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Effect Of Institutional Ownership on Free Cash-Flow Problem

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Introduction and Statement of Hypothesis:

The agency problem and its related costs have been the subject of extensive studies. previous literature has already shown that agency problems and costs can be reduced by increasing the degree of the control over the manager. Different methods of increasing the degree of control over management have been suggested and used (e.g., auditing the firm's financial reports).

Presently, institutions hold a considerable number of shares in other companies. Hessel and Norman (1992) report that about 40 percent of the shares outstanding are held by institutions. For two reasons the managers of firms whose stock is held by institutions

ownership is more complicated than we have initially suggested.

One of the limitations of this paper is related to the limited and relatively insignificant changes in the institutional ownerships. It is possible that the agency problem of free cash flow can be avoided only under conditions in which the change in the institutional ownership is very significant. If the institutional ownership is not large enough to provide proper incentives to the investing corporations to impose higher control on the firm, then the manager will try to use his discretion to have access to larger amounts of free cash flow as is seen in the results of this paper. One way to improve the design of the study is to limit the sample to those firms who are facing substantial changes in institutional ownerships. Although the new design has a selection bias limitation, the problem of small changes in the independent variable is alleviated.

References

- 1- Epplin, M. P., *Leveraged Buyouts: An Analysis of premiums and Stock price Reactions*, Doctoral Dissertation, Oklahoma State University, Stillwater, OK, December, 1992.
- 2- Hessel, C. A. and M. Norman, "Financial Characteristics of Neglected and Institutionally Held Stocks," *Journal of Accounting, Auditing & Finance*, 1992, pp. 313-330.
- 3- Jensen, M. C. "Agency Costs of Free Cash Flow, Corporate Finance and Takeovers." *American Economic Review*, AEA papers and proceedings, May

lead to take-over actions.

one possibility is that the management thinks that the CF is not monitored by the institutional owners. prior research shows that firms who are candidates for being taken private, have shown (relative to others) more intense free-cash-flow problems (Lehn and poulsen, 1989). our findings coupled with that of Lehn and poulsen (1989) provide evidence that the free-cash-flow problem is alleviated only when the firm is being very closely controlled (i.e., taken private).

Summary And Conclusion:

This study reports the empirical results for testing the effect of the changes in institutional ownership on the free-cash-flow problem and its related agency costs. We proposed that since an increase in institutional ownership results in instituting more control on management actions, then the free-cash-flow problem should be alleviated by institutional ownership.

Our results, although showing statistically significant coefficients for the regressions, were opposite to what was expected. The results provide evidence that the management keeps additional cash (as a means to additional power in the firm) more often when the degree of institutional ownership is increased. The results suggest that only when a firm is being taken over is the free-cash-flow problem alleviated. perhaps the relationship between the free cash flow and institutional

see the expected negative relationship between the two, suggesting that the higher the institutional control, the lower the agency costs of free cash flow. Table 4 reports the results of this analysis.

MODEL	Number of observations	R ²	Sign. of the coefficient	Significant at level
$CF_{86} = SHARE_{86}$	312	0.0163	-	0.0242
$CF_{87} = SHARE_{87}$	312	0.0315	-	0.0017
$CF_{88} = SHARE_{88}$	312	0.0104	-	0.0722
$CF_{89} = SHARE_{89}$	285	0	Not significant	
$CF_{86-89} = SHARE_{86-89}$	1221	0.0149	-	0.0002

NOTES: For definition of the variables see notes to Table 1.

Table 4. The results of regression for the test of the hypothesis

Although, there is no significant relationship between CF and SHARE in 1986, significant coefficients (with opposite directions) for years 1987 to 1989 will be noticed. Also, when we pooled the data for all years, we found the same significant relationship. The results in Tables 2 and 4 show that the higher the institutional ownership, the more intense the free-cash-flow problem. This suggests that the firm's management does not consider the free-cash-flow problem as a serious problem that can

1- After using total revenue to standardize CF, we ran the regressions using a standardized value for CF. The results did not improve. However, when we divided the sample into large and small companies, we noticed that the observed results are driven mainly by the large companies.

(CSHARE_{86,87}), however, is opposite to the current independent variable. one explanation may be that it takes the management one period to be able to adjust the amount of free cash flow in response to the changes in the institutional ownership. Another explanation is that the change in CCF and CSHARE both result from a general economic condition and not the firm's specific conditions. Given the results shown in Tables 2 and 3, no conclusion can be made, however.

MODEL	Number of observations	Adjusted R ²	Significant coefficient and its sign	Significant at . level
$CCF_{88,89} = CSHARE_{86,87} - CSHARE_{87,88} - CSHARE_{88,89}$	285	0	Not significant	
$CCF_{87,88} = CSHARE_{86,87} - CSHARE_{87,88}$	285	0.0071	CSHARE _{86,87} + CSHARE _{87,88} - CSHARE _{88,89}	0.0058 0.0005

NOTE:

CSHARE and CCF information is available only for years 1986 to 1989. As a result, it is not possible to include more than two independent variables for the model when CCF_{t-1} is the dependent variable.

Also see notes to Table 2.

Table 3: The results of regression for the test of the hypothesis when the lag variables are included.

Another way of testing the hypothesis is by studying the relationship between the changes in CF and SHARE. If the theory constructed in this paper is valid, then we should be able to

We pooled the yearly data and ran the regression using all company-year data. Results are shown in the last row of Table 2.

MODEL	Number of observations	R ²	Sign of the coefficient	Significant at ... level
CCF ₈₆₋₈₇ = CSHARE ₈₆₋₈₇	312	0	.	Not significant
CCF ₈₇₋₈₈ = CSHARE ₈₇₋₈₈	312	0.0464	.	0.0061
CCF ₈₈₋₈₉ = CSHARE ₈₈₋₈₉	285	0.0034	.	Not significant
CCF _{all company-years} = CSHARE _{all company-years}	909	0.0068	.	0.0127

NOTE:

CCF = The changes in the amount of free cash flow from period (t) to period (t+1), and the dependent variable.

CSHARE = The change in the constitutional ownership from period (t) to period (t+1), and the independent variable.

"all company-years" represents changes in the amount of the variable for years (86-87), (87-88), and (88-89).

Also see notes to Table 1 for additional information.

Table 2: The results of regression for the test of the hypothesis.

Again we found a significant relationship between the changes in the institutional ownership and changes in the amount of free cash flow. The observed directions are, however, opposite to what was expected. To see if the prior-year (lag) changes in the institutional ownership can have a follow up effect, the changes in free-cash-flow were regressed on the changes in the institutional ownerships for up to two prior years. The results of this analysis are reported in Table 3.

Interestingly, again the only significant coefficients are found for year 1988. The direction of the lag of independent variable

Table 1: Provides Selected Statistics for the Sample.

Variable/Year	1986	1987	1988	1989	All-Years
SHARE	0.3399* (291)**	0.3725 (318)	0.3965 (318)	0.4004 (318)	0.3767 (1245)
CHANGE IN SHARE	N.A.	-0.0410 (291)	-0.0183 (318)	0.0097 (318)	-0.0224 (927)
FREE CASH FLOW***	180.3000 (285)	208.9583 (312)	282.9487 (312)	253.8931 (312)	231.4800 (1221)
CHANGE IN FREE CASH FLOW***	N.A.	-28.6583 (285)	-73.6906 (312)	-29.3556 (312)	-13.6257 (999)

NOTES:

- * Mean of the variable.
- ** Number of observations used to calculate the mean for the variable.
- *** Numbers are in millions of dollars.

SHARE = Percentage share of institutional ownership in the firm.

CHANGE IN SHARE = Change in SHARE from period (t-1) to t. "t" corresponds to the year for which the statistics are provided.

FREE CASH FLOW = Free-cash-flow (dependent) variable.

CHANGE IN FREE CASH FLOW = Change in FREE CASH FLOW from period (t-1) to t. "t" corresponds to the year for which the statistics are provided.

Table 1. The Mean (number of observations) of variables included in the analysis.

Results Of The Study:

Table 2 provides the results of regressing the changes in the institutional ownership on the changes in the free cash flow.

The results show a statistically significant relationship between the changes in the amount of the free cash flow and the institutional ownership for only one of three yearly models 1988.

institutional ownership data on DISCLOSURE for at least two consecutive years from 1986 to 1989. This means that if the institutional ownership data was only available for 1987 and not for other years, then that firm was deleted from the sample. The DISCLOSURE data base provided institutional ownership data for 291 firms for 1986, and data for 318 firms for years 1987 to 1989. The compustat data base provided the data necessary to calculate the free cash flow items for years 1986 to 1989. Out of 318 firms, we were able to find complete data for 312 firms for years 1987, 1988, and 1989. For 1986, only 285 firms had complete data for free-cash-flow calculation. The following summarizes the data availability according to the year.

Year	Number of companies for which data (institutional ownership and free-cash-flow) is available:
1986	285
1987	312
1988	312
1989	<u>312</u>
company-year observations	1221

1- To calculate the institutional ownership, we divided the total number of shares owned by corporations by the firm's outstanding shares at the end of the period.

INTEXP	Gross interest expense on short- and long-term debt (Compustat item #15);
PFDDIV	Total amount of preferred dividend requirement on cumulative preferred stock and dividends paid on noncumulative preferred stock (Compustat item #19);
COMDIV	Total dollar amount of dividends declared on common stock (Compustat item #21).

The hypothesis was tested by regressing, the change in free cash flow on the change in the institutional ownership for each year, resulting in three regressions for changes in years 1987 to 1989. We expect to find a statistically significant negative coefficient for each of these models in order to reject the (alternative) hypothesis. Furthermore, since it is quite possible that any decision to change the amount of free cash flow may lag behind an actual change in the institutional ownership, the change in free cash flow is also regressed on the change in the institutional ownership for the current and two previous years¹ (limited to the data availability).

Sample Selection:

We used the compustat data base to draw a random sample of the manufacturing firms whose fiscal year ended on December 31, 1989. The original sample of 450 (randomly chosen) was later limited to only 318 firms for which we had access to the

1- For example, pourjalali (1992) shows that the choices of accounting policies are affected by the lagged values of independent variables such as debt-to- equity.

that the manager should have incentives to avoid the free cash flow problem when he perceives the possibility of take-over action. This possibility increases when the institutional ownership increases. AS institutional ownership increases, the amount of effort necessary to take the firm private or introduce motions and proposals counter to management policies at annual meetings decreases. Therefore, the firm's manager, in an effort to reduce the chance of losing control, should alleviate (remove) the free-cash-flow problem. The following hypothesis (stated in the alternative form) summarizes this:

H_a: An increase in the institutional ownership does not affect the free-cash-flow problem.

Methodology and Sample Selection:

The free-cash-flow hypothesis suggests that the proportion of a firm's assets consisting of free cash flow should relate directly to the agency costs (and likelihood of a firm's going private), holding constant the firm's growth prospects. We measured undistributed cash flow (CF) of a randomly selected sample of firms for 1986 to 1989 (the years under study). This variable (following Lehn and Poulsen, 1989) is defined as:

$$CF = INC - TAX - INTEXP - PFDDIV - COMDIV,$$

Where:

INC Operating income before depreciation, (Compustat item #13);

TAX Total income taxes (Compustat item #16, minus change in deferred taxes from the previous year to the current year (change in Compustat item #35));

free-cash-flow problems are more subject to take-over actions by other firms. One view about take-overs (especially leveraged buyouts¹) is that they are valid investment opportunities, providing a proper return for the level of risk involved, while dramatically increasing the efficiency of the firm.

Jensen (1986) suggests that going-private actions may control the agency costs of free-cash-flow problems. Going private allows the firm to use its free cash flow more efficiently. The ensuing interest payments on debt may be an alternative to having used the free cash flow to pay dividends. The buyout may be seen as having led to liquidating dividends for stockholders, thus eliminating the free-cash-flow problem and the agency costs associated with it (Epplin, 1992). Since take-overs (especially in cases of tender offers and proxy contests) usually result in a change in the management of the target firm, management has incentives to avoid the take-over efforts by avoiding the agency costs. Lehn and poulsen (1989) use Jensen's methodology in measuring free cash flow and show that there is a significant relationship between undistributed cash flow and a firm's decision to go private.

The free-cash-flow problem increases the likelihood of going private since avoiding the free cash flow will increase the firm's value (Lehn and poulsen, 1989). Given this argument, we suggest

1- Leveraged buyouts (LBOS) became increasingly popular during the 1980's.

are under great pressure to maximize short-term performance. First, when a firm's performance weakens' the institution may be divested. Because of the current high level of institutional holdings, sudden divestiture tends to make the firm vulnerable to raiders. To avoid this risk, the management alters policies to satisfy institutional investors. The second form of pressure is that at annual meetings institutional investors can easily introduce motions and proposals counter to management policies. The passage of such motions as well as the fear of passage has caused managers to alter policies to reflect both the short-term goals of institutions and institutional abhorrence of poison-pill amendments and golden parachutes (reported in *Business Week*, May 18, 1987).

prior research has suggested that one agency problem is that management maintains additional cash (in excess of what needed for the operation) as a means to additional power in the firm (Jensen, 1986). Jensen calls this agency problem a "free-cash-flow problem." Surplus funds should be distributed to shareholders if the firm's value is to be maximized. But managers may choose to take on negative net present value projects or retain excess funds in order to increase the resources under their control. According to this theory' the value of the firm is inversely affected by the existence of the free-cash-flow problem. Because of the inherent and unrecognized value in the firm that will be realized when the agency costs are avoided, firms with higher degrees of

1986, 323-329.

4- Lehn, K. and A. poulsen. "Free Cash Flow and Stockholder Gains in Going private Transactions." Journal of Finance, July 1989, 771-787.