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Essay 1: Does ownership structure matter? Essay 2: Asset sale in mutual fund industry

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**ESSAY 1: DOES OWNERSHIP STRUCTURE MATTER?
ESSAY 2: ASSET SALE IN MUTUAL FUND INDUSTRY**

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agriculture and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

In

The Interdepartmental Program in Business Administration

by
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M.B.A., Thunderbird School of Global Management, 2001
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Coming to a Ph.D. program was never part of my plan in pursuing my American dream. I came alone to Unites States to pursue my M.B.A. in the year 2000 and set my goal to end up a lucrative high paying job at an investment banker or an analyst (portfolio manager in the long run) in an asset management company. The plan has changed due to a slowdown of U.S. economy after September 11, 2001 and a hiring freeze in those the industries. However, I have never given up my desire to work for the mutual fund industry. I decided to invest in human capital in the economy slowdown and chose Boston to fulfill my dream. Running into a doctoral seminar at Boston College, a faculty suggested a career path in academic might be an alternative solution to fulfill my passion in asset management field. That conversation brought me to the bayou in the south.

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served as a co-author to reinforce no free-rider in any of our project. Last but not least, I want to thank my colleague Jack Yang for his role model and to share every moment together in the tiny and no-window office which kept us working hard throughout.

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ABSTRACT

The dissertation studies two aspects of the U.S. registered investment companies. The first essay analyzes the ownership and organizational structure aspect while the second essay investigates the restructure events of those investment companies. We find sellers from mutual fund asset sales are mainly financial conglomerates. Funds under management of those conglomerates experience poor performance during the period prior to asset sales. On the other hand, acquirers are generally highly focused mutual fund companies. Funds acquired by these focused entities experience improvement in both fund performance and operational efficiency. From the analysis of organizational structure, funds managed by focused mutual fund companies demonstrate better performance and operating efficiency than those of diversified ones. Funds managed by diversified fund companies also experience performance deterioration during years following their IPOs, while focused counterparts encounter performance enhancement. From the analysis of ownership structure, funds managed by public mutual fund entities outperform their private competitors. Our evidence indicates that (1) organizational structure (level of concentration), (2) economies of scale, (3) strengthened monitoring, and (4) managerial ownership contribute to the superior performance and greater operating efficiency that occur subsequent to asset sales in the mutual fund industry. We propose (1) a public trade, (2) a focused business line, and (3) a large insider ownership to explain the outperformance and management efficiency. Our results not only contribute to the dynamic of mutual fund operations but also explain the evolution of business model for the industry organizations of the past decades.

PART I

CHAPTER 1 INTRODUCTION

With the aid of conglomerate merger wave of the 1960s and the 1970s, the conglomerate model with diversified business lines became viewed as an important facet of American capitalism. Ravenscraft and Scherer (1987) provide evidence of the trend toward diversification for American companies during this period.¹ Stein (1997) and Desai, Foley and Hines (2004) document how multinational and conglomerate can utilize internal capital markets to overcome imperfections in external capital market and allow conglomerate firms to allocate resources efficiently. Although Maksimovic and Phillips (2002) using plant-level data from the U.S. census for the period 1974 to 1992, document that conglomerate firms are less productive than single-segment firms of a similar size, they find that plants of the largest segments of conglomerates with multiple segments are particularly efficient.²

As capital markets have become more global integrated and liquid, investors can diversify by themselves at low cost rather than delegating this task to managers. Most analysts have become hostile to the concept of a conglomerate and have come to believe in the importance of focus. Comment and Jarrell (1995) document a shift toward focus and find that the percentage of firms listing one business segment increased from 36.2% to 63.9% and that the average number of segments fell from 2.59 to 1.72. The average number of SIC codes per firm fell from 4.17 to 2.95. The buyout boom of the 1990s has also presented obstacles for some conglomerates and many of the major diversified business firms are struggling to justify their existence. As an example on October 23, 2005, Cendant Corporation separated into four separate entities. The company sold three of the four business lines, leaving a nicely focused entity. The Cendant name was completely dissolved and the company changed its name to Avis Budget Group. Altria Group, the parent company of Kraft Foods and Philip Morris International, Philip Morris USA and Philip Morris Capital Corp spun-off all its shares in Kraft Foods, which became an independent firm in 2007, and has announced its intention to also spin-off its ownership of Philip Morris. Tyco, a conglomerate beset by scandal that was active in

¹ The Federal Trade Commission (FTC) reports the proportion of manufacturing industry acquisitions, characterized as purely conglomerate, rises from 5% of total assets acquired in 1950-1955, to 18% in 1956-1963, to 36% in 1964-1972.

² Except for the firms of the smallest size.

healthcare, flow control, security, telecommunications and electronics, separated into three companies during the 1st quarter of 2007. Viacom, a media power house, also unraveled decades of acquisitions by splitting into two separate parts. The major remaining conglomerates, such as GE and its rival Honeywell, are reshaping their portfolios of assets in an effort to strengthen shareholder wealth.³ Conglomerates that will survive and prosper are likely to be those that succeed in linking their disparate operations through a common denominator of management and business principles.

Within the financial sector, the U.S. Congress repealed the Glass-Steagall Act by passing the Gramm-Leach-Bliley Act (GLBA, also known as the Gramm-Leach-Bliley Financial Services Modernization Act) in 1999. This legislation open up competition among banks, securities firms, insurance and asset management companies. The U.S. joined many other countries—especially in Europe and, more recently, Japan—in permitting the operation of financial conglomerates, and removing some of the key structural barriers built into the U.S. regulatory system for many years. The existence of conflicts of interest has been documented existing among financial conglomerates. For example, Cowen, Groysberg, and Healy (2004) and Jackson (2005) argue that positive research recommendations are likely to generate greater brokerage revenue thus creating strong incentives for analyst optimism. There is also evidence that analysts (e.g., Michaely and Womack (1999) and Kolasinski and Kothari (2004)) generate more favorable research recommendations in the hopes of generating future business for other divisions of the Investment Bank.

Jensen (1986) argues that managers diversify to increase firm size and to benefit from the power and prestige of managing a large firm. Shleifer and Vishny (1989), along the same line, argue that managers use diversification as opportunity to entrench themselves and extract rents from shareholders by making manager-specific investments. Schmid and Walter (2007) report a substantial and persistent conglomerate discount among financial intermediaries and conclude that it is diversification that causes the discount rather than troubled firms diversity into promising areas. Although diversified financial institutions trade at discount as other non-financial conglomerates do, academics, industry practitioners, and regulators wish to know the most are whether this

³ Sources are from companies' websites and an article reported by Francesco Guerrera, "Less than the sum of its parts? Decline sets in at the conglomerate", on Feb 2nd, 2007 from Financial Times.

conglomerate discount reflect the fact that the informational advantages of large financial institutions are out weighted by the impact Of conflicts of interest activities.

Conflicts of interest in the financial services are well documented. Financial conglomerates have also been found to profit from the asymmetry information which benefits their shareholders. Massa and Rehman (2005) investigate the flow of information within financial conglomerates by focusing on the effect that the lending behavior of affiliated banks has on the portfolio choice of the mutual funds belonging to the same conglomerate. They show that mutual funds of the conglomerate increase their stakes in firms that borrow from the affiliated banks in the period following the deal, while there is no behavior analogous for unaffiliated funds. Using net-of-style returns, they show that this strategy enhances fund performance, on average, by 15 basis points per month (1.8% per year) relative to that of unaffiliated funds in the post-deal era. Funds increase (decrease) their portfolio weights in the stocks of borrowing firms which subsequently sustain positive (negative) abnormal returns, suggesting that the banks exploit inside information not available to the market.

Alchian (1950) and Stigler (1958) argue that the competitive nature of product markets force firms to minimize costs and run efficiently. Low barriers to entry have resulted in more than 500 financial intermediaries from around the world competing in the U.S. market to provide investment management services to investors. At the end of 2006, U.S. registered investment companies managed a record of \$10.4 trillion. Among the fund sponsors, independent financial advisors who manage about half of the investment assets, represent the majority of the U.S. market. Banks, insurance companies, securities broker-dealers, and non-U.S. sponsors are other major fund and trust sponsors in the U.S. market place.⁴ Fund families play an important role in the asset management industry. According to the Investment Company Institute, the top 25 fund families control over 71% of total industry assets.⁵ Fund complexes compete to offer services to investors, and the ease with which investors can shift assets from one entity to another

⁴ Based on the Investment Company Complexes by type of intermediary on December 2006, 59% of the intermediary is by independent financial advisors, 14% by Non-U.S. sponsors, 10% by insurance companies, 10% by banks and thrifts and 7% by brokerages.

⁵ Based on the data from 2007 Investment Company Fact Book, the largest 10 mutual fund sponsors managed 53% of mutual fund assets in 1990 while the assets under management is relative stable and represents 49% in 2006. The Herfindahl-Hirschman measure considers industries with index numbers below 1,000 to be unconcentrated industries while the mutual fund industry has a Herfindahl-Hirschman measure of around 400.

has contributed to competition in the industry. Not only do fund families offer the economies of scale and scope, they lower search costs for investors (Sirri and Tufano (1998)). However, the structure of the delegated asset management industry allows agency problems to arise. Fund complexes hire fund managers (advisors) to manage their fund products who do not work directly for their funds' shareholders, but rather for the shareholders of the fund complexes. Consequently, a fund family may distort the incentives of fund managers at the expense of fund shareholders when the overall family stands to benefit. Gaspar, Massimo and Matos (2006) document that mutual fund families strategically transfer performance across member funds within their organizations and recent fund scandals have triggered regulatory concerns about fund governance.⁶

Earlier literature documents that diversified firms trade at a discount (Lang and Stulz (1994), and Berger and Ofek (1995)) relative to focused peers, although Campa and Kedia (2002) argue that the documented discount is not per se evidence that diversification destroys value but instead indicates a lack of control for an endogeneity problem. The unique nature of mutual fund companies as corporations or business trusts and their stabilized business structures⁷ allow us to control for firm characteristics that affect the diversification decision, mitigating potential endogeneity and self-selection biases that could pervade corporate sector analysis. We use a rich dataset of all U.S. registered investment companies from 2001 to 2005, consisting of nearly 3,000 firm-years. Since these entities hold their business lines constant,⁸ and their product market is relatively stable, the sample covers approximately 35,000 fund-years of data that is free of survivor bias. This evidence affords an opportunity to analyze the issue of the competing literatures among focused versus diversified asset management. To our

⁶ On September 3, 2003, New York Attorney General Eliot Spitzer announced the issuance of a complaint against New Jersey hedge fund company Canary Capital Partners LLC, charging that they had engaged in "late trading" in collusion with Bank of America's Nations Funds. By early November, the SEC's investigations led to the resignation of the chairmen of Strong Mutual Funds and Putnam Investments, both major mutual fund companies. In the case of Strong, the chairman himself was charged with market-timing trading involving his own company's funds. In December, Invesco (market-timing) and Prudential Securities (widespread late trading) were added to the list of implicated fund companies.

⁷ Based on Investment Company Fact Book from 2001 to 2007, the percent of investment company complexes by type of intermediary has been relatively stable. Independent investment advisers represents around 60% while insurance companies, brokerages, and banks represent 10%, 10% and 7% respectively,

⁸ We hold the business structures constant for those investment companies to mitigate any firm switch from a focus business line to diversified or vice versus.

knowledge, this is the first academic research to use mutual fund companies and their product markets as a basis to provide new evidence about diversification.

By extending this unique dataset to dates as early as 1961, we can analyze issues that pervade the IPO literatures. Most of the finance literature remains within the boundaries of public firms. However, even in a well-developed capital market as United States, public firms represent less than 1% of the total population of firms. The unique feature of mutual fund data allows us to measure fund performance and managerial efficiency even though the majority of those fund companies are private and relative small in asset size. The decision to go public is one of the most well-researched questions in finance given that IPOs are underpriced and sustain considerable long run underperformance. Ritter (1991) indicates underpricing of IPOs as short-term phenomenon while those IPOs underperform in the long-run. Loughran and Ritter (1995) document the long-run underperformance of IPOs and conclude that the phenomenon cannot be well explained. Degeorge and Zeckhauser (1993), Jain and Kini (1994), and Mikkelson, Partch, and Shah (1995), Chemmanur, He, and Nandy (2007)⁹ document a significant decline in operating performance, market-to-book ratio, price-to-earnings ratio, and earnings per share subsequent to firms' IPO, suggesting that insiders time IPOs. However, Stoughton, Wong and Zechner (2001) indicate firms have greater tendencies to go public in the industries where the firms themselves have greater confidence about their private information regarding their own product quality. The product market of mutual fund companies allows us to observe the performance and operating efficiency surround the transition of fund companies from being private to go to public for a substantial amount of time.

There are several advantages to using mutual fund companies and their product markets to study the diversification discount and post-IPO performance. The transparency of mutual funds because of mandated public disclosure allows us to generate a sample that is composed of private companies. It compensates prior IPO literatures suffered with limited number of observations which carry little data prior to their

⁹ Degeorge and Zeckhauser (1993) use a sample of reverse LBO firms; Jain and Kini (1994) use the U.S. IPO firms; Mikkelson, Partch, and Shah (1995) use Australian firms to study the post-IPO operating performance and ownership structures for different time frame following their IPOs. Chemmanur, He, and Nandy (2007) use total factor productivity (TFP), sales growth, sales, and capital expenditures to document similar results.

publicly-traded. Analyzing both time series and cross section from the product market of mutual fund companies allows us to evaluate performance and operational efficiency without having to utilize the more subjective accounting measures that are used in the corporate literature. The publicly-disclosed data for mutual funds includes fund performance, expense ratios (costs), net asset under management (size), manager tenure (level of entrenched), and portfolio turnover. These data allow us to analyze whether diversification allows management firms to utilize internal resources more efficiently to achieve economies of scales or allows managers to entrench themselves by developing into a broader conglomerate that makes it more costly for dispersed shareholders to monitor. By investigating performance and operational efficiency at the fund level, we can contribute to an understanding of the dynamics of mutual fund operation, thus help explain the evolution of business model over the past decades.

CHAPTER 2 LITERATURE REVIEW

2.1 Diversification versus Focus

Over the period of 1950s-1970s, Ravenscraft and Scherer (1987) show a trend that American companies move toward diversification. Bhide (1990) attributes the trend of away from diversification toward focus in the 1980s to the improved efficiency of the capital market. Liebeskind (2000) argues that the value of diversification depends on whether internal capital markets are relatively efficient or inefficient. Williamson (1975) contends that diversification allows firms to allocate their capital internally at lower cost than relative to banks and other financial institutions. Along with Myers and Majluf (1984), Stein (1997), and Desai, Foley and Hines (2004) who argue that as a result of information asymmetries, diversified firms can allocate capital more efficiently than external capital markets. However, academic studies and empirical evidence generally indicate that, far from delivering promised synergies, conglomerates display a bias toward plowing surplus resources into their weaker business, resulting in waste and inefficiency. Wernerfelt and Montgomery (1988) and Lang and Stulz (1994) document a positive correlation between Tobin's Q and firm focus.¹⁰ Findings from Lang and Stulz (1994), Berger and Ofek (1995), Servaes (1996), and Lamont and Polk (2002) suggest there is a conglomerate discount of 10% to 12%, implying that internal capital markets are inefficient. Comment and Jarell (1995) also find argue that diversification harms shareholders, documenting that there has been a trend towards more focus and that there is a positive relationship between focus and shareholder returns. John and Ofek (1995) find that an asset sale leads to an improvement in the operating performance of the seller's remaining assets in each of the three years following the asset sale. With the improvements concentrates in firms that increase their focus, they report that the announcement stock returns are greater for focus-increasing divestitures, and that the change in operating performance is positively related to the seller's stock return at the divestiture announcement.

Lang and Stulz (1994), Maksimovic and Phillips (2002), and Campa and Kedia (2002) show that failure to control for firm characteristics that lead firms to diversify, and

¹⁰ Tobin's q is known as another measure of performance. It is the ratio of the market value of a firm's assets (as measured by the market value of its outstanding stock and debt) to the replacement cost of the firm's assets (Tobin 1969).

suffer a diversification discount may wrongly attribute the discount to diversification instead of the underlying characteristics. Campa and Kedia (2002) propose several alternatives for solving endogenous problems. After controlling for firm characteristics, using the probability of diversifying as an instrument, and applying Heckman's technique for controlling self-selection bias, they report that the diversification discount from earlier literatures either drops off or turns into a premium. This evidence shows that the characteristics that cause firms to diversify also cause them to be discounted. Similarly, the decision to focus can be endogenous since firms choose to refocus when the presence of certain firm-specific characteristics makes the benefits of refocusing greater than the associated costs.

2.2 Organizational Structure

Bogle and Twardowski (1980) examine the performance of financial institutions, including banks, insurance companies and mutual funds and find that banks significantly underperform all other categories of institutional groups, including mutual funds. McTague (1994) explains that bank portfolio managers have a reputation of being unaggressive and fail to earn large returns. According to this argument, pension fund managers and other investment advisors are reluctant to invest in bank-directed funds for fear of mediocre returns. Chen, Yao, and Yu (2006) examine fund performance and fund flows for equity funds managed by insurers or their investment subsidiaries and find that insurance funds also underperform non-insurance peers. They claim insurers' efforts to cross-sell mutual funds results in insurance funds attracting unsophisticated investors and that such investors are reluctant to cashout even when managers generate poor performance.

Knuutila, Puttonen, and Smythe (2006) document that clients value convenience and brand rather than past performance for bank-managed funds based on evidence from the European market, where compared to the U.S. mutual fund markets, banks and financial conglomerates play larger roles in terms of the size of assets under management. For example, as of 2002, approximately 70% of Finnish assets are managed by banks, compared to approximately 5.3% in the U.S. market.¹¹ Based on European evidence, Frye (2001) concludes that investors rely mainly on marketing information and the general reputation of the bank in deciding to invest in bank proprietary mutual funds in

¹¹ The source is from Morningstar and Knuutila, Puttonen, and Smythe (2006).

U.S. as well as in Europe. Although she finds no evidence of fund differential performance between bank-managed mutual funds and non-bank managed mutual funds after controlling for different fiduciary standards, she does find that banks focus on more conservative investment objectives and that bank proprietary funds, on the whole, are managed more conservatively than non-bank funds, as evidenced by lower fund risk.

Koppenhaver (1999) and Frye (2001) show that in the U.S., bank-affiliated mutual funds have significantly lower management fees relative to non-bank funds. In contrast, Korkeamaki and Smythe (2004), Gil-Bazo and Martinez (2004), and Geranio and Zanotti (2005) show that bank funds have significantly higher expenses than non-bank funds in Finland, Spain, and Italy market respectively. This result may be partially due to the size of assets under management in the U.S. market which is generally larger than that in Europe.¹² Another possibility is that banks in Europe are the primary promoters and distributors of mutual funds. Thus banks and financial conglomerates can capitalize on their monopoly-like positions and charge higher fees.¹³ Nevertheless, this result raises an interesting question. Since the passage of the Gramm-Leach-Bliley Act (GLBA) opened up competition among banks, securities firms, insurance and asset management companies with the goal of promoting resources utilization, we would expect operating improvements at financial conglomerates, as a results of increased competition. We investigate whether there is any difference in terms of performance and operating efficiency among different structures of mutual fund organization and determinant whether the differences, if there are any, are related to the business concentration and focus fund complexes.

2.3 Markets versus Board Governance as a Source of Control

Supporters of markets generally believe that competition keeps product markets efficient. In their views, regulation and restrictions are costly and do not add value to society because markets are competitive and contestable. Fama (1980) claims that firms are well disciplined by competition. Competition forces the evolution of devices for efficiently monitoring the performance of management and individual managers. A similar argument is made by Hart (1983) and Jensen and Ruback (1983) who argue that

¹² Korkeamaki and Smythe (2004) point out asset under management for U.S. funds are 7 to 10 times larger than those in Europe.

¹³ Otten and Shweitzer (2002) indicate 53% of the mutual funds are distributed throughout banks in Europe.

product markets and the market for corporate control can discipline managers to work for the best interests of shareholders, that is to maximize firm value.

Low barriers of entry contributed to the rapid growth in the U.S. mutual fund market in the 1980s and 1990s in terms of number of fund sponsors. Although a bear market, fund scandals, and the additional costs associated with new regulations caused some consolidation in the industry after 2001, at the end of 2006 the market still managed to compose more than 500 financial intermediaries from around the world competing against each other to provide investment management services. This active competition among sponsors has helped to keep asset concentration low for many years. Khorana (1996) documents an inverse relationship between managerial turnover and prior fund performance as evidence of the effectiveness of governance and control mechanisms in the mutual fund industry. Furthermore, Khorana (2001) argues that the internal market for corporate control in the mutual fund industry is effective in disciplining poorly performing fund managers. Through the hiring new managers, investment advisors could correct prior poor performance to norm.

While supporters of markets hold that competition disciplines managers effectively, the SEC has proposed a series of governance reforms in the light of recent mutual fund scandals, involving improprieties such as market timing and late trading. Although the governance model of the mutual funds industry is often viewed as mirroring the world of non-financial corporation, there are significant structural differences that dilute the authority of directors. Radin and Stevenson (2006) challenge the function of the board of directors in the mutual fund industry and argue that they do not utilize their power and influence to monitor the actions of their managers as effectively as corporate boards. Kuhnen (2006) finds that fund boards award portfolio management contracts preferentially to advisory firms that have had more business relationships with the fund directors. Moreover, advisors receive higher pay when they are more connected to the fund directors. This evidence casts doubt on whether board of directors can be relied on to monitor agency conflicts.

Nevertheless, academia has provided some empirical results as to whether fund performance and management efficiency are associated with sound governance. Tufano and Sevick (1997) provide the first empirical test about the effectiveness of boards. They find that smaller boards in a mutual fund organization negotiate lower fund-management

fees. Similarly, Meschke (2006) finds that funds overseen by an independent chairman charge lower fees although the relationship between fund fees and the percentage of directors that are independent varies through time and measures of board independence do not affect fund performance in an economically meaningful way. Del Guercio, Dann and Partch (2003) find that funds with relatively low expense ratios have smaller boards, a greater proportion of the board is independent, relatively low director compensation. They conclude that board independence is associated with lower expense ratios and value-enhancing restructuring. Tang and Kong (2006) examine the effect of three governance mechanisms on fees and other measures of performance. They conclude that funds with more independent boards are less efficient in terms of the performance-expense tradeoff. The greater the proportion of directors that are independent, a lower 12b-1 fees and fund loads. The above evidence shows that independent board and independent chairman are associated with a lower expense ratio being charged to fund investors. In terms of fund performance and board independence, results are mixed. Tang and Kong (2006) analyze fund organizations that have unitary boards.¹⁴ Surprisingly, their results show that unitary boards charge lower fees and display better performance. This point illustrates that board of directors may themselves create agency problems.

The SEC has devoted some efforts to strengthening the internal monitoring and governance mechanisms in the mutual fund industry, but a federal appeals court has overruled the SEC's proposed rules three times in less than a year.¹⁵ Ding and Wermers (2006), who are in favor of the SEC's proposal, conclude that the structure of the board is an important determinant of governance quality. In examining the role of boards, they find that a greater number of independent directors predicts both better future performance and a higher likelihood of that an underperforming manager will be replaced. Khorana, Tufano and Wedge (2007) examine whether certain governance structures are related to the board approval of across-family fund mergers by target firms, they document that a larger fraction of independent trustees implies a lower tolerance of poor performance in the initiation across-family mergers. This effect is most pronounced when all of the fund's directors are independent. Furthermore, while boards approve

¹⁴ The unitary boards here are defined as one board overseeing all funds in the complex.

¹⁵ The U.S. court rejected the proposal of 75% of a fund's directors, including the chairman, be independent of the company that oversees the fund by the 3rd time on June 23rd, 2006. The SEC has until the end of 2007 for the comment period.

across-family mergers that lead to substantial reductions in their own compensation or even their own firing, more highly paid target fund boards are less likely to approve these mergers.

2.4 Diversifications and Governance

Various researchers are attempted to find various explanations for the value lost through diversification, based on agency considerations. Amihid and Lev (1981) document that managers may diversify to reduce the risk of their undiversifiable human capital. Jensen (1986) argues that managers diversify to increase firm size and to benefit from the power and prestige of managing a large firm. Shleifer and Vishny (1989) argue that managers use diversification as an opportunity to entrench themselves and extract rents from shareholders by making manager-specific investments. Other researchers argue that there is no clear evidence to show that governance characteristics explain the value loss from diversification. Anderson, Bates, Bizjak, and Lemmon (1998) contend that agency costs do not provide a complete explanation for the magnitude and persistence of the diversification discount. They find that CEOs in diversified firms have lower stock ownership and lower pay-for-performance sensitivities, relative to focused firms. However, it is diversified companies that have more outside directors. Consequently, when evaluating independent blockholdings and sensitivity of CEO turnover to performance, there is no statistically significant difference between diversified and focused firms. However, Jiraporn, Kim, Davidson, and Singh (2006) document an inverse relationship between the strength of shareholder rights and the probability of diversifying. Firms with strong shareholder rights seem to prevent firms from diversification. Thus, firms where shareholder rights are more limited due to restrictive corporate governance suffer deeper diversification discounts. More specifically, they find that there is a 1.1-1.4% decline in firm value for each additional governance provision imposed on shareholders. Their conclusions support the proposition that agency theory is an explanation for the loss of value observed at diversified firms while Anderson, Bates, Bizjak, and Lemmon (1998) suspect that other sources are needed to explain the diversification discount.

2.5 Incentives, Insider Ownership and Performance

Fama and Jensen (1983) argue that agency problems arise because contracts cannot be costlessly written and enforced. Servaes (1996) and Denis, Denis, and Sarin

(1997) document an inverse relationship between diversification and managerial ownership. They attribute to agency conflicts within a diversified firm. The Wall Street Journal reports 3% of mutual funds equip incentives fee structure to compensate portfolio managers on April 14th, 2005. One way to solve agency conflicts is to utilize with proper incentives to induce managers to behave in the interests of shareholders. However, the empirical results for adopting incentives to resolve agency problems are mixed. The Wall Street Journal reports that 3% of mutual funds have incentive fees. Blake, Elton and Gruber (2003) conclude that mutual funds which offer incentive fees to their managers do not, on average, outperform their peers. On the other hand, Cremers, Driessen, Maenhout and Weinbaum (2005) document that an incentive-based compensation structure for directors has a positive impact on fund performance and conclude that larger director ownership reduces agency problems between fund managers and shareholders.

Insider ownership has been viewed as an effective signal of a firm's quality that can mitigate information asymmetry and adverse selection problems. Leland and Pyle (1977) propose that managers can signal the quality of firms under taking IPOs by retaining of equity holdings. There are empirical evidences of a positive relationship between insider ownership and firm performance, implying that insider ownership serves as a device to mitigate conflicts of interests and agency problems. Jensen and Meckling (1976) propose by establishing appropriate incentives and incurring monitoring costs can limit the divergent interests between agents and principals. Consequently, managers with higher ownership are less likely to engage value destroying activities, and thus the cost of monitoring is reduced as management ownership rises. Consistent with this convergence of interest hypothesis, McConnell and Servaes (1990) document that corporate value is a function of insider equity ownership. Their evidence shows a significant curvilinear relation between Q and the fraction of shares owned by corporate insiders as well as a significant positive relation between Q and the proportion of shares held by institutional investors. Anderson and Reeb (2003) study founding-family ownership and firm performance of the S&P 500 firms and find that the relation between family holdings and firm performance is nonlinear. Their results show when family members serve as CEOs, performance is better than with outside CEOs. This result is consistent with the argument that concentrated ownership is more effective than dispersed ownership.

Insider ownership has also been found effective in aligning conflicts of interest in the portfolio management industry. Chen, Goldstein and Jiang (2006) find that director ownership tends to be greater when the benefit from monitoring is expected to be high and when there is a lack of other control mechanisms. Khorana, Servaes and Wedge (2007) document higher ownership by portfolio managers is associated with improved future performance, with performance improving by about three basis points for each basis point of managerial ownership. They also find fund managerial ownership is greater in funds with better past performance, lower front-end loads, smaller size, funds affiliated with smaller families, and where the manager has managed the fund for a long period of time. These findings support the notion that managerial ownership has desirable incentive alignment effects for mutual fund investors, and indicate that the disclosure of this information is useful.

While the convergence-of-interests hypothesis suggests a positive relationship, the entrenchment hypothesis suggests that market valuation can be adversely affected by high insider ownership since greater insider control allows insiders greater freedom to depart from value maximizing. Morck, Shleifer and Vishny (1988) study the relationship between management ownership and Tobin's Q. Their results show Tobin's Q first increases, then declines, and finally rises slightly as insider ownership rises. Stulz (1988) develops a model that analyzes the relationship between the takeover premium and managerial ownership. He argues that the takeover market disciplines corporate managers. As managerial equity ownership increases, the probability of a successful hostile takeover declines for any given premium, furthering management entrenchment. Slovin and Sushka (1993) examine the deaths of inside blockholders to test whether ownership concentration promotes managerial entrenchment or aligns insider and non-insider interests. Since market value falls at the death of an inside blockholder, they conclude that firm value is adversely affected when a single insider owns a substantial amount of a firm's stock. The market reacts to the death positively because of the expected reduction in ownership concentration and the greater probability of subsequent corporate control activities.

Increased insider ownership concentration also permits managerial consumption of perquisites. Demsetz (1983) argues that insiders in concentrated firms may choose non-pecuniary consumption and thereby draw resources away from profitable projects.

Combining ownership and control allows concentrated shareholders to exchange profits from private benefits. Jensen (1986) argues that managerial moral hazard can take the form of excessive spending on projects that promote the careers and visibility of managers but are not in the best interest of shareholders. Under the assumption that monitoring costs are not fully shared among shareholders, the free rider problem associated with monitoring is mitigated when ownership is more concentrated. Therefore, concentrated ownership should entail lower expenditure on activities with high scope for generating managerial private benefits. Yafeh and Yosha (2003) propose that concentrated shareholding is associated with lower expenditure on activities with scope for managerial private benefits. DeAngelo and DeAngelo (1985) and Shleifer and Vishny (1997) find that large premiums associated with superior voting shares or control rights provide evidence that controlling shareholders seek to extract private benefits from the firm. Consequently, insider block-holders might forgo some risk diversification gains or promote their own interest at the expense of other shareholders.

2.6 Existence of Institutional Shareholders and Outside Blockholders

The results on the relationship between institutions (outside blocks) holding and firm value are ambiguous. The monitoring hypothesis implies that outsiders will monitor managers and reduce agency problems. Holderness and Sheehan (1985) and Mikkelsen and Ruback (1985) both document equity value increases with the announcements of block purchases by corporations and corporate raiders. Demsetz (1986) argues that nonmanagement insiders with large shareholdings are effective monitors of firm activities. Their arguments are consistent with the large shareholder monitoring hypothesis of Shleifer and Vishny (1986) who predict that the presence of a large blockholder will have a positive effect on the market value of the firm. Large shareholders reduce the free-rider problem in takeovers. The potential takeover threat that large blockholders present can also serve as an effective device for monitoring management.

There is evidence on how block-holders can prevent value destroy or management entrenchment from their voting powers. Jarrell and Poulson (1987) document that firms with larger insider holdings and lower institutional holdings adopt the most harmful antitakeover amendments. Brickley, Lease, and Smith (1988) indicate that institutional investors and other blockholders vote actively on antitakeover amendments, especially when the proposal appears to harm shareholders. Institutions that are less subject to

management influence, such as mutual funds, foundations, and public-employee pension funds, are more likely to oppose management than banks, insurance companies, and trusts, which frequently derive benefits from lines of business under management control. We will empirically test how the presence of outside shareholders influences management performance and operational efficiency and examine how different fund complexes are affected by such block-holders. Agarwal and Mandelker (1990) examine the role of large shareholders in the attempts of entrenched managers to adopt anti-takeover provisions to empirically test two competing hypotheses, active monitoring hypothesis and passive voting hypothesis. Their results imply that the existence of large shareholders leads to better monitoring of managers. Barclay and Holderness (1991) find similar results documenting that there are significant and positive effects at the announcement of an outsider's acquisition of a large equity position, but these gains persist only if a takeover or other corporate restructuring follows. Moreover, Brickley, Lease, and Smith (1994) further analyze a large sample of management-sponsored anti-takeover amendments and conclude that shareholder voting is important. Pagano and Roell (1998) argue that the presence of large outside shareholders can reduce the probability of controlling shareholder wealth expropriation. Demsetz (1983), Shleifer and Vishny (1986), and Pound (1988) report evidence that is consistent with the positive relation between corporate value and institutional share ownership.

However, research indicates that the presence of large blockholders has little influence on firm values. McConnell and Servaes (1990) do find no correlation between firm value and the presence of a block holder or the fraction of equity owned by blockholders. Moreover, Burkart, Gromb and Panunzi (1997) argue that dispersed outside ownership can be beneficial because it enhances managerial discretion, in contradiction to the monitoring hypothesis. Although tight control by outside shareholders may be ex post efficient, ex ante it imposes an expropriation threat that reduces managerial initiative. Even if managerial discretion is detrimental to shareholders ex post, it can be beneficial ex ante because it induces greater firm-specific investment on managers, like searching for new investment projects. The manager is less likely to show such initiative when large shareholders are likely to interfere, whereas the monitoring hypothesis argues that large shareholders constrain managers from expropriating wealth. Thus there might be a trade-off between the gains from blockholder monitoring and the

loss of managerial initiative induced by a blockholder. From this perspective, a firm's ownership structure can act as a commitment device in delegating a certain degree of control to management. Consequently, a dispersed ownership structures assures the manager that shareholders will interfere little, inducing him to show greater initiative. In contrast, a concentrated ownership structure induces high levels of monitoring and control but results in less management initiative so that the ownership structure can serve as an instrument to solve the trade-off between control and managerial initiative.

2.7 IPOs of Mutual Fund Complexes

There is relatively little literature addressing the question of why companies go public. Pagano (1993) points out the possibility that a small stock market may represent a "bad equilibrium" in which no entrepreneur goes public, due to the failure of entrepreneurs in such an economy to internalize the positive externality arising from the increase in the diversification available to investors in public companies. Pagano, Panetta, and Zingales (1998) study the issue of why companies go public by using both ex ante and ex post information on their characteristics and performance. Their analysis shows greater investment is needed in sectors with higher growth opportunities result an IPO. However, investment and profitability declines after the IPO, indicating entrepreneur's attempt to time the market. In addition, going public provides a benefit to company to borrow more cheaply.

In the asset management industry, only a limited number of firms go public. For example, out of nearly 600 U.S. registered investment management companies in 2001, only 26 firms are public companies. Even counting those investment companies that are divisions of public companies, the number of firms would only increase to 107. Most of the investment companies in the U.S. are subject to the Investment Company Act of 1940 with extensive disclosure. The industry is widely recognized as highly competitive since its low barriers to entry. Chemmanur and Fulghieri (1999) argue an entrepreneur has private information about his firm's value, but outsiders can reduce this disadvantage by gaining information and evaluating the firm at some cost. In equilibrium the timing of the going-public decision is determined by a firm's trade-off between reducing the duplication in information production by outsiders (which is unavoidable in the IPO market, but is mitigated by a publicly observable share price) and avoiding the risk-premium demand by venture capitalists and other private investors. Thus, the additional

cost for outsiders to evaluate investment companies might be lower given the fact of their transparency. The trade-off for management considering IPO might be somewhat different because the cost of losing control and ownership might outweigh the benefits from liquidity and diversification.

Brau and Fawcett (2006) survey 336 chief financial officers to compare practice to theory in the areas of initial public offerings with respect to motivation, timing, underwriter selection, underpricing, signaling, and the decision to remain private. They find the most important positive signal for going public is past historical earnings, followed by underwriter certification. The primary motivation for firms going public is to facilitate acquisitions, while the main reason firms remain private is to preserve decision-making control and ownership. They find there are four key motivations for going public. One is for managers to use their private information (Myers and Majluf (1984)). Zingales (1995) argues that IPOs are followed by abnormally high turnover in control, evidence of insiders cashing out. A third explanation as offered by Zingales (1995) is that an IPO can serve as a first step toward having a company taken over at an attractive price. The fourth one is that an IPO is served as strategic moves. For example, Bradley, Jordan, and Ritter (2003) document analyst recommendations are largely biased upward after an IPO. The asset management industry, relative to other industries, has not experienced large consolidation in the 1990s, even though some consolidation took place in the early 2000s as a result of fund scandals and bearish market conditions. A majority of the mutual fund companies that go public are founding-family firms which retain large holdings of shares after their IPOs. This factor suggests that the motivations and decisions for investment companies going public might be different from that of non-financial firms.

Pagano (1993) and Admati, Pfleiderer, and Zechner (1994) both point out the diversification and liquidity benefits to firms from having access to the capital market. Trading in a liquid market also benefits in lowering firms' cost of capital. Zingales (1995) argues that the going public decision is based upon initial owners' decision in balancing maximizing cashflow rights by giving up the control rights. Whether a company should be private or public depends on the particular combination of majority control and dispersed ownership which maximizes owners' wealth. Boot, Gopalan and Thakor (2006) argue that managers need decision-making autonomy to optimally manage the firm while investors need liquid ownership stakes. With diffused ownership, investors rely on

corporate governance to impose generic exogenous controls so the manager may not be able to attain the desired trade-off between autonomy and the cost of capital. The benefit of private ownership is that the manager can attain the precise trade-off through privately-contracting between few large investors.

Some scholars explain an IPO is used as a signaling device used when there exist important differences between expected product qualities. Leland and Pyle (1977) conclude that entrepreneur can signal project quality through retaining a significant ownership of the firm. After controlling for insider ownership, Jain and Kini (1994) conclude that there is a significant positive relation between post-IPO operating performance and equity retention by the original entrepreneurs. Stoughton and Zechner (1998) conclude that the value of a firm's IPO is determined by the ownership structure resulting from the offering mechanism given that investors are not homogeneous in their ability to monitor management of the newly public firm. Monitoring activities are difficult to observe and to contract on since a free-rider problem exists. The existence of this agency problem creates a tension between risk-sharing and information production, and these two goals are traded-off against one another. As a result, the optimal offering process will give favored treatment to the large investor class. Schipper and Smith (1983, 1986) use corporate spin-offs and carve-outs to document that public trading in subsidiary stock provides a better medium for managerial compensation as well as for the acquisition of the subsidiary by another firm.

2.8 Post-IPO Performance

The notion that managers time the market for filing for IPO is found in early literature, implying that firms signal the market with their overvaluation. Thus, issuing stock immediately reveals information about the true state to the market so that the market discounts such firms. More formally, Myers and Majluf (1984) assume managers know more than the market does about the future prospects of the firm, and that managers acting in the best interests of existing shareholders issue stock when the market overvalues the firm. Stein (1989) uses a signal-jamming model to show that myopic behavior like window-dressing may persist even in efficient capital markets.

Consistent with this argument, Degeorge and Zeckhauser (1993) study reverse LBO firms and find they underperform in the post-IPO period, arguing IPO firms also experience deteriorating operational performance following their IPOs. Jain and Kini

(1994) investigate the change in operating performance of firms that go public and find a significant decline in operating performance, market-to-book ratio, price-to-earnings ratio, and earnings per share subsequent to the IPO. However, they document a significant positive relation between post-IPO operating performance and equity retention by the original entrepreneurs, consistent with Leland and Pyle (1977). Mikkelsen, Partch, and Shah (1995) examine ownership structure and operating performance after the IPOs of Australian firms. They also find deteriorating operating performance over the first 4 post-listing years and a positive relationship between insider ownership and firm performance after the IPO. There is a positive relation between institutional ownership and performance, but only in the latter part of a 5-year post-listing window, and find some evidence that independent board leadership is associated with better operating performance.

Kaplan (1989) and Smith (1990) document the superior operating performance of firms that make the transition from public to private ownership through leverage buyouts (LBOs) and management buyouts (MBOs), consistent with the fact that the concentration of ownership intrinsic to LBOs and MBOs eliminates conflicts of interests between managers and shareholders. However, other literature such as Stoughton, Wong and Zechner (2001) finds that IPO firms experience performance improvement. They argue that firms signal product quality through IPOs, especially when there exist great differences between expected product qualities. Thus, industries where firms have greater confidence about their private information regarding their own product quality are more likely to go public.

Based on the competing literature about the quality of IPO firms, we formulate hypotheses to test the performance and management efficiency surrounding IPOs of mutual fund companies. Most importantly, we would like to test whether firms' organization structure with respect to focus versus diversification generates differences surrounding IPOs and whether those differences are related to insider holdings, outside blocks ownership, and governance structures.

2.9 Fund Characteristics and Fund Performance

In documenting how ownership structure and governance is related to fund performance and operational efficiency, we will control for other variables that affect fund performance and efficiency. Some literature argues that fund size and performance

are related. Chen, Hong, Huang and Kubik (2004) document that fund performance declines with fund size but increases with the size of the other funds in the family. In most fund families, major decisions are decentralized so that fund managers select stocks without substantial coordination. Thus a family is an organization that credibly commits to letting each of its fund managers conduct their own stock selection. Being part of a family generates economies of scales with respect to the fixed costs of marketing, research, and back office capacity. Indeed, a key feature of large fund organizations is that the family can hire a pool of analysts whose time and talents are then shared by various fund managers in the organization. Thus if a large fund is organized like a fund family with different managers running smaller pots of money, then scale can enhance efficiency just as family size has a favorable effect on fund performance.

Other literature documents fund performance and operating efficiency is related to management risk incentives and the resulting management fees. Carhart (1997) identifies a negative relationship between fees and performance, and portfolio turnover and performance. The increasing public attention, competition, and recent settlements in the industry have contributed to the reduction in the fee structures of the U.S. mutual fund market. Bris, Gulen, Kadiyala, and Rau (2007) study a pool of funds closed for new investment and document a negative relationship between fees and size of funds under management. Ding and Wermers (2006) find that the presence of managerial entrenchment in the asset-management industry but that experienced managers of smaller funds underperform their less-seasoned counterparts.

We will tests by controlling various fund characteristics, such as size, turnover, expense ratios, and manager tenure to analyze whether ownership and governance structures affect fund performance and management efficiency, and whether good performance is related to being structure of fund complexes being focused or diversified. We also address issues as to whether managers' initiatives and motivations of going public reflect market timing and analyze performance and management efficiency surrounding their IPOs.

CHAPTER 3 HYPOTHESES, SAMPLE, AND METHODOLOGY

3.1 Hypotheses

3.1.1 Focused versus Diversified

Given that Lang and Stulz (1994); Berger and Ofek (1995); Servaes (1996); Lamont and Polk (2002) argue that diversified firms or conglomerates trade at a 10% to 12% discount relative to the focused peers while Stein (1997), and Desai, Foley and Hines (2004) claim that as a result of information asymmetries, diversified firms can allocate capital more efficiently than external capital markets to achieve economies of scales and scopes, we formulate the following central hypotheses for empirical tests.

3.1.1.1 Null Hypotheses

H₀₁: Funds managed under focused mutual fund companies perform as well as those under diversified fund complexes.

H₀₂: Funds managed under focused mutual fund companies achieve management efficiency that is similar to those under diversified fund complexes.

3.1.1.2 Alternative Hypotheses

H₁₁: Funds managed under focused mutual fund companies perform better or worse than those under diversified fund complexes.

H₁₂: Funds managed under focused mutual fund companies show better or worse management efficiency than those under diversified fund structures.

3.1.2 Governance and Diversification

The governance literature has provided some evidence that fund performance and management efficiency (fees) are associated with size and the independence of the board (Tufano and Sevick (1997); Meschke (2006); Del Guercio, Dann and Partch (2003); Tang and Kong (2006); Ding and Wermers (2006)) and that managers use diversification as an opportunity to entrench themselves and extract perks from shareholders by making manager-specific investments (Amihid and Lev (1981); Jensen (1986); Shleifer and Vishny (1989)). Thus, the next hypothesis to be tested is related to the level of diversification of fund complexes and their governance structures.

3.1.2.1 Null Hypothesis

H₀₃: Focused mutual fund companies have size and independency of board members that is similar to diversified fund complexes.

3.1.2.2 Alternative Hypothesis

H₁₃: Focused mutual fund companies are smaller (or larger) in size and have greater (or lower) independency of board members than diversified fund companies

3.1.3 Ownership and Performance

The literature documents an inverse relationship between diversification and managerial ownership within a diversified firm (Servaes (1996); Denis, Denis, and Sarin (1997)), and insider ownership has been documented to be an effective device to mitigate information asymmetry (Jensen and Meckling (1976); Leland and Pyle (1977); McConnell and Servaes (1990); Anderson and Reeb (2003); Chen, Goldstein and Jiang (2006); Khorana, Servaes and Wedge (2007)). However, other literature suggests that market valuation can be adversely affected by insider ownership either (Jarrell and Poulson (1987); Stulz (1988); Slovin and Sushka (1993); Yafeh and Yosha (2003); DeAngelo and DeAngelo (1985); Shleifer and Vishny (1997)), implying entrenchment.

Based on the competing hypotheses of convergence of interests versus entrenchment hypothesis, we formulate a hypothesis as to which entrepreneurs who maintain large ownership of outstanding shares signal the good quality of their firms' superior subsequent performance and operating efficiency of their mutual fund operations.

3.1.3.1 Null Hypothesis

H₀₄: Focused mutual fund companies with similar insider ownership show no difference in fund performance and operation efficiency relative to diversified fund complexes.

3.1.3.2 Alternative Hypothesis

H₁₄: Focused mutual fund companies with larger insider ownership generate superior fund performance and operation efficiency relative to diversified fund complexes.

3.1.4 Existence of Outside Blockholders

Empirical evidence on the relationship between institutional (outside blocks) holdings and firm value are mixed. The monitoring hypothesis implies that outsiders form a monitor mechanism that reduces agency problems (Holderness and Sheehan (1985); Mikkelson and Ruback (1985); Demsetz (1986); Shleifer and Vishny (1986); Brickley, Lease, and Smith (1988); Agarwal and Mandelker (1990); Barclay and Holderness (1991); Pagano and Roell (1998)). However, others evidence indicate that the presence of large blockholders has no influence or may reduce managerial initiative, lowering firm values (McConnell and Servaes (1990); Burkart, Gromb and Panunzi

(1997)). Given the different in organization structure and manager holding between focused and diversified mutual fund complexes, we propose the following hypotheses.

3.1.4.1 Null Hypotheses

H₀₅: An increase in share holdings of outside blockholders has no impact on fund performance and operation efficiency for focused fund complexes.

H₀₆: An increase in share holdings of outside blockholders has no impact to fund performance and operation efficiency for diversified fund complexes.

3.1.4.2 Alternative Hypotheses

H₁₅: An increase in share holdings of outside blockholders has a positive (negative) impact on fund performance and operation efficiency for focused fund complexes.

H₁₆: An increase in share holdings of outside blockholders has a positive (negative) impact on fund performance and operation efficiency for diversified fund complexes.

3.1.5 IPOs of Mutual Fund Companies

Some researchers argue that public trading provides a better medium for managerial compensation (Schipper and Smith (1983, 1986)) and others suggest that going public enables companies to borrow more cheaply to finance their growth opportunities (Pagano (1993); Admati, Pfleiderer, and Zechner (1994); Pagano, Panetta, and Zingales (1998)) or signal their firm's quality (Leland and Pyle (1977); Jain and Kini (1994)). However, performance is found to be improved from the transition of public to private ownership (Kaplan (1989) and Smith (1990)). Given this literatures, we propose that being publicly-traded can affect incentives for portfolio managers and influence performance. Public tradings also enables outside shareholders to monitor their managers for better operation efficiency. We propose the following hypothesis.

3.1.5.1 Null Hypothesis

H₀₇: Publicly-traded mutual fund companies achieve similar fund performance and operational efficiency relative to privately-owned companies.

3.1.5.2 Alternative Hypothesis

H₁₇: Publicly-traded mutual fund companies achieve better or worse fund performance and operation efficiency relative to privately-owned companies.

3.1.6 Post-IPO Performance

A large body of literature supports the argument that managers time the market and that it is in the best interests of existing shareholders to issue stock when the market

overvalues the firm (Akerlof (1970); Myers and Majluf (1984); Stein (1989)). Consistent with this view, subsequent performance following equity issuance normally deteriorates (Degeorge and Zeckhauser (1993); Jain and Kini (1994); Mikkelson, Partch, and Shah (1995)). However, Kaplan (1989) and Smith (1990) find that performance improves in the transition of public to private ownership, while Stoughton, Wong and Zechner (2001) document that managers with favorable private information regarding their product quality choose to go public. Based on this literature, we formulate a hypothesis to test whether managers time the market by testing the performance and management efficiency surrounding their IPOs. Specifically, we would like to test whether firms' organization structure affects product market performance and operational efficiency and whether the differences are related to firms' ownership, and governance structure. Based on the above arguments, we propose the following hypotheses.

3.1.6.1 Null Hypotheses

H₀₈: Focused mutual fund companies perform as well as diversified ones after their IPOs.

H₀₉: Focused mutual fund companies encounter similar operational efficiency as diversified ones after IPOs.

3.1.6.2 Alternative Hypotheses

H₁₈: Focused mutual fund companies perform better (worse) in years after firms' IPOs than diversified ones.

H₁₉: Focused mutual fund companies perform better (worse) with respect to operational efficiency relative to diversified ones after IPOs.

3.1.7 Ownership and Organizational Structure

Our final hypothesis relates to whether an organization is focused or diversified and whether it is publicly-traded or privately-owned.

3.1.7.1 Null Hypothesis

H₀₁₀: Publicly-traded focused mutual fund companies perform as well as diversified privately-owned fund complexes.

H₀₁₁: Diversified, publicly-traded mutual fund companies perform as focused, privately-owned fund complexes.

3.1.7.2 Alternative Hypothesis

H₁₁₀: Publicly-traded focused mutual fund companies perform better (worse) than diversified, privately-owned fund complexes.

H_{III}: Diversified, publicly-traded mutual fund companies perform better (worse) than focused, privately-owned fund complexes.

3.2 Sample and Methodology

We focus our work on the post Glass-Steagall Act of 1999 period when financial institutions were free to compete. Competition among banks, securities firms, insurance and asset management companies allows the operation of banking conglomerates and a study of how organization and ownership structure among mutual fund companies influences fund performance and operational efficiency. We select our sample from all U.S. registered investment companies from January 2001 to December 2005 which covers 3,000 firm-years and more than 35,000 fund-years. We include equity and bond funds, and both live and dead funds.

One major disadvantage in studying whether diversification destroys value is the endogeneity problem. Lang and Stulz (1994), Maksimovic and Phillips (2002), and Campa and Kedia (2002) point out the characteristics that cause firms to diversify, also cause them to be discounted. Similarly, the decision to refocus can be endogenous since firms choose to refocus when the presence of firm-specific characteristics makes the benefits of refocusing greater than the costs. Failure to control for firm characteristics that lead firms to diversify and be discounted may wrongly attribute the discount to diversification instead of the underlying characteristics.

The unique nature of mutual fund companies structured as corporations or business trusts, and their relatively stabilized business structures¹⁶ allow us to control for firm characteristics that affect the diversification or focus decision, mitigating the potential endogeneity and self-selection bias that pervades the non-financial corporate literature. Rather than controlling for firm characteristics, using the probability of diversifying as an instrument, and applying Heckman's estimate technique to control for self-selection bias, as Campa and Kedia (2002) suggest, we manually classify all U.S. registered investment companies annually from 2001 to 2005 to label their organization structure as focused or diversified mutual fund companies. After controlling for firm characteristics, we retain fund companies that maintain their organization structure as focused or diversified during the sample period from 2001 to 2005 and eliminate those

¹⁶ Based on Investment Company Fact Book from 2001 to 2007, the percent of investment company complexes by type of intermediary has been relatively stable. Independent investment advisers represents around 60% while insurance companies, brokerages, and banks represent 10%, 10% and 7% respectively,

companies that switch from a focused mutual fund company to a diversified financial institution or vice versus to eliminate endogeneity problems.

Several databases carry names of mutual fund management companies. However, none of those databases is bias free or providing long tracking record of data. For example, Thomson Financial CDA/ Spectrum 13F Institutional Holding database provides names of mutual fund management companies. However, the data only contains companies with over \$100 million of securities under management. Moreover, Thomason Financial mislabeled management company category after 1998.¹⁷ The CRSP Survivor-Bias Free US Mutual Fund Database provides a selection and survivorship bias free data. However, family level data, such as fund family name and fund family code, is not reported in the database until July 2003. Morningstar Principia Database has a data point of registered name and family name to identify specific mutual fund companies which provides a list of all mutual fund companies with the exception of dead funds and their families. Thus the dataset suffers survivorship bias. To get a complete list of all public and private mutual fund companies, we merge CRSP and Morningstar database by using the numerical identifier from Standard & Poor reported in CRSP tape for the management company to identify the specific management company without sacrificing survivorship bias. This data point also allows us to put funds into specific families even when funds have gone through name changes and acquisitions. To further identify the organization structure, parent-subsidiary affiliation, and other business partnership relationship, we manually refer to Mergent Bank and Finance Manual and News Reports¹⁸ cross checking with SEC filings, company websites, and financial statements so as to be able to label each ownership and organizational structure into 5 categories: banks, insurance companies, mutual fund advisors, brokerage firms, and conglomerates (or others) to manually construct the database.

After identifying and grouping fund families and their product market of mutual funds based on their organization and ownership structure, adjusting for mergers, name

¹⁷ The Thomson Financial CDA/Spectrum 13F Institutional Holding database labels their mutual fund companies based on their ownership structure to (1) banks, (2) insurance companies, (3) investment companies and their managers (mutual funds), (4) independent investment advisors (mostly brokerage firms), and (5) others (mostly pension funds and university endowments).

¹⁸ The manual, which was formerly Moody's Bank and Finance Manual, coverage of more than 3,000 banks, savings and loans, mutual funds, insurance companies, real estate investment trusts, and 6,500 unit investment trusts and their subsidiaries

changes, and survivorship bias, we further break down mutual fund companies into two subgroups, public and private. We use Global New Issues from the SDC Platinum Database to identify public fund companies and extract the specific IPO date. We cross check with SEC filings, SIC code to verify whether their organizational structures are focused or diversified. We label the fund companies as “Focus” if they operate as focused mutual fund companies. An example would be T. Rowe Price Group, Inc. We label the fund companies to be “Diversified (Non-Reg)” if those financial institutions or conglomerates operate multiple business lines beyond mutual fund operations and are exempt from Federal Reserve regulation. An example for this group would be AIM Investment, a wholly owned subsidiary of AMVESCAP PLC, a non-bank public financial institution primarily based in London. We label the fund companies as “Diversified (Reg)” if the financial institutions operates in banking and is subject to the Fed’s regulations. An example for this group would be HSBC fund, an asset management arm of HSBC bank USA.

For private fund companies, we check SEC filings (fund filing) to identify their management companies and their organization and ownership structures. We cross check with Mergent Bank and Finance Manual and News Reports to further identify parent-subsubsidiary and other business partnership relationships, if there is any, to establish their private status. If information is available, we further verify organization structures through companies’ websites and examine their history to determine their status as public and private mutual fund companies. To illustrate, if a fund operation is found within an asset management arm or a subsidiary of a public financial institution, it is classified in the category of public group. If there is no relationship to a public firm, it is classified as a private fund complex.

Based on firms’ revenue sources, we group each observation into one of five categories: banks, insurance companies, mutual fund companies, brokerage companies, and conglomerates (or others). We label the fund companies to be “M” if they operate as focused mutual fund companies. An example would be Fidelity Investments. We label the fund companies to be “I” if those companies with main business lines as insurance companies. An example would be MassMutual Fund, a subsidiary of Mass Mutual Life Insurance Co. We label the fund companies to be “B” if those companies are operating with main business lines in banking. An example for this group would be Country Fund,

a subsidiary of Country Trust Bank. We label the fund companies to be “b” if those companies with main business lines in securities and brokerage services. An example for this group would be Oberweis fund, an asset management arm of Oberweis Securities Inc. Finally, we label the fund companies to be “C” if those companies with multiple business lines and categorize as conglomerates. An example for this group would be AFBA fund, a division within AFBA Corp.

There is evidence that fund performance and management efficiency (fees) are affected by board governance structures (board size and independence), as documented in Tufano and Sevick (1997); Meschke (2006); Del Guercio, Dann and Partch (2003); Tang and Kong (2006); Ding and Wermers (2006)). Jiraporn, Kim, Davidson, and Singh (2006) document that firms where shareholder rights are more suppressed by restrictive corporate governance suffer deeper diversification discounts, Anderson, Bates, Bizjak, and Lemmon (1998) argue that board governance does not provide a complete explanation for the magnitude and persistence of the diversification discount. To explain performance and operational efficiency among focused and diversified mutual fund companies, we manually collect board governance variables from fund prospectus (as Form 485 APOS and 485 BPOS (for both private and public fund companies and their funds)) as well as DEF 14A and related SEC filings for public fund companies). We collect the “number of total directors”, “number of independent directors”, “number of interest directors”, “ratio of independent directors” and “interest chairman dummy (equals one if the chairman of board of director is an interest director)” as variables that measures quality of board governance.

Equity ownership of insiders has been found to affect managers’ decisions on organization structure. Servaes (1996), and Denis, Denis, and Sarin (1997) document an inverse relationship between diversification and managerial ownership. Insider ownership can be an effective device to mitigate information asymmetry (Jensen and Meckling (1976); Leland and Pyle (1977); McConnell and Servaes (1990); Anderson and Reeb (2003); Chen, Goldstein and Jiang (2006); Khorana, Servaes and Wedge (2007)), but it can also allow managers to become entrenched (Jarrell and Poulson (1987); Stulz (1988); Slovin and Sushka (1993); Yafeh and Yosha (2003); DeAngelo and DeAngelo (1985); Shleifer and Vishny (1997)). Equity concentration in the form of outside blocks and institutional investors have also been found to affect managerial decisions.

Monitoring hypothesis implies that outsiders monitor and reduce agency problems (Holderness and Sheehan (1985); Mikkelsen and Ruback (1985); Demsetz (1986); Shleifer and Vishny (1986); Brickley, Lease, and Smith (1988); Agarwal and Mandelker (1990); Barclay and Holderness (1991); Pagano and Roell (1998)) but such interference can also reduce managerial initiatives (McConnell and Servaes (1990); Burkart, Gromb and Panunzi (1997)). Given this literature, we manually collect ownership data for both insiders and outside blocks and institutions through Def 14A of SEC filings. We include variables such as “insider holdings” (total percentage of share outstanding owned by insiders as defined by the SEC), “insider blocks” (summation of total percentage shares of those insiders who hold more than 1% or above shares), and “outside blocks” (summation of total percentage shares of those outsiders who own 5% or above shares outstanding) to access how ownership deviates for both focused and diversified mutual fund companies.

To access fund performance and operational efficiency, we collect fee-adjusted raw performance, portfolio turnover (%), expense ratio (%), total net assets¹⁹ (in million dollars), average total net assets²⁰ (in million dollars), and manager tenure (in months) from the CRSP Mutual Fund Database. We include both live funds and dead funds in the sample to mitigate survivorship bias. Performance is measured in three ways; fee-adjusted buy and hold return (FBHR), fee and market-adjusted buy and hold return (FMBHR, with S&P 500 index proxy for market index for equity funds and risk-free rate proxy for the market index for bond funds), and the Sharpe ratio. For robustness, we include three and four-factor model for calculating alphas. We conduct difference tests for means (t-test) and medians (Wilcoxon sign-rank test) for the following variables: fee-adjusted buy and hold returns (FBHR) and fee and market-adjusted buy and hold returns (FMBHR), Sharpe ratio, portfolio turnover, expense ratio, total net asset, manager tenure, and average total net asset (weighted average for multiple share class).

To identify how differences in organizational structure affect fund performance and operation efficiency, we perform univariate analysis for means (t-test) and medians (Wilcoxon sign-rank test) for fee-adjusted buy and hold returns (FBHR) and fee and

¹⁹ The total net asset reports in the CRSP database is the total assets net of liability which is different from the total asset under management (AUM) that media reports.

²⁰ Total net asset sums all share classes within funds while average total net asset is a weighted average number of multiple share classes offered within the fund.

market-adjusted buy and hold returns (FMBHR), Sharpe ratio, portfolio turnover, expense ratio, total net asset, manager tenure, and average total net asset (weighted average for multiple share class). For multivariate analysis, we use Ordinary Least Square (OLS) Regression, Pooled Regression, Panel Regression, and Probit Regression to investigate differences between focused versus diversified fund complexes with respect to which factors contribute to fund performance and operational efficiency with respect to insider and outsider (blocks and institution) ownership, fund governance, and other fund characteristics control variables.

To analyze the impact of focused versus diversified fund complexes with respect to their performance and operational efficiency surrounding their initial public offerings, we construct a sample for January 1961 to December 2005 of all U.S. registered investment companies which filed an initial public offering during this time frame. We record the year that fund complexes go public and analyze their product market for up to five-year priors to the year of IPO to up to five-years after the IPO to examine the fund performance and operational efficiency of these companies surrounding their IPOs.

We conduct difference tests for means (t-test) and medians (Wilcoxon sign-rank test) for the following variables: fee-adjusted buy and hold returns (FBHR) and fee and market-adjusted buy and hold returns (FMBHR), Sharpe ratio, portfolio turnover, expense ratio, total net asset, manager tenure, and average total net asset (weighted average for multiple share class). We also perform an event study to test our hypothesis as to whether performance deteriorates after an IPO as DeGeorge and Zeckhauser (1993) document or performance improves as Stoughton, Wong and Zechner (2001) predict. We also analyze fund characteristics and operational efficiency to determine whether there are significant differences between event windows prior to and after the IPO of mutual fund companies. We use Ordinary Least Square (OLS) Regression, Pooled Regression, Panel Regression, and Probit Regression in the multivariate analysis for investigating the differences between focused versus diversified fund complexes on what factors contribute to those differences to their fund performance and operation efficiency surrounding their IPOs.

CHAPTER 4 EMPIRICAL TEST AND RESULTS

4.1 Univariate Analysis

Table 4.1 Panel A reports numbers of mutual fund companies and ownership structure for both public and private mutual fund companies, as well as levels of focus (diversified) for their asset management business. The number of firms in this panel is reported on an annual basis during 2001 to 2005. Among public mutual fund companies, our final sample contains 26 focused fund companies, 49 non-Fed regulated financial institutions or conglomerates involving mutual fund operations, and 32 Fed-regulated financial institutions managing mutual fund portfolios on an annual basis for the five-year intervals. Among private mutual fund companies, our sample summarizes 431 focused fund companies, 10 insurance companies, 19 banks, 3 brokerages, and 3 conglomerates that engage in mutual fund operations on an annual basis for the five-year intervals.

Table 4.1 Panel B reports fund performance and fund characteristics from the product market level of those public and private mutual fund companies. All data reported in the sample contain both live and dead funds so the data are free of survivorship bias. Funds with public mutual fund companies entail a total of 4,921 open-end mutual funds from a one-year (year 2005) interval, a total of 2,771 open-end mutual funds from a three-year (from 2003 to 2005) interval, and 1,196 open-end mutual funds in a five-year (from 2001 to 2005) interval. Funds under private mutual fund companies contain 4,553 open-end mutual funds for a one-year (year 2005) interval, 2,761 open-end mutual for a three-year (from 2003 to 2005) interval, and 1,416 open-end mutual funds for a five-year (from 2001 to 2005) interval.

Table 4.1 panel B reports mean, median, maximum, and minimum for fund performance and fund characteristics (operation efficiency) with respect to whether the funds are managed within public or private mutual fund companies during the sample period of January 2001 to December 2005. Performance is measured in terms of fee-adjusted buy and hold return (FBHR), fee and market-adjusted buy and hold return (FMBHR), and the Sharpe ratio. Considering funds across different organization structure with different levels of focus (diversification) of their managing companies, funds managed under private fund companies generate higher return in both mean and median measure (across all three performance measure).

Table 4.1: Descriptive Statistics for Public versus Private Mutual Fund Companies

This table reports descriptive statistics for both firm level and fund level. Data source is from merging CRSP Survivor-Bias Free US Mutual Fund Database, Morningstar Principia, SDC Platinum Database, Investment Company Fact Book, and manually cross check with SEC filing. Panel A (firm level) reports number of firms in each of the category of mutual fund company per year during Jan 2001 to Dec 2005. Panel B (fund level) reports fund performance and fund characteristics for all open-end mutual funds under which are managed in the categories of “public” (public) mutual fund companies or “private” (private) mutual fund companies. Performance is measured in three ways; fee-adjusted buy and hold return (FBHR), fee and market-adjusted buy and hold return (FMBHR, with S&P 500 index for equity funds and risk-free rate for bond funds), and the Sharpe ratio. Fund characteristics are measured in portfolio turnover (%); expense ratio (%); total net assets²¹ (in million dollars); manager tenures (in months) and average total net assets²² (in million dollars). Fund level data is reported in the frequency of 1-year (short-term, year 2005), 3-year (mid-term, year 2003 to year 2005) and 5-year (long-term, year 2001 to year 2005) while both live funds and dead funds are included in the sample. An example for “1” would be T. Rowe Price Group, Inc.; a “2” would be AIM Investment, a wholly owned subsidiary of AMVESCAP PLC based in London; a “3” would be HSBC fund, an asset management arm of HSBC bank USA; an “M” would be Fidelity Investment; an “I” would be MassMutual Fund, a subsidiary of Mass Mutual Life Insurance Co.; a “B” would be Country fund, a subsidiary of Country Trust Bank, a “b” would be Oberweis fund, an asset management arm of Oberweis Securities Inc.; a “C” would be AFBA fund, a division within AFBA Corp.

Panel A : Firm Level

Total number of firms (N)	Public	Private	Total
Public companies			
Mutual fund companies are public and focused companies themselves (1)	26		
Mutual fund companies are wholly-owned (affiliated) subsidiaries or asset management arms of non fed-regulated public financial institutions or conglomerates (2)	49		
Mutual fund companies are wholly-owned (affiliated) subsidiaries or asset management arms of Fed-regulated public financial institutions (3)	32		
Private companies			
Focused mutual fund companies (M)		431	
Mutual fund companies are insurance companies (I)		10	
Mutual fund companies are banks (B)		19	
Mutual fund companies are brokerages (b)		3	
Mutual fund companies are conglomerates (C)		3	
Total	107	466	573

table continued

²¹ The total net asset reports in the CRSP database is the total assets net of liability. Consequently, this is different from the total asset under management (AUM) that general consensus reports.

²² Total net asset sums all share classes within funds while average total net asset is a weighted average number of multiple share classes offered within the fund.

Panel B : Fund Level

Mean	1-year		3-year		5-year	
	Private	Public	Private	Public	Private	Public
Performance (FBHR, %)	8.92	8.18	36.40	30.94	25.39	22.98
Performance (FMBRH, %)	3.74	3.28	17.22	14.10	25.28	19.37
Sharpe ratio	0.00	-0.07	0.01	-0.12	-0.05	-0.30
Portfolio turnover (%)	89.37	74.30	99.96	76.89	92.88	67.93
Expense ratio (%)	1.13	1.08	1.15	1.08	1.11	1.06
Total net assets (\$mn)	859.86	794.08	1,161.70	947.62	1,663.76	1,275.62
Manager tenure (months)	71.00	67.75	77.49	71.57	80.73	76.02
Average total net assets (\$mn)	455.00	342.09	613.54	425.55	945.91	557.75
Number of funds (N)	4,553	4,921	2,761	2,771	1,416	1,196

Median	1-year		3-year		5-year	
	Private	Public	Private	Public	Private	Public
Performance (FBHR, %)	5.09	4.49	25.32	16.57	22.28	19.71
Performance (FMBRH, %)	1.75	1.14	8.63	7.56	16.01	13.58
Sharpe ratio	0.11	0.10	0.25	0.22	0.14	0.13
Portfolio turnover (%)	46.00	43.00	51.33	45.33	52.17	36.80
Expense ratio (%)	1.07	1.02	1.08	1.02	1.02	1.00
Total net assets (\$mn)	137.50	208.70	166.57	283.80	217.67	355.07
Manager tenure (months)	62.50	59.00	67.00	63.00	71.00	70.00
Average total net assets (\$mn)	71.10	81.40	94.40	118.57	132.33	157.41
Number of funds (N)	4,553	4,921	2,761	2,771	1,416	1,196

Maximum	1-year		3-year		5-year	
	Private	Public	Private	Public	Private	Public
Performance (FBHR, %)	52.22	48.28	172.11	152.49	191.05	156.46
Performance (FMBRH, %)	37.58	32.39	132.80	116.31	196.50	162.63
Sharpe ratio	0.83	0.85	0.68	0.71	0.45	0.47
Portfolio turnover (%)	1,005.00	590.00	1,501.00	603.00	1,206.00	633.60
Expense ratio (%)	3.17	2.56	3.40	2.61	3.61	2.56
Total net assets (\$mn)	16,603.50	11,923.70	24,327.20	12,646.53	30,264.99	18,452.97
Manager tenure (months)	244.00	204.00	255.00	204.00	265.00	199.00
Average total net assets (\$mn)	8,779.20	5,518.70	12,430.87	6,118.50	17,711.77	7,412.74
Number of funds (N)	4,553	4,921	2,761	2,771	1,416	1,196

Minimum	1-year		3-year		5-year	
	Private	Public	Private	Public	Private	Public
Performance (FBHR, %)	-22.11	-12.60	-42.65	-34.14	-68.18	-40.81
Performance (FMBRH, %)	-12.83	-10.72	-34.89	-24.03	-58.51	-34.02
Sharpe ratio	-3.71	-3.64	-4.85	-4.89	-4.19	-5.32
Portfolio turnover (%)	0.00	0.00	0.95	0.00	1.31	0.00
Expense ratio (%)	0.09	0.15	0.13	0.18	0.08	0.18
Total net assets (\$mn)	0.64	0.40	1.73	6.47	1.95	12.55
Manager tenure (months)	3.00	3.00	12.00	13.20	14.40	17.40
Average total net assets (\$mn)	0.40	0.20	1.31	3.17	1.44	7.37
Number of funds (N)	4,553	4,921	2,761	2,771	1,416	1,196

Fund characteristics (operation efficiency) are measured in portfolio turnover (%), expense ratio (%), total net assets (in million dollars), manager tenures (in months), and average total net assets (in million dollars) respectively. Both means and medians measures are reported in the descriptive statistics. Funds managed under public fund companies have lower expense ratios, lower portfolio turnover, and lower manager tenure compared to funds managed under private fund companies. All fund level data are reported in frequencies of one year (short-term), three years (mid-term) and five years (long-term). Again, both live funds and dead funds are included in the sample.

Table 4.2 reports descriptive statistics, means and medians for board governance (in Panel A) and ownership (in Panel B) variables for public mutual fund companies in years 2000, 2002, and 2004. In Panel A, we observe that the number of total directors decreases while the ratio of independent directors increases across all focused and diversified public mutual fund companies for the years 2000 to 2004. Considering the focused fund companies, for example, the mean (median) of number of total directors is 9.95 (10) in 2000. This number decreases to 9.55 (9.5) in 2002 and 9.15 (9) in 2004. For conglomerate or non-Fed regulated diversified mutual fund companies, the mean (median) of number of total directors is of 14 (14) in 2000. The number falls to 13.38 (13) in 2002 and 12.85 (12.50) in 2004. On the other hand, the mean (median) for the ratio of directors that are independent increases from 0.55 (0.63) in 2000 to 0.59 (0.61) in 2002 and 0.67 (0.69) in 2004 for the focused mutual fund companies, while the ratio stays relatively stable around 0.75 to 0.80 for conglomerates and diversified Fed-regulated mutual fund companies. Ownership variables in Panel B indicate that focused mutual fund companies show a steady increase in insider ownership and insider block holding throughout the period 2000 to 2004. Five percent outside block data for focused mutual fund companies shares much larger ownership than conglomerates and diversified non-Fed and Fed-regulated mutual fund companies, but this number remains relatively stable across years. Given the debates as to whether diversification destroys value (Lang and Stulz (1994), Berger and Ofek (1995), Servaes (1996), and Lamont and Polk (2002)) or create value (Stein (1997), and Desai, Foley and Hines (2004)), test whether funds managed by focused mutual fund companies perform better and have better operational efficiency than those under diversified fund companies.

Table 4.3 reports test results for differences in means and medians from the product market of public mutual fund companies by pairing focused and diversified mutual fund companies with respect to fund performance and fund characteristics (operating efficiency, defined earlier, measured in terms of portfolio turnover, expense ratio, total net assets, and manager tenure) to analyze whether focus versus diversification

Table 4.2: Descriptive Statistics for Board Governance and Ownership among Public Mutual Fund Companies

This table reports summary statistics (mean and median) of board governance (in panel A) and ownership (in panel B) in each of the category of the public mutual fund companies in the year of 2004, 2002, and 2000 respectively. Panel A measures board governance variables in terms of number of total directors (board size), number of independent directors, number of dependent directors, and the ratio of independent directors (board independency) to access the sound of board governance. Data source for Panel A is from SEC filing 485 APOS form. Panel B measures ownership variables in three different ways. Insider holding measures percentage of shares outstanding controlled by insiders (defined by SEC filing DEF 14A). Sum of 1% above inside blocks measures total percentage of shares outstanding controlled by inside block-holders who own at least 1% of shares outstanding. Sum of 5% above outside blocks measures total percentage of shares outstanding controlled by outside block-holders who own at least 5% of shares outstanding. Data source is for Panel B is from SEC filing DEF 14A. “Focus” stands for mutual fund companies are “public” and “focused” companies”. “Diversified (Non-Reg)” stands for mutual fund companies are wholly-owned subsidiaries or asset management arms (divisions) of non-Fed regulated public financial institutions or conglomerates. “Diversified (Reg)” stands for mutual fund companies are wholly-owned (affiliated) subsidiaries or asset management arms of Fed-regulated public financial institutions.

Panel A : Board Characteristics						
2004						
Types of fund complexes	Focus		Diversified (Non-Reg)		Diversified (Reg)	
Descriptive statistics	Mean	Median	Mean	Median	Mean	Median
Number of total directors	9.15	9.00	12.85	12.50	14.97	15.00
Number of independent directors	6.00	5.50	9.26	9.00	11.19	11.50
Number of dependent directors	3.19	2.50	3.59	2.00	3.78	3.00
Ratio of independent directors	0.67	0.69	0.74	0.78	0.76	0.79
2002						
Types of fund complexes	Focus		Diversified (Non-Reg)		Diversified (Reg)	
Descriptive statistics	Mean	Median	Mean	Median	Mean	Median
Number of total directors	9.55	9.50	13.38	13.00	15.68	16.00
Number of independent directors	5.32	5.00	9.19	9.00	12.03	12.00
Number of dependent directors	4.27	3.50	4.24	3.00	3.65	3.00
Ratio of independent directors	0.59	0.61	0.72	0.74	0.76	0.80
2000						
Types of fund complexes	Focus		Diversified (Non-Reg)		Diversified (Reg)	
Descriptive statistics	Mean	Median	Mean	Median	Mean	Median
Number of total directors	9.95	10.00	14.00	14.00	16.03	17.00
Number of independent directors	5.33	5.00	9.81	10.00	12.69	14.00
Number of dependent directors	4.67	4.00	4.28	3.00	3.34	3.00
Ratio of independent directors	0.55	0.63	0.73	0.79	0.77	0.82

table continued

Panel B : Ownership

Types of fund complexes	2004					
	Focus		Diversified (Non-Reg)		Diversified (Reg)	
	Mean	Median	Mean	Median	Mean	Median
Descriptive statistics						
Insider holding	0.20	0.14	0.04	0.02	0.05	0.01
Sum of 1% above inside blocks	0.16	0.05	0.03	0.01	0.03	0.01
Sum of 5% above outside blocks	0.26	0.15	0.12	0.08	0.08	0.06

Types of fund complexes	2002					
	Focus		Diversified (Non-Reg)		Diversified (Reg)	
	Mean	Median	Mean	Median	Mean	Median
Descriptive statistics						
Insider holding	0.15	0.10	0.05	0.02	0.06	0.02
Sum of 1% above inside blocks	0.11	0.04	0.03	0.01	0.03	0.01
Sum of 5% above outside blocks	0.26	0.15	0.15	0.09	0.07	0.07

Types of fund complexes	2000					
	Focus		Diversified (Non-Reg)		Diversified (Reg)	
	Mean	Median	Mean	Median	Mean	Median
Descriptive statistics						
Insider holding	0.15	0.13	0.06	0.03	0.07	0.02
Sum of 1% above inside blocks	0.11	0.04	0.04	0.01	0.04	0.01
Sum of 5% above outside blocks	0.29	0.17	0.11	0.07	0.08	0.07

of fund companies affects product market performance and operational efficiency. Panel A1 and A2 pair focused and diversified (non-Fed regulated mutual fund companies or financial conglomerates) for equity funds (Panel A1) and domestic equity funds (Panel A2). In Panel A1, the differences for fee-adjusted buy and hold returns, fee and market-adjusted buy and hold returns, and the Sharpe ratio are all statistically significant at the 1% level between focused and diversified (non-Fed regulated mutual fund companies or financial conglomerates) mutual fund companies, whether measured across one, three, and five year intervals. Funds managed under focused mutual fund companies outperform diversified (non-Fed regulated mutual fund companies or financial conglomerates) ones by approximately 200 basis point for a one-year interval (year 2005), 600 basis point for a three-year interval (years 2003 to 2005), and 1,000 basis point for a five-year interval (years 2001 to 2005) using fee-adjusted buy and hold returns and fee and market-adjusted buy and hold returns. The Shape ratio also reveals that funds under focused fund companies outperform the diversified ones by a range of 0.03 to 0.08 throughout the three different time interval measures. In Panel A2, differences in fee-adjusted buy and hold returns, fee and market-adjusted buy and hold returns, and the Sharpe ratio are all statistically significant at the 5% level or better for focused versus diversified (non-Fed regulated mutual fund companies or financial conglomerates)

mutual fund companies across one, three, and five years interval. The results indicate that funds managed under focused mutual fund companies outperform those in the diversified (non-Fed regulated mutual fund companies or financial conglomerates) ones by an economically meaningful amount. For the fund characteristics (operational efficiency) measured in Panel A1 and A2, funds managed under focused mutual fund companies demonstrate lower portfolio turnover, lower expense ratio, higher manager tenure, and higher total net asset (average total net asset) when compared with funds managed under diversified (non-Fed regulated mutual fund companies or financial conglomerates) ones. For example, the expense ratio shows that a fund managed under a focused fund company posts an 8 basis point lower expense ratio than a diversified (non-Fed regulated mutual fund companies or financial conglomerates) rival for a one-year interval and 15 basis point lower over a three-year time frame.

Panels B1 and B2 report test results for differences in means and medians for fund performance and fund characteristics (operation efficiency) for focused and diversified (Fed-regulated financial institutions that also manage mutual funds) mutual fund companies. Differences between fee-adjusted buy and hold returns, fee and market-adjusted buy and hold returns, and the Sharpe ratio of funds managed between focused and diversified (non-Fed regulated mutual fund companies or financial conglomerates) mutual fund companies are also statistically significant across one, three, and five-year intervals. Funds managed under focused mutual fund companies outperform those diversified (Fed-regulated financial institutions that also manage mutual funds) ones by more than 100 basis points at a one-year interval (year 2005), 800 basis points at a three-year interval (year 2003 to 2005), and 1,000 basis points at a five-year interval (year 2001 to 2005), using fee-adjusted buy and hold returns and fee and market-adjusted buy and hold returns as a measure. The Shape ratio also indicates that funds under focused fund companies outperform diversified ones by a range of 0.02 to 0.08 throughout the three different time frames.

For the fund characteristics (operational efficiency) reported in Panel B1 and B2, it is clear that funds managed under focused mutual fund companies consistently demonstrate lower portfolio turnover, higher manager tenure, and higher total net assets (average total net assets) than diversified (Fed-regulated financial institutions that also manage mutual funds) ones. However, the expense ratio, previously documented as

being lower in funds managed under focused mutual fund companies is higher when compared to Fed-regulated diversified financial institutions that also manage mutual funds. Thus, operational efficiency is higher for funds managed under focused mutual fund companies than diversified (non-Fed regulated mutual fund companies or financial conglomerates) ones, a banking structure apparently enhances efficiency for mutual fund activities.

With respect to the last point about the difference generating by bank related mutual fund companies, we test differences in means and medians for fund performance and fund characteristics (operational efficiency) in Panel C1 and C2. Not surprising, most

Table 4.3: Test among Public Mutual Fund Companies

This table reports test statistics for differences in means and medians of performance and fund characteristics for equity funds and domestic equity funds for the public mutual fund companies. Sample ranges from Jan 2001 to Dec 2005 and reports in the frequency of 1-year (year 2005), 3-year (year 2003 to year 2005) and 5-year (year 2001 to year 2005) while both live funds and dead funds are included in the sample. Results are winsorized to 98%. “Focus” stands for mutual fund companies are “public” and “focus” companies”. “Diversified (Non-Reg)” stands for mutual fund companies are wholly-owned subsidiaries or asset management arms (divisions) of non-Fed regulated public financial institutions or conglomerates. “Diversified (Reg)” stands for mutual fund companies are mutual fund companies are wholly-owned (affiliated) subsidiaries or asset management arms of Fed-regulated public financial institutions. Performance is measured in three ways; fee-adjusted buy and hold return (FBHR); fee and market-adjusted return (FMBHR), and the Sharpe ratio. Fund characteristics are measured in portfolio turnover (%); expense ratio (%); total net assets (in million dollars); manager tenures (in months) and average total net assets (in million dollars). ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

Panel A1

“Focus” subtracts “Diversified (Non-Reg)” Equity Funds	1-year		3-year		5-year	
	Mean	Median	Mean	Median	Mean	Median
Performance (FBHR, %)	2.10 ***	1.93 ***	17.20 ***	6.25 ***	16.96 ***	10.34 ***
Performance (FMBHR, %)	2.95 ***	1.99 ***	9.47 ***	6.53 ***	16.34 ***	12.03 ***
Sharpe ratio	0.04 ***	0.04 ***	0.08 ***	0.04 ***	0.03 ***	0.05 ***
Portfolio turnover (%)	0.58	-6.64	-10.12 **	-15.67 ***	-4.50	-20.57 **
Expense ratio (%)	-0.08 **	-0.09 ***	-0.15 ***	-0.18 ***	-0.03	-0.11
Total net assets (\$mn)	596.53 ***	126.30 ***	408.59 ***	48.70	216.87	6.59
Manager tenure (months)	4.59 **	0.86 **	5.49 **	0.00 *	8.58 **	3.56 **
Average total net assets (\$mn)	309.57 ***	37.98 ***	318.01 ***	24.83 **	293.31 ***	40.39
Number of funds	Focus=628; Diversified=659		Focus=385; Diversified=303		Focus=166; Diversified=125	

table continued

Panel A2

“Focus” subtracts “Diversified (Non-Reg)” Domestic Equity Funds	1-year		3-year		5-year	
	Mean	Median	Mean	Median	Mean	Median
Performance (FBHR, %)	1.11 **	1.79 ***	15.56 ***	7.26 ***	17.44 **	10.91 ***
Performance (FMBHR, %)	2.56 ***	1.92 ***	8.26 ***	5.92 ***	16.99 **	11.28 ***
Sharpe ratio	0.03 **	0.04 ***	0.08 ***	0.05 ***	0.03 **	0.03 **
Portfolio turnover (%)	-2.18	-10.60	-9.87	-16.97 ***	-4.87	-16.87 **
Expense ratio (%)	-0.08 **	-0.10 **	-0.14 ***	-0.15 ***	-0.10 **	-0.15 **
Total net assets (\$mn)	633.04 ***	167.85 ***	311.72 *	36.85	-72.59	9.20
Manager tenure (months)	6.55 ***	4.43 ***	6.72 **	2.23 **	12.08 ***	11.08 ***
Average total net assets (\$mn)	328.61 ***	47.14 ***	312.09 ***	21.70	287.39 **	39.58
Number of funds	Focus=469; Diversified=524		Focus=297; Diversified=230		Focus=126; Diversified=98	

Panel B1

“Focus” subtracts “Diversified (Reg)” Equity Funds	1-year		3-year		5-year	
	Mean	Median	Mean	Median	Mean	Median
Performance (FBHR, %)	1.84 ***	1.79 ***	19.57 ***	14.60 ***	14.83 ***	11.67 ***
Performance (FMBHR, %)	2.63 ***	2.16 ***	10.82 ***	8.83 ***	13.51 **	11.45 ***
Sharpe ratio	0.02 **	0.03 **	0.07 ***	0.06 ***	0.04 ***	0.04 ***
Portfolio turnover (%)	-0.53	-4.00	-3.20	-8.02	-9.09	-8.57
Expense ratio (%)	0.12 ***	0.12 ***	0.12 ***	0.07 ***	0.03	-0.16
Total net assets (\$mn)	601.95 ***	104.10 ***	633.66 ***	69.30 ***	853.72 ***	125.87 **
Manager tenure (months)	6.86 ***	4.86 ***	9.64 ***	7.00 ***	13.77 ***	10.50 ***
Average total net assets (\$mn)	272.22 ***	31.71 ***	330.01 ***	27.62 ***	402.13 ***	61.31 ***
Number of funds	Focus=628; Diversified=1,473		Focus=385; Diversified=709		Focus=166; Diversified=227	

Panel B2

“Focus” subtracts “Diversified (Reg)” Domestic Equity Funds	1-year		3-year		5-year	
	Mean	Median	Mean	Median	Mean	Median
Performance (FBHR, %)	1.04 *	1.47 ***	17.51 ***	14.92 ***	11.81 **	12.52 ***
Performance (FMBHR, %)	1.93 ***	1.61 ***	8.28 ***	9.23 ***	9.86 **	10.79 ***
Sharpe ratio	0.01 *	0.04 **	0.08 ***	0.07 ***	0.04 ***	0.04 ***
Portfolio turnover (%)	0.43	-7.13	-0.56	-12.22	-9.57	-12.35 *
Expense ratio (%)	0.09 ***	0.07 ***	0.10 ***	0.05 **	-0.03	-0.17
Total net assets (\$mn)	631.34 ***	137.65 ***	579.33 ***	56.40 **	703.67 ***	143.34
Manager tenure (months)	7.36 ***	7.43 ***	8.42 ***	4.96 ***	14.28 ***	13.46 ***
Average total net assets (\$mn)	281.94 ***	36.11 ***	310.64 ***	23.39 **	354.90 ***	58.00 **
Number of funds	Focus=469; Diversified=1,184		Focus=297; Diversified=553		Focus=126; Diversified=166	

table continued

Panel C1

“Diversified (Non-Reg)” subtracts “Diversified (Reg)”	1-year		3-year		5-year	
	Mean	Median	Mean	Median	Mean	Median
Equity Funds						
Performance (FBHR, %)	-0.26	-0.14	2.37	8.35	-2.12	1.34
Performance (FMBHR, %)	-0.33	0.17	1.35	2.29	-2.83	-0.58
Sharpe ratio	-0.02	-0.01	0.00	0.03	0.00	0.00
Portfolio turnover (%)	-1.11	2.64	6.92	7.65 ***	-4.59	12.00
Expense ratio (%)	0.20 ***	0.22 ***	0.27 ***	0.25 ***	0.06	-0.05
Total net assets (\$mn)	5.42	-22.20	225.07 **	20.60 **	636.85 **	119.27 **
Manager tenure (months)	2.27	4.00	4.15 *	7.00 *	5.19	6.94
Average total net assets (\$mn)	-37.34 **	-6.27	12.00	2.78	108.82	20.92
Number of funds	Diversified (Non-Reg)=659; Diversified (Reg)=1,473		Diversified (Non-Reg)=303; Diversified (Reg)=709		Diversified (Non-Reg)=125; Diversified (Reg)=227	

Panel C2

“Diversified (Non-Reg)” subtracts “Diversified (Reg)”	1-year		3-year		5-year	
	Mean	Median	Mean	Median	Mean	Median
Domestic Equity Funds						
Performance (FBHR, %)	-0.08	-0.32	1.95	7.65	-5.63	1.61
Performance (FMBHR, %)	-0.63 *	-0.30	0.02	3.30	-7.13	-0.49
Sharpe ratio	-0.02 *	0.00	0.00	0.02	0.01	0.01
Portfolio turnover (%)	2.62	3.47	9.31 *	4.74 **	-4.70	4.52
Expense ratio (%)	0.17 ***	0.17 ***	0.24 ***	0.21 ***	0.07	-0.02
Total net assets (\$mn)	-1.71	-30.20	267.60 **	19.55 *	776.26 **	134.14 **
Manager tenure (months)	0.80	3.00	1.70	2.72	2.21	2.38
Average total net assets (\$mn)	-46.67 ***	-11.03	-1.44	1.69	67.51	18.43
Number of funds	Diversified (Non-Reg)=524; Diversified (Reg)=1,184		Diversified (Non-Reg)=230; Diversified (Reg)=553		Diversified (Non-Reg)=98; Diversified (Reg)=166	

of the differences in performance measures and characteristics for funds managed between Fed-regulated or Non-Fed regulated companies do not have significant difference.

Table 4.4 reports test results for differences in means and medians for the product market of private mutual fund companies by pairing focused and diversified mutual fund companies with respect to their fund performance and fund characteristics (operating efficiency, as defined earlier as measured in portfolio turnover, expense ratio, total net assets, and manager tenure) to examine whether the results reported earlier for the outperformance and better operational efficiency of funds managed under public focused mutual fund companies also apply to funds managed under private mutual fund companies.

Table 4.4: Test among Private Mutual Fund Companies

This table reports test statistics for differences in mean and median of performance and fund characteristics among “focus” and “diversified” fund complexes among private mutual fund companies. Panel A reports the results for equity funds while panel B reports the results for domestic equity funds. Sample ranges from Jan 2001 to Dec 2005 and reports in the frequency of 1-year (year 2005), 3-year (year 2003 to year 2005) and 5-year (year 2001 to year 2005) while both live funds and dead funds are included in the sample. Results are winsorized to 98%. Among the “focus” fund complexes, “M” stands for “focused” and “private” mutual fund companies. Among the “diversified” fund complexes, “B” stands for private banks that offer mutual fund products. “C” stands for private conglomerates that offer mutual fund products. “I” stands for private insurance companies that offer mutual fund products. “b” stands for private brokerages that offer mutual fund products. Performance is measured in three ways; fee-adjusted buy and hold return (FBHR); fee and market-adjusted return (FMBHR), and the Sharpe ratio. Fund characteristics are measured in portfolio turnover (%); expense ratio (%); total net assets (in million dollars); manager tenures (in months) and average total net assets (in million dollars). ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

Panel A

“Focus” (M) subtracts “Diversified” (B+C+b+I)	1-year		3-year		5-year	
	Mean	Median	Mean	Median	Mean	Median
Equity Funds						
Performance (FBHR, %)	-1.90 ***	-1.25 ***	21.54 ***	20.74 ***	5.24	2.84
Performance (FMBHR, %)	1.09 ***	1.09 ***	9.76 ***	10.94 ***	3.09	1.18
Sharpe ratio	-0.06 ***	-0.04 ***	0.08 ***	0.10 ***	0.02	0.01
Portfolio turnover (%)	27.73 ***	-4.30	42.21 ***	-2.22	28.21 **	-8.12
Expense ratio (%)	-0.09 ***	-0.11 ***	-0.06	-0.03	0.00	0.04
Total net assets (\$mn)	697.83 ***	-0.55	1035.83 ***	31.84 *	1342.88 ***	72.68
Manager tenure (months)	15.71 ***	19.00 ***	10.21 ***	8.00 ***	8.91	8.13 *
Average total net assets (\$mn)	398.72 ***	21.21 ***	520.85 ***	29.38 **	786.99 ***	25.68
Number of funds	Focus =2,503; Diversified =484		Focus =1,548; Diversified =177		Focus =786; Diversified =75	

Panel B

“Focus” (M) subtracts “Diversified” (B+C+b+I)	1-year		3-year		5-year	
	Mean	Median	Mean	Median	Mean	Median
Domestic Equity Fund						
Performance (FBHR, %)	-2.54 ***	-1.06 ***	17.05 ***	17.78 ***	7.09	5.14
Performance (FMBHR, %)	0.66 *	1.02 **	6.91 ***	8.07 ***	4.62	3.67
Sharpe ratio	-0.07 ***	-0.04 ***	0.05 ***	0.08 ***	0.03 **	0.02 *
Portfolio turnover (%)	41.88 ***	1.76	63.66 ***	4.00	45.04 ***	-5.78
Expense ratio (%)	-0.04	-0.06 **	-0.01	-0.01	0.03	0.02
Total net assets (\$mn)	638.49 ***	-12.65	1112.19 ***	28.84	1386.32 ***	64.83
Manager tenure (months)	14.20 ***	17.00 ***	9.36 **	4.89 **	8.06	10.33
Average total net assets (\$mn)	383.04 ***	16.13 ***	591.43 ***	26.28 **	909.13 ***	33.84
Average total net assets (\$mn)	Focus =2,102; Diversified =397		Focus =1,277; Diversified =149		Focus =647; Diversified =62	

Panels A and Panel B pair funds managed by focused (mutual fund advisors) and diversified (pooling banks, brokerage firms, insurance companies and conglomerates together in private mutual fund companies) for equity funds (Panel A) and domestic

equity funds (Panel B).²³ In both Panel A and Panel B, fee and market-adjusted buy and hold returns indicate that funds managed under focused mutual fund companies outperform those managed under diversified fund companies at one (year 2005) and three-year (year 2003 to 2005) time frames for private mutual fund companies. However, the statistical significant level decreases at the five-year (year 2001 to 2005) measurement although the coefficient remains positive. However, for the one-year performance measure of fee-adjusted buy and hold returns and the Sharpe Ratio, funds managed under focused mutual fund companies perform more poorly relative to diversified ones, a result which contradicts the findings presented earlier. One possibility is the size factor. We will further control for size and other fund characteristics when we analyze performance using multivariate regression.

When we analyze fund characteristics (operational efficiency) for funds managed under private fund companies, we find both similar and different results relative to the results for public mutual fund companies. The expense ratio is generally lower for funds managed under focused fund companies. However, the significance level is weaker than for public mutual fund companies. Manager tenure and total net assets (average total net assets) for funds managed under focused fund companies are also higher than diversified ones. Unlike public fund companies, focused funds in the private fund companies report higher portfolio turnover, which suggests managers' portfolio strategies are different among focused and diversified fund companies in those private groups. However, the differences are significant only for tests of differences in means. Again, we will control for fund size and return to this point in the multivariate regression.

Given that some governance literature argues that fund performance and management efficiency (expense ratio) are associated with the size and independency of the board (Tufano and Sevick (1997), Meschke (2006), Del Guercio, Dann and Partch (2003), Tang and Kong (2006), and Ding and Wermers (2006)), we expect the empirical tests to find evidence that focused mutual fund companies adopt smaller board size and greater independence of board members relative to diversified fund companies.

Table 4.5 reports test results for differences in means and medians of public mutual fund companies by pairing focused and diversified mutual fund companies with

²³ We have also tested funds performance and fund characteristics (operation efficiency) at each of the four diversified private fund companies respectively and find similar results. For increasing the sample size and statistic power, we pool funds under four diversified fund companies all together.

respect to their firm level governance structure, measuring the number of total directors (board size), number of independent directors, and ratio of directors that are independent (board independency). Panel A shows that focused fund companies adopt smaller boards, a smaller number of independent directors, and a lower percentage of independent directors compared to diversified (non-Fed regulated mutual fund companies or financial conglomerates) mutual fund companies. Panel B shows that the results are consistent with Panel A. Focused fund companies adopt smaller boards, a smaller number of independent directors, and a lower percentage of independent directors compared to diversified (Fed-regulated financial institutions that also manage mutual funds) mutual fund companies. Panel C compares diversified mutual fund companies that face different regulatory constraints. Non-Fed regulated mutual fund companies or financial conglomerates adopt smaller directors, and a smaller number of independent directors, but the difference in the percentage of independent directors is not significant.

The results show that throughout three different observation periods, focused mutual fund companies have fewer directors when they are compared to Non-Fed regulated mutual fund companies, with a lower bound for the difference of 3.50 to an upper bound of 4.05. This number increases to a lower bound of 5.81 and upper bound of 7 fewer directors when compared to Fed-regulated mutual fund companies. The figures are statistically significant at the 1% level across for the three different time frames of examination. The board governance variables provide evidence that smaller boards function better at monitoring than larger boards. This conclusion applies to focused fund groups. Although focused mutual fund companies have smaller boards of directors, they also have a lower percentage of independent directors, which indicates poorer monitoring. We conclude that board governance structure does not provide a full explanation for the differences in performance and operating efficiency that pervade focused and diversified mutual fund companies.

Next, we test differences between inside and outside ownership at focused versus diversified mutual fund companies, expecting higher insider ownership for focused fund companies and lower insider ownership for diversified mutual fund companies. With respect to outside blockholders (institution investors), the literature is more ambiguous.

Table 4.5: Test for Governance at Firm Levels for Public Mutual Fund Companies

This table reports test statistics for differences in mean and median of board governance in each of the category of the public mutual fund companies in the year of 2000, 2002, and 2004. Governance data is collected from the end of that year from SEC filing 485 APOS form. Since performance and fund characteristics are measured in the frequency of 1-year (year 2005), 3-year (year 2003 to year 2005) and 5-year (year 2001 to year 2005), we collect governance data at 1-year prior to mitigate causality issues. Board governance variables include number of total directors (board size), number of independent directors, number of dependent directors, and the ratio of independent directors (board independency) to access the sound of board governance. “Focus” stands for mutual fund companies are “public” and “focused” companies”. “Diversified (Non-Reg)” stands for mutual fund companies are wholly-owned subsidiaries or asset management arms (divisions) of non-Fed regulated public financial institutions or conglomerates. “Diversified (Reg)” stands for mutual fund companies are mutual fund companies are wholly-owned (affiliated) subsidiaries or asset management arms of Fed-regulated publicly-traded financial institutions. ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

Panel A

“Focus” subtracts “Diversified (Non-Reg)”	2004		2002		2000	
	Mean	Median	Mean	Median	Mean	Median
Differences						
Number of total directors	-3.69 ***	-3.50 ***	-3.84 ***	-3.50 ***	-4.05 ***	-4.00 ***
Number of independent directors	-3.26 ***	-3.50 ***	-3.87 ***	-4.00 ***	-4.47 ***	-5.00 ***
Ratio of independent directors	-0.07 **	-0.09 **	-0.13 ***	-0.12 **	-0.18 ***	-0.16 ***
Number of firms	Focus=26; Diversified=49		Focus=26; Diversified=49		Focus=26; Diversified=49	

Panel B

“Focus” subtracts “Diversified (Reg)”	2004		2002		2000	
	Mean	Median	Mean	Median	Mean	Median
Differences						
Number of total directors	-5.81 ***	-6.00 ***	-6.13 ***	-6.50 ***	-6.08 ***	-7.00 ***
Number of independent directors	-5.19 ***	-6.00 ***	-6.71 ***	-7.00 ***	-7.36 ***	-9.00 ***
Ratio of independent directors	-0.09 **	-0.10 **	-0.18 ***	-0.19 ***	-0.22 ***	-0.20 ***
Number of firms	Focus=26; Diversified=36		Focus=26; Diversified=36		Focus=26; Diversified=36	

Panel C

“Diversified (Non-Reg)” subtracts “Diversified (Reg)”	2004		2002		2000	
	Mean	Median	Mean	Median	Mean	Median
Differences						
Number of total directors	-2.12 **	-2.50 **	-2.30 **	-3.00 **	-2.03 **	-3.00 *
Number of independent directors	-1.93 ***	-2.50 ***	-2.84 ***	-3.00 ***	-2.88 ***	-4.00 ***
Ratio of independent directors	-0.01	0.00	-0.04	-0.06	-0.04	-0.03
Number of firms	Focus=49; Diversified=36		Focus=49; Diversified=36		Focus=49; Diversified=36	

We have the monitor hypothesis which supports outsiders will honor their monitoring mechanism since such reduces agency problems (Holderness and Sheehan (1985), Mikkelson and Ruback (1985), Demsetz (1986), Shleifer and Vishny (1986), Brickley, Lease, and Smith (1988), Agarwal and Mandelker (1990), Barclay and Holderness (1991), and Pagano and Roell (1998)). However, McConnell and Servaes (1990) and Burkart, Gromb and Panunzi (1997) argue that the presence of large blockholders (institutional investors) may harm managerial initiative and firm value.

Table 4.6 pairs focused mutual fund companies to diversified (non-Fed regulated and Fed-regulated) fund companies and tests for differences in means and medians of ownership structure across year 2000, 2002, and 2004. The differences in insider holdings between focused and diversified (non-Fed regulated) fund companies are statistically significant at 1% level. Insider holding ownership for focus fund companies is greater than that of a diversified (both non-Fed regulated and Fed-regulated) by from 8% to 15%. Insider block (with a 1% or more holding) ownership also shows a difference between focused and diversified mutual fund companies. The median difference is statistically significant at 1% level. While insider block ownership for focus fund companies is greater than that of a diversified (both non-Fed regulated and Fed-regulated) ones on an average by from 3% to 4%, those two variables are consistent with Servaes (1996), and Denis, Denis, and Sarin (1997) who find an inverse relationship between diversification and managerial ownership. Our empirical evidence indicates that outside block holderings (with 5% or more) are greater for focused mutual fund companies than for diversified (both non-Fed regulated and Fed-regulated) ones. The difference (both mean and median) is positive significantly with a lower bound of 6% and a upper bound of 14% between focused versus non-Fed regulated mutual fund companies. The differences are even greater for focused versus Fed-regulated fund companies, with a lower bound of 8% and upper bound of 21% across three years.

We next assess whether public trading versus a private structure affects performance and operational efficiency for mutual fund companies. Firstly, we apply the fund performance and fund characteristics data from earlier analysis from January 2001 to December 2005 by splitting funds into public and private fund companies and test the differences.

Table 4.6: Test for Ownership at Firm Levels for Public Mutual Fund Companies

This table reports test statistics for differences in mean and median of ownership in each of the category of the publicly-traded mutual fund companies in the year of 2000, 2002, and 2004. Ownership data is collected from the end of that year from SEC filing DEF 14A form. Since performance and fund characteristics are measured in the frequency of 1-year (year 2005), 3-year (year 2003 to year 2005) and 5-year (year 2001 to year 2005), we collect ownership data at 1-year prior to mitigate causality issues. Ownership variables contain, (1) Insider holding, which measures percentage of shares outstanding controlled by insiders (defined by SEC filing DEF 14A); (2) Sum of 1% above inside blocks, which measures total percentage of shares outstanding controlled by inside block-holders who own at least 1% of shares outstanding; (3) Sum of 5% above outside blocks, which measures total percentage of shares outstanding controlled by outside block-holders who own at least 5% of shares outstanding. “Focus” stands for mutual fund companies are “public” and “focused” companies”. “Diversified (Non-Reg)” stands for mutual fund companies are wholly-owned subsidiaries or asset management arms (divisions) of non-Fed regulated public financial institutions or conglomerates. “Diversified”(Reg) stands for mutual fund companies are wholly-owned (affiliated) subsidiaries or asset management arms of Fed-regulated publicly-traded financial institutions. ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

Panel A

“Focus” subtracts “Diversified (Non-Reg)”	2004		2002		2000	
	Mean	Median	Mean	Median	Mean	Median
Differences						
Insider holding	0.15 ***	0.13 ***	0.10 ***	0.08 ***	0.08 ***	0.11 ***
Sum of 1% above inside blocks	0.14 ***	0.04 ***	0.08 **	0.03 ***	0.08 **	0.03 ***
Sum of 5% above outside blocks	0.14 **	0.07 ***	0.11 *	0.06 *	0.18 **	0.10 ***
Number of firms	Focus=26; Diversified=49		Focus=26; Diversified=49		Focus=26; Diversified=49	

Panel B

“Focus” subtracts “Diversified (Reg)”	2004		2002		2000	
	Mean	Median	Mean	Median	Mean	Median
Differences						
Insider holding	0.15 ***	0.13 ***	0.09 ***	0.09 ***	0.08 **	0.12 ***
Sum of 1% above inside blocks	0.13 ***	0.04 ***	0.08 **	0.03 ***	0.08 **	0.03 ***
Sum of 5% above outside blocks	0.18 ***	0.09 ***	0.19 ***	0.08 ***	0.21 ***	0.10 **
Number of firms	Focus=26; Diversified=36		Focus=26; Diversified=36		Focus=26; Diversified=36	

Panel C

“Diversified (Non-Reg)” subtracts “Diversified (Reg)”	2004		2002		2000	
	Mean	Median	Mean	Median	Mean	Median
Differences						
Insider holding	-0.01	0.00	-0.01	0.00	0.00	0.01
Sum of 1% above inside blocks	0.00	0.00	0.00	0.00	0.00	0.00
Sum of 5% above outside blocks	0.04 *	0.02	0.08 **	0.03	0.03	0.01
Number of firms	Focus=49; Diversified=36		Focus=49; Diversified=36		Focus=49; Diversified=36	

Secondly, we test whether public trading provides different incentives for mutual fund companies under different organization structure. That is to say, we want to empirically test whether incentives from firms being publicly traded offset their relatively inefficiency and deteriorating performance that is associated with being diversified. For the later point, we further track down fund companies with respect to their initial public offering dates for the entire CRSP Mutual Fund Database sample from January 1961 to December 2005. We follow our earlier analysis of splitting firms into focused and diversified fund companies to study whether organizational structure affects post fund performance and operational efficiency after an IPO.

Table 4.7 reports test results for differences in means and medians of fund performance and fund characteristics (operation efficiency) for both equity (Panel A) and domestic equity funds (Panel B) managed under focused mutual fund companies in the frequency of 1-year (year 2005), 3-year (year 2003 to 2005) and 5-year (year 2001 to 2005) with respect to whether their management companies are public or private.

From Panel A and Panel B, differences in fee-adjusted buy and hold returns and fee and market-adjusted buy and hold returns are positive and significant between public and private fund companies for both equity funds and domestic equity funds across one and three-year interval. Numerically, the differences in fee and market-adjusted returns in mean have a lower boundary of 1.25% and a higher boundary of 1.84% with one-year horizon; 3.42% to 5.03% for three-years and 2.46% to 7.61% over a five-year horizon. Differences between public and private fund companies in the Sharpe ratio also demonstrate a statistically significant difference at the 5% level or better for one, three, and five-year intervals. This result implies publicly traded fund companies provide better incentives for managers and generate better performance. Funds managed in the public domain have lower portfolio turnover and lower manager tenure. However, the expense ratio is not significantly different with respect to their fund management companies are public or private. Median fund size is greater for public mutual fund companies. Overall, the public mutual fund companies post better fund performance and better operational efficiency than those of private management, indicating that public ownership provides better incentives in the mutual fund industry. We next to test whether a different organizational structure provides different incentives for mutual fund companies evaluated from the perspective of the IPO process.

Table 4.7: Test for “Being Public” for Mutual Fund Companies

This table reports test statistics for differences in mean and median of performance and fund characteristics for equity funds and domestic equity funds for those “focused” mutual fund companies. Sample ranges from Jan 2001 to Dec 2005 and reports in the frequency of 1-year (year 2005), 3-year (year 2003 to year 2005) and 5-year (year 2001 to year 2005), with both live and dead funds. Results are Winsorized to 98%. “Focus” stands for mutual fund companies are “public” and “focused” companies” while “M” stands for “focused” and “private” mutual fund companies. Performance is measured in three ways; fee-adjusted buy and hold return (FBHR); fee and market-adjusted return (FMBHR), and the Sharpe ratio. Fund characteristics are measured in portfolio turnover (%); expense ratio (%); total net assets (in million dollars); manager tenures (in months) and average total net assets (in million dollars). ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

Panel A**“Focus” subtract “Focus (M)”**

Equity Funds	1-year		3-year		5-year	
	Mean	Median	Mean	Median	Mean	Median
Differences						
Performance (FBHR, %)	1.76 ***	1.92 ***	10.34 ***	6.54 ***	8.80 *	5.92 **
Performance (FMBHR, %)	1.84 ***	1.33 ***	5.03 **	4.08 ***	7.61	6.59 *
Sharpe ratio	0.04 ***	0.04 ***	0.06 ***	0.03 ***	0.03 ***	0.03 ***
Portfolio turnover (%)	-31.93 ***	-2.00	-49.99 ***	-7.12	-44.73 ***	-13.87 **
Expense ratio (%)	0.06 **	0.09 ***	0.02	0.01	0.03	-0.03
Total net assets (\$mn)	52.37	160.40 ***	-236.77	154.43 ***	-579.49 *	206.11 ***
Manager tenure (months)	-6.99 ***	-8.14 ***	-8.60 ***	-8.00 ***	-9.04 ***	-6.53 *
Average total net assets (\$mn)	-76.45	24.71 ***	-172.01 **	28.00 ***	-496.29 ***	54.36 **
Number of funds	Focus=628 Focus (M)=2,503		Focus=385 Focus (M)=1,548		Focus=166 Focus (M)=786	

Panel B**“Focus” subtract “Focus (M)”**

Domestic Equity Funds	1-year		3-year		5-year	
	Mean	Median	Mean	Median	Mean	Median
Differences						
Performance (FBHR, %)	1.02 *	1.41 ***	9.00 ***	6.53 ***	3.78	4.31 *
Performance (FMBHR, %)	1.28 ***	0.93 ***	3.42 **	4.32 ***	2.46	3.76
Sharpe ratio	0.03 ***	0.04 ***	0.06 ***	0.04 ***	0.02 **	0.02 **
Portfolio turnover (%)	-42.99 ***	-9.86 **	-58.46 ***	-13.97 **	-54.89 ***	-18.13 ***
Expense ratio (%)	0.00	0.04	-0.05	-0.05	-0.11 **	-0.08
Total net assets (\$mn)	144.48	207.55 ***	-244.22	187.05 ***	-646.05 *	311.16 ***
Manager tenure (months)	-7.37 ***	-7.57 **	-11.11 ***	-11.16 ***	-11.41 ***	-6.38 *
Average total net assets (\$mn)	-42.76	36.20 ***	-210.97 **	37.27 ***	-572.77 ***	74.77 **
Number of funds	Focus=469 Focus (M)=2,102		Focus=297 Focus (M)=1,277		Focus=126 Focus (M)=647	

As documented earlier, we want to test whether incentives that arise from public trading offset the inefficiency and deteriorating performance associated with being diversified. The literature on post IPO performance has generated mixed results. We follow our earlier analysis by splitting the sample into focused and diversified fund

companies to study whether organization structure affects post fund performance and operational efficiency after their IPOs. We collecting IPO dates for the entire CRSP Mutual Fund Database sample from January 1961 to December 2005 for this analysis

Table 4.8 reports results for differences in means and medians of fund performance and fund characteristics (operation efficiency) for both domestic equity funds (Panel A-1, B-1, C) and equity funds (Panel A-2, B-2) managed by focused and diversified (both non-Fed and Fed-regulated) mutual fund companies for one, two, three, four, and five-year periods surrounding their initial public offering over the time period of January 1961 to December 2005

From Panel A-1 and A-2, the results show that funds managed under focused fund companies have posted stronger performance after their companies' initial public offering. The fee and market adjusted buy and hold returns for one-year post subtracts one-year prior of IPO dates generates a 3% to 4% difference on the mean measure. The differences increase in the two, three, four, and five-year time frames although the sample size decreases from 116 (146 for equity funds) to 24 (27 for equity funds). It is clear that the post IPO performance for both domestic equity and equity funds outperforms the years prior to their IPOs for the focused fund companies.

This finding is consistent with Stoughton, Wong and Zechner (2001) who argue managers that conduct IPOs are confident about their product quality thus the post performance remains strong in the post IPO years. Although differences for the Sharpe Ratio post a negative figure from three, four and five-year time frames, this result simply reflects the negative returns earned during those down terms. The negative raw returns are still better than the market index. In terms of fund characteristics (operational efficiency), better performance is associated with an increase expense ratio. Consistent with reputation capital hypothesis, a higher fee is charged in reflecting higher quality service. Managerial tenure posts a positive number among several observation periods. However, in comparing managerial tenure for focused mutual fund companies (Panel A-1, A-2) relative to non-Fed regulated diversified (B-1, B-2), companies we find that managers are more entrenched in the diversified fund companies, particularly given their poor fund performance.

Panel B-1 and B-2 report that funds managed under non-Fed regulated mutual fund companies have show deteriorating performance after their companies' initial public

Table 4.8: Test for Performance and Operation Efficiency surrounding the IPOs of Mutual Fund Companies

This table reports mean and median test for fund performance (fee and market-adjusted buy and hold returns (FMBHR)), the Sharpe ratio, portfolio turnover, expense ratio, total net assets, and manager tenure from 5 (4) years prior and 5 (4) years post of the years of IPOs of different level of focused (diversified) publicly-traded mutual fund companies. (-1, +1) stands for the results from one year post of IPOs subtracts one year prior of IPOs. Panel A reports the fund complex in the category of “Focus” fund companies. Panel B reports the fund complex in the category of “Diversified (Non-Reg)”, those wholly-owned subsidiaries or asset management arms (divisions) of non-Fed regulated public financial institutions or conglomerates. Panel C reports the fund complex in the category of “Diversified (Reg)”, those wholly-owned (affiliated) subsidiaries or asset management arms of Fed-regulated publicly-traded financial institutions. Sample covers from January 1961 to December 2005. ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

Panel A-1 : Domestic Equity Funds in “Focus” Fund Company

Year Range (post subtracts prior)	(-1, +1)		(-2, +2)		(-3, +3)		(-4, +4)		(-5, +5)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Mean
Performance (FMBHR, %)	3.36*	-0.61	12.54***	9.70***	20.06***	8.61***	29.34***	14.90**	31.43**	4.98*
Sharpe ratio	-0.05	-0.25	0.02	-0.07	-0.40***	-0.58***	-0.53***	-0.64***	-0.35***	-0.41***
Portfolio turnover (%)	0.14***	0.00	0.24***	-0.01*	0.52***	0.52***	0.63***	0.59***	0.78***	0.71***
Expense ratio (%)	0.03*	0.00	0.04**	0.01**	0.10***	0.04***	0.11***	0.07***	0.11***	0.09***
Total net assets (\$mn)	94.01***	13.18***	-33.90	4.50	99.17**	7.92	83.78**	21.66	130.84**	24.79
Manager tenure (months)	21.76***	24.00***	19.41***	32.00***	21.23***	22.67***	26.64***	20.75***	30.53***	24.60***
Number of funds	116	116	93	93	48	48	33	33	24	24

table continued

Panel A-2 : Equity Funds in “Focus” Fund Company

Year Range (post subtracts prior)	(-1, +1)		(-2, +2)		(-3, +3)		(-4, +4)		(-5, +5)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Mean
Test for differences										
Performance (FMBHR, %)	4.24***	0.12	14.77***	12.15***	26.30***	27.44***	38.55***	18.36***	41.24***	15.49**
Sharpe ratio	0.04	-0.10	0.08	0.05*	-0.35***	-0.54***	-0.50***	-0.59***	-0.32***	-0.41***
Portfolio turnover (%)	0.15***	0.01**	0.27***	-0.01***	0.58***	0.52***	0.74***	0.67***	0.85***	0.96***
Expense ratio (%)	0.02	0.00	0.04**	0.01***	0.12***	0.05***	0.10***	0.07***	0.10***	0.08***
Total net assets (\$mn)	38.84	5.76**	-122.34*	-0.49	75.07**	1.64	65.84*	7.03	106.93*	12.98
Manager tenure (months)	17.36***	24.00***	16.20***	32.00***	23.17***	28.00***	25.38***	20.25***	29.15***	18.80***
Number of funds	146	146	117	117	58	58	37	37	27	27

Panel B-1 : Domestic Equity Funds in “Diversified (Non-Reg)” Fund Company

Year Range (post subtracts prior)	(-1, +1)		(-2, +2)		(-3, +3)		(-4, +4)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Test for differences								
Performance (FMBHR, %)	-6.65***	-3.01***	-16.79***	-7.73***	-14.24**	-10.33***	-1.12	-4.52
Sharpe ratio	-0.24***	-0.25***	-0.01	0.01	0.01	-0.05	-0.05*	-0.11***
Portfolio turnover (%)	0.04	-0.02	-0.06	-0.14	-0.32***	-0.14***	-0.57***	-0.23***
Expense ratio (%)	0.07	0.00	-0.07	-0.01	-0.05	0.00	0.03	-0.01
Total net assets (\$mn)	-23.86	-11.70***	-25.35	-5.05**	-26.93	-9.48**	-112.25*	-37.92***
Manager tenure (months)	20.64***	24.00***	27.10***	36.00***	36.12***	48.00***	43.52***	48.50***
Number of funds	86	86	69	69	53	53	35	35

table continued

Panel B-2 : Equity Funds in “Diversified (Non-Reg)” Fund Company

Year Range (post subtracts prior)	(-1, +1)		(-2, +2)		(-3, +3)		(-4, +4)	
Test for differences	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Performance (FMBHR, %)	-1.29***	-2.41***	-9.86***	-2.25***	-1.82**	-5.97**	-1.73*	-6.72
Sharpe ratio	-0.19***	-0.20***	-0.05*	-0.02	-0.03	-0.05	-0.06**	-0.11**
Portfolio turnover (%)	0.13***	0.07***	0.01	-0.08	-0.23***	-0.13***	-0.48***	-0.23***
Expense ratio (%)	0.13***	0.05***	-0.01	0.04	0.03	0.04	0.10	0.06
Total net assets (\$mn)	-42.56	-11.61***	-56.16	-10.03***	-52.63	-16.42***	-123.60**	-37.92***
Manager tenure (months)	15.95***	24.00***	24.06***	36.00***	32.79***	48.00***	39.64***	48.75***
Number of funds	110	110	83	83	66	66	45	45

Panel C : Domestic Equity Funds in “Diversified (Reg)” Fund Company

Year Range (post subtracts prior)	(-1, +1)		(-2, +2)		(-3, +3)		(-4, +4)		(-5, +5)	
Test for differences	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Mean
Performance (FMBHR, %)	-4.87***	-3.25***	-3.44	-2.74**	16.52***	13.78**	23.17**	18.17**	50.43***	45.29**
Sharpe ratio	-0.09**	-0.24*	0.01	0.04	-0.22***	-0.21***	-0.20***	-0.20***	-0.34***	-0.34***
Portfolio turnover (%)	0.14***	0.03*	0.14***	0.03*	0.05	0.03	-0.04	0.03	0.01	-0.01
Expense ratio (%)	-0.04**	0.00	-0.02	0.02	-0.01	0.02	0.06*	0.10***	0.13***	0.15***
Total net assets (\$mn)	-132.17***	-6.80***	-166.20***	-9.34***	-264.10***	-33.41***	-339.09***	-122.21***	-211.91	-51.73
Manager tenure (months)	5.26**	24.00**	9.55***	30.00***	6.44	2.33	13.15*	10.83*	34.75***	50.00***
Number of funds	154	154	131	131	51	51	33	33	16	16

offering. The fee and market adjusted buy and hold returns generate a negative figure of 3% to 6% relative to domestic equity funds and a negative 1% to 2% on mean and median measures respectively for the one-year post period less the period prior to the IPO date. The difference gap increases in the two and three-year measure while statistical significance decreases after four-year interval. The Sharpe ratio is also strong negative in the one-year time frame for both domestic equity funds and equity funds. Unlike the findings for the focused fund companies, the results of deteriorating performance from diversified groups are consistent with the argument of DeGeorge and Zeckhauser (1993) and others who suspect that managers time the market.

For fund characteristics (operation efficiency) variables, we observe that a public offering from the managing companies is not accompanied by more fund flows. Total assets under management continuously deteriorate throughout these years. As documented earlier in the focused groups, manager tenure in this diversified fund companies show more towards entrenched. The decrease in total assets and performance along with increased managerial tenure indicates that funds managed under non-Fed regulated mutual fund companies are not as efficiently managed as those under focused ones.

Panel C posts different results than those non-Fed regulated mutual fund companies from Panel B. Fee and market adjusted buy and hold returns show a U-shape pattern. Performance deteriorates at the first two-year then increases after three, four, and five-year intervals. This result is similar to DeGeorge and Zeckhauser (1993) and others who suspect that managers time the market and engage in window dressing, at least up to two-year time frame. Our results do not support McTague (1994) and Frye (2001) who argue that bank proprietary funds as more conservatively managed than non-bank funds. Portfolio turnover increases in the first two years after their managing companies' IPOs. Total assets under management, on the other hand, is consistent with the non-fed regulated mutual fund companies experiencing deteriorating performance during the post IPO dates. Overall, we conclude that there is better fund performance and higher operational efficiency for funds managed under focused fund companies around the time of their IPOs. Diversified companies show some evidence of deteriorating performance and operational efficiency surrounding their IPOs, suggests market timing.

We further test fund performance with respect to whether they earn positive or negative alphas surrounding their initial public offering between focused versus diversified groups. We have shown earlier that funds managed under focused fund companies demonstrate better performance and operation efficiency when compared to those diversified ones (in Table 4.3, 4.4). We have also shown earlier (in Table 4.9) that funds managed under focused mutual fund companies outperform in the post IPO time frame while funds managed under diversified ones experience performance deteriorating. Table 4.9 reports test results for Fama and French (1993) three factors performance measures.²⁴ For this robustness test, we address two questions. First, do funds managed under focused fund groups earn positive alphas in the post IPO years compared to the years prior to the IPO? Second, how long do funds managed under focused fund groups earn positive alphas compared to the diversified counterparties? Panel A-1 and A-2 show test results for alpha for both domestic equity funds and equity funds managed under focused, non-Fed regulated and Fed-regulated mutual fund companies for a two-year interval of their initial public offering. Domestic equity funds (Panel A-1) in focused fund companies have positive alphas (0.14% in mean and 0.06% for median) in the first year after their IPOs, consistent with our prior findings and the results from Stoughton, Wong and Zechner (2001). On the other hand, both the domestic equity funds of non-Fed regulated and Fed-regulated diversified mutual fund companies earn negative alphas (-0.30% to -0.33% for mean and -0.07% to -0.29% for median) during the one year after their managing companies' IPOs. The differences between post and prior on the first year are statistically significant at 1% level for domestic equity funds in the diversified fund companies. In Panel A-2, equity funds have a similar result. Funds managed under diversified mutual fund companies have negative alphas (-0.47% and -0.26% for mean and -0.07% and -0.27% for median) for the first year after their managing companies' IPOs. The differences for equity funds under focused management companies from the one year post period less the one year prior are positive and significant.

Panel B-1 and B-2 extends the test to a two-year interval. Consistent with our earlier findings for the one-year span, both domestic equity funds (B-1) and equity funds

²⁴ For limiting space, we do not report momentum four-factor test results. However, those results are similar to the three-factor ones.

(B-2) managed under diversified fund companies earn negative alphas (-0.20% and -0.17% mean and -0.09% and -0.10% median for domestic equity funds and -0.40% and -0.14% mean and -0.14% and -0.05% median for equity funds) the two-year post period less prior two-years. Equity funds post positive and significant differences for the two-year post relative to the period two-year prior. This result is consistent with our earlier findings that funds managed under focused fund companies experience improved performance while funds managed under diversified fund companies encounter the opposite result during their managing companies' initial public offerings. When we extend this measure to three-year and four-year time span, funds in the diversified fund companies constantly earn negative alphas. Funds in the focused fund companies also turn negative.

4.2 Multivariate Regression Analysis

In this section, we report tests using multivariate regression analysis for clarifying earlier concerns from the univariate analysis. We investigate differences in performance and operating efficiency among focused and diversified mutual fund companies by controlling for fund characteristics and other dummy variables. We first examine the relationship of fund performance and level of focus (diversification) by pooling the data into one-year, three-year, and five-year spans respectively. Rather than constructing pooling OLS or panel data, using data through different years allows us to further investigate changes throughout those years with respect to how the level of diversification affects firm performance and efficiency overtime.

Table 4.10 Panel A and Panel B pool equity funds and domestic equity funds from public mutual fund companies for one, three, and five-year, records respectively with respect to their managing companies being focused (a dummy equals 1 if a managing company is focused) versus diversified (non-Fed-regulated in Panel A and non-Fed-regulated in Panel B) together with other control variables such as a one year lag of turnover, expense ratio, nature log of total net asset, and manager turnover. Panels A and B show that funds managed under focused fund companies have better fund performance throughout one, three, and five-year spans across equity funds and domestic equity funds, typically at the 1% significant level.

Table 4.9: Robustness Test for Performance surrounding the IPOs of Mutual Fund Companies

This table reports robustness check for performance measure by using Fama and French's three factors to evaluate up to four years prior and four years post of the IPOs for different level of focused (diversified) of the public mutual fund companies. Alpha is reported in percentage. (-1, +1) stands for the results from one year post of IPOs subtracts one year prior of IPOs. Panel A, B, C, D reports one, two, three, and four years prior and post surrounding the IPOs year respectively. Sample covers from January 1961 to December 2005. Among those Fund Categories, "Focus" stands for "public" and "focused" fund companies. "Diversified (Non-Reg)" stands for mutual fund companies are wholly-owned subsidiaries or asset management arms (divisions) of non-Fed regulated public financial institutions or conglomerates. "Diversified (Reg)" stands for mutual fund companies are wholly-owned (affiliated) subsidiaries or asset management arms of Fed-regulated financial institutions. ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

Panel A-1

Fund Category	Focus		Diversified (Non-Reg)		Diversified (Reg)	
	Mean	Median	Mean	Median	Mean	Median
Domestic Equity Fund						
1 years prior IPO (-1, 0)	0.05	-0.09	0.41***	0.25***	0.06	-0.02
1 years after IPO (0,+1)	0.14**	0.06**	-0.33***	-0.07***	-0.30***	-0.29***
Differences of (0,+1) subtract (-1, 0)	0.09	0.19	-0.74***	-0.20***	-0.36***	-0.16***
Number of funds	116	116	86	86	154	154

Panel A-2

Fund Category	Focus		Diversified (Non-Reg)		Diversified (Reg)	
	Mean	Median	Mean	Median	Mean	Median
Equity Fund						
1 years prior IPO (-1, 0)	-0.20***	-0.23***	-0.14	-0.01	-0.17*	-0.13**
1 years after IPO (0,+1)	0.04	0.05	-0.47***	-0.07***	-0.26***	-0.27***
Differences of (0,+1) subtract (-1, 0)	0.24***	0.29**	-0.33*	-0.06	-0.09	-0.03
Number of funds	146	146	110	110	188	188

Panel B-1

Fund Category	Focus		Diversified (Non-Reg)		Diversified (Reg)	
	Mean	Median	Mean	Median	Mean	Median
Domestic Equity Fund						
2 years prior IPO (-2, 0)	-0.17***	-0.11***	0.66***	0.39***	0.04	0.01
2 years after IPO (0,+2)	-0.04	-0.06	-0.20***	-0.09***	-0.17***	-0.10***
Differences (0,+2) subtract (-2, 0)	0.13	0.03	-0.86***	-0.43***	-0.21**	-0.02
Number of funds	93	93	69	69	131	131

Panel B-2

Fund Category	Focus		Diversified (Non-Reg)		Diversified (Reg)	
	Mean	Median	Mean	Median	Mean	Median
Equity Fund						
2 years prior IPO (-2, 0)	-0.25***	-0.12***	0.39***	0.16***	0.11	0.04
2 years after IPO (0,+2)	-0.02	-0.04	-0.40***	-0.14***	-0.14***	-0.05***
Differences (0,+2) subtract (-2, 0)	0.23**	0.05*	-0.79***	-0.43***	-0.25***	-0.04**
Number of funds	117	117	83	83	160	160

table continued

Panel C-1

Fund Category	Focus		Diversified (Non-Reg)		Diversified (Reg)	
	Mean	Median	Mean	Median	Mean	Median
Domestic Equity Fund						
3 years prior IPO (-3, 0)	0.02	0.05	0.56***	0.30***	0.04	0.06
3 years after IPO (0,+3)	-0.25***	-0.20***	-0.12**	-0.10**	-0.23***	-0.19***
Differences of (0,+3) subtract (-3, 0)	-0.27***	-0.26***	-0.69***	-0.47***	-0.27**	-0.14*
Number of funds	48	48	53	53	51	51

Panel C-2

Fund Category	Focus		Diversified (Non-Reg)		Diversified (Reg)	
	Mean	Median	Mean	Median	Mean	Median
Equity Fund						
3 years prior IPO (-3, 0)	0.00	0.02	0.32***	0.22***	0.02	0.04
3 years after IPO (0,+3)	-0.26***	-0.20***	-0.28***	-0.12***	-0.18***	-0.15***
Differences of (0,+3) subtract (-3, 0)	-0.26***	-0.27***	-0.60***	-0.47***	-0.20	-0.15
Number of funds	58	58	66	66	66	66

Panel D-1

Fund Category	Focus		Diversified (Non-Reg)		Diversified (Reg)	
	Mean	Median	Mean	Median	Mean	Median
Domestic Equity Fund						
4 years prior IPO (-4, 0)	0.11**	0.08*	0.39***	0.10***	0.00	-0.05
4 years after IPO (0,+4)	-0.20***	-0.15***	0.00	0.00	-0.19***	-0.15***
Differences of (0,+4) subtract (-4, 0)	-0.31***	-0.15***	-0.39**	-0.15**	-0.19*	-0.25
Number of funds	33	33	35	35	33	33

Panel D-2

Fund Category	Focus		Diversified (Non-Reg)		Diversified (Reg)	
	Mean	Median	Mean	Median	Mean	Median
Equity Fund						
4 years prior IPO (-4, 0)	0.03	0.03	0.20*	0.08	-0.12	-0.10
4 years after IPO (0,+4)	-0.30***	-0.19***	-0.10	-0.02	-0.05	-0.12
Differences of (0,+4) subtract (-4, 0)	-0.33***	-0.16***	-0.30**	-0.15**	0.08	-0.10
Number of funds	37	37	45	45	46	46

Panel C pools all private fund companies from one, three, and five-year periods respectively with respect to their managing companies being focused (a dummy equals “M” if a managing company is focused) and diversified mutual fund companies (aggregating banks, insurance companies, brokerage companies, and conglomerates) together with other control variables such as one year lag of turnover, expense ratio, nature log of total net asset, and manager turnover. Panel C shows that funds managed under focused mutual fund companies demonstrate better performance (for models 1, 3, 4, and 6) and a lower expense ratio (mostly at the 1% significant level). Although the results are weaker for private fund companies, in general, funds managed under focused fund companies have better performance throughout the different time frames.

These findings are consistent with prior corporate literature (Lang and Stulz (1994), Berger and Ofek (1995), Servaes (1996)) which argues that conglomerates trade at discount due to their inefficiency and agency problems.

Table 4.10: Regression for “Focused” versus “Diversified” of Mutual Fund Companies

This table uses OLS regression to examine the relationship between fee and market-adjusted buy and hold returns (FMBHR) for the past one, three and five-year to the different type of mutual fund companies to study the effect of being “focused” and “diversified”. Sample ranges from Jan 2001 to Dec 2005 and reports in the frequency of 1-year (year 2005), 3-year (year 2003 to year 2005) and 5-year (year 2001 to year 2005), with both live and dead funds. “Focus” stands for mutual fund companies are “public” and “focused” companies”. “Diversified (Fed-Reg)” stands for mutual fund companies are wholly-owned subsidiaries or asset management arms (divisions) of non-Fed regulated public financial institutions or conglomerates. “Diversified (Reg)” stands for mutual fund companies are mutual fund companies are wholly-owned (affiliated) subsidiaries or asset management arms of Fed-regulated publicly-traded financial institutions. “Focus (M)” stands for “focused” and “private” mutual fund companies. “B” stands for private banks that offer mutual fund products. “C” stands for private conglomerates that offer mutual fund products. “I” stands for private insurance companies that offer mutual fund products. “b” stands for private brokerages that offer mutual fund products. EF stands for equity funds and DEF stands for domestic equity funds based on the definition of fund objective from CRSP tape. The dependent variable is fee and market-adjusted buy and hold returns (FMBHR) for a pool of “Focus” and “Diversified (Non-Reg)” (in panel A), “Focus” and “Diversified (Reg)” (in panel B), and “Focus (M)” and “Diversified (B+C+b+I)” (in panel C). The independent variables contain: a “focused public (in Panel A and B) or private (in Panel C) mutual fund company” dummy which equals one if a fund is managed by “focus” companies; an annual portfolio turnover ratio from previous year; an annual expense ratio from previous year; a logarithm total net asset from previous year; a manager’s tenure from previous year. Coefficients of portfolio turnover, total net asset and manager tenure have been multiplied by 100 for report purposes. The standard errors are heteroskedasticity-robust. The p-values are reported in the parentheses. ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

Panel A : “Focus” & “Diversified (Non-Reg)”

Dependent Variable :	1-year		3-year		5-year	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	EF	DEF	EF	DEF	EF	DEF
Ret i,t						
Intercept	-0.3533 (0.8766)	1.8503 (0.5130)	-23.7228** (0.0120)	3.4285 (0.7583)	-36.4724*** (0.0049)	19.8802 (0.1748)
Dummy of being "1" i,t	3.6595*** (0.0032)	3.1996** (0.0335)	15.4468*** (0.0018)	12.2828** (0.0255)	32.4299*** (0.0000)	19.1135*** (0.0095)
Turnover $i,t-1$	-0.2618 (0.6820)	-0.2379 (0.7405)	-1.4818 (0.6700)	3.6998 (0.3258)	-13.7441*** (0.0088)	-12.7482** (0.0124)
Expense $i,t-1$	1.6553 (0.1305)	-0.6120 (0.6791)	27.0484*** (0.0000)	0.7512 (0.9100)	42.9847*** (0.0000)	0.9660 (0.9120)
Log TNA $i,t-1$	-0.0049 (0.8685)	0.0136 (0.7072)	-0.0709 (0.5583)	-0.0250 (0.8456)	-0.0904 (0.2293)	-0.1540** (0.0216)
Manager Tenure $i,t-1$	3.4702** (0.0236)	1.7979 (0.3281)	8.4299 (0.1992)	1.6052 (0.8253)	7.9626 (0.3550)	7.0702 (0.3500)
Adjusted R-squared	0.0112	0.0034	0.087	0.0043	0.3121	0.1408
Number of funds	Focus=628; Diversified=659	Focus=469; Diversified=524	Focus=385; Diversified=303	Focus=297; Diversified=230	Focus=166; Diversified=125	Focus=126; Diversified=98

table continued

Panel B : “Focus” & “Diversified (Reg)”

Dependent Variable : Ret i,t	1-year		3-year		5-year	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	EF	DEF	EF	DEF	EF	DEF
Intercept	1.6394** (0.0305)	3.0646*** (0.0000)	-4.2930 (0.2619)	7.6044** (0.0137)	-20.3755* (0.0670)	16.7298 (0.1585)
Dummy of being "1" i,t	2.2101*** (0.0000)	1.6735*** (0.0006)	12.0656*** (0.0000)	8.2184*** (0.0001)	13.2580* (0.0599)	12.3346* (0.0549)
Turnover $i,t-1$	0.3073 (0.2904)	0.5081* (0.0667)	-1.5266 (0.3449)	0.7561 (0.5717)	-19.9371*** (0.0001)	-13.2634*** (0.0086)
Expense $i,t-1$	2.1441*** (0.0000)	0.2711 (0.5448)	20.2295*** (0.0000)	4.9293** (0.0148)	48.1294*** (0.0000)	13.8521* (0.0648)
Log TNA $i,t-1$	0.0021 (0.8779)	0.0200 (0.1441)	-0.2203** (0.0346)	-0.0795 (0.3595)	-0.3741** (0.0314)	-0.5967*** (0.0013)
Manager Tenure $i,t-1$	0.6346 (0.2974)	-0.6961 (0.2163)	0.4666 (0.8873)	-2.5893 (0.3190)	17.4995* (0.0510)	11.2100 (0.1484)
Adjusted R-squared	0.0342	0.0139	0.1463	0.0388	0.2702	0.0993
Number of funds	Focus=628; Diversified=1,473	Focus=469; Diversified=1,184	Focus=385; Diversified=709	Focus=297; Diversified=553	Focus=166; Diversified=227	Focus=126; Diversified=166

Panel C : “Focus (M)” & “Diversified (B+C+b+I)”

Dependent Variable : Ret i,t	1-year		3-year		5-year	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	EF	DEF	EF	DEF	EF	DEF
Intercept	6.8070*** (0.0000)	5.8018*** (0.0000)	21.1270*** (0.0000)	16.5251*** (0.0000)	31.7115*** (0.0008)	21.4839** (0.0226)
Dummy of being "M" i,t	1.4788** (0.0131)	0.8198 (0.1485)	9.2544*** (0.0038)	7.9375*** (0.0067)	10.9251 (0.2316)	16.2040* (0.0795)
Turnover $i,t-1$	-0.2900*** (0.0002)	-0.1903*** (0.0054)	-0.9965** (0.0115)	-0.4018 (0.2331)	-0.6003 (0.2454)	-0.3890 (0.4111)
Expense $i,t-1$	-0.9967*** (0.0000)	-1.1920*** (0.0000)	-1.7207* (0.0668)	-3.2223*** (0.0001)	-4.4230* (0.0563)	-5.7939*** (0.0068)
Log TNA $i,t-1$	-0.0028 (0.4625)	-0.0017 (0.6197)	-0.0639*** (0.0043)	-0.0503*** (0.0088)	-0.1155* (0.0559)	-0.1188** (0.0476)
Manager Tenure $i,t-1$	-0.9147** (0.0317)	-1.0006** (0.0108)	-2.0568 (0.2182)	-0.8688 (0.5479)	4.6115 (0.2198)	6.6505* (0.0590)
Adjusted R-squared	0.0272	0.0454	0.0145	0.0205	0.0120	0.0323
Number of funds	Focus=2,503; Diversified=484	Focus=2,102; Diversified=397	Focus=1,548; Diversified=177	Focus=1,277; Diversified=149	Focus=786; Diversified=75	Focus=647; Diversified=62

To investigate the impact of going public and the differences in performance and operating efficiency for same level of organization structure but different ownership structure (public or private), we use multivariate regressions to examine differences and create a dummy variable equals one if the fund company is publicly-traded. We pool the data into one-year, three-year, and five-year time frames respectively. Table 4.11 pools funds from focused public and focused private fund companies together. Models 1, 2 and

3 show that funds managed under focused public fund companies have better fund performance throughout one and three-year time spans but the significance level decreases over the five-year interval. Also, we find that funds managed under public fund companies have lower expense ratios and have lower portfolio turnover ratios, evidence of better operational efficiency.

Table 4.11: Regression for “Being Public” for Mutual Fund Companies

This table uses OLS regression to examine the relationship between fee and market-adjusted buy and hold returns (FMBHR) for the past one, three and five-year to the different type of mutual fund companies to study the effect of being “publicly-traded”. Sample ranges from Jan 2001 to Dec 2005 and reports in the frequency of 1-year (year 2005), 3-year (year 2003 to year 2005) and 5-year (year 2001 to year 2005), with both live and dead funds. “Focus” stands for mutual fund companies are “public” and “focused” companies while “Focus (M)” stands for “focused” and “private” mutual fund companies. EF stands for equity funds and DEF stands for domestic equity funds based on the definition of fund objective from CRSP tape. The dependent variable is fee and market-adjusted buy and hold returns (FMBHR) for a pool of “Focus” and “Focus (M)”. The independent variables contain: a “focused publicly-traded mutual fund company” dummy which equals one if a fund is managed by “Focus”; an annual portfolio turnover ratio from previous year; an annual expense ratio from previous year; a logarithm total net asset from previous year; a manager’s tenure from previous year. Coefficients of portfolio turnover, total net asset and manager tenure have been multiplied by 100 for report purposes. The standard errors are heteroskedasticity-robust. The p-values are reported in the parentheses. ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

Focus& Focus (M) Dependent Variable :	1-year		3-year		5-year	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Ret i,t	EF	DEF	EF	DEF	EF	DEF
Intercept	8.1311*** (0.0000)	6.5992*** (0.0000)	28.7143*** (0.0000)	24.6178*** (0.0000)	38.5589*** (0.0000)	37.9773*** (0.0000)
Dummy of being "Focus" i,t	1.6550*** (0.0018)	1.1422** (0.0272)	7.9571*** (0.0020)	1.4003 (0.5615)	7.7725 (0.2669)	-0.2693 (0.9693)
Turnover $i,t-1$	-0.2909*** (0.0002)	-0.1805*** (0.0081)	-1.1835*** (0.0038)	-0.4055 (0.2260)	-0.7137 (0.1759)	-0.4192 (0.3701)
Expense $i,t-1$	-0.9630*** (0.0000)	-1.1869*** (0.0000)	-0.4847 (0.6128)	-3.2618*** (0.0001)	-1.5229 (0.5122)	-5.9089*** (0.0055)
Log TNA $i,t-1$	-0.0033 (0.3879)	-0.0011 (0.7505)	-0.0631*** (0.0064)	-0.0474** (0.0135)	-0.1149* (0.0647)	-0.1321** (0.0307)
Manager Tenure $i,t-1$	-0.7513* (0.0760)	-1.0115*** (0.0088)	-1.8512 (0.2778)	-1.0628 (0.4584)	4.5222 (0.2280)	6.7990** (0.0458)
Adjusted R-squared	0.0265	0.0461	0.0159	0.0156	0.005	0.0257
Number of funds	Focus=628; Focus (M)=2,503	Focus=469; Focus (M)=2,102	Focus=385; Focus (M)=1,548	Focus=297; Focus (M)=1,277	Focus=166; Focus (M)=786	Focus=126; Focus (M)=647

Table 4.12: Panel Regression for Board Governance and Ownership Structures among Public Mutual Fund Companies

This table reports regression results for performance to board governance and ownership structures among three categories of public mutual fund companies of those domestic equity funds. Panel A reports the fund complex category “Focus”, those public and focused fund companies. Panel B reports the fund complex category “Diversified (Non-Reg)”, those fund complexes which are wholly-owned subsidiaries or asset management arms (divisions) of non-Fed regulated public financial institutions or conglomerates. Panel C reports the fund complex category “Diversified (Reg)”, those which are wholly-owned (affiliated) subsidiaries or asset management arms of Fed-regulated public financial institutions. Fund performance and fund characteristics ranges from Jan 2001 to Dec 2005 and reports in the frequency of 1-year (year 2005), 3-year (year 2003 to year 2005) and 5-year (year 2001 to year 2005), with both live and dead funds. The dependent variable is fee and market-adjusted holding period return (FMBHR) for all domestic equity funds in the fund complex. The independent variables contain an annual portfolio turnover ratio from previous twelve months; an annual expense ratio from previous twelve months; a logarithm of aggregated total net asset for domestic equity funds within the same fund families; a manager tenure (average) at previous twelve months; “num_Tot_Director” (total number of directors); “pct_indep” (percentage of independent directors of the total number of directors in the board) ; “dummy_indep”, a dummy variable which equals one if a fund complex has more than 75% independent board; “insider chairman dummy “ which equals one is a chairman is insider (dependent director); “Insiderhold_comm” (total percentage of holding of insiders); “Insiderblock” (5% inside block holders). “5%_outblocks_insti” (institutional investors who own more than 5% shares). Coefficients of portfolio turnover, total net asset and manager tenure have been multiplied by 100 for report purposes. The standard errors are heteroskedasticity-robust. The p-values are reported in the parentheses. ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

table continued

Panel A
Fund Complex Category: Focus, N=892

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Intercept	4.1787*** (<.0001)	-0.9179 (0.4919)	4.3961*** (0.0004)	4.1537*** (<.0001)	9.6121*** (0.0036)	3.9544*** (<.0001)	4.1156*** (<.0001)	4.5740*** (<.0001)	-0.6168 (0.7863)	0.1834 (0.9383)	-1.6210 (0.3261)	-0.8272 (0.6197)
Turnover (-1)	0.2669 (0.3144)	0.2685 (0.3079)	0.2664 (0.3155)	0.2673 (0.3140)	0.2897 (0.2753)	0.3685 (0.1764)	0.3126 (0.2512)	0.4358 (0.1340)	0.6901** (0.0190)	0.6228** (0.0351)	0.6517** (0.0262)	0.5961** (0.0429)
Expense (-1)	-0.1297 (0.7592)	0.3253 (0.4490)	-0.1314 (0.7562)	-0.1279 (0.7628)	-0.1724 (0.6841)	-0.2086 (0.6242)	-0.1659 (0.6970)	0.1467 (0.7574)	0.4847 (0.3145)	0.5457 (0.2580)	0.5378 (0.2622)	0.5791 (0.2272)
Log TNA (-1)	0.2509** (0.0153)	0.2246** (0.0290)	0.2419** (0.0276)	0.2542** (0.0222)	0.2553** (0.0136)	0.2147** (0.0425)	0.2467** (0.0173)	0.3539*** (0.0025)	0.2256* (0.0647)	0.2819** (0.0190)	0.2035* (0.0981)	0.2206* (0.0722)
Manager Tenure (-1)	-0.0033 (0.5624)	0.0006 (0.9147)	-0.0032 (0.5843)	-0.0034 (0.5609)	-0.0032 (0.5765)	-0.0038 (0.5097)	-0.0038 (0.5161)	-0.0080 (0.2160)	-0.0033 (0.6060)	-0.0027 (0.6739)	-0.0027 (0.6772)	-0.0019 (0.7663)
Num_Tot_Director (-1)		0.3974*** (<.0001)							0.4838*** (<.0001)	0.4608*** (<.0001)	0.5292*** (<.0001)	0.5185*** (<.0001)
Pct_indep (-1)			-0.3250 (0.8043)						-2.0137 (0.2530)	-2.2294 (0.2143)		
dummy_indep (-1)				0.0593 (0.9363)							-1.6823* (0.0865)	-2.3350** (0.0112)
Insider chairman D (-1)					-5.4464* (0.0878)							
Insiderhold_comm (-1)						2.9102* (0.0962)			6.1904*** (0.0059)		4.3621* (0.0901)	
Insiderblock (-1)							1.0309 (0.4581)			2.2672 (0.1891)		0.9756 (0.5914)
5%_outblocks_insti (-1)								-3.4540*** (0.0023)	-4.0359*** (0.0026)	-4.6479*** (0.0006)	-4.5482*** (0.0010)	-5.3859*** (<.0001)
Adjusted R-squared	0.0016	0.0160	0.0011	0.0010	0.0028	0.0026	0.0014	0.0087	0.0315	0.0273	0.03276	0.03091

table continued

Panel B
Fund Complex Category: Diversified (Non-Reg), N=852

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Intercept	1.5041 (0.5406)	0.2402 (0.9438)	2.4449 (0.4661)	1.9521 (0.4358)	2.9909 (0.6277)	1.5560 (0.5281)	1.5216 (0.5375)	1.4172 (0.2843)	-11.6226*** (0.0014)	-8.8598** (0.0115)	-2.8225 (0.1007)	-2.3190 (0.1765)
Turnover (-1)	0.0650 (0.9349)	0.0498 (0.9504)	0.0470 (0.9533)	-0.0035 (0.9965)	0.0860 (0.9142)	0.1028 (0.8975)	0.0868 (0.9134)	0.9475** (0.0310)	0.9119** (0.0353)	0.9259** (0.0331)	0.8775** (0.0436)	0.9006** (0.0387)
Expense (-1)	-0.4766 (0.6679)	-0.5473 (0.6247)	-0.5419 (0.6289)	-0.5678 (0.6114)	-0.4699 (0.6746)	-0.4164 (0.7098)	-0.4874 (0.6634)	0.9343 (0.1017)	0.4534 (0.4309)	0.5000 (0.3863)	0.4445 (0.4431)	0.4991 (0.3901)
Log TNA (-1)	-0.1366 (0.5942)	-0.1746 (0.5174)	-0.1545 (0.5571)	-0.1490 (0.5634)	-0.1266 (0.6234)	-0.1102 (0.6698)	-0.1299 (0.6139)	-0.2560** (0.0389)	-0.3288** (0.0109)	-0.3314** (0.0106)	-0.3479*** (0.0072)	-0.3468** (0.0075)
Manager Tenure (-1)	0.0349** (0.0288)	0.0374** (0.0263)	0.0367** (0.0289)	0.0403** (0.0175)	0.0343** (0.0319)	0.0358** (0.0258)	0.0347** (0.0313)	-0.0258*** (0.0012)	-0.0306*** (0.0006)	-0.0275*** (0.0018)	-0.0287*** (0.0017)	-0.0258*** (0.0044)
Num_Tot_Director (-1)		0.0924 (0.5868)							0.5614*** (<.0001)	0.4633*** (0.0005)	0.3037*** (0.0006)	0.2695*** (0.0026)
Pct_indep (-1)			-1.3226 (0.6804)						8.1199*** (0.0027)	6.0130** (0.0204)		
dummy_indep (-1)				-1.5284 (0.3128)							2.0193** (0.0437)	1.3763 (0.1630)
Insider chairman D (-1)					-1.5377 (0.7941)							
Insiderhold_comm (-1)						-10.1164 (0.4115)			26.4005*** (0.0003)		22.1104*** (0.0020)	
Insiderblock (-1)							-1.5760 (0.9381)			31.4862*** (0.0052)		27.7103** (0.0133)
5%_outblocks_insti (-1)								15.6550*** (0.0015)	9.7521* (0.0531)	10.9700** (0.02926)	8.3456* (0.09446)	9.8717* (0.05302)
Adjusted R-squared	0.008	0.0003	0.0002	0.0007	0.0002	0.0005	0.0001	0.0379	0.0661	0.0601	0.0601	0.0559

table continued

Panel C
Fund Complex Category: Diversified (Reg), N=1,903

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Intercept	3.0908*** (<.0001)	4.2263*** (<.0001)	2.7883 (0.0017)	2.8468*** (<.0001)	2.5056*** (0.0004)	2.5907*** (<.0001)	2.5898*** (<.0001)	3.8225*** (<.0001)	4.0481 (0.2575)	4.0667 (0.2538)	5.1795** (0.0334)	5.1114** (0.0346)
Turnover (-1)	1.3046*** (<.0001)	1.4691*** (<.0001)	1.5320*** (<.0001)	1.5411*** (<.0001)	1.5061*** (<.0001)	1.5164*** (<.0001)	1.5184*** (<.0001)	1.5206*** (<.0001)	1.5077*** (<.0001)	1.5010*** (<.0001)	1.5065*** (<.0001)	1.5093*** (<.0001)
Expense (-1)	0.2196 (0.4011)	0.2954 (0.2477)	0.2990 (0.2459)	0.2953 (0.2516)	0.2891 (0.2586)	0.3100 (0.2269)	0.3098 (0.2271)	-0.5238 (0.1753)	-0.5041 (0.2305)	-0.4578 (0.2662)	-0.4544 (0.2793)	-0.4445 (0.2794)
Log TNA (-1)	-0.0446 (0.5134)	0.0334 (0.6161)	0.0397 (0.5553)	0.0398 (0.5545)	0.0382 (0.5682)	0.0401 (0.5486)	0.0399 (0.5500)	0.0255 (0.7959)	-0.0157 (0.8766)	-0.0202 (0.8416)	-0.0274 (0.7858)	-0.0296 (0.7691)
Manager Tenure (-1)	-0.0060 (0.1427)	-0.0090* (0.0265)	-0.0081** (0.0482)	-0.0079* (0.0530)	-0.0080* (0.0497)	-0.0079* (0.0508)	-0.0079* (0.0507)	-0.0045 (0.4790)	-0.0084 (0.1883)	-0.0083 (0.1924)	-0.0081 (0.2044)	-0.0081 (0.2004)
Num_Tot_Director (-1)		-0.0943*** (0.0038)							-0.3523*** (<.0001)	-0.3558*** (<.0001)	-0.4060*** (<.0001)	-0.4051*** (<.0001)
Pct_indep (-1)			-0.1615 (0.8667)						-0.9252 (0.7115)	-0.9620 (0.6994)		
dummy_indep (-1)				-0.3106 (0.4102)							-1.3546** (0.0499)	-1.3377** (0.0475)
Insider chairman D (-1)					0.2043 (0.7036)				4.6966** (0.0184)	4.6550** (0.0190)	4.3211** (0.0252)	4.3418** (0.0239)
Insiderhold_comm (-1)						1.3853 (0.2974)			0.2806 (0.9616)		3.2573 (0.5878)	
Insiderblock (-1)							1.9274 (0.2651)			2.7915 (0.6868)		5.0719 (0.4695)
5%_outblocks_insti (-1)								1.7872 (0.5955)	10.6631** (0.02413)	10.6511** (0.02347)	9.1723** (0.02568)	9.3633** (0.02156)
Adjusted R-squared	0.0001	0.0002	0.0002	0.0003	0.0002	0.0002	0.0002	0.0002	0.0352	0.0353	0.0379	0.0381

To find whether differences in fund performance and operational efficiency are correlated with their managing companies' governance and ownership structure, we perform panel regressions. Considerable literature argues that insider ownership can mitigate information asymmetry (Jensen and Meckling (1976), Leland and Pyle (1977), McConnell and Servaes (1990), Anderson and Reeb (2003), Chen, Goldstein and Jiang (2006), and Khorana, Servaes and Wedge (2007)). However, the entrenchment hypothesis also suggests firm value can be adversely affected by insider ownership (Jarrell and Poulson (1987), Stulz (1988), Slovin and Sushka (1993), Yafeh and Yosha (2003), DeAngelo and DeAngelo (1985), and Shleifer and Vishny (1997)).

We perform a multivariate regression to determine what affects fund performance and fund characteristics (operational efficiency) of focused and diversified mutual fund companies. To mitigate omitting potentially relevant time-invariant variables, we use panel regressions by pooling ownership and governance variables from 2000, 2002 and 2004 while extracting performance data from 2001, 2003, and 2004.

Table 4.12 Panels A, B and C report results for focused, non-regulated diversified fund companies and fed-regulated diversified fund companies for their fee and market-adjusted performance with respect to board structure and insider and outsider ownership, as well as several fund-characteristic control variables. The regressions examine how each of the board governance or ownership variables influences fund performance as well as pooling governance and ownership variables together. Panel A reports results for focused mutual fund companies. We find that fund performance is positively correlated with number of total directors, which is statistically significant at 1% level (in model 2, 9, 10, 11, and 12) for focused fund companies. It also shows a negative correlation between board structures with 75% above independent directors toward performance (in model 11 and 12).

The results are consistent with Meschke (2006) who argues that board independence does not affect fund performance in an economically significant way. The results are also consistent with our univariate analysis which argues that governance structure alone does not fully explain differences between focused and diversified mutual fund companies. Insider holdings, on the other hand, have a positive correlation with fund performance for the focused fund group (in model 6, 9, and 11) at the 10%

significant level. The findings are consistent with Khorana, Servaes and Wedge (2007) who argue that higher ownership of portfolio managers is associated with improved performance. Outside blockholder ownership, unlike insider ownership, shows a negative correlation with fund performance (in model 8, 9, 10, 11 and 12) and is statistically significant at 1% level. This argument is consistent with Burkart, Gromb and Panunzi (1997) who argue that outside ownership constitutes an ex ante expropriation threat that reduces managerial initiative. Performance also shows a statistically positive relationship with the size of funds under management of the mutual fund companies, consistent with the findings of Chen, Hong, Huang and Kubik (2004) who argue that there are economies of scale in operational efficiency.

Panel B reports fund performance for ownership and governance variables within the group of non-Fed-regulated mutual fund companies. Unlike focused fund companies, the percentage of independent directors (in model 9, and 10) and board structures with 75% above independent directors (in model 11) both show a positive relationship with fund performance. Board structures are relative more important in disciplining entrenched managers in diversified fund companies. This result supports the findings Anderson, Bates, Bizjak, and Lemmon (1998) who do not find clear evidence to show that governance characteristics explain the value loss from diversification. Insider holdings as well as insider block holdings (in model 10 and 12) have a statistically significant (at 1% significant level) effect on fund performance (in model 9 and 11). Unlike focused mutual fund companies, outside block holders have their monitoring capacities. The existence of outside blockholders reduces free-rider problems in diversified fund companies, consistent with Demsetz (1986) and Shleifer and Vishny (1986). Another interesting finding from those regressions is that manager tenure turns from positive to negative while portfolio turnover becomes positive correlated with fund performance. This result implies the outside blockholders prevent managerial entrenchment in the diversified fund companies.

Panel C reports fund performance for ownership and governance variables for the group of fed-regulated mutual fund companies. Consistent with Panel B, block holder ownership is positively related to future fund performance within this group at 5% level (in model 9, 10, 11 and 12) but insider ownership loses its significance although it is still

positive. Governance variables are consistent with the focused fund groups. There is a negatively effect of board structures with 75% above independent directors on performance (in model 11 and 12) and a positive effect of insider chairman on fund performance (in model 9, 10, 11 and 12), consistent with Meschke (2006) who argues that board independence does not affect fund performance in an economically significant way. The expense ratio, after adding ownership variable, turns from positive to negative. Although not statistically significant, there is evidence that contribute to operation efficiency. Portfolio turnover is consistently positively correlated with fund performance across all models.

Table 4.13: Robustness Test for “Focused” and “Public” versus “Diversified” and “Private” Mutual Fund Companies

This table reports test statistics for differences in mean and median of performance and fund characteristics for equity funds and domestic equity funds for those “focused” mutual fund companies. Sample ranges from Jan 2001 to Dec 2005 and reports in the frequency of 1-year (year 2005), 3-year (year 2003 to year 2005) and 5-year (year 2001 to year 2005) with both live and dead funds. Results are Winsorized to 98%. “Focus” stands for mutual fund companies are “public” and “focused” companies” while “B” stands for private banks that offer mutual fund products. “C” stands for private conglomerates that offer mutual fund products. “I” stands for private insurance companies that offer mutual fund products. “b” stands for private brokerages that offer mutual fund products. Performance is measured in three ways; fee-adjusted buy and hold return (FBHR); fee and market-adjusted return (FMBHR), and the Sharpe ratio. Fund characteristics are measured in portfolio turnover (%); expense ratio (%); total net assets (in million dollars); manager tenures (in months) and average total net assets (in million dollars). ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

Panel A

“Focus” subtracts “diversified (B+C+b+I)”	1-year		3-year		5-year	
	Mean	Median	Mean	Median	Mean	Median
Equity Funds						
Performance (FBHR, %)	-0.14	0.66	31.88***	27.27***	14.04*	8.76**
Performance (FMBHR, %)	2.93***	2.42***	14.79***	15.02***	10.70**	7.77*
Sharpe ratio	-0.02	0.00	0.13***	0.14***	0.04***	0.03***
Portfolio turnover (%)	-4.19	-6.30	-7.77	-9.33	-16.52	-21.99*
Expense ratio (%)	-0.03	-0.02	-0.03	-0.02	0.03	0.01
Total net assets (\$mn)	750.19***	159.85***	799.05***	186.27***	763.39**	278.80***
Manager tenure (months)	8.71***	10.86***	1.63	0.00	-0.10	1.60
Average total net assets (\$mn)	322.27***	45.92***	348.83***	57.38***	290.69**	80.04**
Number of funds	Focus=628; Diversified=484		Focus=385; Diversified=177		Focus=166; Diversified=75	

table continued

Panel B

“Focus” subtracts “diversified (B+C+b+I)” Domestic Equity Funds	1-year		3-year		5-year	
	Mean	Median	Mean	Median	Mean	Median
Performance (FBHR, %)	-1.51*	0.36	26.05***	24.31***	10.87*	9.45**
Performance (FMBHR, %)	1.94***	1.95***	10.33***	12.39***	7.07**	7.44*
Sharpe ratio	-0.04**	0.00	0.11***	0.12***	0.05***	0.04***
Portfolio turnover (%)	-1.11	-8.10	5.20	-9.97	-9.85	-23.92*
Expense ratio (%)	-0.04	-0.03	-0.07	-0.05	-0.08	-0.07
Total net assets (\$mn)	782.97***	194.90***	867.97***	215.89***	740.28*	375.99***
Manager tenure (months)	6.83**	9.43***	-1.72	-6.27	-3.31	3.95
Average total net assets (\$mn)	340.28***	52.33***	380.46***	63.55***	336.36**	108.61***
Number of funds	Focus=469; Diversified=397		Focus=297; Diversified=149		Focus=126; Diversified=62	

4.3 Robustness Check

As our previous evidence shows, funds managed under focused mutual fund companies demonstrate superior fund performance and operating efficiency, consistent with literature that argues diversification destroys value. Also, funds managed under public mutual fund companies have better incentives and other market discipline to outperform their private rivalries. By joining those two arguments, we perform the test to show how a fund managed under a focused public fund company behaves relative to a private diversified one.

Table 4.13 shows that differences in fee and market adjusted buy and hold returns are statistically significant for both equity funds (Panel A) and domestic equity funds (Panel B) across one, three, and five-year time span. A fund managed under a focused public fund companies outperforms a fund managed under a diversified private fund company. Fund characteristic (operation efficiency) variables, size of the assets under management, both in total net assets and average total net assets, are statistically significant (mostly at 1% level) for funds managed under focused public fund companies than those of the diversified private ones. Differences in expense ratios are insignificant larger because public focused fund companies charge a higher fee for their reputation and services. Fund managers take less risk at the public focused fund companies, while managers in diversified private fund companies have a lower portfolio turnover rate for

Table 4.14: Regression for “Focused” and “Public” versus “Diversified” and “Private” among Mutual Fund Companies

This table uses OLS regression to examine the relationship between fee and market-adjusted buy and hold returns (FMBHR) for the past one, three and five-year to the different type of mutual fund companies to study the effect of being “public”. Sample ranges from Jan 2001 to Dec 2005 and reports in the frequency of in the frequency of 1-year (year 2005), 3-year (year 2003 to year 2005) and 5-year (year 2001 to year 2005) with both live and dead funds. “Focus” stands for mutual fund companies are “public” and “focused” companies. “B” stands for private banks that offer mutual fund products. “C” stands for private conglomerates that offer mutual fund products. “b” stands for private brokerages that offer mutual fund products. “I” stands for private insurance companies that offer mutual fund products. EF stands for equity funds and DEF stands for domestic equity funds based on the definition of fund objective from CRSP tape. The dependent variable is fee and market-adjusted buy and hold returns (FMBHR) for a pool of “focus” and “diversified (B+C+b+I)”. The independent variables contain: a “focused publicly-traded mutual fund company” dummy which equals one if a fund is managed by “1”; an annual portfolio turnover ratio from previous year; an annual expense ratio from previous year; a logarithm total net asset from previous year; a manager’s tenure from previous year. Coefficients of portfolio turnover, total net asset and manager tenure have been multiplied by 100 for report purposes. The standard errors are heteroskedasticity-robust. The p-values are reported in the parentheses. ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

“Focus” substracts “Diversified (B+C+b+I)	1-year		3-year		5-year	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	EF	DEF	EF	DEF	EF	DEF
Intercept	1.4458 (0.1591)	3.7291*** (0.0001)	-23.8052*** (0.0002)	3.8578 (0.4699)	-25.2557* (0.0539)	22.4009 (0.1358)
Dummy of being "1" i_t	2.9666*** (0.0000)	1.8588*** (0.0026)	16.5100*** (0.0000)	9.5709*** (0.0016)	17.5362** (0.0322)	15.3171* (0.0545)
Turnover i_{t-1}	0.7690** (0.0400)	0.4312 (0.2308)	1.8668 (0.4363)	2.8360 (0.1685)	-19.1639*** (0.0004)	-19.3187*** (0.0007)
Expense i_{t-1}	1.6498*** (0.0027)	-0.0788 (0.8864)	25.9775*** (0.0000)	3.9864 (0.2195)	50.5106*** (0.0000)	8.0370 (0.3777)
Log TNA i_{t-1}	-0.0042 (0.7936)	0.0057 (0.7200)	-0.0526 (0.5932)	-0.0308 (0.6965)	-0.1204 (0.3254)	-0.2680** (0.0267)
Manager Tenure i_{t-1}	0.3531 (0.6394)	-0.9254 (0.1790)	4.7788 (0.2637)	-0.2122 (0.9494)	5.8803 (0.4861)	6.8546 (0.3585)
Adjusted R-squared	0.0390	0.0114	0.2105	0.0366	0.3185	0.1314
Number of funds	Focus=628; Diversified=484	Focus=469; Diversified=397	Focus=385; Diversified=177	Focus=297; Diversified=149	Focus=166; Diversified=75	Focus=126; Diversified=62

the career threat for their underperformance. To quantify, the differences in fee and market-adjusted returns have a lower bound of 1.94% to a upper bound of 2.93% with one year; a 10.33% to 15.02% in three-year; and a 7.07% to 10.70% with five-year period.

In Table 4.14, we estimate cross section for one, three, and five-year time frames on both equity funds and domestic equity funds to examine the relationship between fee and market-adjusted buy and hold returns with respect to being a public or private and

organization structure, and being focused or diversified after controlling for fund characteristic variables. Our results show that the focused and public dummies are positive and statistically significant at 1% for both equity funds and domestic equity funds in the panel of one-year and three-year. The statistical significance remains at 5% level in a five-year period for equity funds and 10% for domestic equity funds. This evidence strengthens our findings that ownership structure and organization structure affect the fund performance and operating efficiency of the asset management industry.

CHAPTER 5 CONCLUSION

For the past decades, the mutual fund literature has documented how fund characteristics contribute to differences of fund performance. It is only recently that with the rise of fund scandals that mutual fund researchers have started emphasize the agency issues. The passage of the Gramm-Leach-Bliley Act (GLBA) in 1999 opens up the competition among banks, securities firms, insurance and asset management companies and the existence of financial conglomerates. Although the structure of financial conglomerates enables financial institutions to achieve economies of scales and scopes, it also generates conflicts interest among different participants. This paper uses all U.S. registered investment companies in the post GLBA era and the ten-year even window surrounding their IPOs to investigate how the organizational structure of being focused versus diversified, and public and private affect fund performance and operating efficiency. We document three important findings. First, funds managed under a focused mutual fund company demonstrate better fund performance and superior operating efficiency relative to diversified ones. Second, funds managed under public mutual fund entity outperforms private rivalries. Third, funds managed under diversified fund companies experience performance deteriorates during the years following their IPOs while their focused counterparts generate performance enhancement. We argue that publicly traded, a focused business line, and a large insider ownership explains the differences in performance and operational efficiency between mutual fund companies

Using mutual fund complexes to study issues of focus versus diversification and subsequent performance of IPOs gives us several advantages. Given the relative static nature of fund complexes, it mitigates the endogeneity problem that pervades corporate finance in determining whether it is firm characteristics that cause firms to diversify and to be traded at discounted. With a pure product market which publicly reports performance and fund characteristics regardless of whether the fund complex is publicly-traded or privately-owned, we can compare the performance and operating efficiency of the product markets and draw conclusions about firm operation without suffering self selection bias on the difficulties of using accounting measures. Our results not only contribute to the evolution of mutual fund operations but have implications for regulators and policy makers as to how to regulate the financial industry.

PART II

CHAPTER 6 INTRODUCTION

In 1999, the U.S. Congress passed the Gramm-Leach-Bliley Financial Services Modernization (GLBA) Act to enhance competition among banks, securities firms, insurance and asset management companies. This legislation also removed some of the key structural barriers built into the U.S. regulatory system for many years and enhanced the potential for conflicts of interest in the financial services industry. For example, Morgan Stanley paid \$52 million in fines in November 2003 for its failure to disclose to investors that its brokers were paid more to sell in-house funds. Other fund scandals such as market timing²⁵ and late trading have resulted in the payment of large fines by Putnam, MFS, and other mutual fund companies to settle charges with their investors.

The issue of whether a conglomerate business model enhances efficiency in financial services or creates opportunities for conflicts of interests remains an important issue under active debate. Numerous studies report that divestitures enhance value. The gain in shareholder wealth from restructuring conglomerates into focused entities has been documented by Comment and Jarrell (1995). John and Ofek (1995) find that an improvement in operating performance for sellers of assets occurs primarily when there is an increase in focus. Maksimovic and Philips (2001) point out that there is a large and active market for corporate assets from sales of individual plants and divisions up to sales of entire corporations. Each year an average of 3.89% of large manufacturing plants changed ownership during 1974 to 1992. After the passage of GLBA act, there has been an increasing level of acquisitions and asset sales activities including mutual funds, among financial institutions.

The trend for financial conglomerates to sell-off mutual fund units is worthy of investigation. For example, Citigroup sold its mutual fund unit to Legg Mason in December 2005. In 2006, Merrill Lynch sold its mutual fund business to BlackRock reflecting the fact that Merrill Lynch, particularly in terms of bond funds, had struggled without gaining improved performance. The asset acquisition has made BlackRock a \$1 trillion money-management powerhouse.

²⁵ Market timing refers to rapid trades in and out of mutual funds to capture short-term market movement, which many funds officially prohibit since it drives up costs for average investors and makes the total portfolio harder to manage.

The latest sale of a mutual fund unit relates to Putnam. Putnam's total assets under management were ranked 4th in the industry prior to the market-timing scandals in 2001. Investors have since withdrawn a net of \$106 billion from Putnam and assets under management dropped to a nine-year low before its parent Marsh and McLennan decided to put the unit up for sale.²⁶ Soon after Putnam's asset sale announcement, Sun Life Financial of Canada retained investment bankers to explore a sale of its mutual fund units, MFS Investment Management.

Hite, Owers, and Rogers (1987) define an asset sell-off as the sale of a subsidiary, division, or other operating assets to a buyer for cash, securities, and/or other future consideration. The literature proposes at least four motives for asset sales: (1) an exit strategy that entails liquidation or sale of unprofitable units (Alexander, Benson, and Kampmeyer (1984), Jain (1985), Brown, James, and Mooradian (1994), and Ofek (1993)); (2) a business strategy of restructuring a parent from a diversified to a focused structure (John and Ofek (1995)); (3) a source of external financing (Lang, Poulsen, and Stulz (1995) (the financing hypothesis), Lang, Stulz, and Walkling (1991), and Bates (2005)); or (4) a simply a reallocation of resources to higher-valued uses (Hite, Owers, and Rogers (1987), (the synergy hypothesis)). Nevertheless, information conveyed by asset sales is difficult to evaluate because asset sales convey news about the value of the asset sold, the parent's intended use of the proceeds, and the selling firm's value. John and Ofek (1995) evaluate the seller's profitability following the divestiture. Maksimovic and Philips (2001) examine sales of individual plants and document that there is an improvement in the efficiency of assets after they are transferred to acquirers.

Jayaraman, Khorana, and Nelling (2002) study the determinants and shareholder wealth effects of mutual fund mergers. They conclude that acquiring fund shareholders suffer a significant deterioration in performances but shareholders of target funds experience significant improvements in postmerger performance as well as a reduction in expense ratios. Since asset sell-offs represent partial acquisitions from the buyer's perspective, the motivations for asset sales are broadly in common with mergers and acquisitions. Thus the transition of funds from diversified to focused management companies via asset sales should enhance management efficiency and performance.

²⁶ According to figures compiled by Bloomberg News and Financial Research Corp in Feb 2006.

Acquiring companies merge funds acquired through asset sales into their existing funds, suggesting the opportunity for an improvement of efficiency, but in practice performance deteriorates after acquisitions. To clarify the performance and managerial efficiency after the asset sales, there is a need to divide the product market into funds that remain stand-alone versus those funds that are merged into buyers' existing funds.

Unlike most of the literature which focuses on firm level transactions and evaluates the announcement window effects of asset sales, this paper examines the product market of all open-end mutual funds to investigate whether a reallocation of resources to higher-valued uses takes place so that fund holder gain from asset sales. Because of the unique regulatory environment of mutual funds, there is extensive public disclosure which allows us to observe fund performance and operating efficiency of the unit even when asset sales involve private fund companies. Using an event window across 10 years, that is from 5 years prior to 5 years after an asset sale, allows us to consider some of the important puzzles in asset sales.

CHAPTER 7 LITERATURE REVIEW AND HYPOTHESES

7.1 Asset Sales

The divestiture literature uniformly agrees that asset sales generate gains to seller firms. Slovin, Sushka, and Polonchek (2005) document that the means of payment in asset sales affects the pattern of returns. Since equity deals are associated with the formation of blockholders, these result asset sales in positive returns to buyers as well as sellers. Overall, they find gains for buyers which are generally insignificant or inconclusive for cash but strongly positive for equity. Using an asymmetric information model, Hege, Lovo, Slovin, and Sushka (2007) show that there are large gains in wealth for both buyers and sellers in equity-based asset sales that do not involve the formation of corporate blockholding while cash deal generate relatively small gains that accrue only to sellers. Without assessing the means of payment, other researchers generally find that asset sales create gains for both buyers and sellers. For example, Alexander, Benson, and Kampmeyer (1984) and Jain (1985) conclude that announcements of partial sell-offs of operations generate positive abnormal returns on the announcement date and that sell-offs generally occur after a period of negative returns prior to the asset sales. Hite, Owers, and Rogers (1987) find that both sellers and bidders earn small positive abnormal returns at the announcement of partial sell-offs. The combined gains for buyers and sellers are consistent with the synergy hypothesis for interfirm tender offers proposed by Bradley, Desai and Kim (1983) who argue that positive returns are due to reallocation of resources to more efficient uses, rather than mispricing as a result of information asymmetry.

Lang, Poulsen, and Stulz (1995) find that there are positive returns to sellers only when they use proceeds to pay off debt (a financing hypothesis), contrary to the synergy rationale used by Hite, Owers, and Rogers (1987). In a related study, Lang, Stulz, and Walkling (1991) argue that bidders with high free cash flow and poor investment opportunities encounter significant negative returns at acquisition announcements. Bates (2005) finds that shareholder returns for firms that retain the cash proceeds from asset sales decisions are positively correlated with growth opportunities and benchmarked investment but are negatively correlated with benchmarked investment for firms with poor growth opportunities.

Lang and Stulz (1994), Berger and Ofek (1995), Servaes (1996), and Lamont and Polk (2002) find that there is conglomerate discount that is on average of 10% to 12% so that diversification appears to destroy shareholder wealth. On the other hand, Williamson (1975) contends that diversification allows firms to allocate their capital internally at lower cost relative to banks and other financial institutions. Stein (1997), and Desai, Foley and Hines (2004) also argue diversified firms can allocate capital more efficiently than external capital markets as a result of information asymmetries. Empirically, John and Ofek (1995) find that asset sales lead to an improvement in sellers' operating performance in the subsequent three years when there is an increase in focus for sellers. More broadly, Comment and Jarrell (1995) document that there is a positive relationship between focus and shareholder returns. Based on these arguments above, we propose our testing hypothesis to be:

H1: Funds suffer poor performance prior to the onset of asset sales.

H2: Funds experience performance improvement and improved efficiency subsequent to the asset sales.

To investigate the outcome for buyers from the asset sales, we use as a database of all U.S registered investment companies that voluntarily announce partial sell-offs of mutual fund units, document their product market performance and efficiency during the transition from sellers to buyers, and shed new light on the evidence about gains to buyers in asset sales.

7.2 Mutual Fund Governance

The SEC has pursued several initiatives to strengthen internal monitoring and governance mechanisms in the mutual fund industry, partly as a result of scandals in the mutual fund industry ranging from market timing to late trading. Among the proposed rules, the SEC would require that the boards of most mutual funds be comprised of at least 75% independent directors and have an independent chair. On June 23rd 2006, a federal appeals court overruled the SEC's proposed rules for the third time in less than a year. Specifically, the court invalidated rules requiring that the boards of most mutual funds be comprised of at least 75% independent directors and have an independent chair. The SEC has reopened the comment period regarding amendments to investment company governance provisions. There have been hearings before committees in

Congress, with industry representatives and regulators testifying as to whether tighter regulations with detailed disclosures are needed, but no legislation has been passed.

Although the SEC has not been able to enforce changes in board governance of mutual funds, Tufano and Sevick (1997) have documented that managerial efficiency with respect to fee structure, is related to board governance. Meschke (2006), Del Guercio, Dann and Partch (2003), and Ding and Wermers (2006) also argue that managerial efficiency and performance are related to the size and independence of the board of directors, indicating that sound governance with independent directors provides more efficient monitoring and reduces agency problems. Based on the governance literature for mutual funds, we propose the following hypothesis:

H3: Fund performance and managerial efficiency (fund characteristics) is associated with the size of the board and the independence of the board for both buyers and sellers from asset sale.

7.3 Ownership

One possible explanation for changes in performance and operational efficiency after asset sales is the change in equity ownership, such as the formation of corporate blockholders and the associated favorable information conveyed about buyers in equity deals as documented in Slovin, Sushka, and Polonchek (2005). Morck, Shleifer and Vishny (1988) conclude that management ownership and Tobin Q have a non-linear relationship. Tobin's Q first rises, then declines, and finally rises again as ownership by the board of directors rises. The positive relationship between management ownership and performance is consistent with the convergence of interests hypothesis (Jensen and Meckling (1976), Leland and Pyle (1977), McConnell and Servaes (1990), Anderson and Reeb (2003), Chen, Goldstein and Jiang (2006), and Khorana, Servaes and Wedge (2007)) while a negative relationship supports the entrenchment hypothesis (Jarrell and Poulson (1987), Stulz (1988), Slovin and Sushka (1993), Yafeh and Yosha (2003), DeAngelo and DeAngelo (1985), Shleifer and Vishny (1997)). Based on these hypotheses, we propose that there is a nonlinear relationship between management ownership and fund performance. Our hypothesis is:

H4: Fund performance exhibits a non-linear relationship with the changes of management ownership surround the asset sale.

The relationship between outside blockholders' ownership and firm value can also be positive or negative. A positive relationship coincides with a monitoring hypothesis, such as Shleifer and Vishny (1986), implying that outside shareholders perform monitoring duties to reduce agency problems. However, large blockholders can reduce managerial initiative and firm values (Burkart, Gromb and Panunzi (1997)). Based on the available evidence, we propose the following hypothesis:

H5: Fund performance might either increase or decrease with the changes of ownership of outside blockholders surround the asset sales.

CHAPTER 8 DATA AND SAMPLE DESCRIPTION

8.1 Data

To obtain data for mutual fund asset sales, we examine asset sales agreements reported in LexisNexis, EBSCOhost, Dow Jones and Associated Press (Factiva) Databases from March 1990 to June 2007. We identify the announcement date of each asset sale as the earliest date found within the collective databases. The effective dates are defined as the date when the relevant mutual fund units are transferred from sellers to the buyers using the same sources from the above. To be included in the sample, each asset sale transaction must involve at least two U.S. registered investment (mutual fund) companies with the seller voluntarily announcing its intent to sell a mutual fund unit to the buyer by transferring full ownership of the mutual fund unit from the seller to the buyer. Fund performance (fee-adjusted returns) and fund characteristic variables, including total net assets under management, expense ratio, portfolio turnover, and manager tenure are extracted from the CRSP Survivor-Free US Mutual Fund Database.

Some buyers' fund families merge the newly-acquired funds associated with asset sales into their existing funds. Consequently, we further split the sample funds into funds that remain stand-alone and funds that are merged after the transition from sellers to buyers.²⁷ It worth noting that the merged funds in our sample might overlap with the cross-family fund mergers sample of Jayaraman, Khorana, and Nelling (2002) who find that acquiring fund shareholders suffer a significant deterioration in fund performance. Since an asset sell-off represents a partial acquisition from the buyers perspective, by splitting the data into two different sub-samples, we should be able to test whether a reallocation of resources to higher-valued uses can generate the efficiency gains in terms of product market (fund) performance from those funds that remain stand-alone after the asset sale. Moreover, disaggregation of the sample might improve our understanding of buyers' intent in reallocating resources after an asset sale. Consequently, the results from asset sales for the two subgroups might be different.

²⁷ An example for a stand-alone fund would be ABN AMRO sell its US mutual fund business to Highbury Financial so an existing ABN AMRO fund named ABN AMRO Growth Fund will be named Aston/ ABN AMRO Growth Fund after the asset sale. An example for a fund merged to the buyer's fund would be Washing Mutual sold its mutual fund units to Principal Financial Group so the WF Growth Fund merged into Principal Financial Group and renamed the merged fund as Principal Investors Large Cap Growth Fund.

To evaluate the effects of fund asset sales, we create a matched sample of fund companies. The matched sample is created from a matched fund family with (1) a similar level of family concentration that is chosen from the absolute minimum difference of number of styles of equity and bond funds managed by the matched family, (2) a similar family size which is chosen from the absolute minimum difference of total net asset managed under the matched families, and (3) a similar fund size with same management style that is chosen from the absolute minimum difference of total net assets for the particular matched fund from the matched fund family with the same Standard & Poor's SI-OBJ code (fund style) at 13 months prior to the onset of an asset sale. For example, if a sample fund is an "Equity USA Aggressive Growth Fund", it will be matched to the same fund type from the matched fund family. We delete those funds that do not have complete information on total net assets and net asset value at 24 months prior to the formation of the matched fund to mitigate backfill bias.

Information on the underlying share ownership of insiders and outsiders as well as the board structure for buyers and sellers and matched sample fund companies is manually collected from proxy statements (DEF 14A) reported on the SEC EDGAR Database from the SEC filing for two years prior and two years after the announcement of the asset sale for both buyers and sellers to analyze how changes of ownership affect fund performance and management efficiency around the asset sale. For private fund companies, board data are manually collected from Forms 485APOS and 485BPOS. Given that there is prior literature that argues that firm value is positively associated with more concentrated ownership (convergence of interests hypothesis), we collect the percentage of shares held by insiders (board of directors and executives as a group) relative to total shares outstanding (in percentage), by insider blocks, and by outsider blocks. To measure other governance related effects, we collect the number of board members, non-independent board members, percentage of independent directors, and whether the chairman of the board is an inside board member.

8.2 Sample Description

In Table 8.1, Panel A reports the number of fund companies engaging in asset sales by year from 1990 through 2007. The total sample includes 21 buyers and 21 sellers with most of the activity clustered in 1994, 2000, 2005 and 2006.

Panel B reports that 62% of the sellers and 71% of the buyers are public companies. Panels C and D show that diversified (banks, insurance companies) and conglomerate financial institutions make up 81% of the sellers. Sixty-seven percent of the buyers, on the other hand, are focused mutual fund companies. In terms of the main business of the asset sale investment companies, 67% of the buyers are mutual fund advisors while more than 80% of the sellers are banks, insurance companies and conglomerates. Thus asset sales involve more assets shifting from diversified financial groups to more focused asset management groups. Panel E, F, G report differences for ownership and board governance variables between buyers and sellers of fund families at

Table 8.1: Descriptive Statistics of Asset Sales from Mutual Fund Companies

This table reports summary statistics of asset sales of mutual fund companies. Data Source is from LexisNexis, EBSCOhost, Dow Jones and Associated Press (Factiva) Databases from March 1990 to June 2007. Panel A reports the distribution of those 21 events (42 mutual fund companies) and 524 funds by the year of announcement.²⁸ Panel B reports the distribution of asset sales by their ownership structure of being public or private of those mutual fund companies. Panel C reports the distribution of asset sales by their organization structure of those mutual fund companies. Panel D reports distribution of asset sales by their main business of those mutual fund companies. Panel E reports ownership variables for both buyers (B) and sellers (S) at two fiscal years prior and two fiscal years post during the onset of asset sales. Insider holding measures percentage of shares holding for board of directors and executives as defined in the proxy statement. Sum of 1% above insider blocks aggregates inside blockholders who own more than 1% outstanding common shares of the firms. Sum of 5% above outsider blocks aggregate institutions and non-insiders who own more than 5% outstanding common shares of the firms. Ownership data is collected from the proxy statement (DEF 14A) from the SEC filing. Panel F reports board governance variables for both buyers (B) and sellers (S) at two fiscal years prior and two fiscal years post during the onset of asset sales. Number of total directors measures board size. Number of independent directors and number of non-independent directors measure directors who are independent from the operations of the firm or not associated with the firms as defined in the SEC filing. Board governance data is collected from form 485APOS and Form 485BPOS from the SEC filing. Panel G reports differences in means and medians for board governance and ownership variables for both buyers (B) and sellers (S) by using variables from two fiscal years post subtract two fiscal year prior to the onset of asset sales. Panel H reports differences on means and medians between sample and matched samples (M) for the ownership variables at two fiscal year prior (for sellers) and two fiscal year post (for buyers) to the onset of asset sales. The matched sample is created from a matched fund family with (1) a similar level of family concentration (the absolute minimum difference of number of styles of equity and bond funds managed by the matched family), (2) a similar family size (the absolute minimum difference of total net asset among matched families), and (3) a similar fund size with same management style (the absolute minimum difference of total net asset for the particular matched fund from the matched fund family with same SI-OBJ code (fund style)) at 13 months prior to the onset of asset sales. Panel I reports differences on means and medians between sample funds (for both buyers (B) and sellers (S)) and matched sample funds (M) for the governance variables at two fiscal year prior (for sellers) and post (for buyers) to the onset of asset sales. P-values are in parentheses. Statistical significance is indicated by * at the 10% level, ** at 5% level, and *** at the 1% level.

table continued

²⁸ Number of funds in this panel is reported base on the time of announcement. For the assessment of fund performance and characteristics in the later tables, we exclude funds with missing data thus reduce the sample to 387 funds at the time of the announcement.

Panel A : Distribution of Events and Funds at the Announcement of Asset Sales by Year

Year of the announcement	Number of events of asset sale	Number of funds involved
2007	1	66
2006	4	135
2005	3	113
2004	1	21
2003	1	8
2002	1	33
2000	3	40
1997	1	2
1996	1	7
1994	3	68
1993	1	7
1990	1	24
1990-2007	21	524

Panel B : Distribution of Asset Sales by Ownership Structure of Mutual Fund Companies

	Number of Sellers (%)	Number of Acquirers (%)
Public fund companies	13 (61.90%)	15 (71.43%)
Private fund companies	8 (38.10%)	6 (28.57%)

Panel C : Distribution of Asset Sales by Organization Structure of Mutual Fund Companies

	Number of Sellers (%)	Number of Acquirers (%)
Focused fund companies	4 (19.05%)	14 (66.67%)
Diversified fund companies	17 (80.95%)	7 (33.33%)

Panel D : Distribution of Asset Sales by Mutual Fund (Parent) Companies' Main Business

	Number of Sellers (%)	Number of Acquirers (%)
Mutual fund advisors	4 (19.05%)	14 (66.67%)
Banks	7 (33.33%)	3 (14.29%)
Insurance companies	7 (33.33%)	3 (14.29%)
Conglomerates and others	3 (14.29%)	1 (4.76%)
Total number of firms	21 (100%)	21 (100%)

Panel E : Ownership Structure between Buyers (B) and Sellers (S)

Buyers (B) and Sellers (S)	Mean			Median		
	(B)	(S)	Differences (B)-(S)	(B)	(S)	Differences (B)-(S)
<u>A. Year=-2</u>						
Insider holding	0.1019	0.0149	0.0707* (0.0533)	0.0405	0.0100	0.0176** (0.0186)
Sum of 1% above inside blocks	0.0564	0.0102	0.0474* (0.0809)	0.0176	0.0100	0.0100** (0.0313)
Sum of 5% above outside blocks	0.1034	0.0573	0.0571 (0.1218)	0.0686	0.0100	0.0404* (0.0591)

table continued

<u>B. Year=+2</u>						
Insider holding	0.0960	0.0225	0.0602*	0.0288	0.0130	0.0010
			(0.0707)			(0.1377)
Sum of 1% above inside blocks	0.0550	0.0129	0.0446*	0.0142	0.0100	0.0000
			(0.0938)			(0.1250)
Sum of 5% above outside blocks	0.1028	0.0529	0.0586*	0.0680	0.0560	0.0160*
			(0.0643)			(0.0737)

Panel F : Board Governance Structure between Buyers (B) and Sellers (S)

Buyers (B) and Sellers (S)	Mean			Median		
	(B)	(S)	Differences (B)-(S)	(B)	(S)	Differences (B)-(S)
<u>A. Year=-2</u>						
Number of total directors	11.6667	10.7778	0.8889	11.0000	10.0000	1.0000
			(0.3085)			(0.2788)
Number of independent directors	7.8889	8.7222	-0.8333	7.5000	8.0000	-2.5000
			(0.2762)			(0.2041)
Number of non-independent directors	3.7222	2.0556	1.6667**	3.0000	2.0000	1.5000***
			(0.0385)			(0.0061)
Ratio of independent directors	0.6305	0.8212	-0.1907***	0.6458	0.8000	-0.1750***
			(0.0026)			(0.0027)
<u>B. Year=+2</u>						
Number of total directors	11.1111	10.8889	0.2222	11.5000	10.0000	1.0000
			(0.4331)			(0.3179)
Number of independent directors	7.9444	8.6667	-0.7222	7.5000	8.0000	-2.0000
			(0.2911)			(0.3201)
Number of non-independent directors	3.1667	2.2222	0.9444	2.5000	2.0000	1.0000
			(0.1810)			(0.1323)
Ratio of independent directors	0.6771	0.8134	-0.1363**	0.7143	0.8333	-0.1190*
			(0.0453)			(0.0770)

Panel G : Ownership and Governance Variables from 2 Years Post Minus 2 Years Prior for Both Buyers (B) and Sellers (S)

Buyers (B), Sellers (S)	Mean		Median	
	(S)	(B)	(S)	(B)
<u>A. Ownership structure</u>				
Insider holding	0.0076	-0.0058	0.0030**	-0.0061*
	(0.1341)	(0.2758)	(0.0488)	(0.0757)

table continued

Sum of 1% above inside blocks	0.0027** (0.0433)	-0.0014 (0.3226)	0.0000** (0.0469)	-0.0015* (0.0977)
Sum of 5% above outside blocks	-0.0044 (0.4147)	-0.0007 (0.4672)	0.0000 (0.2734)	-0.0018 (0.1167)
B. Board governance structure				
Number of total directors	0.1111 (0.4162)	-0.5556* (0.0580)	0.0000 (0.4259)	-0.5000** (0.0435)
Number of independent directors	-0.0566 (0.4477)	-0.0566 (0.4486)	0.0000 (0.5000)	0.0000 (0.4707)
Number of non-independent directors	0.1667 (0.2641)	-0.5556** (0.0185)	0.0000 (0.5000)	0.0000** (0.0283)
Ratio of independent directors	-0.0078 (0.3464)	0.0466* (0.0667)	0.0000 (0.4250)	0.0448* (0.0938)

Panel H : Ownership Structure between Sellers (S), Buyers (B) and Matched Sample (M)

Buyers (B), Sellers (S), and Matched (M)	Mean		Median	
	(S)-(M)	(B)-(M)	(S)-(M)	(B)-(M)
A. Year=-2				
Insider holding	-0.0913*** (<0.001)	-0.0392 (0.1069)	-0.0097*** (0.0017)	0.0000 (0.2666)
Sum of 1% above inside blocks	-0.0384*** (0.0016)	-0.0234** (0.0410)	-0.0015*** (<0.001)	0.0000 (0.1782)
Sum of 5% above outside blocks	-0.0606** (0.0333)	0.1102*** (0.0045)	-0.0255** (0.0156)	0.0400** (0.0113)
B. Year=+2				
Insider holding	-0.0720*** (0.0015)	-0.0331* (0.0980)	-0.0036*** (0.0033)	0.0050 (0.3448)
Sum of 1% above inside blocks	-0.0282*** (0.0033)	-0.0160* (0.0568)	0.0000*** (0.0035)	0.0000 (0.2385)
Sum of 5% above outside blocks	-0.0367 (0.1190)	0.1156*** (0.0016)	-0.0005 (0.1963)	0.0479*** (0.0036)

Panel I : Governance Structure between Sellers (S), Buyers (B) and Matched Sample (M)

Buyers (B), Sellers (S), and Matched (M)	Mean		Median	
	(S)-(M)	(B)-(M)	(S)-(M)	(B)-(M)
A. Year=-2				
Number of total directors	1.5429*** (0.0013)	2.7429*** (<0.001)	1.0000*** (<0.001)	4.0000*** (<0.001)

table continued

Number of independent directors	1.9619*** (<0.001)	1.1238*** (0.0076)	2.0000*** (<0.001)	1.0000*** (0.0096)
Number of non-independent directors	-0.4095** (0.0269)	1.5619*** (<0.001)	0.0000*** (<0.001)	1.0000*** (<0.001)
Ratio of independent directors	0.0856*** (<0.001)	-0.1082*** (<0.001)	0.0833*** (<0.001)	-0.0667*** (<0.001)
B. Year=+2				
Number of total directors	1.5429*** (<0.001)	2.0095*** (<0.001)	1.0000*** (<0.001)	3.0000*** (<0.001)
Number of independent directors	1.7429*** (<0.001)	1.2857*** (0.0038)	2.0000*** (<0.001)	1.0000*** (0.0028)
Number of non-independent directors	-0.2000 (0.1863)	0.7238*** (0.0033)	0.0000*** (0.0027)	0.0000** (0.0307)
Ratio of independent directors	0.0682*** (<0.001)	-0.0389* (0.0525)	0.0692*** (<0.001)	0.0000 (0.1539)

two years prior and two years post relative to the asset sales, and the differences are also reported. Buyers have a higher percentage of insiders holdings as well as a larger percentage of shares held by insider blocks and outsider blocks, relative to sellers at both 2 years prior and 2 years after the asset sale (Panel E). On the other hand, buyers have a higher percentage of non-independent directors (Panel F). During the four years span (Panel G), buyers reduce their board size while increasing their percentage of independent director members. Panels H and I compare the ownership and governance variables from sample fund families to matched sample's during the two years prior and post of asset sales. The results show that seller fund families have a smaller percentage of shares held by insiders. Seller fund families also have a smaller percentage of shares held by insider blocks, a smaller percentage of shares held by outsider blocks, larger boards, and a higher ratio of independent directors at both two years prior and two years after asset sales when compared to the matching fund families. Buyer fund families have a larger percentage of shares hold by outsider blocks, larger boards, and a lower ratio of independent directors at both two years prior and two years after an asset sale when compared to the matching fund families.

Table 8.2 Panels A, B, and C report descriptive statistics for fund performance and fund characteristics prior to the asset sales for sample, matched sample, and sample

minus matched sample funds. Two asset sales announced in 2006 and one case in 2007 are still pending, involving 90 separate funds, are not included in our sample. The final sample consists of 387 open-end mutual funds with 180 domestic equity funds, 25 international equity funds, 76 taxable bond funds, and 106 tax-free bond funds. Prior to asset sales, sample funds demonstrate lower performance, larger fund size (total net asset), lower portfolio turnover, and higher manager tenure when compared to the matched funds, although the differences are not statistically significant. The expense ratio is lower in domestic equity funds and tax-free bond funds prior to the asset sale.

Table 8.2: Descriptive Statistics for Funds from Sellers of the Asset Sales

This table compares sample (Panel A) and matched sample (Panel B) funds and reports statistics for means and medians (in parentheses) for each sample, matched sample, and their differences (Panel C) for all equity (domestic equity funds (DEF) and international equity funds (IEF)) and bond funds (taxable bond funds (TBF) and tax-free bond funds (TFF)) prior to the onset of asset sales of sample funds' management companies. Sample period is from March 1990 to June 2007. Data source is from CRSP Survivor Bias Free US Mutual Fund Database. The fee and market-adjusted buy and hold return (FMBHR) is calculated for funds over a 12 months cumulative return from 12-month prior to 1-month prior to the announcement date of asset sales of their fund families. Market indices for equity funds and bond funds are S&P 500 index and 30-day Treasury bill respectively. Total net assets measure total assets under management net of liabilities. It is reported in millions of dollars at 1-month (a monthly reported variable) prior to asset sales. Expense ratio measures fund's annual expenses as a percentage of AUM (asset under management). It is reported 12-months (an annual reported variable) prior to the asset sale. Portfolio turnover is reported 12-months (an annual reported variable) prior to the asset sale. Manager tenure is measured 1-month (a monthly reported variable) prior to the asset sales. The matched sample is created from a matched fund family with (1) a similar level of family concentration (the absolute minimum difference of number of styles of equity and bond funds managed by the matched family), (2) a similar family size (the absolute minimum difference of total net asset among matched families), and (3) a similar fund size with same management style (the absolute minimum difference of total net asset for the particular matched fund from the matched fund family with same SI-OBJ code (fund style)) at 13 months prior to the onset of asset sales. Numbers are reported in means while medians are reported in parentheses. Statistical significance is indicated by * at the 10% level, ** at 5% level, and *** at the 1% level.

Panel A : Sample

Funds Characteristics	Equity Funds		Bond Funds		All Funds N=387
	DEF N=180	IEF N=25	TBF N=76	TFF N=106	
FMBHR (%) $t-12$ to $t-1$	3.6955 (1.3675)	12.8582 (5.5474)	3.1364 (0.6628)	-1.1240 (-0.4985)	2.8575 (0.3961)
Total net assets (millions) $t-1$	387.6343 (89.1000)	226.3124 (41.9000)	235.0692 (52.2000)	182.0969 (63.4000)	292.4541 (69.9000)
Expense ratio (%) $t-12$	1.3686 (1.3000)	1.6500 (1.5600)	1.2150 (1.1100)	0.9621 (0.8700)	1.2417 (1.2000)
Portfolio turnover $t-12$	0.7417 (0.6300)	0.7785 (0.7000)	1.0828 (0.7500)	0.6394 (0.3078)	0.7765 (0.5400)
Manager tenure (months) $t-1$	69.6221 (69.0000)	69.3333 (77.0000)	57.1515 (44.5000)	94.9036 (92.0000)	73.2986 (70.0000)

table continued

Panel B : Matched

Funds Characteristics	Equity Funds		Bond Funds		All Funds N=387
	DEF N=180	IEF N=25	TBF N=76	TFF N=106	
FMBHR (%) t_{-12} to t_{-1}	7.6348 (1.9750)	12.0526 (7.2629)	4.8020 (2.5258)	-0.8094 (-0.2132)	4.8756 (1.2359)
Total net assets (millions) t_{-1}	237.0489 (83.4000)	234.0156 (31.3540)	144.1021 (50.0500)	148.0760 (55.5500)	191.1676 (62.0000)
Expense ratio (%) t_{-12}	1.5467 (1.4350)	1.6935 (1.7500)	1.1867 (1.1250)	1.1410 (1.0200)	1.3602 (1.2650)
Portfolio turnover t_{-12}	0.7358 (0.5800)	1.0113 (0.8218)	0.9808 (0.5975)	0.6965 (0.3300)	0.7962 (0.5450)
Manager tenure (months) t_{-1}	65.2768 (55.0000)	63.1176 (62.0000)	62.4074 (48.0000)	77.2917 (72.0000)	67.9176 (59.0000)

Panel C : Sample Minus Matched

Funds Characteristics	Equity Funds		Bond Funds		All Funds N=387
	DEF N=180	IEF N=25	TBF N=76	TFF N=106	
FMBHR (%) t_{-12} to t_{-1}	-2.7909 (-0.1922)	4.4618 (-0.9290)	-1.1380 (-0.2756)	-0.1571 (-0.0252)	-1.2161 (-0.1790)
Total net assets (millions) t_{-1}	47.6239 (1.8000)*	56.5144 (1.9180)	66.3209 (-13.4500)	21.2337 (-1.5000)	44.4868 (0.0345)
Expense ratio (%) t_{-12}	-0.1978*** (-0.1000)***	-0.0165 (-0.0700)	0.0567 (0.2350)	-0.2391*** (-0.1900)***	-0.1447*** (-0.1300)***
Portfolio turnover t_{-12}	-0.0195 (0.0631)	-0.1655 (-0.0248)	0.1008 (0.2333)	-0.1151 (-0.0700)	-0.0336 (0.0000)
Manager tenure (months) t_{-1}	4.1792 (6.5000)	1.6471 (9.0000)	2.3830 (-3.0000)	11.9322 (14.0000)	5.6201 (7.0000)

CHAPTER 9 EMPIRICAL ANALYSIS

9.1 Univariate Analysis

Table 9.1 reports CARs for buyers and sellers over the announcement period for asset sales between firms listed on NYSE/ASE/Nasdaq. The buyers sustain large shareholder gains of 3.24% during a two-day period and 3.72% during a three-day period, both significant at the 1% level. Although sellers' excess returns are insignificant except for the two-day CAR of 0.32% at the 10% significant level, the combined gains are significant at the announcement. Although large gains to buyers are uncommon in the prior asset sales literature, this result is at least partially due to the fact that means of payments of the mutual fund companies are largely equity-based asset sales.²⁹ This point is consistent with prior literature as Slovin, Sushka, and Polonchek (2005), and Hege, Lovo, Slovin, and Sushka (2007) document that large gains are associated with equity deal for buyers relative to cash deal. The increase in value is consistent with the hypothesis that there are efficiency gains from a reallocation of resources to higher-valued uses, consistent with Hite, Owers, and Rogers (1987).

Table 9.1: Excess Returns for Buyers and Sellers at Asset Sales

This table reports two-day (-1, 0) and three-day (-1, +1), (-2, 0) average excess returns (CAR) in percentage at announcements of asset sales for buyers and seller mutual fund companies listed on NYSE/ASE/Nasdaq, using market model methodology. T-values are in parentheses and N is number of funds during the sample period. Positive / Negative represents number of positive and negative observation. Statistical significance is indicated by * at the 10% level, ** at 5% level, and *** at the 1% level. Day 0 is the date of the announcement date first appeared in the LexisNexis, EBSCOhost, Dow Jones and Associated Press (Factiva) Databases during March 1990 to June 2007. Market model parameters are estimated using least squares over the pre-event period, $t = -255$ to -43 .

Days	Sellers CAR	Positive /Negative	Buyers CAR	Positive /Negative
(-1, +1)	0.22%	7:4	3.24%	7:4
	(1.003)		(3.897)***	
(-1, 0)	0.29%	8:3	3.24%	8:3
	(1.606)*		(4.760)***	
(-2, 0)	0.31%	6:5	3.72%	7:4
	(0.400)		(4.463)***	

²⁹ Six out of the eight firms with identified means of payments are associated with equity deals.

Table 9.2 Panels A, B, C, and D report fee and market-adjusted buy and hold returns and alphas from one, three, and four factor model for seller funds prior to the asset sales of their fund companies. For both domestic equity funds and bond funds, we observe that selling funds underperform across one, two, three, four, and five-year periods prior to the onset of asset sales. We conclude that prior to the onset of asset sales,

Table 9.2: Performance (Sample Minus Matched Sample) prior to Asset Sales

This table reports differences on sample minus matched sample funds from the sellers with four performance measurements (in percentage) prior to the asset sale. The results of fee and market-adjusted buy and hold (cumulative) returns for domestic equity funds³⁰ and bond funds are reported in Panel A. Market indices for domestic equity funds and bond funds are S&P 500 index and 30-day Treasury bill respectively. The results of one-factor-loading alpha (Sharpe (1964)), three-factor-loading alpha (Fama and French (1993)), and four-factor-loading alpha (Jegadeesh and Titman (1993)) for domestic equity funds are reported in Panel B, Panel C, and Panel D, respectively. The matched sample is created from a matched fund family with (1) a similar level of family concentration (the absolute minimum difference of number of styles of equity and bond funds managed by the matched family), (2) a similar family size (the absolute minimum difference of total net asset among matched families), and (3) a similar fund size with same management style (the absolute minimum difference of total net asset for the particular matched fund from the matched fund family with same SI-OBJ code (fund style)) at 13 months prior to the observation period. The sample period is from March 1990 through June 2007 and the performance is measured from five fiscal years, benchmarked in year -5 to one fiscal year prior to the onset of asset sales, benchmarked in year -1. The sample size (in the one year prior to the asset sale, (-1), measurement) is different from previous table (Table II) is due to the matched sample procedure might not exactly find a matched fund or a matched fund might suffer data missing during the sample period. P-values are in parentheses and N is number of funds during the sample period. Statistical significance is indicated by * at the 10% level, ** at 5% level, and *** at the 1% level.

Panel A : Fee and Market-Adjusted Buy and Hold Returns

Year	(-5, -1)	(-4, -1)	(-3, -1)	(-2, -1)	(-1)
<u>A. Domestic Equity Funds</u>					
Mean	-13.6900 (0.1237)	-6.7514 (0.2148)	-6.5952 * (0.0669)	-4.1852** (0.0407)	-2.7909 (0.3371)
Median	-6.5985 (0.1639)	-2.4350 (0.2181)	-5.3142 * (0.0505)	-1.3258 (0.1105)	-0.1922 (0.7550)
N	44	55	68	88	116
<u>B. Bond Funds</u>					
Mean	-0.5420 (0.6928)	-0.6805 (0.5422)	-1.8681 ** (0.0460)	-1.0760** (0.0460)	-0.5826 (0.1128)
Median	-0.3069 (0.3528)	-0.7032 (0.1510)	-0.9134 ** (0.0106)	-0.2905** (0.0385)	-0.1601 (0.1146)
N	61	65	77	103	136

table continued

³⁰ We exclude international equity funds from this analysis due to the limited sample size.

Panel B : Alpha from One-Factor Model

Year	(-5, -1)	(-4, -1)	(-3, -1)	(-2, -1)	(-1)
<u>A. Domestic Equity Funds</u>					
Mean	-0.1109 (0.1555)	-0.1191** (0.0499)	-0.1527** (0.0265)	-0.1367** (0.0288)	-0.0942 (0.4872)
Median	-0.1434* (0.0699)	-0.1008** (0.0470)	-0.0788** (0.0314)	-0.0467* (0.0842)	-0.0148 (0.6954)
N	44	55	68	88	116

Panel C : Alpha from Three-Factor Model

Year	(-5, -1)	(-4, -1)	(-3, -1)	(-2, -1)	(-1)
<u>A. Domestic Equity Funds</u>					
Mean	-0.1324** (0.0207)	-0.1201** (0.0124)	-0.1402*** (0.0036)	-0.1531*** (0.0035)	-0.1696* (0.0728)
Median	-0.0932** (0.0218)	-0.0711** (0.0280)	-0.1054*** (0.0076)	-0.0988*** (0.0039)	-0.0632 (0.1405)
N	44	55	68	88	116

Panel D : Alpha from Four-Factor Model

Year	(-5, -1)	(-4, -1)	(-3, -1)	(-2, -1)	(-1)
<u>A. Domestic Equity Funds</u>					
Mean	-0.0843* (0.0835)	-0.0772* (0.0555)	-0.1312*** (0.0039)	-0.1271** (0.0115)	-0.1062 (0.2854)
Median	-0.0768 (0.1081)	-0.0473 (0.1102)	-0.1038*** (0.0046)	-0.0904** (0.0119)	-0.0380 (0.3371)
N	44	55	68	88	116

there is negative performance relative to competitors which is likely to be at least in part a reason triggering the sellers to offer their mutual fund units to the market for sale.

Table 9.3 Panels A and B disaggregate the funds acquired by buyers into stand-alone funds and merged funds. We report fee and market-adjusted buy and hold returns for domestic equity funds and bond funds at one, two, three, and four years post minus one year prior to the asset sale. Domestic equity funds in Panel A show significant deterioration in performance after the asset sale, particularly for merged funds. Bond funds (Panel B), on the other hand, show improved performance after the asset sale. There is evidence of enhanced performance at three and four years when compared to the year prior to the asset sale.

Table 9.3: Performance Subsequent to Asset Sales

This table reports fee and market-adjusted buy and hold returns (in percentage) for domestic equity funds (Panel A) and bond funds (Panel B) subsequent to one fiscal year prior to the onset of asset sales, benchmarked in year -1, over the sample period of March 1990 through June 2007. Market indices for domestic equity funds and bond funds are S&P 500 index and 30-day Treasury bill respectively. Sample is sub-grouped into all cases, stand-alone fund (S), fund being merged to buyers' existing funds (M), and differences from (S) minus (M) during the observation period. An example for a stand-alone fund would be ABN AMRO sell its US mutual fund business to Highbury Financial so an existing ABN AMRO fund named ABN AMRO Growth Fund will be named Aston/ ABN AMRO Growth Fund after the asset sale. An example for a fund merged to the buyer's fund would be Washing Mutual sold its mutual fund units to Principal Financial Group so the WF Growth Fund merged into Principal Financial Group and renamed Principal Investors Large Cap Growth Fund. Sample size reduces throughout those years is due to several events occurred relatively recent. P-values are in parentheses and N is number of funds during the sample period. Statistical significance is indicated by * at the 10% level, ** at 5% level, and *** at the 1% level.

Panel A : Domestic Equity Funds

Year	(-1, +1)	(-1, +2)	(-1, +3)	(-1, +4)
<u>A. All Cases</u>				
Mean	-11.4031** (0.0190)	-10.7927*** (<0.001)	-11.6610*** (<0.001)	-12.9123*** (<0.001)
Median	-2.9660*** (<0.001)	-6.1567*** (<0.001)	-8.1316*** (<0.001)	-11.2552*** (<0.001)
N	115	62	59	50
<u>B. Stand-alone Funds after Asset Sales (S)</u>				
Mean	-10.3431 (0.2033)	-4.2800* (0.0902)	-4.2333 (0.2855)	-2.5290 (0.4624)
Median	-2.0873*** (0.0052)	-5.2856* (0.0723)	-1.8488* (0.0532)	-5.4289 (0.5798)
N	63	21	20	18
<u>C. Funds Being Merged to Buyers' Existing Funds (M)</u>				
Mean	-12.6872*** (0.0044)	-14.1285*** (<0.001)	-15.4701*** (0.0012)	-18.7529*** (<0.001)
Median	-5.6736*** (0.0079)	-9.7535*** (<0.001)	-10.2697*** (<0.001)	-18.8208*** (<0.001)
N	52	41	39	32
<u>D. Differences (S-M)</u>				
Mean	2.3441 (0.3987)	9.8485** (0.0172)	11.2368** (0.0301)	16.2239*** (0.0038)
Median	3.5863 (0.1077)	4.4680* (0.0646)	8.4209** (0.0384)	13.3919** (0.0121)

table continued

Panel B : Bond Funds

Year	(-1, +1)	(-1, +2)	(-1, +3)	(-1, +4)
<u>A. All Cases</u>				
Mean	1.1011 (0.3929)	1.9049 (0.1577)	6.6911*** (<0.001)	6.5857*** (<0.001)
Median	0.7397** (0.0445)	2.7692** (0.0216)	8.9941*** (<0.001)	6.3738*** (<0.001)
N	118	65	55	53
<u>B. Stand-alone Funds after Asset Sales (S)</u>				
Mean	1.0894 (0.5175)	-1.5817 (0.6745)	8.0294** (0.0341)	6.2773*** (0.0082)
Median	1.1231*** (<0.001)	1.4637 (0.9632)	10.1508** (0.0398)	4.9949*** (0.0020)
N	57	17	13	10
<u>C. Funds Being Merged to Buyers' Existing Funds (M)</u>				
Mean	1.1119 (0.5695)	3.1398*** (0.0137)	6.2769*** (0.0013)	6.6574*** (<0.001)
Median	-0.0400 (0.8176)	3.2178*** (0.0020)	6.3453*** (<0.001)	7.5314*** (<0.001)
N	61	48	42	43
<u>D. Differences (S-M)</u>				
Mean	-0.0225 (0.4965)	-4.7215 (0.1199)	1.7525 (0.3214)	-0.3800 (0.4484)
Median	1.1631* (0.0611)	-1.7541 (0.1498)	3.8055 (0.2663)	-2.5365 (0.4955)

Table 9.4 Panels A, B, and C disaggregate the funds acquired by buyers into stand-alone funds and merged. We report one, three, and four factor-loading performance measures for domestic equity funds at one, two, three, and four years after the sale minus one year prior to the asset sale for a robustness check. The funds being merged into buyers' existing funds consistently demonstrate poorer performance subsequent to asset sale. Stand-alone funds, on the other hand, although showing a deteriorating performance subsequent to the asset sale for years one and two, begin to show improved performance after year three and four relative to one year prior to the asset sale. Panel B and C show that starting in the fourth year, performance of stand-alone funds becomes positive compared to one year prior to the asset sale for the three and four factor loading analysis. Merged funds show persistent deterioration in performance subsequent to the asset sale regardless of the performance measure reported.

Table 9.4: Factor-loading Performance Subsequent to Asset Sales

This table reports factor-loading (one-factor, Sharpe (1964); three-factor, Fama and French (1993); four-factor, Jegadeesh and Titman (1993) respectively in Panel A, B, and C) performance measure (in percentage) for domestic equity funds subsequent to one fiscal year prior to the asset sales, benchmarked in year -1, over the sample period of March 1990 through June 2007. Sample is sub-grouped into all cases, stand-alone fund (S), fund being merged to buyers' existing funds (M), and differences from (S) minus (M) during the observation period. Sample size reduces throughout those years is due to several events occurred relatively recent. P-values are in parentheses and N is number of funds during the sample period. Statistical significance is indicated by * at the 10% level, ** at 5% level, and *** at the 1% level.

Panel A : Alpha from One-Factor Model

Year	(-1, +1)	(-1, +2)	(-1, +3)	(-1, +4)
<u>A. All Cases</u>				
Mean	-0.6708** (0.0476)	-0.6706*** (<0.001)	-0.5586** (0.0104)	-0.6065*** (0.0058)
Median	-0.1377*** (0.0050)	-0.3844*** (<0.001)	-0.2289*** (0.0046)	-0.2196** (0.0252)
N	115	62	59	50
<u>B. Stand-alone Funds after Asset Sales (S)</u>				
Mean	-0.6594 (0.2653)	-0.3606* (0.0549)	0.1987 (0.3396)	0.0216 (0.9000)
Median	-0.0615 (0.1664)	-0.1368 (0.1337)	0.0478 (0.3884)	-0.1439 (0.9323)
N	63	21	20	18
<u>C. Funds Being Merged to Buyers' Existing Funds (M)</u>				
Mean	-0.6847*** (0.0029)	-0.8294*** (0.0015)	-0.9469*** (0.0019)	-0.9599*** (0.0030)
Median	-0.3677*** (0.0076)	-0.5484*** (0.0016)	-0.5371*** (<0.001)	-0.5825*** (0.0076)
N	52	41	39	32
<u>D. Differences (S-M)</u>				
Mean	0.0253 (0.4840)	0.4688* (0.0619)	1.1456*** (<0.001)	0.9815*** (0.0032)
Median	0.3062* (0.0501)	0.4117 (0.1595)	0.5848*** (<0.001)	0.4386** (0.0385)

table continued

Panel B : Alpha from Three-Factor Model

Year	(-1, +1)	(-1, +2)	(-1, +3)	(-1, +4)
<u>A. All Cases</u>				
Mean	-0.1663 (0.1404)	-0.1891 (0.1715)	-0.2858* (0.0604)	-0.1345 (0.5075)
Median	-0.0460 (0.1226)	-0.0470 (0.2761)	-0.1992 (0.1404)	-0.0386 (0.8903)
N	115	62	59	50
<u>B. Stand-alone Funds after Asset Sales (S)</u>				
Mean	0.0820 (0.5628)	-0.2144 (0.2031)	0.0753 (0.7112)	0.3414* (0.0631)
Median	0.0045 (0.8710)	-0.0664 (0.3168)	0.1903 (0.5706)	0.4755* (0.0987)
N	63	21	20	18
<u>C. Funds being Merged to Buyers' Existing Funds (M)</u>				
Mean	-0.4671*** (0.0089)	-0.1762 (0.3605)	-0.4709** (0.0213)	-0.4022 (0.1769)
Median	-0.2566** (0.0471)	-0.0245 (0.5619)	-0.3259** (0.0345)	-0.4213 (0.2767)
N	52	41	39	32
<u>D. Differences (S-M)</u>				
Mean	0.5491*** (0.0070)	-0.0382 (0.4397)	0.5462** (0.0415)	0.7436** (0.0164)
Median	0.2611* (0.0537)	-0.0419 (0.2469)	0.5162** (0.0398)	0.8968** (0.0402)

table continued

Panel C : Alpha from Four-Factor Model

Year	(-1, +1)	(-1, +2)	(-1, +3)	(-1, +4)
<u>A. All Cases</u>				
Mean	-0.3520 (0.2479)	-0.2151 (0.1711)	-0.2680* (0.0642)	-0.2034 (0.2911)
Median	-0.0459 (0.2922)	-0.0112 (0.4555)	-0.0798 (0.1246)	-0.1164 (0.6375)
N	115	62	59	50
<u>B. Stand-alone Funds after Asset Sales (S)</u>				
Mean	-0.5485 (0.3087)	-0.1536 (0.3416)	0.0606 (0.7427)	0.4119** (0.0478)
Median	-0.0395 (0.3814)	-0.0376 (0.4684)	0.0834 (0.7562)	0.4760* (0.0539)
N	63	21	20	18
<u>C. Funds Being Merged to Buyers' Existing Funds (M)</u>				
Mean	-0.1138 (0.5236)	-0.2466 (0.2728)	-0.4366** (0.0268)	-0.5495** (0.0425)
Median	-0.1061 (0.5651)	-0.0069 (0.6604)	-0.2526** (0.0414)	-0.5069* (0.0784)
N	52	41	39	32
<u>D. Differences (S-M)</u>				
Mean	-0.4347 (0.2212)	0.0930 (0.3668)	0.4972** (0.0320)	0.9614*** (0.0023)
Median	0.0665 (0.4430)	-0.0307 (0.3830)	0.3360* (0.0880)	0.9829*** (0.0093)

Table 9.5 Panels A and B report robustness tests comparing the sample funds acquired by buyers to matched sample funds at one, two, three and four years subsequent to the one year prior to the asset sale for fee and market-adjusted buy and hold returns, for one, three, and four factor models.³¹ Since the earlier result of poorer post performance for the domestic equity funds is puzzling, we create a matched sample to compare performance controlling for fund style, fund size, family diversified level, and family asset size to reevaluate the performance subsequent to asset sales for both domestic equity and bond funds. The results show that during the one year after the asset sale, funds acquired by the buyers generate positive returns (alphas) when compared to one year prior to the asset sale.

³¹ We have documented earlier how we choose matched sample fund families and their funds.

Table 9.5: Performance (Sample Minus Matched Sample) Subsequent to Asset Sales

This table reports differences in performance measurements (in percentage) between sample and matched sample funds subsequent to the asset sale. Fee and market-adjusted buy and hold returns are reported in Panel A for domestic equity funds and bond funds while one-factor-loading alpha (Sharpe (1964)), three-factor-loading alpha (Fama and French (1993)), and four-factor-loading alpha (Jegadeesh and Titman (1993)) for domestic equity funds are reported in Panel B. The matched sample is created from a matched fund family with (1) a similar level of family concentration (the absolute minimum difference of number of styles of equity and bond funds managed by the matched family), (2) a similar family size (the absolute minimum difference of total net asset among matched families), and (3) a similar fund size with same management style (the absolute minimum difference of total net asset for the particular matched fund from the matched fund family with same SI-OBJ code (fund style)) at 13 months prior to the onset of asset sales. The sample period is from March 1990 through June 2007 subsequent to one fiscal year prior to the onset of asset sales, benchmarked in year -1. P-values are in parentheses. Statistical significance is indicated by * at the 10% level, ** at 5% level, and *** at the 1% level.

Panel A : Fee and Market-Adjusted Buy and Hold Returns

Year	(-1, +1)	(-1, +2)	(-1, +3)	(-1, +4)
<u>A. Domestic Equity Funds</u>				
Mean	9.0299* (0.0824)	0.6113 (0.8700)	-3.3062 (0.4728)	6.3213 (0.2649)
Median	3.1927*** (0.0050)	0.1262 (0.8100)	-1.0840 (0.8419)	5.3757* (0.0769)
<u>B. Bond Funds</u>				
Mean	1.4453** (0.0101)	0.5940 (0.4617)	0.2114 (0.7677)	-0.4302 (0.5932)
Median	1.0331*** (0.0048)	-0.0259 (0.9442)	0.0268 (0.7333)	-0.2486 (0.4194)

Panel B : Factor-Loading Alpha

Year	(-1, +1)	(-1, +2)	(-1, +3)	(-1, +4)
<u>A. One-Factor Model</u>				
Mean	0.5485** (0.0124)	-0.1286 (0.6164)	-0.0533 (0.8900)	0.3699 (0.3575)
Median	0.4589*** (<0.001)	-0.0502 (0.5205)	-0.2312 (0.8249)	0.2721 (0.3914)
<u>B. Three-Factor Model</u>				
Mean	0.1732 (0.2504)	0.1224 (0.5212)	0.0619 (0.8189)	0.4276 (0.3279)
Median	0.1936** (0.0462)	-0.0255 (0.9872)	0.0967 (0.2251)	0.1424 (0.4646)
<u>C. Four-Factor Model</u>				
Mean	0.3682** (0.0458)	0.3003 (0.3008)	-0.0383 (0.8890)	0.1340 (0.6784)
Median	0.2225*** (0.0073)	-0.1503 (0.7349)	0.0744 (0.5335)	0.2449 (0.4078)

Table 9.6: Fund Characteristics (Management Efficiency) Subsequent to Asset Sales

This table reports the test results from subsequent fund characteristic (management efficiency) variables to one fiscal year prior to the onset of asset sales, benchmarked in year -1, for both domestic equity funds (Panel A) and bond funds (Panel B) over the sample period of March 1990 through June 2007. For example, (-1, +1) denotes the changes of the average fund characteristic variable from one year post minus the average fund characteristic variable from one year prior of asset sales. Data source is from CRSP Survivor Bias Free US Mutual Fund Database. Total net assets (reported in million dollars) measure total assets under management net of liabilities of a monthly average figure during the sample period. Expense ratio (reported in percentage) measures fund's annual expense of an annual figure during the sample period. Portfolio turnover (reported in percentage) measures manager portfolio turnover of an annual figure during the sample period. Manager tenure (reported in months) measures lengths of managers as a portfolio manager within this fund of a monthly average figure during the sample period. P-values are in parentheses and N is number of funds during the sample period. Statistical significance is indicated by * at the 10% level, ** at 5% level, and *** at the 1% level.

Panel A: Domestic Equity Funds

Year	(-1, +1)	(-1, +2)	(-1, +3)	(-1, +4)
A. Total Net Assets (Million Dollars)				
Mean	200.9697*** (0.0017)	274.7263*** (<0.001)	231.7678*** (<0.001)	309.8315*** (0.0014)
Median	8.2742*** (<0.001)	50.5180*** (<0.001)	61.3394*** (<0.001)	108.0618*** (<0.001)
N	115	62	59	50
B. Expense Ratio (%)				
Mean	-0.0405* (0.0900)	-0.0873** (0.0245)	-0.1056** (0.0101)	-0.1094** (0.0280)
Median	-0.0000 (0.2325)	-0.0200** (0.0130)	-0.0500*** (0.0034)	-0.0400** (0.0239)
N	109	60	57	49
C. Portfolio Turnover (%)				
Mean	0.2929*** (0.0026)	0.3783*** (0.0084)	0.2882** (0.0289)	0.2853** (0.0137)
Median	0.0700** (0.0249)	0.1040** (0.0233)	0.1780* (0.0639)	0.2355*** (0.0080)
N	102	56	53	46
D. Manager Tenure (Months)				
Mean	1.0685 (0.7362)	4.3400 (0.4119)	14.6366** (0.0121)	18.5643** (0.0132)
Median	13.0000** (0.0111)	22.7500 (0.1367)	36.0000** (0.0496)	36.5000** (0.0337)
N	110	60	54	49

table continued

Panel B: Bond Funds

Year	(-1, +1)	(-1, +2)	(-1, +3)	(-1, +4)
A. Total Net Assets (Million Dollars)				
Mean	87.1119* (0.0610)	178.6101* (0.0584)	226.9812** (0.0330)	170.0249*** (0.0072)
Median	0.0300 (0.3231)	13.3838** (0.0104)	54.2600*** (<0.001)	97.9430*** (<0.001)
N	118	65	55	53
B. Expense Ratio (%)				
Mean	-0.0027 (0.8821)	-0.0008 (0.9797)	-0.0185 (0.4105)	0.0075 (0.8347)
Median	0.0000 (0.9523)	0.0000 (0.9434)	-0.0100 (0.4904)	-0.0150 (0.5476)
N	113	65	55	53
C. Portfolio Turnover (%)				
Mean	0.2176 (0.2319)	0.1402 (0.5792)	0.1834 (0.3638)	0.1462 (0.3004)
Median	-0.0700 (0.5821)	-0.0000 (0.7199)	0.0000 (0.9264)	0.0000 (0.4034)
N	101	55	46	44
D. Manager Tenure (Months)				
Mean	-18.9358*** (<0.001)	-6.2275 (0.4352)	7.1069 (0.3724)	10.4118 (0.1584)
Median	13.0000** (0.0200)	22.6667 (0.8812)	34.0000 (0.3676)	21.5000 (0.1018)
N	113	63	53	51

Table 9.6 Panels A and B report fund characteristics that include total net assets, expense ratio, portfolio turnover, and manager tenure (as a proxy for management efficiency) at one, two, three, and four years subsequent to the one year prior to asset sales for both domestic equity and bond funds. Our results show that subsequent to the asset sales, total net assets increase both for domestic equity and bond funds. Portfolio turnover increases and expense ratio decreases significantly for the domestic equity funds. Thus, without separating stand-alone funds or without comparing matched funds, we would not be able to determinant whether management efficiency has improved as a result of the asset sale

Table 9.7: Fund Characteristics (Management efficiency) Subsequent to Asset Sales Stand-Alone Minus Merged Funds & Sample Minus Matched Sample Funds

This table separates Domestic Equity funds (Bond funds) into funds being stand-alone minus funds being merged in Panel A1 (Panel B1) and sample fund minus matched sample funds in Panel A2 (Panel B2) to measure fund characteristics (management efficiency) variables subsequent to one year prior to the asset sales, benchmarked in year -1. The matched sample is created from a matched fund family with (1) a similar level of family concentration (the absolute minimum difference of number of styles of equity and bond funds managed by the matched family), (2) a similar family size (the absolute minimum difference of total net asset among matched families), and (3) a similar fund size with same management style (the absolute minimum difference of total net asset for the particular matched fund from the matched fund family with same SI-OBJ code (fund style)) at 13 months prior to the onset of asset sales. Sample period is from March 1990 through June 2007. Data source is from CRSP Mutual Fund Database. Total net assets (reported in million dollars) measure total assets under management net of liabilities of a monthly average figure during the sample period. Expense ratio (reported in percentage) measures fund's annual expense of an annual figure during the sample period. Portfolio turnover (reported in percentage) measures manager portfolio turnover of an annual figure during the sample period. Manager tenure (reported in months) measures lengths of managers as a portfolio manager within this fund of a monthly average figure during the sample period. P-values are in parentheses and N is number of funds during the sample period. Statistical significance is indicated by * at the 10% level, ** at 5% level, and *** at the 1% level.

Panel A1: Domestic Equity Funds (Stand-Alone Minus Merged Funds)

Year	(-1, +1)	(-1, +2)	(-1, +3)	(-1, +4)
<u>A. Total Net Assets (Million Dollars)</u>				
Mean	-235.5509** (0.0413)	-107.8221 (0.2102)	-188.5192** (0.0419)	-302.7885* (0.0564)
Median	-69.9707*** (<0.001)	-14.9394 (0.4881)	-38.7120* (0.0631)	-126.6378* (0.0519)
N	S=63, M=52	S=21, M=41	S=20, M=39	S=18, M=32
<u>B. Expense Ratio (%)</u>				
Mean	0.0711* (0.0806)	0.1100* (0.0607)	0.1264* (0.0671)	0.0981 (0.1693)
Median	0.0200 (0.1029)	0.0525** (0.0227)	0.1150** (0.0161)	0.1000 (0.1197)
N	S=60, M=49	S=20, M=40	S=19, M=38	S=17, M=32
<u>C. Portfolio Turnover (%)</u>				
Mean	-0.4813** (0.0101)	-0.4471** (0.0295)	-0.4503** (0.0280)	-0.3621* (0.0610)
Median	-0.4100*** (0.0072)	-0.2250** (0.0433)	-0.3703** (0.0482)	-0.4778** (0.0408)
N	S=57, M=45	S=19, M=37	S=18, M=35	S=16, M=30
<u>D. Manager Tenure (Months)</u>				
Mean	-2.7298 (0.3420)	8.2315 (0.2297)	13.2434 (0.1302)	0.6228 (0.4837)
Median	3.0000 (0.2438)	13.5000* (0.0541)	12.2500* (0.0521)	24.0000 (0.1876)
N	S=63, M=47	S=21, M=39	S=20, M=34	S=18, M=31

table continued

Panel A2: Domestic Equity Funds (Sample Minus Matched Sample Funds)

Year	(-1, +1)	(-1, +2)	(-1, +3)	(-1, +4)
<u>A. Total Net Assets (Million Dollars)</u>				
Mean	-38.0808 (0.2531)	93.2558* (0.0546)	111.3776 (0.1836)	206.5993* (0.0601)
Median	-0.4333 (0.8233)	25.8000** (0.0192)	48.2348** (0.0365)	88.6003** (0.0249)
N	70	36	30	27
<u>B. Expense Ratio (%)</u>				
Mean	0.0118 (0.7293)	0.0034 (0.9533)	0.0224 (0.7654)	-0.0219 (0.7659)
Median	0.0400 (0.2761)	0.0500 (0.8412)	0.0700 (0.5976)	-0.0200 (0.8517)
N	66	36	30	27
<u>C. Portfolio Turnover (%)</u>				
Mean	0.1010 (0.3179)	0.1061 (0.5229)	0.1357 (0.4370)	0.1155 (0.4841)
Median	0.0600 (0.2883)	0.1440 (0.2341)	0.1530 (0.3229)	0.0805 (0.6947)
N	56	29	26	23
<u>D. Manager Tenure (Months)</u>				
Mean	10.9792** (0.0164)	0.8557 (0.9422)	13.5758 (0.3526)	-2.1240 (0.8720)
Median	0.0000* (0.0532)	0.0000 (0.8745)	5.7500 (0.5604)	0.0000 (0.6995)
N	64	34	26	25

Panel B1: Bond Funds (Stand-Alone Minus Merged Funds)

Year	(-1, +1)	(-1, +2)	(-1, +3)	(-1, +4)
<u>A. Total Net Assets (Million Dollars)</u>				
Mean	-137.2677* (0.0637)	-147.8937 (0.1636)	-120.8029 (0.2615)	-21.6467 (0.4454)
Median	-6.8526* (0.0730)	1.1838 (0.4792)	37.5834 (0.2929)	71.5948 (0.2300)
N	S=57, M=61	S=17, M=48	S=13, M=42	S=10, M=43
<u>B. Expense Ratio (%)</u>				
Mean	-0.0060 (0.4346)	-0.0464 (0.2519)	-0.0115 (0.4149)	-0.1090 (0.1168)
Median	0.0000 (0.4656)	-0.0425 (0.1133)	-0.0050 (0.3945)	-0.0850 (0.1505)
N	S=57, M=56	S=17, M=48	S=13, M=42	S=10, M=43

table continued

<u>C. Portfolio Turnover (%)</u>				
Mean	-0.0853 (0.4135)	0.0935 (0.4339)	0.2557 (0.2901)	-0.0017 (0.4981)
Median	-0.0300 (0.4592)	0.1200 (0.1452)	0.0700 (0.2039)	0.1500 (0.2377)
N	S=56, M=45	S=16, M=39	S=12, M=34	S=9, M=35
<u>D. Manager Tenure (Months)</u>				
Mean	-7.6551 (0.2381)	23.2182** (0.0317)	15.1128 (0.1435)	43.1073*** (<0.001)
Median	-2.3333 (0.1649)	8.6667 (0.3018)	18.3333 (0.3299)	45.5000** (0.0175)
N	S=57, M=56	S=17, M=46	S=13, M=40	S=10, M=41
Panel B2: Bond Funds (Sample Minus Matched Sample Funds)				
Year	(-1, +1)	(-1, +2)	(-1, +3)	(-1, +4)
<u>A. Total Net Assets (Million Dollars)</u>				
Mean	-18.9393** (0.0192)	11.5455 (0.7001)	118.1076* (0.0914)	103.7154 (0.1423)
Median	-3.5417** (0.0484)	5.2090 (0.9128)	8.5744 (0.2128)	28.4703 (0.2380)
N	85	43	34	32
<u>B. Expense Ratio (%)</u>				
Mean	-0.0165 (0.4665)	0.0095 (0.8423)	0.0035 (0.9314)	0.0121 (0.8211)
Median	0.0000 (0.6163)	0.0300 (0.8154)	0.0200 (0.9927)	-0.0400 (0.6736)
N	81	43	34	32
<u>C. Portfolio Turnover (%)</u>				
Mean	-0.0892 (0.4652)	0.1137 (0.6132)	0.1319 (0.6601)	0.0207 (0.9509)
Median	0.0300 (0.5751)	0.0543 (0.3966)	0.1250 (0.6261)	0.0100 (0.9854)
N	66	31	24	22
<u>D. Manager Tenure (Months)</u>				
Mean	-23.5580** (<0.001)	-14.5244 (0.1587)	-14.4323 (0.2144)	-11.4878 (0.3595)
Median	0.0000*** (<0.001)	0.0000* (0.0739)	0.0000 (0.3229)	-3.1667 (0.4271)
N	80	42	33	32

Table 9.7 Panels A1, A2, B1, and B2 report fund characteristics that include total net assets, expense ratio, portfolio turnover, and manager tenure at one, two, three, and four years subsequent to the one year prior to asset sales by disaggregating funds into stand-alone and merged funds as well as sample versus matched sample funds. Stand-

alone funds have lower portfolio turnover for domestic equity funds and lower assets under management. The expense ratio is higher for stand-alone funds within the group of domestic equity funds while lower but insignificant for bond funds.

Table 9.8: Manager Turnover Probability Subsequent to Asset Sales Stand-Alone Minus Merged Funds & Sample Minus Matched Sample Funds

This table separates domestic equity funds and bond funds into funds being stand-alone minus funds being merged (Panel A) and sample fund minus matched sample funds (Panel B) to measure the frequency whether managers are replaced in the first fiscal year subsequent to one fiscal year prior to the onset of asset sales,³² denoted as (-1, +1). The matched sample is created from a matched fund family with (1) a similar level of family concentration (the absolute minimum difference of number of styles of equity and bond funds managed by the matched family), (2) a similar family size (the absolute minimum difference of total net asset among matched families), and (3) a similar fund size with same management style (the absolute minimum difference of total net asset for the particular matched fund from the matched fund family with same SI-OBJ code (fund style)) at 13 months prior to the onset of asset sales. Sample period is from March 1990 through June 2007. Data source is from CRSP Survivor Bias Free US Mutual Fund Database. P-values are in parentheses and N is number of funds during the sample period. Statistical significance is indicated by * at the 10% level, ** at 5% level, and *** at the 1% level.

Panel A: Stand-Alone Minus Merged Funds

Year (-1, +1)				
Fund Type	All Cases	Stand-alone	Merger	Difference
Domestic Equity Funds (N=180)	0.2636	0.2063	0.3404	-0.1341* (0.0582)
Bond Funds (N=182)	0.4513	0.4561	0.4464	0.0097 (0.4592)

Panel B: Sample Minus Matched Sample Funds

Year (-1, +1)			
Fund Type	Sample Funds	Matched Sample Funds	Difference
Domestic Equity Funds (N=92)	0.2547	0.1000	0.1094* (0.089)
Bond Funds (N=105)	0.4381	0.1075	0.3625*** (<0.001)

When comparing the sample to matched sample funds (reported in Panel A2 and B2), the results show that total net assets drop in the year subsequent to the asset sale but start to increase afterwards. There is no significant difference in expense ratio, portfolio

³² Manager turnover is an annual frequency data reported in the CRSP database.

turnover and manager tenure. The increase in assets under management from year two after asset sales is consistent with Sirri and Tufano (1998) who argue that better performance leads investors to chase the funds. Bond funds also demonstrate large manager turnover subsequent to asset sales when compared to matched samples.

To further clarify whether there is greater manager turnover subsequent to asset sales, we report both stand-alone versus merged funds as well as sample versus matched sample funds in Table 9.8. In Panel A, compared to merged funds, stand-alone funds among the domestic equity funds have less manager turnover. However, when compared to the matched funds, there is significant manager turnover at both domestic equity and bond funds, suggesting that the improvement of performance subsequent to asset sales, is at least partially due to the manager turnover.

9.2 Multivariate Analysis

Table 9.9 reports logistic regression to estimate the probability of a fund being a target for an asset sale. The results indicate that a fund that experiences deteriorating performance during the past 24 months prior to the asset sales is more likely to be the subject of a divestiture. The inverse relation between performance and the probability of a fund being the subject of an asset sale is negative and significant at 10% (5%) level for domestic equity (bond) funds after controlling for fund characteristic variables. This finding is consistent with Alexander, Benson, and Kampmeyer (1984) who conclude that sell-offs in general occur after a period of negative seller returns.

Table 9.10 reports regression analysis that explains the differences in fund performance from one year prior to two year post to the asset sales. In particular, we are interested in testing whether the changes in performance as a result of the transition from a diversified to a more highly focused fund entity is related to changes in the percentage of shares held by insiders, insider blocks, outsider blocks, and changes in governance structure after controlling for several fund characteristic variables.

The dependent variable is the difference in fee and market-adjusted buy and hold returns from one year prior to the sale to two years post from sample fund. Independent variables are changes in the percentage of shares held by insiders who own less than 5% shares, changes in the percentage of shares held by insiders who own more than 5% but less than 25% shares, the percentage of shares held by insider blocks, the percentage of

Table 9.9: Logistic Regression for Target Funds of Asset Sales

Logistic regressions are estimated to explain the probability of funds being chosen as asset sales target from a pool of sample and matched sample funds. Panel A reports the regression coefficient and Panel B reports actual and implied asset sales probabilities. Total sample in this regression includes 612 open-end equity and 304 bond funds for the period of 1990 to 2007. Independent variables include fee and market-adjusted buy and hold returns from two years prior to the asset sales; Total net assets, reported in million dollars, at 13-month prior to the onset of asset sales; Expense ratio, reported in percentage, at 13-month prior to the onset of asset sales; Portfolio turnover, reported in percentage, at 13-month prior to the onset of asset sales; Manager tenure, reported in months, at 13-month prior to the onset of asset sales.. The p-values are reported in the parentheses. ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

Panel A : Regression Coefficient

Variables	Fund Type	Domestic Equity Funds	Bond Funds	Taxable Bond Funds	Tax-free Bond Funds
		N=308	N=304	N=117	N=187
Intercept		0.5290 (0.1775)	-0.5050 (0.2092)	-0.1917 (0.7621)	-0.4962 (0.3727)
FMBHR (%) t_{-24} to t_{-1}		-0.0038* (0.0727)	-0.0289** (0.0483)	-0.0320* (0.0636)	-0.0569 (0.1308)
Total net assets (millions) t_{-13}		-0.0001 (0.6034)	-0.0001 (0.6175)	-0.0002 (0.7025)	-0.0002 (0.5704)
Expense ratio (%) t_{-13}		-0.1827 (0.3859)	0.1903 (0.4931)	0.3814 (0.3392)	-0.0799 (0.8440)
Portfolio turnover t_{-13}		-0.2149 (0.1265)	0.0963 (0.6175)	0.0260 (0.8984)	0.1605 (0.3527)
Manager tenure (months) t_{-13}		-0.0001 (0.9569)	0.0055** (0.0237)	-0.0011 (0.8040)	0.0083*** (0.0065)
Adjusted R-Square		0.0170	0.0354	0.0348	0.0620

Panel B : Actual and Implied Asset Sales Probabilities

Variables	Fund Type	Domestic Equity Funds	Bond Funds	Taxable Bond Funds	Tax-free Bond Funds
		N=308	N=304	N=117	N=187
Actual asset sales frequency		0.5085	0.5000	0.5000	0.5000
Mean implied probability		0.5065	0.5066	0.4957	0.5134
Median implied probability		0.5149	0.5051	0.5016	0.5084

shares held by outside blockholders, changes in the total number of directors, changes in ratio of independent directors, an independent chairman dummy, a dummy for the focus of the fund company, and control variables for the difference in total net assets, expense ratios, portfolio turnover, and manager tenure for the two years prior to two years after the sale. Model 1 through Model 4 report the results for all (domestic equity and bond) funds with governance variables (Model 1 and Model 2) and ownership variables (Model

3 and Model 4).

From the results of Model 1 and 2, fund performance subsequent to an asset sale is positively associated with the ratio of independent directors and the presence of an insider chairman. The positive relationship between performance and the ratio of independent directors is consistent with Tufano and Sevick (1997), Meschke (2006), Del Guercio, Dann and Partch (2003), and Ding and Wermers (2006) who argue that efficiency and performance are related to size and independence of the board of directors. However, the positive relationship between an insider chairman and performance indicates that governance structure alone does not fully explain the positive changes in fund performance after asset sales. We also find that when a focus dummy is added (Model 2), that indicates when an acquirer of the asset is a focused mutual fund company, there is a positive relationship with fund performance after an asset sale. This result is consistent with Comment and Jarrell (1995) who document a positive relationship between focus and shareholder returns.

From Models 3 and Model 4, we find that changes in fund performance subsequent to asset sales are positively associated with an increase of insider ownership when it remains below 5% but is negatively associated with insider ownership when it is more than 5% (up to 25%). This finding is consistent with Morck, Shleifer and Vishy (1988) who find that ownership and performance have a nonlinear relation. The broader positive relationship between insider ownership and performance at low levels of insider holdings is consistent with the convergence of interest hypothesis from the corporate literature (Jensen and Meckling (1976), Leland and Pyle (1977), McConnell and Servaes (1990), Anderson and Reeb (2003)) as well as the mutual fund literature (Chen, Goldstein and Jiang (2006), and Khorana, Servaes and Wedge (2007)). However, the results for the range of 5% to 25% for insider ownership support the entrenchment hypothesis (Jarrell and Poulson (1987), Stulz (1988), Slovin and Sushka (1993), Yafeh and Yosha (2003), DeAngelo and DeAngelo (1985), Shleifer and Vishny (1997)). Although the literature provides mixed evidence on institutional (outside block) holdings, our evidence seems to support the monitoring hypothesis (Shleifer and Vishny (1986)) rather than Burkart, Gromb and Panunzi (1997) who argue that although tighter control by outside shareholders is ex post efficient, it imposes an ex ante threat that reduces managerial

initiative. Similar to Model 2, when we add a focus dummy (Model 4) in the regression, it is significant at the 5% level, indicating that focused fund families are associated with improved performance and better managerial efficiency, consistent with Comment and Jarrell (1995) findings in the corporate literature.

Models 5 through 11 disaggregate the earlier results into sub-samples as a robustness check. Similar to earlier findings, the results for domestic equity and bond funds demonstrate that a focused fund company with an increase in insider ownership that remains below 5% contributes to the improvement in performance follows asset sales. When insider ownership increases to more than 5%, the positive relationship turns negative, indicating the possibility of managerial entrenchment. Outside blockholders' ownership shows a consistently positive relationship with performance for domestic equity funds, but becomes insignificant for the bond fund groups.

Table 9.10: Regression Analysis of Fund Performance Subsequent to Asset Sales

Cross-sectional regressions are estimated to explain the differences in fee and market-adjusted buy and hold returns over the two years subsequent to one years prior to the onset of asset sales (-1, +2). The sample includes 18³³ buyers and sellers of mutual fund companies of a total of 362 open-end domestic equity and bond funds for the period of 1990 to 2007. The dependent variable is fee and market-adjusted buy and hold returns from two years subsequent to asset sale minus two years prior to the asset sales (-2, +2). Independent variables include differences on board governance and ownership variables and fund characteristics control variables from two years subsequent to asset sale minus two years prior to the asset sales (-2, +2) are defined as follows: a dummy of focused fund “D focus” which equals one if a fund is managed under a focused fund company; “diff_turn” represents differences on annual portfolio turnover ratio; “diff_exp” represents differences on annual expense ratio; “diff_tnam” represents differences on logarithm of total net asset; “diff_tenure” represents differences on manager tenure (average); “diff_director” represents differences on total number of directors; “diff_indep_ratio” represents differences on percentage of independent directors; “diff_chair” represents differences insider chairman dummy which equals one if a chairman is insider (dependent) director; “d1 hold” represents differences on total percentage of holding of insiders with 5% or less; “d2 hold” represents differences on total percentage of holding of insiders with 5% above and 25% below; “diff_outside_block Differences” represents differences on institutions or investors who own more than 5% shares. Coefficients of expense ratio, portfolio turnover, ratio of independent director, insider and institution holding have been reported in percentage. The standard errors are heteroskedasticity-robust. The p-values are reported in the parentheses. ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively.

table continued

³³ The sample drops 3 fund families due to events occurred very recently. Consequently the data is unavailable.

Fund Type Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
	Total Funds				Domestic Equity Funds				Bond Funds		
Intercept	-5.5237*** (0.0070)	-16.1533*** (0.0025)	-2.7407 (0.2808)	-2.1689 (0.4091)	-10.5586** (0.0126)	-24.9411** (0.0129)	-5.9989* (0.0586)	-7.0691** (0.0239)	-0.5381 (0.7219)	-1.0606 (0.8172)	1.8210 (0.4434)
D focus		25.2267** (0.0298)		13.0522** (0.0390)		35.6616* (0.0981)		36.6853* (0.0904)		1.1779* (0.0904)	
diff_tnam	-0.0019 (0.6369)	-0.0039 (0.3363)	0.0056 (0.4536)	-0.0016 (0.8886)	0.0024 (0.7125)	-0.0015 (0.8250)	-0.0018 (0.8627)	0.0138 (0.2909)	0.0050 (0.3272)	0.0050 (0.3371)	0.0096 (0.4007)
diff_exp	21.0186*** (0.0024)	24.2236*** (0.0005)	25.5341*** (0.0018)	23.3157*** (0.0062)	25.3201** (0.0200)	29.1977*** (0.0084)	21.8274*** (0.0081)	26.7132*** (0.0023)	3.2944 (0.6189)	3.5504 (0.6134)	-25.5929 (0.3910)
diff_turn	-0.7369 (0.5249)	-0.3821 (0.7392)	0.6980 (0.5738)	0.5259 (0.6765)	-2.0035 (0.5075)	-1.3202 (0.6595)	4.8286** (0.0129)	5.7984*** (0.0039)	-0.3819 (0.6353)	-0.3614 (0.6638)	-2.2955* (0.0960)
diff_tenure	-0.0405 (0.2362)	-0.0340 (0.3130)	-0.0250 (0.5086)	-0.0308 (0.4248)	-0.1110 (0.1492)	-0.0691 (0.3837)	0.0697 (0.2178)	0.0924* (0.0970)	0.0150 (0.5563)	0.0145 (0.5781)	-0.0429 (0.2935)
diff_director	0.2102 (0.5361)	0.8640* (0.0553)			0.6071 (0.2389)	1.3769* (0.0507)			-0.0449 (0.8990)	-0.0081 (0.9863)	
diff_indep_ratio	0.1829** (0.0175)	0.5189*** (0.0028)			0.2795** (0.0460)	0.7682** (0.0232)			0.1574** (0.0144)	0.1720 (0.2096)	
diff_chair	12.0699*** (0.0042)	11.1363*** (0.0073)			17.5948** (0.0183)	15.3481** (0.0384)			7.7185** (0.0381)	7.6872** (0.0416)	
d1_hold			3.5666* (0.0941)	4.0448* (0.0929)			5.7517* (0.0736)	5.4727* (0.0698)			4.8676* (0.0691)
d2_hold			-0.8816** (0.0114)	-0.2360 (0.7727)			-0.5374 (0.1993)	-2.1227** (0.0419)			-2.1489*** (0.0011)
diff_outside_block			0.8324* (0.0916)	0.8738* (0.0800)			1.4447** (0.0169)	1.3095** (0.0215)			-0.0818 (0.8656)
Adjusted R-squared	0.1391	0.2331	0.3596	0.3546	0.1036	0.1347	0.6467	0.6939	0.1050	0.0850	0.7017

CHAPTER 10 CONCLUSIONS

There is continuing discussion as to the extent to which the asset sales market facilitates the efficient reallocation of assets. Maksimovic and Philips (2001) use plant-level sales data and find that there are efficiency gains in asset sales. Schlingemann, Stulz, and Walkling (2002) use accounting data to predict which firms are likely to use asset sales and which segments (assets) are likely to be chosen for sales. This paper complements these papers by obtaining performance and efficiency measures from mutual fund data. The results indicate that asset sales generate efficiency gains and an increase shareholder wealth, with the gains in wealth occurring to buyers. Most importantly, the efficiency gains are sensitive to organization structure when there is concentrated ownership.

Using unique mutual fund data and focusing on asset sales conducted by asset management companies, we document that at the product level there is performance improvement after asset sales. We assess managerial efficiency when a fund transitions from an inefficient diversified seller to a more efficient focused acquirer. This result contributes to the literature in two ways. First, we find that sellers of these mutual fund assets are mainly diversified financial firms. Funds under the management of these conglomerates experience poor performance during the period prior to asset sales. Second, acquirers are generally highly focused mutual fund companies. The funds acquired by these focused entities experience significant improvement in both fund performance and operational efficiency. The evidence indicates that (1) organizational structure (focus), (2) economies of scale, (3) strengthened monitoring, and (4) managerial ownership contribute to the superior performance and greater operating efficiency that occur subsequent to asset sales in the mutual fund industry.

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VITA

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