

CORPORATE OWNERSHIP AND MUTUAL FUND PERFORMANCE: EVIDENCE FROM TAIWAN

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Abstract

We examine the relationship between corporate ownership and fund performance in Taiwan. Using the panel regression after controlling for fund attributes, the proportional share held by foreign institutional investors is positively correlated with fund performance. Furthermore, we also find a negative relationship between the number of board members and the return gap measure of fund performance, but ownership concentration are not effect on fund performance. Our results imply that foreign institutional shareholders are now playing a significant monitoring role of fund companies in Taiwan.

Keywords: corporate ownership; mutual fund; boards

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1. Introduction

The mutual fund industry grew rapidly over the last decade. This growth increased the debate on several aspects of the industry covering the role of corporate ownership as effective protection of shareholder rights. Many developed countries enact laws to cope with this matter. For example, the Investment Company Act of the United States creates a unique corporate governance system for mutual funds and their shareholders under which fund boards must have a majority of independent directors.

Moreover, the Investment Company Institute (ICI), which is the national association of the U.S. investment company industry, has consistently published best practices and compliance guidelines in areas such as valuation procedures, anti-money laundering, brokerage allocation practices and side-by-side management of mutual funds and hedge funds. Although the ICI is not a self-regulatory organization, it certainly can play an important role to advance the interests of mutual funds and their shareholders.⁹⁷

⁹⁷ The Investment Company Institute was formed in 1940, at the suggestion of the United States Securities and Exchange Commission (SEC), to represent mutual fund organizations on regulatory and legislative issues. The Institute's membership includes more than 8,000 mutual funds, their investment advisers and principal underwriters. Its mutual fund members manage more than 95 of total mutual fund assets. (See Investment Company Institute Accomplishments and Recent Activities, May 2004)

In contrast with the U.S. fund governance mechanism, many emerging markets still in the initial planning stage for constitute fund governance regimes. The 2005 International Investment Funds Association Annual Meeting in Taiwan, mention that in order to foster the sound operation and development of securities investment trust (SITE) and to protect investors' interests, the President promulgated the Securities Investment Trust and Consulting Act, enacted on November 1, 2004. The main aspect covered in the Act is improvement of protection for investors and stricter liabilities, including criminal liabilities, on financial service operators.

On 9 May 2005, Securities Investment Trust and Consulting Association (SITCA) of Taiwan⁹⁸ also amended Corporate Governance Best-Practice Principles for securities investment trust enterprises (SITE) and securities investment consulting enterprises (SICE). Though major fund governance reforms adopted in Taiwan, the scope of mutual fund governance is still not defined clearly. For instance, SITE could to establish fund governance committee

⁹⁸ The Association was reorganized on October 8, 1998 and previously known as Securities Investment Trust & Advisory Association of Taiwan, which was set up in January of 1990. To strengthen services for its members, well perform its functions as self-regulatory organization, meet the requirements for securities market development, and support the administrative operations entrusted by the government agencies in charge, the Association obtained the permission to set up from the Ministry of the Interior affairs on November 6, 1998.

and require a certain percentage of independent directors in each fund company's board, and so forth.

Despite a considerable number of studies having already been carried out in fund governance, very little attention has been paid to it in emerging markets which fund governance reforms remain incomplete. In this paper, we examine the relationship between corporate ownership and fund performance in Taiwan.

In addition, while most past studies which examined the relationship between corporate governance and performance have used the traditional method of measuring fund performance, this study uses return gap to measure fund performance. According to the research of Kacperczyk, Sialm and Zheng (2007), the return gap is defined as the difference between the reported fund return and the return of a portfolio that invests in the previously disclosed holdings after adjusting for expenses. Thus, the performance measure of return gap that we use could contribute substantially to observe all actions of fund managers.

Furthermore, we use of panel data techniques has several methodological advantages. Cross-sectional time series data analysis is very suited for studying changes in corporate ownership across funds and time for several reasons. First, this analysis reflects both cross-sectional differences (between funds), and time-series differences (within a given fund for a set period of time). Panel data regression techniques allow us to examine these differences and to assess their impact on corporate ownership independently. Second, panel data allows us to control for omitted variables that differ between cases but are constant over time, and for omitted variables that vary over time but are constant between cases.

Our paper presents evidence that mutual fund ownership do have effect on fund performance. The higher share held by foreign company, the higher is the mutual fund performance. This identifies the fund company's ownership that could drive fund performance among mutual fund managers. We also provide evidence on a negative relationship between the number of board members and the return gap measure of fund performance. However, we find no significant relation between the three largest shareholders and fund performance.

The paper is organized as follows: Section 2 provides a review of the relevant literatures on the corporate governance and fund performance. Section 3 describes the data and examines some methodological. In particular, we focus on the relevance of panel data techniques for the analysis relationship between corporate ownership and fund performance. Section 4 discusses the empirical findings and their implications. Section 5 concludes the paper.

2. Literature Review

A number of academic literatures as well as having already been carried out on corporate government, most researches have focused on a relation between board composition and firm performance.⁹⁹ Recent papers by Gompers, Ishii and Metrick (2003) and Cremers and Nair (2005) specifically examine various governance measures and their impact on performance. Their results show that governance issues do have economic impact. Similar relation between mutual fund board independence and total fund fee has also documented. In a sample of open-end funds in U.S., Tufano and Sevick (1997) examine the composition and compensation of fund boards. Their results appear to contradict the notion that directors serving on several boards are ineffective monitors. Shareholder fees, a common proxy for governance quality, are lower in funds whose director sit on a large fraction of the fund sponsor's other boards. Moreover, Del Guercio, Dann and Partch (2003) find that closed-end fund boards with more independent directors are more likely to undertake activities that benefit shareholders, such as authorizing share repurchases.

Besides, Zitzewitz (2003) examines market timing and late-trading in the mutual fund industry. He shows that the incidence of stale-pricing in fund complexes is higher for funds with fewer independent directors. This implies being consistent with more independent boards providing greater shareholder protection.

Further, a number of researches assess whether fund governance is associated with differences in performance. Ding and Wermers (2005) examine the joint relationship between fund managers and fund directors for the first time with a combined database of manager and board characteristics. They find that poorly performing fund managers are more likely to be replaced by funds having a higher proportion of independent directors. Khorana, Tufano and Wedge (2007) examine whether certain governance structures relate to whether target boards approve these mergers. Fund mergers of this kind are more likely when funds underperform and when their boards are composed of a larger fraction of independent trustees. This strong interaction effect is consistent with more independent boards exhibiting a lower tolerance of poor performance before initiating across-family mergers.

Mutual funds boards may also have indirect influence on decisions made by the fund management company. For instance, the fund companies are responsible to employ and dismiss the fund manager, the individual or team members with direct

⁹⁹ See Byrd and Hickman (1992), Klien (1998); Cotter, Shivdasani and Zenner (1997); Gabriellsson and Huse(2005) and Silva and Leal (2006).

responsibility for fund investment decisions. If an independent board can monitor effectively, they should put pressure on the fund management company to replace fund managers with poor performance. Wellman and Zhou (2007) document that the relationship between mutual fund governance and mutual fund performance. They argue that Morningstar's variables for board quality and fees are the most explanatory power to explain ex-post returns. They further indicate that board quality is the most important factor to explain mutual funds' performance among all possible fund governance factors. Their results imply that corporate governance significantly affects performance. Chou, Ng and Wang (2007) also show that corporate governance mechanisms play a role in the investment decisions of mutual funds. In general, mutual funds tend to tilt their portfolios toward firms with good corporate governance structures, and this is more evident in funds with good governance practices.

In addition, ownership concentration may improve performance by increasing monitoring (Shleifer and Vishny, 1986). However, other mechanisms may work in the opposite direction. There is a possibility that large shareholders exercise their control rights to create private benefits.¹⁰⁰ On the other hand, Morck, Nakamura and Shivdasani (2000) investigate the positive and negative effects of bank ownership on firm value. Their empirical results show that there is no significant relation between ownership concentration and firm performance.

3. Data and Methodology

3.1 Data

The data are collected from the Taiwan Economic Journal (TEJ) database. They include the quarter ownership data for the mutual fund industry, the quarter net asset values, and other characteristics of the fund like, for example, its expense ratio, fund size, fund age, and total net assets. Further, corporate ownership data, including fraction of shares owned by the three largest shareholders, the proportional share held by foreign institutional investors and total number of board members, had to be available from Securities Investment Trust & Consulting Association of Taiwan. In this paper, open-end equity funds with invested in domestic securities are examined. The data period covers 1999 to 2006. We hand-collect data from each fund's statement to construct a measure of the fund industry ownership for each fund in the sample. Table 1 show that the numbers of open-end equity funds increased from 165 in 1999, reaching the maximum value of 183 in 2004, and then dropped to

176 in 2006. The fund size of open-end equity funds fluctuate steadily around NT\$209,653 million to NT\$267,368 except in 2000.

<Table 1 is inserted about here>

3.2 Methodology

To determine the relationship between corporate ownership and fund performance we use panel data methodology that allows us to account for errors in estimation arising out of heterogeneity. The sources of heterogeneity could be factor specific to the mutual fund. This is a significant improvement over the traditional OLS techniques given the high level of correlation expected between various performance measures. The panel data technique allows us to make a distinction between residual heterogeneity associated with both a group (cross-section) and cell (within-group) identifiers.

A. Corporate ownership

The effect of ownership structure and concentration on a fund's performance is an important issue in the literature. Therefore, to determine the ownership concentration, we use the percentage of shares held by the three largest shareholders. In addition, foreign institutional investors are becoming a significant presence in Taiwan, bringing their trading habits and corporate governance preferences to fund markets. We consider the effect on fund performance from foreign institutional investors.¹⁰¹ Moreover, Kiel and Nicholson (2003) argue that a board interlock is dependent upon board members. Thus, the greater the number of board members, the more likely that the number of board interlocks will rise. Bennedsen, Kongsted, and Nielsen (2007) also find that the right number of directors is a trade off between the benefits of having sufficient competencies represented and the cost arising from increased free riding among board members. In order to comprehend the relationship between ownership structure and performance, we also include number of board members to test whether this variable effect on fund performance.

Overall in our study, independent variables of corporate ownership were chosen mainly based on the existing corporate ownership literature. The first variable used is ownership concentrations. Ownership concentration is measured by the fraction of shares owned by the three largest shareholders (*TLSH*). The second variable used is ownership structure, measured by proportional share held by foreign institutional investors (*FII*). The third variable used is board size, measured by number of board members (*NUMBM*).

¹⁰⁰ Shleifer and Vishny (1997) and Mudambi and Niclosia (1998) argue that ownership concentration may improve performance by decreasing monitoring costs.

¹⁰¹ Institutional investors have become the predominant players in financial markets and their influence worldwide is growing, chiefly due to the privatization and development of pension fund systems (Gillan and Starks, 2002).

B. Fund performance

We employ three alternative measures of fund performance: raw return (*RARTN*), Sharpe ratio (*SHARPE*) and return gap (*RTNGAP*), with all variables measured over an quarter period. The first measure variable, *RARTN*, is the percentage change in the fund's value for the quarter, including any dividends given out. We also examine Sharpe ratio that measure of risk adjusted performance. It is the ration of fund excess return to its standard deviation. A higher Sharpe ratio is therefore better as it represents a higher return generated per unit of risk. Besides, in order to attract manager's unobserved actions on fund returns, we chose return gap to be the dependent variable for our analysis. The return gap is defined as the difference between the reported fund return and the return of a portfolio that invests in the previously disclosed holdings after adjusting for expenses (Kacperczyk et al., 2007)¹⁰².

We describe the computation of the return gap as follow. The net return of the fund *i* at time *t* ($R_{i,t}$) is computed as the relative change in the net asset value of the fund shares (*NAV*), including the total dividend (*DIV*).

$$R_{i,t} = \frac{NAV_{i,t} - NAV_{i,t-1} + DIV_{i,t}}{NAV_{i,t-1}} \quad (1)$$

Besides, the *RH* is defined as a hypothetical buy-and-hold portfolio return that is invested in the most recently disclosed stock positions:

$$RH_{i,t} = \sum_{j=1}^N \tilde{w}_{i,j,t-1} R_{j,t} + \tilde{w}_{i,t-1}^s R_t^s \quad (2)$$

If a fund discloses its holdings in the previous quarter, then the weights of the individual asset classes depend on the number of stocks held by the fund (*N*) and the stock price (*P*):

$$\tilde{w}_{i,j,t-1} = \frac{N_{i,j,t-1} P_{j,t-1}}{\sum_j N_{i,j,t-1} P_{j,t-1}} \quad (3)$$

Based on the above, Kacperczyk et al. (2007) define the return gap (*RG*) as a difference between net and gross returns after adjusting for expenses (*EXP*):

$$RG_{i,t} = R_{i,t} - (RH_{i,t} - EXP_{i,t}) \quad (4)$$

C. Fund attributes

Fund performances are related to other fund attributes, such as expense, fund age, fund size and new money

growth. Therefore, we add these fund attributes as control variables to explain some of the variation in returns. Each return measure is presented before sales fees. Those costs are captured by mutual fund's expense ratio and do not affect the fund manager to make decision. We consequently include the expense ratio (*EXPRATIO*) as an independent variable to control for the fraction of returns that are out of the manager's control. The expense ratio does not include brokerage costs and various other transaction costs that may also contribute to a fund's total expenses. Such as those costs are directly related to the amount of trades the fund manager executes.

In the panel regression analysis, we also include fund age as an independent variable to control for capture any systematic differences between young and old funds. *AGE* represents the age of the fund in years. Larger funds tend to exhibit a higher degree of efficiency than small funds. Several studies results indicate that the mutual funds' size is potentially an important characteristic to fund performance (Ciccotello and Grant, 1996; Indro, Jiang, Hu, and Lee, 1999; Berk and Green, 2004). Thus, in order to gauge the impact of fund size on the performance relation, we also control for fund size based on the *TNA* at the end of the quarter. In our study, fund size is measured by fund's total net assets (*TNA*) at the end of quarter during our sample period. We denote the natural logarithm of total net assets by *TNA*. Finally, since several measures of performance are significantly related to the flow of funds (Ammann, Kind and Seiz, 2007), we include new-money growth (*NMG*) as a proxy to control for involuntary liquidation of fund assets. Following Gruber (1996), we calculate new money as a percentage of the beginning of the period *TNA* as follow:

$$NMG_{i,t} = \frac{TNA_{i,t} - TNA_{i,t-1}(1 + R_{i,t})}{TNA_{i,t-1}} \quad (5)$$

Where R_{it} is the return of fund *i* in period *t*. Thus, the general fixed effects model for fund *i* where the performance is regressed on corporate ownership and control variables is as follows:

$$PERF_{i,t} = \beta_0 + \beta_1 TLSH_{i,t} + \beta_2 FII_{i,t} + \beta_3 NUMBM_{i,t} + \beta_4 EXPTRIO_{i,t} + \beta_5 AGE_{i,t} + \beta_6 LOGTNA_{i,t} + \beta_7 NMG_{i,t} + \varepsilon_{i,t} \quad (6)$$

4. Empirical Results

Table 2 contains descriptive statistics of the performance. The raw return of average fund outperformed by 1.1 percent per quarter over the period over 1999-2006. Table 2 also provides information on the fraction of shares owned by the top three largest shareholders (*TLSH*), proportional share held by foreign institutional investors (*FII*), the number of fund boards (*NUMBM*), director

¹⁰² Their results show that the return gap helps to predict future fund performance and conclude that fund investors should use the return gap as an additional measure to evaluate the performance of mutual funds.

compensation and fund, expense ratio (*EXPRATIO*), fund age (*AGE*), total net assets (*TNA*) and new money growth (*NMG*). As shown in Table 2 for our data, the three largest shareholders participate in 83.62% of the total number of fund companies, whereas the percentage varies between 80.73% and 100%. The share held by foreign institution investors participate in about 28.87% of the fund industry where the percentage varies between 10% and 100%. On the other hand, the average fund charged 1.52% in fees annually, ranging from a minimum of 1.5% to a maximum of 2.0%. The average number of board members is 9 in each fund company.

<Table 2 is inserted about here>

Table 3 shows the correlation matrix for the sample used here. The correlations that should be noted are the 0.659 correlation between *RARTN* and *SHARPE*, the two alternative measures of performance, one based on raw return and the other based Sharpe ratio. There was strong correlation between *SHARPE* and *RTNGAP*, high correlation between *SHARPE* and *RATR*, and moderate correlation between *RTNGAP* and *RARTN*. Despite the strong correlation coefficient between *SHARPE* and *RTNGAP*, there is different interpretation of the two variables. The *SHARPE* is a measure of risk-return tradeoff. It shows how much extra return, over and above a risk-free investment. However, *RTNGAP* is able to directly obtain a precise measure of unobserved actions by fund managers. The correlation between fund characteristic variables *TNA* and *NMG* is 0.132, and that between ownership structure variables *TLSH* and *FII* is 0.186. The correlation between *TLSH* and *NUMBM* is 0.068. None of the remaining variables are correlated to an extent that merits noting.

<Table 3 is inserted about here>

The results from estimating the performance equation with three different specifications of the dependent variable, three specifications of independent variables and control variables are shown in Table 4. The point estimate for the coefficient on the fraction of shares owned by the three largest shareholders, *TLSH*, is considerably smaller, and it is less significant in three equations¹⁰³ (at the 5 percent level for *RARTN*, *SHARPE* and *RTNGAP*).

<Table 4 is inserted about here>

¹⁰³ We also consider the variables of the largest shareholders and the two largest shareholders in the regression to account for possible effects. However, the results all indicate that no significant relationship between ownership concentration and fund performance.

The same results are also in the variable of total number of board members (*NUMBM*). There is weak evidence that board size have some influence on mutual fund investment strategies, as revealed by total number of board members. These imply that the three largest shareholders and total number of board members have not an effect on fund performance. Moreover, we find a negative relationship between the number of board members and the return gap measure of fund performance. This result is similar with previous studies stating that ownership concentration could improve performance (Shleifer and Vishny, 1997; Mudambi and Niclosia, 1998)

On the other hand, the proportional share held by foreign institutional investors, *FII*, is estimated to have positive impact on each performance measure variables, the effects statistically significant at the 5 percent. Our results provide evidence that high levels of foreign institutional shareholding by corporations have a positive effect on fund performance. These imply that foreign institutional investors have played an active role, to a different degree, in helping their fund companies improve corporate governance and introduce advanced investment strategies in Taiwan fund companies.

5. Conclusions

As the share of the market owned by mutual funds continues to rise, fund governance becomes increasingly important. In this study we examine the relationship between corporate ownership and fund performance in Taiwan. Our study presents empirical evidence that mutual fund ownership do have effect on fund performance. The results show that the higher share held by foreign company, the higher is the mutual fund performance. This identifies the fund industry ownership that could drive fund performance among mutual fund managers. We also find a negative relationship between the number of board members and the return gap measure of fund performance. In addition, in our study, there are no significant relation between number of board member seats and fund performance or ownership concentration and fund performance.

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Appendices

Table 1. Summary Statistics for Open-end Equity Funds in Taiwan

The data in the table relate to the end of year. Only includes mutual funds invested in domestic securities.

Year	Number of Funds	Fund Size (TWD million)				Aggregate Fund Size (TWD million)
		Max.	Min.	Medium	Average	
1999	165	10,781	25	1,043	1,754	267,368
2000	170	7,044	35	650	993	168,837
2001	173	9,295	44	839	1,308	226,284
2002	178	7,843	32	781	1,177	209,653
2003	181	9,714	53	850	1,326	240,064
2004	183	8,598	26	818	1,259	230,437
2005	180	9,000	75	829	1,322	238,071
2006	176	7,210	83	813	1,360	239,498

Table 2. Descriptive Statistics for Dependent and Independent Variables

RARTN is the mutual fund quarter excess return. *SHARPE* and *RTNGAP* are mutual fund performance by Sharpe ratio and return gap, respectively. *TLSH* = fraction of shares owned by the three largest shareholders, *FII*= Proportional share held by foreign institutional investors, *NUMBM*=total number of board members, *EXPRATIO* = fund's expense ratio, *AGE* = fund age in years. *LOGTNA* = the fund's total net assets, in millions, denote the natural logarithm of total net assets by TNA. *NMG*= new money growth.

	Mean	Median	Std. Dev	Max	Min
<i>RARTN</i>	0.011	0.039	0.179	0.526	-0.255
<i>SHARPE</i>	0.302	-0.001	7.448	24.081	-19.672
<i>RTNGAP</i>	0.004	-0.001	0.111	0.519	-0.572
<i>TLSH</i>	83.62%	81.25%	0.01	100%	80.73%
<i>FII</i>	28.87%	25%	0.19	100%	10%
<i>NUMBM</i>	9	9	2.98	19	5
<i>EXPRATIO</i>	1.52%	1.5%	0.09	2%	1.5%
<i>AGE</i>	10.16	9.28	3.08	19.93	7.03
<i>LOGTNA</i>	1.098	1.078	0.966	1.002	1.317
<i>NMG</i>	-1.580	-3.000	0.809	-1.701	-1.235

Table 3. Correlation matrix

This table shows correlations between variables. The variables are defined as follow: *RARTN* is the mutual fund quarter excess return. *SHARPE* and *RTNGAP* are mutual fund performance by Sharpe ratio and return gap, respectively. *TLSH* = fraction of shares owned by the three largest shareholders, *FII*= Proportional share held by foreign institutional investors, *NUMBM*=total number of board members, *EXPRATIO* = fund's expense ratio, *AGE* = fund age in years. *LOGTNA* = the fund's total net assets, in millions, denote the natural logarithm of total net assets by TNA. *NMG*= new money growth.

Variable	<i>RARTN</i>	<i>SHARPE</i>	<i>RTNGAP</i>	<i>TLSH</i>	<i>FII</i>	<i>NUMBM</i>	<i>EXPRATIO</i>	<i>AGE</i>	<i>TNA</i>	<i>NMG</i>
<i>RARTN</i>	1.000	0.659	0.565	0.001	0.023	0.007	0.031	0.132	0.145	0.022
<i>SHARPE</i>		1.000	0.947	-0.016	-0.009	-0.007	0.01	-0.061	-0.075	0.005
<i>RTNGAP</i>			1.000	-0.011	-0.008	-0.003	0.009	-0.065	-0.071	-0.001
<i>TLSH</i>				1.000	0.186	0.068	0.127	0.066	0.041	0.010
<i>FII</i>					1.000	-0.386	-0.04	0.145	-0.022	-0.002
<i>NUMBM</i>						1.000	-0.006	-0.003	-0.024	0.003
<i>EXPRATIO</i>							1.000	-0.052	0.082	0.06
<i>AGE</i>								1.000	-0.137	0.056
<i>TNA</i>									1.000	0.132
<i>NMG</i>										1.000

Table 4. Estimation Results of Panel Regression Analysis

This table reports the regression of corporate ownership variables. The dependent variables are defined as follows: *RARTN* is the mutual fund quarter excess return. *SHARPE* and *RTNGAP* are mutual fund performance by Sharpe ratio and return gap, respectively. *TLSH* = fraction of shares owned by the three largest shareholders, *FII* = Proportional share held by foreign institutional investors, *NUMBM*=total number of board members, *EXPRATIO* = fund's expense ratio, *AGE* = fund age in years. *LOGTNA* = the fund's total net assets, in millions, denote the natural logarithm of total net assets by TNA. *NMG*= new money growth. In each cell the regression coefficient is reported in the upper case and t-statistics in parentheses is reported in the lower case. ***, **, and * represent significance level of 1%,5%, and 10%, respectively.

Variable	<i>RARTN</i>	<i>SHARPE</i>	<i>RTNGAP</i>
<i>INTERCEPT</i>	0.182 (0.615)	0.247 (1.212)	0.021 (1.048)
<i>TLSH</i>	-0.143 (-0.428)	-0.065 (-0.217)	-0.077 (-0.433)
<i>FII</i>	0.003 *** (2.531)	0.001 *** (2.663)	0.004 *** (2.598)
<i>NUMBM</i>	-0.001 (-0.149)	-0.001 (-0.199)	-0.002 ** (-1.884)
<i>EXPRATIO</i>	2.943 (1.151)	0.922 (0.554)	1.189 (0.699)
<i>AGE</i>	0.001 ** (1.833)	-0.002 * (-1.682)	-0.003 (-0.229)
<i>LOGTNA</i>	-0.018 *** (-4.666)	-0.011 *** (-3.896)	-0.010 *** (-3.493)
<i>NMG</i>	0.004 * (1.978)	0.001 (0.223)	-0.001 (-0.007)