Skin in the game: The impact of Managerial Investment in No Load Mutual Funds
Professor Abigail Hornstein, James Hounsell '11*, and Jeffrey Legunn '13

Abstract

- U.S. mutual fund portfolio managers invest in the funds they manage.
- Managerial ownership of funds could lead to conflicts of interest between the fund's managers and its investors.
- Alternatively, portfolio managers who beneficially own more shares of a fund may have their interests more closely aligned with those of their investors, and therefore have more of an incentive to help the fund perform well.
- Vast empirical literature finds both effects present in corporations: low levels of managerial ownership lead to an alignment of interest while high levels lead to entrenchment and degrade firm performance.
- Scant literature on the mutual fund industry.
- The goal of this study is to determine the impact of managerial ownership on a mutual fund's performance and management.

Data

- No-load funds do not charge a sales fee at time of investment. There are approximately 9,000 mutual funds in the U.S.
- 1,073 fund-year observations spanning 2006-2009.
- As of March 2005, U.S. mutual funds are required by the SEC to disclose a range of how many managers have personally invested in the funds they manage.
- The ranges are: $0, $1-$10,000, $10,001-$50,000, $50,001-$100,000, $100,001-$500,000, $500,001-$1,000,000, and $1,000,001+.
- For our purposes we record the midpoint of these ranges for each manager of each fund. $1 million is recorded as $1,000,000. Many funds are team-managed.
- Data was also collected on aspects of the fund’s performance, management and corporate governance.

Distribution of Managerial Ownership and Returns

The managerial ownership distribution is relatively split into three levels: managers have no ownership stake in 18% of the fund-years, have intermediate levels of ownership in 45% of the fund-years, and 36% have stakes of more than $1,000,000.

Manager Ownership

- Many factors can influence a portfolio manager’s decision to invest in a fund given that managerial income and employment are already closely tied to the fund’s performance.
- Our dataset does not include information on managerial income or other investment assets, and thus cannot address the role of portfolio diversification.
- Managers with different personal characteristics (such as age) may avoid investing in certain types of funds. Younger managers, in particular, may prefer to avoid investing in bond funds.
- However, even if a manager decides that their own fund is not the optimal personal investment, managers may invest in their fund just to be able to signal to potential investors that they have confidence in the fund.
- While the few studies of the mutual fund industry thus far have found a positive correlation between higher levels of manager ownership and fund performance, there is no established conclusion regarding the causal relationship. Moreover, these studies do not differentiate among types of mutual funds.

Returns by Average Ownership Level

Empirical Analysis

The generalizations of the forms of equations we used to find our results are as follows. All models are estimated using OLS with error terms clustered at the fund family level. We estimate each model twice using nominal and style-adjusted excess returns.

- Returns = f(manager ownership, fund characteristics, year characteristics)
- Fees = f(manager ownership, fund characteristics, year characteristics)
- Manager Ownership = f(return, fund characteristics, year characteristics)

Managerial ownership is measured as:
1. average manager ownership
2. total managerial ownership in $ terms
3. total managerial ownership as a % of the assets under management

Regression Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total managerial ownership in fund (lagged) in $ terms</td>
<td>1,276</td>
<td>658,943</td>
<td>830,290</td>
<td>0</td>
<td>5,750,005</td>
</tr>
<tr>
<td>As % of total assets in fund</td>
<td>1,276</td>
<td>.001</td>
<td>.005</td>
<td>0</td>
<td>.104</td>
</tr>
<tr>
<td>Frequency of zero ownership</td>
<td>1,276</td>
<td>.201</td>
<td>.401</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal returns (bp)</td>
<td>1,719</td>
<td>1,988</td>
<td>3,509</td>
<td>-11,679</td>
<td>30,677</td>
</tr>
<tr>
<td>Excess returns (bp)</td>
<td>1,719</td>
<td>-4,02e-09</td>
<td>1,548</td>
<td>-9,921</td>
<td>13,404</td>
</tr>
<tr>
<td>Fund characteristics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expense ratio (bp)</td>
<td>1,718</td>
<td>1,025</td>
<td>.406</td>
<td>0</td>
<td>2.97</td>
</tr>
<tr>
<td>Age of fund (years)</td>
<td>1,720</td>
<td>20,040</td>
<td>15,594</td>
<td>0</td>
<td>85</td>
</tr>
<tr>
<td>Fund size (log $m, lagged)</td>
<td>1,276</td>
<td>7,326</td>
<td>1,510</td>
<td>1,619</td>
<td>11,406</td>
</tr>
<tr>
<td>Total fund family size (log $m)</td>
<td>1,597</td>
<td>30,773</td>
<td>14,784</td>
<td>0</td>
<td>54,995</td>
</tr>
<tr>
<td>Board size (ln)</td>
<td>1,660</td>
<td>2,108</td>
<td>337</td>
<td>1,099</td>
<td>2,773</td>
</tr>
<tr>
<td>Insiders as % of board</td>
<td>1,550</td>
<td>23,103</td>
<td>20,555</td>
<td>0</td>
<td>77,398</td>
</tr>
</tbody>
</table>

All results are robust to the use of excess returns in lieu of nominal returns, and to the inclusion of corporate governance variables. Results are also robust across multiple divisions of the dataset (e.g., by year or quartile size or age).

Conclusions

Managerial ownership in a no load mutual fund leads to:
- Lower future returns
- Higher future expenses

Managerial ownership in a no load mutual fund is likely to be higher when the fund:
- Has lower past returns
- Is older
- Belongs to a smaller fund family

These results suggest that the entrenchment theory better explains the relationship between ownership and performance in the no load mutual fund industry.

References