.0203
Other Directorship	0.0466	0.1142	0.0637	0.0665	0.0169	0.0199	0.0341	0.0351	0.0396	0.0409
Age Diver.(CV)	0.2492	0.1285	0.043	-0.104	-0.1731	-0.3033	0.2753	0.227	0.2532	0.2099
Tenure Diver.(CV)	0.1211	0.1105	0.0642	0.0547	0.1003	0.0912	0.0237	0.0219	0.0369	0.0347
Industry Diver.	-0.5638	-0.4883	-0.5428	-0.4532	-0.7889 <sup>a</sup>	-0.7183	0.0116	0.0396	0.0324	0.0602
Ownership Diver.	-0.0956	-0.1112	-0.0674	-0.0828	-0.0305	-0.0435 <sup>a</sup>	-0.0852 <sup>a</sup>	-0.0899 <sup>a</sup>	-0.0952 <sup>a</sup>	-0.1001 <sup>b</sup>
<b>Control Variables</b>										
Ln (Fund Age)	0.0301	0.1285	0.0029	0.0123	-0.1731	0.045	-0.0289	-0.0261	-0.0199	-0.0172
Ln (Fund size)	0.0093	0.1105	0.0103	0.01	0.1003	0.0032	0.011 <sup>b</sup>	0.0109 <sup>b</sup>	0.0088	0.0087
Gross Expense	0.011	-0.4883	0.0253 <sup>b</sup>	0.0255 <sup>b</sup>	-0.7889	0.0175	0.0029	0.003	0.0004	0.0005
100*Turnover	-0.0016	-0.1112	0.0038	-0.0253	-0.0305	0.0147	-0.0125	-0.0118	-0.0181	-0.0173
Prev. (CAPM)	0.0306	0.0309								
Prev. (FF3)			-0.0369	-0.0358						
Prev. (FF4)					-0.0395	-0.038				
Prev. (DWA)							-0.3417 <sup>c</sup>	-0.3413 <sup>c</sup>		
Prev. (TWA)									-0.4203 <sup>c</sup>	-0.4196 <sup>c</sup>
Adjusted R <sup>2</sup>	0.0202	0.0229	0.0332	0.0370	0.0392	0.0413	0.1205	0.1212	0.1646	0.1657

**Appendix B-II. Cont'd**

<i>Panel B: 2011 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0033	0.0042	0.0042	0.0048	0.0056	0.0059	0.0068	0.0078	0.0068	0.0077
Chairman	-0.0062	0.0002	-0.0171	-0.0104	-0.0225	-0.0157	-0.0164	-0.0186	-0.0197	-0.021
Age	-0.0005	-0.0007	0.0017	0.0016	0.002	0.0024	-0.0023	-0.0024	-0.0016	-0.0017
Tenure	0.007	0.0067	0.0072	0.0069 <sup>a</sup>	0.0053	0.005	0.0041	0.0041	0.004	0.0039
100*Funds overseen	0.072 <sup>b</sup>	0.0703 <sup>a</sup>	0.0747 <sup>a</sup>	0.073 <sup>a</sup>	0.097 <sup>b</sup>	0.0964 <sup>b</sup>	0.0365	0.0345	0.0323	0.0304
Ln (Compensation)	0.015	0.0217	0.0159	0.0236	0.0204	0.0278	0.0112	0.0139	0.0088	0.0118
Ln (Ownership)	-0.0089	-0.0096	-0.0065	-0.0073	-0.0007	-0.0015	-0.0048	-0.005	-0.0031	-0.0033
# of Committees	-0.026 <sup>b</sup>	-0.026 <sup>b</sup>	-0.0432 <sup>c</sup>	-0.0432 <sup>c</sup>	-0.0482 <sup>c</sup>	-0.0479 <sup>c</sup>	-0.0213 <sup>c</sup>	-0.0215 <sup>c</sup>	-0.0201 <sup>c</sup>	-0.0203 <sup>c</sup>
Ave. Meetings	0.0052 <sup>b</sup>	0.0053 <sup>b</sup>	0.0026	0.0028	0.0003	0.0003	0.0037 <sup>b</sup>	0.0039 <sup>b</sup>	0.0039 <sup>b</sup>	0.004 <sup>b</sup>
<b>Board Diversity</b>										
% Independent	0.4672 <sup>b</sup>		0.5533 <sup>b</sup>		0.5426 <sup>b</sup>		0.2754 <sup>a</sup>		0.2905 <sup>a</sup>	
Independent (Blau)		0.3153 <sup>a</sup>		0.3682 <sup>b</sup>		0.3454 <sup>a</sup>		0.2469 <sup>b</sup>		0.2492 <sup>b</sup>
% Female	0.0012		0.0567		-0.1347		-0.0182		-0.0124	
Gender (Blau)		-0.0618		-0.006		-0.1223		-0.0464		-0.0426
Other Directorship	-0.0154	-0.0229	-0.0262	-0.0345	-0.0241	-0.0316	-0.0007	-0.005	0.0031	-0.0014
Age Diver.(CV)	0.5674	0.5402	0.8965 <sup>b</sup>	0.8669 <sup>b</sup>	0.7951	0.7658	0.4138	0.4436 <sup>a</sup>	0.4002	0.4237
Tenure Diver.(CV)	-0.0874	-0.0856	-0.0311	-0.0328	-0.0687	-0.0685	-0.0317	-0.0319	-0.0188	-0.0191
Industry Diver.	0.0824	0.1012	0.063	0.0805	0.3033	0.2953	0.08	0.0781	0.0817	0.0815
Ownership Diver.	0.2028 <sup>c</sup>	0.2093 <sup>c</sup>	0.1777 <sup>b</sup>	0.1852 <sup>b</sup>	0.1715 <sup>a</sup>	0.1731 <sup>a</sup>	0.1064 <sup>b</sup>	0.1112 <sup>b</sup>	0.1044 <sup>b</sup>	0.1093 <sup>b</sup>
<b>Control Variables</b>										
Ln (Fund Age)	0.5674 <sup>c</sup>	0.0662 <sup>b</sup>	0.0637 <sup>b</sup>	0.0617 <sup>a</sup>	0.0402	0.0385	0.4138	0.0047	0.0024	0.0001
Ln (Fund size)	-0.0874 <sup>c</sup>	-0.047 <sup>c</sup>	-0.0553 <sup>c</sup>	-0.0558 <sup>c</sup>	-0.0514 <sup>c</sup>	-0.0517 <sup>c</sup>	-0.0317 <sup>c</sup>	-0.028 <sup>c</sup>	-0.0284 <sup>c</sup>	-0.0285 <sup>c</sup>
Gross Expense	0.0824 <sup>c</sup>	-0.2156 <sup>c</sup>	-0.1961 <sup>c</sup>	-0.1954 <sup>c</sup>	-0.2134 <sup>c</sup>	-0.2123 <sup>c</sup>	0.08 <sup>c</sup>	-0.1232 <sup>c</sup>	-0.1287 <sup>c</sup>	-0.1274 <sup>c</sup>
100*Turnover	0.2028 <sup>c</sup>	-0.1081 <sup>c</sup>	-0.0757 <sup>c</sup>	-0.0762 <sup>c</sup>	-0.1007 <sup>c</sup>	-0.1002 <sup>c</sup>	0.1064 <sup>c</sup>	-0.0512 <sup>c</sup>	-0.0615 <sup>c</sup>	-0.0619 <sup>c</sup>
Prev. (CAPM)	0.0086	0.0105								
Prev. (FF3)			0.2088 <sup>c</sup>	0.2119 <sup>c</sup>						
Prev. (FF4)					0.0751	0.0778				
Prev. (DWA)							-0.0546 <sup>b</sup>	-0.0545 <sup>b</sup>		
Prev. (TWA)									-0.0755 <sup>c</sup>	-0.0753 <sup>c</sup>
Adjusted R <sup>2</sup>	0.1274	0.1262	0.1284	0.1262	0.0937	0.0924	0.0859	0.0875	0.0935	0.0946

**Appendix B-II. Cont'd**

<i>Panel C: 2013 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0055	0.0032	0.0051	0.003	0.0027	0.001	0.0156 <sup>c</sup>	0.0143 <sup>b</sup>	0.0162 <sup>c</sup>	0.0149 <sup>c</sup>
Chairman	-0.007	-0.0062	-0.0004	-0.0022	-0.001	-0.0045	-0.0212	-0.0188	-0.028	-0.0262
Age	-0.006	-0.0052	-0.0029	-0.0022	-0.0021	-0.0013	-0.0018	-0.0015	-0.0021	-0.0017
Tenure	-0.0012	-0.0009	-0.003	-0.0026	-0.0026	-0.0022	0.0004	0.0002	0.0006	0.0008
100*Funds overseen	-0.0145	-0.0068	0.0081	0.0146	0.0104	0.0161	0.0503 <sup>a</sup>	0.0456 <sup>a</sup>	0.0539 <sup>a</sup>	0.0495 <sup>a</sup>
Ln (Compensation)	0.0251	0.0207	0.0088	0.0032	0.0088	0.0034	0.0113	0.0094	0.0119	0.0103
Ln (Ownership)	-0.0098	-0.0091	-0.009	-0.0085	-0.01	-0.0094	-0.0066	-0.0063	-0.0052	-0.0049
# of Committees	0.0131	0.0126	0.0112	0.0107	0.0157	0.0151	0.0076	0.0075	0.0073	0.0071
Ave. Meetings	0.0007	0.0004	-0.0013	-0.0016	-0.0013	-0.0015	0.0015	0.0013	0.0013	0.0011
<b>Board Diversity</b>										
% Independent	-0.2243		-0.2833		-0.2558		-0.1202		-0.0869	
Independent (Blau)		0.2303		0.2428 <sup>a</sup>		0.2094		0.1356		0.1085
% Female	0.0509		0.0923		0.023		0.0392		0.0517	
Gender (Blau)		0.178		0.207 <sup>a</sup>		0.1519		0.0934		0.1096
Other Directorship	0.0856	0.0918 <sup>a</sup>	0.1001 <sup>a</sup>	0.1061 <sup>a</sup>	0.0782	0.0836	-0.0463	-0.0425	-0.0378	-0.0347
Age Diver.(CV)	0.7132 <sup>b</sup>	0.7201 <sup>b</sup>	0.2395	0.2503	0.2742	0.2946	-0.1234	-0.127	-0.0501	-0.0517
Tenure Diver.(CV)	-0.0992 <sup>b</sup>	-0.1112 <sup>b</sup>	-0.1236 <sup>b</sup>	-0.135 <sup>c</sup>	-0.0853 <sup>a</sup>	-0.097 <sup>a</sup>	-0.0045	-0.01	-0.0119	-0.018
Industry Diver.	-0.7421	-0.7542	-0.8362 <sup>a</sup>	-0.8545 <sup>a</sup>	-0.664	-0.6824	-0.2401	-0.2439	-0.3162	-0.3216
Ownership Diver.	-0.0058	-0.0131	0.0416	0.0348	0.0193	0.012	-0.0129	-0.0162	-0.0152	-0.0185
<b>Control Variables</b>										
Ln (Fund Age)	0.0132	0.0162	0.016	0.2503	-0.0051	-0.0023	-0.0152	-0.0136	-0.0241	-0.0226
Ln (Fund size)	0.0315 <sup>c</sup>	0.0315 <sup>c</sup>	0.0134	-0.135	0.0206 <sup>a</sup>	0.0207 <sup>a</sup>	-0.0039	-0.0039	-0.0014	-0.0014
Gross Expense	0.0441	0.0446	0.0054	-0.8545	0.0166	0.0171	0.0067	0.0064	0.0163	0.0162
100*Turnover	-0.0493 <sup>b</sup>	-0.0478 <sup>b</sup>	-0.0841 <sup>c</sup>	0.0348 <sup>c</sup>	-0.0764 <sup>b</sup>	-0.0746 <sup>b</sup>	0.0379 <sup>a</sup>	0.0383 <sup>a</sup>	0.0365 <sup>a</sup>	0.037 <sup>a</sup>
Prev. (CAPM)	-0.2836 <sup>c</sup>	-0.2797 <sup>c</sup>								
Prev. (FF3)			-0.1707 <sup>c</sup>	-0.1664 <sup>c</sup>						
Prev. (FF4)					-0.2645 <sup>c</sup>	-0.2611 <sup>c</sup>				
Prev. (DWA)							0.4092 <sup>c</sup>	0.4102 <sup>c</sup>		
Prev. (TWA)									0.4036 <sup>c</sup>	0.4041 <sup>c</sup>
Adjusted R <sup>2</sup>	0.08839	0.0918	0.0493	0.0521	0.0963	0.0979	0.1134	0.1151	0.1094	0.1113



### Appendix B-III. Full results for fund-level cross-sectional regressions with standard errors clustered by fund objectives and families

The tables in this appendix reports results for each cross-sectional regression at the fund level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund objectives and fund families. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then Blau's diversity index as the independence and gender diversity measures. Panel A presents regression results for the sample of 1396 funds in 2009, Panel B presents regression results for the sample of 1268 funds in 2011, and Panel C presents regression results for the sample of 1130 funds in 2013. <sup>a</sup>, <sup>b</sup> and <sup>c</sup> refer to significance at the 0.10, 0.05 and 0.01 levels, respectively.

<i>Panel A: 2009 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0158	0.0118	0.0186 <sup>a</sup>	0.0147	0.0195 <sup>b</sup>	0.0159 <sup>b</sup>	0.0069	0.0057	0.0053	0.0042
Chairman	0.051	0.0787	0.0567	0.0883 <sup>a</sup>	0.0615 <sup>a</sup>	0.0907 <sup>b</sup>	0.0108	0.0214	0.0152	0.0247
Age	-0.0044	-0.0042	-0.0036	-0.0034	-0.002	-0.0019	-0.0041 <sup>a</sup>	-0.0041 <sup>a</sup>	-0.0034	-0.0033
Tenure	0.0092	0.0102	0.0083	0.0092 <sup>a</sup>	0.0022	0.003	0.0037	0.0039	0.0025	0.0028
100*Funds overseen	0.0002	0.0065	0.073	0.0814	0.0681 <sup>a</sup>	0.0762 <sup>a</sup>	0.0269	0.0306	0.016	0.0192
Ln (Compensation)	-0.0156	-0.0111	-0.0303 <sup>a</sup>	-0.0253	-0.0185	-0.0139	-0.0124 <sup>a</sup>	-0.0109	-0.0115	-0.0101
Ln (Ownership)	0.0254 <sup>a</sup>	0.0269 <sup>a</sup>	0.0232 <sup>b</sup>	0.0247	0.0156 <sup>a</sup>	0.0168 <sup>a</sup>	0.0096 <sup>a</sup>	0.01 <sup>b</sup>	0.0111 <sup>b</sup>	0.0115 <sup>b</sup>
# of Committees	0.0042	0.0049	0.0044	0.0049	0.0022	0.0031	-0.0052	-0.0051	-0.0047	-0.0047
Ave. Meetings	0.0021	0.0024	0.0019	0.0021	0.0022	0.0024	0.0021 <sup>b</sup>	0.0023 <sup>b</sup>	0.0023 <sup>b</sup>	0.0024 <sup>a</sup>
<b>Board Diversity</b>										
% Independent	0.0438		0.0276		0.1374		0.0367		0.0058	
Independent (Blau)		0.333 <sup>a</sup>		0.3723 <sup>b</sup>		0.2477 <sup>a</sup>		0.0946		0.1124
% Female	0.1864		0.1496		0.1579		-0.0181		-0.0167	
Gender (Blau)		0.2463 <sup>a</sup>		0.1915 <sup>a</sup>		0.191 <sup>a</sup>		0.008		0.0138
Other Directorship	0.1077	0.1128	0.0639	0.0673	0.0195	0.0228	0.0351	0.0362	0.0406	0.0419
Age Diver.(CV)	0.2303	0.1162	0.0445	-0.0975	-0.1518	-0.2781	0.2838	0.2364	0.2616	0.2195
Tenure Diver.(CV)	0.1264	0.1138	0.0637	0.0529	0.0943	0.0844	0.0214	0.0194	0.0346	0.0322
Industry Diver.	-0.5656	-0.4893	-0.5427	-0.4529	-0.7874 <sup>a</sup>	-0.7167 <sup>a</sup>	0.0125	0.0405	0.0333	0.0611
Ownership Diver.	-0.0914	-0.1087	-0.0677	-0.0841	-0.0352	-0.0488	-0.0872 <sup>a</sup>	-0.0919 <sup>b</sup>	-0.0971 <sup>b</sup>	-0.1022 <sup>b</sup>
<b>Control Variables</b>										
Ln (Fund Age)	0.0294	0.0384	0.003	0.0125	0.037	0.0458	-0.0287	-0.0258	-0.0197	-0.0169
Ln (Fund size)	0.0094	0.0089	0.0103	0.0099	0.0035	0.0031	0.0109 <sup>b</sup>	0.0109 <sup>b</sup>	0.0087 <sup>a</sup>	0.0087 <sup>a</sup>
Gross Expense	0.0108	0.0109	0.0253 <sup>b</sup>	0.0256 <sup>b</sup>	0.0176 <sup>a</sup>	0.0178 <sup>a</sup>	0.003	0.0031	0.0005	0.0007
100*Turnover	-0.0024	0.0004	0.0038	0.0065	0.0139	0.0158	-0.0121	-0.0115	-0.0177	-0.0169
Prev. (CAPM)	0.0299	0.0304								
Prev. (FF3)			-0.0368	-0.0355						
Prev. (FF4)					-0.0388	-0.0373				
Prev. (DWA)							-0.3418 <sup>c</sup>	-0.3415 <sup>c</sup>		
Prev. (TWA)									-0.4205 <sup>c</sup>	-0.4198 <sup>c</sup>
Adjusted R <sup>2</sup>	0.0200	0.0228	0.0332	0.0370	0.0387	0.0406	0.1203	0.1210	0.1645	0.1655

**Appendix B-III. Cont'd**

<i>Panel B: 2011 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0033	0.0042	0.0041	0.0048	0.0058	0.006	0.0069	0.0079 <sup>a</sup>	0.0069	0.0078 <sup>a</sup>
Chairman	-0.0063	-0.0002	-0.0173	-0.0105	-0.0221	-0.0154	-0.0161	-0.0184	-0.0194	-0.0207
Age	-0.0005	-0.0007	0.0018	0.0017	0.0018	0.0021	-0.0025	-0.0026	-0.0018	-0.0019
Tenure	0.007 <sup>a</sup>	0.0067 <sup>a</sup>	0.0071 <sup>a</sup>	0.0068 <sup>a</sup>	0.0054	0.0051	0.0042 <sup>a</sup>	0.0041 <sup>a</sup>	0.0041 <sup>a</sup>	0.004 <sup>a</sup>
100*Funds overseen	0.0713 <sup>a</sup>	0.0704 <sup>a</sup>	0.0726 <sup>a</sup>	0.0714 <sup>a</sup>	0.101 <sup>b</sup>	0.1008 <sup>b</sup>	0.0399 <sup>a</sup>	0.0382 <sup>a</sup>	0.0359	0.0344
Ln (Compensation)	0.015	0.0217	0.0159	0.0236 <sup>a</sup>	0.0205	0.0279	0.0113	0.0139	0.0089	0.0119
Ln (Ownership)	-0.009	-0.0096	-0.0067	-0.0074	-0.0004	-0.0011	-0.0045	-0.0047	-0.0028	-0.003
# of Committees	-0.0257 <sup>c</sup>	-0.026 <sup>c</sup>	-0.0422 <sup>c</sup>	-0.0425 <sup>c</sup>	-0.0502 <sup>c</sup>	-0.0501 <sup>c</sup>	-0.0229 <sup>c</sup>	-0.0233 <sup>c</sup>	-0.0219 <sup>c</sup>	-0.0223 <sup>c</sup>
Ave. Meetings	0.0052 <sup>c</sup>	0.0053 <sup>c</sup>	0.0026	0.0028	0.0002	0.0002	0.0037 <sup>b</sup>	0.0038 <sup>b</sup>	0.0038 <sup>b</sup>	0.0039 <sup>b</sup>
<b>Board Diversity</b>										
% Independent	0.4671 <sup>b</sup>		0.553 <sup>b</sup>		0.543 <sup>b</sup>		0.276 <sup>a</sup>		0.2912 <sup>a</sup>	
Independent (Blau)		0.3152 <sup>b</sup>		0.3687 <sup>b</sup>		0.3442 <sup>a</sup>		0.2461 <sup>b</sup>		0.2482 <sup>b</sup>
% Female	-0.0007		0.0503		-0.122		-0.0074		-0.0009	
Gender (Blau)		-0.0617		-0.011		-0.1076		-0.0341		-0.0293
Other Directorship	-0.0158	-0.0229	-0.0275	-0.0356	-0.0215	-0.0287	0.0015	-0.0025	0.0055	0.0013
Age Diver.(CV)	0.5687	0.5402	0.9008 <sup>b</sup>	0.8702 <sup>b</sup>	0.7865	0.7562 <sup>a</sup>	0.4066 <sup>a</sup>	0.4356 <sup>a</sup>	0.3924 <sup>a</sup>	0.415 <sup>a</sup>
Tenure Diver.(CV)	-0.0882	-0.0856	-0.0337	-0.0345	-0.0635	-0.0636	-0.0273	-0.0278	-0.0141	-0.0147
Industry Diver.	0.0856	0.101	0.0736	0.0884	0.2825	0.2723	0.0622	0.0586	0.0626	0.0606
Ownership Diver.	0.2028 <sup>c</sup>	0.2093 <sup>c</sup>	0.1776 <sup>b</sup>	0.1851 <sup>b</sup>	0.1717 <sup>b</sup>	0.1735 <sup>b</sup>	0.1066 <sup>b</sup>	0.1115 <sup>b</sup>	0.1047 <sup>b</sup>	0.1096 <sup>b</sup>
<b>Control Variables</b>										
Ln (Fund Age)	0.0682 <sup>c</sup>	0.0662 <sup>b</sup>	0.0637 <sup>b</sup>	0.0617 <sup>b</sup>	0.0401	0.0385	0.0071	0.0047	0.0023	0.0014
Ln (Fund size)	-0.0466 <sup>c</sup>	-0.047 <sup>c</sup>	-0.0552 <sup>c</sup>	-0.0558 <sup>c</sup>	-0.0515 <sup>c</sup>	-0.0518 <sup>c</sup>	-0.028 <sup>c</sup>	-0.0281 <sup>c</sup>	-0.0285 <sup>c</sup>	-0.0286 <sup>c</sup>
Gross Expense	-0.2158 <sup>c</sup>	-0.2156 <sup>c</sup>	-0.1957 <sup>c</sup>	-0.1951 <sup>c</sup>	-0.2142 <sup>c</sup>	-0.2132 <sup>c</sup>	-0.1253 <sup>c</sup>	-0.1239 <sup>c</sup>	-0.1295 <sup>c</sup>	-0.1282 <sup>c</sup>
100*Turnover	-0.1073 <sup>c</sup>	-0.1081 <sup>c</sup>	-0.0755 <sup>c</sup>	-0.0761 <sup>c</sup>	-0.1011 <sup>c</sup>	-0.1006 <sup>c</sup>	-0.0513 <sup>c</sup>	-0.0516 <sup>c</sup>	-0.0619 <sup>c</sup>	-0.0623 <sup>c</sup>
Prev. (CAPM)	0.0085 <sup>c</sup>	0.0106								
Prev. (FF3)			0.2083 <sup>c</sup>	0.2116 <sup>c</sup>						
Prev. (FF4)					0.0761	0.0789				
Prev. (DWA)							-0.0539 <sup>b</sup>	-0.0538 <sup>b</sup>		
Prev. (TWA)									-0.0747 <sup>c</sup>	-0.0744 <sup>c</sup>
Adjusted R <sup>2</sup>	0.1274	0.1262	0.1283	0.1261	0.0933	0.0919	0.0851	0.0865	0.0926	0.0935

**Appendix B-III. Cont'd**

<i>Panel C: 2013 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0053	0.0029	0.005	0.003	0.0027	0.001	0.0155 <sup>c</sup>	0.0142 <sup>b</sup>	0.0161 <sup>c</sup>	0.0148 <sup>b</sup>
Chairman	-0.0084	-0.0073	-0.0006	-0.0023	-0.0013	-0.0047	-0.0219	-0.0194	-0.0286	-0.0267
Age	-0.0066 <sup>a</sup>	-0.0057 <sup>a</sup>	-0.003	-0.0022	-0.0022	-0.0014	-0.0021	-0.0018	-0.0024	-0.0019
Tenure	-0.0014	-0.001	-0.003	-0.0026	-0.0027	-0.0023	-0.0001	0.0001	0.0006	0.0007
100*Funds overseen	0.0064	0.001	0.0093	0.0151	0.012	0.0171	0.0461 <sup>a</sup>	0.0416 <sup>a</sup>	0.0504 <sup>a</sup>	0.0463 <sup>a</sup>
Ln (Compensation)	0.0228	0.0191	0.0085	0.0031	0.0084	0.0031	0.0101	0.0085	0.0109	0.0096
Ln (Ownership)	-0.008	-0.0074	-0.0088	-0.0084	-0.0097	-0.0092	-0.0057	-0.0054	-0.0044	-0.0042
# of Committees	0.0088	0.0086	0.0105	0.0104	0.0149	0.0146	0.0054	0.0053	0.0055	0.0054
Ave. Meetings	0.0005	0.0003	-0.0013	-0.0016	-0.0013	-0.0015	0.0014	0.0012	0.0012	0.0011
<b>Board Diversity</b>										
% Independent	-0.1859		-0.2774		-0.2481		-0.1002		-0.0703	
Independent (Blau)		0.2097 <sup>a</sup>		0.2413 <sup>a</sup>		0.2067		0.1247		0.0997
% Female	0.0604		0.0938		0.025		0.0443		0.056	
Gender (Blau)		0.1921 <sup>a</sup>		0.2081 <sup>a</sup>		0.1537		0.1011		0.1158
Other Directorship	0.0877 <sup>a</sup>	0.0933 <sup>a</sup>	0.1004 <sup>a</sup>	0.1063	0.0786	0.0838 <sup>a</sup>	-0.0452	-0.0417	-0.0369	-0.034
Age Diver.(CV)	0.6711 <sup>b</sup>	0.6804 <sup>b</sup>	0.233	0.2473	0.2658	0.2895	-0.1454	-0.148	-0.0683	-0.0688
Tenure Diver.(CV)	-0.0946 <sup>b</sup>	-0.1076 <sup>b</sup>	-0.1229 <sup>b</sup>	-0.1348 <sup>b</sup>	-0.0844 <sup>a</sup>	-0.0965 <sup>a</sup>	-0.0021	-0.0081	-0.0099	-0.0164
Industry Diver.	-0.7203 <sup>a</sup>	-0.7341 <sup>a</sup>	-0.8329 <sup>a</sup>	-0.853 <sup>a</sup>	-0.6596	-0.6798 <sup>a</sup>	-0.2289	-0.2334	-0.3069	-0.3131
Ownership Diver.	-0.0184	-0.0252	0.0397	0.0339	0.0168	0.0105	-0.0194	-0.0225	-0.0205	-0.0236
<b>Control Variables</b>										
Ln (Fund Age)	0.0134	0.0164	0.0161	0.0191	-0.005	-0.0023	-0.015	-0.0135	-0.024	-0.0225
Ln (Fund size)	0.0311 <sup>c</sup>	0.0311 <sup>c</sup>	0.0133	0.0134	0.0205 <sup>a</sup>	0.0206 <sup>a</sup>	-0.0041	-0.0041	-0.0016	-0.0017
Gross Expense	0.0401	0.0411	0.0048	0.0057	0.0158	0.0167	0.0048	0.0047	0.0147	0.0148
100*Turnover	-0.0493 <sup>b</sup>	-0.0477 <sup>b</sup>	-0.0841 <sup>c</sup>	-0.0824 <sup>c</sup>	-0.0763 <sup>b</sup>	-0.0745 <sup>b</sup>	0.038 <sup>b</sup>	0.0385 <sup>b</sup>	0.0366 <sup>b</sup>	0.0371 <sup>b</sup>
Prev. (CAPM)	-0.2866 <sup>c</sup>	-0.2824 <sup>c</sup>								
Prev. (FF3)			-0.1709 <sup>c</sup>	-0.1665 <sup>c</sup>						
Prev. (FF4)					-0.2648 <sup>c</sup>	-0.2613 <sup>c</sup>				
Prev. (DWA)							0.4087 <sup>c</sup>	0.4096 <sup>c</sup>		
Prev. (TWA)									0.4033 <sup>c</sup>	0.4036 <sup>c</sup>
Adjusted R <sup>2</sup>	0.08533	0.0891	0.0493	0.0521	0.0962	0.0979	0.1120	0.1139	0.1085	0.1105

### Appendix C. Full results for fund-family-level cross-sectional regressions with standard errors clustered by fund objectives

The tables in this appendix report results for each cross-sectional regression at the fund-family level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund-family objectives. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then Blau's diversity index as the independence and gender diversity measures. Panel A presents regression results for the sample of 329 fund families in 2009, Panel B presents regression results for the sample of 323 fund families in 2011, and Panel C presents regression results for the sample of 304 fund families in 2013. <sup>a</sup>, <sup>b</sup> and <sup>c</sup> refer to significance at the 0.10, 0.05 and 0.01 levels, respectively.

<i>Panel A: 2009 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	-0.0113	-0.0135	0.0204 <sup>b</sup>	0.0183 <sup>b</sup>	0.0216 <sup>c</sup>	0.0188 <sup>c</sup>	-0.0068	-0.0068	-0.0086	-0.0086
Chairman	0.1061	0.1235	0.058	0.0781	0.0363	0.0633	0.0111	-0.0098	0.0017	0.0018
Age	-0.0094	-0.0093	-0.009	-0.0086	-0.0059	-0.0054	-0.0062 <sup>a</sup>	-0.0062 <sup>a</sup>	-0.0062 <sup>a</sup>	-0.0062 <sup>a</sup>
Tenure	0.0193	0.0187 <sup>a</sup>	0.0258 <sup>b</sup>	0.0248 <sup>b</sup>	0.0213 <sup>a</sup>	0.0199 <sup>a</sup>	0.0076 <sup>a</sup>	0.0075 <sup>a</sup>	0.0066	0.0065
100*Funds overseen	0.0813	0.0903	0.1121 <sup>a</sup>	0.1184 <sup>a</sup>	0.2031 <sup>a</sup>	0.2119 <sup>a</sup>	0.0272 <sup>a</sup>	0.0279 <sup>a</sup>	0.0314	0.0325
Ln (Compensation)	-0.0009	-0.0003	-0.0185	-0.016	-0.0081	-0.005	-0.0106	-0.0105	-0.0099	-0.0099
Ln (Ownership)	0.0361 <sup>c</sup>	0.0362 <sup>c</sup>	0.0273 <sup>c</sup>	0.0269 <sup>c</sup>	0.0124 <sup>b</sup>	0.0119 <sup>c</sup>	0.0101 <sup>a</sup>	0.01 <sup>a</sup>	0.0108 <sup>a</sup>	0.0107 <sup>a</sup>
# of Committees	0.0097	0.0109	0.0129	0.015	0.0175	0.0202	-0.0003	-0.0004	-0.0028	-0.0029
Ave. Meetings	0.0063 <sup>b</sup>	0.0064 <sup>b</sup>	0.0028 <sup>a</sup>	0.0031 <sup>a</sup>	0.0025	0.0028	0.0015 <sup>b</sup>	0.0016 <sup>a</sup>	0.0023 <sup>b</sup>	0.0023 <sup>a</sup>
<b>Board Diversity</b>										
% Independent	-0.0683		0.3535		0.5022		0.0323		0.0051	
Independent (Blau)		0.2668		-0.0592		-0.1078		-0.0175		0.0115
% Female	0.1496		0.1972 <sup>b</sup>		-0.1701		0.0212		0.0371	
Gender (Blau)		0.1324		0.111 <sup>b</sup>		-0.0937		0.0032		0.0174
Other Directorship	0.2446 <sup>a</sup>	0.2509 <sup>b</sup>	0.1039	0.1107	0.0436	0.0511	0.0564	0.0556	0.0766 <sup>a</sup>	0.0762 <sup>a</sup>
Age Diver.(CV)	-0.0065	-0.0476	-0.1713	-0.2339	-0.2824	-0.3675	0.2377	0.2322	0.231	0.2258
Tenure Diver.(CV)	0.3071	0.2947	0.0848	0.0789	0.021	0.0124	0.0612	0.0604	0.0827	0.0811
Industry Diver.	-1.1427 <sup>b</sup>	-1.1352 <sup>b</sup>	-1.1721 <sup>a</sup>	-1.1603	-1.5542 <sup>b</sup>	-1.5329 <sup>b</sup>	-0.0026	0.0021	-0.0078	-0.0042
Ownership Diver.	-0.0208	-0.0187	0.0108	0.0141	0.1831 <sup>b</sup>	0.189 <sup>c</sup>	-0.0572	-0.056	-0.0566	-0.0555
<b>Control Variables</b>										
Ln (FamilyAge)	-0.1062 <sup>b</sup>	-0.1004 <sup>a</sup>	-0.0141	-0.0086	0.0487	0.0564	-0.0617 <sup>c</sup>	-0.0609 <sup>c</sup>	-0.0584 <sup>c</sup>	-0.0575 <sup>c</sup>
Ln (Family size)	0.0334 <sup>c</sup>	0.0351 <sup>c</sup>	0.006	0.0077	-0.0087	-0.0062	0.0312 <sup>c</sup>	0.0315 <sup>c</sup>	0.0298 <sup>c</sup>	0.0301 <sup>c</sup>
Gross Expense	0.0062	0.0065	0.0242 <sup>b</sup>	0.025 <sup>b</sup>	0.0232 <sup>b</sup>	0.0243 <sup>b</sup>	0.0007	0.0008 <sup>a</sup>	-0.0018 <sup>b</sup>	-0.0017 <sup>b</sup>
100*Turnover	-0.0506	-0.0498	-0.0021	-0.0018	0.0416 <sup>a</sup>	0.042	-0.0275	-0.0276	-0.0324	-0.0325
Prev. (CAPM)	0.0082	0.0068								
Prev. (FF3)			-0.0069	-0.0044						
Prev. (FF4)					0.0946	0.0975				
Prev. (DWA)							-0.3467 <sup>c</sup>	-0.3472 <sup>c</sup>		
Prev. (TWA)									-0.3976 <sup>c</sup>	-0.398 <sup>c</sup>
Adjusted R <sup>2</sup>	0.0899	0.0916	0.0827	0.0805	0.0851	0.0807	0.2024	0.2023	0.2410	0.2408

**Appendix C. Cont'd**

<i>Panel B: 2011 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.006	0.0074	-0.0002	-0.0002	0.0082	0.0076	0.0036 <sup>a</sup>	0.005 <sup>a</sup>	0.004	0.0055
Chairman	-0.0538	-0.0389	-0.0486	-0.0344	-0.1134	-0.1093	-0.0269	-0.028	-0.0321	-0.033
Age	-0.0038	-0.0029	-0.0028	-0.0019	-0.0036	-0.0017	-0.0034	-0.0032	-0.0031	-0.0029
Tenure	0.0105	0.0092	0.0126 <sup>a</sup>	0.0115	0.0169 <sup>a</sup>	0.0162	0.0054 <sup>a</sup>	0.0055 <sup>a</sup>	0.006 <sup>a</sup>	0.006 <sup>a</sup>
100*Funds overseen	0.1363 <sup>a</sup>	0.1379 <sup>a</sup>	0.0922 <sup>b</sup>	0.096 <sup>b</sup>	0.1323 <sup>a</sup>	0.1344 <sup>a</sup>	0.0532	0.0505	0.0589 <sup>a</sup>	0.0561 <sup>a</sup>
Ln (Compensation)	-0.0098	-0.0062	0.0037	0.0078	0.0044	0.0088	0.0018	0.0013	-0.0016	-0.002
Ln (Ownership)	-0.0044	-0.0049	-0.0042	-0.0044	0.0124 <sup>a</sup>	0.0129 <sup>b</sup>	-0.0038	-0.0034	-0.0034	-0.003
# of Committees	-0.0219	-0.0209	-0.0388	-0.0381	-0.0581 <sup>b</sup>	-0.0599 <sup>b</sup>	-0.019	-0.0193	-0.0199	-0.0202
Ave. Meetings	0.0065 <sup>b</sup>	0.0064 <sup>c</sup>	0.0037	0.0044 <sup>a</sup>	0.0004	0.0011 <sup>b</sup>	0.0041 <sup>c</sup>	0.0042 <sup>c</sup>	0.0044 <sup>c</sup>	0.0045 <sup>c</sup>
<b>Board Diversity</b>										
% Independent	0.804 <sup>b</sup>		0.9012 <sup>b</sup>		1.0713 <sup>b</sup>		0.3545		0.4018 <sup>a</sup>	
Independent (Blau)		0.5303 <sup>a</sup>		0.59 <sup>b</sup>		0.7799 <sup>b</sup>		0.3526 <sup>a</sup>		0.3912 <sup>b</sup>
% Female	-0.1318		0.1446		-0.1251		-0.0151		-0.0243	
Gender (Blau)		-0.1519		0.1079		0.0714		-0.0544		-0.0601
Other Directorship	0.0156	0.0011	0.0076	-0.009	0.0497	0.0394	0.0213	0.0178	0.0257	0.0216
Age Diver.(CV)	0.7279	0.6358	1.4615 <sup>c</sup>	1.3856 <sup>c</sup>	1.1236	1.1138	0.3462 <sup>b</sup>	0.3451 <sup>b</sup>	0.3162 <sup>a</sup>	0.314 <sup>a</sup>
Tenure Diver.(CV)	-0.0681	-0.0676	-0.0016	-0.0141	-0.1083	-0.1414	0.0223	0.0236	0.0182	0.0189
Industry Diver.	0.4486	0.4901	0.4906	0.5315	1.2856 <sup>b</sup>	1.2661 <sup>b</sup>	0.2858	0.3042	0.2906	0.3097
Ownership Diver.	0.1807	0.171	0.1198	0.1104	0.1148	0.0931	0.0944	0.0954	0.1132	0.1137
<b>Control Variables</b>										
Ln (Family Age)	0.0725 <sup>c</sup>	0.072 <sup>c</sup>	0.0482	0.0461	-0.0998 <sup>c</sup>	-0.1056 <sup>c</sup>	0.0147	0.0104	0.0155	0.0109
Ln (Family size)	0.0757 <sup>b</sup>	0.0757 <sup>b</sup>	0.0765 <sup>b</sup>	0.0773 <sup>b</sup>	0.0724 <sup>c</sup>	0.0749 <sup>c</sup>	0.0365 <sup>c</sup>	0.0359 <sup>c</sup>	0.0363 <sup>c</sup>	0.0357 <sup>c</sup>
Gross Expense	-0.3835 <sup>b</sup>	-0.3794 <sup>b</sup>	-0.3102 <sup>b</sup>	-0.3073 <sup>b</sup>	-0.3761 <sup>b</sup>	-0.3724 <sup>b</sup>	-0.1559 <sup>c</sup>	-0.153 <sup>c</sup>	-0.1673 <sup>c</sup>	-0.1641 <sup>c</sup>
Turnover <sup>a</sup> 100	-0.1616 <sup>b</sup>	-0.1605 <sup>b</sup>	-0.1257 <sup>b</sup>	-0.1254 <sup>b</sup>	-0.2182 <sup>c</sup>	-0.2172 <sup>c</sup>	-0.067 <sup>c</sup>	-0.0665 <sup>c</sup>	-0.0742 <sup>c</sup>	-0.0738 <sup>c</sup>
Prev. (CAPM)	0.0882	0.0965								
Prev. (FF3)			0.1507	0.1635						
Prev. (FF4)					0.0316	0.0445				
Prev. (DWA)							0.0459	0.0487		
Prev. (TWA)									0.0419	0.0454
Adjusted R <sup>2</sup>	0.2714	0.2654	0.2208	0.2108	0.2548	0.2479	0.1608	0.1634	0.1754	0.1779

**Appendix C. Cont'd**

<i>Panel C: 2013 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	-0.0022	-0.0056	-0.0022	-0.005	-0.0059	-0.008	0.012	0.0097	0.0113	0.0088
Chairman	-0.0275	-0.0179	-0.0243	-0.0246	-0.0204	-0.0253	-0.0393	-0.0309	-0.0436	-0.0354
Age	-0.0054	-0.0048	-0.0032	-0.0027	-0.0013	-0.0008	-0.0006	-0.0005	-0.0008	-0.0006
Tenure	0.0022	0.0021	-0.0023	-0.0024	-0.0036	-0.0036	0.0035 <sup>b</sup>	0.0035 <sup>b</sup>	0.0041 <sup>b</sup>	0.0039 <sup>b</sup>
100*Funds overseen	0.0188	0.0311	-0.0273	-0.0218	-0.0156	-0.0137	-0.1159	-0.1066	-0.1207	-0.1115
Ln (Compensation)	0.0042	0.0066	-0.0081	-0.0074	-0.01	-0.0099	0.0074	0.0088	0.0053	0.0071
Ln (Ownership)	-0.0125	-0.0128	-0.0137	-0.0138	-0.0145	-0.0144	-0.0096	-0.0101	-0.009	-0.0095
# of Committees	0.0007	0.0006	0.0078	0.0072	0.0038	0.003	0.0197 <sup>b</sup>	0.0198 <sup>c</sup>	0.0191 <sup>b</sup>	0.0192 <sup>b</sup>
Ave. Meetings	0.002	0.0017	-0.0031	-0.0034	-0.0028	-0.0031	0.0031 <sup>b</sup>	0.0029 <sup>b</sup>	0.0025 <sup>b</sup>	0.0023 <sup>b</sup>
<b>Board Diversity</b>										
% Independent	0.0755		0.082		0.0855		0.01		0.0497	
Independent (Blau)		0.0692		-0.0525		-0.1048		0.107		0.056
% Female	0.2244		0.3113		0.2332		0.2366 <sup>b</sup>		0.2703 <sup>b</sup>	
Gender (Blau)		0.2777		0.3454		0.2904		0.2149 <sup>c</sup>		0.2514 <sup>c</sup>
Other Directorship	0.0917 <sup>a</sup>	0.0957 <sup>a</sup>	0.1301 <sup>b</sup>	0.1306 <sup>b</sup>	0.1091 <sup>b</sup>	0.1091 <sup>c</sup>	0.0981 <sup>b</sup>	0.0951 <sup>b</sup>	0.0872 <sup>b</sup>	0.0852 <sup>b</sup>
Age Diver.(CV)	0.3927 <sup>a</sup>	0.4074 <sup>a</sup>	0.1409	0.1584	0.2287	0.2522	-0.2287	-0.2302	-0.1926	-0.192
Tenure Diver.(CV)	-0.0611	-0.0672	-0.0687	-0.0755	-0.0588	-0.0665	-0.017	-0.0185	-0.015	-0.0176
Industry Diver.	-0.3406	-0.3508	-0.794	-0.8254	-0.4777	-0.52	-0.0055	0.0018	-0.1148	-0.1077
Ownership Diver.	0.0912	0.0894	0.0745	0.0694	0.0447	0.0377	-0.0693 <sup>a</sup>	-0.0668 <sup>a</sup>	-0.0714 <sup>b</sup>	-0.0703 <sup>b</sup>
<b>Control Variables</b>										
Ln (Family Age)	0.0113	0.0111	0.006	0.006	0.0086	0.0073	-0.0005	0.0015	-0.0125	-0.011
Ln (Family Size)	0.0598	0.0574	0.057	0.0547	0.0656	0.0635	0.0024	0.0013	0.0087	0.0074
Gross Expense	0.1653	0.1636	0.1869	0.1864	0.1744	0.1753	-0.0182	-0.0213	0.0029	0.0002
100*Turnover	-0.0511 <sup>b</sup>	-0.0543 <sup>b</sup>	-0.0896 <sup>c</sup>	-0.0915 <sup>c</sup>	-0.0825 <sup>c</sup>	-0.0838 <sup>c</sup>	0.0709 <sup>a</sup>	0.0687 <sup>a</sup>	0.0689 <sup>a</sup>	0.0665 <sup>a</sup>
Prev. (CAPM)	-0.169	-0.1675								
Prev. (FF3)			-0.0558	-0.0541						
Prev. (FF4)					-0.216	-0.2137				
Prev. (DWA)							0.4313 <sup>c</sup>	0.4265 <sup>c</sup>		
Prev. (TWA)									0.4163 <sup>c</sup>	0.409 <sup>c</sup>
Adjusted R <sup>2</sup>	0.09098	0.0963	0.0731	0.0777	0.1013	0.1056	0.1938	0.1967	0.1808	0.1840

### Appendix D-I. Full results for fund-level cross-sectional regressions with standard errors clustered by fund objectives for the robustness test samples

The tables in this appendix reports results for each cross-sectional regression for the smaller sample at the fund level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund objectives. To be included, each fund share class is required to have at least 48-month consecutive returns and NAVs. Separate cross-sectional regressions are conducted for each of the five fund performance measures using simple percentages and then using Blau's diversity index as the independence and gender diversity measures. The sample consists of 1266 funds in Panel A, 1189 funds in Panel B, and 1089 funds in Panel C. <sup>a</sup>, <sup>b</sup> and <sup>c</sup> refer to significance at the 0.10, 0.05 and 0.01 levels, respectively.

<i>Panel A: 2009 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0174 <sup>b</sup>	0.0149 <sup>b</sup>	0.0114 <sup>b</sup>	0.0099 <sup>b</sup>	0.0111 <sup>c</sup>	0.0092 <sup>c</sup>	0.004 <sup>b</sup>	0.0026	0.0018	0.0004
Chairman	0.012 <sup>a</sup>	0.025	0.0255	0.0335 <sup>a</sup>	0.0287	0.0386 <sup>b</sup>	-0.0063	0.0031	0.0042	0.0128
Age	-0.002	-0.0017	-0.0029	-0.0028	-0.0007	-0.0006	-0.001	-0.0008	-0.0008	-0.0006
Tenure	0.0045 <sup>b</sup>	0.005 <sup>b</sup>	0.0032	0.0035	-0.0005	-0.0003	0.0019	0.0022	0.0015	0.0019
100 <sup>a</sup> Funds overseen	0.0324	0.0343	0.0574 <sup>a</sup>	0.0581 <sup>a</sup>	0.0531 <sup>b</sup>	0.0543 <sup>b</sup>	0.0342	0.0361	0.028 <sup>a</sup>	0.0295
Ln (Compensation)	-0.0108	-0.0079	-0.0167	-0.0148	-0.0082	-0.0059	-0.0028	-0.0009	-0.0031	-0.0013
Ln (Ownership)	0.0175 <sup>c</sup>	0.0186 <sup>c</sup>	0.0108 <sup>b</sup>	0.0115 <sup>b</sup>	0.0084 <sup>a</sup>	0.0092 <sup>a</sup>	0.0082 <sup>c</sup>	0.0089 <sup>c</sup>	0.0089 <sup>c</sup>	0.0096 <sup>c</sup>
# of Committees	-0.0091	-0.008	0.0001 <sup>b</sup>	0.0007	-0.0026	-0.0015	-0.0078 <sup>b</sup>	-0.0074 <sup>b</sup>	-0.006 <sup>c</sup>	-0.0057 <sup>c</sup>
Ave. Meetings	0.0008	0.001	0.0012	0.0013 <sup>a</sup>	0.001	0.0011	0.0011	0.0012	0.0013	0.0014
<b>Board Diversity</b>										
% Independent	0.1171 <sup>b</sup>		0.0291		0.1265 <sup>a</sup>		0.0147		-0.0182	
Independent (Blau)		0.0969		0.0955		0.0395		0.1126 <sup>a</sup>		0.1347 <sup>b</sup>
% Female	0.1035 <sup>b</sup>		0.0885 <sup>c</sup>		0.1373 <sup>b</sup>		0.0314 <sup>a</sup>		0.0264	
Gender (Blau)		0.1446 <sup>c</sup>		0.1045 <sup>a</sup>		0.1459 <sup>a</sup>		0.0515 <sup>a</sup>		0.0518 <sup>a</sup>
Other Directorship	0.0328	0.0376	0.0158	0.0184	0.0069	0.0098	0.0142	0.0163	0.021	0.0233
Age Diver.(CV)	0.243	0.1994	0.0315	0.0023	-0.0972	-0.1299	0.139	0.1004	0.1425	0.1071
Tenure Diver.(CV)	0.07	0.06	0.0849	0.0782	0.1068	0.0983	0.0291	0.0237	0.0468 <sup>a</sup>	0.0413 <sup>a</sup>
Industry Diver.	-0.5706 <sup>a</sup>	-0.5298	-0.2636	-0.2343	-0.4283	-0.4013	0.0856	0.1194	0.0882	0.1229
Ownership Diver.	-0.0083	-0.0144	-0.0222	-0.0261	-0.0016	-0.0052	-0.0907	-0.0943	-0.0919	-0.0959
<b>Control Variables</b>										
Ln (Fund Age)	-0.0226	-0.0184	-0.0477	-0.0452	-0.0171	-0.0139	-0.0232	-0.0208	-0.0134	-0.011
Ln (Fund Size)	-0.004	-0.0044	0.0065 <sup>b</sup>	0.0063 <sup>b</sup>	-0.0004	-0.0008	0.0087 <sup>a</sup>	0.0086 <sup>a</sup>	0.0094 <sup>b</sup>	0.0093 <sup>b</sup>
Gross Expense	0.0659 <sup>b</sup>	0.0647 <sup>b</sup>	0.0594 <sup>c</sup>	0.0586 <sup>c</sup>	0.0502 <sup>b</sup>	0.0491 <sup>b</sup>	0.0406 <sup>c</sup>	0.0398 <sup>c</sup>	0.042 <sup>c</sup>	0.0412 <sup>c</sup>
100 <sup>a</sup> Turnover	-0.0196	-0.0185	-0.0221	-0.0213	-0.0062	-0.0057	0.0059	0.0066	0.0057	0.0066
Prev. (CAPM)	0.4107 <sup>b</sup>	0.4079 <sup>b</sup>								
Prev. (FF3)			0.0146	0.0133						
Prev. (FF4)					0.0696 <sup>b</sup>	0.0683 <sup>b</sup>				
Prev. (DWA)							-0.0688	-0.0701		
Prev. (TWA)									-0.2004 <sup>c</sup>	-0.2016 <sup>c</sup>
Adjusted R2	0.1375	0.1381	0.0312	0.0322	0.0455	0.0453	0.0319	0.0336	0.0504	0.0527

**Appendix D-I. Cont'd**

<i>Panel B: 2011 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	-0.0013	-0.0008	-0.0011	-0.0006	-0.0026	-0.0021	0.002	0.0026	0.0018	0.0023
Chairman	0.0065	0.0065	0.0047	0.0052	0.0044	0.004	0.0053	-0.0001	-0.0019	-0.0068
Age	-0.0024	-0.0026	-0.0012	-0.0014	-0.0019	-0.002	-0.0026 <sup>b</sup>	-0.0026 <sup>b</sup>	-0.0018	-0.0018
Tenure	0.0048	0.0047	0.005	0.005	0.005	0.0049	0.0037	0.0037	0.0032	0.0032
100 <sup>a</sup> Funds overseen	0.0594 <sup>b</sup>	0.0586 <sup>b</sup>	0.0569 <sup>a</sup>	0.0564 <sup>b</sup>	0.0581 <sup>b</sup>	0.0577 <sup>b</sup>	0.0319 <sup>a</sup>	0.0309 <sup>a</sup>	0.027 <sup>b</sup>	0.026 <sup>b</sup>
Ln (Compensation)	0.0112 <sup>b</sup>	0.0125 <sup>a</sup>	0.0114 <sup>c</sup>	0.0126 <sup>b</sup>	0.0112 <sup>b</sup>	0.0115 <sup>a</sup>	0.0127 <sup>b</sup>	0.0114 <sup>b</sup>	0.0089	0.0078 <sup>a</sup>
Ln (Ownership)	-0.0055	-0.0056	-0.0056	-0.0056	-0.006	-0.0059	-0.0047	-0.0045	-0.0029	-0.0027
# of Committees	-0.0128 <sup>b</sup>	-0.0129 <sup>b</sup>	-0.0174 <sup>c</sup>	-0.0175 <sup>c</sup>	-0.0156 <sup>c</sup>	-0.0157 <sup>c</sup>	-0.0077	-0.0078	-0.0069	-0.007
Ave. Meetings	0.0032 <sup>c</sup>	0.0032 <sup>b</sup>	0.0025 <sup>b</sup>	0.0025 <sup>a</sup>	0.0029 <sup>c</sup>	0.0029 <sup>c</sup>	0.002 <sup>b</sup>	0.002 <sup>b</sup>	0.0023 <sup>b</sup>	0.0023 <sup>b</sup>
<b>Board Diversity</b>										
% Independent	0.1025		0.0927		0.0299		-0.0235		-0.0158	
Independent (Blau)		0.091		0.0793		0.0414		0.0399		-0.0399
% Female	-0.0025		-0.0249		-0.0607		-0.0429		-0.0291	
Gender (Blau)		-0.0266		-0.0445		-0.0731		-0.0347		-0.0228
Other Directorship	-0.0093	-0.0111	-0.0211	-0.0226	-0.0223	-0.023	-0.0031	-0.0031	0.0032	0.0031
Age Diver. (CV)	0.1089	0.1166	0.1804	0.1853	0.1376	0.1481	0.0649	0.1067	0.076	0.1137 <sup>a</sup>
Tenure Diver. (CV)	-0.0819	-0.0804	-0.072	-0.0695	-0.0702	-0.0662	-0.042	-0.0417	-0.0302	-0.0303
Industry Diver.	0.2007	0.2039	0.2447	0.2478	0.2808	0.2826	0.2567	0.2408	0.2912	0.2769
Ownership Diver.	0.0771	0.0798	0.0342	0.0363	0.0232	0.0243	0.0331	0.0338	0.0284	0.0292
<b>Control Variables</b>										
Ln (Fund Age)	0.0281 <sup>b</sup>	0.027 <sup>a</sup>	0.0118 <sup>b</sup>	0.0109 <sup>a</sup>	0.005	0.0041	-0.0095	-0.0104	-0.0159	-0.0167
Ln (Fund Size)	-0.0201 <sup>a</sup>	-0.0202 <sup>a</sup>	-0.0209 <sup>b</sup>	-0.0209 <sup>b</sup>	-0.0178 <sup>b</sup>	-0.0177 <sup>b</sup>	-0.0113 <sup>b</sup>	-0.0111 <sup>b</sup>	-0.0112 <sup>b</sup>	-0.0111 <sup>b</sup>
Gross Expense	-0.1521 <sup>b</sup>	-0.1515 <sup>b</sup>	-0.1332 <sup>b</sup>	-0.1326 <sup>b</sup>	-0.1177 <sup>b</sup>	-0.1172 <sup>b</sup>	-0.0925 <sup>c</sup>	-0.0916 <sup>c</sup>	-0.0973 <sup>c</sup>	-0.0964 <sup>c</sup>
100 <sup>a</sup> Turnover	-0.0789 <sup>a</sup>	-0.0793 <sup>a</sup>	-0.0652 <sup>a</sup>	-0.0656 <sup>a</sup>	-0.064 <sup>a</sup>	-0.0643 <sup>a</sup>	-0.0218	-0.0217	-0.0306	-0.0305
Prev. (CAPM)	-0.1092 <sup>c</sup>	-0.1086 <sup>c</sup>								
Prev. (FF3)			0.0246	0.0254						
Prev. (FF4)					0.097 <sup>a</sup>	0.0982 <sup>a</sup>				
Prev. (DWA)							-0.0054	-0.0045		
Prev. (TWA)									-0.0174	-0.0166
Adjusted R <sup>2</sup>	0.1552	0.1554	0.1015	0.1019	0.1121	0.1129	0.0879	0.0879	0.0980	0.0982



Appendix D-I. Cont'd

<i>Panel C: 2013 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0154 <sup>c</sup>	0.0137 <sup>b</sup>	0.0098 <sup>b</sup>	0.0084 <sup>b</sup>	0.0099 <sup>b</sup>	0.0086 <sup>b</sup>	0.0115 <sup>c</sup>	0.0104 <sup>c</sup>	0.0123 <sup>c</sup>	0.0112 <sup>c</sup>
Chairman	-0.0213	-0.0196	-0.0347	-0.0345	-0.0335	-0.0332	-0.0287	-0.0286	-0.0307	-0.0312
Age	-0.0007	-0.0003	0.0002	0.0006	0.0004	0.0007	-0.0002	0.0001	-0.0008	-0.0004
Tenure	-0.0001	0.0001	-0.0021	-0.0019	-0.002	-0.0018	0.0014 <sup>a</sup>	0.0016 <sup>a</sup>	0.0019 <sup>b</sup>	0.002 <sup>b</sup>
100 <sup>a</sup> Funds overseen	0.0196 <sup>a</sup>	0.0233 <sup>b</sup>	0.0087	0.0118	0.0064	0.0093	0.0036	0.0063	-0.0004	0.002
Ln (Compensation)	0.0018	0.001	0.005	0.0034	0.0052	0.0035	0.0048	0.0035	0.0084	0.0072
Ln (Ownership)	0.0152	0.0151	0.0109 <sup>a</sup>	0.0109 <sup>a</sup>	0.0106 <sup>a</sup>	0.0106 <sup>a</sup>	-0.0082	-0.0081	-0.0081	-0.0079
# of Committees	-0.0134 <sup>b</sup>	-0.0134 <sup>b</sup>	0.0104	0.0103	0.01	0.01	-0.0073 <sup>b</sup>	-0.0073 <sup>b</sup>	-0.0082 <sup>b</sup>	-0.008 <sup>b</sup>
Ave. Meetings	0.0007	0.0005	-0.0006	-0.0008	-0.0008	-0.001	0.0008	0.0006	0.0006	0.0004
<b>Board Diversity</b>										
% Independent	0.0297		0.0798		0.0804		0.0567		0.0429 <sup>b</sup>	
Independent (Blau)		0.0686 <sup>b</sup>		0.0878 <sup>b</sup>		0.0867 <sup>b</sup>		0.0678		0.0534 <sup>b</sup>
% Female	0.1632		0.1235		0.1293		0.0826 <sup>c</sup>		0.0801	
Gender (Blau)		0.2094 <sup>c</sup>		0.1686 <sup>a</sup>		0.1702 <sup>a</sup>		0.1268 <sup>c</sup>		0.1288
Other Directorship	0.0237	0.0261	0.0152	0.0179	0.0164	0.019	-0.0176	-0.0155	-0.0147	-0.013
Age Diver.(CV)	0.0576	0.0543	0.0653	0.0637	0.0723	0.0715	0.2884 <sup>b</sup>	0.2853 <sup>c</sup>	0.2282 <sup>b</sup>	0.2221
Tenure Diver.(CV)	-0.1172 <sup>b</sup>	-0.125 <sup>b</sup>	-0.0712 <sup>b</sup>	-0.0781 <sup>b</sup>	-0.0727 <sup>b</sup>	-0.0793 <sup>b</sup>	-0.01	-0.0159	-0.0133	-0.0196
Industry Diver.	-0.3098	-0.3224	-0.3467	-0.359	-0.3658	-0.3783	-0.0177	-0.0269	-0.0903	-0.1006
Ownership Diver.	-0.0928 <sup>c</sup>	-0.0908 <sup>c</sup>	0.0516	0.0497	0.0516	0.0501	-0.0475 <sup>c</sup>	-0.0455 <sup>c</sup>	-0.0537 <sup>c</sup>	-0.0514 <sup>c</sup>
<b>Control Variables</b>										
Ln (Fund Age)	0.0364 <sup>b</sup>	0.038 <sup>b</sup>	0.0053	0.0068	0.0082	0.0098	-0.0135	-0.0124	-0.015	-0.0139
Ln (Fund Size)	-0.0068	-0.0069	-0.0081	-0.008	-0.0099	-0.0099	-0.0043	-0.0043	-0.0039	-0.0038
Gross Expense	-0.1243 <sup>b</sup>	-0.1231 <sup>b</sup>	-0.1001 <sup>a</sup>	-0.0994 <sup>a</sup>	-0.1034 <sup>a</sup>	-0.1028 <sup>a</sup>	-0.0643 <sup>c</sup>	-0.0637 <sup>c</sup>	-0.0509 <sup>b</sup>	-0.05 <sup>b</sup>
100 <sup>a</sup> Turnover	-0.0034	-0.0028	-0.0159 <sup>a</sup>	-0.0151 <sup>a</sup>	-0.016 <sup>a</sup>	-0.0152 <sup>a</sup>	0.0278 <sup>b</sup>	0.0284 <sup>b</sup>	0.0272 <sup>a</sup>	0.028 <sup>a</sup>
Prev. (CAPM)	0.3393 <sup>c</sup>	0.3424 <sup>c</sup>								
Prev. (FF3)			0.1712 <sup>c</sup>	0.1739 <sup>c</sup>						
Prev. (FF4)					0.1983 <sup>c</sup>	0.2012 <sup>c</sup>				
Prev. (DWA)							0.3002 <sup>c</sup>	0.302 <sup>c</sup>		
Prev. (TWA)									0.2897 <sup>c</sup>	0.291 <sup>c</sup>
Adjusted R <sup>2</sup>	0.2312	0.2355	0.1145	0.1189	0.1173	0.1215	0.1597	0.1640	0.1527	0.1573

## Appendix D-II. Full results for fund-level cross-sectional regressions with standard errors clustered by fund families for the robustness test samples

The tables in this appendix report results for each cross-sectional regression for the smaller sample at the fund level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund families. To be included, each fund share class is required to have at least 48-month consecutive returns and NAVs. Separate cross-sectional regressions are conducted for five different fund performance measures using simple percentages and then Blau's diversity index as the independence and gender diversity measures. The sample consists of 1266 funds in Panel A, 1189 funds in Panel B, and 1089 funds in Panel C. <sup>a</sup>, <sup>b</sup> and <sup>c</sup> refer to significance at the 0.10, 0.05 and 0.01 levels, respectively.

<i>Panel A: 2009 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0174 <sup>b</sup>	0.0149 <sup>a</sup>	0.0114 <sup>a</sup>	0.0099	0.0111 <sup>b</sup>	0.0092 <sup>b</sup>	0.004	0.0026	0.0018	0.0004
Chairman	0.012	0.025	0.0255	0.0335	0.0287	0.0386	-0.0063	0.0031	0.0042	0.0128
Age	-0.002	-0.0017	-0.0029	-0.0028	-0.0007	-0.0006	-0.001	-0.0008	-0.0008	-0.0006
Tenure	0.0045	0.005	0.0032	0.0035	-0.0005	-0.0003	0.0019	0.0022	0.0015	0.0019
100 <sup>a</sup> Funds overseen	0.0324	0.0343	0.0574	0.0581	0.0531 <sup>a</sup>	0.0543 <sup>a</sup>	0.0342	0.0361	0.028	0.0295
Ln (Compensation)	-0.0108	-0.0079	-0.0167	-0.0148	-0.0082	-0.0059	-0.0028	-0.0009	-0.0031	-0.0013
Ln (Ownership)	0.0175 <sup>a</sup>	0.0186 <sup>a</sup>	0.0108	0.0115	0.0084	0.0092	0.0082	0.0089	0.0089	0.0096
# of Committees	-0.0091	-0.008	0.0001	0.0007	-0.0026	-0.0015	-0.0078	-0.0074	-0.006	-0.0057
Ave. Meetings	0.0008	0.001	0.0012	0.0013	0.001	0.0011	0.0011	0.0012	0.0013	0.0014
<b>Board Diversity</b>										
% Independent	0.1171		0.0291		0.1265		0.0147		-0.0182	
Independent (Blau)		0.0969		0.0955		0.0395		0.1126		0.1347
% Female	0.1035 <sup>a</sup>		0.0885 <sup>a</sup>		0.1373		0.0314		0.0264	
Gender (Blau)		0.1446 <sup>a</sup>		0.1045 <sup>a</sup>		0.1459 <sup>a</sup>		0.0515 <sup>b</sup>		0.0518 <sup>b</sup>
Other Directorship	0.0328	0.0376	0.0158	0.0184	0.0069	0.0098	0.0142	0.0163	0.021	0.0233
Age Diver.(CV)	0.243	0.1994	0.0315	0.0023	-0.0972	-0.1299	0.139	0.1004	0.1425	0.1071
Tenure Diver.(CV)	0.07	0.06	0.0849	0.0782	0.1068 <sup>a</sup>	0.0983	0.0291	0.0237	0.0468	0.0413
Industry Diver.	-0.5706	-0.5298	-0.2636	-0.2343	-0.4283	-0.4013	0.0856	0.1194	0.0882	0.1229
Ownership Diver.	-0.0083 <sup>c</sup>	-0.0144 <sup>c</sup>	-0.0222	-0.0261	-0.0016	-0.0052	-0.0907 <sup>b</sup>	-0.0943 <sup>c</sup>	-0.0919 <sup>c</sup>	-0.0959 <sup>c</sup>
<b>Control Variables</b>										
Ln (Fund Age)	-0.0226	-0.0184	-0.0477 <sup>a</sup>	-0.0452 <sup>a</sup>	-0.0171	-0.0139	-0.0232	-0.0208	-0.0134	-0.011 <sup>a</sup>
Ln (Fund Size)	-0.004	-0.0044	0.0065	0.0063	-0.0004	-0.0008	0.0087 <sup>a</sup>	0.0086 <sup>a</sup>	0.0094 <sup>a</sup>	0.0093 <sup>b</sup>
Gross Expense	0.0659	0.0647	0.0594 <sup>b</sup>	0.0586 <sup>a</sup>	0.0502 <sup>b</sup>	0.0491 <sup>a</sup>	0.0406	0.0398 <sup>b</sup>	0.042 <sup>b</sup>	0.0412
100 <sup>a</sup> Turnover	-0.0196	-0.0185	-0.0221	-0.0213	-0.0062	-0.0057	0.0059	0.0066	0.0057	0.0066
Prev. (CAPM)	0.4107 <sup>c</sup>	0.4079 <sup>c</sup>								
Prev. (FF3)			0.0146	0.0133						
Prev. (FF4)					0.0696	0.0683				
Prev. (DWA)							-0.0688	-0.0701 <sup>a</sup>		
Prev. (TWA)									-0.2004 <sup>c</sup>	-0.2016 <sup>c</sup>
Adjusted R <sup>2</sup>	0.1375	0.1381	0.0312	0.0322	0.0455	0.0453	0.0319	0.0336	0.0504	0.0527

**Appendix D-II. Cont'd**

<i>Panel B: 2011 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	-0.0013	-0.0008	-0.0011	-0.0006	-0.0026	-0.0021	0.002	0.0026	0.0018	0.0023
Chairman	0.0065	0.0065	0.0047	0.0052	0.0044	0.004	0.0053	-0.0001	-0.0019	-0.0068
Age	-0.0024	-0.0026	-0.0012	-0.0014	-0.0019	-0.002	-0.0026	-0.0026	-0.0018	-0.0018
Tenure	0.0048 <sup>a</sup>	0.0047	0.005 <sup>b</sup>	0.005 <sup>a</sup>	0.005 <sup>b</sup>	0.0049 <sup>a</sup>	0.0037 <sup>b</sup>	0.0037 <sup>b</sup>	0.0032 <sup>a</sup>	0.0032 <sup>a</sup>
100 <sup>a</sup> Funds overseen	0.0594 <sup>b</sup>	0.0586 <sup>b</sup>	0.0569 <sup>b</sup>	0.0564 <sup>b</sup>	0.0581 <sup>b</sup>	0.0577 <sup>b</sup>	0.0319	0.0309	0.027	0.026
Ln (Compensation)	0.0112	0.0125	0.0114	0.0126	0.0112	0.0115	0.0127 <sup>a</sup>	0.0114	0.0089	0.0078
Ln (Ownership)	-0.0055	-0.0056	-0.0056	-0.0056	-0.006	-0.0059	-0.0047	-0.0045	-0.0029	-0.0027
# of Committees	-0.0128 <sup>a</sup>	-0.0129 <sup>a</sup>	-0.0174 <sup>b</sup>	-0.0175 <sup>c</sup>	-0.0156 <sup>b</sup>	-0.0157 <sup>a</sup>	-0.0077	-0.0078	-0.0069	-0.007
Ave. Meetings	0.0032 <sup>c</sup>	0.0032 <sup>c</sup>	0.0025 <sup>b</sup>	0.0025 <sup>b</sup>	0.0029 <sup>c</sup>	0.0029 <sup>c</sup>	0.002 <sup>c</sup>	0.002 <sup>c</sup>	0.0023 <sup>c</sup>	0.0023 <sup>c</sup>
<b>Board Diversity</b>										
% Independent	0.1025		0.0927		0.0299		-0.0235		-0.0158	
Independent (Blau)		-0.091		-0.0793		-0.0414		-0.0399		-0.0399
% Female	-0.0025		-0.0249		-0.0607		-0.0429		-0.0291	
Gender (Blau)		-0.0266		-0.0445		-0.0731		-0.0347		-0.0228
Other Directorship	-0.0093	-0.0111	-0.0211	-0.0226	-0.0223	-0.023	-0.0031	-0.0031	0.0032	0.0031
Age Diver.(CV)	0.1089	0.1166	0.1804	0.1853	0.1376	0.1481	0.0649	0.1067	0.076	0.1137
Tenure Diver.(CV)	-0.0819	-0.0804	-0.072	-0.0695	-0.0702	-0.0662	-0.042	-0.0417	-0.0302	-0.0303
Industry Diver.	0.2007	0.2039	0.2447	0.2478	0.2808	0.2826	0.2567	0.2408	0.2912	0.2769
Ownership Diver.	0.0771	0.0798	0.0342	0.0363	0.0232	0.0243	0.0331	0.0338	0.0284	0.0292
<b>Control Variables</b>										
Ln (Fund Age)	0.0281	0.027	0.0118	0.0109	0.005	0.0041	-0.0095	-0.0104	-0.0159	-0.0167
Ln (Fund Size)	-0.0201 <sup>c</sup>	-0.0202 <sup>c</sup>	-0.0209 <sup>c</sup>	-0.0209 <sup>c</sup>	-0.0178 <sup>c</sup>	-0.0177 <sup>c</sup>	-0.0113 <sup>c</sup>	-0.0111 <sup>c</sup>	-0.0112 <sup>c</sup>	-0.0111 <sup>c</sup>
Gross Expense	-0.1521 <sup>c</sup>	-0.1515 <sup>c</sup>	-0.1332 <sup>c</sup>	-0.1326 <sup>c</sup>	-0.1177 <sup>c</sup>	-0.1172 <sup>c</sup>	-0.0925 <sup>c</sup>	-0.0916 <sup>c</sup>	-0.0973 <sup>c</sup>	-0.0964 <sup>c</sup>
100 <sup>a</sup> Turnover	-0.0789 <sup>c</sup>	-0.0793 <sup>c</sup>	-0.0652 <sup>c</sup>	-0.0656 <sup>c</sup>	-0.064 <sup>c</sup>	-0.0643 <sup>c</sup>	-0.0218 <sup>a</sup>	-0.0217 <sup>a</sup>	-0.0306 <sup>b</sup>	-0.0305 <sup>c</sup>
Prev. (CAPM)	-0.1092 <sup>c</sup>	-0.1086 <sup>c</sup>								
Prev. (FF3)			0.0246	0.0254						
Prev. (FF4)					0.097 <sup>c</sup>	0.0982 <sup>c</sup>				
Prev. (DWA)							-0.0054	-0.0045		
Prev. (TWA)									-0.0174	-0.0166
Adjusted R <sup>2</sup>	0.1552	0.1554	0.1015	0.1019	0.1121	0.1129	0.0879	0.0879	0.0980	0.0982

**Appendix D-II. Cont'd**

<i>Panel C: 2013 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0154 <sup>c</sup>	0.0137 <sup>c</sup>	0.0098 <sup>b</sup>	0.0085 <sup>a</sup>	0.0099 <sup>b</sup>	0.0086 <sup>a</sup>	0.0115 <sup>c</sup>	0.0104 <sup>b</sup>	0.0123 <sup>c</sup>	0.0112 <sup>c</sup>
Chairman	-0.021	-0.0193	-0.0344	-0.0341	-0.0331	-0.0329	-0.0288	-0.0287	-0.0307	-0.0313
Age	-0.0008	-0.0003	0.0001	0.0005	0.0003	0.0007	-0.0002	0.0001	-0.0008	-0.0004
Tenure	0	0.0001	-0.0021	-0.0018	-0.002	-0.0017	0.0014	0.0016	0.0019	0.002
100 <sup>a</sup> Funds overseen	0.0193	0.0231	0.0084	0.0115	0.006	0.009	0.0037	0.0064	-0.0004	0.0021
Ln (Compensation)	0.0018	0.001	0.005	0.0034	0.0052	0.0035	0.0047	0.0035	0.0084	0.0072
Ln (Ownership)	0.0152 <sup>c</sup>	0.0151 <sup>c</sup>	0.0109 <sup>a</sup>	0.0109 <sup>a</sup>	0.0106 <sup>a</sup>	0.0106	0.0082 <sup>a</sup>	0.0081 <sup>a</sup>	0.0081 <sup>a</sup>	0.0079 <sup>a</sup>
# of Committees	-0.0134 <sup>b</sup>	-0.0134 <sup>a</sup>	0.0103	0.0103	0.01	0.01	0.0073	0.0073	-0.0082 <sup>a</sup>	-0.008
Ave. Meetings	0.0007	0.0005	-0.0006	-0.0008	-0.0008	-0.0009	0.0008	0.0006	0.0006	0.0004
<b>Board Diversity</b>										
% Independent	-0.0301		-0.0804		-0.0811		-0.0565		-0.0428	
Independent (Blau)		0.0692		0.0888		0.0876		0.0676		0.0533
% Female	0.1626 <sup>a</sup>		0.1225		0.1284		0.0828		0.0801	
Gender (Blau)		0.209 <sup>c</sup>		0.1679 <sup>b</sup>		0.1695 <sup>b</sup>		0.1269 <sup>b</sup>		0.1288 <sup>b</sup>
Other Directorship	0.0241	0.0265	0.0158	0.0184	0.0169	0.0195	-0.0177	-0.0157	-0.0147	-0.0131
Age Diver.(CV)	0.0589	0.0556	0.0632	0.0617	0.0704	0.0696	0.2889 <sup>a</sup>	0.2857 <sup>a</sup>	0.2283	0.2223
Tenure Diver.(CV)	-0.1173 <sup>c</sup>	-0.1252 <sup>c</sup>	-0.0713 <sup>b</sup>	-0.0782	-0.0729 <sup>b</sup>	-0.0795 <sup>b</sup>	-0.01	-0.0159	-0.0133	-0.0196
Industry Diver.	-0.3125	-0.325	-0.3507	-0.3629	-0.3695	-0.3819	-0.0168	-0.0261	-0.09	-0.1004
Ownership Diver.	-0.0923 <sup>a</sup>	-0.0903 <sup>a</sup>	-0.0508	-0.0489	-0.0509	-0.0493	0.0477	0.0456	0.0538	0.0515
<b>Control Variables</b>										
Ln (Fund Age)	0.0366 <sup>a</sup>	0.0382 <sup>b</sup>	0.0056	0.0071	0.0085	0.01	-0.0136	-0.0124	-0.015	-0.0139
Ln (Fund Size)	-0.0067	-0.0068	-0.0078	-0.0078	-0.0097	-0.0097	-0.0044	-0.0043	-0.0039	-0.0039
Gross Expense	-0.1241 <sup>c</sup>	-0.123 <sup>c</sup>	-0.0999 <sup>c</sup>	-0.0992 <sup>c</sup>	-0.1031 <sup>c</sup>	-0.1026 <sup>c</sup>	-0.0644 <sup>c</sup>	-0.0637 <sup>c</sup>	-0.051 <sup>c</sup>	-0.05 <sup>c</sup>
100 <sup>a</sup> Turnover	-0.0035	-0.0028	-0.016	-0.0153	-0.0161	-0.0153	0.0278 <sup>c</sup>	0.0284 <sup>c</sup>	0.0272 <sup>b</sup>	0.028 <sup>b</sup>
Prev. (CAPM)	0.3389 <sup>c</sup>	0.3421 <sup>c</sup>								
Prev. (FF3)			0.1705 <sup>c</sup>	0.1732 <sup>c</sup>						
Prev. (FF4)					0.1976 <sup>c</sup>	0.2004 <sup>c</sup>				
Prev. (DWA)							0.3006 <sup>c</sup>	0.3024 <sup>c</sup>		
Prev. (TWA)									0.2898 <sup>c</sup>	0.2912 <sup>c</sup>
Adjusted R <sup>2</sup>	0.2312	0.2355	0.1143	0.1187	0.1171	0.1212	0.1595	0.1638	0.1525	0.1571

**Appendix D-III. Full results for fund-level cross-sectional regressions with standard errors clustered by fund objectives and families for the robustness test samples**

The tables in this appendix report results for each cross-sectional regression for the smaller sample at the fund level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund objectives and fund families. To be included, each fund share class is required to have at least 48-month consecutive returns and NAVs. Separate cross-sectional regressions are conducted for five different fund performance measures using simple percentages and then Blau's diversity index as the independence and gender diversity measures. The sample consists of 1266 funds in Panel A, 1189 funds in Panel B, and 1089 funds in Panel C. <sup>a</sup>, <sup>b</sup> and <sup>c</sup> refer to significance at the 0.10, 0.05 and 0.01 levels, respectively.

<i>Panel A: 2009 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0174 <sup>b</sup>	0.0149	0.0114 <sup>a</sup>	0.0099	0.0111 <sup>c</sup>	0.0092 <sup>b</sup>	0.004	0.0026	0.0018	0.0004
Chairman	0.012	0.025	0.0255	0.0335	0.0287	0.0386	-0.0063	0.0031	0.0042	0.0128
Age	-0.002	-0.0017	-0.0029	-0.0028	-0.0007	-0.0006	-0.001	-0.0008	-0.0008	-0.0006
Tenure	0.0045	0.005	0.0032	0.0035	-0.0005	-0.0003	0.0019	0.0022	0.0015	0.0019
100 <sup>a</sup> Funds overseen	0.0324	0.0343	0.0574	0.0581	0.0531 <sup>a</sup>	0.0543 <sup>a</sup>	0.0342	0.0361	0.028	0.0295
Ln (Compensation)	-0.0108	-0.0079	-0.0167	-0.0148	-0.0082	-0.0059	-0.0028	-0.0009	-0.0031	-0.0013
Ln (Ownership)	0.0175	0.0186 <sup>a</sup>	0.0108	0.0115	0.0084	0.0092	0.0082	0.0089	0.0089	0.0096
# of Committees	-0.0091	-0.008	0.0001	0.0007	-0.0026	-0.0015	-0.0078	-0.0074	-0.006	-0.0057
Ave. Meetings	0.0008	0.001	0.0012	0.0013	0.001	0.0011	0.0011	0.0012	0.0013	0.0014
<b>Board Diversity</b>										
% Independent	0.1171		0.0291		0.1265		0.0147		-0.0182	
Independent (Blau)		0.0969		0.0955		0.0395		0.1126		0.1347
% Female	0.1035		0.0885		0.1373		0.0314		0.0264	
Gender (Blau)		0.1446 <sup>b</sup>		0.1045 <sup>a</sup>		0.1459 <sup>b</sup>		0.0515 <sup>b</sup>		0.0518 <sup>a</sup>
Other Directorship	0.0328	0.0376	0.0158	0.0184	0.0069	0.0098	0.0142	0.0163	0.021	0.0233
Age Diver.(CV)	0.243	0.1994	0.0315	0.0023	-0.0972	-0.1299	0.139	0.1004	0.1425	0.1071
Tenure Diver.(CV)	0.07	0.06	0.0849	0.0782	0.1068 <sup>a</sup>	0.0983 <sup>a</sup>	0.0291	0.0237	0.0468	0.0413
Industry Diver.	-0.5706	-0.5298	-0.2636	-0.2343	-0.4283	-0.4013	0.0856	0.1194	0.0882	0.1229
Ownership Diver.	-0.0083	-0.0144	-0.0222	-0.0261	-0.0016	-0.0052	-0.0907 <sup>b</sup>	-0.0943 <sup>b</sup>	-0.0919 <sup>b</sup>	-0.0959 <sup>b</sup>
<b>Control Variables</b>										
Ln (Fund Age)	-0.0226	-0.0184	-0.0477 <sup>a</sup>	-0.0452 <sup>a</sup>	-0.0171	-0.0139	-0.0232	-0.0208	-0.0134	-0.011
Ln (Fund Size)	-0.004	-0.0044	0.0065	0.0063	-0.0004	-0.0008	0.0087 <sup>a</sup>	0.0086 <sup>a</sup>	0.0094 <sup>a</sup>	0.0093 <sup>a</sup>
Gross Expense	0.0659	0.0647	0.0594 <sup>a</sup>	0.0586 <sup>a</sup>	0.0502 <sup>b</sup>	0.0491 <sup>b</sup>	0.0406 <sup>b</sup>	0.0398 <sup>b</sup>	0.042 <sup>b</sup>	0.0412 <sup>b</sup>
100 <sup>a</sup> Turnover	-0.0196	-0.0185	-0.0221	-0.0213	-0.0062	-0.0057	0.0059	0.0066	0.0057	0.0066
Prev. (CAPM)	0.4107 <sup>c</sup>	0.4079 <sup>c</sup>								
Prev. (FF3)			0.0146	0.0133						
Prev. (FF4)					0.0696	0.0683				
Prev. (DWA)							-0.0688 <sup>a</sup>	-0.0701 <sup>a</sup>		
Prev. (TWA)									-0.2004 <sup>c</sup>	-0.2016 <sup>c</sup>
Adjusted R <sup>2</sup>	0.1375	0.1381	0.0312	0.0322	0.0455	0.0453	0.0319	0.0336	0.0504	0.0527

Appendix D-III. Cont'd

<i>Panel B: 2011 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	-0.0013	-0.0008	-0.0011	-0.0006	-0.0026	-0.0021	0.002	0.0026	0.0018	0.0023
Chairman	0.0065	0.0065	0.0047	0.0052	0.0044	0.004	0.0053	-0.0001	-0.0019	-0.0068
Age	-0.0024	-0.0026	-0.0012	-0.0014	-0.0019	-0.002	-0.0026	-0.0026	-0.0018	-0.0018
Tenure	0.0048 <sup>a</sup>	0.0047 <sup>a</sup>	0.005 <sup>b</sup>	0.005 <sup>b</sup>	0.005 <sup>b</sup>	0.0049 <sup>b</sup>	0.0037 <sup>b</sup>	0.0037 <sup>b</sup>	0.0032 <sup>a</sup>	0.0032 <sup>a</sup>
100 <sup>a</sup> Funds overseen	0.0594 <sup>a</sup>	0.0586 <sup>b</sup>	0.0569 <sup>b</sup>	0.0564 <sup>b</sup>	0.0581 <sup>b</sup>	0.0577 <sup>b</sup>	0.0319 <sup>a</sup>	0.0309 <sup>a</sup>	0.027	0.026
Ln (Compensation)	0.0112	0.0125	0.0114	0.0126	0.0112	0.0115	0.0127 <sup>a</sup>	0.0114	0.0089	0.0078
Ln (Ownership)	-0.0055	-0.0056	-0.0056	-0.0056	-0.006	-0.0059	-0.0047	-0.0045	-0.0029	-0.0027
# of Committees	-0.0128 <sup>a</sup>	-0.0129 <sup>a</sup>	-0.0174 <sup>c</sup>	-0.0175 <sup>c</sup>	-0.0156 <sup>c</sup>	-0.0157 <sup>b</sup>	-0.0077	-0.0078 <sup>a</sup>	-0.0069	-0.007
Ave. Meetings	0.0032 <sup>c</sup>	0.0032 <sup>c</sup>	0.0025 <sup>b</sup>	0.0025 <sup>b</sup>	0.0029 <sup>c</sup>	0.0029 <sup>c</sup>	0.002 <sup>c</sup>	0.002 <sup>c</sup>	0.0023 <sup>c</sup>	0.0023 <sup>c</sup>
<b>Board Diversity</b>										
% Independent	0.1025		0.0927		0.0299		-0.0235		-0.0158	
Independent (Blau)		-0.091		-0.0793		-0.0414		-0.0399		-0.0399
% Female	-0.0025		-0.0249		-0.0607		-0.0429		-0.0291	
Gender (Blau)		-0.0266		-0.0445		-0.0731		-0.0347		-0.0228
Other Directorship	-0.0093	-0.0111	-0.0211	-0.0226	-0.0223	-0.023	-0.0031	-0.0031	0.0032	0.0031
Age Diver.(CV)	0.1089	0.1166	0.1804	0.1853	0.1376	0.1481	0.0649	0.1067	0.076	0.1137
Tenure Diver.(CV)	-0.0819	-0.0804	-0.072	-0.0695	-0.0702	-0.0662	-0.042	-0.0417	-0.0302	-0.0303
Industry Diver.	0.2007	0.2039	0.2447	0.2478	0.2808	0.2826	0.2567	0.2408	0.2912	0.2769
Ownership Diver.	0.0771	0.0798	0.0342	0.0363	0.0232	0.0243	0.0331	0.0338	0.0284	0.0292
<b>Control Variables</b>										
Ln (Fund Age)	0.0281	0.027	0.0118	0.0109	0.005	0.0041	-0.0095	-0.0104	-0.0159	-0.0167
Ln (Fund Size)	-0.0201 <sup>c</sup>	-0.0202 <sup>c</sup>	-0.0209 <sup>c</sup>	-0.0209 <sup>c</sup>	-0.0178 <sup>c</sup>	-0.0177 <sup>c</sup>	-0.0113 <sup>c</sup>	-0.0111 <sup>c</sup>	-0.0112 <sup>c</sup>	-0.0111 <sup>c</sup>
Gross Expense	-0.1521 <sup>c</sup>	-0.1515 <sup>c</sup>	-0.1332 <sup>c</sup>	-0.1326 <sup>c</sup>	-0.1177 <sup>c</sup>	-0.1172 <sup>c</sup>	-0.0925 <sup>c</sup>	-0.0916 <sup>c</sup>	-0.0973 <sup>c</sup>	-0.0964 <sup>c</sup>
100 <sup>a</sup> Turnover	-0.0789 <sup>c</sup>	-0.0793 <sup>c</sup>	-0.0652 <sup>c</sup>	-0.0656 <sup>c</sup>	-0.064 <sup>c</sup>	-0.0643 <sup>c</sup>	-0.0218 <sup>c</sup>	-0.0217 <sup>a</sup>	-0.0306 <sup>b</sup>	-0.0305 <sup>b</sup>
Prev. (CAPM)	-0.1092 <sup>c</sup>	-0.1086 <sup>c</sup>								
Prev. (FF3)			0.0246	0.0254						
Prev. (FF4)					0.097 <sup>c</sup>	0.0982 <sup>c</sup>				
Prev. (DWA)							-0.0054	-0.0045		
Prev. (TWA)									-0.0174	-0.0166
Adjusted R <sup>2</sup>	0.1552	0.1554	0.1015	0.1019	0.1121	0.1129	0.0879	0.0879	0.0980	0.0982

**Appendix D-III. Cont'd**

<i>Panel C: 2013 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0154 <sup>c</sup>	0.0137 <sup>c</sup>	0.0098 <sup>b</sup>	0.0085 <sup>b</sup>	0.0099 <sup>b</sup>	0.0086 <sup>b</sup>	0.0115 <sup>c</sup>	0.0104 <sup>c</sup>	0.0123 <sup>c</sup>	0.0112 <sup>c</sup>
Chairman	-0.021	-0.0193	-0.0344	-0.0341	-0.0331	-0.0329	-0.0288	-0.0287	-0.0307 <sup>a</sup>	-0.0313 <sup>a</sup>
Age	-0.0008	-0.0003	0.0001	0.0005	0.0003	0.0007	-0.0002	0.0001	-0.0008	-0.0004
Tenure	0	0.0001	-0.0021	-0.0018	-0.002	-0.0017	0.0014	0.0016	0.0019	0.002
100*Funds overseen	0.0193	0.0231	0.0084	0.0115	0.006	0.009	0.0037	0.0064	-0.0004	0.0021
Ln (Compensation)	0.0018	0.001	0.005	0.0034	0.0052	0.0035	0.0047	0.0035	0.0084	0.0072
Ln (Ownership)	0.0152 <sup>c</sup>	0.0151 <sup>c</sup>	0.0109 <sup>a</sup>	0.0109 <sup>a</sup>	0.0106 <sup>a</sup>	0.0106 <sup>a</sup>	0.0082 <sup>a</sup>	0.0081 <sup>a</sup>	0.0081 <sup>a</sup>	0.0079 <sup>a</sup>
# of Committees	-0.0134 <sup>b</sup>	-0.0134 <sup>b</sup>	0.0103	0.0103	0.01	0.01	0.0073	0.0073	-0.0082 <sup>a</sup>	-0.008
Ave. Meetings	0.0007	0.0005	-0.0006	-0.0008	-0.0008	-0.0009	0.0008	0.0006	0.0006	0.0004
<b>Board Diversity</b>										
% Independent	-0.0301		-0.0804		-0.0811		-0.0565		-0.0428	
Independent (Blau)		0.0692		0.0888		0.0876		0.0676		0.0533
% Female	0.1626 <sup>a</sup>		0.1225		0.1284		0.0828		0.0801	
Gender (Blau)		0.209 <sup>c</sup>		0.1679 <sup>b</sup>		0.1695 <sup>c</sup>		0.1269 <sup>b</sup>		0.1288 <sup>b</sup>
Other Directorship	0.0241	0.0265	0.0158	0.0184	0.0169	0.0195	-0.0177	-0.0157	-0.0147	-0.0131
Age Diver.(CV)	0.0589	0.0556	0.0632	0.0617	0.0704	0.0696	0.2889 <sup>a</sup>	0.2857 <sup>a</sup>	0.2283	0.2223
Tenure Diver.(CV)	-0.1173 <sup>c</sup>	-0.1252 <sup>c</sup>	-0.0713 <sup>b</sup>	-0.0782 <sup>b</sup>	-0.0729 <sup>b</sup>	-0.0795 <sup>c</sup>	-0.01	-0.0159	-0.0133	-0.0196
Industry Diver.	-0.3125	-0.325	-0.3507	-0.3629	-0.3695	-0.3819 <sup>a</sup>	-0.0168	-0.0261	-0.09	-0.1004
Ownership Diver.	0.0923 <sup>a</sup>	0.0903 <sup>a</sup>	0.0508	0.0489	0.0509	0.0493	0.0477	0.0456	0.0538	0.0515
<b>Control Variables</b>										
Ln (Fund Age)	0.0366 <sup>b</sup>	0.0382 <sup>b</sup>	0.0056	0.0071	0.0085	0.01	-0.0136	-0.0124	-0.015	-0.0139
Ln (Fund Size)	-0.0067	-0.0068	-0.0078	-0.0078	-0.0097	-0.0097	-0.0044	-0.0043	-0.0039	-0.0039
Gross Expense	-0.1241 <sup>c</sup>	-0.123 <sup>c</sup>	-0.0999 <sup>c</sup>	-0.0992 <sup>c</sup>	-0.1031 <sup>c</sup>	-0.1026 <sup>c</sup>	-0.0644 <sup>c</sup>	-0.0637 <sup>c</sup>	-0.051 <sup>c</sup>	-0.05 <sup>c</sup>
100*Turnover	-0.0035	-0.0028	-0.016	-0.0153	-0.0161	-0.0153	0.0278 <sup>c</sup>	0.0284 <sup>c</sup>	0.0272 <sup>c</sup>	0.028 <sup>c</sup>
Prev. (CAPM)	0.3389 <sup>c</sup>	0.3421 <sup>c</sup>								
Prev. (FF3)			0.1705 <sup>c</sup>	0.1732 <sup>c</sup>						
Prev. (FF4)					0.1976 <sup>c</sup>	0.2004 <sup>c</sup>				
Prev. (DWA)							0.3006 <sup>c</sup>	0.3024 <sup>c</sup>		
Prev. (TWA)									0.2898 <sup>c</sup>	0.2912 <sup>c</sup>
Adjusted R <sup>2</sup>	0.2312	0.2355	0.1143	0.1187	0.1171	0.1212	0.1595	0.1638	0.1525	0.1571

**Appendix E. Full results for fund-family-level cross-sectional regressions with standard errors clustered by fund objectives for the robustness test samples**

The tables in this appendix report results for each cross-sectional regression for the smaller sample at the fund-family level for each of 2009, 2011 and 2013 where the standard errors are clustered by fund-family objectives. To be included, each fund share class is required to have at least 48-month consecutive returns and NAVs. Separate cross-sectional regressions are conducted for five different fund performance measures using simple percentages and then Blau's diversity index as the independence and gender diversity measures. The sample consists of 294 fund families in Panel A, 308 fund families in Panel B, and 299 fund families in Panel C. <sup>a</sup>, <sup>b</sup> and <sup>c</sup> refer to significance at the 0.10, 0.05 and 0.01 levels, respectively.

<i>Panel A: 2009 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	-0.0111	-0.0124	-0.0022	-0.0021	0.0013	0.0004	-0.0059	-0.0062	-0.0085	-0.0087
Chairman	0.079	0.086	0.0593	0.0572	0.0375	0.0443	-0.0023	0.0002	0.0128	0.015
Age	-0.003	-0.0029	-0.0043	-0.0043	-0.0016	-0.0014	-0.001	-0.001	-0.0013	-0.0014
Tenure	0.0102	0.0101	0.0051	0.0053	0.0035	0.0029	0.0064 <sup>a</sup>	0.0065 <sup>a</sup>	0.0052	0.0054
100 <sup>a</sup> Funds overseen	0.0145	0.0179	-0.0027	-0.0033	0.0747 <sup>b</sup>	0.0749 <sup>c</sup>	0.0067	0.0097	0.0092	0.0124
Ln (Compensation)	0.0087	0.0091	-0.0015	-0.0016	-0.0052	-0.0037	0.0107	0.0102	0.0119	0.0113
Ln (Ownership)	0.0205 <sup>b</sup>	0.021 <sup>b</sup>	0.0111	0.0111	0.0052	0.005	0.0064 <sup>b</sup>	0.0068 <sup>b</sup>	0.006 <sup>b</sup>	0.0064 <sup>b</sup>
# of Committees	0.008	0.0088	0.0164	0.0163	0.0111	0.0121	0.0022	0.0021	0.0018	0.0017
Ave. Meetings	0.0024 <sup>c</sup>	0.0025 <sup>c</sup>	-0.0003	-0.0003	-0.0004	-0.0003	0.0004	0.0004	0.0009	0.0009
<b>Board Diversity</b>										
% Independent	-0.1401		-0.0468		0.2296		-0.2356		-0.2669	
Independent (Blau)		0.2081		0.0205		-0.1062		0.2228		0.2467
% Female	0.1721		0.0727		0.0291 <sup>a</sup>		0.1007		0.1022	
Gender (Blau)		0.1398		0.0423		0.0129		0.0687		0.0706
Other Directorship	0.1216	0.1259	0.0558	0.0566	0.0145	0.0156	0.0094	0.0117	0.0359	0.0384
Age Diver.(CV)	0.2755	0.2659	0.1842	0.1894	0.1314	0.1114	0.3928 <sup>c</sup>	0.3939 <sup>c</sup>	0.4157 <sup>c</sup>	0.4181 <sup>c</sup>
Tenure Diver.(CV)	0.1694	0.1623	0.1849 <sup>b</sup>	0.1862 <sup>b</sup>	0.1555	0.154	0.0106	0.0058	0.0451 <sup>c</sup>	0.0402 <sup>b</sup>
Industry Diver.	-0.4613	-0.4599	-0.0796	-0.0869	-0.2752	-0.259	0.1718	0.1661	0.1111	0.1038
Ownership Diver.	-0.0171	-0.016	0.0019	0.0001	0.0666	0.0695	-0.0392	-0.0392	-0.0332	-0.0336
<b>Control Variables</b>										
Ln (Fund Age)	-0.1223 <sup>c</sup>	-0.1204 <sup>c</sup>	-0.0877 <sup>b</sup>	-0.0882 <sup>c</sup>	-0.0431 <sup>c</sup>	-0.0418 <sup>b</sup>	-0.0679 <sup>c</sup>	-0.0667 <sup>c</sup>	-0.0622 <sup>c</sup>	-0.0609 <sup>c</sup>
Ln (Fund Size)	0.0208 <sup>a</sup>	0.0211 <sup>a</sup>	0.029	0.0286	0.0239	0.0248	0.0214 <sup>c</sup>	0.0213 <sup>c</sup>	0.0216 <sup>b</sup>	0.0215 <sup>b</sup>
Gross Expense	0.0624	0.0616	0.0614	0.0614	0.0948	0.0956	0.0281	0.0272	0.0268	0.0258
100 <sup>a</sup> Turnover	-0.0644 <sup>b</sup>	-0.0633 <sup>b</sup>	-0.0777 <sup>b</sup>	-0.0778 <sup>b</sup>	-0.0633 <sup>b</sup>	-0.0633 <sup>b</sup>	-0.0044	-0.0038	0.0005	0.0011
Prev. (CAPM)	0.0418	0.0391								
Prev. (FF3)			-0.2413 <sup>b</sup>	-0.2399 <sup>b</sup>						
Prev. (FF4)					-0.1283 <sup>a</sup>	-0.1313 <sup>a</sup>				
Prev. (DWA)							-0.294 <sup>c</sup>	-0.294 <sup>c</sup>		
Prev. (TWA)									-0.4114 <sup>b</sup>	-0.4124 <sup>c</sup>
Adjusted R <sup>2</sup>	0.0673	0.0692	0.1291	0.1289	0.1128	0.1103	0.1409	0.1422	0.2010	0.2023



**Appendix E. Cont'd**

<i>Panel B: 2011 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0035	0.0043	0.0031	0.0037	0.0033	0.0038	0.0028 <sup>a</sup>	0.0036 <sup>a</sup>	0.0033 <sup>b</sup>	0.004 <sup>b</sup>
Chairman	-0.0251	-0.0241	-0.0269	-0.0255	-0.0318	-0.0311	0.0004	-0.0054	-0.0128	-0.0188
Age	-0.0029	-0.0026	-0.0024	-0.0022	-0.0031	-0.003	-0.0026 <sup>b</sup>	-0.0027 <sup>c</sup>	-0.002	-0.0021
Tenure	0.0072	0.0071	0.008	0.0079	0.0077	0.0076	0.0032 <sup>a</sup>	0.0036 <sup>a</sup>	0.0036	0.004
100 <sup>a</sup> Funds overseen	0.103 <sup>c</sup>	0.1018 <sup>c</sup>	0.0763 <sup>c</sup>	0.0755 <sup>c</sup>	0.0594 <sup>b</sup>	0.0585 <sup>b</sup>	0.0347 <sup>b</sup>	0.0314 <sup>b</sup>	0.0335 <sup>a</sup>	0.0303
Ln (Compensation)	-0.0057	-0.0053	-0.0011	-0.0007	0.0009	0.0011	0.0085 <sup>a</sup>	0.0073	0.0036	0.0025
Ln (Ownership)	-0.0051	-0.005	-0.005	-0.0048	-0.0036	-0.0035	-0.0056	-0.0051	-0.0047	-0.0042
# of Committees	-0.0244	-0.0244	-0.028 <sup>a</sup>	-0.028 <sup>a</sup>	-0.0246 <sup>a</sup>	-0.0246 <sup>a</sup>	-0.0132	-0.0134	-0.0134	-0.0137
Ave. Meetings	0.003 <sup>b</sup>	0.0029 <sup>a</sup>	0.0024 <sup>c</sup>	0.0024 <sup>b</sup>	0.003 <sup>b</sup>	0.0029 <sup>a</sup>	0.0018 <sup>c</sup>	0.0017 <sup>c</sup>	0.0021 <sup>c</sup>	0.002 <sup>c</sup>
<b>Board Diversity</b>										
% Independent	0.2506		0.2054		0.1178		-0.0191		0.0016	
Independent (Blau)		-0.2123		-0.1673		-0.0996		-0.0716		-0.0877
% Female	-0.0459		-0.0065		-0.0351		-0.0543		-0.0446	
Gender (Blau)		-0.05		-0.0198		-0.0384		-0.0528		-0.0379
Other Directorship	0.0309	0.0273	0.0204	0.0169	0.0228	0.0211	0.0134	0.0162	0.0177	0.0203
Age Diver.(CV)	0.1969	0.1849	0.3573	0.3449	0.2215	0.2137	0.0609	0.0907	0.0803	0.1113
Tenure Diver.(CV)	-0.1662	-0.1665	-0.1794	-0.1796	-0.1873	-0.1864	-0.0586	-0.0557	-0.0654	-0.0641
Industry Diver.	0.5588	0.5648	0.6552	0.6628	0.6247	0.6285	0.4491 <sup>b</sup>	0.4418 <sup>b</sup>	0.4895 <sup>b</sup>	0.48 <sup>b</sup>
Ownership Diver.	0.1012	0.0985	0.0434	0.0416	0.0236	0.0222	-0.0363	-0.039 <sup>a</sup>	-0.0435 <sup>a</sup>	-0.0457 <sup>a</sup>
<b>Control Variables</b>										
Ln (Fund Age)	0.0628 <sup>a</sup>	0.0608 <sup>a</sup>	0.0375	0.0359	0.0183	0.0175	-0.0039	-0.0062	-0.0002	-0.0027
Ln (Fund Size)	-0.02	-0.02	-0.0208	-0.0208	-0.016	-0.0159	-0.0087 <sup>b</sup>	-0.0083 <sup>b</sup>	-0.0075	-0.0073
Gross Expense	-0.1828 <sup>b</sup>	-0.1807 <sup>b</sup>	-0.168 <sup>c</sup>	-0.1665 <sup>c</sup>	-0.1542 <sup>c</sup>	-0.153 <sup>c</sup>	-0.0901 <sup>b</sup>	-0.0885 <sup>b</sup>	-0.0994 <sup>b</sup>	-0.0979 <sup>b</sup>
100 <sup>a</sup> Turnover	-0.1489 <sup>a</sup>	-0.1481 <sup>a</sup>	-0.1304 <sup>b</sup>	-0.1299 <sup>b</sup>	-0.1237 <sup>b</sup>	-0.1232 <sup>b</sup>	-0.0462 <sup>a</sup>	-0.0452	-0.0481	-0.0472
Prev. (CAPM)	-0.0663	-0.0641								
Prev. (FF3)			0.0463	0.0482						
Prev. (FF4)					0.1137	0.1156				
Prev. (DWA)							0.0896	0.0885		
Prev. (TWA)									0.0864	0.0858
Adjusted R <sup>2</sup>	0.2236	0.2234	0.2203	0.2198	0.2393	0.2394	0.1638	0.1651	0.1689	0.1704

**Appendix E. Cont'd**

<i>Panel C: 2013 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0169 <sup>c</sup>	0.0141 <sup>c</sup>	0.0094 <sup>c</sup>	0.0066 <sup>b</sup>	0.0095 <sup>c</sup>	0.0068 <sup>b</sup>	0.0093 <sup>a</sup>	0.0075	0.0099 <sup>a</sup>	0.0081
Chairman	-0.0278	-0.0216	-0.0286	-0.0253	-0.0277	-0.0244	-0.0333	-0.0318	-0.0355	-0.0341
Age	0.0045	0.0047	0.0027	0.0029	0.0027	0.003	0.0028	0.0027	0.0022	0.0022
Tenure	0.0008	0.0005	-0.0017	-0.0019	-0.0015	-0.0017	0.002 <sup>b</sup>	0.0019 <sup>b</sup>	0.0024 <sup>b</sup>	0.0023 <sup>b</sup>
100 <sup>a</sup> Funds overseen	0.0497	0.0574	0.0111	0.0177	0.0097	0.0163	-0.0183	-0.0138	-0.0277	-0.0234
Ln (Compensation)	-0.0012	0.0005	0.0088	0.01	0.0089	0.0101	0.0111	0.0112	0.0114	0.0118
Ln (Ownership)	0.0215 <sup>b</sup>	0.0219 <sup>b</sup>	0.0206 <sup>a</sup>	0.021 <sup>a</sup>	0.0205 <sup>a</sup>	0.0209 <sup>a</sup>	0.0112	0.0117 <sup>a</sup>	0.0112	0.0116
# of Committees	0.0026	0.0027	-0.0026	-0.0027	-0.0036	-0.0037	0.006 <sup>a</sup>	0.0059 <sup>a</sup>	0.0058 <sup>b</sup>	0.0056 <sup>b</sup>
Ave. Meetings	0.0011	0.0008	-0.0013	-0.0016	-0.0016	-0.0019	0.001	0.0007	0.0004	0.0002
<b>Board Diversity</b>										
% Independent	0.1544 <sup>b</sup>		0.1179 <sup>a</sup>		0.1233 <sup>a</sup>		-0.0207		0.0363	
Independent (Blau)		-0.0584		-0.0563		-0.0613		0.0317		-0.0142
% Female	0.3939 <sup>b</sup>		0.4058 <sup>b</sup>		0.41 <sup>b</sup>		0.3212 <sup>b</sup>		0.3165 <sup>b</sup>	
Gender (Blau)		0.3452 <sup>c</sup>		0.3703 <sup>b</sup>		0.3703 <sup>b</sup>		0.2612 <sup>c</sup>		0.2673 <sup>c</sup>
Other Directorship	0.0351	0.0333	0.0189	0.0177	0.0216	0.0201	-0.0244	-0.0243	-0.0223	-0.023
Age Diver.(CV)	0.2219 <sup>c</sup>	0.2163 <sup>c</sup>	0.1583	0.1576	0.1652	0.1636	0.2081	0.2153	0.1818	0.1866
Tenure Diver.(CV)	-0.1322	-0.1343	-0.0937	-0.0974	-0.0983	-0.1017	-0.0227	-0.0233	-0.0195	-0.0209
Industry Diver.	-0.4709	-0.4715	-0.3338	-0.3451	-0.3497	-0.3599	-0.13 <sup>b</sup>	-0.1322 <sup>b</sup>	-0.152	-0.1555
Ownership Diver.	-0.1908 <sup>b</sup>	-0.1907 <sup>a</sup>	-0.1318 <sup>a</sup>	-0.1309 <sup>a</sup>	-0.1327 <sup>a</sup>	-0.132 <sup>a</sup>	-0.025 <sup>a</sup>	-0.0277 <sup>b</sup>	0.0294	-0.0306 <sup>a</sup>
<b>Control Variables</b>										
Ln (Fund Age)	0.0167	0.0188	-0.0019	0	0.0004	0.0025	-0.0152	-0.0122	-0.0189	-0.0167
Ln (Fund Size)	-0.0067	-0.0086	-0.0065	-0.0086	-0.0082	-0.0103	-0.0017	-0.0027	0.0011	-0.0001
Gross Expense	-0.181 <sup>a</sup>	-0.1832 <sup>a</sup>	-0.1372	-0.1399	-0.1439	-0.1467	-0.0729 <sup>b</sup>	-0.0771 <sup>b</sup>	-0.064 <sup>a</sup>	-0.0675 <sup>a</sup>
100 <sup>a</sup> Turnover	-0.0202	-0.022	-0.0235	-0.0252	-0.0236	-0.0252 <sup>a</sup>	0.0358 <sup>c</sup>	0.0348 <sup>c</sup>	0.0369 <sup>c</sup>	0.0358 <sup>c</sup>
Prev. (CAPM)	0.2793 <sup>b</sup>	0.2826 <sup>b</sup>								
Prev. (FF3)			0.1212	0.1243						
Prev. (FF4)					0.1279	0.1306				
Prev. (DWA)							0.2662 <sup>c</sup>	0.2613 <sup>c</sup>		
Prev. (TWA)									0.2279 <sup>b</sup>	0.2232 <sup>b</sup>
Adjusted R <sup>2</sup>	0.2962	0.2979	0.1885	0.1950	0.1905	0.1963	0.2299	0.2294	0.2059	0.2081

**Table 12. Summarized results for fund-family-level cross-sectional regressions with not clustered standard errors**

This table reports summarized results for cross-sectional regressions at the fund-family level for each of 2009, 2011 and 2013 where the standard errors are not clustered. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then using Blau’s diversity index as the independence and gender diversity measures. The result is ten regression estimates for all the independent variables with the exception of independence and gender diversity that only have five regression estimates each for each of their two measures. Coefficient estimates with consistently significant positive and negative signs are indicated by + and -, respectively, in the column labelled “Result sign”. Significant coefficient estimates with a mixture of signs are indicated by a yellow-highlighted blank cell in the same column for each cross-section. The remaining columns for each cross-section represent the number of significant coefficients at the 1%, 5% and 10% level, respectively (Detailed results corresponding to Table12 are in Appendix F).

Variables	Pred. sign	Sample 2009				Sample 2011				Sample 2013			
		Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%
<b>Panel A: Average</b>													
Board Size	+		0	0	0		0	0	0		0	0	0
Chairman	+		0	0	0	-	0	1	2		0	0	0
Age	-	-	0	4	4		0	0	0		0	0	0
Tenure	+	+	1	7	8	+	0	3	6		0	0	0
Funds Overseen	+		0	0	0		0	0	0	+	0	2	3
Ln (Compensation)	-		0	0	0		0	0	0	+	0	1	1
Ln (Ownership)	+	+	0	2	4		0	0	0		0	0	0
Committees	+		0	0	0	-	0	2	4		0	0	0
Committee Meeting	+		0	0	0	+	0	4	6		0	0	0
<b>Panel B: Diversity</b>													
% Independent	+		0	0	0	+	5	5	5		0	0	0
Independent (Blau)	+		0	0	0	+	2	4	4		0	0	0
% Female	-		0	0	0		0	0	0	+	0	1	2
Gender (Blau)	-		0	0	0		0	0	0	+	0	2	4
Other Directorship	+	+	0	2	2		0	0	0	+	0	0	2
Age (CV)	-		0	0	0	+	2	4	5		0	0	0
Tenure (CV)	+		0	0	0		0	0	0		0	0	0
Occupation	+	-	0	2	4	+	2	2	2	-	0	0	1
Ownership	-		0	0	0	-	0	0	1		0	0	0

## Appendix F. Full results for fund-family-level cross-sectional regressions with no clustered standard errors

The tables in this appendix report results for each cross-sectional regression at the fund-family level for each of 2009, 2011 and 2013 where the standard errors are not clustered. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then using Blau's diversity index as the independence and gender diversity measures. Panel A presents regression results for the sample of 329 fund families in 2009, Panel B presents regression results for the sample of 323 fund families in 2011, and Panel C presents regression results for the sample of 304 fund families in 2013. <sup>a</sup>, <sup>b</sup> and <sup>c</sup> refer to significance at the 0.10, 0.05 and 0.01 levels, respectively.

<i>Panel A: 2009 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	-0.0101	-0.0122	0.0211	0.0189	0.022	0.0191	-0.0061	-0.0061	-0.0078	-0.0079
Chairman	0.1104	0.1277	0.0606	0.0805	0.0376	0.0643	-0.0086	-0.0072	0.0028	0.0045
Age	-0.0094	-0.0093	-0.009	-0.0086	-0.0059	-0.0054	-0.0063 <sup>b</sup>	-0.0063 <sup>b</sup>	-0.0062 <sup>b</sup>	-0.0062 <sup>b</sup>
Tenure	0.0194 <sup>b</sup>	0.0189 <sup>b</sup>	0.0258 <sup>c</sup>	0.0249 <sup>b</sup>	0.0213 <sup>b</sup>	0.0199 <sup>b</sup>	0.0077 <sup>a</sup>	0.0075 <sup>b</sup>	0.0066	0.0065
100*Funds overseen	0.0628	0.072	0.102	0.109	0.198	0.208	0.0165	0.0173	0.0199	0.021
Ln (Compensation)	0.0004	0.001	-0.0178	-0.0154	-0.0078	-0.0047	-0.0099	-0.0098	-0.0092	-0.0092
Ln (Ownership)	0.0362 <sup>b</sup>	0.0363 <sup>b</sup>	0.0275 <sup>a</sup>	0.0272 <sup>a</sup>	0.0125	0.012	0.0103	0.0102	0.011	0.0109
# of Committees	0.0112	0.0124	0.0142	0.0162	0.0181	0.0207	0.0007	0.0007	-0.0018	-0.0018
Ave. Meetings	0.0064	0.0066	0.0029	0.0032	0.0025	0.0028	0.0016	0.0017	0.0024	0.0024
<b>Board Diversity</b>										
% Independent	-0.0756		0.3502		0.5007		0.0288		0.001	
Independent (Blau)		0.2721		-0.0572		-0.1071		-0.015		0.0144
% Female	0.1459		-0.1916		-0.167		0.0234		0.0377	
Gender (Blau)		0.1295		-0.1088		-0.0924		0.0038		0.017
Other Directorship	0.2436 <sup>b</sup>	0.25 <sup>b</sup>	0.1054	0.112	0.0444	0.0518	0.057	0.0561	0.0768	0.0764
Age Diver.(CV)	0.0112	-0.0299	-0.1641	-0.2272	-0.279	-0.3648	0.2455	0.2401	0.2399	0.2347
Tenure Diver.(CV)	0.3022	0.2899	0.0843	0.0783	0.0209	0.0123	0.0602	0.0593	0.081	0.0795
Industry Diver.	-1.1572 <sup>a</sup>	-1.1498	-1.1858	-1.1726 <sup>a</sup>	-1.5609 <sup>b</sup>	-1.5383 <sup>b</sup>	-0.0124	-0.0076	-0.0174	-0.0139
Ownership Diver.	-0.0232	-0.0212	0.009	0.0125	0.1822	0.1883	-0.0593	-0.0581	-0.0588	-0.0576
<b>Control Variables</b>										
Ln (Family Age)	-0.1056	-0.0998	-0.0148	-0.0092	0.0483	0.056	-0.0621	-0.0613	-0.0586	-0.0577
Ln (Family size)	0.0311	0.0328	0.005	0.0068	-0.0091	-0.0065	0.0301 <sup>b</sup>	0.0304 <sup>c</sup>	0.0285 <sup>c</sup>	0.0288 <sup>b</sup>
Gross Expense	0.0061	0.0063	0.0242 <sup>b</sup>	0.025 <sup>b</sup>	0.0232 <sup>c</sup>	0.0243 <sup>c</sup>	0.0006	0.0007	-0.0019	-0.0019
100*Turnover	-0.0496	-0.0488	-0.0018	-0.0016	0.0417	0.0421	-0.0271	-0.0272	-0.032 <sup>a</sup>	-0.032 <sup>a</sup>
Prev. (CAPM)	0.0094	0.0081								
Prev. (FF3)			-0.006	-0.0036						
Prev. (FF4)					0.095 <sup>a</sup>	0.0978 <sup>a</sup>				
Prev. (DWA)							-0.3474 <sup>c</sup>	-0.3481 <sup>c</sup>		
Prev. (TWA)									-0.3983 <sup>c</sup>	-0.3988 <sup>c</sup>
Adjusted R <sup>2</sup>	0.0265	0.0284	0.0199	0.0176	0.0224	0.0178	0.1471	0.1470	0.1880	0.1879

**Appendix F. Cont'd**

<i>Panel B: 2011 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0076	0.0091	0.0015	0.0015	0.0106	0.0102	0.0049	0.0065	0.0054	0.0072
Chairman	-0.0724	-0.0548	-0.0678	-0.0504	-0.1408 <sup>b</sup>	-0.1326 <sup>a</sup>	-0.0416	-0.0419	-0.0482	-0.0482
Age	-0.0038	-0.0028	-0.0029	-0.0018	-0.0037	-0.0015	-0.0034	-0.0031	-0.0031	-0.0028
Tenure	0.0112 <sup>a</sup>	0.0097 <sup>a</sup>	0.0133 <sup>b</sup>	0.012 <sup>a</sup>	0.0179 <sup>b</sup>	0.0169 <sup>b</sup>	0.0059	0.0058	0.0065	0.0064
100*Funds overseen	0.122	0.124	0.0773	0.0826	0.111	0.115	0.042	0.0391	0.0466	0.0436
Ln (Compensation)	-0.0146	-0.0102	-0.0013	0.0037	-0.0027	0.0029	-0.0021	-0.0023	-0.0058	-0.0059
Ln (Ownership)	0.0008	-0.0002	0.0011	0.0002	0.0199	0.0197	0.0001	0.0006	0.0009	0.0014
# of Committees	-0.0246	-0.0234	-0.0415 <sup>a</sup>	-0.0406 <sup>a</sup>	-0.062 <sup>b</sup>	-0.0635 <sup>b</sup>	-0.0209	-0.0212	-0.022	-0.0223
Ave. Meetings	0.0069 <sup>a</sup>	0.0068 <sup>a</sup>	0.0041	0.0048	0.001	0.0016	0.0045 <sup>b</sup>	0.0045 <sup>b</sup>	0.0048 <sup>b</sup>	0.0049 <sup>b</sup>
<b>Board Diversity</b>										
% Independent	0.9453 <sup>c</sup>		1.0473 <sup>c</sup>		1.2809 <sup>c</sup>		0.4629 <sup>c</sup>		0.5209 <sup>c</sup>	
Independent (Blau)		0.6325		0.6926 <sup>b</sup>		0.9298 <sup>c</sup>		0.4395 <sup>b</sup>		0.4863 <sup>c</sup>
% Female	-0.1555		0.1195		-0.161		-0.035		-0.0461	
Gender (Blau)		-0.1728		0.0866		0.0405		-0.0731		-0.0805
Other Directorship	0.0367	0.0186	0.0292	0.0085	0.0807	0.0648	0.0372	0.0323	0.0432	0.0375
Age Diver.(CV)	0.8063 <sup>a</sup>	0.7004	1.5411 <sup>c</sup>	1.4495 <sup>c</sup>	1.2378 <sup>b</sup>	1.2072 <sup>b</sup>	0.4043	0.3979	0.3803	0.372
Tenure Diver.(CV)	-0.0455	-0.0476	0.0216	0.0059	-0.0751	-0.1123	0.0394	0.0403	0.037	0.0371
Industry Diver.	0.5088	0.5491	0.5524	0.5904	1.3739 <sup>c</sup>	1.3521 <sup>c</sup>	0.3301	0.352	0.3398	0.3625
Ownership Diver.	0.1927	0.1807	0.1323	0.1201	0.1325	0.1072	0.1048	0.1048	-0.1246	-0.124 <sup>a</sup>
<b>Control Variables</b>										
Ln (Family Age)	0.0721	0.0709	0.0479	0.0451	0.0807	-0.1073	0.0153	0.0103	0.0162	0.0109
Ln (Family size)	-0.0745 <sup>c</sup>	-0.0747 <sup>c</sup>	-0.0753 <sup>c</sup>	-0.0762 <sup>c</sup>	1.2378 <sup>c</sup>	-0.0733 <sup>c</sup>	-0.0358 <sup>c</sup>	-0.0351 <sup>c</sup>	-0.0355 <sup>c</sup>	-0.0348 <sup>c</sup>
Gross Expense	-0.388 <sup>c</sup>	-0.3827 <sup>c</sup>	-0.3148 <sup>c</sup>	-0.3106 <sup>c</sup>	-0.0751 <sup>c</sup>	-0.3772 <sup>c</sup>	-0.1595 <sup>c</sup>	-0.156 <sup>c</sup>	-0.1713 <sup>c</sup>	-0.1674 <sup>c</sup>
100*Turnover	-0.159 <sup>c</sup>	-0.158 <sup>c</sup>	-0.123 <sup>c</sup>	-0.123 <sup>c</sup>	1.3739 <sup>c</sup>	-0.213 <sup>c</sup>	-0.0647 <sup>c</sup>	-0.0641 <sup>c</sup>	-0.0717 <sup>c</sup>	-0.0711 <sup>c</sup>
Prev. (CAPM)	0.0846	0.0941			0.1325					
Prev. (FF3)			0.1467 <sup>a</sup>	0.1611 <sup>b</sup>						
Prev. (FF4)					0.0236	0.0394				
Prev. (DWA)							0.0512	0.0546		
Prev. (TWA)									0.0473	0.0517
Adjusted R <sup>2</sup>	0.2294	0.2213	0.1755	0.1624	0.2172	0.2066	0.1157	0.1186	0.1338	0.1363

**Appendix F. Cont'd**

<i>Panel C: 2013 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	-0.0022	-0.0056	-0.0022	-0.005	-0.0059	-0.008	0.012	0.0097	0.0113	0.0088
Chairman	-0.0275	-0.0179	-0.0243	-0.0246	-0.0204	-0.0253	-0.0393	-0.0309	-0.0436	-0.0354
Age	-0.0054	-0.0048	-0.0032	-0.0027	-0.0013	-0.0008	-0.0006	-0.0005	-0.0008	-0.0006
Tenure	0.0022	0.0021	-0.0023	-0.0024	-0.0036	-0.0036	0.0035	0.0035	0.0041	0.0039
100*Funds overseen	0.0188	0.0311	-0.0273	-0.0218	-0.0156	-0.0137	0.116	0.107 <sup>a</sup>	0.121 <sup>b</sup>	0.111 <sup>b</sup>
Ln (Compensation)	0.0042	0.0066	-0.0081	-0.0074	-0.01	-0.0099	0.0074 <sup>b</sup>	0.0088	0.0053	0.0071
Ln (Ownership)	-0.0125	-0.0128	-0.0137	-0.0139	-0.0145	-0.0144	-0.0096	-0.0101	-0.009	-0.0095
# of Committees	0.0007	0.0006	0.0078	0.0073	0.0038	0.0031	0.0197	0.0198	0.0192	0.0192
Ave. Meetings	0.002	0.0017	-0.0031	-0.0035	-0.0028	-0.0031	0.0032	0.0029	0.0025	0.0023
<b>Board Diversity</b>										
% Independent	0.0755		0.082		0.0855		0.01		0.0497	
Independent (Blau)		0.0692		-0.0525		-0.1048		0.107		0.056
% Female	0.2244		0.3113		0.2332		0.2366 <sup>a</sup>		0.2703 <sup>b</sup>	
Gender (Blau)		0.2777 <sup>a</sup>		0.3454 <sup>a</sup>		0.2904		0.2149 <sup>b</sup>		0.2515 <sup>b</sup>
Other Directorship	0.0917	0.0957	0.1301	0.1306	0.1091	0.1091	0.0981 <sup>a</sup>	0.0952 <sup>a</sup>	-0.0872	-0.0852
Age Diver.(CV)	0.3927	0.4074	0.1409	0.1584	0.2287	0.2522	-0.2287	-0.2302	-0.1926	-0.192
Tenure Diver.(CV)	-0.0611	-0.0672	-0.0687	-0.0755	-0.0588	-0.0666	-0.017	-0.0186	-0.015	-0.0176
Industry Diver.	-0.3406	-0.3508	-0.794 <sup>a</sup>	-0.8254	-0.4777	-0.52	-0.0056	0.0018	-0.1148	-0.1077
Ownership Diver.	0.0912	0.0894	0.0745	0.0694	0.0447	0.0377	-0.0693	-0.0668	-0.0714	-0.0703
<b>Control Variables</b>										
Ln (Family Age)	0.0113	0.0111	0.0061	0.006	0.0086	0.0073	-0.0005	0.0015	-0.0125	-0.011
Ln (Family size)	0.0598 <sup>c</sup>	0.0575 <sup>c</sup>	0.057 <sup>b</sup>	0.0547 <sup>b</sup>	0.0656 <sup>c</sup>	0.0635 <sup>c</sup>	0.0024	0.0014	0.0087	0.0074
Gross Expense	0.1653 <sup>c</sup>	0.1636 <sup>c</sup>	0.1869 <sup>c</sup>	0.1864 <sup>c</sup>	0.1744 <sup>c</sup>	0.1753 <sup>c</sup>	-0.0182	-0.0213	0.0029	0.0002
100*Turnover	-0.0511	-0.0543	-0.0896 <sup>b</sup>	-0.0915 <sup>b</sup>	-0.0825 <sup>b</sup>	-0.0838 <sup>b</sup>	0.0709 <sup>c</sup>	0.0687 <sup>c</sup>	0.0688 <sup>c</sup>	0.0665 <sup>c</sup>
Prev. (CAPM)	-0.169 <sup>b</sup>	-0.1675 <sup>b</sup>								
Prev. (FF3)			-0.0558	-0.0541						
Prev. (FF4)					-0.216 <sup>c</sup>	-0.2137 <sup>c</sup>				
Prev. (DWA)							0.4313 <sup>c</sup>	0.4265 <sup>c</sup>		
Prev. (TWA)									0.4163 <sup>c</sup>	0.409 <sup>c</sup>
Adjusted R <sup>2</sup>	0.0233	0.0290	0.0040	0.0090	0.0344	0.0389	0.1337	0.1369	0.1198	0.1232

**Table 13. Summarized results for fund-family-level cross-sectional regressions with not clustered standard errors for the robustness test sample**

This table reports summarized results for cross-sectional regressions for the smaller samples at the fund level for each of 2009, 2011 and 2013 where the standard errors are not clustered. To be included in these smaller samples, each fund share class is required to have at least 48-month consecutive returns and NAVs. Separate cross-sectional regressions are conducted for each of the five different fund performance measures using first simple percentages and then using Blau’s diversity index as the independence and gender diversity measures. The result is ten regression estimates for all the independent variables with the exception of independence and gender diversity that only have five regression estimates each for each of their two measures. Coefficient estimates with consistently significant positive and negative signs are indicated by + and -, respectively, in the column labelled “Result sign”. Significant coefficient estimates with a mixture of signs are indicated by a yellow-highlighted blank cell in the same column for each cross-section. The remaining columns for each cross-section represent the number of significant coefficients at the 1%, 5% and 10% level. The family-level sample size for the robustness test sample is 294, 308 and 299 families for year 2009, 2011 and 2013, respectively (Detailed results corresponding to Table 13 are in Appendix G).

Variables	Pred. sign	Sample 2009				Sample 2011				Sample 2013			
		Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%	Result Sign	# at 1%	# at 5%	# at 10%
<b>Panel A: Average</b>													
Board Size	+		0	0	0		0	0	0	+	0	0	1
Chairman	+		0	0	0		0	0	0		0	0	0
Age	-		0	0	0		0	0	0		0	0	0
Tenure	+	+	0	0	1	+	0	1	4		0	0	0
Funds Overseen	+		0	0	0		0	0	0		0	0	0
Ln (Compensation)	-		0	0	0		0	0	0		0	0	0
Ln (Ownership)	+	+	0	0	2		0	0	0	+	2	10	10
Committees	+		0	0	0	-	0	3	4		0	0	0
Committee Meeting	+		0	0	0	+	1	6	9		0	0	0
<b>Panel B: Diversity</b>													
% Independent	+	+	0	0	2		0	0	0		0	0	0
Independent (Blau)	+	+	0	1	2		0	0	0		0	0	0
% Female	-		0	0	0		0	0	0	+	4	4	4
Gender (Blau)	-		0	0	0		0	0	0	+	5	5	5
Other Directorship	+		0	0	0		0	0	0	+	1	1	1
Age (CV)	-		0	0	0		0	0	0		0	0	0
Tenure (CV)	+		0	0	0	-	0	1	4	-	0	0	3
Occupation	+		0	0	0	+	0	4	8	-	0	0	2
Ownership	-		0	0	0		0	0	0	-	2	6	6

### Appendix G. Full results for fund-family-level cross-sectional regressions with no clustered standard errors for the robustness test samples

The tables in this appendix report results for each cross-sectional regression for the smaller sample at the fund-family level for each of 2009, 2011 and 2013 where the standard errors are not clustered. To be included, each fund share class is required to have at least 48-month consecutive returns and NAVs. Separate cross-sectional regressions are conducted for the five fund performance measures using simple percentages and then Blau's diversity index as the independence and gender diversity measures. The sample consists of 294 fund families in Panel A, 308 fund families in Panel B, and 299 fund families in Panel C. <sup>a</sup>, <sup>b</sup> and <sup>c</sup> refer to significance at the 0.10, 0.05 and 0.01 levels, respectively.

<i>Panel A: 2009 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	-0.0111	-0.0124	-0.0022	-0.0021	0.0013	0.0004	-0.0059	-0.0062	-0.0085	-0.0087
Chairman	0.079	0.086	0.0593	0.0572	0.0375	0.0443	-0.0023	0.0002	0.0128	0.015
Age	-0.003	-0.0029	-0.0043	-0.0043	-0.0016	-0.0014	-0.001	-0.001	-0.0013	-0.0014
Tenure	0.0102	0.0101	0.0051	0.0053	0.0035	0.0029	0.0064	0.0065 <sup>a</sup>	0.0052	0.0054
100 <sup>a</sup> Funds overseen	0.0145	0.0179	-0.0027	-0.0033	0.0747	0.0749	0.0067	0.0097	0.0092	0.0124
Ln (Compensation)	0.0087	0.0091	-0.0015	-0.0016	-0.0052	-0.0037	0.0107	0.0102	0.0119	0.0113
Ln (Ownership)	0.0205 <sup>a</sup>	0.021 <sup>a</sup>	0.0111	0.0111	0.0052	0.005	0.0064	0.0068	0.006	0.0064
# of Committees	0.008	0.0088	0.0164	0.0163	0.0111	0.0121	0.0022	0.0021	0.0018	0.0017
Ave. Meetings	0.0024	0.0025	-0.0003	-0.0003	-0.0004	-0.0003	0.0004	0.0004	0.0009	0.0009
<b>Board Diversity</b>										
% Independent	0.1401		0.0468		0.2296		0.2356 <sup>a</sup>		0.2669 <sup>a</sup>	
Independent (Blau)		0.2081		0.0205		-0.1062		0.2228 <sup>a</sup>		0.2467 <sup>b</sup>
% Female	0.1721		-0.0727		-0.0291		0.1007		0.1022	
Gender (Blau)		0.1398		-0.0423		-0.0129		0.0687		0.0706
Other Directorship	0.1216	0.1259	0.0558	0.0566	0.0145	0.0156	0.0094	0.0117	0.0359	0.0384
Age Diver.(CV)	0.2755	0.2659	0.1842	0.1894	0.1314	0.1114	0.3928	0.3939	0.4157	0.4181
Tenure Diver.(CV)	0.1694	0.1623	0.1849	0.1862	0.1555	0.154	0.0106	0.0058	0.0451	0.0402
Industry Diver.	-0.4613	-0.4599	-0.0796	-0.0869	-0.2752	-0.259	0.1718	0.1661	0.1111	0.1038
Ownership Diver.	-0.0171	-0.016	0.0019	0.0001	0.0666	0.0695	-0.0392	-0.0392	-0.0332	-0.0321
<b>Control Variables</b>										
Ln (Fund Age)	-0.1223 <sup>b</sup>	-0.1204 <sup>b</sup>	-0.0877	-0.0882	-0.0431	-0.0418	-0.0679 <sup>b</sup>	-0.0667 <sup>a</sup>	-0.0622 <sup>a</sup>	-0.0336 <sup>a</sup>
Ln (Fund Size)	0.0208	0.0211	0.029 <sup>a</sup>	0.0286 <sup>a</sup>	0.0239	0.0248 <sup>a</sup>	0.0214 <sup>a</sup>	0.0213 <sup>a</sup>	0.0216 <sup>b</sup>	-0.0609 <sup>b</sup>
Gross Expense	0.0624 <sup>a</sup>	0.0616 <sup>a</sup>	0.0614 <sup>a</sup>	0.0614 <sup>a</sup>	0.0948 <sup>a</sup>	0.0956 <sup>a</sup>	0.0281	0.0272	0.0268	0.0215
100 <sup>a</sup> Turnover	-0.0644	-0.0633	-0.0777 <sup>a</sup>	-0.0778 <sup>a</sup>	-0.0633 <sup>a</sup>	-0.0633 <sup>a</sup>	-0.0044	-0.0038	0.0005	0.0258
Prev. (CAPM)	0.0418	0.0391								0.0011
Prev. (FF3)			-0.2413 <sup>c</sup>	-0.2399 <sup>c</sup>						
Prev. (FF4)					-0.1283	-0.1313 <sup>a</sup>				
Prev. (DWA)							-0.294 <sup>c</sup>	-0.294 <sup>c</sup>		
Prev. (TWA)									-0.4114 <sup>c</sup>	-0.4124 <sup>c</sup>
Adjusted R <sup>2</sup>	0.0673	0.0692	0.1291	0.1289	0.1128	0.1103	0.1409	0.1422	0.2010	0.2023



**Appendix G. Cont'd**

<i>Panel B: 2011 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0035	0.0043	0.0031	0.0037	0.0033	0.0038	0.0028	0.0036	0.0033	0.004
Chairman	-0.0251	-0.0241	-0.0269	-0.0255	-0.0318	-0.0311	0.0004	-0.0054	-0.0128	-0.0188
Age	-0.0029	-0.0026	-0.0024	-0.0022	-0.0031	-0.003	-0.0026	-0.0027	-0.002	-0.0021
Tenure	0.0072	0.0071	0.008 <sup>a</sup>	0.0079 <sup>a</sup>	0.0077 <sup>b</sup>	0.0076 <sup>a</sup>	0.0032	0.0036	0.0036	0.004
100 <sup>a</sup> Funds overseen	0.103	0.1018	0.0763	0.0755	0.0594	0.0585	0.0347	0.0314	0.0335	0.0303
Ln (Compensation)	-0.0057	-0.0053	-0.0011	-0.0007	0.0009	0.0011	0.0085	0.0073	0.0036	0.0025
Ln (Ownership)	-0.0051	-0.005	-0.005	-0.0048	-0.0036	-0.0035	-0.0056	-0.0051	-0.0047	-0.0042
# of Committees	-0.0244	-0.0244	-0.028 <sup>b</sup>	-0.028 <sup>b</sup>	-0.0246 <sup>b</sup>	-0.0246 <sup>a</sup>	-0.0132	-0.0134	-0.0134	-0.0137
Ave. Meetings	0.003	0.0029 <sup>b</sup>	0.0024 <sup>a</sup>	0.0024 <sup>a</sup>	0.003 <sup>b</sup>	0.0029 <sup>b</sup>	0.0018 <sup>b</sup>	0.0017 <sup>a</sup>	0.0021 <sup>c</sup>	0.002 <sup>b</sup>
<b>Board Diversity</b>										
% Independent	0.2506		0.2054		0.1178		-0.0191		0.0016	
Independent (Blau)		-0.2123		-0.1673		-0.0996		-0.0716		-0.0877
% Female	-0.0459		-0.0065		-0.0351		-0.0543		-0.0446	
Gender (Blau)		-0.05		-0.0198		-0.0384		-0.0528		-0.0379
Other Directorship	0.0309	0.0273	0.0204	0.0169	0.0228	0.0211	0.0134	0.0162	0.0177	0.0203
Age Diver.(CV)	0.1969	0.1849	0.3573	0.3449	0.2215	0.2137	0.0609	0.0907	0.0803	0.1113
Tenure Diver.(CV)	-0.1662	-0.1665	-0.1794 <sup>a</sup>	-0.1796 <sup>a</sup>	-0.1873 <sup>b</sup>	-0.1864 <sup>a</sup>	-0.0586	-0.0557	-0.0654	-0.0641
Industry Diver.	0.5588	0.5648	0.6552 <sup>a</sup>	0.6628 <sup>a</sup>	0.6247 <sup>a</sup>	0.6285 <sup>a</sup>	0.4491 <sup>b</sup>	0.4418 <sup>b</sup>	0.4895 <sup>b</sup>	0.48 <sup>b</sup>
Ownership Diver.	0.1012	0.0985	0.0434	0.0416	0.0236	0.0222	0.0363	0.039	0.0435	0.0457
<b>Control Variables</b>										
Ln (Fund Age)	0.0628	0.0608	0.0375	0.0359	0.0183	0.0175	-0.0039	-0.0062	-0.0002	-0.0027
Ln (Fund Size)	-0.02	-0.02	-0.0208	-0.0208	-0.016	-0.0159	-0.0087	-0.0083	-0.0075	-0.0073
Gross Expense	-0.1828 <sup>c</sup>	-0.1807 <sup>c</sup>	-0.168 <sup>c</sup>	-0.1665 <sup>c</sup>	-0.1542 <sup>c</sup>	-0.153 <sup>c</sup>	-0.0901 <sup>c</sup>	-0.0885 <sup>c</sup>	-0.0994 <sup>c</sup>	-0.0979 <sup>c</sup>
100 <sup>a</sup> Turnover	-0.1489 <sup>c</sup>	-0.1481 <sup>c</sup>	-0.1304 <sup>c</sup>	-0.1299 <sup>c</sup>	-0.1237 <sup>c</sup>	-0.1232 <sup>c</sup>	-0.0462 <sup>b</sup>	-0.0452 <sup>b</sup>	-0.0481 <sup>c</sup>	-0.0472 <sup>c</sup>
Prev. (CAPM)	-0.0663	-0.0641								
Prev. (FF3)			0.0463	0.0482						
Prev. (FF4)					0.1137 <sup>b</sup>	0.1156 <sup>b</sup>				
Prev. (DWA)							0.0896 <sup>a</sup>	0.0885 <sup>a</sup>		
Prev. (TWA)									0.0864 <sup>a</sup>	0.0858 <sup>a</sup>
Adjusted R <sup>2</sup>	0.2236	0.2234	0.2203	0.2198	0.2393	0.2394	0.1638	0.1651	0.1689	0.1704

**Appendix G. Cont'd**

<i>Panel C: 2013 Sample</i>	CAPM		FF3		FF4		DWA		TWA	
	%	Blau	%	Blau	%	Blau	%	Blau	%	Blau
<b>Average</b>										
Board Size	0.0169	0.0141	0.0094	0.0066	0.0095	0.0068	0.0093	0.0075	0.0099 <sup>a</sup>	0.0081
Chairman	-0.0278	-0.0216	-0.0286	-0.0253	-0.0277	-0.0244	-0.0333	-0.0318	-0.0355	-0.0341
Age	0.0045	0.0047	0.0027	0.0029	0.0027	0.003	0.0028	0.0027	0.0022	0.0022
Tenure	0.0008	0.0005	-0.0017	-0.0019	-0.0015	-0.0017	0.002	0.0019	0.0024	0.0023
100 <sup>a</sup> Funds overseen	0.0497	0.0574	0.0111	0.0177	0.0097	0.0163	-0.0183	-0.0138	-0.0277	-0.0234
Ln (Compensation)	-0.0012	0.0005	0.0088	0.01	0.0089	0.0101	0.0111	0.0112	0.0114	0.0118
Ln (Ownership)	0.0215 <sup>c</sup>	0.0219 <sup>c</sup>	0.0206 <sup>b</sup>	0.021 <sup>b</sup>	0.0205 <sup>b</sup>	0.0209 <sup>b</sup>	0.0112 <sup>b</sup>	0.0117 <sup>b</sup>	0.0112 <sup>b</sup>	0.0116 <sup>b</sup>
# of Committees	0.0026	0.0027	-0.0026	-0.0027	-0.0036	-0.0037	0.006	0.0059	0.0058	0.0056
Ave. Meetings	0.0011	0.0008	-0.0013	-0.0016	-0.0016	-0.0019	0.001	0.0007	0.0004	0.0002
<b>Board Diversity</b>										
% Independent	0.1544		0.1179		0.1233		-0.0207		0.0363	
Independent (Blau)		-0.0584		-0.0563		-0.0613		0.0317		-0.0142
% Female	0.3939 <sup>c</sup>		0.4058 <sup>c</sup>		0.41 <sup>c</sup>		0.3212 <sup>c</sup>		0.3165	
Gender (Blau)		0.3452 <sup>c</sup>		0.3703 <sup>c</sup>		0.3703 <sup>c</sup>		0.2612 <sup>c</sup>		0.2673 <sup>c</sup>
Other Directorship	0.0351	0.0333	0.0189	0.0177	0.0216	0.0201	0.0244	0.0243	0.0223 <sup>c</sup>	0.023
Age Diver.(CV)	0.2219	0.2163	0.1583	0.1576	0.1652	0.1636	-0.2081	-0.2153	-0.1818	-0.1866
Tenure Diver.(CV)	-0.1322 <sup>a</sup>	-0.1343 <sup>a</sup>	-0.0937	-0.0974	-0.0983	-0.1017 <sup>a</sup>	-0.0227	-0.0233	-0.0195	-0.0209
Industry Diver.	-0.4709 <sup>a</sup>	-0.4715 <sup>a</sup>	-0.3338	-0.3451	-0.3497	-0.3599	-0.13	-0.1322	-0.152	-0.1555
Ownership Diver.	-0.1908 <sup>c</sup>	-0.1907 <sup>c</sup>	-0.1318 <sup>b</sup>	-0.1309 <sup>b</sup>	-0.1327 <sup>b</sup>	-0.132 <sup>b</sup>	0.025	0.0277	0.0294	0.0306
<b>Control Variables</b>										
Ln (Fund Age)	0.0167	0.0188	-0.0019	0	0.0004	0.0025	-0.0152	-0.0122	-0.0189	-0.0167
Ln (Fund Size)	-0.0067	-0.0086	-0.0065	-0.0086	-0.0082	-0.0103	-0.0017	-0.0027	0.0011	-0.0001
Gross Expense	-0.181 <sup>b</sup>	-0.1832	-0.1372 <sup>b</sup>	-0.1399	-0.1439 <sup>b</sup>	-0.1467 <sup>b</sup>	-0.0729 <sup>c</sup>	-0.0771 <sup>c</sup>	-0.064 <sup>c</sup>	-0.0675 <sup>c</sup>
100 <sup>a</sup> Turnover	-0.0202	-0.022 <sup>b</sup>	-0.0235	-0.0252 <sup>b</sup>	-0.0236	-0.0252	0.0358 <sup>b</sup>	0.0348 <sup>b</sup>	0.0369 <sup>c</sup>	0.0358 <sup>b</sup>
Prev. (CAPM)	0.2793 <sup>c</sup>	0.2826 <sup>c</sup>								
Prev. (FF3)			0.1212	0.1243						
Prev. (FF4)					0.1279	0.1306				
Prev. (DWA)							0.2662 <sup>c</sup>	0.2613 <sup>c</sup>		
Prev. (TWA)									0.2279 <sup>c</sup>	0.2232 <sup>c</sup>
Adjusted R <sup>2</sup>	0.2962	0.2979	0.1885	0.1950	0.1905	0.1963	0.2299	0.2294	0.2059	0.2081