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Why Do Financial Acquirers Pay Less Than Strategic Acquirers?

The impact of industry characteristics on the premium difference

Abstract

This study provides new evidence on the role of industry characteristics in the difference of premiums paid by strategic and financial acquirers. Consistent with Bargeron, Schlingemann, Stulz and Zutter (2008), I show that financial acquirers do indeed pay smaller premium than strategic acquirers. Further, I find evidence that supports the hypothesis that financial acquirers prefer target companies in mature industries. Moreover, there is suggestive evidence that target company's industry has a relatively high impact on the amount of premium paid by a financial acquirer.

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"These two examples, it's important to note, reveal an important and often overlooked truth about the top PE firms: Their investment theses tend to focus not on cost reduction but on growth. Yes, imposing a stronger strategic focus usually entails aggressive pruning of the existing business, but creating a path to strong growth is what produces the big returns on investment. Far from stripping assets to boost short-term returns, PE firms actually tend to overinvest in businesses during the first six months of their ownership. Whether a firm's planned exit is a sale or an IPO, netting top dollar demands a compelling growth story."

– Rogers, Holland and Haas (Harvard Business Review, 2002)

1 Introduction

Private equity (PE) industry has grown remarkably since mid-1990s. Instead of looking for synergies in a potential target company, a private equity company, or any other financial acquirer, seeks for inefficiencies that they can fix, so that they can later exit with a profit. Top financial acquirers pay smaller premium and make bigger profit than strategic acquirers. In contrast to strategic buyers, financial acquirers look for different, often less appealing qualities in target companies. Their objective is clear, to acquire an unattractive company for a low price, make it attractive, and sell it for a profit.

Financial community has provided little research on causes of differences in premiums paid by different types of acquirers. Bargeron et al. (2008) studied why private companies pay smaller premium in mergers and acquisitions than public companies. They found that there were target and deal characteristics that made the target company to be more likely bought by private equity company than an operating company, but they could not fully explain differences in premiums paid. Nevertheless, they showed many assumptions of private equity behavior to hold true.

However, Bargeron et al. did not study much the targets' industry effects. Therefore, it is of interest to study how target company's industry characteristics would affect premiums paid, and whether those characteristics would have explanatory power in the question why do financial acquirers pay less than strategic ones do.

This paper studies what target company's industry-level characteristics can tell about the differences in premiums paid by strategic and financial acquirers. I start with comparing premiums paid, industry characteristics' attractiveness to the two acquirer types, and then continue to investigate whether the industry characteristics have an impact on the differences in premiums paid. I will use terms financial investor, financial acquirer and financial buyer interchangeably throughout this paper as well as strategic buyer and strategic acquirer. I define premium to be the market reaction on target company's share price before and after the acquisition announcement.

The rest of this paper is organized as follows. Section 2 provides theoretical background and review of previous studies on the topic. In addition, I define my hypotheses at the end of Section 2. Section 3 describes the data I used for my research. Section 4 presents methodology and results for the statistical tests. Section 5 deals with robustness checks, and finally, Section 6 concludes and discusses the results and implications as well as gives suggestions for further research.

2 Theoretical background and hypotheses

2.1 *Theory and previous researches*

Traditionally, the reason behind mergers and acquisitions has been that the companies involved seek benefits they could not achieve without combining businesses. These benefits, called synergies, are the excess net income that the combined company gets in addition to their stand-alone incomes. The synergies are based on strategic or operational benefits the combined company gets. I define such acquisitions in this paper as strategic acquisitions. In contrast, acquisitions, where the acquirer does not seek operational or strategic synergies, but an opportunity to make improvements in the target company, after which they can implement an exit strategy[1], are defined as financial acquisitions.

In theory, acquirer should pay for the target company something between the target company's stand-alone value and target company's stand-alone value plus the present value of synergies. The amount paid excess to target's stand-alone value is called premium. On the other hand, the target company should maximize their profit; hence require the largest amount of premium to be gained from selling the business. Therefore, strategic buyer should pay premium approximately the amount of synergies they gain. Because financial acquirers are not looking for operational synergies, one can argue that the target management cannot expect them to pay as high premiums as strategic buyers do. Moreover, Bargeron et al. (2008) show in their study that private equity companies pay significantly lower premiums than operating companies do. Kaplan and Strömberg (2009) discuss also other possible reasons why private equity companies pay less premium than the strategic buyers.

Based on DePamphilis (2015), financial acquirers can make profit in several ways. Acquirer can see potential for cost reduction or improvements in other operational and financial inefficiencies. There can even be a possibility to sell non-profitable operations of the company to make it more attractive when the time for exit becomes relevant. Moreover, financial acquisitions quite often include large amounts of debt. These types of acquisitions are called leveraged buyouts (LBOs). Here the acquirer finances the acquisition with as much debt as possible. Because the required return for debt is lower than the required return for equity, it makes sense to raise cheap capital with leverage. Financial acquirer tackles the default risk associated with a high leverage by selecting a target company with a steady income. That way

[1] An exit strategy is a financial acquirers' plan to realize their earnings from the takeover. Most often this means selling the target company to new owners.

financial acquirer can use the cash flows generated by the target company, to pay the interest and pay back the debt. In addition, paying the interest creates tax shield that also provides economic benefits for the financial acquirer. When the debt level reaches a target level, financial owner can implement the exit strategy. The profit from selling company's equity will also include the share of equity gained by paying back debt with company's cash flows.

Financial acquirers seek primarily opportunities, where a target company could be improved and later sold with a high profit. Based on DePamphilis (2015), target selection, avoiding overpaying and improving operating performance are among the most important factors for a successful LBO. DePamphilis describes an attractive industry for the LBO's target company to be in a mature state. Such industries are characterized by large tangible book values, modest growth prospects, stable cash flows, and limited research and development (R&D) spending. In addition, empirical studies have shown that industries with high free cash flow and limited growth opportunities are good candidates for LBOs (Opler and Titman, 1993; Phan, 1995). This is consistent with the presumption that financial investors acquire companies with a steady cash flow, because companies' cash flows are considered to be driven by industry-level factors (Palepu et al., 2013).

Harford and Kolasinski (2013) show that selling the target company to a strategic buyer is the most common way of exiting. The second most common way of exit is a sale to another financial acquirer in a so-called secondary buyout. Further, Harford and Kolasinski show that strategic buyers' stock prices increase when they announce the purchase of a portfolio company from a private equity sponsor. They also reject the hypothesis, that private equity firms sacrifice long-term value for short-term profit. Indeed, several researches (Lerner et al., 2011; Lichtenberg & Siegel, 1990; Popov & Roosenboom, 2009) implicate that companies acquired by private equity companies tend to invest in innovation. This is related with improving the operating margin by improving efficiency and introducing new products (DePamphilis, 2015). Together with the target in a mature industry hypothesis, this suggests that financial acquirers seek to find a target that they can turn attractive for a strategic buyer, who is looking for a long-term benefit in an otherwise stable and modest-growth industry.

2.2 *Hypotheses*

In this research paper, I will try to show that financial and strategic acquirers have different preferences in target company's industry, and therefore it can partly explain why these two

different acquirer types pay different premiums. Next, I will introduce my hypotheses and explain the reasoning behind them.

First, I need to test that the theory of financial acquirers paying less premium holds true with the empirical data. Therefore, my first hypothesis addresses this question:

H1: Financial acquirers pay smaller premium for a target company than strategic acquirers.

My next hypotheses determine several target companies' industry-level characteristics that should be different for different acquirers based on theory described by DePamphilis (2015):

One of the primary ways of gaining profit in a financial acquisition is through leverage. Often exit strategy involves a target debt level which financial acquirer obtains from industry average debt ratio. This seems appropriate, because it would be reasonable to sell a company with an average debt-ratio to a strategic buyer, and strategic buyer would most likely also prefer a strategic acquisition of a company with an "optimal capital structure"[2]. Because there is a relatively large profit to gain and more tax shield to obtain from a large debt reduction, when financial acquirer uses leverage to buyout a target company, I expect financial acquirers to prefer a low debt ratio for industry.

H2: Financial acquirers look for companies within industries with a low average debt ratio, whereas it should not be as relevant for the strategic acquirers.

Because many exit strategies often involve selling the target company to a strategic buyer, financial acquirers want to make the target companies attractive from a strategic perspective. It is reasonable to believe that strategic buyers in less innovative industries should be interested in acquisitions, where they can gain synergies from target's innovations. Hence, it would be easier for a financial acquirer to sell an innovative company in a less innovative industry to gain a large profit. On the other hand, it would be logical for a strategic buyer to acquire innovative companies from innovative industries to obtain some cross-industry innovation-

[2] Optimal capital structure is one of the most discussed topics in the field of corporate finance. There are several theories that try to assess the optimal capital structure, but no single theory that could provide universal assessment for the optimal capital structure (Brealey et al. 2014). In practice, industry average debt ratio is often viewed as an optimal capital structure in lack of a better knowledge. There are also several empirical studies that show that individual companies' debt ratios are strongly driven by the industry they operate in (MacKay & Phillips, 2005; Bradley et al., 1984; Schwartz & Aronson, 1967).

related synergies. Therefore, I expect financial acquirers to prefer industries with relatively low R&D spending.

H3: Strategic **(**Financial) buyers acquire companies in industries where the relative R&D activity is high (low).

To tackle the risk that financial acquirers take, when they expect they can make the target company more attractive to a strategic buyer than it was, they should expect to have a steady income already with little or no improvements. Also, to pay back the debt that is often affiliated with a financial acquisition, financial acquirers are expected to seek companies that provide steady enough income to manage the debt reduction. Income is often industry-driven, and because some industries are more stable than others are, industry-level profitability should be important to a financial acquirer. For strategic acquirers, industry profitability should not matter as much, because they look more for strategic synergies they can gain jointly with the target company.

H4: Financial acquirers' target companies are in more profitable and profit-wise stable industries, whereas that should not be as relevant for strategic acquirers.

Historically, firms have been attracted to make acquisitions in high growth industries (Audretsch, 1989). Schoenberg and Reeves (1999) also show that high industry growth rate is an important factor in high acquisition activity. Acquiring a company in a high growth industry makes sense to a strategic buyer who wants to expand and modernize their business for the current growth trend. Moreover, Schoenberg and Reeves suggest that managers may want to maximize their own utility by a rapid growth of the corporation they run, for which acquiring companies in high growth industries would be very a suitable method. From the financial acquirer's perspective, in theory they should be interested in a modest-growth industry, although the most important factor is that the target company's industry would be stable enough to ensure stable cash flows.

H5: Strategic (Financial) acquirers prefer high-growth (modest-growth) industries.

Fama and French (1995) show that firms with a low market price relative to the book value of equity tend to be distressed and have relatively low earnings.[3] On the other hand, companies with high market prices relative to the book values have high returns and high growth rates. Adam and Goyal (2008) show in their study that market to book equity is a reasonable proxy for growth opportunities, although they show that market value of assets to total book value of assets is even a better proxy. Because of the value-creation-oriented approach of financial buyers, and the growth-oriented approach of strategic buyers, I expect especially strategic acquirers to value growth opportunities more.

H6: Strategic (Financial) acquirers prefer industries that have high (low) market-to-book ratios.

I will call combined hypotheses H2-H6 as the industry preference hypotheses for different acquirer types throughout this paper.

Finally, I expect the industry-level differences described in hypotheses H2-H6 to have different impacts on premiums paid by financial and strategic acquirers in accordance with each reasoning behind each hypothesis. Because hypotheses H2-H6 split the two types of acquirers' industry preferences quite well into what is defined as mature and growth industry[4], my last hypothesis is as follows:

H7: Strategic (Financial) buyer values more, hence pays more premium, for target companies in growth (mature) industries based on previous hypotheses (H2-H6).

3 Data

3.1 *Sample acquisitions*

I used similar requirements as Bargeron et al. (2008) did for the sample acquisitions. I collected from the SDC database all US domestic mergers and acquisitions with a public target company

[3] Nevertheless, some investors see low market to book ratio as an opportunity, because this implicates that there could be unrealized or unliquidated value in the company.
[4] Although one can argue that the leverage is not as much related to the life-cycle of an industry as it is to the nature of an industry, I make here an exception and include it as part of hypothesis H7 for simplifying reasons.

announced between 1.1.2000 and 31.12.2015. I required acquirer to own at least 90%[5] of shares after the transaction and acquire at least 85%[6] in the transaction. Further, I required the acquirer to hold at most 1%[7] of shares six months prior to announcement. To make an apples-to-apples comparison, I required the acquisition to be an all-cash deal. In addition, I excluded all spinoffs, recapitalizations, self-tenders, exchange offers, repurchases, privatizations and sellers of a minority interests. Further, I required all the transactions to have complete information about premiums and company-specific data for targets described later in this paper. This left me with 882 transactions, of which 256 had financial acquirer and 626 had strategic acquirer according to the SDC database.[8]

3.2 *Premium data*

For the premium[9] calculations, I obtained simple premium data from the SDC database. Those premiums included one day, one week and four weeks returns in target's share price prior to the announcement day. The premiums are based on relative change in target's share price and the method is presented in the Equation 1.

SDC-based one day, one week, and four weeks premiums are calculated as follows:

$$Premium = \frac{P_{Announced} - P_{Before}}{P_{Before}}, \quad (1)$$

where $P_{Announced}$ is the closing price of target company's share on the announcement day of the acquisition, and P_{Before} is the closing price of target company's share one day, one week or four weeks prior to the announcement day

In addition, I obtained daily return data from CRSP database for my sample of target companies. I used the returns to calculate cumulative abnormal returns (CARs) in target's share

5 In the U.S. the acquirer can use their right to make a compulsory acquisition of remaining minority shares when they own at least 90 % of the target company's shares.
6 In the U.S. the acquirer can buy up to 5 % of target's shares without filing the acquisition to the authorities.
7 For this research, I expect the buyers to be coming from outside the company.
8 SDC uses following definition for financial acquirers: "the acquiring company is buying a non-financial target company for financial reasons rather than for strategic reasons. The acquiring company is considered a financial company and can either be a buyout firm, a venture capital company, a merchant bank, a commercial bank or an investment bank."
9 In lack of a better knowledge, I estimated target companies' stand-alone values to be the market price before the announcement day of acquisition. The premiums used throughout this paper are based on market reactions to the announcement of acquisition on the target company's share price.

price for three-, five-, and eleven-day windows around the announcement day of the acquisition to further estimate the premiums paid. Calculation method for the cumulative abnormal returns is presented in Equations 2 and 3.

Abnormal returns are calculated as follows:

$$AR_i = r_{iTarget} - r_{iS\&P500}\ , \tag{2}$$

where AR_i is the abnormal return on day i, $r_{iTarget}$ is the daily return of the target company's share on day i, and $r_{iS\&P500}$ is the daily return of S&P 500 index on day i.

Cumulative abnormal returns are calculated as follows:

$$CAR_T = \sum_{i=1}^{T} AR_i\ , \tag{3}$$

where CAR_T is the cumulative abnormal return during a time window of T days.
Note: CAR calculations are calculated in time windows starting (T – 1) / 2 days before the announcement day.

3.3 *Industry and company-specific data*

I calculated the needed industry data from all the U.S. domestic company data available in the Compustat database for each year of my acquisition sample.[10] First, I took out all the duplicates, because some companies had separate yearly data for different issues.[11] Second, I calculated each company's ratios that I needed on yearly basis.[12] Third, I used the boxplot method introduced by Tukey (1977) to detect outliers in company data and to trim them out. Finally, I calculated yearly industry-level ratios by taking the average of the company ratios within an industry. I classified companies to be in the same industry based on companies' primary Standard Industrial Classification (SIC) codes' first two numbers. In addition, I calculated some company-level ratios for control variables that I discuss later, and required all target companies to have these ratios available.

[10] In addition, to calculate five year compound growth rate and three year average return on equity, I needed to obtain data from earlier years as well. In total, the Compustat data included 21,967 individual companies across the 20-year window I used to derive industry ratios.
[11] Based on last two numbers of 8-digit company-specific CUSIP code.
[12] I wanted to use data that was most likely available to the public prior to the announcement, so I used previous year's data for each acquisition.

Last, to combine the data from different databases, I used target companies' 6-digit CUSIP codes, 4-digit SIC codes and the announcement dates provided by the SDC database as the common identifier for the data. Because Compustat and CRSP database use 8-digit CUSIP codes, I had to change them into 6-digit codes first. I used the first two numbers of targets' SIC codes to identify their industry. Since I used yearly data, I decided to merge the deal and company-specific data by the acquisition announcement year and the target company's previous fiscal year.[13]

3.4 *Limitations in data*

There were several limitations in data, of which some I will address in robustness checks in Section 5. I used only U.S. domestic deals, because that data was well recorded compared to international data. I argue that it was reasonable to use widely accepted boxplot method to detect and trim out the outliers, since the industry means in original data did not correlate with the medians. As for other limitations, the industry ratios were calculated as simple averages of companies operating in the same industry with no weights added. Also, I had to calculate the industry ratios only based on available company ratios.[14] Because there is no comprehensive industry data available, the method I used works as a reasonable approximation for the industry ratios. In addition, combining data from three different databases with different company identifiers[15] forced me to drop a significant amount of sample deals. Nevertheless, because the sample size remained relatively large, and the missing data was assumably randomly distributed, I consider the sample of acquisitions used in this paper representative for this research.

4 Methodology and results

In this section I discuss the methods I used to test my hypotheses, and present the results. In the end of this section, I will discuss the interpretation of the results and what do they mean from the point of view of my hypotheses.

[13] This way I would also see if the data has any predictive power on the acquisition premiums.
[14] Not all companies had data available for each year, and company data was only for public companies.
[15] 6-digit and 8-digit CUSIP codes as well as CRSP's company permanent numbers.

Table 1

Average premiums by different acquirer types

This table presents average [median] premiums target companies gained in U.S. domestic all-cash acquisitions announced between 2000 and 2015 divided by two acquirer types, strategic and financial. CAR3, CAR5 and CAR11 are cumulative abnormal returns for target company shareholders in 3-, 5-, and 11-day windows around the announcement date of acquisition, respectively. Premium 1 day, Premium 1 week, and Premium 4 weeks are relative changes of target company's closing share prices on the announcement date and one day, one week and four weeks prior to the announcement date. Student's t-tests are conducted between averages of the two groups and Wilcoxon rank-sum tests are conducted between medians of the two groups. t-statistics, W-statistics and p-values are provided. CAR data is obtained from the CRSP database and the rest premium and acquisition data is from the SDC database. Data covers 882 acquisitions of which 626 are by strategic acquirers and 256 are by financial acquirers.

		Acquirer		Strategic - Financial			
	Average [Median]	Strategic	Financial	Difference	t-value [W-value]	p-value	
CAR3	0.3153	0.3309	0.2774	0.0535	2.1956	0.0287	*
	[0.2457]	[0.2788]	[0.1939]	[0.0849]	[95630]	[<0.0001]	***
CAR5	0.3189	0.3345	0.2807	0.0538	2.2045	0.0280	*
	[0.2557]	[0.2874]	[0.1998]	[0.0876]	[95506]	[<0.0001]	***
CAR11	0.3297	0.3475	0.2863	0.0613	2.5390	0.0115	*
	[0.2663]	[0.3029]	[0.1945]	[0.1083]	[96674]	[<0.0001]	***
Premium 1 day	0.3632	0.3828	0.3152	0.0676	2.5762	0.0103	*
	[0.3102]	[0.3275]	[0.2482]	[0.0794]	[95386]	[<0.0001]	***
Premium 1 week	0.3836	0.4044	0.3328	0.0716	2.7279	0.0066	**
	[0.3184]	[0.3409]	[0.2500]	[0.0909]	[96241]	[<0.0001]	***
Premium 4 weeks	0.4439	0.4791	0.3580	0.1211	3.4635	0.0006	***
	[0.3494]	[0.3877]	[0.2768]	[0.1110]	[98967]	[<0.0001]	***
Note:				*p<0.05;	**p<0.01	***p<0.001	

4.1 *Tests for differences in premiums paid*

To test the hypothesis H1 to see whether financial acquirer pays less premium than strategic buyer does, I used the same method as Bargeron et al. (2008). I divided premiums into two groups based on the acquirer type, and conducted Student's t-test on groups' means and Wilcoxon rank-sum test on group's medians. As expected, the test results show that strategic buyers pay more premium than financial acquirers do.

Table 1 shows that the means and medians of the two groups' premiums are different at 95 % confidence level. Further, all medians are different at 99.9 % confidence level based on the rank-sum tests. The average premium paid by a strategic buyer based on 5-day window (CAR5) measure was 33 % while for financial buyer the premium was 28 % over the target's stand-alone price. Moreover, based on the SDC's four-week premiums, a financial acquirer paid on average twelve percentage points less premium than a strategic acquirer did. The results are similar throughout the premium tests. Therefore, hypothesis H1 seems to hold true.

4.2 *Tests for differences in industry-related preferences*

To test hypotheses H2-H6, I made similar tests as with the tests for premiums paid. Again, I divided sample acquisitions into two groups based on the acquirer type, and conducted t-tests for means and rank-sum tests for medians of industry-level leverage, R&D, profitability, growth, and market-to-book measures for those groups. The detailed information on the measures and calculations behind are provided in Table 2.

To test each hypothesis I used relative measures of industry characteristics to make them more comparable. As mentioned previously, I used industry ratios of previous fiscal year in relation to the announcement date. Most of the industry ratios used are self-explanatory and in accordance with my hypotheses. Using R&D expenses divided by company's assets should provide a comparable ratio for R&D investments across the sample acquisitions. According to Palepu et al. (2013), return on equity (ROE) is a comprehensive measure for firm's performance and profitability. Moreover, the three-year average ROE reflects the stability in profits better than just a previous year's ROE. Just as the average ROE, so does the compound annual growth rate take into account stability better than the one year change in sales. Naturally, it also shows the growth and the medium term trend in the industry.

Table 2 shows the results for the industry preference tests on hypotheses H2-H6. Based on these tests, hypotheses H2-H4 for different preferences in industries' leverage, R&D investments, and profitability hold true. The average industry leverage for targets of financial

Table 2

Industry-level preferences of different acquirer types

This table presents average [median] target company industry characteristics in U.S. domestic all-cash acquisitions announced between 2000 and 2015 divided by two acquirer types, strategic and financial. *Leverage* is the previous fiscal year's industry average total liabilities divided by common book equity. This industry-ratio tests hypothesis H2. *R&D* is the previous fiscal year's industry average R&D expenses divided by total book value of assets. This industry-ratio tests hypothesis H3. *ROE* is an industry average of three previous fiscal year averages of net income divided by common book equity. This industry-ratio tests hypothesis H4. *CAGR* is an industry average compound annual growth rate of revenues in five previous fiscal years. This industry-ratio tests hypothesis H5. *Market-to-Book* is the previous fiscal year's industry average market value of equity divided by common book equity. This industry ratio tests hypothesis H6. Student's t-tests are conducted between averages of the two groups and Wilcoxon rank-sum tests are conducted between medians of the two groups. t-statistics, W-statistics and p-values are provided. Industry data is obtained and derived from company-specific data from the Compustat database and the acquisition data is from the SDC database. Data covers 882 acquisitions of which 626 are by strategic acquirers and 256 are by financial acquirers.

		Acquirer		Strategic - Financial			
	All	Strategic	Financial	Difference	Statistic	p-value	
Leverage	1.7076	1.8157	1.4432	0.3724	2.6418	0.0084	**
	[0.9056]	[0.8996]	[0.9870]	[-0.0874]	[71825]	[0.0156]	*
R&D	0.0720	0.0772	0.0593	0.0178	3.7695	0.0002	***
	[0.0882]	[0.0900]	[0.0648]	[0.0252]	[92892]	[0.0002]	***
ROE	0.0092	0.0008	0.0297	-0.0288	-3.7464	0.0002	***
	[0.0416]	[0.0406]	[0.0515]	[-0.0108]	[69022]	[0.0012]	**
CAGR	0.0639	0.0653	0.0605	0.0048	1.6122	0.1075	
	[0.0639]	[0.0607]	[0.0614]	[-0.0007]	[82219]	[0.5427]	
Market-to-Book	2.4375	2.4349	2.4439	-0.0090	-0.1436	0.8859	
	[2.3134]	[2.3045]	[2.3594]	[-0.0549]	[79091]	[0.7627]	
Note:				*p<0.05;	**p<0.01	***p<0.001	

buyers is 1.44 while it is 1.81 for the strategic buyer. The average industry R&D investments for targets are also higher for the strategic acquirer and statistically the difference in both means and medians is significant at 99.9 % confidence level. The average industry profitability for targets measured by three-year average return on equity, is on the other hand on average 3 %-points higher for financial acquirers than for strategic. All the results are statistically significant at the 95 % confidence level.

Based on the t-tests for means and rank-sum tests for medians, strategic and financial acquirers have no differences in preferences for growth or market-to-book measures of target companies' industry. Therefore, hypotheses H5 and H6 do not seem to hold true based on these tests. The fact that both groups' targets have similar and low[16] industry growth rates might implicate that as expected, financial acquirers prefer modest-growth industries. As for the strategic buyers, the result might be driven by intra-industry acquisition. Owen and Yawson (2010) show that a corporation in a mature state is more likely to become a bidder. This might also apply at the industry-level, because there would be more growth through acquisitions in such industries.[17] In addition, the two groups' industry market-to-book ratio averages are quite close to the market averages[18], which implicates that it might not be a significant factor in acquisition decisions for the two groups.

4.3 *Tests for differences in value of industry characteristics*

Next, I tested whether the differences in acquirers' preferences would explain differences in premiums paid. I ran multiple linear regressions on the total sample, and on two separate groups of the sample based on the acquirer type. I used premiums as dependent variables, and previous year's industry characteristics introduced earlier as independent variables. In addition, I used the target's Q-ratio and size, profitability and leverage measures as well as indicator variables of deal characteristics as control variables for the regressions. The definitions and methods for calculations of the control variables are provided in Table 3. The rationale behind the selection of these control variables is based on the paper of Bargeron et al. (2008).

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16 Market's average historic growth rate for sales is higher than the sample average during most of the years included in my sample acquisitions. This is based on comparison with a yearly data collected by Professor Damodaran at NYU Stern.

17 Although Schoenberg and Reeves (1999) show that high industry growth rate is an important factor in high acquisition activity, it might be that the strategic acquirers at mature state begin their bidding activity with intra-industry acquisitions.

18 In absolute values based on data collected by Professor Damodaran at NYU Stern.

Table 3 provides results from the regression models. Based on the linear model for the whole sample, the financial acquirer indicator variable is statistically significant at 95 % confidence level. This implicates that the model does not fully explain why the different types of acquirers pay different premiums. All industry ratios, except for the three-year average ROE, have statistically significant explanatory power over the premium size. Compound annual growth rate has largest economic significance, with a coefficient of 0.583 in the CAR5-model. On other words, one percentage change in industry's growth rate should change the premium by around half a percent. Industry leverage and market-to-book ratio have negative coefficients in the linear models. Although they are quite insignificant in the economic scale, they are statistically significant. For market-to-book ratio, this implicates that acquirers pay less premium for higher proxy of growth opportunities. It might be, that there is so much future expectations, and hence risk of uncertainty in an industry with a high market-to-book ratio, that acquirers prefer to use rather conservative synergy estimations when approaching targets in such industries.

I also wanted to compare, how this regression model would explain premiums paid in a sample of only financial acquirers versus strategic acquirers. Table 3 provides regressions with CAR5 and one-day premium as dependent variables for financial acquisitions in Columns (3) and (4), and for strategic acquisitions in Columns (5) and (6), respectively. The only industry ratio that is statistically significant in both subsets of the sample data is leverage. Although industry leverage has little economic explanatory power, it is systematically, throughout the different dependent premium variables, approximately twice as large for financial acquirers as it is for strategic, implying that industry-level leverage would be more important for a financial acquirer.

In addition to leverage, only the industry three-year-average ROE seems to have a statistically significant explanatory power over the premiums paid by financial acquirers. Comparing the industry ROE coefficients and their standard errors between premiums paid in different acquisition groups suggests, that industry ROE is significantly more valuable to a financial acquirer than to a strategic acquirer. For instance, in CAR5-model, for financial acquirer the ROE coefficient is 0.546 and the standard error is 0.306, while for strategic acquirer the values are -0.080 and 0.144 respectively.[19] This implicates that the hypothesis H4 for financial acquirers preferring and valuing industries with a stable positive profits holds true.

[19] See Appendix B for more comprehensive table.

Table 3
Effects of industry characteristics on premiums paid by different acquirer types

The sample includes 882 U.S. domestic all-cash acquisitions announced between 2000 and 2015 obtained from the SDC database. This table presents results from multiple linear regressions, where premium is the dependent variable, and industry characteristics are independent variables. There are also seven target and deal related control variables. *Financial Acquiror* is an indicator variable for a financial acquisition based on SDC database. *Leverage* is the previous fiscal year's industry average total liabilities divided by common book equity. *R&D* is the previous fiscal year's industry average R&D expenses divided by total book value of assets. *ROE* is an industry average of three previous fiscal year averages of net income divided by common book equity. *CAGR* is an industry average compound annual growth rate of revenues in five previous fiscal years. *Market-to-Book* is the previous fiscal year's industry average market value of equity divided by common book equity. CAR5 is the cumulative abnormal return for target company shareholders in 5-day windows around the announcement date of acquisition. Premium one day is the relative change in target company's closing share prices on the announcement date and one day prior to the announcement date. lnMVEComp is target-company's logarithmic market value of equity, and indicates company's size. TobinsQComp is target company's market value of equity and total liabilities divided by its total assets, and indicates company's Q-ratio. ROAComp is target company's net income divided by its total assets, and indicates profitability. DebtAssetsComp is target company's total liabilities divided by its total assets, and indicates company's leverage. Tender is an indicator value to see whether the announcement was a tender offer. TTermFee is an indicator value to see whether the target had signed a termination fee contract. Alockup is an indicator value to see whether the acquirer had a lockup provision in the acquisition. Regressions (1) and (2) are made on the whole sample, Regressions (3) and (4) are made on financial acquisitions, and Regressions (5) and (6) are made on strategic acquisitions. Industry and target data is obtained and derived from company-specific data from the Compustat database. The acquisition and Premium one day data is from the SDC database. CAR5 data is obtained from the CRSP database.

	All acquisitions		Financial acquisitions		Strategic acquisitions	
	CAR5	Premium one day	CAR5	Premium one day	CAR5	Premium one day
	(1)	(2)	(3)	(4)	(5)	(6)
Financial Acquiror	-0.048**	-0.069***				
R&D	0.425*	0.549**	0.331	0.505	0.419*	0.545**
ROE	0.046	0.069	0.546*	0.684**	-0.080	-0.086
Leverage	-0.014***	-0.021***	-0.028**	-0.037**	-0.011*	-0.018***
CAGR	0.583**	0.549**	-0.129	0.046	0.705**	0.582**
Market-to-Book	-0.025*	-0.040**	0.012	-0.014	-0.033*	-0.047***
lnMVEComp	-0.037***	-0.041***	-0.078***	-0.072***	-0.022***	-0.031***
TobinsQComp	-0.013	-0.009	-0.017	-0.011	-0.008	-0.002
ROAComp	-0.083**	-0.069*	-0.298***	-0.359***	-0.050	-0.011
DebtAssetsComp	0.026	0.061	0.052	0.061	0.031	0.087*
Tender	0.066***	0.031	0.107**	0.040	0.047*	0.022
TTermFee	0.055*	0.046	0.047	0.048	0.049	0.036
Alockup	-0.112	-0.241*			-0.088	-0.211
Observations	882	882	256	256	626	626
Adjusted R^2	0.095	0.092	0.213	0.174	0.056	0.059

Note: *p<0.1; **p<0.05; ***p<0.01

The regression results for strategic acquisitions are very similar to the results on the whole sample. Industry's R&D investments and growth rates seem to have a significant statistical and economic power on premiums strategic acquirers pay, with CAR5-model coefficients of 0.419 and 0.705, respectively. Based on these results, strategic acquirers are ready to pay more premium for a target company in a growing and innovation-oriented industries. Inspecting the same industry ratios in financial acquisitions' regressions, the standard errors are larger and coefficients smaller than in strategic acquirer models. This implies that these ratios do not strongly affect the premiums paid by financial acquirers, but they can still be relatively important in making the takeover decisions.

Nevertheless, R-squared values are systematically larger in regression models for financial acquisitions than for strategic ones. For example, the adjusted R-squared for CAR5-model in financial acquisitions is 0.213, while the same value for strategic acquisitions is 0.056 in the same linear model. This might suggest that target company's industry has a bigger impact in the amount of premium paid, for the financial acquirer than for the strategic acquirer. Although this would seem reasonable and consistent with the theory provided by DePamphilis (2015), the topic requires further research. Also, the control variables used are not adjusted for different groups,[20] so the comparison of the linear models is rather suggestive.

All in all, the results are similar throughout all the regressions with different premiums being the dependent variables. More detailed tables of the results are included in Appendix A and B.

4.4 *Interpretations of the results*

Based on the tests conducted and discussed previously in this section, I conclude with the interpretation of the results on the hypotheses. First, hypothesis H1 holds true. Financial acquirers indeed pay less premium than strategic acquirers. Second, hypothesis H2 holds true as well. In addition to the fact that financial acquirers do seem to prefer industries with a low leverage, they clearly value it in premium calculations. Third, hypothesis H3 holds true on acquirer type preferences. Strategic acquirers clearly prefer industries with more R&D activity. Fourth, H4 holds true. Steady profitability is important determinant for financial acquirer's takeover decision. Fifth, there are mixed results for hypothesis H5 tests. From the financial acquirer's perspective, the hypothesis about growth holds true in preferences, but it does not

[20] Except for indicator variable for acquirer's lockup provision, that is removed from financial acquirer subset model because none of the acquisitions in this group have that provision.

affect the premium valuation and vice versa for strategic acquirer. Sixth, hypothesis H6 does not hold true. If anything can be said about the industry market-to-book ratio, it seems that contrary to the hypothesis, strategic buyer pays more for a target in a low market-to-book industry. Last, hypothesis H7 cannot be rejected. There is suggestive evidence that industry matters, and especially the theory that financial acquirers prefer mature industries seems to hold. Nevertheless, different acquirers are driven by different motives, so further and more comprehensive research on the topic is required.

5 Robustness checks and other tests

To address limitations in data, and choices I made in deal, industry, and target characteristics, I conducted several robustness checks. I tested same hypotheses with a similar sample of acquisitions as previously, but included also non-cash deals. To test the industry ratio robustness, I tested the hypotheses using median numbers for industry characteristics instead of means of outlier-trimmed data. In addition, I tested different ratios to approximate target's size, profitability and leverage used as control variables. I will discuss these tests next.

5.1 *Non-cash deals included*

It appears that including non-cash or mixed cash and stock deals to the sample acquisitions might not hold true with the first hypothesis H1 of differences in premiums between financial and strategic acquirers as strongly as in all-cash-deals sample. Student's t-tests return no statistical significance for differences in CAR-based premiums. Only the four weeks to announcement day premium is significant at 10 %-level, having a p-value of 0.06. On the other hand, all premium measures, except for CAR5, indicate significant differences in premiums paid by different acquirers at 95 % confidence level according to Wilcoxon rank-sum tests on medians.

In the robustness check for extended sample with non-cash deals included, the differences in different acquirers' industry preferences are similar with the previous results. Additionally, the industry's market-to-book seems to be statistically different for the two groups of acquirers, strategic acquirers seemingly preferring targets in industries with lower average market-to-book ratios than financial acquirers do. This might implicate, that strategic acquirers prefer to get more tangible assets in return for their stock. On the other hand, financial

acquirers might prefer industries that have growth opportunities, and where they can sell a company with a high price relative to the book value of equity.

Applying similar multiple regressions as in previous section on the sample data including the non-cash deals, I get similar results as with the multiple regressions for all-cash deals. It is important to notice, that I do not change or add any control variables when adding the non-cash deals to regression model. In the regression model for the whole data sample, the indicator variable for financial acquirer loses its significance, but is of similar scale and sign. Further, based on R-squared it seems that the industry-based model resumes to have larger explanatory power for premiums paid by financial acquirers over strategic buyers. A detailed regression table is included in Appendix C.

5.2 *Industry medians instead of averages*

In this paper, I chose to remove the outliers from company data to calculate average yearly characteristics for each industry. Because the company data from Compustat database was very noisy, the other option was to use medians from the noisy data.[21] I decided to use those yearly industry medians for a robustness check. Tests for industry-related preferences derived similar results as when using outlier-trimmed industry averages. Also, multiple regressions, to test whether the industry characteristics had an effect in different premiums paid, returned mainly similar coefficients. The main difference between the median and average industry ratios was in reduced statistical significance of industry R&D in linear model. This seemed strange, because the correlation coefficient between the median and average industry R&D-to-assets ratios was quite large at 0.896. A detailed regression table is in Appendix D.

5.3 *Other robustness checks*

In addition to the two major robustness tests on sample and industry data, I also made several smaller robustness checks that I do not report here, for different measures of industry and target characteristics. For instance, I replicated the tests by changing the three year average ROE to previous year's ROE, debt-to-equity to debt-to-assets, market-to-book to Q-ratio, and market value of equity to revenues. These robustness checks did not change the results or interpretations significantly, and were mainly in line with the results from the main research.

[21] As I mentioned previously in this paper, the means and medians form the noisy data did not have any correlation. Also, the means were economically unrealistic to represent industry-level averages, hence I did not even consider using means calculated from the noisy data.

Since the SDC database had other grouping methods for different types of financial acquirers, I decided to test whether the results using those groupings would be similar as with the SDC's financial acquirer indicator. Groupings I tested were based on SDC's LBO firm, financial sponsor, and investor group acquirer indicators.[22] The results were similar to the main research for LBO firms and financial sponsors. The deal grouping based on investor groups, on the other hand, did not return similar results. This is due to the fact that investor groups are not necessarily acquiring companies for financial reasons. Often, the investor groups are involved in management buyouts, where the current management needs outside financing to take control over the company. Although investors do mostly plan an exit strategy in these cases as well, the situation is different from when they are simply looking for a good investment. Therefore, a takeover affiliated with an investor group does not necessarily mean that the takeover would be what is considered as a financial acquisition.

In addition, I tried to see whether there were any signs of clustering between the strategic and financial acquirers' target-industry characteristics, relative to the premiums paid. I do not report the result in a graph, because there was no indication of clustering. It appears that although industry characteristics do seem to have different attractiveness to different types of acquirers, these differences in buyers' preference explain little about the differences in premiums paid.

6 Conclusion

In this paper, I have researched how industry characteristics drive the takeover decisions and different premiums financial and strategic acquirers pay. First, I have shown that financial acquirers pay less premium than strategic acquirers do. This holds with previous research (Bargeron et al., 2008) and theory of synergies. Second, I have analyzed how different industry characteristics affect the acquisition preferences of the two acquirer types. Third, I tested multilinear regression models controlling target and deal characteristics to see, whether the

[22] SDC defines acquirer types mentioned as follows:

LBO Firm: "the acquiror company in a transaction is a buyout firm regardless of the nature of the transaction itself."

Financial Sponsor: "companies that engage in private equity or venture capital transactions using capital raised by investors. A company is considered a financial sponsor when it engages in non-strategic acquisitions acting as a financial buyer."

Investor Group: "group of investors, companies, individuals, or investment firms. -- If an ESOP (Employee Stock Ownership Plan) is the only acquiror, the acquiror is not considered an investor group.

industry characteristics would affect premiums paid differently for different acquirers. Finally, I addressed to limitations in data with robustness tests.

I found that strategic and financial acquirers are driven by different target company's industry characteristics. As I expected, financial acquirers seem to prefer companies in industries with relatively low R&D expenses. In addition, industry with a steady, positive ROE and relatively low leverage seem to attract financial acquirers. In contrary to what I expected, target's five-year compound annual industry growth rate seems to be on average at the same level in financial and strategic acquisitions. Still, as I expected, the strategic buyer values growth more than the financial acquirer based on the premium paid. Also, industries' high market-to-book seem to have negative, yet economically little, impact on the premiums paid.

Based on the multiple linear regression, the five industry characteristics affect premiums paid by the two acquirer types differently. In the regression model for the whole sample, all the industry characteristics but the three-year average ROE seemed to have explanatory power on premiums paid. However, when dividing the sample data into two groups based on the acquirer type, and applying the same linear model, it seems that different industry characteristics have different explanatory power over premiums paid by strategic and financial acquirers. Moreover, it seems that the target company's industry has a higher relevance in premiums paid for a financial acquirer than for a strategic one. In addition, financial acquirer does seem to prefer mature industries as DePamphilis (2015) described.

Although this paper provides an answer on question whether industry characteristics drive differences in premiums paid by strategic and financial acquirers, it is still somewhat unclear what the true value of the industry is for different types of acquirers, and what part it plays on significantly different premiums paid by the two acquirer types. Another question arising is, what other industry-related characteristics would drive differences in premiums paid and how all the industry characteristics contribute to other deal-related characteristics when trying to answer the question why do financial buyers pay less for acquisitions.

In this paper, I examined a narrow set of industry characteristics. Further research should be conducted to see how industries' economic situation, cycles, and the private equity firms' clubbing behavior affects the differences in premiums paid by financial and strategic acquirers. Moreover, the question why strategic acquirers do not simply outbid financial buyers should be addressed in further financial research.

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Appendix A

Industry-level model for premium prediction

The sample includes 882 U.S. domestic all-cash acquisitions announced between 2000 and 2015 obtained from the SDC database. This table presents results from multiple linear regressions, where premium is the dependent variable, and industry characteristics are independent variables. There are also seven target company and deal related control variables. Results show coefficients for independent variables and standard errors in the brackets.

	CAR3 (1)	CAR5 (2)	CAR11 (3)	Premium1day (4)	Premium1week (5)	Premium4weeks (6)
Financial Acquiror	-0.050**	-0.048**	-0.052**	-0.069***	-0.068***	-0.096**
	(0.023)	(0.023)	(0.023)	(0.024)	(0.025)	(0.039)
R&D	0.427*	0.425*	0.477**	0.549**	0.660***	0.557
	(0.219)	(0.219)	(0.223)	(0.234)	(0.237)	(0.372)
ROE	0.060	0.046	0.068	0.069	0.035	-0.163
	(0.131)	(0.131)	(0.134)	(0.140)	(0.142)	(0.222)
Leverage	-0.014***	-0.014***	-0.013**	-0.021***	-0.023***	-0.022**
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.009)
CAGR	0.510**	0.583**	0.532**	0.549**	0.633**	1.295***
	(0.248)	(0.247)	(0.253)	(0.264)	(0.267)	(0.420)
Market-to-Book	-0.020	-0.025*	-0.026*	-0.040**	-0.047***	-0.036
	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)	(0.025)
lnMVEComp	-0.039***	-0.037***	-0.038***	-0.041***	-0.040***	-0.040***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.012)
TobinsQComp	-0.013	-0.013	-0.009	-0.009	-0.014	-0.021
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.016)
ROAComp	-0.078**	-0.083**	-0.071*	-0.069*	-0.089**	-0.203***
	(0.036)	(0.036)	(0.037)	(0.038)	(0.039)	(0.061)
Debt-to-AssetsComp	0.026	0.026	0.018	0.061	0.082*	0.114*
	(0.039)	(0.039)	(0.040)	(0.042)	(0.042)	(0.067)
Tender	0.064***	0.066***	0.070***	0.031	0.039	-0.004
	(0.024)	(0.024)	(0.024)	(0.026)	(0.026)	(0.041)
TTermFee	0.060**	0.055*	0.059*	0.046	0.035	-0.019
	(0.030)	(0.030)	(0.030)	(0.032)	(0.032)	(0.050)
ALockup	-0.179	-0.112	-0.006	-0.241*	0.073	1.950***
	(0.124)	(0.124)	(0.127)	(0.132)	(0.134)	(0.211)
Constant	0.487***	0.491***	0.500***	0.601***	0.621***	0.670***
	(0.059)	(0.059)	(0.061)	(0.063)	(0.064)	(0.101)
Observations	882	882	882	882	882	882
R^2	0.106	0.108	0.104	0.105	0.125	0.196
Adjusted R^2	0.092	0.095	0.091	0.092	0.112	0.184
Residual Std. Error (df = 868)	0.297	0.296	0.303	0.317	0.320	0.504
F Statistic (df = 13; 868)	7.894***	8.089***	7.753***	7.836***	9.551***	16.300***

Note: *p<0.1; **p<0.05; ***p<0.01

Appendix B

Effects of industry characteristics on premiums paid by different acquirer types

The sample includes 882 U.S. domestic all-cash acquisitions announced between 2000 and 2015 obtained from the SDC database. This table presents results from multiple linear regressions, where premium is the dependent variable, and industry characteristics are independent variables. There are also seven target company and deal related control variables. Results show coefficients for independent variables and standard errors in the brackets. First two regressions are linear regressions driven on the whole sample. Regressions (3) and (4) are for financial acquisitions. Regressions (5) and (6) are for strategic acquisitions.

	All acquisitions		Financial acquisitions		Strategic acquisitions	
	CAR5	Premium 1day	CAR5	Premium 1day	CAR5	Premium 1day
	(1)	(2)	(3)	(4)	(5)	(6)
Financial Acquiror	-0.048**	-0.069***				
	(0.023)	(0.024)				
R&D	0.425*	0.549**	0.331	0.505	0.419*	0.545**
	(0.219)	(0.234)	(0.549)	(0.609)	(0.235)	(0.248)
ROE	0.046	0.069	0.546*	0.684**	-0.080	-0.086
	(0.131)	(0.140)	(0.306)	(0.339)	(0.144)	(0.152)
Leverage	-0.014***	-0.021***	-0.028**	-0.037**	-0.011*	-0.018***
	(0.005)	(0.006)	(0.014)	(0.015)	(0.006)	(0.006)
CAGR	0.583**	0.549**	-0.129	0.046	0.705**	0.582**
	(0.247)	(0.264)	(0.565)	(0.627)	(0.273)	(0.288)
Market-to-Book	-0.025*	-0.040**	0.012	-0.014	-0.033*	-0.047***
	(0.015)	(0.016)	(0.029)	(0.032)	(0.017)	(0.018)
lnMVEComp	-0.037***	-0.041***	-0.078***	-0.072***	-0.022***	-0.031***
	(0.007)	(0.007)	(0.013)	(0.015)	(0.008)	(0.009)
TobinsQComp	-0.013	-0.009	-0.017	-0.011	-0.008	-0.002
	(0.010)	(0.010)	(0.027)	(0.029)	(0.011)	(0.011)
ROAComp	-0.083**	-0.069*	-0.298***	-0.359***	-0.050	-0.011
	(0.036)	(0.038)	(0.096)	(0.107)	(0.042)	(0.044)
DebtAssets Comp	0.026	0.061	0.052	0.061	0.031	0.087*
	(0.039)	(0.042)	(0.077)	(0.085)	(0.047)	(0.049)
Tender	0.066***	0.031	0.107**	0.040	0.047*	0.022
	(0.024)	(0.026)	(0.050)	(0.056)	(0.027)	(0.028)
TTermFee	0.055*	0.046	0.047	0.048	0.049	0.036
	(0.030)	(0.032)	(0.053)	(0.059)	(0.035)	(0.037)
ALockup	-0.112	-0.241*			-0.088	-0.211
	(0.124)	(0.132)			(0.122)	(0.128)
Constant	0.491***	0.601***	0.614***	0.665***	0.419***	0.542***
	(0.059)	(0.063)	(0.115)	(0.128)	(0.068)	(0.072)
Observations	882	882	256	256	626	626
R2	0.108	0.105	0.247	0.210	0.074	0.077
Adjusted R2	0.095	0.092	0.213	0.174	0.056	0.059
Residual Std. Error	0.296 (df = 868)	0.317 (df = 868)	0.302 (df = 244)	0.335 (df = 244)	0.289 (df = 613)	0.305 (df = 613)
F Statistic	8.089*** (df = 13; 868)	7.836*** (df = 13; 868)	7.288*** (df = 11; 244)	5.890*** (df = 11; 244)	4.093*** (df = 12; 613)	4.242*** (df = 12; 613)
Note:			*p<0.1; **p<0.05; ***p<0.01			

Appendix C

Effects of industry characteristics on premiums paid by different acquirer types (mixed)

The sample includes 1657 U.S. domestic mixed cash and stock acquisitions announced between 2000 and 2015 obtained from the SDC database. This table presents results from multiple linear regressions, where premium is the dependent variable, and industry characteristics are independent variables. There are also seven target company and deal related control variables. Results show coefficients for independent variables and standard errors in the brackets. First two regressions are linear regressions driven on the whole sample. Regressions (3) and (4) are for financial acquisitions. Regressions (5) and (6) are for strategic acquisitions.

	All acquisitions		Financial acquisitions		Strategic acquisitions	
	CAR5	Premium 1day	CAR5	Premium 1day	CAR5	Premium 1day
	(1)	(2)	(3)	(4)	(5)	(6)
Financial Acquiror	-0.016	-0.149				
	(0.017)	(0.126)				
R&D	0.563***	1.672	0.486	0.816	0.559***	1.842
	(0.158)	(1.162)	(0.464)	(0.519)	(0.167)	(1.393)
ROE	0.182**	0.980	0.540**	0.779***	0.124	1.005
	(0.084)	(0.619)	(0.253)	(0.283)	(0.088)	(0.737)
Leverage	-0.010***	-0.043**	-0.026***	-0.040***	-0.008***	-0.048**
	(0.003)	(0.020)	(0.010)	(0.011)	(0.003)	(0.024)
CAGR	0.126	1.059	-0.073	0.015	0.155	1.222
	(0.142)	(1.043)	(0.426)	(0.477)	(0.149)	(1.243)
Market-to-Book	-0.014	-0.099	0.003	-0.018	-0.015	-0.123
	(0.009)	(0.069)	(0.025)	(0.027)	(0.010)	(0.085)
lnMVEComp	-0.035***	-0.050	-0.062***	-0.058***	-0.030***	-0.050
	(0.004)	(0.031)	(0.011)	(0.012)	(0.005)	(0.038)
TobinsQComp	-0.002	-0.013	-0.027	-0.027	0.003	-0.0004
	(0.006)	(0.045)	(0.022)	(0.025)	(0.006)	(0.054)
ROAComp	-0.052**	-0.136	-0.272***	-0.331***	-0.026	-0.090
	(0.025)	(0.180)	(0.083)	(0.093)	(0.026)	(0.217)
DebtAssetsComp	0.020	0.192	0.067	0.061	0.017	0.261
	(0.027)	(0.198)	(0.062)	(0.069)	(0.030)	(0.254)
Tender	0.104***	-0.026	0.112**	0.047	0.098***	-0.049
	(0.019)	(0.136)	(0.046)	(0.051)	(0.020)	(0.167)
TTermFee	0.028	-0.310**	0.021	0.034	0.027	-0.415**
	(0.020)	(0.144)	(0.045)	(0.050)	(0.022)	(0.182)
ALockup	-0.007	-0.203			-0.007	-0.214
	(0.064)	(0.470)			(0.063)	(0.523)
Constant	0.428***	1.020***	0.564***	0.619***	0.390***	1.100***
	(0.038)	(0.282)	(0.098)	(0.110)	(0.041)	(0.342)
Observations	1,657	1,657	320	320	1,337	1,337
R^2	0.104	0.011	0.227	0.204	0.089	0.011
Adjusted R^2	0.097	0.004	0.199	0.176	0.081	0.002
Residual Std. Error	0.268 (df = 1643)	1.966 (df = 1643)	0.284 (df = 308)	0.317 (df = 308)	0.262 (df = 1324)	2.183 (df = 1324)
F Statistic	14.666*** (df = 13; 1643)	1.461 (df = 13; 1643)	8.219*** (df = 11; 308)	7.177*** (df = 11; 308)	10.763*** (df = 12; 1324)	1.278 (df = 12; 1324)

Note: *p<0.1; **p<0.05; ***p<0.01

Appendix D

Effects of industry characteristics on premiums paid by different acquirer types (med)

The sample includes 882 U.S. domestic all-cash acquisitions announced between 2000 and 2015 obtained from the SDC database. This table presents results from multiple linear regressions, where premium is the dependent variable, and industry characteristics are independent variables. There are also seven target company and deal related control variables. Results show coefficients for independent variables and standard errors in the brackets. First two regressions are linear regressions driven on the whole sample. Regressions (3) and (4) are for financial acquisitions. Regressions (5) and (6) are for strategic acquisitions. **Industry-ratios are calculated from industry medians.**

	CAR5	Premium 1day	CAR5	Premium 1day	CAR5	Premium 1day
	(1)	(2)	(3)	(4)	(5)	(6)
Financial Acquiror	-0.049**	-0.070***				
	(0.023)	(0.024)				
R&D	0.039	0.190	-0.403	-0.356	0.224	0.442
	(0.350)	(0.374)	(0.636)	(0.707)	(0.415)	(0.438)
ROE	-0.152	-0.133	0.481	0.551	-0.260	-0.239
	(0.202)	(0.216)	(0.415)	(0.461)	(0.229)	(0.242)
Leverage	-0.014***	-0.020***	-0.033**	-0.041***	-0.011*	-0.017***
	(0.005)	(0.006)	(0.014)	(0.015)	(0.006)	(0.006)
CAGR	0.641**	0.607*	-0.385	-0.200	0.832**	0.701**
	(0.291)	(0.311)	(0.626)	(0.695)	(0.325)	(0.343)
Market-to-Book	-0.023	-0.043**	0.026	-0.003	-0.038*	-0.056**
	(0.018)	(0.019)	(0.034)	(0.038)	(0.021)	(0.022)
lnMVEComp	-0.037***	-0.041***	-0.081***	-0.075***	-0.021***	-0.030***
	(0.007)	(0.007)	(0.013)	(0.015)	(0.008)	(0.009)
TobinsQComp	-0.010	-0.006	-0.008	-0.001	-0.007	0.001
	(0.010)	(0.010)	(0.026)	(0.029)	(0.011)	(0.011)
ROAComp	-0.081**	-0.066*	-0.317***	-0.372***	-0.049	-0.009
	(0.036)	(0.039)	(0.096)	(0.107)	(0.042)	(0.044)
Tender	0.069***	0.034	0.108**	0.041	0.049*	0.025
	(0.024)	(0.026)	(0.050)	(0.056)	(0.027)	(0.028)
TTermFee	0.055*	0.045	0.047	0.048	0.049	0.036
	(0.030)	(0.032)	(0.053)	(0.059)	(0.035)	(0.037)
ALockup	-0.116	-0.251*			-0.099	-0.228*
	(0.124)	(0.133)			(0.122)	(0.129)
DebtAssetsComp	0.018	0.053	0.040	0.045	0.026	0.083*
	(0.039)	(0.042)	(0.077)	(0.086)	(0.047)	(0.049)
Constant	0.512***	0.623***	0.638***	0.702***	0.433***	0.553***
	(0.062)	(0.066)	(0.120)	(0.133)	(0.071)	(0.075)
Observations	882	882	256	256	626	626
R^2	0.104	0.100	0.252	0.211	0.072	0.074
Adjusted R^2	0.091	0.087	0.219	0.175	0.054	0.056
Residual Std. Error	0.297 (df = 868)	0.318 (df = 868)	0.301 (df = 244)	0.335 (df = 244)	0.290 (df = 613)	0.306 (df = 613)
F Statistic	7.764*** (df = 13; 868)	7.437*** (df = 13; 868)	7.485*** (df = 11; 244)	5.915*** (df = 11; 244)	3.978*** (df = 12; 613)	4.089*** (df = 12; 613)
Note:						*p<0.1; **p<0.05; ***p<0.01