TRANSPARENCY AND FUND GOVERNANCE EFFICACY:

THE EFFECT OF THE SEC'S DISCLOSURE RULE FOR ADVISORY CONTRACTS

by

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ABSTRACT

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Keywords: Advisory rates, Fund governance, Agency Issues, Advisory Contract Disclosure Rule, Closed-end funds.

JEL Classification: G11, G23.

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Using a hand-collected governance panel database of all U.S. closed-end funds (CEFs) during 1994-2013, we present evidence consistent with the notion that the 2004 SEC amendments as the primary catalyst successfully encouraged independent fund directors to act more independently in negotiating advisory fees with fund advisors. The maximum (minimum) numbers of advisory fee decreases (increases) occur in the year after this event. We find that the percentage of independent directors is significantly and negatively related with advisory fees only after this event even after controlling for post-event board structure changes.

1. INTRODUCTION

Fund advisors are investment companies which administer, monitor and market closed-end funds (CEFs). Advisory fees account for the majority of fund fees (54% in our sample) that investors pay for fund services. Advisors are generally paid a percentage, referred to as the advisory rate, of the net asset value (NAV) of a mutual fund to compensate for their services.

Fund directors have the fiduciary duty to evaluate and approve advisory contracts (including advisory rates) annually based on the extent and quality of the services provided by the advisors. Section 15(c) of the Investment Company Act of 1940 clearly describes the duties of boards of directors as follows: "It shall be the duty of the directors of a registered investment company to request and evaluate, and the duty of an investment advisor to such company to furnish, such information as may reasonably be necessary to evaluate the terms of any contract whereby a person undertakes regularly to serve or act as investment advisor of such company." Thus, the Investment Company Act relies on boards of directors to resolve any conflicts of interests (agency issues) including those related to advisory fees.

Critics of the mutual fund industry believe that the compensations of mutual fund advisors are excessive due at least in part to the lack of independence of fund directors.[1] Freeman and Brown (2001) argue that advisory charges are higher for mutual than pension funds due to the more independent bargaining associated with the latter. Haslem (2010) believes that "Traditionally, independent directors have been nominated, employed, and compensated at the pleasure of mutual fund advisers. This control, often with very generous pay and retirement benefits, may also influence directors to "go along" with adviser plans and actions." Proponents of more effective fund governance believe that fund agency issues will be reduced by the provision of more information about, for example, portfolio managers, portfolio holdings and board of director actions and approvals.[2]

Since 1994, the Security and Exchange Commission (SEC) as the primary regulator of investment companies requires funds seeking shareholder approval of advisory contracts to contain a discussion of the material factors on which the boards recommended such approval in a fund's proxy statements.[3] To increase the visibility of such disclosures, the SEC in 2002 required funds to provide the basis for a board's approval of an existing investment advisory contract in its Statement of Additional Information (SAI).[4] In June 2004, the SEC adopted a new rule[5] requiring enhanced disclosure dealing with the approval of investment advisory contracts by the boards of directors of mutual funds to "…improve the effectiveness of fund boards of directors and enhance their independence in dealing with matters such as the advisory fee." This followed growing discontent with the efficacy of advisory fee setting which involved over 500

[1] See for example Barker (1999), Haslem (2004), Freeman and Brown (2001, 2008), Bogle (2005), Moyer and Light (2014), and Wall (2015).
[2] See Haslem (2004) for his proposed complete disclosure template.
[3] Item 22(c)(11) of Schedule 14A. See Investment Company Act Release No. 20614 (Oct. 13, 1994) [59 FR 52689 (Oct. 19, 1994)] (adopting amendments to Schedule 14A).
[4] Item 12(b)(10) of Form N–1A (registration statement for open-end management investment companies); Item 18.13 of Form N–2 (registration statement for closed-end management investment companies); Item 20(l) of Form N–3 (registration statement for separate accounts organized as management investment companies that offer variable annuity contracts); Investment Company Act Release No. 24816 (Jan. 2, 2001) [66 FR 3734, 3744 (Jan. 16, 2001)] (adopting requirement for disclosure in SAI of basis for board's approval of advisory contract).
[5] SEC Final Rule "Disclosure regarding approval of investment advisory contracts by directors of investment companies", Release Nos. 33-8433; 34-49909; IC-26486; File No. S7-08-04

class actions and derivative suits filed against mutual fund advisers starting in 2003, and cases involving mutual funds accounting for almost 10% of all federal securities class actions in 2003 and 2004 (Coats and Hubbard, 2007).[6] Following the adoption of this rule, the SEC's Enforcement Division has been actively pursuing failures to fulfil statutory duties, such as approving advisory contracts without having all the necessary information to evaluate them. In one such action,[7] the SEC's Enforcement Division similarly agreed to civil money sanctions in the respondents' offer on June 17, 2015. This Section 15(c) proceeding was against the SEC-registered mutual fund advisor Commonwealth Capital Management (CCM), its owner-president and also interested director/trustee, and three independent trustees/directors of two funds where Commonwealth was the advisor.

Although fund boards are a major participant in the determination of advisory contracts, research on their effectiveness is limited. Coles, Suay and Woodbury (2000) examine the cross-sectional relationship between advisory rates and CEF characteristics and one board characteristic (aggregate ownership of CEF officers and directors). Deli (2002) examines the cross-sectional variation in advisory rates during 1997 using only fund and no governance characteristics. Warner and Wu (2011) examine the association of board characteristics (such as board independence, size and director compensation) with advisory rates using only the 442 funds with changes in advisory rates during the 1994-2001 period.[8] As a result, they could not

[6] About a quarter of the funds faced at least one lawsuit for excessive fees between 2000 and 2009 (Curtis and Morley, 2012).

[7] In the Matter of Commonwealth Capital Management, LLC, Commonwealth Shareholder Services, Inc. *et al.*, Respondents, Order instituting administrative and cease-and-desist proceedings pursuant to Sections 9(b) and 9(f) of the Investment Company Act of 1940, making findings, and imposing remedial sanctions and a cease-and-desist order, SEC Rel. No. IC-31678 (June 17, 2015). https://www.sec.gov/litigation/admin/2015/ic-31678.pdf.

[8] Their subsample results regarding the effect of the percentage of independent directors on the magnitude of advisory fee decreases for 1994-2001 period differ from our full sample results for 1994-2004 period reported in section 6 of this paper. Furthermore, their time period does not capture most of the effects of various *other* changes designed to curb conflicts of interest, and improve the accuracy and reliability of corporate disclosures and governance. These include changes in March 2001 to the Investment Company Act of 1940 by the SEC requiring, amongst other things, that 50% of the directors of a CEF be "not interested" (i.e., independent), the passing of the Sarbanes–Oxley Act (SOX) in July 2002, and the adoption of rules in February 2004 where CEFs (and OEFs) must file their complete portfolio holdings schedules with the SEC.

examine the effect of board characteristics on the probabilities of decreases or increases in advisory rates (see Warner and Wu, 2011, Table IV).

Thus, this study fills an important gap in the literature by addressing an important question about fund governance: Does enhanced transparency on fund board activities and approval of advisory contracts make fund governance more effective? We address this question by conducting a natural experiment that involves an examination of the effects of board characteristics on advisory contracts before and after the 2004 SEC amendments as the primary catalyst designed to enhance disclosure of advisory contract renewal. To this end, we examine the effect of board characteristics on advisory fees and on the probability of changes in advisory fees using estimation specifications that are robust to endogeneity and a large database that includes hand-collected data on board characteristics. Furthermore, similarities in size, complexity, public reporting of advisory contracts, board information and share prices make CEFs an exemplary laboratory for an examination of questions dealing with corporate finance and asset pricing (Cherkes, 2012).

Thus, this paper follows a long research tradition of examining the effects of what appears to be a single exogenous event or shock. A good example is the paper by Schnabl (2012) who uses a single event (i.e., the 1998 Russian default) to identify the impact of a liquidity shock on lending.[9] Other papers more directly related to others include the papers by Duchin, Matsusaka, and Ozbas (2010) and Armstrong, Core and Guay (2014) who use regulations issued in 2003 by the NYSE and Nasdaq as an exogenous event that significantly altered the proportion of independent directors on the boards of some firms, and the paper by Kryzanowski and Mohebshahedin (2016) whose exogenous event is the successful SEC 2001 amendment to the Investment Company Act of 1940 that increased the percentage of fund directors that must be "not interested" from 40% to 50%.[10] In our case, we use the 2004 SEC amendments as an

[9] This paper is given as an example of a natural experiment in Roberts and Whited (2013).
[10] Their second period includes the 2004 SEC proposed and adopted new rule requiring every mutual fund board to have an independent chairman and raising the proportion of independent directors from the previous 50% to at least

important and catalyst event to identify the beginning of a series of events that we argue caused disinterested directors to act in a more responsible and transparent manner when negotiating advisory fees for the benefit of investors. Although one could question if the 2004 SEC amendment was the initial event, our findings are robust if we use an alternate division of the 1994-2013 period (1994-2002 and 2003-2013). The delineator in this case is the 2002 SEC requirement that funds provide the basis for a board's approval of an existing investment advisory contract in its Statement of Additional Information (SAI). With this delineation, the second period also encapsulates the numerous class actions and derivative suits filed against mutual fund advisers starting in 2003.

Our survivorship-bias free sample includes all U.S. CEFs in existence at any point in time during 1994-2013. Following Coles *et al.* (2000), we define the advisory rate or marginal compensation rate as the compensation to an advisor for a small change in CEF assets based on CEF advisory rates and the current level of assets. We examine the cross-sectional relationship between CEF advisory rates and board characteristics (e.g., board independence, size, compensation and ownership). Many studies stress the need to address endogeneity issues when examining the relation between board governance and firm characteristics (e.g., Wintoki, Linck and Netter, 2012). As Adams, Hermalin and Weisbach (2010) explain "…many studies of boards can best be interpreted as joint statements about both the director-selection process and the effect of board composition on board actions and firm performance." Since the past performance of a fund can affect both its advisory rates (which represent the compensation of its managers) and its governance, endogeneity issues may be present when examining the relationship between advisory rates and board governance. Consistent with this conjecture, we show that that past advisory-rate values are related with current values and value changes of board characteristics (like board independence and size) for our sample of CEFs. Random and fixed-effect estimators are inconsistent in such situations (Nickell, 1981; Wintoki, Linck and Netter, 2012). Thus, our

75%. Since the rule was twice vacated by the D.C. Circuit in 2004 and 2005, it is largely followed in practice but remains unimplemented in law.

primary estimation specification is the two-step system generalised method of moments, "system-GMM", which for unbalanced panels and endogenous regressors accounts for endogeneity issues such as simultaneity, reverse causality and unobserved heterogeneity (Flannery and Hankins, 2013). Arellano and Bover (1995) and Blundell and Bond (1998) state that the system-GMM is suitable for estimating a dynamic model, particularly when it is difficult if not impossible to find exogenous instruments to reduce endogeneity concerns (e.g., in governance variables).

We find that the relationship between advisory rates for CEFs with higher percentages of independent directors is not significant for the 1994-2004 period and is significant (and negative) for the 2005-2013 period. This is consistent with the notion that more transparency about board activities and approvals may lead to more effective governance and better aligns the interests of independent directors and shareholders. One possible explanation for the significant relationship in the second period could be the 2001 SEC rule requiring that the board has a minimum of 50% of independent directors. First, our summary statistics show the maximum (minimum) average percentage of independent directors has been 85 (72) percent during our full sample period. Therefore, we do not expect that the increase in percentage of independent directors above 72 percent drives our results. In fact, we believe that the 2004 SEC amendments designed to strongly encourage the same independent directors to act more independently in favor of investors did so. Second, we re-examine the relationship between advisory rates and board characteristics for those funds with no significant change in the percentage of independent directors around 2004. We identify significant changes by testing whether the average percentage of independent directors are equal using 3 and 5 years windows around 2004 at 5% and 10% significance levels. The results for these subsamples confirm our previous findings using the whole sample. Our results also show no significant relationship between advisory rates and other board characteristics for the 1994-2004 and 2005-2013 periods.

We also examine the effect of CEF board characteristics on the probability of changes in CEF advisory rates. We find that 2.8% (424 out of 14,972) of the CEF advisory rates changed

during the 1994-2013 period after adjusting for asset growth. When we consider advisory rate changes for the 1994-2004 period, we find that CEFs with higher percentages of female directors and higher average ages are more likely to increase advisory rates. For the 2005-2013 period, we find that CEFs with lower percentages of independent directors, larger board sizes, higher excess compensations of their independent directors and higher percentages of female directors are more likely to increase their advisory rates. Our results regarding the relationship between the percentage of independent directors and advisory rate changes before and after the 2004 SEC amendment support the notion that more transparency about board activities and approvals may lead to more effective governance and monitoring aligned with the interests of shareholders. Using a sample of funds which may or may not change their advisory contracts for the 1994-2004 period,[11] we find that our results regarding the relationship between board characteristics and advisory rate changes do not support the results from Warner and Wu (2011) based solely on the funds who changed their advisory rates. To control for the effect of changes in board structure, we examine the effect of board characteristics on the probability of changes in CEF advisory rates for the sample of funds which do not significantly change their percentages of independent directors. Our results once again confirm our previous findings using the whole sample. As an additional robustness check, we also test whether a change in board characteristics during the past three years affects a board's decision to increase or decrease the advisory rate for its fund. Considering the results for the advisory rate changes using changes in independent variables over the past three years, our results once again are consistent with our previous findings.

This paper contributes to the literature in various ways. First, to the extent of our knowledge, this is the first study which examines the transparency effects of board decision making on board effectiveness in the mutual fund industry. Our study extends the findings of various studies (e.g., Armstrong, Core and Guay, 2014; Ferreira, Ferreira, and Raposo, 2011; Linck, Netter, and Yang, 2008) who find a positive relation between corporate transparency and the proportion of

[11] This period covers the Warner and Wu (2011) sample for the 1994-2001 period.

independent directors to how well the same proportion of independent directors protect the interests of the fund shareholders. Our study provides evidence on the combined advisory-fee effects of the 2004 SEC amendments and related changes requiring greater transparency in the decision-making process behind advisory contracts.

Second, this paper contributes to the literature on the value to investors of information disclosure.[12] The common view is that more information disclosure helps investors make more informed decisions and makes governance more effective by reducing information asymmetry (Leuz and Verrecchia, 2000; Verrecchia, 2001; Rezaee and Jain, 2005; Jain, Kim and Rezaee, 2006). Other studies argue that information disclosure can have adverse effects like direct accounting costs and benefits for product-market competitors (Feltham, Gigler, and Hughes, 1992; Hayes and Lundholm, 1996; Zhang, 2007; Sidhu, Smith, Whaley, and Willis, 2008). Our results from examining the relationship between the percentage of independent directors and advisory rates and the probability of advisory rate changes support the notion that the 2004 SEC amendments to transparency improved board effectiveness and reduced agency problems by reducing fund fees.

Third, this paper contributes to our understanding of the relationship between CEF boards and an important advisory contract term, advisory fees, for a fund group where the efficacy of the relationship is more important. Unlike OEF (open-end fund) investors, CEF investors do not have the ability to redeem their investments at NAV and reduce the fund assets under management (AUM) of fund advisors to discipline poor performing fund advisors. Although CEF investors can trade their shares in the market, the CEF fund advisors have no fear of reductions in fund assets or dollar fees due to shareholder redemptions. In turn, this places a greater responsibility on CEF boards of directors to better align the interests of fund advisors with those of the funds' shareholders. While CEF liquidation or conversion to an OEF theoretically can provide external discipline for a CEF, the extensive effort and cost and low

[12] See Leuz and Wysocki (2006) for a survey of the literature on information disclosure.

probability of success associated with such actions ensure that these actions are seldom effective in practice.

Fourth, our study contributes to the more general literature on compensation and contracts by considering both cross-sectional variation and time-series dynamics in advisory rates. Fifth and finally, we use what we believe is the longest time-series of board information in the mutual fund literature, which allows us to study the effect of changes in board characteristics and past benchmark-adjusted share return performance on an important aspect of the advisory contract negotiation. This helps us to better understand the effect of recent board dynamics on the advisory contract oversight behaviors of CEF boards.

The remainder of the paper is organized as follows. The next section provides a very brief review of the 2004 SEC amendments. The third section reviews the relevant literature that leads to various testable hypotheses. The fourth section describes the data used in our analysis. Sections five and six discuss the results of examining the relation between board characteristics and CEF advisory rates and their changes, respectively. Section seven reports on some further robustness checks. Section eight concludes the paper.

2. DISCLOSURE OF INVESTMENT ADVISORY CONTRACT APPROVALS BY INVESTMENT COMPANY DIRECTORS[13]

The 2004 SEC amendments require that the material factors, processes and conclusions associated with board approval of investment (sub-)advisory contracts be reported in Form N-1A for OEFs, N-2 for CEFs, and N-3[14] for separate accounts managed by management investment and insurance companies. Fund prospectuses inform investors that this information is available in the shareholder report. Proxy statements are also required to discuss the factors considered and the process used to negotiate contracts with (sub-)advisors.

[13] SEC Release Nos. 33–8433; 34–49909; IC–26486; File No. S7–08–04

[14] Item 21(d)(6) of Form N–1A; Instruction 6.e. to Item 23 of Form N–2; Instruction 6(v) to Item 27(a) of Form N–3. These factors are similar to those used by courts (called "Gartenberg factors") in "excessive fee" cases.

The 2004 amendments clarified that a board's decision about the selection of an investment advisor and the approval of advisory fees and any other fees paid under an advisory contract must be included in its discussion. They stipulated that the board discussion needs to discuss how at least the following factors were used to arrive at their final contract decision: the nature, extent, and quality of the services to be provided by the investment adviser; the investment performance of the fund and the investment adviser; the costs of the services to be provided and profits to be realized by the investment adviser and its affiliates from the fund relationship; the extent to which economies of scale would be realized as the fund grows; and whether fee levels would reflect these economies of scale for the benefit of fund investors.[15] A note must be included to explain why a factor not so discussed is not applicable. The 2004 amendments require a fund's discussion to specify whether the board relied upon comparisons of other investment advisory contracts in terms of services and compensation like those of the same investment advisor with pension funds and other institutional investors or those with different investment advisors, and whether such comparisons assisted the board in deciding to approve the advisory contract.

The SEC appears to have two goals in adopting the 2004 amendments. The first is to increase the visibility of this disclosure to help investors make more informed fund choices. The second is to encourage fund boards to engage in more independent monitoring of advisory contracts by providing considerably greater detail to investors about the material factors and their use by boards in concluding advisory contracts.

3. HYPOTHESES

Except for compliance oversight responsibilities, independent fund directors have two important responsibilities as Warren Buffet noted in an annual letter to shareowners of Omaha Insurance and Investments (McDonald, 2003); namely, hiring the best available investment

[15] Section 36(b) of the 1940 Act allows the SEC or a shareholder to file lawsuit against a fund's advisor for breach of fiduciary duty regarding excessive advisory fees.

manager and negotiating low fees on behalf of shareholders. As noted in the introduction, many critics blame the lack of independence of independent directors as the main reason behind high fees and the seldom turnover of fund advisors. Radin and Stevenson (2006) argue that independent directors face personal financial risk if they try to replace fund advisors due to the lack of empowering regulations. For example, independent directors were both unsuccessful and sued by the fund advisors when they attempted to replace the fund advisors of Navellier Series fund and Yacktman fund.[16] As aptly stated by Buffet (McDonald, 2003): "If you or I were empowered, I can assure you we could easily negotiate materially lower management fees with incumbent managers of most mutual funds." Thus, this major impediment to the replacement of advisors not only makes the negotiation of fees more difficult but the SEC in 2004 felt the need to adopt amendments to enhance the information disclosed about the factors and process used by a fund's board to approve an advisory contract. The passage of time since its adoption provides an excellent opportunity to assess whether or not it has lowered advisory fees. While interested directors assist the board to be better informed about firms, independent directors provide neutrality (and expertise) that is expected to reduce potential agency issues between fund advisors and investors. Fama and Jensen (1983a) contend that independent directors are better monitors since retaining their personal reputations in the directorship market is tremendously important. Consistent with the greater role of boards as monitors than advisors, studies report that lower fees are associated with higher percentages of independent directors; namely, Ferris and Yan (2007) and Adams, Mansi and Nishikawa (2012) for OEFs, and Tufano and Sevick (1997), Del Guercio, Dann and Partch (2003) and Kryzanowski and Mohebshahedin (2016) for CEFs. Adams, Mansi and Nishikawa (2012) report that higher expense ratios are associated with board size for a sample of U.S. index funds.

The net effect of any disclosure that is mandated by regulation depends on its costs and benefits. Potential benefits of the 2004 SEC amendments are reduced information asymmetry and agency issues between boards and investors, and the provision of greater transparency on

[16] See Radin and Stevenson (2006) for board problems regarding fund advisor replacement.

how fund boards arrive at their advisory contracts which could improve the governance practices by facilitating improved investor oversight. Potential costs include the direct costs associated with the preparation, certification and dissemination of reports, and the indirect costs associated with the use of the disclosed information to the benefit of competitors and other parties in the market. The total external costs of additional disclosure are estimated by the SEC as being around 4.5 million dollar for all funds annually.[17] We expect that indirect costs would be a minor addition to total external costs, and that the benefits of the 2004 SEC amendments to the reduction in advisory fees would be substantially higher than its associated costs. Thus, our first set of two hypotheses in their alternative forms is

H_A^{1a}: After the 2004 SEC amendments, CEFs with higher percentages of independent board directors are associated with lower advisory rates.

H_A^{1b}: After the 2004 SEC amendments, CEFs with higher percentages of independent board directors are more likely to decrease their advisory rates.

4. DATA, GOVERNANCE VARIABLES AND DESCRIPTIVE STATISTICS

4.1 Sample and Data

Information about the investment advisory contracts are collected from semi-annual reports (items 45-48) from the SEC EDGAR database, referred to as NSAR forms hereafter, for all CEFs with unique CIK numbers (Central Index Key) from 1994 (first filling date) through 2013. The NSAR forms contain information regarding fund advisor, administrator, affiliated broker-dealer, portfolio transactions, financial information, and condensed balance sheet data at the level of registrants with unique CIKs. This information is aggregated over all the classes of the same fund. Unlike OEFs, only two of the CEFs in our sample have more than one share class. We collect 23,152 N-SAR fillings on all the CEFs during the 1994-2013 period. Since almost all

[17] See SEC Release Nos. 33–8433; 34–49909; IC–26486; File No. S7–08–04

the NSAR forms are filled according to the strict reporting standards of the SEC, the data in these forms can be captured electronically before it is verified manually.

We carefully hand-collect the CEF board information from all the associated annual proxy statements, referred to as the DEF-14A form hereafter, with unique CIK numbers from 1994 (first filling date) through 2013. The DEF-14A forms cover information regarding each director on the board including the term of office and the length of time served, whether the director is independent, the dollar range of equity securities in the fund (beneficially) owned by the director, the aggregate dollar range of equity securities owned in all registered investment companies overseen by the director in the fund family, and the total dollar amount of cash compensation received by each independent director serving on the fund and for all other funds in the fund family. Since the board information is presented in different formats in the DEF-14A forms, this data need to be hand collected.

We use Morningstar Direct to get survivorship-free data regarding share and NAVPS (net-of-fees) returns, fund inceptions, and fund categories. Morningstar Direct contains information for 1,031 CEFs during the 1994-2013 period. We match our datasets from NSAR and DEF-14A forms based on unique CEF CIK numbers which are available on both forms. Our final database is built after all data from the Morningstar Direct and SEC Edgar databases are matched. After eliminating index funds and institutional funds and CEFs without advisory contract or board information from our initial sample, our final sample consists of 815 CEFs and 14,972 semi-annual fund observations.[18] The six investment objective categories used herein are equity, international equity, bond, municipal bond, allocation and specialty. Panel A of Table 1 reports the number of CEFs with each fund investment objective based on Morningstar Direct and their total numbers for every two-year period. The number of CEFs increases from 42 in 1994 to its highest level of 463 in 2008. CEFs with bond and municipal bond (allocation and specialty) investment objectives comprise the most (least) number of funds in the sample annually.

[18] Voya Senior Income Fund and Franklin Mutual Recovery Fund are institutional Funds. Dow 30 Enhanced Premium and Income is the only index closed-end fund.

[Please place Table 1 about here.]

4.2 Marginal Compensation Rate (Advisory Rate)

Like OEFs, CEFs are managed either internally by employees of the fund sponsor or externally by investment advisory firms who provide various services like portfolio management in return for fees. The structure of advisory rates is flexible by regulation as long as investment advisors are compensated for gains and penalized for losses. In almost 85% of the contracts in our sample, the fee is determined based on a percentage of NAV. Some other fees are benchmark-based (Elton, Gruber, and Blake, 2003). The percentage fee can be either fixed or fixed up to a NAV breakpoint.[19] Most of the contracts with breakpoints are concave[20] meaning that advisory rate percentages decline above each NAV breakpoint (Golec, 1992; Deli, 2002). For example, the advisory fee for Cutwater Select Income Fund in 2013 was 0.50% for the first $100 million of NAV and 0.40% for any additional NAV.

We calculate the marginal compensation rate as a measure determining the sensitivity of CEFs advisory rates to changes in CEF NAVs as in Coles *et al.* (2000), Deli (2002) and Warner and Wu (2011). Coles *et al.* (2000) define the marginal compensation rate (advisory rate) as "the percentage of a relatively 'small' change in NAV that will be captured or lost by the investment advisor." Panel B of Table 1 reports the descriptive statistics (mean, median, and standard deviation) of the advisory rates for each category of funds for every two year period. The average and median advisory rates are the highest for CEFs belonging to the international equity fund category and the lowest for bond and municipal bond CEFs. Also, the mean and median advisory rates of 0.76% and 0.71% respectively, grew gradually over our sample period to reach their highest level in 2012.

[19] Question 48 (A-K) of the semi-annual reports of investment companies includes all the breakpoints and corresponding percentage fees.

[20] In our sample only 7 out of 14,979 observations show convexity in that their advisory rates grow as their NAVs grow. These apparent data entry errors are deleted from our sample as no other source is available to correct them.

In Panel C of Table 1, we report whether advisory fees have changed around the 2004 SEC amendments. Using three years of data around 2004, our results show that the average yearly advisory fees decrease or do not change for CEFs with equity, international equity and municipal bond investment objectives that represent over 75 percent of CEF industry NAV and they increase for CEFs with bond, allocation and specialty objectives. Therefore, we can infer that the average annual advisory fees decreased after the 2004 SEC amendments. There is a possibility that the decrease in advisory fees is due to the 2001 SEC amendment that at least 50% of directors should be independent or the 2002 Sarbanes-Oxley Act regulatory changes dealing with corporate governance. To control for the effect of a change in board structure (especially board independence), we construct a sub-sample of CEFs with no change in the percentage of independent directors around the 2004 SEC amendments. Based on the results for the three years around 2004 that are presented in Panel C of Table 1, we observe that the average annual advisory fees decrease or do not change after the adoption of the SEC 2004 amendments for all categories of fund investment objectives.

4.3 Governance Variables[21]

We use $\%IndDirFnd$ as the percentage of independent directors on a CEF board. If a director is an employee of the investment advisor or a member of the family of an employee, employee of a registered broker-dealer or a 5-percent shareholder of it, or affiliated with any recent legal counsel to the fund, the director is considered as being "interested".[22] Based on our data, the mean and median percentage of independent directors has risen gradually during our sample period.

$BdSize$ is the total number of CEF board directors. The average $BdSize$ in our sample has increased gradually. The mean and median numbers of board directors are 8.6 and 8, respectively, during our sample period (Panel D of Table 1). Larger boards might be considered

[21] The definitions of all variables and their data sources are described in the appendix at the end of this paper.
[22] Section 2(a)(19) of the Investment Company 1940 Act.

to be less efficient than smaller boards because of higher free-riding and coordination costs (Jensen, 1993) and lower cohesion (Hermalin and Weisbach, 2003) or to be more valuable for firms requiring advice (Coles, Daniel and Naveen, 2008; Adams and Mehran, 2012). As noted earlier, Tufano and Sevick (1997), Del Guercio *et al.* (2003) and Adams, Mansi and Nishikawa (2009) find a significantly positive relation between mutual fund board size and expense ratios.

$AveIndDirCompFnd$ ($AveIndDirCompFam$) is the average dollar value of compensation received by the independent directors from a CEF (fund family). Panel D of Table 1 shows that the cross-sectional mean $AveIndDirCompFnd$ and $AveIndDirCompFam$ have their highest and lowest values in 2000 and 1994, respectively. Following Tufano and Sevick (1997), we calculate unexplained compensation, $UnexpCompIndDir$, as the average residual (in millions of dollars) from an annual regression of director compensation on the number of boards a director serves on and the total assets overseen by that director. Directors who receive relatively large compensations from a fund or fund family are less likely to disapprove of the fees proposed by fund sponsors (Sevick and Tufano, 1997; Ferris and Yan, 2007; Meschke, 2007). Thus, we expect director excess compensations to be positively related with CEF advisory rates.

$\%IndDirOwn > 50K$ measures the percentage of independent directors who hold more than \$50,000 worth of a CEF's shares. We expect that the interests of directors who have greater equity dollar investments to be more aligned with the interests of investors which is supported by the findings that director ownership is positively related with fund performance (e.g., Chen, Glodstein and Jaing, 2008; Cremers *et al.*, 2009). Based on an order passed by the SEC, the dollar range of equity securities beneficially owned by the directors as part of a fund's compensation plan or from their personal investment in a fund became public after February 2002. Funds are required to disclose each director's holdings within the following investment ranges: no investment; \$1 to \$10,000; \$10,001 to \$50,000; \$50,001 to \$100,000; or more than \$100,000. Based on Panel D of Table 1, the average percentage of independent directors in the highest category was highest in 2012 at 11%, and averaged 8% over our total sample period.

$\%DirFemaleFnd$ is the percentage of female directors to test if gender diversity can improve board effectiveness. The average $\%DirFemaleFnd$ is about 15% over the full period and has its highest level of 21% in 2012. Robinson and Dechant (1997) and Adams and Ferreira (2009) argue that female directors are relatively more diligent with better communication skills which can lead to better problem solving by boards. Higher percentages of female directors are associated with increased board meeting attendances and not better firm performances (Adams and Ferreira, 2009) but more informative stock prices (Gul, Srinidhi and Ng, 2011). On balance, we expect that more gender diverse boards are more effective in protecting shareholder interests.

$AveTenIndDirFnd$ is the average number of years that the independent directors served on a CEF board. We form no expectation for this variable since directors may become more informed but be subject to greater capture by fund sponsors with longer board tenures (Del Guercio *et al.*, 2003). The mean and median average tenures of independent directors for our sample are 6.2 and 5.9 years, respectively (Panel D of Table 1).

$AveIndDirAgeFnd$ is the average age of the independent directors serving on the board. Based on Panel D of Table 1, the full-sample average of this variable is 63 years old.

4.4. Fund and Family Variables

Panel E of Table 1 reports the means and medians of the cross-sectional distributions of CEF characteristics for every two year period. The number of advisors and sub-advisors ($\#Advisors$) and the number of services ($\#Services$) they provide are obtained from the NSAR filings. Their average numbers have gradually increased from 1994 to 2012. They provide an average of six services to the CEFs. The mean annual CEF share returns ($ShareReturn$) have their lowest (highest) values in 2008 (2006). The highest and lowest cross-sectional average (and median) annual CEF premiums [(share price - NAVPS)/NAVPS] occur in 2008 and 2012, respectively. The average (median) fund size ($FndSize$) as measured by total net assets (TNA) has increased steadily from almost $200 million ($130 million) in 1994 to $380 million ($260 million) in 2012.

The highest (lowest) value of the average annual CEF turnover ratio ($FndTurnover$), which is measured using the lesser of purchases or sales divided by average monthly net assets, is in 2012 (2000). The average fund age ($FndAge$) in years measured from a fund's inception is almost 11 years. Dividend yield ($DivYield$) and leverage ($Leverage$), which are respectively the ratios of dividends to share price and non-common equity to total assets, are 5.9 (6.0) percent and 23.5 (30.5) percent, respectively.

Spearman rank correlations between the advisory rates and CEF NAVPS returns (NAVPSReturn) with board characteristics are reported in Table 2. We observe that fund advisory rates and the cross-sectional mean percentages of independent directors ($\%IndDirFnd$), board sizes ($BdSize$), percentages of female directors ($\%DirFemaleFnd$) and CEF premiums ($Premium$) are negatively correlated at the 0.01 level. NAVPS returns ($NAVPSReturn$) are negatively correlated with the cross-sectional mean percentages of independent directors ($\%IndDirFnd$) and board sizes ($BdSize$) at the 0.01 level. NAVPS returns ($NAVPSReturn$) and CEF premiums are positively related to the percentages of independent directors who hold more than 50,000 dollars of fund shares ($\%IndDirOwn > 50K$). Since no correlation other than between the different advisory-rate measures exceeds 0.38, multicollinearity is not considered to be an issue of concern.

[Please place Table 2 about here.]

5. ADVISORY RATES AND BOARD CHARACTERISTICS

5.1. Methodology

To examine the relationship between CEF advisory marginal compensation rates ($Margrt$) and board characteristics, we estimate the following panel regression using semi-annual data:

$$Margrt_{it} = a + b_1\%IndDirFnd_{it-1} + b_2 BdSize_{it-1} + b_3 UnexpCompIndDir_{it-1} + b_4\%IndDirOwn > 50K_{it-1} + b_5\%DirFemaleFnd_{it-1} + b_6 AveTenIndDirFnd_{it-1} + b_7 LnAveIndDirAgeFnd_{it-1} + b_8 Star_{it-1} + b_9 StarFam_{it-1} + b_{10} ReturnAlpha_{it-1} +$$

$$b_{11}FixedIncome_{it} + b_{12}Foreign_{it} + b_{13}LnFndSize_{it} + b_{14}LnFamSize_{it} + b_{15}TopFndMrktShr_{it} + b_{16}TopFamMrktShr_{it} + b_{17}\#Advisors_{it} + b_{18}\#Services_{it} + b_{19}HighLeverage_{it} + b_{20}HighDivYield_{it} + b_{21}HighPremium_{it} + b_{22}LnFndTurnover_{it} + b_{23}Outsourced_{it} \quad (1)$$

where the variables are as previously defined (also see the appendix). Equation (1) is estimated for both the 1994-2004 and 2005-2013 periods to examine the effect of the 2004 SEC amendments. Due to data availability, the regression estimated for 1994-2004 does not include board ownership.

As briefly discussed in the introduction, many researchers highlight the importance of dealing with potential endogeneity problems when examining governance effects on firm or fund characteristics. One source of endogeneity herein is the effect of fund performance on both governance and advisory rates. Past advisory contracts approved by CEF boards might affect CEF governance due to, e.g., status and prestige, religious, political or ethnic ties.[23] Warner and Wu (2011) report that advisory-rate increases are associated with superior past (not extremely poor) market-adjusted performances. To investigate if this source of endogeneity is present, we follow Wintoki *et al.* (2012) and examine how strongly changes and the current values of various governance and control regressors, such as board independence ($\%IndDirFnd$), board size ($BdSize$) and fund size ($LnFndSize$), are related to past advisory rates. These regressions also include other control variables such as the lag of CEF governance variables and CEF characteristics like the logarithm of fund age ($LnFndAge$) and family size ($LnFamSize$).

Panel A of Table 3 reports the results from regressing the present values (levels) of some regressors in equation (1) on the CEF advisory rates and characteristics from the prior year. We find that board independence ($\%IndDirFnd$), board size ($BdSize$) and fund size ($FndSize$) in the current year are significantly and negatively related to CEF advisory rates ($Margrt$) in the prior year. Panel B of Table 3 reports the results from regressions of the one-year changes of some regressors in equation (1) on the CEF advisory rates and characteristics from two years

[23] In their review article, Johnson, Schnatterly and Hill (2013) categorize these as being social capital.

prior to the year of interest. For the 2005-2013 period, the current year's changes in board size ($1Y\Delta BdSize$) and in fund size ($1Y\Delta FndSize$) are significantly positively and negatively associated with the previous year's changes in CEF advisory rates (Margrt).

[Please place Table 3 about here.]

Thus, the results reported in Table 3 show that some of our governance variables (e.g., board independence and size) and control variables (e.g., fund size) may be dynamically endogenous. As discussed earlier, we adopt the recommendation of Flannery and Hankins (2013) to use the system-GMM estimation specification as they find that it performs better than its competitors for unbalanced panels with endogenous regressors. We also use the OLS and fixed-effects estimation specifications to illustrate how the results change if the specification does not account for dynamic endogeneity. To deal with endogeneity in the OLS and fixed-effects regressions regarding equation (1), we use one-year lagged governance variables (Adams et al., 2009). Our fixed-effects model specification includes fund and year fixed effects.

Arellano and Bover (1995) and Blundell and Bond (1998) propose the use of a "system-GMM" to estimate a dynamic panel model, particularly when it is difficult if not impossible to find exogenous instruments to reduce the endogeneity concerns in the independent variables (e.g., governance). The "level" equation in the system-GMM includes the variables in their levels, and the "differenced equation" includes the differenced variables. The system-GMM uses some combinations of variables from a firm's history as "internal" instrumental variables to deal with endogeneity.[24] The finite sample correction proposed by Windmeijer (2005) is used to address the tendency of this estimation method to generate downward biased standard errors.

The key exogeneity assumption for the system-GMM estimator is that the instruments (lagged dependent and independent variables) are exogenous to current shocks in the dependent variable. Two tests are used to examine the exogeneity of the instruments. The first (second-order serial

[24] We use "xtbond2" module in STATA to estimate coefficients based on the system-GMM specification. For further discussion on system-GMM, please see Roodman (2009).

correlation) examines if enough lags of the dependent variable are included. If the model has enough lags of the dependent variable, then any subsequent lags of the dependent variable are potential valid instruments for current shocks in the dependent variable. Therefore, the residuals in first (second) differences should (not) be correlated if our model has enough lags of the dependent variable. The autocorrelation tests of the first and second differences are referred to as AR(1) and AR(2) in all of our tables. Since multiple lags are used in our system-GMM, we can test whether our model is over-identified. Thus, the second test is a Hansen test of over-identification which provides a *J*-statistic with a χ^2 distribution under the null hypothesis of the validity of the instruments.[25]

All our panel-regression inferences reflect the recommendation of Petersen (2009) that year dummies and clustered (Roger) standard errors be used to avoid rejecting the null hypothesis too often when both potential time-series and cross-sectional correlations exist in the panel data. To preserve valuable journal space, the coefficients for the time dummies are suppressed when the panel regression results are tabulated.

5.2. Results

Summary results for panel regression (1) for both time periods are reported in Table 4. The insignificant test statistics of second-order autocorrelation (AR(2)) and for the Hansen J-statistics of over-identifying restrictions indicate that the system-GMM specification is well fitted. Consistent with our first alternative hypothesis (H_A^{1a}), we find a significant and negative relationship between advisory rates and the percentage of independent directors ($\%IndDirFnd$) for the system-GMM model specifications only for the period after the 2004 SEC amendments. The results are consistent using the OLS and fixed-effect model specifications. This is consistent with the notion that independent directors were more independent in that they were better able to negotiate lower advisory fees after the 2004 SEC amendments. Using estimates from Panel C of

[25] The R-squared for the system-GMM regression is calculated herein as the squared correlation coefficient between actual and fitted values.

Table 1, one standard deviation increase in the percentage of independent directors ($\%IndDirFnd$) implies a decrease of 0.72 [i.e., 0.03 times 0.24 (standard deviation)] percentage in advisory rates. Our results show no significant relationship between advisory fee rates and the other board characteristics for all three model specifications.

[Please place Table 4 about here.]

Our results could be due at least partly to a SEC 2001 requirement that 50% of fund directors be independent. To address this potentially confounding event, we construct a sub-sample of CEFs with no changes in their percentage of independent directors around the 2004 SEC amendments.[26] The results reported in Table 5 continue to display a negative and significant relationship between the percentage of independent directors and advisory fees after but not before the 2004 SEC amendments.

[Please place Table 5 about here.]

Table 4 also includes the estimated coefficients for the control variables in equation (1). We find a positive and weakly significant relationship between advisory rates and benchmark-adjusted share returns ($ReturnAlpha$) for the 2005-2013 period. We find that fixed-income CEFs ($FixedIncome$) in the combined bond and municipal bond fund categories are associated with lower advisory rates compared to their equity counterparts for the 2005-2013 period. This is consistent with the finding of Deli (2002), which is based on the argument that equity fund advisors have higher marginal products and advisory rates than debt fund advisors, since equity funds have higher returns volatilities (Khorana, 1996). We find that the coefficient of the international fund dummy ($Foreign$) is positive and significant as in Deli (2002) for the 1994-2004 period. The system-GMM findings show a significant and positive relationship for the 2005-2013 period between advisory rates and the number of advisors or sub-advisors

[26] A CEF is selected if the mean difference test of its percentage of board independent directors using data from three years before and three after the adoption of the 2004 SEC amendments is rejected at a 10% significance level. As a robustness test, we also try a 5% significance level and our untabulated results are similar.

($\#Advisors$) engaged by the CEFs and the number of different services ($\#Services$) they provide. We find a significant and positive relationship between CEF advisory rates and the logarithm of portfolio turnover for both periods. This is consistent with the finding of Deli (2002) who bases his explanation on the findings of Ippolito (1992) and Edelen (1999) that better informed advisors trade more intensely. We find no significant relationship between CEF advisory rates and the dummy variable, $Outsourced$. This is consistent with the descriptive statistics reported in Chen, Hong, Jiang and Kubik (2013, Table II) for a sample of OEFs for the 1994-2007 period that show no difference between the average expense ratios of in-house versus outsourced funds.

6. ADVISORY RATE CHANGES AND BOARD CHARACTERISTICS

To further examine the effect of additional disclosure due to the 2004 SEC amendments, we now study the changes in advisory rates and the effect of board characteristics, especially independence, on such changes for both time periods.

6.1 Measurement of Advisory Rate Changes and Descriptive Statistics

We define the change in advisory rates ($\Delta Margrt$) as the difference between the advisory rate from item 48 on a current NSAR filing and the advisory rate from the previous NSAR filing as in Warner and Wu (2011). For linear contracts the change is simply the change between two consecutive NSAR filings for six-month periods. For concave contracts, the change is any change in the breakpoints between the current and previous NSAR filings that is obtained from NSAR filings items 48, A through K. To ensure that advisory rates changes are attributable to a contract change and not to asset growth we use the current period NAV for both current and previous contracts (NSAR filings) to obtain the marginal compensation rate for concave contracts, as in Warner and Wu (2011).

Figures 1 and 2 depict the number of advisory rate decreases and increases, respectively, for the 1994-2013 period. The maximum number of advisory rate decreases of 48 (Figure 1) and the

minimum number of increases of 2 (Figure 2) are in 2005 (the year after the 2004 SEC amendments). The second highest number of advisory rate decreases in Figure 1 is in year 2001 when the SEC mandated that at least 50% of the directors be independent.

[Please place Figures 1 and 2 about here.]

Panel A of Table 6 reports the distribution of contract changes for the 1994-2013 period. Of the 424 advisory rates changes,[27] 300 (124) are decreases (increases). Panel B of Table 6 reports summary statistics on advisory rates ($Margrt$), advisory rate changes ($\Delta Margrt$), and board characteristics for advisory rate increases ($\Delta Margrt > 0$), decreases ($\Delta Margrt < 0$), changes ($\Delta Margrt < 0 \; or \; > 0$) and no changes ($\Delta Margrt = 0$). Based on these results, we observe that the mean and median of those CEFs which increase (decrease) their advisory rates have higher (lower) advisory rates after the change. The average absolute magnitude of the changes ($\Delta Margrt$) for CEFs with increased advisory rates is, on average, higher than that for CEFs with decreased advisory rates. CEFs that increase their advisory rates on average have a lower percentage of independent directors ($\%IndDirFnd$), a larger board size (*BdSize*), a lower average tenure of their independent directors ($AveTenIndDirFnd$), a higher average age of their independent directors ($AveIndDirAgeFnd$), a lower percentage of female directors ($\%DirFemaleFnd$), a higher average compensation of their independent directors ($AveIndDirCompFnd$) and a higher director ownership ($\%IndDirOwn > 50K$).

[Please place Table 6 about here.]

6.2 Methodology

We continue by examining the effect of board characteristics and other control variables on the likelihoods and magnitudes of various types of advisory rate changes for both 1994-2004 and 2005-2013 periods. We use separate probit regressions to disentangle any asymmetric effects of

[27] The initial number was 451. We manually double-check each of the advisory rate changes and change the ones to no change when the change is erroneously due to an obvious NSAR data entry. For example, we would record no change for the following series: 0.7, 0.7, 7.0, 0.7.

various potential determinants on CEFs with increases from those with decreases in advisory rates. We use an ordered logit model specification to test our hypothesis described in Section 3. We use an OLS model specification controlling for year fixed-effects to examine the magnitudes of the effects of our independent variables on the CEF advisory rate changes.

The following probit model specification is used to test our hypotheses on the factors that affect the likelihood of CEF advisory rate changes based on semi-annual data:

$$\begin{aligned} Prob(ChgType_{it}) = Probit(a + b_1\%IndDirFnd_{it-1} + b_2 BdSize_{it-1} + \\ b_3 UnexpCompIndDir_{it-1} + b_4\%IndDirOwn > 50K_{it-1} + b_5\%DirFemaleFnd_{it-1} + \\ b_6 AveTenIndDirFnd_{it-1} + b_7 AveIndDirAgeFnd_{it-1} + b_8 Star_{it-1} + \\ b_9 StarFam_{it-1} + b_{10} ReturnAlpha_{it-1} + b_{11} HighAdvRt_{it-1} + b_{12} LnFndSize_{it-2} + \\ b_{13} LnFamSize_{it-2} + b_{14} TopFndMrktShr_{it-2} + b_{15} TopFamMrktShr_{it-2} + \\ b_{16} HighGrwthFnd_{it-1} + b_{17} HighGrwthFam_{it-1} + b_{18}\Delta\#Advisors_{it} + \\ b_{19}\Delta\#Services_{it} + b_{20}\Delta FndTurnover_{it} + b_{21} HighLeverage_{it-1} + \\ b_{22} HighDivYield_{it-1} + b_{23} HighPremium_{it-1} + b_{24} Acquirer_{it} + b_{25} Target_{it}) \end{aligned} \quad (2)$$

The dependent variable *ChgType* is either advisory rate increases, decreases or unsigned changes. For advisory rate increases ($\Delta Margrt > 0$), the dependent variable is equal to one for an increase in advisory rates and zero for a negative or no change in advisory rates. For advisory rate decreases ($\Delta Margrt < 0$), the dependent variable is equal to one for a decrease in advisory rates and zero for a positive or no change in advisory rates. For unsigned advisory rate changes ($\Delta Margrt < 0 \; or > 0$), the dependent variable is equal to one if advisory rates decrease or increase and is equal to zero otherwise. For each of these specifications, we include time dummies and cluster the standard errors following Petersen (2009).

6.3 Results

6.3.1 Advisory-rate changes

Table 7 presents the results of our tests of equation (2). For each variable, we begin with a discussion of the logit regression results reported in columns (5) and (6) for advisory rate

changes ($\Delta Margrt < 0 \; or > 0$) and then we compare the results with the ones from the likelihoods of advisory rate increases ($\Delta Margrt > 0$) in columns (1) and (2) and decreases ($\Delta Margrt < 0$) in columns (3) and (4). [28] Consistent with our first hypothesis (H_A^{1b}), our ordered logit regression results show that that advisory-rate decreases are significantly more likely for a CEF with a higher percentage of independent directors ($\%IndDirFnd$) for only the period after but not before the 2004 SEC amendments (columns (5) and (6) in Table 7). This is consistent with the notion that independent directors negotiate and question advisory fees with greater independence after the 2004 SEC amendments. The results from the probit regression of the likelihoods of advisory rate decreases ($\Delta Margrt < 0$) support this finding (columns (3) and (4) in Table 7). Since this variable is not significantly related with advisory-rate increases, this suggests that a larger percentage of independents on CEF boards is effective in decreasing advisory rates but not in preventing increases in advisory rates. Our ordered logit regression results show that a CEF with a larger board size ($BdSize$) is significantly more likely to increase its advisory rates for the 2005-2013 period (columns (5) and (6) in Table 7). This is consistent with the notion that larger boards are less diligent in their monitoring responsibilities due to higher free-riding and coordination costs and lack of cohesion compared to smaller boards (Jensen, 1993; Hermalin and Weisbach, 2003). The results from the probit regression of the likelihoods of advisory rate increases ($\Delta Margrt > 0$) support this finding (columns (1) and (2) in Table 7). This suggests that a larger CEF board is more likely to approve an increase in advisory rates probably due to free-riding and coordination problems.

[Please place Table 7 about here.]

The ordered logit regression results show that a CEF with a higher unexplained compensation of its independent directors ($UnexpCompIndDir$) is less likely to decrease its advisory rates based on the findings for the period after but not before the 2004 SEC amendments (columns (5) and (6) in Table 7). The results from the probit regression of the likelihood of advisory rate

[28] Our untabulated results using the dynamic probit and ordered logit regressions as a robustness check produce results that are consistent with those reported using probit and ordered logit regressions.

decreases ($\Delta Margrt < 0$) support this finding (columns (3) and (4) in Table 7). Our ordered logit regression results show that a CEF with a higher percentage of female directors ($\%DirFemaleFnd$) is significantly less (more) likely to increase its advisory rates for the 1994-2004 (2005-2013) period (columns (5) and (6) in Table 7).

We not only control for the effects of fund growth, economies of scale, good performance, market share and mergers and acquisitions as in Warner and Wu (2011) but also for the effects of special CEF characteristics like premiums and leverages. As in Warner and Wu (2011), we remove the mechanical effect of CEF size on advisory rates by using fund family size and market share lagged two periods. We find evidence for economies of scale based on the logarithm of family size ($LnFamSize$) for both periods. The likelihood of advisory rate decreases is lower for a CEF that belongs to a larger family for both periods or to a family with a higher market share ($TopFamMrktShr$). We find that advisory-rate increases are significantly less likely for a CEF with an already high advisory rate ($HighAdvRt$) for both periods. This finding is consistent with that of Warner and Wu (2011) and Khorana and Servaes (2005), and the conjecture that it is potentially easier for funds to raise currently low versus currently high rates. The likelihood to increase advisory rates is higher for a CEF with a larger change in portfolio turnover ($\Delta FndTurnover$) and in the number of its advisors and sub-advisors ($\Delta \#Advisors$) for the 2005-2013 period. The effect of a change in portfolio turnover on advisory rates may indicate that higher advisory rates are required to compensate better-informed advisors who are more likely to trade based on their information (Ippolito, 1992; Edelen, 1999; Deli, 2002). We find that advisory-rate increases are not related significantly with past benchmark-adjusted share returns ($ReturnAlpha$), high leverage ($HighLeverage$) and high dividend yield ($HighDivYield$) for both periods. Our results show that advisory-rate increases are significantly and positively related for a high premium CEF ($HighPremium$).

To control for the effect of a change in board structure, we examine equation (2) using the sub-sample of CEFs which did not change their percentages of board independence before and after the 2004 SEC amendments as explained in Section 5.2. The results from Table 8 show that

advisory-rate decreases are significantly more likely for a CEF with a higher percentage of independent directors ($\%IndDirFnd$) for only the period after but not before the 2004 SEC amendments (columns (3), (4), (5) and (6) in Table 8). Therefore, this relationship exists even after controlling for the change in the percentage of independent board members.

[Please place Table 8 about here.]

6.3.2 Magnitude of advisory-rate changes

The results for an examination of the factors that affect the magnitudes of the actual rate change ($\Delta Margrt^{*}$) as the dependent variable using OLS regressions are reported in Table 7 (columns 7 and 8). Consistent with our results on the direction of the advisory rate changes, we find that smaller advisory rate changes (smaller increases or larger decreases in magnitude) are associated with a CEF with a higher percentage of independent directors ($\%IndDirFnd$) after but not before the 2004 SEC amendments. Advisory-rate changes are significantly higher for a CEF with a higher unexplained compensation of its independent directors ($UnexpCompIndDir$) for the 2005-2013 period. We continue to find that advisory-rate changes are significantly higher for a CEF with a high premium ($HighPremium$) and a not high pre-change advisory rate ($HighAdvRt$) for both periods.

7. ROBUSTNESS CHECKS

In section 6, we examined the effect of lags of board characteristics on the direction and magnitude of advisory-rate changes. Taking advantage of our long time-series of board characteristics, we now test whether changes in board characteristics during the previous X years affect the likelihood of advisory rate changes (increases or decreases). Since board members renew their contracts every three years,[29] we set X to three years in order to capture the recent dynamics in CEF governance variables. Also, the choice of three-year changes in the governance

[29] Three years is also long enough to completely change all board members in staggered boards if the fund decides to do so.

variables are an additional way of dealing with potential endogeneity concerns between CEF board characteristics and advisory-rate changes.

Based on the ordered logit regression results reported in Table 9, we observe that the change in the percentage of independent directors ($3Y\Delta\%IndDirFnd$) is significantly and negatively related to advisory-rate increases for after but not before the 2004 SEC amendments (columns (5) and (6) in Table 9). The results from the probit regressions of the likelihood of advisory rate decreases ($\Delta Margrt < 0$) support this finding (columns (3) and (4) in Table 9). Our results suggest that funds with boards with more independent directors are more likely to decrease than increase advisory rates. Our results based on ordered-logit regressions show that a change in board size ($3Y\Delta BdSize$) is positively and significantly related with the likelihood of an advisory-rate change (columns (5) and (6) in Table 9). These results suggest that a larger board size may make a board less efficient in its monitoring of the compensation of advisors.

[Please place Table 9 about here.]

Consistent with our results in section 6, the ordered logit regression results show that a CEF with a higher unexplained compensation of its independent directors ($UnexpCompIndDir$) is less likely to decrease its advisory rates based on the findings for the period after but not before the 2004 SEC amendments (columns (5) and (6) in Table 9). Unlike our earlier results reported in section 6, we find no significant relationship between larger changes in the percentage of female directors ($3Y\Delta\%DirFemaleFnd$) and advisory rate changes. Consistent with our findings reported earlier in section 6, we find no significant relationship between a change in the ownership of directors ($3Y\Delta\%IndDirOwn > 50K$) and an advisory rate change.

8. CONCLUSION

We use a large database of equity and fixed-income U.S. closed-end funds (CEFs) during 1994-2013 that includes hand-collected governance data. We find that the highest number of decreases and lowest number of increases in advisory rates occur in the year after the 2004 SEC

amendments. We find that CEFs with higher percentages of independent directors are associated with lower advisory rates and a significantly greater likelihood of advisory-rate decreases for the period after but not before the 2004 SEC amendments even when we confine our sample to those CEFs with no change in their percentage of independent directors around the 2004 SEC amendments. In summary, we can infer that the 2004 SEC amendments have been successful in encouraging independent directors to act more independently in questioning and negotiating advisory fees with fund advisors after their adoption.

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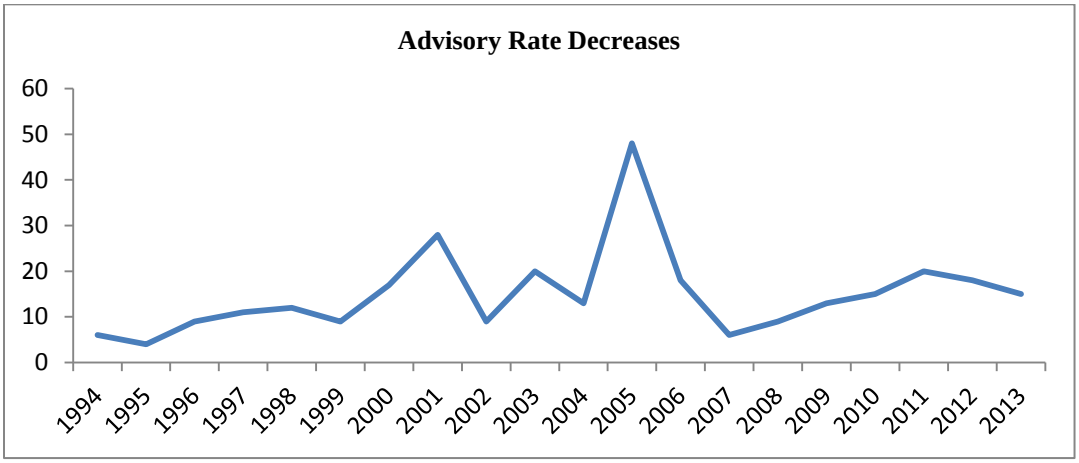

Figure 1. Number of advisory fee decreases
Above graph shows the number of advisory fee decreases for 1994-2013 period. The change in advisory rates for concave contracts is any change in the breakpoints between current and previous NSAR filings. To ensure that the changes in advisory rates are attributable to a contract change and not to the effect of fund asset growth we use the current period NAV for both current and previous contracts.

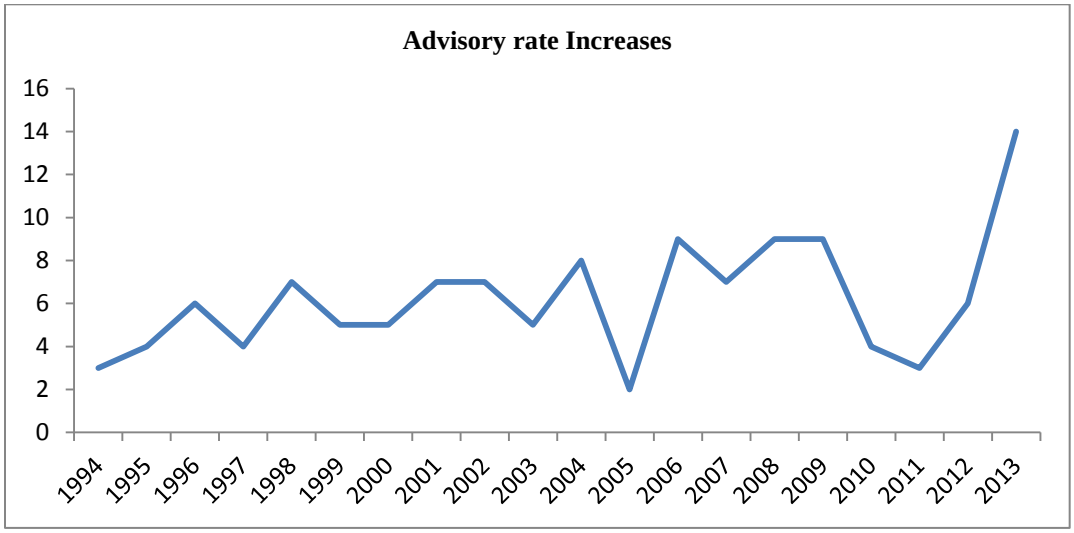

Figure 2. Number of advisory fee increases
Above graph shows the number of advisory fee increases for 1994-2013 period. The change in advisory rates for concave contracts is any change in the breakpoints between current and previous NSAR filings. To ensure that the changes in advisory rates are attributable to a contract change and not to the effect of fund asset growth we use the current period NAV for both current and previous contracts.

Table 1. Summary statistics for the sample of closed-end funds and the characteristics of their boards

This table reports summary statistics for fund and board characteristics for the 20 year period from January 1994 through 2013. Panel A provides the number of funds having each investment objective for a cross-section every two years. Panel B reports the means and medians of the individual fund characteristics that are defined in the appendix. Panel C provides the means and medians of the board characteristics that are defined in the appendix. Panel D reports the means, medians and standard deviation (SD) of advisory rates (marginal compensation rates) for each investment objective for cross-sections where each covers two years.

Panel A: Number of CEFs

Fund Objective	Year									
	1994	**1996**	**1998**	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**	**2012**
Equity	0	9	13	14	14	16	35	43	36	29
International Equity	0	54	62	53	49	40	48	60	62	62
Bond	7	85	89	87	91	101	115	120	115	121
Municipal Bond	33	172	174	195	195	262	173	157	149	141
Allocation	1	12	12	14	14	20	27	37	38	37
Specialty	1	10	8	10	11	21	40	46	40	49
Total	42	342	358	373	374	460	438	463	440	439

Panel B: Advisory Rate (Marginal Compensation Rate) Characteristics

Fund type	Statistics	Year										Total
		1994	**1996**	**1998**	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**	**2012**	
Equity	**Mean**	0.82	0.81	0.79	0.83	0.85	0.87	0.89	0.89	0.85	0.88	0.86
	Median	0.80	0.82	0.85	0.93	0.85	0.85	0.90	0.94	0.99	0.98	0.90
	SD	0.11	0.24	0.28	0.25	0.24	0.19	0.17	0.17	0.24	0.20	0.21
International Equity	**Mean**	0.96	0.98	1.00	0.98	0.99	0.95	0.91	0.97	0.94	0.93	0.96
	Median	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	0.95	0.95	1.00
	SD	0.34	0.32	0.30	0.33	0.27	0.30	0.29	0.24	0.26	0.25	0.29
Bond	**Mean**	0.65	0.62	0.63	0.66	0.68	0.70	0.70	0.72	0.74	0.75	0.69
	Median	0.65	0.60	0.63	0.65	0.65	0.70	0.70	0.74	0.75	0.75	0.70
	SD	0.21	0.21	0.21	0.22	0.22	0.20	0.18	0.19	0.21	0.21	0.21
Municipal Bond	**Mean**	0.55	0.57	0.57	0.57	0.58	0.55	0.53	0.53	0.53	0.53	0.55
	Median	0.50	0.61	0.60	0.61	0.61	0.55	0.55	0.55	0.55	0.55	0.55
	SD	0.20	0.18	0.17	0.16	0.15	0.12	0.13	0.13	0.13	0.13	0.15
Allocation	**Mean**	0.72	0.79	0.76	0.71	0.79	0.77	0.80	0.83	0.84	0.83	0.80
	Median	0.6	0.75	0.75	0.65	0.75	0.75	0.75	0.80	0.85	0.85	0.75
	SD	0.25	0.27	0.23	0.26	0.24	0.23	0.22	0.20	0.21	0.22	0.23
Specialty	**Mean**	0.91	0.83	0.80	0.83	0.78	0.78	0.87	0.94	0.98	1.00	0.91
	Median	0.93	0.80	0.80	0.80	0.80	0.80	0.86	1.00	1.00	1.00	0.95
	SD	0.18	0.22	0.21	0.20	0.22	0.17	0.19	0.19	0.22	0.22	0.22
Total	**Mean**	0.67	0.67	0.67	0.67	0.67	0.68	0.70	0.74	0.74	0.76	0.70
	Median	0.65	0.65	0.64	0.65	0.65	0.65	0.65	0.70	0.70	0.71	0.65
	SD	0.27	0.27	0.26	0.26	0.23	0.23	0.23	0.24	0.26	0.26	0.25

Panel C: Average Advisory Rates Around 2004

Fund type	Full Sample			Sub-sample (no change in board independence)		
	Mean		Mean Difference	Mean		Mean Difference
	2002-2004	2005-2007		2002-2004	2005-2007	
Equity	0.86	0.88	-0.01	0.90	0.90	0.00
International Equity	0.98	0.92	0.06***	1.00	0.92	0.07***
Bond	0.69	0.70	-0.01**	0.77	0.73	0.04***
Municipal Bond	0.57	0.53	0.04***	0.56	0.53	0.03***
Allocation	0.77	0.79	-0.02***	0.74	0.70	0.04**
Specialty	0.78	0.86	-0.08***	0.79	0.84	-0.05

Panel D: Board Characteristics

Variables	Statistics	Year										Total
		1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	
%IndDirFnd	**Mean**	0.72	0.72	0.74	0.76	0.78	0.82	0.83	0.85	0.85	0.85	0.81
	Median	0.72	0.71	0.75	0.75	0.78	0.82	0.86	0.86	0.85	0.86	0.82
BdSize	**Mean**	7.90	7.80	8.10	8.00	8.20	8.90	8.30	9.10	9.00	9.10	8.60
	Median	6.00	8.00	8.00	7.00	8.00	8.00	8.00	9.00	9.00	10.00	8.00
AveIndDirCompFnd	**Mean**	4091	11164	11959	12528	7707	10224	7718	8106	8291	9689	9445
	Median	4500	4450	4500	3089	3161	3465	3414	2751	3574	4206	3678
AveIndDirCompFam (000s)	**Mean**	27.3	118.6	123.2	142.0	70.9	149.6	64.2	95.5	108.6	105.4	106.2
	Median	12.7	31.5	23.2	23.7	27.7	28.5	55.2	68.9	101.5	91.1	38.0
%IndDirOwn >50K	**Mean**	NA	NA	NA	0.09	0.07	0.07	0.09	0.06	0.09	0.11	0.08
	Median	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
%DirFemaleFnd	**Mean**	0.06	0.13	0.10	0.11	0.13	0.14	0.13	0.17	0.19	0.21	0.15
	Median	0.00	0.00	0.00	0.00	0.13	0.17	0.13	0.18	0.22	0.22	0.14
AveTenIndDirFnd (Years)	**Mean**	2.40	4.20	5.20	6.10	6.80	6.70	5.90	5.80	6.90	7.70	6.20
	Median	2.00	3.70	4.80	5.80	6.80	6.50	5.60	6.00	7.00	7.80	5.90
AveIndDirAgeFnd (Years)	**Mean**	60.00	61.00	62.00	63.00	63.00	64.00	63.00	63.00	64.00	65.00	63.00
	Median	60.00	62.00	61.00	62.00	64.00	65.00	62.00	62.00	63.00	65.00	63.00

Panel E: Fund Characteristics

Variables	Statistics	Year										Total
		1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	
#Advisors	Mean	1.00	1.10	1.20	1.10	1.10	1.30	1.40	1.60	2.00	2.10	1.50
	Median	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00
#Services	Mean	6.20	6.00	5.80	6.30	6.40	6.50	6.80	6.60	6.90	6.90	6.50
	Median	5.00	6.00	6.00	6.00	6.00	6.00	7.00	7.00	7.00	7.00	7.00
ShareReturn	Mean	-0.15	0.11	0.04	0.13	0.04	0.08	0.17	-0.32	0.12	0.15	0.09
	Median	-0.15	0.09	0.08	0.15	0.07	0.06	0.13	-0.30	0.09	0.14	0.09
ReturnAlpha	Mean	-0.06	0.01	-0.01	0.14	0.03	-0.02	0.00	-0.03	-0.00	-0.00	0.00
	Median	-0.05	0.03	0.01	0.05	-0.01	-0.03	-0.00	-0.02	-0.01	-0.01	-0.01
Premium	Mean	-0.11	-0.07	-0.03	-0.10	-0.04	-0.03	-0.01	-0.09	-0.02	-0.01	-0.04
	Median	-0.10	-0.07	-0.03	-0.09	-0.04	-0.04	-0.03	-0.11	-0.02	-0.01	-0.05
ExpenseRatio	Mean	0.85	1.20	1.20	1.30	1.40	1.20	1.20	1.30	1.30	1.30	1.28
	Median	0.82	1.10	1.10	1.20	1.30	1.20	1.20	1.20	1.20	1.20	1.18
FndSize($Bi)	Mean	0.20	0.26	0.26	0.25	0.23	0.28	0.36	0.26	0.34	0.38	0.30
	Median	0.13	0.15	0.15	0.15	0.14	0.17	0.22	0.16	0.21	0.26	0.18
FamSize($Bi)	Mean	2.70	4.60	5.30	6.10	6.40	9.70	12.10	13.40	14.10	15.30	10.33
	Median	4.10	3.30	2.90	3.50	3.30	6.90	7.60	7.30	10.00	11.00	4.82
FndTurnover	Mean	41.00	40.00	38.00	35.00	38.00	38.00	38.00	42.00	42.00	45.00	40.63
	Median	22.00	17.00	19.00	18.00	18.00	20.00	21.00	24.00	24.00	24.00	21.00
AveIndDirAgeFnd	Mean	3.20	6.60	8.70	10.00	12.00	11.00	11.00	11.00	13.00	14.00	11.33
	Median	2.00	4.00	6.00	8.00	10.00	11.00	12.00	9.00	11.00	11.00	9.00
DivYield	Mean	5.90	6.00	5.50	6.60	5.80	5.90	5.30	7.30	5.60	5.50	5.90
	Median	6.90	6.40	5.70	6.70	6.00	6.40	5.40	6.00	5.90	5.70	6.00
Leverage	Mean	22.60	19.30	17.80	19.10	22.50	26.10	26.50	27.50	24.30	23.10	23.50
	Median	33.40	23.30	19.20	19.80	30.70	33.00	33.40	35.10	30.20	29.30	30.50

Table 2. Spearman Rank Correlations

This table reports Spearman Rank Correlations for *Margrt, EffAdvRt, EffAdvRt_Other, Premium, NAVPSReturn, %IndDirFnd, BdSize, UnexpCompIndDir, %IndDirOwn>50K, %DirFemaleFnd, AveIndDirAgeFnd* and *AveTenIndDirFnd* that are defined in the appendix.

Variable	*Margrt*	*EffAdvRt*	*EffAdvRt_ Other*	*Premium*	*NAVPS Return*	*%IndDir Fnd*	*#IndDir Fnd*	*UnexpComp IndDir*	*%IndDir Own>50K*	*%Dir FemaleFnd*	*AveTen IndDirFnd*	*AveIndDir AgeFnd*
Margrt	1.00											
EffAdvRt	0.41***	1.00										
EffAdvRt_Other	0.28***	0.46***	1.00									
Premium	-0.08***	-0.15***	-0.04***	1.00								
NAVPSReturn	0.14***	0.12***	0.07***	0.21***	1.00							
%IndDirFnd	-0.04***	-0.15***	-0.04***	0.04***	-0.05***	1.00						
BdSize	-0.20***	-0.35***	-0.27***	0.00	-0.03***	0.14***	1.00					
UnexpCompIndDir	0.00	-0.11***	-0.08***	0.07***	-0.01	-0.02	-0.06***	1.00				
%IndDirOwn>50K	0.15***	0.35***	0.23***	-0.08***	0.08***	-0.08***	-0.28***	0.06***	1.00			
%DirFemaleFnd	-0.21***	-0.27***	-0.20***	0.10***	-0.02	0.29***	0.38***	-0.15***	-0.17***	1.00		
AveTenIndDirFnd	-0.08***	0.10***	0.07***	-0.04***	0.01	0.06***	-0.01	-0.19***	0.17***	-0.00	1.00	
AveIndDirAgeFnd	-0.02*	0.01	0.00***	0.07***	0.04***	0.11***	0.08***	0.17***	0.03**	-0.18***	0.23***	1.00

Table 3. Summary results for panel regressions for the relationship between current board characteristics and past CEF advisory rates

This table reports the coefficient estimates of OLS panel regressions to examine the relationship between the values and changes in values of some regressors from equation (1) like board dependence, size and CEF size and past CEF advisory rates with their t-values in parentheses for the 2002-2013 and 1994-2013 periods for all available individual U.S. closed-end funds (CEFs). In Panel A, the dependent variables are the current values of board independence (*%IndDirFnd)*, board size (*BdSize*) and CEF size (*FndSize*). In panel B, the dependent variables are the one-year changes in board independence (Δ*%IndDirFnd)*, board size (Δ*BdSize*) and CEF size (Δ*FndSize*). The independent variables are defined in the appendix. ***, ** and * indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

Panel A: Level dependent variable at time t

Column	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Dependent variables	***%IndDirFnd***		***BdSize***		***FndSize***	
Sample Period	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**
Margrt $_{t-2}$	-0.0258**	-0.0438***	0.3529	-0.9102***	-0.2767***	-0.2836***
	(-2.41)	(-4.97)	(1.49)	(-3.79)	(-5.63)	(-4.52)
%IndDirFnd $_{t-2}$			2.0864***	-3.4339***	-0.2465***	-0.5063***
			(7.03)	(-11.72)	(-4.73)	(-8.58)
BdSize $_{t-2}$	-0.0022***	-0.0013***			0.0107***	-0.0039
	(-2.97)	(-2.75)			(3.93)	(-1.62)
UnexpCompIndDir $_{t-2}$	0.0493***	-0.0217***	0.4126***	-1.1709***	-0.0152	-0.0611**
	(10.59)	(-3.90)	(4.31)	(-8.22)	(-0.85)	(-2.12)
%IndDirOwn>50K $_{t-2}$		-0.0017		-0.3618**		0.2914***
		(-0.28)		(-2.29)		(9.10)
%DirFemaleFnd $_{t-2}$	0.0811***	-0.0006	3.1874***	1.5258***	0.0977**	0.1533**
	(6.33)	(-0.05)	(12.19)	(5.21)	(2.03)	(2.42)
AveTenIndDirFnd $_{t-2}$	0.0009	-0.0003	-0.0896***	-0.1538***	0.0018	0.0009
	(1.15)	(-0.84)	(-6.05)	(-16.74)	(0.62)	(0.46)
AveIndDirAgeFnd $_{t-2}$	0.0257	0.0912***	2.1972***	3.3062***	0.0269	0.6987***
	(0.95)	(4.34)	(3.97)	(6.06)	(0.27)	(5.91)
FndSize $_{t-2}$	-0.0028	-0.0092***	0.1222*	-0.0313		
	(-0.98)	(-4.83)	(1.89)	(-0.62)		
FamSize $_{t-2}$	0.0100***	0.0106***	0.1512***	0.5400***	0.0886***	0.0674***
	(5.75)	(8.44)	(3.87)	(16.05)	(10.29)	(8.49)
LnFndAge $_{t-2}$	0.0436***	0.0074***	1.0561***	0.9163***	-0.1142***	-0.1760***
	(11.98)	(3.49)	(14.17)	(16.95)	(-7.61)	(-14.24)
Constant	0.4354***	0.4219***	-10.2997***	-14.2267***	17.1695***	15.6254***
	(3.58)	(4.50)	(-4.02)	(-5.79)	(39.21)	(30.14)
Observations	5,767	7,153	5,767	7,153	5,980	7,165
R-squared	0.060	0.046	0.047	0.282	0.050	0.036

Panel B: Change of dependent variable from t-2 to t where t-2 is one year or two six-month periods earlier

Column	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variables	$1Y\Delta\%IndDirFnd$		$1Y\Delta\#BdSize$		$1Y\Delta FndSize$	
Sample Period	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**
Margrt $_{t-4}$	0.0123**	-0.0017	0.0182	-0.3423**	-0.0126	0.0810***
	(2.35)	(-0.51)	(0.18)	(-2.44)	(-0.66)	(5.20)
%IndDirFnd $_{t-4}$			-0.1647	1.1451***	0.0403	-0.0906**
			(-0.64)	(3.84)	(1.00)	(-2.22)
BdSize $_{t-4}$	0.0001	0.0005*			-0.0054***	0.0032**
	(0.16)	(1.80)			(-2.84)	(2.24)
UnexpCompIndDir $_{t-4}$	-0.0070**	-0.0078*	-0.1752***	0.2512*	0.0279**	0.0245
	(-2.26)	(-1.73)	(-2.82)	(1.68)	(2.51)	(1.15)
%IndDirOwn>50K $_{t-4}$		-0.0054		-0.1266		-0.0641***
		(-1.25)		(-0.80)		(-3.22)
%DirFemaleFnd $_{t-4}$	0.0354***	-0.0225***	0.6945***	-0.6741***	0.0792**	0.1149***
	(3.99)	(-3.51)	(3.92)	(-2.77)	(2.51)	(3.70)
AveTenIndDirFnd $_{t-4}$	0.0004	0.0001	0.0897***	0.0249***	-0.0042**	-0.0038***
	(0.67)	(0.49)	(7.12)	(2.71)	(-2.03)	(-3.17)
AveIndDirAgeFnd $_{t-4}$	-0.0301	-0.0204*	0.2224	0.5292	0.0596	0.1841***
	(-1.61)	(-1.80)	(0.58)	(1.20)	(0.92)	(3.39)
FndSize $_{t-4}$	0.0009	-0.0012*	-0.0659**	0.0751**		
	(0.68)	(-1.65)	(-2.41)	(2.41)		
FamSize $_{t-4}$	0.0009	-0.0019***	0.1261***	-0.0711***	0.0032	-0.0065**
	(1.10)	(-3.52)	(7.41)	(-3.28)	(1.07)	(-2.54)
LnFndAge $_{t-4}$	0.0000	-0.0031***	-0.2024***	-0.2072***	0.0300***	0.0453***
	(0.01)	(-2.63)	(-3.41)	(-4.75)	(3.11)	(8.10)
Constant	0.0849	0.1609***	-2.2878	-2.3405	-0.3602	-0.7298***
	(1.09)	(3.36)	(-1.44)	(-1.25)	(-1.36)	(-3.26)
Observations	4,630	6,826	4,630	6,826	4,948	6,934
R-square	0.012	0.007	0.031	0.004	0.008	0.019

Table 4. Summary results for panel regressions for the relationship between CEF advisory rates with board characteristics

This table reports the coefficient estimates of panel regressions to examine the relationship between CEF board characteristics and CEF advisory rates using OLS, fixed-effects and system-GMM estimators and their t-values in parentheses for the period of 2002-2013 and extended period of 1994-2013 for all available individual U.S. closed-end funds (CEFs). The dependent variable is *Margrt* or the advisory rates. The independent variables are defined in the appendix. Each *t* is a 6-month period. The year dummies are supressed for brevity. AR(1) and AR(2) are first-order and second-order, respectively, tests for no serial correlation in the first differenced standard errors. Hansen J-stat is the test of over-identification under the null that all instruments are valid. The R-square values are also reported. The standard errors are clustered. ***, ** and * indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS		Fixed-effect		System-GMM	
Variables	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**
%IndDirFnd$_{t-1}$	-0.0372	-0.0528**	-0.0410	-0.0583**	0.0081	-0.0334**
	(-1.06)	(-2.08)	(-1.12)	(-2.07)	(0.34)	(-1.98)
BdSize$_{t-1}$	0.0002	0.0002	0.0004	0.0004	0.0005	-0.0010
	(0.09)	(0.27)	(0.14)	(0.40)	(0.65)	(-0.92)
UnexpCompIndDir$_{t-1}$	-0.0056	-0.0002	0.0022	-0.0011	-0.0109	-0.0038
	(-0.90)	(-0.02)	(0.35)	(-0.10)	(-1.54)	(-0.55)
%IndDirOwn>50K$_{t-1}$		-0.0211		-0.0224		-0.0063
		(-1.28)		(-1.31)		(-0.57)
%DirFemaleFnd$_{t-1}$	-0.0503**	0.0058	-0.0479*	-0.0014	-0.0094	-0.0144
	(-2.19)	(0.25)	(-1.73)	(-0.05)	(-0.64)	(-0.59)
AveTenIndDirFnd$_{t-1}$	0.0001	0.0004	0.0011	0.0004	-0.0001	-0.0006
	(0.06)	(0.35)	(0.46)	(0.36)	(-0.08)	(-0.98)
AveIndDirAgeFnd$_{t-1}$	-0.0411	-0.0156	-0.0852	-0.0358	0.0255	0.0179
	(-0.47)	(-0.15)	(-0.94)	(-0.32)	(1.04)	(0.52)
Star$_{t-1}$	0.0018	-0.0006	0.0014	-0.0006	0.0060	0.0024
	(0.39)	(-0.25)	(0.29)	(-0.23)	(0.67)	(0.37)
StarFam$_{t-1}$	0.0057**	-0.0006	0.0062**	-0.0004	0.0013	-0.0023
	(2.19)	(-0.32)	(2.23)	(-0.22)	(0.73)	(-0.81)
ReturnAlpha$_{t-1}$	0.0013	0.0023	0.0030	0.0057	0.0029	0.0234**
	(0.32)	(0.30)	(0.01)	(0.71)	(0.36)	(1.99)
FixedIncome	-0.2711***	-0.2757***	-0.3032*	-0.3275*	0.0109	-0.0417*
	(-3.76)	(-12.05)	(-1.84)	(-1.92)	(0.59)	(-1.95)
Foreign	0.0629**	0.0161*	0.0183	-0.0043	0.0433**	0.0009
	(2.28)	(1.82)	(0.71)	(-0.72)	(2.15)	(0.09)

Table 4. Cont'd

Variables	(1)	(2)	(3)	(4)	(5)	(6)
LnFndSize	-0.0666***	-0.0264***	-0.0766***	-0.0326***	0.0018	0.0011
	(-3.85)	(-3.03)	(-3.60)	(-3.38)	(0.40)	(0.36)
LnFamSize	0.0159**	-0.0019	0.0191**	-0.0020	-0.0013	0.0030
	(2.22)	(-0.35)	(2.33)	(-0.30)	(-0.53)	(1.49)
TopFndMrktShr	-0.0231	-0.0185	-0.0215	-0.0176	-0.0134	-0.0013
	(-1.32)	(-1.37)	(-1.26)	(-1.29)	(-0.81)	(-0.08)
TopFamMrktShr	0.0457	0.0372***	0.0438	0.0372***	-0.0188	-0.0037
	(1.10)	(3.89)	(1.04)	(3.58)	(-0.91)	(-0.50)
LnFndAge	-0.0187	-0.0187***	-0.0592	-0.0217	-0.0039	0.0043
	(-1.03)	(-2.90)	(-1.59)	(-1.43)	(-0.62)	(0.96)
#Advisors	0.0212	0.0037**	0.0205	0.0036**	0.0059	0.0030**
	(1.49)	(2.43)	(1.48)	(2.32)	(1.16)	(2.53)
#Services	-0.0038*	0.0017	-0.0041*	0.0015	-0.0010	0.0022*
	(-1.89)	(1.04)	(-1.85)	(0.92)	(-0.75)	(1.71)
OutSourced	-0.0284**	0.0038	0.0162	0.0059	-0.0086	0.0082
	(-2.04)	(0.49)	(1.21)	(0.66)	(-1.16)	(1.14)
HighLeverage	-0.0024	-0.0007	-0.0042	-0.0005	0.0084*	-0.0014
	(-0.71)	(-0.27)	(-1.21)	(-0.21)	(1.81)	(-0.36)
HighDivYield	0.0010	-0.0017	-0.0005	-0.0020	0.0050	-0.0050
	(0.56)	(-0.80)	(-0.25)	(-0.95)	(0.89)	(-1.02)
HighPremium	-0.0002	-0.0014	0.0003	-0.0018	0.0067	-0.0015
	(-0.07)	(-0.55)	(0.11)	(-0.70)	(1.60)	(-0.58)
LnFndTurnover	0.0035**	0.0036***	0.0026	0.0032***	0.0018**	0.0013*
	(2.07)	(3.29)	(1.43)	(2.90)	(2.10)	(1.86)
Margrt$_{t-1}$					0.6222***	0.9004***
					(8.74)	(9.59)
Margrt$_{t-2}$					0.3172***	0.0188
					(4.56)	(0.17)
Constant	2.0052***	1.5570***	2.3940***	1.5876***	-0.1006	-0.0634
	(4.55)	(3.56)	(4.39)	(3.18)	(-0.84)	(-0.42)
AR(1) test (p-value)					0.00	0.00
AR(2) test (p-value)					0.16	0.61
Hansen J-stat (p-value)					0.74	0.51
Observations	4,549	5,347	4,549	5,347	4,613	5,185
R-squared	0.096	0.129	0.127	0.061	0.931	0.912

Table 5. Summary results for panel regressions for the relationship between CEF advisory rates with board characteristics of a sub-sample with no change in board independence around 2004 SEC amendments

This table reports the coefficient estimates of panel regressions to examine the relationship between CEF board characteristics and CEF advisory rates using OLS, fixed-effects and system-GMM estimators and their t-values in parentheses for the period of 2002-2013 and extended period of 1994-2013 for a sub-sample of U.S. closed-end funds (CEFs) with no change in board independence around 2004 SEC amendments. The dependent variable is *Margrt* or the advisory rates. The independent variables are defined in the appendix. Each *t* is a 6-month period. The year dummies are supressed for brevity. AR(1) and AR(2) are first-order and second-order, respectively, tests for no serial correlation in the first differenced standard errors. Hansen J-stat is the test of over-identification under the null that all instruments are valid. The R-square values are also reported. The standard errors are clustered. ***, ** and * indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS		Fixed-effect		System-GMM	
Variables	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**
%IndDirFnd$_{t-1}$	-0.0564	-0.0789*	-0.0552	-0.0934**	0.0045	-0.1299*
	(-1.52)	(-1.87)	(-1.34)	(-2.14)	(0.17)	(-1.81)
BdSize$_{t-1}$	-0.0033	0.0018	-0.0036	0.0016	0.0023*	0.0035
	(-1.31)	(1.19)	(-1.37)	(0.92)	(1.84)	(0.99)
UnexpCompIndDir$_{t-1}$	0.0024	0.0192	0.0101	0.0176	-0.0195	-0.0075
	(0.32)	(1.07)	(1.26)	(1.08)	(-1.59)	(-0.36)
%IndDirOwn>50K$_{t-1}$		-0.0246		-0.0270		0.0179
		(-1.01)		(-1.11)		(0.56)
%DirFemaleFnd$_{t-1}$	-0.0901**	0.0289	-0.0787	0.0132	-0.0280	-0.1789**
	(-1.97)	(0.80)	(-1.51)	(0.30)	(-1.11)	(-2.60)
AveTenIndDirFnd$_{t-1}$	0.0003	0.0007	0.0009	0.0007	0.0000	-0.0034*
	(0.13)	(0.55)	(0.37)	(0.55)	(0.01)	(-1.95)
AveIndDirAgeFnd$_{t-1}$	-0.0550	0.1341	-0.0770	0.0950	0.0380	0.0495
	(-0.62)	(1.22)	(-0.84)	(0.84)	(0.94)	(0.54)
Star$_{t-1}$	-0.0038	0.0066**	-0.0032	0.0065**	-0.0036	0.0228
	(-0.89)	(2.03)	(-0.69)	(2.12)	(-0.38)	(0.91)
StarFam$_{t-1}$	0.0058	-0.0020	0.0070*	-0.0026	-0.0011	0.0132
	(1.64)	(-0.82)	(1.86)	(-0.97)	(-0.19)	(1.15)
ReturnAlpha$_{t-1}$	0.0141	0.0071	0.0131	0.0090	-0.0080	-0.0589
	(0.95)	(0.51)	(0.81)	(0.66)	(-0.65)	(-1.21)
FixedIncome	-0.2922**	-0.2606***	-0.3120	-0.2312	-0.0039	0.0469
	(-2.32)	(-5.43)	(-1.57)	(-1.28)	(-0.18)	(1.50)
Foreign	0.0413	-0.0012	-0.0070	-0.0226*	0.0195	0.0264
	(1.22)	(-0.07)	(-0.44)	(-1.86)	(0.88)	(1.17)

Table 5. Cont'd

Variables	(1)	(2)	(3)	(4)	(5)	(6)
LnFndSize	-0.0576**	-0.0507***	-0.0641**	-0.0529***	0.0050	-0.0068
	(-2.31)	(-3.71)	(-2.20)	(-3.40)	(0.74)	(-1.02)
LnFamSize	0.0260*	0.0007	0.0303*	0.0015	-0.0038	-0.0079
	(1.70)	(0.11)	(1.77)	(0.20)	(-0.87)	(-1.02)
TopFndMrktShr	-0.0231	-0.0109	-0.0186	-0.0081	-0.0269	0.0674**
	(-1.29)	(-0.84)	(-1.08)	(-0.64)	(-0.89)	(2.17)
TopFamMrktShr	0.0353	0.0287*	0.0284	0.0271*	-0.0162	-0.0231
	(1.63)	(1.74)	(1.42)	(1.66)	(-0.89)	(-1.60)
LnFndAge	0.0006	-0.0521***	-0.0272	-0.1285**	-0.0088	0.0156
	(0.03)	(-2.71)	(-0.64)	(-2.33)	(-0.90)	(0.71)
#Advisors	0.0032	0.0037*	0.0157	0.0136*	0.0009	-0.0008
	(1.33)	(1.79)	(0.93)	(1.72)	(0.50)	(-0.25)
#Services	0.0168	0.0130	0.0027	0.0034	-0.0066	-0.0001
	(0.96)	(1.64)	(0.90)	(1.58)	(-0.96)	(-0.01)
OutSourced	-0.0374*	0.0200	0.0084	0.0240	-0.0110	0.0244
	(-1.87)	(1.40)	(0.47)	(1.63)	(-0.98)	(1.19)
HighLeverage	-0.0061*	0.0028	-0.0069*	0.0022	0.0048	0.0098
	(-1.96)	(0.62)	(-1.96)	(0.49)	(0.97)	(0.82)
HighDivYield	0.0011	-0.0010	-0.0013	-0.0018	0.0002	0.0096
	(0.34)	(-0.34)	(-0.39)	(-0.61)	(0.06)	(0.94)
HighPremium	-0.0008	-0.0057	-0.0009	-0.0062	0.0112*	0.0241**
	(-0.24)	(-1.49)	(-0.27)	(-1.63)	(1.70)	(2.01)
LnFndTurnover	0.0024	0.0046**	0.0022	0.0045*	0.0011	0.0018
	(1.04)	(1.99)	(0.91)	(1.96)	(0.73)	(0.65)
Margrt$_{t-1}$					0.6172***	0.7039***
					(8.22)	(5.14)
Margrt$_{t-2}$					0.3241***	0.3257***
					(3.43)	(2.83)
Constant	1.7006***	1.4092***	1.8655***	1.6543***	-0.1425	0.1018
	(3.22)	(2.71)	(2.86)	(2.65)	(-0.80)	(0.29)
AR(1) test (p-value)					0.00	0.00
AR(2) test (p-value)					0.12	0.14
Hansen J-stat (p-value)					0.32	0.89
Observations	2,238	2,131	2,238	2,131	2,218	2,080
R-squared	0.270	0.265	0.174	0.094	0.82	0.91

Table 6. Summary statistics for the sample of closed-end funds and the characteristics of their boards

This table reports summary statistics for fund advisory rate change ($\Delta Margrt$) and board characteristics for the 20 year period from 1994 through 2013. Panel A provides the number of positive (>0), negative (<0) and negative or positive (<0 or >0) advisory rate change within our sample period for all the years in our sample. Panel B reports the means and medians of the fund board characteristics that have positive, negative, positive or negative and no change in advisory rates. All variables are defined in appendix.

Panel A: Number of advisory-rate changes

	Year																				Total
$\Delta Margrt$	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
<0	6	4	9	11	12	9	17	28	9	20	13	48	18	6	9	13	15	20	18	15	300
>0	3	4	6	4	7	5	5	7	7	5	8	2	9	7	9	9	4	3	6	14	124
<0 or >0	9	8	15	15	19	14	22	35	16	25	21	50	27	13	18	22	19	23	24	29	424

Panel B: Board characteristics for different categories of advisory rate change

Variables	Advisory rate increase ($\Delta Margrt$ >0) (N=124)		Advisory rate decrease ($\Delta Margrt$ <0) (N=300)		Advisory rate change ($\Delta Margrt$ <0 or >0) (N=424)		No Change in Advisory rate ($\Delta Margrt$ =0) (N=14,548)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Margrt	0.90	0.90	0.66	0.63	0.73	0.69	0.70	0.65
Δ*Margrt*	0.24	0.20	-0.13	-0.10	-0.02	-0.05	0.00	0.00
%IndDirFnd	0.79	0.80	0.81	0.83	0.80	0.83	0.80	0.80
BdSize	8.60	8.00	8.50	8.00	8.50	8.00	8.50	8.00
AveTenIndDirFnd	6.10	5.00	6.40	6.70	6.30	6.20	5.80	5.30
AveIndDirAgeFnd	64	64	63	63	64	64	63	63
%DirFemaleFnd	0.10	0.00	0.14	0.10	0.13	0.09	0.14	0.14
AveIndDirCompFnd	10211	7000	8352	4127	8865	5258	9771	4182
AveIndDirCompFam	41425	17900	62776	32845	56716	27500	112967	35298
%IndDirOwn>50K	0.12	0.00	0.07	0.00	0.08	0.00	0.08	0.00

Table 7. Summary results for regression analysis of advisory rate changes and board characteristics

This table reports the coefficient estimates of probit regressions for examining the effect of CEF board characteristics on the likelihood of advisory rate increase ($\Delta Margrt>0$) and decrease ($\Delta Margrt<0$). The dependent variables for advisory rate increase (decrease) is a dummy variable which equals one when the change in advisory rate is positive (negative) and zero otherwise. We use ordered logit regression to examine the effect of board characteristics on the likelihood of advisory rate changes ($\Delta Margrt<0$ or >0). The dependent variable for ordered logit regression equals one (minus one) when the change in advisory rate is positive (negative) and zero when there is no change in advisory rate. We also use a time fixed-effects specification to examine the magnitude of advisory-rate changes. The dependent variable is the advisory-rate change ($\Delta Margrt$). The independent variables are defined in the appendix. Each *t* is a 6-month period. The year dummies are supressed for brevity. The R-square values are also reported. The standard errors are clustered. ***, ** and * indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Probit		Probit		Ordered Logit		OLS	
	$\Delta Margrt>0$		$\Delta Margrt<0$		$\Delta Margrt<0$ or >0		$\Delta Margrt$	
Variables	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**
%IndDirFnd$_{t-1}$	-0.2484	-0.0116	-0.1941	3.5392***	0.6999	-4.4602***	-0.0084	-0.0141***
	(-0.38)	(-0.01)	(-0.42)	(4.37)	(0.69)	(-3.86)	(-1.19)	(-2.93)
BdSize$_{t-1}$	-0.0115	0.0741***	-0.0192	0.0188	0.0399	0.0825**	0.0004**	0.0002
	(-0.45)	(2.91)	(-0.89)	(0.85)	(1.08)	(2.56)	(2.06)	(1.08)
UnexpCompIndDir$_{t-1}$	0.0015	-5.3766***	-0.1860	-6.0105***	0.2231	5.9755***	-0.0000	0.0103***
	(0.01)	(-3.09)	(-1.02)	(-7.01)	(1.33)	(6.27)	(-0.03)	(2.79)
%IndDirOwn>50K$_{t-1}$		0.6214**		0.2398		0.1983		0.0016
		(1.98)		(0.85)		(0.36)		(0.75)
%DirFemaleFnd$_{t-1}$	-0.7327	-0.9081	-1.8903***	0.3994	2.8130***	-1.7293*	0.0063*	-0.0017
	(-1.30)	(-1.46)	(-3.68)	(0.95)	(4.27)	(-1.91)	(1.77)	(-0.53)
AveTenIndDirFnd$_{t-1}$	-0.0178	-0.0871***	0.0120	-0.0513***	-0.0412	-0.0177	0.0002	-0.0001
	(-0.61)	(-3.95)	(0.65)	(-2.84)	(-1.11)	(-0.59)	(0.70)	(-0.52)
AveIndDirAgeFnd$_{t-1}$	0.7137	1.5307	-1.3199*	-0.0227	2.8696*	1.6428	0.0124	0.0017
	(0.80)	(1.32)	(-1.73)	(-0.02)	(1.93)	(0.92)	(1.47)	(0.22)
Star$_{t-1}$	0.3008	-0.2961	-0.0418	-0.0807	1.1837***	0.0073	0.0050*	-0.0011
	(1.16)	(-0.78)	(-0.21)	(-0.36)	(3.63)	(0.02)	(1.83)	(-0.61)
StarFam$_{t-1}$	-0.1068	0.0504	-0.3569***	0.0059	0.6635***	-0.1579	0.0013	-0.0016
	(-0.61)	(0.33)	(-2.82)	(0.05)	(2.93)	(-0.62)	(1.12)	(-1.64)
ReturnAlpha$_{t-1}$	-0.0403	-0.6416	0.0035	-0.1019	-0.0685	-0.0920	-0.0012	-0.0007
	(-0.31)	(-1.27)	(0.05)	(-0.29)	(-0.64)	(-0.13)	(-0.60)	(-0.27)
HighAdvRt$_{t-1}$	-0.3777***	-0.1806	0.3649***	0.5639***	-0.9199***	-1.0455***	-0.0050***	-0.0030***
	(-3.04)	(-1.24)	(3.39)	(5.22)	(-4.89)	(-4.49)	(-3.52)	(-3.33)

Table 7. Cont'd

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LnFndSize$_{t-2}$	0.0064	0.1541	-0.0641	-0.0953	0.1140	0.2545**	0.0001	0.0004
	(0.07)	(1.19)	(-1.17)	(-1.45)	(1.20)	(2.52)	(0.20)	(0.82)
LnFamSize$_{t-2}$	-0.0335	-0.1304*	0.0725*	0.1106*	-0.1735**	-0.3178***	-0.0000	-0.0006
	(-0.64)	(-1.83)	(1.77)	(1.84)	(-2.41)	(-3.78)	(-0.02)	(-0.92)
TopFndMrktShr$_{t-2}$	0.0765	0.2541	0.2113	-0.1077	-0.2003	0.4793	-0.0010	0.0020
	(0.28)	(0.75)	(1.08)	(-0.53)	(-0.50)	(0.82)	(-0.32)	(1.22)
TopFamMrktShr$_{t-2}$	-0.0867	-0.5904	-0.6300**	-0.9869***	0.7671*	1.0162*	0.0038	0.0034**
	(-0.34)	(-1.39)	(-2.47)	(-3.16)	(1.71)	(1.65)	(0.80)	(2.17)
HighGrwthFnd$_{t-1}$	-0.2002	-0.0686	0.0200	0.1951	-0.0785	-0.3625	0.0023	-0.0021*
	(-0.81)	(-0.27)	(0.12)	(1.23)	(-0.21)	(-1.07)	(0.88)	(-1.71)
HighGrwthFam$_{t-1}$	-0.0488		-0.0236	0.0589	0.0022	-0.3938	0.0004	-0.0024
	(-0.13)		(-0.11)	(0.22)	(0.00)	(-0.99)	(0.12)	(-1.13)
Δ*#Advisors*	0.1264	0.0277	-0.5373***	-0.2268	0.8005	0.2938***	0.0111	-0.0003
	(0.37)	(0.39)	(-2.95)	(-1.26)	(1.30)	(2.64)	(0.99)	(-0.51)
Δ*#Service*	0.1946**	-0.0045	0.0059	-0.0874	0.1093	0.1411	-0.0001	-0.0004
	(2.28)	(-0.08)	(0.07)	(-1.53)	(0.61)	(1.39)	(-0.16)	(-0.47)
Δ*FndTurnover*	-0.0002	0.0021	-0.0010	-0.0013	0.0021	0.0028*	0.0000	0.0000
	(-0.20)	(1.41)	(-1.42)	(-1.60)	(1.27)	(1.79)	(1.22)	(1.37)
HighLeverage$_{t-1}$	-0.2875**	-0.1686	0.0581	-0.0137	-0.2470	-0.0895	-0.0003	-0.0001
	(-2.13)	(-1.33)	(0.60)	(-0.13)	(-1.46)	(-0.47)	(-0.21)	(-0.21)
HighDivYield$_{t-1}$	0.2573	0.1146	0.0016	0.0166	0.0904	0.1731	0.0006	0.0008
	(1.59)	(0.74)	(0.02)	(0.17)	(0.58)	(0.94)	(0.81)	(1.11)
HighPremium$_{t-1}$	0.0701	0.2143	-0.1347	-0.1469	0.3049*	0.3281*	0.0023*	0.0022**
	(0.51)	(1.25)	(-1.46)	(-1.38)	(1.86)	(1.66)	(1.68)	(2.29)
Acquirer	0.4097	-0.1210	0.4505***	0.2201	-0.8568*	-0.0095	-0.0070*	0.0031
	(1.15)	(-0.40)	(2.58)	(0.92)	(-1.71)	(-0.02)	(-1.80)	(1.12)
Target			0.4950		-0.9238	0.2849	-0.0095	0.0003
			(1.03)		(-0.91)	(0.75)	(-0.93)	(0.25)
FixedIncome	-0.4937**	-0.1302	-0.2195	-0.4817***	-0.0318	0.5572	0.0017	0.0036**
	(-2.04)	(-0.66)	(-1.40)	(-2.91)	(-0.10)	(1.44)	(0.60)	(2.51)
Constant	-3.8848	-8.4497*	3.8777	-5.6315	-7.4685	3.9904	0.0372	0.0101
	(-1.04)	(-1.66)	(1.33)	(-1.10)	(-1.29)	(0.52)	(0.72)	(0.36)
Unconditional probability	1.4% (61/4, 218)	1.5% (63/4, 019)	2.9% (138/4, 651)	3.0% (162/5, 327)	4.0% (199/4, 861)	4.2% (225/5, 342)		
Observations	4,218	4,019	4,651	5,327	4,861	5,342	4,861	5,342
R-square	0.147	0.173	0.161	0.218	0.109	0.141	0.012	0.021

Table 8. Summary results for regression analysis of advisory rate changes and board characteristics for a sub-sample with no change in board independence around 2004 SEC amendments

This table reports the coefficient estimates of probit regressions for examining the effect of CEF board characteristics on the likelihood of advisory rate increase ($\Delta Margrt$>0) and decrease ($\Delta Margrt$ <0) for a sub-sample with no change in board independence around 2004 SEC amendments. The dependent variables for advisory rate increase (decrease) is a dummy variable which equals one when the change in advisory rate is positive (negative) and zero otherwise. We use ordered logit regression to examine the effect of board characteristics on the likelihood of advisory rate changes ($\Delta Margrt$ <0 or >0). The dependent variable for ordered logit regression equals one (minus one) when the change in advisory rate is positive (negative) and zero when there is no change in advisory rate. We also use a time fixed-effects specification to examine the magnitude of advisory-rate changes. The dependent variable is the advisory-rate change ($\Delta Margrt$). The independent variables are defined in the appendix. Each *t* is a 6-month period. The year dummies are supressed for brevity. The R-square values are also reported. The standard errors are clustered. ***, ** and * indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Probit		Probit		Ordered Logit		OLS	
	$\Delta Margrt$ >0		$\Delta Margrt$ <0		$\Delta Margrt$ <0 or >0		$\Delta Margrt$	
Variables	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**
%IndDirFnd$_{t-1}$	-3.4062**	0.2529	-0.0622	2.8896**	-2.1470	-3.2064*	-0.0166	-0.0117
	(-2.44)	(0.19)	(-0.06)	(2.36)	(-0.82)	(-1.68)	(-1.63)	(-1.56)
BdSize$_{t-1}$	-0.0410	0.1546***	-0.1080**	0.0993**	0.1499**	0.0334	0.0008***	0.0005
	(-1.04)	(3.06)	(-2.03)	(2.32)	(2.20)	(0.63)	(3.06)	(0.97)
UnexpCompIndDir$_{t-1}$	0.0190	-11.9974***	-0.3766	-1.4828	0.1865	0.1437	-0.0002	-0.0036
	(0.10)	(-3.89)	(-1.02)	(-0.91)	(0.67)	(0.10)	(-0.19)	(-0.69)
%IndDirOwn>50K$_{t-1}$		1.7779***		-0.1718		0.9099		0.0024
		(3.97)		(-0.45)		(1.30)		(0.86)
%DirFemaleFnd$_{t-1}$	-1.0339	-1.2254	-3.4562***	-1.7419	3.6020***	0.7119	0.0091	0.0032
	(-1.06)	(-1.53)	(-4.03)	(-1.55)	(3.20)	(0.53)	(1.60)	(0.46)
AveTenIndDirFnd$_{t-1}$	0.0269	-0.1968***	0.0245	-0.0671**	0.0115	-0.0302	0.0006*	-0.0004
	(0.85)	(-4.53)	(0.93)	(-2.53)	(0.16)	(-0.71)	(1.74)	(-1.18)
AveIndDirAgeFnd$_{t-1}$	0.6026	5.1194**	-1.9027**	-0.1729	4.2472*	4.0394	0.0070	0.0217
	(0.49)	(2.16)	(-2.00)	(-0.10)	(1.89)	(1.06)	(0.74)	(1.22)
star$_{t-1}$	0.3299			-0.0541	1.1097	-0.1502	0.0020	0.0100
	(0.78)			(-0.14)	(1.48)	(-0.33)	(1.35)	(0.97)
StarFam$_{t-1}$	-0.0150	-0.1482	0.3127	-0.1268	-0.3201	0.0556	0.0010	-0.0020
	(-0.05)	(-0.51)	(1.13)	(-0.68)	(-0.58)	(0.12)	(0.52)	(-1.01)
ReturnAlpha$_{t-1}$	0.3196	-0.8044	0.3638*	-0.3834	-0.5346	0.1912	-0.0109	0.0004
	(1.03)	(-0.86)	(1.84)	(-0.73)	(-1.45)	(0.18)	(-1.12)	(0.06)
HighAdvRt$_{t-1}$	-0.7190***	-0.7073***	0.0350	0.1493	-0.8221*	-0.5795	-0.0044***	-0.0043*
	(-3.03)	(-3.09)	(0.16)	(0.69)	(-1.92)	(-1.54)	(-2.74)	(-1.80)

Table 8. Cont'd

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LnFndSize$_{t-2}$	0.0953	-0.2377**	0.2071*	0.0382	-0.1277	-0.1563	-0.0003	-0.0006
	(0.77)	(-2.21)	(1.84)	(0.33)	(-0.72)	(-1.22)	(-0.36)	(-1.37)
LnFamSize$_{t-2}$	-0.0004	0.0819	-0.0556	-0.0402	0.0826	-0.0847	0.0007	-0.0008
	(-0.01)	(0.99)	(-0.72)	(-0.46)	(0.64)	(-0.84)	(1.07)	(-0.64)
TopFndMrktShr$_{t-2}$	0.2596	-0.0136	0.2040	0.0631	-0.3151	0.2685	-0.0053	0.0025
	(0.57)	(-0.04)	(0.68)	(0.24)	(-0.41)	(0.55)	(-1.46)	(1.14)
TopFamMrktShr$_{t-2}$	-0.3059	-0.3958	-0.6943*	-0.7567	0.5262	0.7935*	-0.0004	0.0028
	(-0.84)	(-0.99)	(-1.81)	(-1.62)	(0.56)	(1.75)	(-0.08)	(1.44)
HighGrwthFnd$_{t-1}$	-0.5206	0.0218	-0.1308	0.4355**	-0.1501	-0.7525	0.0012	-0.0034*
	(-1.30)	(0.07)	(-0.47)	(2.18)	(-0.25)	(-1.51)	(0.36)	(-1.66)
HighGrwthFam$_{t-1}$			0.3786	0.9077**	-0.6265	-1.8790***	-0.0007	-0.0092
			(0.76)	(2.77)	(-0.81)	(-2.82)	(-0.21)	(-1.58)
Δ#Advisors	0.0670	-0.0802	-0.2385**	-0.3024**	0.8904	0.3771	0.0116	0.0013
	(0.15)	(-0.39)	(-2.13)	(-2.13)	(0.79)	(0.74)	(0.70)	(0.64)
Δ#Service	0.1055	0.2109	0.1660	-0.0970	-0.2164	0.1504	-0.0008	-0.0017
	(1.26)	(1.47)	(1.37)	(-0.81)	(-0.90)	(0.57)	(-0.68)	(-0.63)
ΔFndTurnover	-0.0010	0.0084***	-0.0006	-0.0028*	0.0008	0.0046*	0.0000	0.0000
	(-0.97)	(3.29)	(-0.49)	(-1.77)	(0.20)	(1.90)	(0.66)	(0.78)
HighLeverage$_{t-1}$	0.1364	-0.3217	0.0628	-0.0939	0.0354	-0.0075	0.0007	-0.0001
	(0.65)	(-1.47)	(0.39)	(-0.57)	(0.13)	(-0.03)	(0.51)	(-0.05)
HighDivYield$_{t-1}$	0.2829	0.2725	-0.2013	0.0209	0.4787	0.0770	0.0023*	0.0008
	(1.32)	(1.06)	(-1.16)	(0.11)	(1.30)	(0.26)	(1.73)	(0.65)
HighPremium$_{t-1}$	0.1353	0.1136	-0.0490	-0.0710	0.1357	0.2155	0.0023	0.0020
	(0.67)	(0.54)	(-0.24)	(-0.47)	(0.38)	(0.80)	(0.90)	(1.33)
Acquirer	0.5228		0.3878		-0.4396	0.4917	-0.0083	0.0020
	(1.46)		(1.14)		(-0.28)	(1.46)	(-1.13)	(1.36)
Target						0.2636		0.0038
						(0.37)		(0.96)
FixedIncome	-0.2522	-0.4689	-0.2836	-0.7259**	0.2161	0.8861**	-0.0025	0.0034
	(-0.75)	(-1.59)	(-1.06)	(-2.14)	(0.33)	(2.04)	(-0.68)	(1.37)
Constant	-3.7471	-20.6369**	3.9300	-3.0283	-12.1437	-4.0241	-0.0389	-0.0542
	(-0.73)	(-1.99)	(1.08)	(-0.37)	(-1.42)	(-0.24)	(-0.93)	(-0.79)
Unconditional probability	1.5% (22/1, 461)	1.8% (22/1, 168)	2.3% (38/1, 642)	2.4% (35/1, 418)	4.3% (100/2, 321)	4.5% (97/2, 133)		
Observations	1,461	1,168	1,642	1,418	2,321	2,133	2,321	2,133
R-square	0.212	0.312	0.222	0.185	0.077	0.132	0.020	0.025

Table 9. Summary results for regression analysis of the change in board characteristics and advisory rate changes

This table reports the coefficient estimates of probit regressions for examining the effect of the change in CEF board characteristics on the likelihood of advisory-rate increase ($\Delta Margrt$ >0) and decrease ($\Delta Margrt$ <0). The dependent variables for advisory rate increase (decrease) is a dummy variable which equals one when the change in advisory rate is positive (negative) and zero otherwise. We use an ordered logit regression to examine the effect of the change in board characteristics on the likelihood of advisory rate changes ($\Delta Margrt$ <0 or >0). The dependent variable for ordered logit regression is equals one (minus one) when the change in advisory rate is positive (negative) and zero when there is no change in the advisory rate. We also use an OLS specification to examine the magnitude of the effect of the change in board characteristics on advisory-rate changes. The dependent variable is the advisory-rate change ($\Delta Margrt$). The independent variables are defined in the appendix. Each *t* is a 6-month period. The year dummies are supressed for brevity. The R-square values are also reported. The standard errors are clustered. ***, ** and * indicate statistical significance at the 0.01, 0.05 and 0.10 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Probit		**Probit**		**Ordered-Logit**		**OLS**	
	$\Delta Margrt$ >0		**$\Delta Margrt$ <0**		**$\Delta Margrt$ <0 or >0**		**$\Delta Margrt$**	
Variables	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**	**1994-2004**	**2005-2013**
3Y∆%IndDirFnd	-0.9422**	2.1240***	-0.6550	2.3289***	0.9319	-2.7355***	-0.0047	-0.0045
	(-2.16)	(3.51)	(-1.16)	(4.16)	(0.93)	(-2.63)	(-0.49)	(-0.65)
3Y∆BdSize	0.0057	0.0720	-0.0750**	-0.0502**	0.1491**	0.1174***	0.0006*	0.0004
	(0.11)	(1.59)	(-2.45)	(-2.03)	(2.40)	(3.10)	(1.76)	(1.47)
3Y∆UnexpCompIndDir	-0.2594	0.1767	-0.2182	-0.2654	0.1337	0.6124*	0.0035	0.0015
	(-0.77)	(0.27)	(-0.94)	(-0.90)	(0.54)	(1.67)	(1.63)	(1.10)
3Y∆%IndDirOwn>50K		-0.0575		-0.5034		0.4554		-0.0064
		(-0.18)		(-1.58)		(0.56)		(-0.62)
3Y∆%DirFemaleFnd	0.6258	0.3635	0.7254	0.6203	-0.8412	-1.4933	-0.0038	0.0071
	(0.84)	(0.40)	(1.47)	(1.17)	(-0.71)	(-1.56)	(-0.82)	(1.07)
3Y∆AveTenIndDirFnd	-0.0058	-0.0413*	-0.0631**	-0.0679***	0.1007	0.0755*	0.0007*	-0.0004
	(-0.11)	(-1.75)	(-1.97)	(-2.80)	(1.57)	(1.66)	(1.80)	(-0.92)
3Y∆AveIndDirAgeFnd	-0.1893	3.2354**	0.0357	2.1515	0.2182	-1.2674	-0.0083	0.0213
	(-0.15)	(2.18)	(0.03)	(1.37)	(0.09)	(-0.38)	(-0.51)	(1.08)
star$_{t-1}$	0.1125	-0.1832	-0.1735	-0.2461	1.0782***	0.3035	0.0027***	0.0010
	(0.35)	(-0.53)	(-1.31)	(-1.09)	(2.97)	(0.86)	(3.43)	(1.54)
StarFam$_{t-1}$	-0.0186	0.0163	-0.3640**	-0.0519	0.6470**	0.0048	0.0018	-0.0008
	(-0.11)	(0.11)	(-2.45)	(-0.39)	(2.41)	(0.02)	(1.60)	(-0.90)
ReturnAlpha$_{t-1}$	0.0428	-0.7800	0.0205	-0.0658	-0.0132	-0.1753	-0.0011	-0.0009
	(0.91)	(-1.46)	(0.33)	(-0.18)	(-0.07)	(-0.26)	(-0.59)	(-0.30)
HighAdvRt$_{t-1}$	-0.4271***	-0.1132	0.4486***	0.5162***	-1.1348***	-0.9290***	-0.0053***	-0.0020***
	(-2.74)	(-0.74)	(3.28)	(4.96)	(-4.27)	(-4.19)	(-4.08)	(-3.23)

Table 9. Cont'd

***LnFndSize*$_{t-2}$**	0.0746 (0.74)	0.1905 (1.44)	-0.1040* (-1.79)	-0.0881 (-1.30)	0.2106** (2.01)	0.2385** (2.19)	0.0006 (1.03)	0.0001 (0.40)
***LnFamSize*$_{t-2}$**	-0.1141** (-2.13)	-0.1505* (-1.83)	0.0429 (1.03)	0.1252** (2.27)	-0.1204 (-1.47)	-0.2707** (-2.78)	0.0001 (0.26)	-0.0007 (-1.00)
***TopFndMrktShr*$_{t-2}$**	-0.1372 (-0.47)	0.2588 (0.75)	-0.3468 (-1.18)	0.0156 (0.08)	0.5119 (1.13)	0.3975 (0.65)	0.0045 (1.39)	0.0022 (1.37)
***TopFamMrktShr*$_{t-2}$**	0.1352 (0.50)	-0.3581 (-0.85)	-0.5544* (-1.87)	-0.4676 (-1.61)	0.7505 (1.52)	0.5441 (1.01)	-0.0003 (-0.07)	0.0029 (1.46)
***HighGrwthFnd*$_{t-1}$**	-0.1652 (-0.58)	-0.0306 (-0.12)	0.0589 (0.27)	0.1607 (1.06)	-0.0790 (-0.19)	-0.3416 (-1.01)	0.0009 (0.35)	-0.0017 (-1.37)
***HighGrwthFam*$_{t-1}$**	0.1035 (0.26)			0.1696 (0.60)	1.0771** (2.23)	-0.5247 (-1.13)	0.0065* (1.77)	-0.0030 (-1.26)
Δ*#Advisors*	0.0911 (0.25)	0.0607 (0.93)	-0.5248*** (-2.70)	-0.3343* (-1.95)	0.5672 (0.76)	0.2509** (2.36)	0.0101 (0.76)	-0.0004 (-0.59)
Δ*#Service*	0.1540 (1.56)	-0.0089 (-0.15)	-0.1547* (-1.66)	-0.0537 (-0.94)	0.3499** (2.30)	0.1004 (1.01)	0.0012* (1.87)	-0.0003 (-0.40)
Δ*FndTurnover*	-0.0000 (-0.01)	0.0018 (1.44)	-0.0009 (-0.98)	-0.0011 (-1.62)	0.0019 (0.91)	0.0029** (2.10)	0.0000 (0.94)	0.0000 (1.56)
***HighLeverage*$_{t-1}$**	-0.2641* (-1.78)	-0.1064 (-0.82)	0.1569 (1.52)	-0.0585 (-0.60)	-0.4427** (-2.24)	-0.0180 (-0.10)	-0.0002 (-0.17)	0.0006 (0.93)
***HighDivYield*$_{t-1}$**	0.2893* (1.84)	0.2103 (1.18)	-0.0666 (-0.57)	0.0354 (0.39)	0.2414 (1.31)	0.1232 (0.61)	0.0005 (0.76)	0.0004 (0.53)
***HighPremium*$_{t-1}$**	0.0652 (0.43)	0.1629 (0.82)	-0.2095* (-1.85)	-0.1256 (-1.21)	0.4975** (2.22)	0.3304 (1.60)	0.0018 (1.07)	0.0020** (2.03)
Acquirer	0.4560 (1.33)		0.5530** (2.50)	0.2460 (1.14)	-1.0909* (-1.71)	-0.6376 (-1.64)	-0.0095** (-2.07)	-0.0005 (-0.37)
Target			0.6922 (1.29)		-1.4380 (-1.36)	0.1608 (0.45)	-0.0113 (-0.92)	0.0004 (0.32)
FixedIncome	-0.3984 (-1.61)	-0.0312 (-0.15)	-0.3277** (-2.02)	-0.1750 (-0.89)	0.1353 (0.34)	0.2212 (0.64)	0.0006 (0.16)	0.0024* (1.67)
Constant	-1.0491 (-0.60)	-2.6474 (-1.24)	-0.5877 (-0.51)	-3.4652** (-2.28)	2.3400 (1.11)	6.7000*** (2.82)	0.0371 (1.31)	0.0144 (1.03)
Unconditional probability	0.9% (31/3, 237)	1.3% (49/3, 698)	2.5% (81/3, 170)	2.8% (141/5, 028)	6.1% (220/3, 581)	4.8% (245/5, 043)		
Observations	3,237	3,698	3,170	5,028	3,581	5,043	3,581	5,043
R-square	0.143	0.109	0.166	0.158	0.118	0.117	0.016	0.014

APPENDIX: Definition of variables and data source

#*Advisors*: The number of advisors and sub-advisors providing service in a CEF (item 8 A and B of NSAR form); NSAR form

Δ#*Advisors*: The difference between current value of $\#Advisors$ and its value in previous NSAR filing; NSAR form

***AveIndDirCompFnd*:** The average dollar value of compensation received by board from a CEF; DEF-14A SEC form

***AveIndDirCompFam*:** The average dollar value of compensation received by board from a CEF family; DEF-14A SEC form

***AveTenIndDirFnd*:** The average number of years independent directors sit on a CEF board; DEF-14A SEC form

3*Y*Δ*AveTenIndDirFnd*: The difference between current value $AveTenIndDirFnd$ and three-year lagged value of this variable; DEF-14A SEC form

BdSize: The total number of directors on a CEF board; DEF-14A SEC form

1*Y*Δ*BdSize:* The difference between current value of ***BdSize*** and one-year lagged value of this variable; DEF-14A SEC form

3*Y*Δ*BdSize*: The difference between current value of ***BdSize*** and three-year lagged value of this variable; DEF-14A SEC form

***ChgType*:** A variable which takes values of -1, 0 and 1 if the fund decreases, does not change and increases its advisory rate, respectively; NSAR form

%*DirFemaleFnd*: The percentage of female directors on a CEF board; Public online sources

3*Y*Δ%*DirFemaleFnd*: The difference between current value $\%DirFemaleFnd$ and three-year lagged value of this variable; DEF-14A SEC form

***DivYield*:** Dividend amount (Item 73-A1 of NSAR form) as a percentage of CEF share price (Item 76 of NSAR form); NSAR form

***ExpenseRatio*:** CEF's annual expense ratios; Morningstar Direct

***FamStar*:** A dummy variable which take one if the CEF family has at least one other star CEF within the complex sample in a given period; Calculated

***FamMrktShr*:** Calculated as the NAV of CEF family divided by sum of all NAVs in the market; Calculated

***FixedIncome*:** A dummy variable which takes value of one for CEFs with bond and municipal bond fund type and zero otherwise; Morningstar Direct

***FndTurnover*:** The lesser of purchases (item 71A of form NSAR) or sales (item 71B of form NSAR) divided by average monthly net assets (item 71C of form NSAR); NSAR form

Δ*FndTurnover*: The difference between current value of $FndTurnover$ and the value of this variable in previous NSAR filing; Calculated

Foreign: A dummy variable which takes value of one if CEF being registered outside the U.S. (Item 68-B); NSAR form

***GrowthFam*:** The difference between CEF family NAV of current and previous NSAR filing; Calculated

***GrowthFnd*:** The difference between CEF NAV of current and previous NSAR filing; Calculated

***HighAdvRt*:** A dummy variable equals to one if the advisory rate ($Margrt$) is higher than sample median advisory rate in a given period; Calculated

***HighDivYield*:** A dummy variable which equals one if the CEF $DividendYield$ is above the sample median dividend yield in a given period; Calculated

***HighGrwthFam*:** A dummy variable which takes value of one if the CEF family growth ($GrowthFamily$) is on top decile of the sample given the period; Calculated

***HighGrwthFnd*:** A dummy variable which takes value of one if the CEF growth ($GrowthFnd$) is on top decile of the sample for a given the fund type and period; Calculated

***HighLeverage*:** A dummy variable which equals one if the CEF $Leverage$ is above the sample median leverage in a given period; Calculated

***HighPremium*:** A dummy variable which equals one if the CEF $Premium$ is above the sample median premium in a given period; Calculated

%*IndDirFnd*: The percentage of independent directors in CEF boards; DEF-14A SEC form

1*Y*Δ%*IndDirFnd*: The difference between current value of $\%IndDirFnd$ and one-year lagged value of this variable; DEF-14A SEC form

3*Y*Δ%*IndDirFnd*: The difference between current value of $\%IndDirFnd$ and three-year lagged value of this variable; DEF-14A SEC form

%*IndDirOwn* > 50*K*: The percentage of independent directors who hold more than $50,000 worth of funds shares;DEF-14A SEC form

3*Y*Δ%*IndDirOwn* > 50*K*: The difference between current value of $\%IndDirOwn > 50K$ and three-year lagged value of this variable; DEF-14A SEC form

***Leverage*:** The ratio of non-common equity (Item 74-N minus Item 74-F) to CEF total assets (Item 74-N of NSAR form); NSAR form

***LnAveIndDirAgeFnd*:** The logarithm of average age of independent directors (years) on the CEF board; DEF-14A SEC form

3*Y*Δ*LnAveIndDirAgeFnd*: The difference between current value of $LnAveIndDirAgeFnd$ and three-year lagged value of this variable; DEF-14A SEC form

***LnFamSize*:** The natural logarithm of family's total net assets in CEFs; NSAR form

***LnFndAge*:** The natural logarithm of fund's age as given by the fund launch date; Morningstar Direct

***LnFndSize*:** The natural logarithm of the fund's total net assets (Item 74-U01*74-U01); NSAR form

1*Y*Δ*LnFndSize*: The difference between current value of $LnFndSize$ and one-year lagged value of this variable; Calculated

***LnFndTurnover*:** The natural logarithm of the lesser of purchases (item 71A of form NSAR) or sales (item 71A of form NSAR) divided by average monthly net assets (item 71C of form NSAR); NSAR form

***Margrt*:** The advisor marginal rate of compensation (advisory rate). For linear contracts, we use the item 48 of NSAR forms. For concave contracts, this rate depends on the NAV of the CEFs; NSAR form

Δ***Margrt*:** The change of marginal rate or advisory rate from previous NSAR filings. Following Warner and Wu (2011), we use the same NAV for current and previous NSAR filings to remove the mechanical effect of asset growth on the concave contracts; NSAR form

***MrktShr*:** Calculated as the CEF NAV divided by sum of all NAVs in the market; Calculated

***Outsourced*:** A dummy variable which takes value of one if the CEF is outsourced. Following Chen et al., (2013), we define if a CEF is outsourced if the CEF has at least one advisor which is not affiliated to the fund family complex; NSAR form

***Premium*:** (share price - NAVPS)/NAVPS (item 74V1 and 76 of form NSAR for NAVPS and share price); NSAR form

***ReturnAlpha*:** We obtain the *ReturnAlpha* following Chen et al. (2013), Ferreira et al. (2013). Specifically: $ReturnAlpha_{it} = ShareReturn_{it} - (\sum_{k=1}^{K} \hat{\beta}_{ikt} I_{kt})$, where $ReturnAlpha_{it}$ is the benchmark-adjusted share return of fund *i* at time *t*, $ShareReturn_{it}$is the realized share return of fund *i* at time *t*, *K* is the number of factors in the benchmark model, I_{kt} is the realized return for benchmark factor *k* at time *t*, and $\hat{\beta}_{ikt}$ are the estimated factor betas of fund *i* at time *t* obtained by regressing the previous 36 months of realized share returns against the corresponding realized benchmark factor returns. The benchmark-adjusted share return performances for funds with an investment objective of equity, international equity and specialty are calculated using a 5-factor model. The factors are the monthly excess returns on the CRSP value-weighted index, the differences in returns between small and large stock portfolios, the differences in returns between high and low book-to-market stock portfolios, the Carhart (1997) momentum factor, and the Pastor and Stambaugh (2003) liquidity factor. The factor data

are collected from Wharton Research Data Services (WRDS). For the bond and municipal bond CEFs, we use a 7-factor model that includes the Barclays Aggregate Bond Index, Barclays U.S. Treasury Long, Barclays U.S. Treasury Intermediate, Barclays U.S. Mortgage Backed Securities, Barclays U.S. Corp Investment Grade, Barclays Municipal Bond and Barclays U.S. Corp High Yield Bond, which is consistent with the models used in Blake, Elton, and Gruber (1993) and Chen *et al.* (2013). For the allocation CEFs, we use a 12-factor model that includes the 5 factors used for the equity CEFs and the 7 factors used for the bond CEFs. CEFs are included in the samples for the tests of benchmark-adjusted return performances only if they have at least 36 non-missing monthly return observations. The monthly benchmark-adjusted returns are compounded to annualize them. Calculated.

#*Services*: The number of services provided by advisors (item 54 A through O of NSAR form); NSAR form

Δ#*Services*: The difference between current value of $\#Services$ and the value of this variable in previous NSAR filing; Calculated

***ShareReturn*:** CEF holding period return; Morningstar Direct

***Star*:** A dummy variable which take one if the CEF share return was on the top 5% of the sample in a given the fund type and period; Calculated

***TopFamMrktShr*:** A dummy variable which equals one if CEF family market share ($FamMrktShr$) is on top decile of the sample market shares in a given period; Calculated

***TopFndMrktShr*:** A dummy variable which equals one if CEF market share ($MrktShr$) is on top decile of the sample market shares in a given period; Calculated

***UnexpCompIndDir*:** Average residual obtained (in millions of dollars) from annually regressing the total compensation of a director from fund family on the number of boards that the director serves on and the total assets overseen by that director, as in Tufano and Sevick (1997); Calculated

3YΔUnexpCompIndDir: The difference between current value of $UnexpCompIndDir$ and three-year lagged value of this variable; Calculated