



TU-E1090 Research Assignment in Strategy and Venturing (5 cr)



# The Effect of Dedicated Institutional Shareholders on Acquisition Likelihood

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## *Research report*

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*Submitted for feedback and guidance.*

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## **Abstract**

This paper presents a longitudinal study of large U.S. public firms to investigate the relationship between dedicated institutional shareholders and acquisition likelihood. Institutional shareholder classifications are used to distinguish dedicated from non-dedicated shareholders and evaluate the impact of dedicated shareholders specifically. An inverse relationship is discovered between dedicated institutional shareholder ownership and acquisition likelihood among the firms in the sample. The results are inline with the literature on M&A and dedicated institutional investors in that dedicated institutional investors aim to maximize the long-term financial performance of their firms and M&A have been found to erode firm value on average. This empirical work, while limited, contributes to the body of research and provides several avenues for future research.

## Introduction



For the past few decades mergers and acquisitions (M&A) has aroused interest among researchers in the strategic management field. The year 2015 set a new record for the estimated total value of M&A deals globally, roughly 5 871 billion U.S. dollars (Martin, 2016). Research around the topic has progressed a great deal over the years: firstly, focused on the relationship between M&A activity and firm performance; secondly, concentrated on the factors which lead M&As to failure or success; finally, research has examined the antecedents of M&A activity (Haleblian et al., 2009). According to Haleblian et al., ite a large amount of antecedents proposed by researchers, they can primarily be combined into four categories: value creation, managerial self-interest, environmental factors and firm characteristics. ever, this literature focused on antecedents has not yet properly examined the relationship between dedicated institutional shareholders and acquisition likelihood.



Porter (1992) defines institutional investors as pension funds, mutual funds and various financial managers. He points out that the importance of institutional shareholders is in their large aggregate holdings containing shares of several companies. Furthermore, he explains that a significant external attribute is the way in which company owners and their agents influence management behaviour in the firms whose shares they own.

Still, according to EU Green Paper (2011) the majority of shareholders do not actively engage in corporate governance and are mostly focused on short-term goals. They underline several reasons for shareholders to avoid involvement in corporate governance including cost of engagement, uncertainty of the engagement outcome,


conflict of interest and uncertainty on the return value of engagement. However, they claim that institutional investors are the ones who have the most interest to be involved, in order to ensure superior performance in the firms they are invested in.


Connelly et al. (2010) have explored the influence of dedicated institutional shareholders on companies' decisions. They claim that institutional shareholders are able to interact directly with the decision makers of a firm to influence strategic decisions to the specific ends. Furthermore, Bushee (1998) proposes that institutional ownership leads managers to pursue towards long-term benefits for the company. He concludes that there is an influence of institutional shareholders to company decision makers rather than vice versa. However, he also points out a difficulty in proving this influence due to the fact that much of the interaction relies on face-to-face meetings perhaps over lunch, phone calls and other informal interpersonal exchanges from which no documentation is publicly available.


Motivated by the significance of institutional ownership (see Porter, 1992), the previously identified influences of institutional ownership (see f. ex. Connelly et al., 2010; Bushee, 1998), and the clear lack in the literature with respect to the influence of institutional shareholders on M&A activity (see f. ex. Halebian et al., 2009), we formulate the following research question to address the research gap: How do dedicated institutional shareholders affect acquisition likelihood? The theory section will describe the relevant literature on the topic in more detail and provides our hypothesis.

## Theory and hypothesis development



The literature review below first examines the power of long-term institutional ownership on corporate decision in general and then focuses on the literature related to

the hypothesis, the effect on acquisition likelihood. Our definition for the term institutional shareholder is the one used by Porter (1992) and mentioned in the previous section. 

Extant literature suggests that the most important activity for institutional investors is monitoring management (Shleifer & Vishny, 1986). Through equity ownership, “institutional investors can effectively acquire information, perform monitoring functions, and thereby improve corporate investment policies” (Fung & Tsai, 2012). This activity of institutional investors is different and has different outcomes relative to the activities of other types of shareholders: Conelly et al. (2010) highlight the difference between dedicated institutional shareholders and transient owners. They claim that transient owners are more likely to pressure decision makers of a firm to support actions leading to short-term rnings while dedicated institutional shareholders will support major decisions which are more long-term oriented, such as M&A. Zhang and Gimeno (2016) also emphasise the performance focus horizon as the main difference between the two categories of institutional investors.

Furthermore, especially dedicated institutional investors are keenly involved with corporate governance and monitoring management activities (Koh, 2007). Controlling is often related to discrepancies which arise from  conflicts of interest i.e. agency problem. When corporate decisions involve several parties (many stakeholders), with different goals and preferences, often people set their own preferences before others (Gillain & Starks 2003). These conflicts can also be observed in cases of M&A, where executives make harmful decisions and act in their own self-interest rather than in the interest of shareholders.

Institutional shareholders, with large shares ownership, are an increasingly important external control mechanism to affect management decision such as investing in a particular company (Gillain & Stark 2003). For example, lending institutions have better inside information for monitoring and controlling companies' financing decisions and thus, reducing potential agency cost of debt financing (Fama 1985). G. Erenburg et al. (2016) classify monitoring and corporate control mechanisms in two types of activities: influence and non-influence based actions. As direct influence, writers mention activism such as institutional campaigns which can bring changes in targeted firms' governance. Moreover, passively managed mutual funds which hold large ownership of firms shares, can exercise influence by voting alongside the activists (Appel et al. 2016). As second channel for influence, Erenburg et al. (2016) suggest "voting with their feet" i.e. institutional selling, which could affect board decision if the concerned shareholders are important for the directors. By non-influence based actions, writers refer to changes in ownership such as institutional practise of selling underperforming firms.

 Considering the preferences of institutional investors, especially long-term institutional investors can mitigate aggressive earnings management among companies (Koh, 2007). For example, Bushee (1998) points out that in the absence of long-term oriented investors, investments in R&D were much more likely to be cut to maintain earnings growth than when a significant portion of the shares was owned by dedicated institutional investors. With this in mind, Haleblan et al. (2009, p. 470) note that strong evidence indicates that acquisitions on average do not produce positive returns for the shareholders of the acquiring company in the short- or long-term. All things considered, this would indicate that dedicated institutional shareholders would not most likely be willing to support companies' uncertain acquisition decision 

Summarizing briefly our findings, the research on institutional ownership (Lang & McNichols, 1997; Connelly et al., 2010; Zhang & Gimeno, 2016) shows that there are two types of institutional investors both of which are dedicated and have a long-term investment horizon. Dedicated institutional investors are active shareholders that positively affect corporate governance practices (Shleifer & Vishny, 1986; Fung & Tsai, 2012; Koh, 2007; Gillan & Starks, 1998). Large dedicated investors and good corporate governance practices are important in that they serve as a control mechanism in protecting shareholders' interests in strategic decision-making for example in M&As which may sometimes be executed against the interest of some stakeholder groups (Gillain & Starks, 2003; Derrien et al., 2013). Furthermore, dedicated institutional investors' preferences alleviate the negative effects of short-term earnings pressures and, moreover, encourage the kind of strategic decision-making that maximizes long-term competitiveness. This was highlighted by the finding of Bushee (1998) that demonstrated how dedicated institutional ownership was found to reduce myopic behavior in management. Finally, a large body of literature on M&A indicates that on average M&As decreases rather than increases the overall financial performance of the acquiring firm on the long-term (Haleblian et al., 2009, p. 470).

Thus based on this review of current research we formulate the following hypothesis on the link between institutional investors and acquisition likelihood:

**H1:** *Ceteris paribus*, if a firm's proportion of dedicated institutional shareholders increases, then its M&A activity decreases.

## Methods

To evaluate a potential relationship between long-term institutional shareholders and acquisition likelihood, we decided to undertake a longitudinal study of large US firms for which data in the often tricky areas of M&A deals and ownership would be most

easily accessible. The time frame selected was a ten year period from 2005 to 2015, allowing the use of information which is consistent and long-term but fairly recent and applicable to the modern large-cap US market.

## **Sample selection**

In this study, samples were derived from existing data sets that originated with three different sources - Compustat's Capital IQ data for North America including Index Constituents and Quarterly Fundamentals, Thomson Reuters' M&A and 13F institutional shareholder data, and Professor Brian Bushee's Institutional Investor Classification data. The data from these disparate sets were merged and aggregated into a single table containing quarterly measurements of all variables for each of the selected firms.

One of the challenges in sample selection is that subject firms must be chosen which have both M&A data available, sufficient M&A activity in the target period, and a high enough portion of classifiable institutional shareholders. The solution chosen in this study was to select from an especially well established and discussed subset of public US firms, the S&P100 index. While the S&P100 is relatively stable, it is a dynamic index which can add or remove constituents at any time. To deal with the changes in the index over the target time range, we elected to include only firms which were part of the index throughout the entire period (2005-2015), leaving us with a total of 49 firms to analyze. Finally, we ignored all observations with missing data for the variables (see below) which led to losing 12 more firms and thus leaving us with a total of 37 firms and 1506 firm quarters. Otherwise no data points (incl. outliers) were removed.



## Variables



In pursuit of the goal of identifying any relationship between long-term institutional shareholders and acquisition likelihood, the independent variable was selected as the percentage of dedicated institutional holdings in the firm (PIH). Specifically, we define PIH as the total number of shares reported on 13F statements as owned by dedicated institutional shareholders divided by the number of shares outstanding at the end of the given quarter as listed on the 13F.

Dedicated institutional shareholders were identified using Bushee's classification data, and while the PIH was calculated quarterly on the basis of 13F statements it was decided to lag the value as well as the controls by one period (quarter) to both assist in establishing direction of effect and to account for the theoretical expectation that it takes time for a shift in ownership to both influence management and then for that change in influence to translate into an observable change in acquisition behavior.

The dependent variable was selected as the number of acquisitions announced by each of the target firms quarterly over the selected time period. While simplistic, we believe that the influence of long-term shareholders on management behavior regarding M&A activity must be represented in the acquisition count and that this measurement is sufficient for establishing an initial correlation.

As control variables, values covering the firm's size and performance were chosen in addition to fixed effect dummy variables controlling for the year and the firm's industry, to incorporate effects from both the overall macroeconomic environment and the relevant industry. Firm size was modeled based on each firm's total market value at the end of each quarter using the previously mentioned fundamentals data from

Compustat. The performance was likewise derived from the Compustat data sets by calculating ROA, defined as net income divided by total assets, quarterly. Slack was also included as a factor, specifically unabsorbed slack which is defined as quarterly current assets divided by current liabilities (Iyer & Miller, 2008). Both ROA and slack were further refined by calculating quarterly average values for each industry group (3 digit SIC) and normalizing each individual firm observation against its own industry group average. Industry fixed effect was likewise based on the first three digits of the firm's SIC code, its industry group.

## Models and regression methodology

Basic descriptive statistics, a Pearson correlation coefficient matrix with statistical significances of each bivariate correlation and a set of scatter and barplots were generated for all variables as part of initial data analysis.

Then, from the proposed variables, three models were created. Model 1 contains only the control variables and the dependent variable, while Model 2 contains our suggested independent variable (PIH) as well. In both of these models the control and independent variable are lagged with one period. The third model was created to examine the robustness of the model relative to the chosen lag and thus is like the second model but with a two period lag. With each of these models, a regression was conducted using Ordinary Least Squares (OLS) to test the proposed hypothesis.

For each OLS regression, standard errors were grouped by firm to reduce bias that arises from having several observations per firm (this is known in econometrics as standard error clustering). Variance inflation factors (VIFs) were also computed for each of the three models to detect multicollinearity.

## Results

Table 1 contains the descriptive statistics and bivariate correlations between the numeric variables used in the analysis. Table 2 summarizes the results of the OLS regression for both models.

Table 1: The descriptive statistics and bivariate correlations between the numeric variables used in the analysis.

|   |                                      | <b>Min</b> | <b>Max</b> | <b>Mean</b> | <b>S. D.</b> | <b>1</b>  | <b>2</b> | <b>3</b>  | <b>4</b> | <b>5</b> |
|---|--------------------------------------|------------|------------|-------------|--------------|-----------|----------|-----------|----------|----------|
| 1 | Market value, M\$                    | 7805       | 382702     | 89528       | 64341        | 1.00      | 0.01     | -0.09 *** | -0.04    | 0.26 *** |
| 2 | Return on assets, relative           | -7.32      | 8.12       | 1.00        | 0.63         | 0.01      | 1.00     | 0.10 ***  | 0.05 *   | -0.01    |
| 3 | Slack, relative                      | 0.35       | 2.18       | 1.00        | 0.24         | -0.09 *** | 0.10 *** | 1.00      | -0.05 .  | -0.05 .  |
| 4 | Percentage of dedicated shareholders | 0.01       | 46.05      | 4.81        | 4.87         | -0.04     | 0.05 *   | -0.05 .   | 1.00     | 0.08 **  |
| 5 | Acquisition count                    | 0          | 26         | 1.21        | 1.73         | 0.26 ***  | -0.01    | -0.05 .   | 0.08 **  | 1.00     |

N = 1506; \*\*\* p<0.001; \*\* p<0.01; \* p<0.05; . p<0.1.

As can be noted from the descriptive statistics (table 1) on average the firms in the sample are large (the smallest has a market value of around 8 billion dollars) and they announced an average of 1.21 acquisitions per quarter. However, the standard deviation is larger than the mean indicating a lot of variance across firms. The percentage of dedicated institutional holdings was at most around 46% while on average it was around 5%. The standard deviation was roughly 4.87 thus also indicating a lot of variance across firms.

From the bivariate correlation coefficients (table 1) it must be noted that acquisition count seems to correlate most clearly and positively with the market value of the acquirer (0.26 with p-value less than 0.001). However, the correlation with the lagged

PIH is positive and very low. This positive correlation does not fit our hypothesis (H1).

The correlation with market value was expected but the negative correlation with slack is likewise counter intuitive.

Table The results of the OLS regression with standard error clustering by firm for models 1 and 2. The table includes the beta-coefficients for the numerical control variables and model 2 also includes the independent variable. The coefficients for each instance of the dummy variables Year and SIC3 are omitted.

|  | Model 1  | Model 2  |
|--|----------|----------|
| (Intercept)                              | 0.98 **  | 1.14 **  |
| Year                                     | Yes      | Yes      |
| SIC3                                     | Yes      | Yes      |
| Market value, \$B                        | 0.00 *** | 0.00 *** |
| Return on assets, relative               | -0.03    | -0.02    |
| Slack, relative                          | -0.18    | -0.21    |
| Percentage of institutional shareholders |          | -0.02    |
| Observations                             | 1506     | 1506     |
| Firms                                    | 37       | 37       |
| Multiple R <sup>2</sup>                  | 0.277    | 0.279    |


\*\*\* p<0.001; \*\* p<0.01; \* p<0.05; . p<0.1.

The results of the regression reported in table 2 show that, in the second model in which the independent variable is present, the beta-coefficient for it is -0.02 which supports the hypothesis that increasing the percentage of dedicated institutional holdings decreases the number of acquisitions firms announce (the following year). The coefficient indicates that a 1% increase in the PIH of a firm would result in a decrease of 0.02 acquisitions per quarter. However, the finding is not statistically significant.

The variance inflation factors for all models were around 1.08 which indicates that there is no significant issues with multicollinearity.

## Discussion

This quantitative study contributes to the body of M&A research that aims to understand the antecedents of M&A activity as well as to the research on the effects of dedicated institutional investors. Prior to this work the relationship between the proportion of dedicated institutional ownership in firms and their respective acquisition likelihood has been unclear. However, this work marks the start of examining this relationship further. Because the results are statistically insignificant our hypothesis that increased dedicated institutional ownership decreases M&A activity is yet to be confirmed.

Provided future research shows that the relationship is significant, the finding would be inline with earlier research on M&A and institutional investors. Evidence from earlier studies on the effects of M&A activity on the financial performance of firms has concluded that on average M&As tend to erode firm value more often than improve it (Haleblian et al., 2009). The research on institutional investors has highlighted the positive effects of institutional investors on corporate governance and the long-term performance of firms. (Shleifer & Vishny, 1986; Fung & Tsai, 2012; Koh, 2007; Gillan & Starks, 1998). Dedicated investors tend to reduce myopia and protect shareholders' interests in strategic decision-making (Gillain & Starks, 2003; Derrien et al., 2013; Bushee, 1998). Dedicated investors tend to have a long investment horizon according to which they seek to maximize the long-term competitiveness of the firms they invest in (Lang & McNichols, 1997; Connelly et al., 2010; Zhang & Gimeno, 2016). Thus our empirical findings  indeed concur with earlier research.

## Limitations

Limitations in this study come mostly from the challenges of finding complete data on all of the information needed to establish both institutional holdings and M&A activities. One limitation derived directly from this challenge is that we only addressed the behavior of the largest public US firms over the time range, and it is entirely possible that the results are not applicable to non-US firms, smaller firms, or privately held firms. Further, we found that despite using the most comprehensive M&A data set available, many deals do not include basic information such as the transaction amount because this information was never disclosed publicly.

Additionally, the use of institutional investor classifications leads to potential limitations in the broad applicability of the results. While Brian Bushee's classification data is excellent, it cannot possibly classify every investor. In cases where no classification was available, we ignored the investor's ownership. Institutional investors who are not required to file 13F documents are also naturally absent from our analysis.



Data was not available for computing all the variables for all of the firms which resulted in a significant loss of data. Especially the addition of the slack variable resulted in a large reduction in sample size.



## Future research

Opportunities abound for future research expanding upon these results. The obvious already mentioned avenue is to attempt to collect a larger dataset to establish a clear answer to whether the relationship exists and what is its magnitude and direction. Another such topic could be to investigate whether the impact of institutional shareholders varies significantly across industries. We did use simplified industry



values but only as dummy variables and did not investigate any effect magnitudes in detail. These details could help to build upon the theory of how shareholders influence management decisions.

Furthermore, a more detailed look could be taken at the specific types of dedicated institutional shareholders and whether different types of institutions influence managers differently. For example, traditional banks, asset management firms, and pension funds might all be categorized as dedicated shareholders but probably have some differences in how they exert influence. Some dedicated shareholders may well be much more active in enforcing improvements in corporate governance and a lot more demanding when it comes to M&A related decision-making.

Finally, there is a large opportunity to study these types of effects in markets outside of the US. It has been suggested in past literature that institutional investors in other countries such as Germany and Japan have a significantly greater long-term orientation than their US counterparts (Porter, 1992). It is thus an open question whether these differences would be visible in an analysis of acquisition likelihood and, if so, whether the differences are attributable to managerial culture, regulatory environment, or other factors.

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# Appendices

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## Notes and issues regarding the requested improvements



### Introduction

- We made the section shorter, more concise and smooth focusing more clearly on the research on M&A antecedents.

### Theory & hypothesis development

- We removed the unnecessary structuring, refactored the text based more on ideas and not articles, trying to proceed smoothly from how PIH and CG are related and how they influence managerial decision-making to the finding that M&A, on average, tend to deteriorate shareholder value.

### Methods

- R&D intensity  control variable excluded due to the inclusion would result in a large loss of industries which have few or no reported R&D expenditures: See figures A1 and A2. Potentially we could study the effect within just one industry group (eg. 283 - pharmaceuticals) to examine the impact, for example, and if deemed interesting.
- Firm age control variable excluded because it seems to only be available in  datasets that Aalto has not subscribed to (Capital IQ Helper, People Intelligence, Factset, etc).

- Added cluster robust standard error to reduce bias
- VIF added to examine multicollinearity

## **Results**

- Statistical significance marks for correlations in the descriptive stats table added
- Unnecessary content removed
- Use of full names instead of abbreviations
- Included the simple explanation of the identified magnitude of effect

## **Discussion**

- Updated

## **Additional tables and figures**

This section offers additional tables and figures that we generated during our data analysis process.

Figure A1: SIC3 distribution before firms without R&D intensity data were excluded.

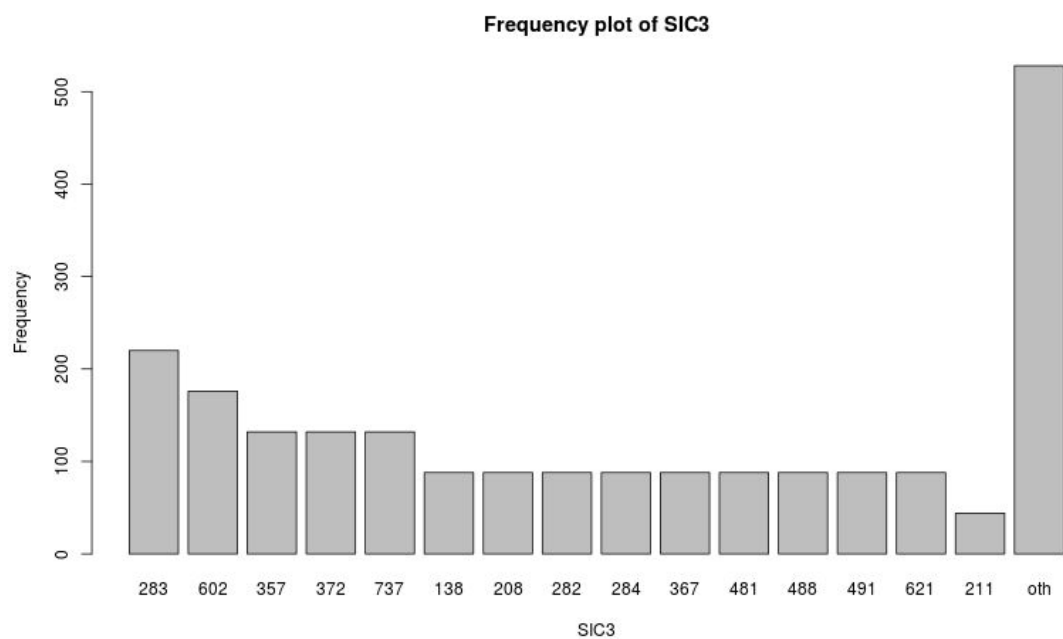


Figure A2: SIC3 distribution after firms without R&D intensity data were excluded.

