AALTO UNIVERSITY
School of Science
Master's Programme in Industrial Engineering and Management

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

The Effect of Dedicated Institutional Shareholders on Acquisition Likelihood

Research report

April 9th 2018

Submitted for grading

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Abstract

M&A has attracted interest in the strategic management field for decades and several antecedents and outcomes of M&A have been identified and analyzed. However, the effect of dedicated institutional investors on acquisition likelihood has not been examined. By drawing on insights from M&A and corporate governance literature, we hypothesize that increasing the proportion of dedicated institutional shareholders decreases acquisition likelihood due to the surmounting evidence that reveals that on average M&A do not increase shareholder value and thus the positive influences of dedicated institutional shareholders on corporate governance work to decrease the number of potentially unattractive M&A. We examine this hypothesis using longitudinal data of 1502 observations from 37 large U.S. public firms during the period 2005-2015. An inverse relationship is discovered between dedicated institutional shareholder ownership and acquisition likelihood among the firms in the sample. Thus the results support the hypothesis and are inline with the literature on M&A and dedicated institutional investors. This empirical work contributes to the body of research on M&A by showing that dedicated institutional investors have a significant effect on M&A likelihood. We also outline 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 and colleges, various types of antecedents proposed by researchers, can primarily be combined into four categories: value creation, managerial self-interest, environmental factors and firm characteristics. Even though the previous literature has improved our understanding of the drivers of M&A, the linkage between corporate governance and M&A has been underexamined.

This report aims to identify the influence of corporate governance, in particular, dedicated institutional shareholders on M&A activities. Institutional shareholders can be classified as transient and dedicated. Dedicated shareholders hold large amount of equity in small number of portfolio firms during a long-term investment period (Bushee, 1998). In this paper, we focus on dedicated shareholders due to corporate governance literature has been showing the influence of dedicated shareholders on managerial decision making including R&D, alliance and acquisition decisions (Connelly et. al. 2010; Bushee et. al 1998, 2001; Koh 2017; EU Green Paper 2011). In addition, dedicated institutional shareholders are able to interact directly with the decision makers of a firm to influence strategic decisions to the specific ends (Connelly et. al., 2010). Dedicated institutional ownership typically leads managers to pursue

towards long-term benefits for the company such as R&D, employees training and marketing. The influence of institutional ownership towards strategic decisions is made through various types of interactions including private interactions and annual general meetings (Bushee, 1998).

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. Haleblian 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 discuss the relevant literature on the topic in more detail and provides our hypothesis.

Theory and hypothesis development

The research on institutional ownership (Lang & McNichols, 1997; Connelly et al., 2010; Zhang & Gimeno, 2016) shows that there are two types of institutional investors, dedicated and transient owners. Bushee (1998) defines dedicated shareholders as institutional investors which have high average size of an institution's stake in its portfolio. In addition, they are characterized with low degree of portfolio turnover which means that they trade less frequently and are more likely to hold any given company in their portfolio continuously for over two years. Lastly, they have almost no trading sensitivity to current earnings news. Compared with transient owners, which hold small amount of equities in a large number of portfolio companies for a short-term investment horizont, dedicated investors do not tend to decrease their holdings in stocks with negative current earnings news. Connelly et al. (2010) and Zhang and

Gimeno (2016) also highlight the dedicated investors support for actions leading to long-term earnings.

Extant literature suggests that dedicated institutional investors have an active role in monitoring their portfolio companies (Shleifer & Vishny, 1986; Fung & Tsai, 2012; Koh, 2007; Gillan & Starks, 1998). These practises are often related to discrepancies which arise from conflicts of interest between different stakeholders i.e. agency problem. When corporate decisions involve several parties 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 company executives make harmful investments decisions and act in their own self-interest rather than in the interest of shareholders (Derrien et al., 2013). With large equity ownership, institutional investors can prevent management acquisition decisions by actively voting and making proposals against directors suggestions (Brickley et al. 1988). Furthermore, there is found evidence of the relationship between dedicated institutional investors influence on executive decision. Bushee (1998) demonstrates how dedicated institutional investors have extensive knowledge of the company they invest and a unique ability to monitor executive actions over time. This interaction relates to face-to-face meetings, phone calls and other informal interpersonal exchanges. Also, dedicated shareholders can influence decision-making by "voting with their feet" i.e. institutional sellings, which could affect board decision if the concerned shareholders are important for the directors (Erenburg et al. 2016).

Moreover, Bushee (1998) highlights how dedicated institutional investors' preferences alleviate the negative effects of short-term earnings pressures and, encourage the kind of strategic decision-making that maximizes long-term competitiveness. According to his findings, institutional ownership is found to reduce myopic behaviour in

management. By myopic investment behaviour Bushee refers to ignoring investments to long-term, intangible project for purposes of gaining short-term goals. His research shows how 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. In addition, Conelly et al. (2010) also shows the influence of different institutional owners on the competitive actions taken by firms in which they hold shares. According to Conelly and colleagues, dedicated institutional investors, with long-term objective, are positively associated with firm use of strategic competitive actions. By strategic actions, writer refers, among others, acquisitions, strategic alliances, the establishment or closing of subsidiaries, investments in technology, and restructuring.

Moving forward, 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). Underperforming acquisition which not necessary retain company's long-term competitive position and are costly in a short-term, do not seem attractive when considering the preferences of dedicated institutional investor.

Based on shown influence of dedicated investors over management decision-making on acquisitions (Erenburg et al. 2016; Bushee 1998; Brickley et al. 1988) and their preference to choose long-term rather short-term returns in face when considering M&A investments (Bushee 1998; Conelly et al. 2010), and in addition, poor overall long-term financial performance of acquisitions (Haleblian et al., 2009, p. 470), we formulate the following hypothesis on the link between dedicated institutional investors and acquisition likelihood:

H1: Ceteris paribus, if a firm's proportion of dedicated institutional shareholders increases, then its likelihood of acquisitions decreases.

Methods

To test the relationship between dedicated 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.

The decision to use quarterly rather than annual data was based on several factors. First and foremost, we have theorized that dedicated institutional shareholders exert influence over managers on a continuous basis that is not limited to annual shareholder meetings and is likely to happen considerably faster on average than one year (Bushee 1998). Furthermore, quarterly data has nearly equivalent availability to annual data for

the variables under study so there is little downside to starting with the most granular observations available.

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 any of the variables (see below) which led to losing 12 more firms and thus leaving us with a total of 37 firms and 1502 firm quarters. Otherwise no data points (incl. outliers) were removed.

Variables

Independent Variable

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. A lag of two periods was calculated as an additional robustness check.

Dependent Variable

The dependent variable was selected as the number of acquisitions announced by each of the target firms quarterly over the selected time period. The influence of long-term shareholders on management behavior regarding M&A activity is expected to be represented in the acquisition count and thus this measurement is sufficient for establishing a correlation (Zeng & Huang, 2015).

Control Variables

With our control variables, we sought to rule out several foreseeable alternative explanations for differences in acquisition behavior. First, each firm's size was controlled for in the form of its total market value at the end of each quarter under study, using the previously mentioned fundamentals data from Compustat. This control variable is essential because larger firms tend to engage in several activities in larger scale and/or higher frequency relative to smaller firms, and this tendency has been shown to impact also M&A. Management structures and decision making processes are also often affected by firm size which is why it is logical to suppose that size may have an effect on acquisition behavior (Iyer & Miller, 2008).

Similarly, to account for the effects of the evolution of management practices, corporate culture and interfirm networks that may develop over time, firm age was included as a control variable (Zeng & Huang, 2015). Since the dataset extends over a period of 10

years longitudinally, age was calculated relative to each quarterly observation: year of the quarter of each observation minus the founding year of each subject firm.

Next, we included a measure of each firm's relative performance in the form of its ROA relative to its industry group. Specifically, this was calculated by dividing net income by total assets based on Compustat data and then dividing that value by the average for the firm's entire industry group (3 digit SIC) within the sample data set. Relative performance has plausible impacts on acquisition behavior through driving managers towards problemistic search activities in times of poor performance relative to peers (Greve, 2003). One way for managers to attempt to resolve a performance slump is to explore acquisition opportunities that might improve the company's competitive standing.

Additionally, available resources were modeled using unabsorbed slack - quarterly current assets divided by quarterly current liabilities (Iyer & Miller, 2008). While it was previously mentioned that problemistic search is one plausible driver of acquisitions, a surplus of resources could also reasonably affect acquisition behavior. Managers of firms with high slack are theorized to engage in slack search behavior, seeking out investment opportunities, including acquisitions, to make use of their excess resources. This variable was also made relative across each industry group. This is important because industries are very different in their capital and risk structures, and thus similar absolute slack ratios may not affect M&A behaviour similarly across industries but firms with similar slack relative to their industry peers should be more likely to behave similarly in terms of M&A, irrespective of industry.

Finally, fixed effect dummy variables were introduced to control for the year and each firm's industry group. The goal of these two dummies was to model and account for

effects from the overall macroeconomic environment and industry level trends and characteristics, respectively. As in the relative ROA and slack calculation, industry group was defined as the first 3 digits of the SIC.

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 and histograms were generated for all variables as part of initial exploratory 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 explanatory 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 negative binomial regression was conducted to test the proposed hypothesis. Negative binomial was chosen because the dependent variable, acquisition count, is a count variable, its variance is significantly greater than its mean (see table 1), and it has a significantly long tail to the right. This was done following the example of eg. Wadhwa & Kotha (2006).

ANOVA tests were performed to check whether Models 2 and 3 statistically significantly improve upon Model 1. Variance inflation factors (VIFs) were also computed for each of the three models to detect issues with multicollinearity (this was done using the vif function of the car package in R).

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.

	Variable	Min	Max	Mean	S. D.	1	2	3	4	5	6
1	Firm age, years	5	213	78.26	51.62	1.00	0.07 *	0.01	-0.23 *	0.01	-0.07 *
2	Market value, $B	7805	439679	90481	65131	0.07 *	1.00	0.00	-0.09 *	-0.03	0.25 *
3	Return on assets, relative	-7.32	8.12	1.00	0.66	0.01	0.00	1.00	0.10 *	0.05	0.00
4	Slack, relative	0.35	2.18	1.00	0.24	-0.23 *	-0.09 *	0.10 *	1.00	-0.05 *	-0.07 *
5	Percentage of institutional shareholders	0	46	4.73	4.84	0.01	-0.03	0.05	-0.05 *	1.00	0.08 *
6	Acquisition count	0	26	1.21	1.73	-0.07 *	0.25 *	0.00	-0.07 *	0.08 *	1.00

N = 1502; * p<0.05.

As can be noted from the descriptive statistics (table 1) on average the firms in the sample were old (around 80 years on average) and large (the smallest had 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 relative ROA and slack varied quite significantly across firm-quarters in the sample. The percentage of dedicated institutional holdings was at most around 46% while on average it was around 5%. The standard deviation was roughly 4.84 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 (0.25 with p-value less than 0.001). However, the correlation with PIH is positive and very low. While the positive correlation with market value was expected but the slightly negative correlation with slack is unexpected.

Table 2: The results of the negative binomial regression for models 1 and 2. The third model with two period lag used for robustness checking is also shown for comparison.

Variable	**Model 1**		**Model 2**		**Model 3**	
(Intercept)	0.25		0.38		0.42	
Year fixed effects	Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes	
Firm age	0.00		0.00		0.00	
Market value	0.00	***	0.00	***	0.00	***
Return on assets, relative	-0.05		-0.04		-0.15	**
Slack, relative	-0.37	**	-0.40	**	-0.35	*
Percentage of institutional shareholders			-0.01	.	-0.01	.
Observations	1502		1502		1502	
Firms	37		37		37	
Lag period, quarters	1		1		2	
Log-likelihood	-3960		-3957		-3951	
Log-likelihood ratio			3.26	.	5.58	***

*** 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 PIH variable is present, the beta-coefficient for it is -0.01 and as its p-value is approximately 0.079 it is significant at the 10% confidence level. This result supports the hypothesis that increasing the percentage of dedicated institutional holdings subsequently decreases the number of acquisitions firms announce. The coefficient indicates that a 1% increase in the PIH of a firm would result in a decrease of

0.01 acquisitions per quarter which is roughly one percent of the mean number of acquisitions conducted per quarter by the firms in the sample.

Model 3 was added as a robustness check. It resulted in a slightly more statistically significant coefficient for PIH (its p-value is approx. 0.050). Also, the relative returns on assets showed a stronger and statistically significant effect with this longer lag. However, otherwise the model does not seem to be very sensitive to the choice of lag which strengthens the confidence on these empirical findings.

The generalized variance inflation factors for the main variables of the three models are all significantly less than 10 except that for firm age which is roughly 4. The one for PIH is approximately 1.6 for model 2 and 1.3 for model 3, which indicates that there are 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 provides a statistically significant result that confirms the hypothesis that increased dedicated institutional ownership decreases M&A likelihood.

This finding is inline with earlier research on M&A and institutional investors. As noted in the theory section, evidence from earlier studies on the effects of M&A activity on the financial performance of firms has concluded that on average M&A 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 also 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). Subsequently, in this paper we hypothesized and then provided empirical evidence in support of the claim that these influences of dedicated investors would work to decrease the likelihood of the kinds of M&A that are more likely to erode firm value. Both our hypothesis and 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 (value) because this information was never disclosed publicly. This prevented us from operationalizing M&A activity with deal size in addition to acquisition count.

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 loss of data. From among the control variables, the addition of the slack variable was most costly resulting in an approximately 23% reduction in sample size. Provided that there would have been more and more complete data available the negative binomial regression should have been made more complete by clustering the standard errors to handle the heteroskedasticity that arises from having several interdependent observations of different quarters but the same firm. Other control variables could have also been added to account for alternative explanations more effectively. For example employee count could have been used to complement market capitalization as another type of proxy for firm size. R&D intensity might have been used to capture differences between firms's strategy of internal vs external R&D (through M&A). Likewise, acquisition deal size could have been added to complement the dependent variable to provide more depth to the models, as already mentioned. However, these additions would have also made the models more complex while reducing the sample size due to differences in reporting and limitations in data accessibility.

Future research

This work marks the start of empirical research on the relationship between dedicated institutional investors and M&A likelihood. Opportunities abound for future research expanding upon these results. As our findings were significant only at the 10%

confidence level the obvious 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. Even just reapplying our methodology with an extended dataset time range and/or firm count are likely to allow for more statistically significant evidence. The addition of already mentioned acquisition value and additional control variables would permit deeper understanding of the relationships and stronger elimination of alternative explanations.

Another avenue for future research 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. Qualitative case studies, for example, might provide a lot more insight into how strongly and why the M&A mitigating effect of dedicated investors actually works in different contexts.

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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