

OEA Memorandum

To: Investment Company File S7-03-04

From: Chester Spatt, Chief Economist

Date: December 29, 2006

Re: Literature Review on Independent Mutual Fund Chairs and Directors[◇]

Executive Summary

This memorandum provides a review of the literature in financial economics related to mutual fund governance, in the form of independent chair and directors, and performance in mutual funds.

Overall, we draw two main inferences from our examination of the mutual fund literature:

- Boards with a greater proportion of independent directors are more likely to negotiate and approve lower fees, merge poorly performing funds more quickly or provide greater investor protection from late-trading and market timing.
- Broad cross-sectional analysis reveals little consistent evidence that board composition is related to lower fees and higher returns for fund shareholders.

These two inferences may seem in conflict, but results of empirical studies are materially affected by the existence of reliable models of economic behavior and the availability of empirical methods, statistical tools and relevant data. Any empirical test of governance structures is implicitly a joint test of a given structure and the model that the researcher relies upon to generate testable results. The lack of consistent evidence that board composition leads to better fund performance may be attributed to several factors.

- First, there is no sound structural model that enables researchers to isolate the effect of a given board decision on performance from all other factors that affect performance.
- Second, inherent limitations to data and statistical tools as applied in the particular context may render it difficult for research to identify relations that exist and that may be economically significant. This point is discussed at greater length in a companion memorandum by the staff of the Office of Economic Analysis (OEA).
- Third, and finally, the nature of the conflicts of interest in mutual funds is such that there may not be a unique relation between governance and performance.

[◇] This memorandum was drafted by the staff of the Office of Economic Analysis and has been updated through December 2006. The Commission has expressed no view about its contents.

That is, poor governance can at times be associated with higher returns through excessive, nontransparent risk taking by fund managers; although, with a proper risk-adjustment, fund performance could be lower.

Given that the literature focusing on governance and performance is relatively recent in the mutual fund area, we also provide a brief review of the governance literature for operating companies, again focusing on the role of independent directors and independent board chairs. Although economists have suggested that the management of conflicts of interest plays a more central role for a mutual fund board than for an operating company board, there are several basic inferences that can be drawn from both literatures.

I. Introduction

This memo describes the current academic literature on the relation between the independence of mutual fund chairs and boards, and the performance, fees and compliance of mutual funds. To provide background and context for these studies, we first describe agency conflicts that arise between mutual fund advisers, portfolio managers and mutual fund shareholders. We then consider the results of academic studies in the area, and discuss their goals, methods and findings.

Economic theory on board composition has evolved over the past two decades, focusing primarily on the role of outside directors of non-financial corporations, although a small but increasing body of literature on the boards of financial institutions has begun to emerge.

The theory of board composition is concerned with both the determinants and the consequences of board structure for the actions and performance of corporations. Focusing on outside directors,¹ the determinants of the optimum board structure for any company depend, in part, on the best trade-off between the positive and negative consequences of increasing the influence of outsiders over the board, such as by adding outside directors. On the one hand, outsiders may bring expertise and independence, so that their influence may improve the quality of management decisions and manage conflicts of interest that insiders have, thereby increasing the value of the firm. On the other hand, outsiders may lack information about the “inner-workings” of the firm and other firm-specific knowledge. If independent directors find it difficult to extract this hidden (or simply costly-to-acquire) information from management, their influence may diminish the quality of management decisions and reduce the value of the firm.

Thus, the optimum structure of a firm’s board (from a firm value standpoint) depends on the relative importance of the board’s expertise or independence versus the need for access to hidden, firm-specific information. This optimum may prove to be quite different for firms with different characteristics. Changes in board structure may affect the quality of decisions within the firm and thereby may affect investor value. The theoretical literature on board composition reflects the observation that the incremental

¹ Throughout this discussion, we use the terms independent directors and outside directors interchangeably.

value of outsider expertise and independence, relative to information access, may vary widely among firms.

Two different insights from the theory are important to the development and interpretation of empirical research on board composition. The first is that in well-functioning markets, shareholders will select a mix of both inside and outside directors that maximizes the value of the firm. That optimal mix will depend on the value to investors of the different contributions that insiders and outsiders make to the board of a particular firm. In markets where there are few impediments to selecting the optimal board composition, there may be differences in board composition across firms. *Because value-maximizing board structures might differ from firm to firm, there may be no obvious relation between board composition and investor wealth.*

Second, to the extent board structures are *not* optimally chosen from the investor perspective, *boards with a suboptimal structure may be associated with reduced investor wealth.* Under a scenario that some, but not all, firms have too few outside directors, for example, economic theory predicts there to be a relation between investor value and board structure across companies such that companies with the right numbers of outside directors make better decisions – and generate more value for investors generally – than do companies with too few outside directors. Further, in this instance, *changes in board structure can create value.*

The current state of empirical research with respect to the impact of independent mutual fund chairs, as well as governance mechanisms for mutual funds more generally, is growing but remains underdeveloped. As a result, our review includes a discussion of the academic findings related to independent chairs and boards for operating companies, because this literature is more established.

The two main inferences that may be drawn from the mutual fund literature are similar to those drawn from the operating company literature. First, there is some evidence that governance mechanisms, such as independent chairs or greater independence of boards, are associated with decisions that enhance firm value. Second, broad cross-sectional analysis provides little consistent empirical evidence relating a firm's governance characteristics to its financial performance.

There is an important caveat to these seemingly contradictory conclusions. All conclusions of empirical studies are materially affected by the strengths and weaknesses of the available empirical methods and statistical tools. Econometric methodologies designed to compare performance across the broad cross-section of funds (that is, across all or most funds) are likely to be unsuccessful due to limited power in relation to the potentially small yet economically significant relation between governance and performance. A method that best addresses this inherent lack of power may be one designed to capture differences in economic effects where those differences are likely to be largest. However, the types of events where governance appears to matter most may not be representative of all types of decisions with economic consequences made by the board. Because many board decisions may not be observable, it may prove inappropriate to conclude that greater independence benefits all decisions.

In part, the objective of this review is to recognize issues that may make it difficult for empirical researchers to detect a statistically significant relation between measures of mutual fund governance and performance, even where such a relation exists. The first issue is the absence of guiding principles or models to correctly characterize the relation that actually exists between governance and mutual fund performance, fees or compliance. For example, a structural model would improve the ability of a researcher to reliably identify a relation (that is, increase the power of test statistics) by helping to identify all relevant factors that may determine the outcome (performance, fees or compliance) of any given fund. The absence of such a model can limit researchers' abilities to distinguish among different factors that mask or exaggerate the relations that actually exist in the data, and thus limit the power of the test, particularly if the effect being studied is small yet economically relevant.

A second issue also relates to the power of the test. For instance, the power of a statistical test decreases as the relevance of luck (or randomness) on the level of return achieved increases. In other words, when luck plays an important role in determining returns, estimating a statistically reliable relation becomes more difficult. This occurs because the true effects of the relation between independent board chair and performance may be swamped by a much larger proportion of the return earned in any given year that are due to random factors (luck). On the other hand, the power of the test increases as the number of observations in the data analyzed increases. Over longer periods, the randomness in returns thus diminishes and the importance of other factors such as manager ability or governance will be easier to detect if the relation between governance and performance is stationary over time.² The issue of power is discussed in more detail in a companion memorandum.

II. Agency conflicts in mutual funds

The potential conflicts between mutual fund advisers³ and the people who invest in the funds that they manage can be characterized as an agency problem. In this context, investors (principals) want managers (agents) to make investment judgments that maximize risk-adjusted expected returns. Managers have an additional, potentially conflicting, objective, namely to maximize their own profits. The information possessed by the manager and how that information is used is not directly observable to investors. Accordingly, if decisions that maximize the mutual funds' profits differ from decisions

² For additional discussion, see L. Harris, Trading and Exchanges, Oxford University Press, New York, 2003, pp. 454-466.

³ In the discussion that follows describing agency conflicts we follow the convention of the academic literature and do not distinguish between mutual fund advisers and fund managers. We note that certain of the conflicts exist primarily between managers and investors (e.g., conflicts that arise from the form of the management compensation contract), while others may exist at either the adviser or manager level (e.g., the benefit from cross-subsidization). In addition, we treat the interest of investors as generally aligned with the fund's interests. We recognize that there are circumstances where some investors have conflicts with respect to other investors (i.e., short term gains at the expense of long term gains for ongoing investors).

that directly benefit investors, economic theory suggests that managers may not always serve investors' best interests.⁴

Academic literature has directly or indirectly identified several specific agency conflicts associated with mutual funds. Below, we describe three of the leading conflicts:

- Differences in financial incentives of the adviser and the fund. The typical compensation arrangement in the mutual fund industry is for the adviser to charge an advisory fee based on a percentage of assets under management. Therefore advisers may have incentives to maximize assets under management rather than fund performance. This effect may be best demonstrated by the following example:⁵ New mutual fund investments are highly sensitive to published reports of annual performance. Because greater performance implies greater net fund inflows and greater net inflows imply greater management fees, managers may alter the risk of the fund to indirectly maximize their own compensation. If a fund is ahead of expectations halfway into the reporting period, managers may “pull back” from the strategy preferred by investors and reduce the risk of the portfolio in order to lock-in the present level of returns, attract more assets and maximize fees from investors. Conversely, if the fund is underperforming during the year, managers may be tempted to “gamble” and increase the risk of the portfolio to try and catch up to the market so they can minimize the impact on fees.⁶
- Differences in adviser and investor risk tolerances. This conflict is related broadly to the conflict described above. Investors, given their personal wealth and circumstances, may be willing to expose their investments to a given level of risk. For instance, an individual near retirement who plans to rely on her investments for post-career consumption is not likely to be willing to risk losing a significant portion of her “nest-egg” in a highly risky portfolio. But, advisers to the same fund may be far less risk averse, preferring investments with higher expected returns (under certain circumstances) even if they have higher risk.⁷

⁴ See, e.g., B. Holmstrom and P. Milgrom, “Aggregation and Linearity in the Provision of Intertemporal Incentives,” *Econometrica* 55 (1987), pp. 303-28. Siggelkow (2004) indicates the problem can be even more complex. Managers act as agents to both the mutual fund shareholders and the advisers that employ them. Fund shareholders want to maximize returns while advisers want to minimize costs, but in many cases, the managers' decisions represent a direct wealth transfer from one principal to the other. He finds that fund providers shift expenses via 12b-1 fees and soft dollars onto shareholders. This expense shifting is more pronounced for retail funds than for institutional funds, suggesting that customer power is more important in this relationship than competition between fund providers. See N. Siggelkow, “Caught between Two Principals,” working paper, The Wharton School, University of Pennsylvania, Philadelphia, PA.

⁵ The example is drawn from J. Chevalier and G. Ellison, “Risk Taking by Mutual Funds as a Response to Incentives,” *Journal of Political Economy*, 105 (1997), pp.1167-1200.

⁶ See, e.g., K. Brown, W. Harlow and L. Starks, “Of Tournaments and Temptations: An Analysis of Managerial Incentives in the Mutual Fund Industry,” *Journal of Finance* 51 (1996), pp.85-110 and J. Taylor, “Risk-Taking Behavior in Mutual Fund Tournaments,” *Journal of Economic Behavior and Organization* 50 (2003), pp. 373-383.

⁷ Under certain conditions, managers may be willing to expose the portfolio to very different risk characteristics than preferred by investors. For instance, Chevalier and Ellison (1999) provide evidence that some managers significantly increase portfolio risk as the threat of termination increases. See J.

Because investments in the portfolio are only made public at fixed intervals (every three to six months), advisers may have the ability to alter the risk profile between public reports. In practical terms, managers view themselves as part of a tournament, where they are rewarded for their performance relative to their competitors.⁸ The manager of an underperforming fund may have an incentive to mimic the strategy of a higher risk fund, resulting in what is often termed “style drift.” Style drift occurs when a fund strays from its stated investment philosophy in search of superior returns, introducing a conflict between the actual risk profile of the fund and the risk preferences of the fund’s investors. There are Commission rules that seek to limit the ability of a mutual fund to become undiversified or alter its investment objective or policies from its publicly stated investment objective or policies; however, advisers still have significant latitude in the choice of individual investments, both at and between reporting intervals.⁹

- Cross-subsidization. Advisers typically sponsor, establish and advise multiple mutual funds of varying styles (e.g. market index funds, sector funds, international funds, equity or bond funds, etc.) that are aimed at different clienteles (individuals, institutional investors, hedge funds, etc). Economically, creating these investment vehicles allows mutual funds to leverage their ability and knowledge across several products, providing investors more choice at potentially lower cost. Advising multiple funds may create incentives to favor one fund over another. These adverse effects may arise in several ways. Net new fund flows are dramatically higher for funds with superior returns (often referred to as “star funds”), and the star funds appear to attract additional inflows to other funds within the same family.¹⁰ Advisers managing a number of diverse mutual funds within a family may have an incentive to assign winning and losing trades after the fact in an effort to make a particular fund a “star” to the detriment of investors in the adviser’s other funds (which are assigned the adviser’s losing trades), although such actions might be in violation of SEC rules.¹¹ Finally, an

Chevalier and G. Ellison, “Career Concerns of Mutual Fund Managers,” *Quarterly Journal of Economics* 114 (1999), pp. 389-432.

⁸ See K.C. Brown and W. V. Harlow, “Staying the Course: Performance Persistence and the Role of Investment Style Consistency in Professional Asset Management,” University of Texas, working paper, Austin, TX, 2005 and Chan, L. K., H.-L. Chen and J. Lakonishok, “On Mutual Fund Investment Styles,” *The Review of Financial Studies* 15 (2002), pp.1407-1437.

⁹ See, P. Tkac, “Mutual Funds: Temporary Problem or Permanent Morass?,” *Federal Reserve Bank of Atlanta Economic Review*, fourth quarter 2004, pp. 1-21.

¹⁰ See, V. Nanda, Z. Jay Wang, and Lu Zheng, “Family Values and the Star Phenomenon,” *The Review of Financial Studies*, 17(3), 2004. See also I. Guedj and J. Papastaikoudi, “Can Mutual Fund Families Affect the performance of their Funds?,” working paper, Sloan School of Management, MIT, Cambridge, MA, 2005. Guedj and Papastaikoudi (2005) identify that individual funds within larger fund families exhibit greater abnormal persistent positive performance, which they associate with greater latitude in allocating resources unevenly between funds.

¹¹ See M. Massa, P. Matos and J. Gaspar, “Favoritism in Mutual Fund Families? Evidence on Strategic Cross-Fund Subsidization,” *Journal of Finance* 61 (2006), pp. 73-104. Note that there are other ways to allocate trades across funds that may benefit one fund over another. If, for instance, multiple funds were to sell (or buy) the same underlying security in the same day, an adviser could allocate the early trades with the least price impact to one fund and the later trades with the greatest price impact to another fund. Such an allocation strategy can be determined ex ante, or before any trading occurs, but also might constitute a

adviser may have an incentive to open a number of diverse, unadvertised “incubator funds,” subsequently liquidating the poorest performing of these funds and offering to the public only the best performing incubator fund without disclosing the random nature of that fund’s superior performance.¹²

Even beyond the investment decisions made by managers, there is another central agency conflict between fund advisers and mutual fund investors. When fund advisers serve on the mutual fund’s board, they participate in setting the advisory contract, and in effect, participate in establishing their own compensation. As one study notes, “Negotiating the service contracts for investment advising and/or fund management are among the most important of the board’s duties. Payments for these services are the largest expenses of most funds, and negotiation of these contracts determines the amount of expenses and fees shareholders pay.”¹³ Advisers acting as directors might be in a position to negotiate a better contract for the adviser – at the expense of fund shareholder.

While economists typically agree that these types of conflicts are inherent in the adviser/portfolio manager-investor relationship, many point to important features of the mutual fund industry that may mitigate their impact. First, investment advisers are in a competitive market for services. As of December 31, 2005, there were over 8,600 funds.¹⁴ Advisers and fund managers, like any other manager, must protect their reputations if they are to attract and retain investment flows as well as maintain employment and labor market mobility in such a competitive environment. These career concerns increase the advisers’ incentives to self-police the types of conflicts described above.¹⁵

violation of SEC rules. See also G. Cici, S. Gibson and R. Moussawi, “For Better or for Worse? Mutual Funds in Side-by-Side Management Relationships with Hedge Funds,” working paper, The Wharton School, Philadelphia PA. The authors find that when managers manage both a mutual fund and a hedge fund “side-by-side,” the mutual fund significantly underperforms matched mutual funds and that these “side-by-side” mutual funds are allocated significantly fewer underpriced IPO shares. See also T. Nohel, Z. J. Wang and L. Zheng, “Side-by-Side Management of Hedge Funds and Mutual Funds,” working paper, Loyola University, Chicago, IL, 2006.

¹² See M. Massa, P. Matos and J. Gaspar, *above* note 11. The authors find that funds with high fees or high past performance outperform low fee /low performance funds within a family and that larger allocations of under priced IPOs and opposite trades across family funds explains a significant portion of the performance gap.

¹³ D. Del Guercio, L. Dann and M. Partch, “Governance and Boards of Directors in Closed-End Mutual Funds,” *Journal of Financial Economics*, 69 (2003), pp. 111-152.

¹⁴ See the 2005 Investment Company Fact Book. This figure includes open-end funds, closed-end funds, exchange traded funds, and unit investment trusts.

¹⁵ There is a significant literature in economics relating to market forces that ensure the importance of manager reputation. See, e.g., B. Klein and K. Leffler, “The Role of Market Forces in Assuring Contractual Performance,” *Journal of Political Economy* 89 (1991), pp. 615-641. A recent theoretical paper, Gervais, Lynch and Musto (2004), argues that larger fund families can credibly convey manager quality with a commitment to fire its worst-performing managers, thereby reducing (but not eliminating) informational asymmetries between investors and money managers. See S. Gervais, A. Lynch and D. Musto, “Fund Families as Delegated Monitors of Money Managers,” working paper, Duke University, Durham, NC. Fama and Jensen (1983) point out that reputation matters to both directors and managers in the context of operating companies, but the argument applies to mutual fund advisers equally. E. Fama and M. Jensen, “Separation of Ownership and Control,” *Journal of Law and Economics* 26 (1983), pp. 301-325. However, as Hermalin and Weisbach note, it is not clear what sort of reputation a director will find it

In a related argument, the ability to redeem mutual fund shares at net asset value may be sufficient to impose market discipline. When conflicts of interest either result in lower performance or become publicly known, investors can always choose to sell their investment. Because mutual fund shares are always bought and sold at their net asset value, investors' choice to redeem (sell shares) typically has no impact on the price of the mutual fund shares at the time of the sale.¹⁶ This scenario differs from that in operating companies, where perceived poor managerial performance can reduce the share price or where attempting to sell large holdings can depress share price, which may limit investors' desire to liquidate.¹⁷ Because mutual fund shareholders choosing to sell do not bear these extra costs of liquidating their positions and "voting with their feet," mutual fund adviser compensation may be more sensitive to real or perceived conflicts of interest.¹⁸

These arguments, however, do not fully consider the institutional features that have been shown to make it relatively costly for shareholders to change mutual funds. There are considerable "search costs" in fund selection. With approximately 8,600 mutual funds to choose from, it is difficult and time consuming for investors to identify the best-managed funds prior to making a purchase. Of course, this phenomenon is not limited to mutual funds—it is also true of many products such as automobiles. As with other products, investors often rely on reputation, the media and recommendations (from friends for cars, from brokers for funds). In fact, there is empirical evidence that funds that receive greater media attention and that belong to larger complexes (which presumably have a more well-known reputation) attract more new investment.¹⁹ Further, mutual funds that

profitable to cultivate. A director who develops a reputation for making trouble may lose her seat on the board. A director that goes along even with less capable managers may retain her directorship and even be appointed to other firms that have less capable managers. B. Hermalin and M. Weisbach, "Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature," *Economic Policy Review* 9 (2003), pp. 7-26. Holmstrom notes that the market pressure to maintain reputation exists even in the absence of a contingent contract. B. Holmstrom, "Managerial Incentive Problems: A Dynamic Perspective," *Review of Economic Studies* 66 (1999), pp. 169-182. At least one paper addresses the question of the role of reputation for mutual fund managers directly. See J. Chevalier and G. Ellison (1999), *above*, note 7.

¹⁶ This is not to suggest that significant purchase or sale of mutual fund shares cannot impact fund price. For instance, significant redemption of mutual fund shares will ultimately cause the fund to sell its underlying assets in order to repay mutual fund shareholders who have redeemed (sold) their shares. If the fund must sell equities to raise the cash necessary, that sale may be sufficiently large to impact the market price of the stock. If so, tomorrow's net asset value (value of a share of the mutual fund) will be lower than today's NAV due to today's net redemptions.

¹⁷ Admati and Pfleiderer (2006) provide a model that describes the case where a large investor's threat to sell is sufficient to discipline managers and the case where a large shareholder may exacerbate the agency problem. See A. R. Admati and P. Pfleiderer, "The 'Wall Street Walk' and Shareholder Activism: Exit as a Form of Voice," working paper, Graduate School of Business, Stanford University, Palo Alto CA, 2006.

¹⁸ See E. Fama and M. Jensen, "Agency Problems and Residual Claims," *Journal of Law and Economics* 26 (1983), pp. 327-349.

¹⁹ See E. Sirri and P. Tufano, "Costly Search and Mutual Fund Flows," *Journal of Finance* 53 (1998), pp. 1589-1622.

merely change their names to reflect the most recent popular investing trend (with no actual change in their portfolios) also attract additional inflows.²⁰

However, there are reasons to believe the media and brokers may not identify the best-managed funds. Brokers and the media suffer from their own agency conflicts. Brokers may favor the funds that pay them the highest commissions and financial journals may favor their advertisers.²¹ In addition, it is difficult even for large organizations with highly skilled personnel to evaluate a fund's management. These organizations usually base analyses largely on funds' past performance.

Importantly, performance is affected by a sufficiently broad set of other factors that it is extremely difficult for investors to separate the skilled managers from those who are simply lucky. In large measure this is because of the amount of randomness in fund returns. It is very unlikely that any given manager will outperform the benchmark portfolio persistently.²² In fact, academic studies find that Morningstar's rankings are poor predictors of future performance for all but the lowest rated funds.²³ Investors' lack of knowledge about the quality of fund management may also make them less likely to withdraw assets from poorly managed funds.²⁴ Agents benefiting from this conflict are likely to understand that investor assets tend to be "sticky" and may allow certain agency conflicts to persist.

Tax considerations represent an additional institutional feature that may affect the ability of market participants to discipline mutual funds. It has been generally shown that

²⁰ M.J. Cooper, H. Gulen, and P. R. Rau, "Changing Names with Style: Mutual Fund Name Changes and their Effects on Fund Flows," *Journal of Finance* 60 (2005), pp. 2825-2858.

²¹ Reuter and Zitzewitz find evidence that personal finance magazines are more likely to recommend funds from families that have advertised in their pages. They do not find such a relationship for the *New York Times* and *Wall Street Journal*. J. Reuter, and E. Zitzewitz, "Do Ads Influence Editors? Advertising and Bias in the Financial Media," *Quarterly Journal of Economics* 121 (2006), pp. 197-227.

²² The notion of persistence in mutual funds returns has been debated in the academic literature. While several studies provide evidence that persistence exists [see, e.g., Hendricks, Patel and Zeckhauser (1993), Grinblatt, Titman and Wermers (1995) and Wermers (1999)], Berk and Green (2005) note that "studies have shown little evidence that mutual fund managers outperform passive benchmarks." J. Berk and R. Green, "Mutual Fund Flows and Performance in Rational Markets," *Journal of Political Economy*, 112 (2005), p. 1270. See also, D. Hendricks, J. Patel and R. Zeckhauser, "Hot Hands in Mutual Funds: Short-Run Persistence in Performance," *Journal of Finance* 48 (1993), pp. 93-130, M. Grinblatt, S. Titman and R. Wermers, "Momentum Investing Strategies, Portfolio Performance and Herding: A Study of Mutual Fund Behavior," *American Economic Review* 85 (1995), pp. 1088-1105, and R. Wermers, "Mutual Fund Herding and the Impact on Stock Prices," *Journal of Finance* 54 (1999), pp. 581-622.

²³ See C. Blake and M. Morey, "Morningstar Ratings and Mutual Fund Performance," *Journal of Financial and Quantitative Analysis* 35 (2000), pp. 451-83.

²⁴ See J. Chevalier and G. Ellison (1999), *above* note 7, D. Del Guercio and P. Tkac, "The Determinants of the Flow of Funds of Managed Portfolios: Mutual Funds versus Pension Funds," *Journal of Financial and Quantitative Analysis* 37 (2002), pp. 523-57 or E. Sirri and P. Tufano, *above* note 19. More recently, Johnson (2006) shows that while both new and existing shareholders are sensitive to positive performance – buying shares after good performance, neither are as sensitive to poor performance. He concludes that the lack of responsiveness to poor performance cannot be attributed to locked-in pension assets, shareholder ignorance of on-going fund returns or embedded capital gains. See W. Johnson, "Who Monitors the Mutual Fund manager, New or Old Shareholders?," working paper, University of Oregon, Eugene, OR, 2006.

investors are reluctant to sell securities that have appreciated significantly in the past. Past appreciation triggers a capital gains tax liability upon sale that investors would like to delay for as long as possible. As tax appreciation increases, along with the expected tax burden upon sale, investors are less likely to sell today even if they receive bad news about managers.²⁵ Although there is evidence that mutual funds may be acting to reduce this overhang,²⁶ its existence makes it more difficult for investors to withdraw assets from mutual funds and may allow those funds to tolerate greater levels of agency conflicts.

Finally, individuals investing through their employer's retirement plan may be limited to investing in funds offered by a limited set of advisers. Ideally, the employer would only retain advisers that offered superior management. However, employers also face agency conflicts in choosing advisers. For example, they may choose to hire (and/or refrain from firing) advisers who have a history of voting in favor of management in shareholder elections, regardless of their ability to manage funds successfully.²⁷

III. Fund performance, fees and governance

The discussion above provides both theoretical and empirical evidence of the ways in which potential conflicts of interest can affect the investment strategy for a mutual fund to the detriment of its investors. Conceptually, better governance is designed to mitigate these conflicts and in so doing, align mutual fund investment strategies with investor desires.²⁸ Theoretically, reducing the agency conflict between managers and investors should increase managerial effort on behalf of investors, ultimately leading to better performance. Practically, better governance can lead boards to negotiate lower fees on behalf of investors, a critical determinant of long-term fund performance.²⁹

²⁵ See, e.g., C. Spatt and R. Dammon, "Optimal Trading and Pricing of Securities with Asymmetric Capital Gains Taxes and Transaction Costs," *Review of Financial Studies* 9 (1996), pp. 921-952.

²⁶ M. Barclay, N. Pearson and M. Weisbach, "Open-end Mutual Funds and Capital Gains taxes," *Journal of Financial Economics* 49 (1998), pp. 3-43. There may actually be a reason that funds want to reduce this overhang, due to an agency conflict. Investors don't want to invest in funds that have a lot of unrealized capital gains. Thus, in order to increase inflows, funds have an incentive to realize and distribute capital gains, even though it is not in the best interest of existing shareholders.

²⁷ A recent paper explores this issue in depth and finds some evidence consistent with advisers voting in favor of management to gain pension fund business. See G. F. Davis and E. H. Kim, "Business Ties and Proxy Voting by Mutual Funds," *Journal of Financial Economics*, forthcoming.

²⁸ Boards mitigate these conflicts through negotiating the terms of the advisory contract and monitoring. In the terms of principal-agent theory, principals use a mix of compensation and supervision because elements of the agent's performance are costly to observe in a world of information asymmetry, uncertainty and risk. These compensation and supervision mechanisms are imperfect, that is, governance, whether in the form of independent directors or board chairs, cannot fully eliminate the conflicts of interest that advisers have in relation to the funds they manage. For a discussion of the general theory see P. Milgrom and J. Roberts, *Economics, Organization and Management*, Prentice-Hall, London, 1992.

²⁹ The importance of fee negotiations should not be underestimated, as there is some established empirical evidence that persistent differences in expenses and transaction costs explain most of the difference in average and risk-adjusted returns across mutual funds over time. See M. Carhart, "On Persistence in Mutual Fund Performance," *Journal of Finance* 52 (1997), pp. 57-82.

There are several reasons why better governance may not necessarily lead ultimately to better performance. They are, briefly:

- If markets are sufficiently well functioning, each fund will select the appropriate mix of independent and non-independent directors, and that mix will be different across funds with differing business conditions. In such a case, the mix of directors in large measure will be unrelated to performance.³⁰
- Under circumstances where managers can be compensated for taking more risk than shareholders desire, increased agency conflict (i.e., worse governance) will lead to higher, not lower ex post returns on average.³¹
- The advisory company may already have sufficient incentive to replace underperforming managers.³² When managers perform poorly, investors are hurt and funds do not attract new flows, limiting the management fees earned.

It is important to note, however, that governance is not the only determinant of fees. A recent theoretical study by Berk and Green argues that highly skilled portfolio managers, i.e., those with better ability to choose investments, are able to command higher fees.³³ This study attempts to address the apparent conundrum that: 1) there is little evidence that managers can consistently beat passive benchmarks such as the S&P 500 index,³⁴ and yet 2) mutual fund investors appear to ‘chase’ past performance by increasing net flows to funds that outperform their benchmark.³⁵ Increased net flows generate higher manager compensation, rewarding managers for previous performance.

Berk and Green (2004) argue that high compensation (to at least some fund managers) in the face of little evidence of consistent out-performance may hold due to labor market

³⁰ In the context of operating companies, Demsetz and Lehn (1985) argue that the structure of corporate ownership varies in systematic ways that are consistent with maximizing shareholder value. The argument we make here is analogous with respect to board structure. See H. Demsetz and K. Lehn, “The Structure of Corporate Ownership: Causes and Consequences,” *Journal of Political Economy* 93 (1985), pp.1155-1177.

³¹ To see this, consider a case where fund management pursues a risky strategy to increase expected mutual fund returns, thereby attracting greater net investment inflows and higher management fees. Assume also that the investment strategy is executed in a manner such that investors cannot effectively monitor the increased risk. If subsequently the fund adopted policies and procedures to limit this risk-increasing behavior, the expected return to the mutual fund would decrease. This could lead to the seemingly counter-intuitive result that better governance is associated with lower average returns, and greater conflicts of interest are associated with higher returns. To be sure, this example compares non-risk adjusted returns and this is just one scenario. To the extent investors do not know the true risk of the portfolio, they will compare the returns to an improper benchmark and come to an improper conclusion about fund performance. The relation between expected returns and the existence of agency conflicts is ambiguous; in some instances conflicts may lead to a riskier investment strategy than desired by investors and in others a less risky strategy.

³² In certain cases, an agency conflict may create poorer performance. Consider the case of a fund that allows certain investors to engage in late trading or market timing in return for some pecuniary benefit. These activities reduce the value of the fund to other investors.

³³ J. Berk and R. Green, “Mutual Fund Flows and Performance in Rational Markets,” *Journal of Political Economy* 112 (2004), pp. 1269-1295.

³⁴ See, e.g., M. Carhart, *above* note 29 or M. Gruber, “Another Puzzle: The Growth in Actively Managed Mutual Funds,” *Journal of Finance* 51 (1996), pp. 783-810.

³⁵ See E. Sirri and P. Tufano, *above* note 19 and J. Chevalier and G. Ellison (1999), *above* note 7.

conditions, limits to the scale of investment ideas, and the chasing of returns by investors.³⁶ If this model accurately reflects true investment dynamics, higher fund fees may be, at least sometimes, associated with more highly skilled managers and not with poorer governance.

IV. Empirical Evidence – Mutual Fund Literature

Independent Boards

There have been a small number of papers that have directly addressed the question of mutual fund board structure and expenses. But, given the inherent difficulty in determining the expected relation between returns and governance, some academics have noted that mutual fund fees may represent a better proxy for board effectiveness. Tufano and Sevick (1997) examine the boards for the 50 largest fund sponsors in 1992 and conclude that funds with smaller boards and a larger percentage of independent directors tend to negotiate and approve lower fees.³⁷ Del Guercio, Dann and Partch (2003) examine the universe of closed-end funds in 1996 and find similar results.³⁸ Careful examination of both papers, however, reveals that the results are sensitive to whether funds are treated as independent observations or aggregated to the family level.

Researchers have studied the relation between governance and expenses in the execution of the boards' duty to negotiate fees with advisers and managers. Since fees are negotiated between directors and advisers, the relative level of fees (compared to funds with similar investment strategies, distribution networks, etc.) is a reasonable measure of board effectiveness. There is also no ambiguity about the obligation of directors to negotiate fees in shareholders' best interest.³⁹

This distinction is important because it speaks to what types of experiments are likely to supply meaningful information to the debate. Econometric methodologies designed to compare performance across the open cross-section of funds (that is, across all or most funds) are likely to be unsuccessful due to limited power in relation to the potentially small yet economically significant relation between governance and expenses.⁴⁰

A method that addresses the inherent lack of power is one designed to capture differences in economic effects where those differences are likely to be largest. This is the

³⁶ As noted elsewhere in this review, net investment inflows to mutual funds are highly sensitive to past performance, so that past winners attract significant new monies. As funds get larger, managers have to invest more assets in the market. Those investments are likely to have greater price impact, meaning that executing the investment strategy is increasingly more expensive and returns to the fund are lowered. In equilibrium, better managers can demand higher salaries, those funds will have higher fees on average, and monies will flow to those funds until the return is the same as that available from other, less well-managed funds.

³⁷ P. Tufano and M. Sevick, "Board Structure and Fee-Setting in the Mutual Fund Industry," *Journal of Financial Economics* 46 (1997), pp. 321-355.

³⁸ See D. Del Guercio, L. Dann and M. Partch, *above* note 13.

³⁹ See e.g., the discussion of legal responsibilities in Tufano and Sevick (1997). P. Tufano and M. Sevick, *above* note 36, p. 325.

⁴⁰ See OEA companion memorandum discussing the power of the test.

researcher's equivalent to "searching under the lamp post" where the light is brightest. Researchers often design experiments to identify situations where the outcome is unambiguous, for example boards either replace managers after poor performance or they do not. If differences in governance structure truly lead to better outcomes for shareholders, these types of experiments are most likely to identify it.

In this vein, several academic studies provide evidence on whether board independence is related to board decision-making in the best interest of investors. Del Guercio, Dann and Partch (2003) find that closed-end fund boards with more independent directors are more likely to undertake activities that benefit shareholders, such as authorizing share repurchases. Khorana, Tufano and Wedge (2006) report that open-end mutual fund boards that are more independent tend to be relatively intolerant to poor performance before initiating fund mergers.⁴¹ Zitzewitz (2003) examines market timing and late-trading in the mutual fund industry. He finds that funds with more independent directors more frequently establish higher short-term trading fees.⁴² He interprets this result as being consistent with more independent boards providing greater shareholder protection.

Several papers assess whether fund governance is associated with differences in performance. Ding and Wermers (2005) find that poorly performing fund managers are more likely to be replaced by funds having a higher proportion of independent directors.⁴³ In a recent working paper, Cremers et al. (2005) report that independent director ownership is positively associated with higher fund and fund-family returns.⁴⁴ The authors posit that increased ownership improves governance because directors have more to lose personally if the fund underperforms.⁴⁵ Both sets of authors offer their evidence as indicative of the benefits of governance in mutual funds.

There is, however, an important limitation to this literature (relative to the operating company literature discussed below.) Even in the case where board independence is related to board decision-making, it is not generally possible to make a direct connection between those decisions and increased shareholder value. In the case of an operating company, the public announcement of the board's decision can lead investors to trade, based on whether or not they believe the board's actions are good news. Thus, there is a natural test to see if differences in board actions or even changes to the board structure are deemed by the market to be value increasing or value decreasing. For an open-end

⁴¹ The authors find a statistically significant relation between board independence and the probability of removing a poorly performing manager where boards are composed of at least 90% independent directors. A. Khorana, P. Tufano and L. Wedge, "Board Structure, Mergers and Shareholder Wealth: A Study of the Mutual Fund Industry," *Journal of Financial Economics*, forthcoming.

⁴² E. Zitzewitz, "How Widespread is Late Trading in Mutual Funds?," working paper, Stanford University, Palo Alto, CA, 2003.

⁴³ B. Ding and R. Wermers, "Mutual Fund Performance and Governance Structure: The Role of Portfolio Managers and Boards of Directors," working paper, University of Maryland, College Park, MD, 2005.

⁴⁴ M. Cremers, J. Driessen, P. Maenhout and D. Weinbaum, "Does Skin in the Game Matter? Director Incentives and Governance in the Mutual Fund Industry," working paper, Yale School of Management, New Haven, CT 2005.

⁴⁵ The authors also show a positive relation between ownership and performance for non-independent directors. Further, high director ownership only appears to be significantly associated with higher returns where both independent and non-independent directors hold high stakes.

mutual fund, changes to Net Asset Value does not reflect the efficiency of the boards' decisions, rather it only reflects the fair value of the assets under management.⁴⁶ Ultimately, it is very difficult for researchers to determine whether replacing a manager after poor performance was a good idea (because the poor performance was due to poor management and the new manager is likely to be better) or a bad one (because the poor performance was due to bad luck, and the new manager is not likely to be any better).

To this point, we have taken as given the appropriate definition of outside or independent director. Kuhnen (2006) asks whether the legal definition of independence is sufficient to ensure that directors effectively mitigate conflicts of interest. The paper offers a measure of independence related to the number of repeat dealings a director has with an adviser.⁴⁷ In the case where a board has to choose a subadviser, she finds the more connected a subadviser is to directors through past business relationships, the more likely it is to win the portfolio management contract. Further, the more connected the subadviser is to the directors, the greater the fund load, the lower the level of expense reimbursements paid back to the fund, and the lower is the fund's performance, both before and after advisory fees.

Studies motivated by SEC fund governance rules

The staff has identified three studies in the public domain that have been motivated, in part or in whole, by the Commission's previously proposed and adopted rules concerning mutual fund governance.⁴⁸ These studies conduct broad-based, cross-sectional tests attempting to determine the coincidence of higher returns or lower fees and independent mutual fund board chairs and other related governance characteristics. Below, we describe the research conducted and conclusions drawn in each study.

The Bobroff-Mack Study

The Bobroff-Mack study attempts to provide empirical results in order to answer two primary questions:

⁴⁶ For open-end mutual funds, changes in net fund flows might be sufficient to test for the market's assessment of the value relevance of a change in governance. Such a study would require, however, a structural model of fund flows, with predictable and testable implications; we are unaware of any such model. In the context of closed-end fund, the fund premium or discount may certainly reflect the market's assessment of the importance of conflicts of interest in that fund. See Del Guercio, Dann and Partch (2003), *above* note 13. See also, J. L. Coles, J. Suay and D. Woodbury, "Fund Adviser Compensation in Closed-End Funds," *Journal of Finance* 55 (2000), pp. 1385-1414.

⁴⁷ C. Kuhnen, "Social Networks, Corporate Governance and Contracting in the Mutual Fund Industry," working paper, Stanford Graduate School of Business, Palo Alto, CA, 2006.

⁴⁸ One of these studies, G. Bobroff and T. Mack, "Assessing the Significance of Mutual Fund Board Independent Chairs," was commissioned by Fidelity Investments and submitted as part of Fidelity's comment letter to the Commission for consideration of Investment Company Governance rules (IC-26520), adopted July 2, 2004. The other studies are academic working papers, S. Ferris and X. Yan, "Do Independent Directors and Chairmen Really Matter? The Role of Boards of Directors in Mutual Fund Governance," working paper, University of Missouri – Columbia, Columbia, MO, 2004 and J. Meschke, "An Empirical Examination of Mutual Fund Boards," working paper, Carlson School of Management, University of Minnesota, Minneapolis, MN, 2006.

- Are mutual funds with independent chairs associated with higher performance?
- Do mutual funds with independent chairs have lower expenses?

To address these questions, the authors study a sample of funds from 55 fund families with at least \$10 billion in assets. They identify the chair's independence for each fund from (at least) the most current Statement of Additional Information (SAI) filed with the Commission, but do not provide information about how many documents were examined and over how many years.

To study the relation between independent chair and performance the authors conduct three types of tests. First, they report that the relative and absolute Morningstar rankings of funds with independent chairs are significantly lower than the rankings of management-affiliated chaired funds over the past three, five and ten years. Second, they report that the average *alpha*⁴⁹ for management-chaired funds is higher than for independent-chaired funds. Third, they report no reliable relation between chair independence and expenses, noting that the inference depends on how expenses are measured and the relative weight of each fund considered.

The results of the Morningstar analysis appear to be driven by just one class of funds, the municipal bond funds.⁵⁰ But, the Morningstar ranking analysis may still be informative if current rankings accurately predict future rankings and performance. Evidence points to two difficulties in relying on Morningstar ratings to infer anything about future performance. First, we previously noted that Morningstar ratings are poor predictors of future performance for all but the lowest rated funds.⁵¹ Second, funds receiving a five-star rating from Morningstar have been shown to subsequently increase the riskiness of their investment strategies.⁵²

Several characteristics of the approach make the results of this analysis difficult to interpret. First, the study identifies governance characteristics as of a given date and then

⁴⁹This analysis of performance is based on fund returns measured in excess of a benchmark return, also known as the fund's *alpha*. The benchmark return is "a custom blend of market indexes that best match the fund's style," i.e., bond funds are compared to bond indices, equity funds to equity indices, etc. See p.12 of the Fidelity comment letter.

⁵⁰ See p. 22 of the Fidelity comment letter. The authors conduct this analysis by assigning each fund to a percentile rank based on its Morningstar performance rank within its style category. The fund with the highest Morningstar ranking is assigned a value of 100 while the lowest Morningstar ranked funds are assigned a value of 1. Thus, one can interpret a fund ranking of 50 as "average." Bobroff-Mack discusses this methodology on pages 15-16 of the Fidelity letter.

⁵¹ See C. Blake and M. Morey, above, note 23.

⁵² See M. Morey, "The Kiss of Death: A 5-Star Morningstar Mutual Fund Rating?," working paper, Pace University, New York, New York, 2003. This result is also consistent with changes in risk of funds with high returns. See e.g., J. Busse, "Another Look at Mutual Fund Tournaments," *Journal of Financial and Quantitative Economics* 36 (2001), pp. 53-74. Morey provides several potential explanations for the increase in risk, including the possibility that managers take bigger risks in order to remain winning funds, consistent with Chevalier and Ellison (1997), above note 5, or that the substantial new inflows that follow the 5-star ranking become unwieldy to manage and lead to lower performance, essentially an argument consistent with Berk and Green, above note 33.

looks back. This causes significant misclassification in at least two ways.⁵³ Second, the analysis treats each fund as a unique observation when the governance characteristics hold for the entire family.⁵⁴ Third, the authors, indeed, recognize the omission of several relevant fund characteristics is a potential weakness in their study. They note that: differences in fund size may affect average costs (given that funds with independent chairs tend to be smaller);⁵⁵ differences in distribution channels (sales force versus direct marketing) may affect their relative costs;⁵⁶ and, differences in how distribution costs are paid for (front-end load versus no-load or 12b-1 fee) may introduce a bias to their primary measure of performance.⁵⁷ Fourth, and finally, the report does not provide much detail about the appropriateness of the benchmarks used to compute alphas. In fact, several academic studies of fund performance have reported that results are extremely sensitive to how that performance is benchmarked.⁵⁸

The Ferris-Yan Study

This study uses a larger sample of mutual fund families in 2002 to address whether board and chair independence are related to fund fees and whether independence is related to the probability of a fund family being identified as under investigation for market timing or late trading activity.⁵⁹ The analysis covers almost 450 fund families with over 97% of industry total net assets. The study does not address the question of whether board or chair independence is associated with differences in performance.

The Ferris-Yan study addresses a number of dimensions of independence, including whether or not the fund has an independent chair, the size of the board, fund ownership by independent directors, independent director compensation, the number of funds

⁵³ The study does not control for the date the 14 independent-chaired fund families included in the sample actually adopted independent chairs. Commission staff, based on a review of public filings by funds, found that only 3 of the 14 fund families had independent chairs over the full 10 years. As such, the Morningstar rankings analysis compares funds that effectively do not differ with respect to chair-independence over most of the ten- and five-year horizons. In addition, the authors treat funds merged during the sample period as having operated under the chair type of the acquiring family prior to the merger. For instance a management-chaired fund acquired by an independent-chaired family in 2002 would be classified as independent-chaired over the entire ten years studied. The past performance of the fund would be assigned to the independent-chaired sample, even though no independent chair existed for the fund in eight of the ten years considered.

⁵⁴ For instance, Franklin Templeton, with 100 funds, counts for four times more observations in the analysis than Trustco Capital, with 24 funds. The analyses' statistical measures of significance presented are based on the likelihood that two samples (management chaired vs. independent chaired-funds) have different average performance or expenses, assuming all observations within the sample are independent of each other. Because this assumption does not hold, this method makes it more difficult to identify the significance of differences in the samples. See e.g., D. Latzko, "Economies of Scale in Mutual Fund Administration," *Journal of Financial Research* 22 (1999), pp. 331-339.

⁵⁵ See p. 12 of the Fidelity comment letter.

⁵⁶ See p. 12 of the Fidelity comment letter.

⁵⁷ See p. 21 of the Fidelity comment letter.

⁵⁸ See, e.g., B. Lehman and D. Modest, "Mutual Fund Performance Evaluation: A Comparison of Benchmarks and Benchmark Comparisons," *Journal of Finance* 17 (1987), pp. 233-265.

⁵⁹ The authors identify these fund families using the "Fund Industry Investigation Update" and "Fund Scandal Scorecard" available from the *Morningstar* and *Wall Street Journal* websites, respectively. See Ferris and Yan, *above* note 48, p. 10.

overseen by the independent director, the independent director's tenure and the presence of a nominating and governance committee.

Based on a series of regression analyses, the authors report that board size, the number of funds overseen by each independent director, and unexplained independent director compensation are all positively related to fees. But they find no evidence that funds with higher percentage of independent directors, or independent chairmen have lower fees.

Ferris-Yan note that the lack of a significant relationship between board independence and fees may be due to the high levels of board independence in their sample; most of the fund boards in their study already had more independent directors than legally required.⁶⁰ The lack of variation in board structure may speak more about the lack of power of the test than whether greater independence is associated with increased shareholder value.⁶¹

The Ferris-Yan analysis does not control for differences in distribution methods across funds and fund groups. Bobroff and Mack note (but do not explore) the fact that a significant number of funds with independent chairs are bank related. They note that bank related funds more frequently charge loads and are less frequently direct-marketed, both of which are factors that may increase expenses. We cannot say how inclusion of these institutional controls would alter the Ferris-Yan results.

The Meschke Study

In his 2006 working paper, Meschke assesses the impact of board and chair independence for a sample of 400 randomly chosen mutual funds for the period from 1995 through 2004. He documents increases in the percentage of boards with independent chairs as well as increases in the average percentage of director independence over the decade.

Meschke examines whether this increase in independence can be ascribed to an evolution of boards generally or whether it is associated with a *clientele effect* – that is, boards add governance features in response to an increased set of investors who are attracted to funds with those characteristics. As the author notes:

Without the time dimension in the data it is impossible to tell whether more independent boards make decisions better aligned with fund share holder interests *because* of their greater independence, or whether this relation is largely the result of optimal contracting within the industry.⁶²

⁶⁰ As the authors note, “Indeed our median sample fund had 76% independent directors in 2002, while even the 25th percentile reported 68% independent directors.... Thus, there is relatively little cross-sectional variation on the percentage of independent directors across mutual funds, with supermajorities of independent directors already the industry norm in 2002.” See Ferris and Yan, *above* note 48, p. 21.

⁶¹ For more on this point, see OEA companion memorandum addressing the issue of the power of the analysis.

⁶² See Meschke, *above* note 48, p.2.

His findings are: 1) Funds overseen by an independent chair charge lower fees, and funds that adopt independent chairs lower their fees; 2) Higher percentages of independent directors is associated with higher fees between 1995 and 2001, but lower fees for the 2002-2004 time period; and 3) Boards that pay their directors higher than average compensation, holding assets under management constant, tend to be associated with funds with higher fees. In addition to the usual control variables, these results also control for critical fund characteristics, such as distribution channel. Thus, unlike the prior two studies, Meschke directly controls for the relation between chair independence and bank sponsorship of the fund.

Due to data constraints, Meschke's tests for the relation between fund performance and independence is limited to the period 2002 through 2004.⁶³ He finds no evidence of a positive relation between board or chair independence and a variety of measures of fund performance. For both equity and bond funds, he reports that greater board independence is generally associated with lower returns.⁶⁴ Although Meschke does not discuss it, this test may suffer from the same lack of dispersion in the percentage of independent board members that Ferris-Yan describes.

Finally, Meschke posits that increased board diligence would be associated with lower total fees and lower fee components. Empirically, he observes that an independent chair is associated with lower total fees that include front-end and back-end loads and lower 12b-1 fees, but their boards approve management fees that are higher on average. Conversely, boards with a higher proportion of independent directors are associated with marginally higher total fees, and they also tend to be associated with lower management fees. The lack of consistent evidence does not allow him to conclude that greater independence is necessarily associated with greater board diligence.

V. Related Operating Company Literature

Our goal in this section is not to provide a complete review of the extensive literature measuring the impact of governance on operating companies. Rather, the goal is to place the evidence pertaining to independent-chaired mutual funds in the context of current literature examining the relation between governance and performance.

Academic research has paid substantially greater attention to questions of the impact of governance on operating firms than on mutual funds. As discussed briefly in the introduction to this memo, economic theory on board composition has focused primarily on the role of outside directors. Outside directors are recognized as creating value to shareholders where they bring expertise and independence, so that their influence may improve the quality of management decisions and limit conflicts of interest that insiders might otherwise face. Alternatively, outside directors may not have access to critical information available to insiders, so that their influence may diminish the quality of

⁶³ Meschke's discussion of the data collection leaves open the question as to whether this study suffers from a similar look-back bias as does Bobroff-Mack. See footnote 52.

⁶⁴ Meschke employs several specifications for his tests, where he measures performance relative to six different benchmarks. See Meschke, *above* note 47, pp. 19-22.

management decisions and reduce the value of the firm.⁶⁵ In this context, economists have long recognized the potential for a link between optimum governance and business conditions.⁶⁶

The implication of this theory leads to logical conclusions about the expected relation between governance and performance. Where markets are well functioning, theory suggests that investors will choose the mix of inside and outside directors in such a way as to maximize the value of the firm. In such markets, there may be differences in board composition across firms, yet little observable relation between board composition and investor wealth. Further, to the extent board structures are *not* optimally chosen from the investor perspective, *changes in board structure can create value.*⁶⁷

There has been significant research examining the relation between board independence and performance. One line of research has attempted to correlate board independence with contemporaneous returns, long-term performance, and Tobin's q , (a measure of market value to replacement cost of assets for a firm).⁶⁸ For all of these measures of performance, researchers have not identified a significant relation with board independence. A more recent study has also looked at the effect on firm value of the set of governance rules imposed in 2002.⁶⁹ The authors find that the adoption of those rules is associated with a significantly positive return for large firms, but significantly negative for small firms. Moreover, the effect was positive only when the equity stake of insiders was low. The findings suggest that, during the period of the corporate scandals, investors viewed board structure as important to corporate value, but also that the independence

⁶⁵ See, e.g., E. Fama, and M.C. Jensen, "Separation of Ownership and Control" (1983), *Journal of Law and Economics* 26; M. Harris and A. Raviv, "A Theory of Board Control and Size," *Review of Financial Studies*, forthcoming; B. Hermalin and M. Weisbach, "Endogenously Chosen Boards of Directors and Their Monitoring of the CEO," *American Economic Review* 88 (1998), pp. 96-118; A. B., Gillette, T. H. Noe and M. J. Rebellon, (2003), Corporate Board Composition, Protocols, and Voting Behavior. Experimental Evidence, *Journal of Finance* 58, 1997-2033; See also, R. Adams, and D. Ferreira, "A Theory of Friendly Boards", *Journal of Finance*, forthcoming; C. Raheja, "Determinants of Board Size and Composition: A Theory of Corporate Boards," *Journal of Financial and Quantitative Analysis* 40 (2005), 283-306. A. Almazan and J. Suarez, "Entrenchment and Severance Pay in Optimal Governance Structures" *Journal of Finance* 58 (2003), 519-548.

⁶⁶ See, for example, S. Kole and K. Lehn, "Deregulation, the Evolution of Corporate Governance Structure, and Survival," *American Economic Review* 87 (1997), pp. 421-425.

⁶⁷ Moreover, to the extent that board structures are optimal from an investor perspective, changes in composition may reduce investor wealth. Conversely, where there are impediments to investors selecting the wealth-maximizing board, theory would suggest that better governed boards would make better judgments. In such a world, one may in fact observe a relation between board composition and investor wealth.

⁶⁸ See Hermalin and Weisbach (2003) for a discussion of the relevant literature. See also S. Bhagat and B. Black, "The Non-Correlation between Board Independence and Long Term Firm Performance," *Journal of Corporation Law* 27 (2001), pp. 231-274; See also S. Rosenstein, and J. Wyatt, "Outside Directors, Board Independence, and Shareholder Wealth," *Journal of Financial Economics* 26 (1990), 175-191;

⁶⁹ These changes to governance include those in Sarbanes-Oxley and stock exchange listing requirements. Among the requirements were: requiring that the board be made up of a majority of independent directors, requiring that audit committees be made up of only independent directors, enhanced corporate disclosures and internal controls, and increased penalties for corporate fraud. See V. Chhaochharia and Y. Grinstein, "Corporate Governance and Firm Value: The Impact of the 2002 Governance Rules," *Journal of Finance*, forthcoming.

requirements were not value enhancing in small firms or when other governance mechanisms were also in place.

Also complementary to the research for mutual funds, there is evidence that more independent boards make value-increasing choices across a spectrum of corporate events. Weisbach (1988) finds that CEO turnover is more sensitive to poor performance when boards are dominated by outside directors.⁷⁰ Huson, Parrino and Starks (2001) document that boards with a greater percentage of independent directors are more likely to replace CEOs with outsiders to the company.⁷¹ Cotter, Shivdasani and Zenner (1997) and Byrd and Hickman (1992) provide related evidence of better governance leading to better outcomes in mergers. Cotter, Shivdasani and Zenner find that takeover targets with a majority of independent directors receive significantly higher merger premiums on average than do firms with a majority of insider directors.⁷² Byrd and Hickman report that acquiring firms with a majority of independent directors have significantly lower adverse market reaction to the takeover announcement.⁷³ Ryan and Wiggins (2004) show that boards with more independent directors are more likely to award directors more equity-based compensation, more closely aligning the managers to shareholders' objectives.⁷⁴ McWilliams and Sen (1997) provide evidence that markets react more negatively to the adoption of a poison pill amendment when boards are dominated by insiders and affiliated outsiders.⁷⁵

There is also some empirical evidence to suggest that board independence is associated with lower likelihood of fraud and manipulation. Bebchuk, Grinstein and Peyer (2006), and Bizjak, Lemmon and Whitby (2006), find that firms with larger percentage of independent directors are associated with reduced likelihood of options backdating. Beasley (1996); Beasley (2000); Dechow, Sloan and Sweeney (1996) also find that increased board independence is associated with lower likelihood of accounting fraud. However, in a study of the relation between governance and corporate crime, Alexander and Cohen (1999) find no relation between the independence of the board and the occurrence of misconduct.⁷⁶

The above evidence suggests that greater board independence may be desirable for a set of specific decisions made by the board, especially when agency conflicts between management and shareholders are of primary concern. It also suggests that board

⁷⁰ M. Weisbach, "Outside Directors and CEO Turnover," *Journal of Financial Economics* 20 (1988), pp. 431-460.

⁷¹ M. Huson, R. Parrino and L. Starks, "Internal Monitoring Mechanisms and CEO Turnover: A Long-Term Perspective," *Journal of Finance* 56 (2001), pp. 2265-2297.

⁷² J. Cotter, A. Shivdasani and M. Zenner, "Do Independent Directors Enhance Target Shareholder Wealth during Tender Offers?," *Journal of Financial Economics* 43 (1997), pp. 195-218.

⁷³ J. Byrd and K. Hickman, "Do Outside Directors Monitor Managers? Evidence from Tender Offer Bids," *Journal of Financial Economics* 32 (1992), pp. 95-207.

⁷⁴ H. Ryan and R. Wiggins, "Who is in Whose Pocket? Director Compensation, Board Independence, and Barriers to Effective Monitoring," *Journal of Financial Economics* 73 (2004), pp. 497-524.

⁷⁵ V. McWilliams and N. Sen, "Board Monitoring and Antitakeover Amendments," *Journal of Financial and Quantitative Economics* 32 (1997), pp.491-505.

⁷⁶ See C. Alexander and M. Cohen, "Why Do Corporations Become Criminals? Ownership, Hidden Actions, and Crime as an Agency Cost," *Journal of Corporate Finance* 5 (1999), pp. 1-34.

independence might not create the same value in small firms, or where other incentive alignment mechanisms are already in place, such as insiders with a large equity stake.

We also note that even in cases where director independence is found desirable, the empirical literature is for the most part silent about what specific independence majority requirements are optimal, likely because it is extremely hard to make such statistical identification across a large set of heterogeneous firms. Instead, much of the empirical literature looks for a correlation between different measures of independence (whether these are majority of independent directors on the board, or the percentage of independent directors on the board) and firm decisions or firm performance. In contrast, the experimental study of Gillette, Noe, and Rebello (2003) does suggest that a simple majority of independent directors constitutes a focal point that balances information of insiders with independence of outsiders.

Compared to the literature on board independence, the literature on the economic consequences of an independent chair is substantially smaller. Brickley, Coles, and Jarrell (1997), study the decision to separate the CEO from the board chair position.⁷⁷ They point to the potential benefits and costs of separating the two positions. Benefits of separation are the potential reduction in the influence of the CEO on board decisions, especially when CEO incentives are not fully aligned with those of the firm. Costs of separation include the costs of communicating information from the CEO to the chair, especially when the chair lacks the firm-specific expertise. Their empirical findings suggest that, in most firms, the two positions are not separated. Moreover, when these two positions are separated, the CEO has shorter tenure, and the board chair is, for the most part, a former executive of the firm, such as the founder or the previous CEO. In almost none of the cases do firms appoint an independent chair. Their findings suggest that the separation decision is made when the CEO has less experience, and the more experienced insiders take some of the controlling responsibilities by chairing the firm.

Most of the literature pertaining to separating the CEO from the chair position in operating companies has focused not on performance, but on the impact of separate CEO/Chair on policy and decision-making. Ryan and Wiggins (2004) show that when the two positions are separated there is lower likelihood of replacing equity compensation with cash payments, keeping managers interests better aligned with shareholders. Goyal and Park (2002) examine the relation between CEO turnover and the separation between CEO and the chair positions. They report that CEO turnover is more sensitive to performance when the two positions are separated.⁷⁸ None of the studies above, however, differentiate between an independent chair and a non-independent chair.

To summarize, the existence of different theoretical perspectives on board composition suggest exercising caution in interpreting evidence on the relation between board

⁷⁷ J. Brickley, J. Coles, and G. Jarrell, "Leadership Structure: Separating the CEO and Chairman of the Board," *Journal of Corporate Finance* 3 (1997), pp. 189-220.

⁷⁸ V. Goyal and C. Park, "Board Leadership Structure and CEO Turnover," *Journal of Corporate Finance* 8 (2002), pp. 49-66.

composition and the quality of specific decisions by firms. This literature focuses on the types of high-profile decisions that may best illustrate the comparative advantage of outside directors. But there are many other decisions that boards make, unseen by investors and researchers, where greater insider participation could potentially benefit shareholders (i.e., shareholders may be harmed by the greater influence of less-informed independent directors). Focusing only on a small and potentially non-representative set of events could create a biased impression of the effect of outside directors on investor wealth.⁷⁹

Before ending this section, it is worthwhile to ask to what extent one can apply the lessons learned about board or chair independence and performance from operating companies to mutual funds. At a basic level, this question simplifies to asking whether operating company boards of directors have the same function as do mutual fund company boards. Fama and Jensen (1983) lay out a theory for all boards, where decision management (e.g., project initiation and implementation) is optimally separated from risk management (e.g., ratification and monitoring).⁸⁰ This separation provides two distinct benefits. First, it allows managers to concentrate their efforts in ways that will generate the greatest value for shareholders. Second, this separation is an effective common approach to controlling conflicts of interest.

Generally, boards of directors are seen as having a series of responsibilities. These include: Monitoring and disciplining top management; broad policymaking; individual board members providing advice and guidance with respect to operational or policy decisions; and providing access to a network of contacts that might lead to generating resources to the firm, such as access to bank capital or increased sales.⁸¹ These differing roles of board members can be reduced to two types of functions: 1) those where board members monitor and set limits on managers' authority and 2) those where board members provide specialized expertise and knowledge to the benefit of the entity.

But Fama and Jensen (1983) do note that there is an important difference in the role and scope of mutual fund boards. Specifically, they argue that mutual fund boards provide protection from agency conflicts but provide less in the way of other services to the fund's shareholders.⁸² This conclusion is in line with the Supreme Court's oft-cited decision in *Burks v. Lasker*, where mutual fund independent directors are described as

⁷⁹ See S. Bhagat and B. Black, "The Uncertain Relationship between Board Composition and Firm Performance," *The Business Lawyer* 54 (1999), pp. 921-963. See also S. Bhagat and B. Black, "The Non-Correlation between Board Independence and Long Term Firm Performance," *Journal of Corporation Law* 27 (2001), pp. 231-274.

⁸⁰ See E. Fama and M. Jensen, "Separation of ownership and Control," *Journal of Law and Economics* 26 (1983).

⁸¹ See M. Bainbridge, "Why a Board? Group Decisionmaking in Corporate Governance," *Vanderbilt Law Review* 55 (2002).

⁸² They say, in part, "The reduced role of the board is especially evident in mutual savings banks and mutual funds, which are not complex even though often large in terms of assets... The role of the board, especially in the less complex mutuals, is largely limited to monitoring agency problems against which redemption of residual claims offers little protection, for example, fraud or outright theft of assets by internal agents."

“independent watchdogs, who would furnish an independent check on management of investment companies.”⁸³

Ultimately, then, mutual fund boards of directors serve some, but not all, of the functions of operating company boards. Thus, there may be some important limits to making broad inferences from the operating company literature to the mutual fund case.

VI. Summary

The purpose of this memo is to review academic literature that examines the relationship between mutual fund governance (in particular, the presence of independent chairs and directors) and performance, expenses and compliance. OEA is aware of only a small body of research that addresses these questions directly. The evidence that does exist reflects some of the weaknesses found in the governance-performance literature more generally. Two issues of particular note are the lack of strong theoretical underpinnings to guide empirics and sufficient noise in the returns (and expense) generating process so that the empirical tests are unlikely to identify a significant relationship even where one was to exist.

In order to enhance understanding of the literature, we frame our discussion in two ways. First, we examine the theory of agency conflicts present in mutual funds and identify ways that those conflicts may harm investors. Second, we compare the literature to the empirical evidence relating governance more broadly for mutual funds and operating companies.

Indeed, economic theory suggests that if there are no impediments to markets working efficiently, mutual funds and their shareholders would select governance characteristics – including the presence of an independent chair or the percentage of the board held by independent directors – in an optimal manner. The theory suggests that board structure may be different for individual mutual funds due to differing business conditions, but if chosen optimally is likely to result in little or no expected relation between those structural characteristics and fund performance.

With respect to the empirical literature, we find reported results to be consistent with two conclusions drawn in the governance literature generally. First, boards with a greater proportion of independent directors are more likely to make decisions, such as negotiating lower adviser fees that may potentially lead to higher returns. Because this type of research focuses on a limited set of events and outcomes (e.g., is the adoption of a poison pill value increasing or value decreasing?), it may be more likely to identify the impact of greater board independence. Evidence suggests that certain forms of governance are associated with managerial compensation contracts that are more closely aligned with shareholder interests and to increased value to merger or adoption of a poison pill. For mutual funds, greater board independence has been linked to events such as adoption of greater protection against timing and trading abuses, greater sensitivity to

⁸³ See *Burks v. Lasker*, 441 U.S. 471, 484-486 (1979).

poor managerial performance and lower expenses (better fee negotiation). With respect to independent chairs to mutual funds, there is limited support for the hypothesis that greater board independence leads to lower expenses.

Second, there is no consistent evidence that chair or board independence is associated with lower fees and/or higher returns for fund shareholders in the cross-section. We consider several analyses recently placed in the public domain that test for a relation between mutual fund performance and chair independence. These studies cannot conclude that such a relation exists. These findings are consonant with the theory, but may also reflect the limits to inquiry created by the lack of structural model, insufficient data and weak power to the test discussed above.

Bibliography

- Adams, R. and D. Ferreira, "A Theory of Friendly Boards", *Journal of Finance*, forthcoming.
- Admati, A. R. and P. Pfleiderer, "The 'Wall Street Walk' and Shareholder Activism: Exit as a Form of Voice," working paper, Graduate School of Business, Stanford University, Palo Alto CA, 2006.
- Alexander, C. and M. Cohen, "Why Do Corporations Become Criminals? Ownership, Hidden Actions, and Crime as an Agency Cost," *Journal of Corporate Finance* 5 (1999), pp. 1-34.
- Almazan, A. and J. Suarez, "Entrenchment and Severance Pay in Optimal Governance Structures," *Journal of Finance* 58 (2003), pp. 519-548.
- Bainbridge, M., "Why a Board? Group Decisionmaking in Corporate Governance," *Vanderbilt Law Review* 55 (2002).
- Barclay, M., N. Pearson and M. Weisbach, "Open-end Mutual Funds and Capital Gains taxes," *Journal of Financial Economics* 49 (1998), pp. 3-43.
- Bebchuk, L. A., Y. Grinstein and U. C. Peyer, "Lucky CEOs," NBER working paper no. 12771 and Harvard Law and Economics Discussion Paper No. 566, 2006.
- Beasley, M. S., "An Empirical Analysis of the Relation between Board of Director Composition and Financial Statement Fraud," *Accounting Review* 71 (1996), pp. 443-455.
- Beasley, M. S., "Fraudulent Financial Reporting: Consideration of Industry Traits and Corporate Governance Mechanisms," *Accounting Horizons* 14 (2000), pp. 441-452.
- Berk, J. and R. Green, "Mutual Fund Flows and Performance in Rational Markets," *Journal of Political Economy* 112 (2004), pp. 1269-1295.
- Bhagat, S. and B. Black, "The Uncertain Relationship between Board Composition and Firm Performance," *Business Lawyer* 54 (1999), pp. 921-963.
- Bhagat, S. and B. Black, "The Non-Correlation between Board Independence and Long Term Firm Performance," *Journal of Corporation Law* 27 (2001), pp. 231-274.
- Bizjak, J., M. Lemmon, and R. Whitby, "Option Backdating and Board Interlocks," Working Paper, Portland State University and University of Utah, 2006.
- Blake C. and M. Morey, "Morningstar Ratings and Mutual Fund Performance," *Journal of Financial and Quantitative Analysis* 35 (2000), pp. 451-83.

Bobroff, G. and T. Mack, “Assessing the Significance of Mutual Fund Board Independent Chairs,” submitted as part of Fidelity’s comment letter to the Commission for consideration of Investment Company Governance rules (IC-26520), 2004.

Bogle, J., “Mutual Funds in the Coming Century... While We’re At It, Let’s Build a Better World,” remarks made to the Institutional Investor Magazine Mutual Fund Regulation and Compliance Conference, Washington, D.C., May 5, 2004.

Brickley, J., J. Coles, and G. Jarrell, “Leadership Structure: Separating the CEO and Chairman of the Board,” *Journal of Corporate Finance* 3 (1997), pp. 189-220.

Brown, K. C. and W. V. Harlow, “Staying the Course: Performance Persistence and the Role of Investment Style in Professional Asset Management,” University of Texas, working paper, Austin, TX, 2005.

Brown, K., W. Harlow and L. Starks, “Of Tournaments and Temptations: An Analysis of Managerial Incentives in the Mutual Fund Industry,” *Journal of Finance* 51 (1996), pp. 85-110.

Busse, J., “Another Look at Mutual Fund Tournaments,” *Journal of Financial and Quantitative Economics* 36 (2001), pp. 53-74.

Burks v. Lasker, 441 U.S. 471, 484-486 (1979).

Byrd, J. and K. Hickman, “Do Outside Directors Monitor Managers? Evidence from Tender Offer Bids,” *Journal of Financial Economics* 32 (1992), pp. 95-207.

Carhart, M., “On Persistence in Mutual Fund Performance,” *Journal of Finance* 52 (1997), pp. 57-82.

Chan, L. K., H.-L. Chen and J. Lakonishok, “On Mutual Fund Investment Styles,” *Review of Financial Studies* 15 (2002), pp. 1407-1437.

Chevalier, J. and G. Ellison, “Risk Taking by Mutual Funds as a Response to Incentives,” *Journal of Political Economy* 105 (1997), pp. 1167-1200.

Chevalier, J. and G. Ellison, “Career Concerns of Mutual Fund Managers,” *Quarterly Journal of Economics* 114 (1999), pp. 389-432.

Chhaochharia, V. and Y. Grinstein, “Corporate Governance and Firm Value: The Impact of the 2002 Governance Rules,” *Journal of Finance*, forthcoming.

Cici, G., S. Gibson and R. Moussawi, “For Better or for Worse? Mutual Funds in Side-by-Side Management Relationships with Hedge Funds,” working paper, The Wharton School, University of Pennsylvania, Philadelphia PA.

Coles, J. L., J. Suay and D. Woodbury, "Fund Adviser Compensation in Closed-End Funds," *Journal of Finance* 55 (2000), pp. 1385-1414.

Cooper, M. J., H. Gulen, and P. R. Rau, "Changing names with Style: Mutual Fund Name Changes and their Effect on Fund Flows," *Journal of Finance* 60 (2005), pp. 2825-2858.

Cotter, J., A. Shivdasani and M. Zenner, "Do Independent Directors Enhance Target Shareholder Wealth during Tender Offers?," *Journal of Financial Economics* 43 (1997), pp. 195-218.

Cremers, M., J. Driessen, P. Maenhout and D. Weinbaum, "Does Skin in the Game Matter? Director Incentives and Governance in the Mutual Fund Industry," working paper, Yale School of Management, New Haven, CT 2005.

Davis, G. F. and E H. Kim, "Business Ties and Proxy Voting by Mutual Funds," *Journal of Financial Economics*, forthcoming.

Dechow, P. M., R. G. Sloan, and A. P. Sweeney, "Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC," (1996), *Contemporary Accounting Research* 13, 1-21.

Del Guercio, D., L. Dann and M. Partch, "Governance and Boards of Directors in Closed-End Mutual Funds," *Journal of Financial Economics* 69 (2003), pp. 111-152.

Del Guercio, D. and P. Tkac, "The Determinants of the Flow of Funds of Managed Portfolios: Mutual Funds versus Pension Funds," *Journal of Financial and Quantitative Analysis* 37 (2002), pp. 523-57.

Demsetz, H. and K. Lehn, "The Structure of Corporate Ownership: Causes and Consequences," *Journal of Political Economy* 93 (1985), pp.1155-1177.

Ding, B. and R. Wermers, "Mutual Fund Performance and Governance Structure: The Role of Portfolio Managers and Boards of Directors," working paper, University of Maryland, College Park, MA, 2005.

Elton, E., M. Gruber and C. Blake, "Survivorship Bias and Mutual Fund Performance", *Review of Financial Studies* 9 (1996), pp. 1097-1120.

Fama, E. and M. Jensen, "Separation of Ownership and Control," *Journal of Law and Economics* 26 (1983), pp. 301-325.

Fama, E. and M. Jensen, "Agency Problems and Residual Claims," *Journal of Law and Economics* 26 (1983), pp. 327-349.

Ferris, S. and X. Yan, “Do Independent Directors and Chairmen Really Matter? The Role of Boards of Directors in Mutual Fund Governance,” working paper, University of Missouri – Columbia, Columbia, MO, 2005.

Gervais, S., A. Lynch and D. Musto, “Fund Families as Delegated Monitors of Money managers,” working paper, Duke University, Durham, NC.

Gillette, A., T. Noe and M. Rebello, “Corporate Governance and Outside Director Power: The Experimental Evidence,” working paper, Georgia State University, Atlanta, GA 2004.

Goyal, V. and C. Park, “Board Leadership Structure and CEO Turnover,” *Journal of Corporate Finance* 8 (2002), pp. 49-66.

Greene, W., Econometric Analysis: Second Addition, Macmillan Publishing 1993, p. 368-370.

Grinblatt, M., S. Titman and R. Wermers, “Momentum Investing Strategies, Portfolio Performance and Herding: A Study of Mutual Fund Behavior,” *American Economic Review* 85 (1995), pp. 1088-1105

Gruber, M., “Another Puzzle: The Growth in Actively Managed Mutual Funds,” *Journal of Finance* 51 (1996), pp. 783-810.

Guedj, I. and J. Papastaikoudi, “Can Mutual Fund Families Affect the performance of their Funds?,” working paper, Sloan School of Management, MIT, Cambridge, MA, 2005.

Harris, L., Trading and Exchanges, Oxford University Press, New York, 2003.

Harris, M. and A. Raviv, “A Theory of Board Control and Size,” *The Review of Financial Studies*, forthcoming.

Hendricks, D., J. Patel and R. Zeckhauser, “Hot Hands in Mutual Funds: Short-Run Persistence in Performance,” *Journal of Finance* 48 (1993), pp. 93-130.

Hermalin, B. and M. Weisbach, “Endogenously Chosen Boards of Directors and their Monitoring of the CEO,” *American Economic Review* 88 (1998), pp. 96-118.

Hermalin B. and M. Weisbach, “Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature,” *Economic Policy Review* 9 (2003), pp. 7-26.

Holmstrom, B., “Managerial Incentive Problems: A Dynamic Perspective,” *Review of Economic Studies* 66 (1999), pp. 169-182

- Holmstrom, B. and P. Milgrom, "Aggregation and Linearity in the Provision of Intertemporal Incentives," *Econometrica* 55 (March 1987), pp. 303-28.
- Huson, M., R. Parrino and L. Starks, "Internal Monitoring Mechanisms and CEO Turnover: A Long-Term Perspective," *Journal of Finance* 56 (2001), pp. 2265-2297.
- Investment Company Institute, 2005 Investment Company Fact Book, Washington D.C., 2005.
- Johnson, W., "Who Monitors the Mutual Fund Manager, New or Old Shareholders?," working paper, University of Oregon, Eugene, OR, 2006.
- Khorana, A., P. Tufano and L. Wedge, "Board Structure, Mergers and Shareholder Wealth: A Study of the Mutual Fund Industry," *Journal of Financial Economics*, forthcoming.
- Klein, B. and K. Leffler, "The Role of Market Forces in Assuring Contractual Performance," *Journal of Political Economy* 89 (1991), pp. 615-641.
- Kole, S. and K. Lehn, "Deregulation, the Evolution of Corporate Governance Structure, and Survival," *American Economic Review* 87 (1997), pp. 421-425.
- Kuhnen, C., "Social Networks, Corporate Governance and Contracting in the Mutual Fund Industry," working paper, Stanford Graduate School of Business, Palo Alto, CA, 2006.
- Latzko, D., "Economies of Scale in Mutual Fund Administration," *Journal of Financial Research* 22 (1999), pp. 331-339.
- Lehmann B. and D. Modest, "Mutual Fund Performance Evaluation: A Comparison of Benchmarks and Benchmark Comparisons," *Journal of Finance* 17 (1987), pp. 233-265.
- Massa, M., P. Matos and J. Gaspar, "Favoritism in Mutual Fund Families? Evidence on Strategic Cross-Fund Subsidization," *Journal of Finance* 61 (2006), pp. 73-104.
- McWilliams, V. and N. Sen, "Board Monitoring and Antitakeover Amendments," *Journal of Financial and Quantitative Economics* 32 (1997), pp.491-505.
- Meschke, J., "An Empirical Examination of Mutual Fund Boards." working paper, Carlson School of Business, University of Minnesota, Minneapolis, MN, 2006.
- Milgrom, P. and J. Roberts, Economics, Organization and Management, Prentice-Hall, London, 1992.
- Morey, M., "The Kiss of Death: A 5-Star Morningstar Mutual Fund Rating?," *Journal of Investment Management* 3 (2005) pp. 41-52.

Nanda, V., Z. Jay Wang, and Lu Zheng, "Family Values and the Star Phenomenon: Strategies of Mutual Fund Families," *Review of Financial Studies* 17(2004), pp. 667-698.

Nohel, T., Z. J. Wang and L. Zheng, "Side-by-Side Management of Hedge Funds and Mutual Funds," working paper, Loyola University, Chicago, IL, 2006.

Raheja, C., "Determinants of Board Size and Composition: A Theory of Corporate Boards," *Journal of Financial and Quantitative Analysis* 40 (2005), pp. 283-306.

Reuter, J. and E. Zitzewitz, "Do Ads Influence Editors? Advertising and Bias in the Financial Media," *Quarterly Journal of Economics* 121 (2006), pp 197-227.

Rosenstein, S. and J. Wyatt, "Outside Directors, Board Independence, and Shareholder Wealth," *Journal of Financial Economics* 26 (1990), pp. 175-191.

Ryan, H. and R. Wiggins, "Who is in Whose Pocket? Director Compensation, Board Independence, and Barriers to Effective Monitoring," *Journal of Financial Economics* 73 (2004), pp. 497-524.

Siggelkow, N., "Caught Between Two Principals," working paper, The Wharton School, University of Pennsylvania, Philadelphia, PA, 2004.

Sirri, E. and P. Tufano, "Costly Search and Mutual Fund Flows," *Journal of Finance* 53 (1998), pp. 1589-1622.

Spatt, C. and R. Dammon, "Optimal Trading and Pricing of Securities with Asymmetric Capital Gains Taxes and Transaction Costs," *Review of Financial Studies* 9 (1996), pp. 921-952.

Taylor, J., "Risk-Taking Behavior in Mutual Fund Tournaments," *Journal of Economic Behavior and Organization* 50 (2003), pp. 373-383.

Tkac, P., "Mutual Funds: Temporary Problem or Permanent Morass?," *Federal Reserve Bank of Atlanta Economic Review*, fourth quarter 2004, pp. 1-21.

Tufano P. and M. Sevick, "Board Structure and Fee-Setting in the Mutual Fund Industry," *Journal of Financial Economics* 46 (1997), pp. 321-355.

Weisbach, M., "Outside Directors and CEO Turnover," *Journal of Financial Economics* 20 (1988), pp. 431-460.

Wermers, R., "Mutual Fund herding and the Impact on Stock Prices," *Journal of Finance* 54 (1999), pp. 581-622.

Zitzewitz, E., "How Widespread is Late Trading in Mutual Funds?," working paper, Stanford University, Palo Alto, CA, 2004.