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Does financial advisory add value to M&A transactions in the pharmaceutical industry?

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Abstract

This study investigated if financial advisors contribute to value creation in M&A transactions in the pharmaceutical industry, using an event study methodology. Based on 294 transactions worldwide between 2012-2016, an average of 3.03% positive cumulative abnormal return was found, significant at a 1% level. Using OLS and Heckman least square regressions, no significant effect of employing a financial advisor was found, no matter if the advisor was a top-tier or non-top-tier financial advisor.

Keywords: M&A, Pharmaceutical, Financial advisory, Industrial specialization, Asymmetric information, Abnormal return

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1. Introduction

During the recent decades mergers and acquisitions (M&A) has been a growing field. According to the Institute of Mergers, Acquisitions and Alliances, M&A activity has seen a massively growing trend during the last 30 years, with the greatest booms around the turn of the millennium, and 2007, when about 40 000 transactions took place worldwide to a value of approximately $5000 billions USD. After the severe financial crisis there was a drop in M&A activity. However, during the last years, especially from 2015, there has been a growing trend once again (Institute of Mergers, Acquisitions and Alliances, 2016).

Lubatkin, (1983), argues that the main motive of an acquisition should be to strengthen the performance of the firm. The idea that value creation should be the central goal for M&As springs from the theory that the purpose of the company should be to maximize shareholders' wealth (Roe, 2001). However, it is not clear that M&A actually is a value creating activity when it comes to shareholder value. Scholars have stated that M&A does not create any value for shareholders, for example Agrawal and Jaffe (2000).

In M&A transactions there is often not solely the acquiring firm that value the company. In many cases, an investment bank will be responsible for a large part of it. This comes with both advantages and risks. Jacob, Rock and Weber (2008) and McLaughlin (1992) writes about the multiple incentives that investment banks might have in financial advisory, and approaches it as an agency problem. Advisory fees in M&As is a big part of an investment bank's income (Bowers and Miller, 1990). Banks have during the last decades also started to approach firms with possible prospects (Bowers and Miller, 1990), showing that the M&A activity is of high interest for the banks. An executed transaction will bring a success fee to the advisor and will also affect the bank's position in the league table of financial advisors positively. A league table within investment banking is a ranking that summarize the number and value of transactions that the investment banks have executed under a specific period, and is considered to highly affect the competitiveness of the bank (Walter, Yawson and Yeung ,2008).

During a valuation of a company, it often exists an issue of reduced information for the acquirer. This discrepancy between buyer and seller is acknowledged as an information asymmetry, first described by Akerlof (1970). As an industry involves more elements / higher

proportions of activities that are difficult to value, the possibility to make a correct valuation based on public information decreases and thereby the asymmetric information will increase (Servaes and Zenner, 1996).

Higgins and Rodriguez (2006) write that, as the pharmaceutical industry involves a high proportion of research and development (R&D), it is to be considered as an industry with high asymmetric information. The target will almost always be in a more favourable position in evaluating the potential capitalization of a drug in development. This makes the already difficult valuation in the M&A industry even more difficult when involving a target in an industry such as the pharmaceutical.

The wave of M&As in general have inspired scholars such as Moeller et al. (2007) to further research. They found that the average premium for an US public acquisition between 1980 and 2001 was between 62% - 68%, which is argued to require massive cost savings and growth targets to be justified. Giliberto and Varaya (1989), discuss the winner's curse hypothesis, where the winner of a bid auction overpays the true value of the company, an issue of adverse selection and asymmetric information, according to Hong and Shum (2002). Nevertheless, as high premiums and winner's curse seem to be affected by high asymmetric information, several studies have tried to examine possibilities to reduce asymmetric information in mergers and acquisitions. Moeller et al. (2007), showed that the wealth of the acquirer shareholders and asymmetric information are related.

Besides the asymmetric information regarding the company in a merger or acquisition, Williamson (1975) also mentions the difficulties of acquiring firms outside of the acquirer's core competencies. Servaes and Zenner (1996) offers a hypothesis about the asymmetric information, where they hypothesize that an information asymmetry can be due to things as industry relatedness and type of transaction. Servaes and Zenner also add that it seems like if the information asymmetry increases, the need of a financial advisor increases as well.

Higgins and Rodriguez (2006) found it reasonable that firms with high asymmetric information find targets with similar competencies. Experience of sales in the industry of interest seems to affect acquirer returns positive, as can be seen in the same study by Higgins and Rodriguez (2006), which strengthen the hypothesis that it is not only knowledge about the company itself that can manage asymmetric information, but also industry specialized

knowledge. This could be supported by studies that show that industry specialized financial firms and advisors tend to create significantly higher acquirer returns compared to non-specialized (Cressy, Munari and Malipiero, 2007).

Walter et al. (2008) show that investment banks that are specialized outperform those who are not, in creating abnormal return to shareholders, when stock are included as payment in the deal. This could be argued by that investment banks that perform many transactions in an industry evolve strategies on how to manage and reduce asymmetric information and thereby produce a higher acquirer return. On the other hand, as the positive effect seems to be affected by both choices of payment and reputation it is still difficult to evaluate the true effect of industrial specialization in investment banks to reduce asymmetric information (Walter et al., 2008).

However, in a study by Golubov, Petmezas and Travlos (2012), it is found that M&As advised by investment banks that are considered as top-tier deliver a higher acquirer return than if advised by a non-top-tier bank in public transactions. Bao and Edmans (2011) describe a *skilled-advice hypothesis*, where banks can help to identify synergistic targets and favourable terms, suggesting that highest quality advisors would lead to highest return. They also present results that support this hypothesis, where the average top financial advisor is related to a positive acquirer return, an effect that is increasing as the investment bank increase the number of deals they advice.

If this is true we would believe that financial advisory do matters for the outcome of shareholder wealth and that the highest-quality bank would provide the best outcome (Bao and Edmans, 2011). But when it comes to this point it appears to exist different opinions. An article published in Wall Street Journal in May 2016, stated that during the first 4 months of 2016, 27% of the total mergers and acquisitions in the US were executed without any financial advisor, an increasing trend that could be seen during the latest years (Mattioli ,2016, 10 May).

Previous studies have also questioned the effect of financial advisory in M&A, where different multiples have been chosen to express advisory quality. Bowers and Miller (1990) uses prestige of the financial advisor's name and found no link with the return of the acquirer. Rau (2000) used market share and found a negative relationship between advisory quality and

return of acquirer and Servaes and Zenner (1996) found that it is not beneficial to hire a financial advisor in comparison to perform the deal in-house. This would imply that the passive execution hypothesis stated by Bao and Edmans (2011) is more plausible. This hypothesis states that banks do not provide good advices and just undertake the deal as instructed by the client.

Today there is no clear picture of how investment banks contribute to acquirer return in M&A transactions, even less in the pharmaceutical industry. Studies have partly showed that the hypothesis about financial advisors positively affecting shareholder wealth and reducing asymmetric information could be plausible. However, these studies are done over several sectors that might also include sectors with low asymmetric information. In order to investigate the use of financial advisors to reduce asymmetric information, deepened studies in sectors with high asymmetric information would be suitable. As the pharmaceutical industry is highly affected by this phenomenon, it is of high interest to investigate the hypothesis furthermore in this industry.

The purpose of this study is to examine whether acquisitions create shareholder value or not, in the pharmaceutical industry. Furthermore, it will also investigate if the choice of financial advisors, at the buyer side, in acquisitions affect acquirer abnormal returns positively compared to an acquisition without a financial advisor. Also, we will examine if the choice of a top-tier financial advisor matter on acquirer abnormal returns.

2. Theory and hypothesis

The definition of an information asymmetry was first described by Akerlof (1970), where the seller possesses more information about the asset than the buyer. This will lead to an asymmetry in the relation between buyer and seller and put the buyer in a place where the seller always knows better if the bidding price is above or below the true value. This will create an adverse selection, where only those with a lower true value than the bid is willing to sell. As the buyer knows about this asymmetric information they will lower the bid. This process will continue until the market collapse. Myers and Majluf (1984) propose that asymmetric information and adverse selection that can be implemented in sectors with high technology and R&D, when the asset includes several areas of asymmetric information.

Even though asymmetric information exists in almost every transaction, mergers and acquisitions have increased in popularity the latest decades. During this time, several studies have focused on how to manage this information asymmetry. Still today, there is no consensus whether M&A create shareholder value in the short or long run. Hence, merger and acquisitions is based on the idea that it will create additional value (Bowers and Miller, 1990), based on the assumption that the company could be properly valued. It is therefore plausible to believe that M&A is one way to create value.

H1: M&A creates value to shareholders in pharmaceutical companies

In order for acquirers to reduce the information asymmetry in mergers and acquisitions, researchers have studied, for instance, the importance of financial advisors. The hypothesis regarding asymmetric information stated by Servaes and Zenner (1996), shows that firms tend to seek financial advisors to manage the information asymmetry in order to create acquirer return. Even though financial advisors charge fees, as long as they contribute to an abnormal return in shareholder wealth that surpasses the advisory-fee, they will be beneficial. This means that in order to be beneficial, financial advisors need to create abnormal returns to shareholder wealth, leading to our second hypothesis.

H2: Financial advisory within M&A creates additional shareholder wealth in pharmaceutical companies

Higgins and Rodriguez (2006) propose that sales and research experiences are important in order to create abnormal return for the acquirer. Golubov et al. (2012) show that this type of industrial knowledge tends to be true in the financial advisory industry as well. Results suggests that as financial advisor's advice more and larger deals the acquirer return tends to increase. With the background of the asymmetric information hypothesis by Servaes and Zenner (1996) and studies made on industrial specialization in other industries (Cressy et al. ,2007), we hypothesize that the industrial specialization of the advising firm is important for acquirer return.

H3: Industry specialization in financial advisory within M&A creates additional shareholder wealth in pharmaceutical companies

3. Data and Methodology

3.1 Sample collection

Since we wanted to investigate if hiring a financial advisor would make the acquirer return higher, we chose to apply an event study approach where we calculated abnormal and cumulative abnormal returns (CARs) as described and used by Mackinlay (1997). The study is a quantitative comparative analysis since we compared M&As where the acquirer employed an investment bank and where they did not. The study focused only on the abnormal returns of the acquiring firm, and not of the targeted firm.

We collected data of M&A deals from 2012 to 2016 from the Zephyr database, offered by Bureau van Dijk, which contains information from over 500 000 M&A deals. The study was solely performed on acquisitions that was completed and where the acquirer and the target was included in SIC-code category 283 (Drugs). Firm specific data on stocks and financial values for our control variables was based on data from Zephyr. Data on stock prices and other stock information has been collected from the Bloomberg terminal. When further writing M&A in this paper, the authors are focusing on the acquisition part of this phenomena.

League tables was created on our collected sample from Zephyr. One league table was created for every year respectively, from 2011-2015 to create the dummy variable, see Appendix A. Every table displayed the top 10 financial advisors in total deal value for the respective year. We chose to create a new league table for each year in order to find the currently most active banks. A financial advisor was considered to be top-tier if it was placed in a top eight position in the League table from the year prior to the deal, otherwise it was considered as non-top tier.

3.2 Sample constraints

After creating the League tables, we applied some constraints on our sample. Firstly, the acquiring firm had to be listed and have data on trading days for 292 days prior to the announcement of the deal. This to be able to catch 250 daily observations and exclude a 42-days prior to announcement date due to the possibility of information leakage (Schwert ,1996).

We also excluded all the deals where Zephyr did not report any deal value. Deals where the acquirer had any ownership in the target prior to the deal and all deals where the target was an entity of a company was excluded. We also excluded all deals where the acquirer did not acquire 100 % of the target. Therefore, only acquisitions where 100% of the company was bought in one transaction, according to data from Zephyr, were included in our sample. Also, as the pharmaceutical industry include several large companies, many transactions might not affect the share price as the size of the deal may be too small. Therefore, we chose to exclude all deals where the transaction value was below one percent of the market capitalization of the acquiring firm. Lastly we also, in line with McGahan (1999), excluded all deals where either the acquirer or the target had a SIC code that started with 6 (Financial institutions and Insurance companies).

3.3 Abnormal Returns

Abnormal returns are a common measure for value creation and has been used in many preceding studies, Seth (1990), Mackinlay (1997) and Golubov et al. (2012). The definition of abnormal returns is:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$$

In this formula AR_{it} is the abnormal shareholder return for stock *i* at time *t*. R_{it} is the rate of return for stock *i* at time *t*. To calculate α and β, we use the market model as stated by Mackinlay (1997), which relates the return of the security to the market return and follows from the assumed joint normality of asset returns. For any security the model is stated as:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

We used the MSCI world index as an index for the market portfolio since about 50% of the deals in our sample were conducted globally. According to Roll (1992) there is a question about how far back in time you should go to get a large sample. This is important for statistical accuracy, when estimating the parameters α_i and β_i, since there could be a shift in the parameters of the return generating mechanism when you travel back in time. We chose to use a 250-day period for ordinary least squares of daily returns to estimate α_i and β_i. We also excluded 42 days prior to the event date so we could be sure that our estimated parameters would not be affected by information leakage, this is all in line with Schwert's (1996)

findings. The estimation window was therefore (-292, -42). CARs was then calculated for different time periods around the announcement day. We only calculated CARs for the acquiring firm since this study did not take the CAR of the target in consideration. CARs is calculated as:

$$\mathrm{CAR_i}(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} AR_{it}$$

This CAR value was used to determine hypothesis one, if M&A in the pharmaceutical industry creates value to shareholders. The significance of our results was tested with a two-sided student's t-test.

3.4 Independent variables

Since the main purpose of this study was to investigate if employing a financial advisor had any effect on the shareholder value of the firm we did an OLS-regression, where we used heteroscedasticity-robust standard errors. As main independent variable was a dummy variable which takes the value of 1 for deals where the acquirer had a financial advisor, according to Zephyr, and 0 for deals where the acquirer didn't have a financial advisor used.

We were also interested in if employing a top-tier bank had any effect on the shareholder wealth. Therefore, we made another OLS-regression, with heteroscedasticity-robust standard errors, on the subsample with the deals where the acquirer employed a financial advisor. Here we used a dummy variable which takes the value of 1 for deals where the acquirer employed a top-tier bank or 0 for deals where the acquirer employed a non-top tier bank.

We chose to include the same control variables since both Servaes and Zenner (1996), who tested for the effect of employing a financial advisor, and Golubov et al. (2012), who tested for the effect of employing a top-tier bank, used almost the same type of control variables in their respective analysis. The chosen variables are presented below in Table I.

Table I
Variable definitions

The table below presents chosen control variables to be included in the regressions. Ln denotes the natural logarithm. The variable *Previous acquisitions* equals acquisitions reported as completed before day of announcement.

Variable	Definition
Ln(Deal value)	Logarithmic value of the transaction from Zephyr in US $ million
Ln(Size)	Logarithmic acquirer market value of equity the year prior to the acquisition announcement based on data from Zephyr in US $ million
Relative size	Value of the transaction from Zephyr divided by the acquirer's market value of equity the year prior to the announcement based on data from Zephyr
Payment method	Dummy variable: 1 for deals in which consideration includes stock, 0 if not
Domestic	Dummy variable: 1 for deals where the acquirer and target is based in the same country according to Zephyr, 0 if not
Previous acquisitions	Number of acquisitions made by the acquirer over the last 10 years prior the acquisition according to Zephyr

It is important to have in mind that these analyses were made on the assumption that both the choice to employ an advisor and the choice of which advisor to employ is determined exogenously. But as Golubov et al. (2012) show, there are significant differences in the characteristics of both acquirer- and deal-specifics for the two categories of advisors, Top-tier and non top-tier, and this would suggest that which advisor to employ could be determined endogenously. This means that self-selection bias could be a fact which would cause the OLS estimates to be unreliable, as shown by Heckman (1979). Based on the same assumptions, we could have a problem with endogeneity with the choice of employing an advisor or not.

Heckman means that self-selection bias is similar to omitted variable bias and proposes to use a two-step procedure to control for it. Therefore, we implemented a procedure where we, for the case with the choice of employing a financial advisor or not, had a first-stage equation which modelled the choice of employing a financial advisor or not and a second-stage equation that controlled for the selection bias. For the case with the choice of employing a top-tier or a non top-tier advisor we have followed the same procedure, with a first-stage equation that modelled for the choice and a second-stage equation that controlled for the bias.

This variable should also have an influence on the choice but not on the outcome (Golubov et al., 2012). The first stage equation has been estimated with a probit regression. The second stage equation will have the CAR as dependent variable and an inverse Mills ratio that adjusts for the non-zero mean of error terms. This inverse Mills ratio have been used to determine if the main independent variable had any significant effect on the acquirer-CAR, this is in line with how Golubov et al. (2012) performs their study.

Following Golubov et al. (2012), we created a variable called scope to use as an instrument variable in the second-stage equation. This was a variable which in the case for the choice of either employing or not employing a financial advisor was represented by the extent to which the acquirer had employed a financial advisor in prior deals. It is a dummy variable which take the value of 1 if the acquirer has employed a financial advisor in any M&A deal 5 year prior to the deal according to data from Zephyr and the value of 0 otherwise. In the case for the choice between employing a top-tier advisor or a non-top tier advisor the variable represented to which extent the acquirer has employed a top-tier financial advisor in prior deals. It is a dummy variable that takes the value of 1 if the acquirer has employed a top-tier financial advisor in any M&A deal 5 year prior to the deal according to data from Zephyr and the value of 0 otherwise. The instrument was created from league tables from 2007-2015, see Appendix B.

3.5 Event windows

Hackbart and Morellec (2008) states that when it comes to value creation the most reliable measures will be drawn from short-term event windows. We therefore mainly analysed our results on a three-day period around the announcement day (-1,1). In other words, from one day prior to one day post the announcement day. In the case of a weekend announcement, the first trading day post that weekend is used as announcement date. The assumption behind this is that if M&A is seen as a value creating activity an announcement of a M&A deal would be a sign of potential value creation.

We have also applied some other event windows to capture patterns in the timeframe and to check for robustness in our results. We calculated one additional short- term window, (-3, 3), and because of Schwert's (1996) findings about the 42-day price run-up period we also calculated (-42, -1).

3.6 Model

Following Golubov et al. (2012), the models were developed in order to measure the effect of financial advisory on CAR in acquisitions. Two models were used, one to measure the CAR in the total sample, sub grouped in using financial advisor or not, (1). The second model measured CAR in the advisor subgroup, grouped in using top-tier financial advisor or not, (2). The models used Advisor and Top-advisor as variable of interest, respectively. Both models included the same independent variables as mentioned earlier as controls.

$$1)\ CAR = \alpha_a + \beta_x Advisor + \beta_{a\ldots f} Controls + \varepsilon_a$$

$$2)\ CAR = \alpha_b + \beta_y Topadvisor + \beta_{g\ldots l} Controls + \varepsilon_b$$

4. Empirical results

4.1 Descriptive characteristics

As seen in table II, a total of 294 deals were included in the sample after implementation of restrictions. To be noticed is the differences between mean and median in all controls concerning size. This suggests a high number of smaller deals and a few larger. The average deal value and size of the acquirer have an average about ten times the median, suggesting a sample skewness, with a few transactions affecting the average value. The data also suggests that the average deal size is about 50% of acquirer market capitalization. Furthermore, the data show that every fourth deal included stocks and that every other deal was performed domestic. An average of about six prior deals could be noticed, with a range between zero and 51 deals.

Table II
Sample characteristics

This table shows the relevant sample characteristics for all 294 deal in our sample. The variable size is defined as the market cap of the acquirer one year before the year of announcement. The variables payment method and domestic are dummy variables and taking a value between 0 and 1.

	Mean	Median	Q1	Q3	Min	Max
Deal value ($ mln)	1 240	109	14.8	525	0.098	32 000
Size ($ mln)	10 900	932	112	4 200	0.22	184 000
Relative size	0.53	0.11	0.04	0.33	0.01	24.55
Payment method	0.25	-	-	-	-	-
Domestic	0.53	-	-	-	-	-
Previous acquisitions	6.41	3	1	9	0	51

Table III presents the number of deals in the given sample. It also presents the cumulative average abnormal return, (CAAR), in the sample for the main time window (-1, 1), as well as in the subgroups Advisor and Non-advisor. The subgroups represent deals advised or not advised by an investment bank. To begin with, the overall CAAR in the sample show a significantly positive abnormal return on executing an acquisition (3.03%). Furthermore, differences in the subgroups could be noticed. Where deals advised by investment banks showed a positive, yet not significant abnormal return, while deals done in-house were significant and positive. However, no significant difference in means could be noticed.

In the total sample, 56.46% had a CAR above 0 during a three-day period around the announcement of the deal, while the advisor subgroup is slightly lower and non-advisor slightly higher.

Table III

Cumulative Average Abnormal Returns

The table presents data regarding CAAR within the total sample and in selected sub-groups during the main time window (-1, 1). Number of observations, standard deviations, t-statistics and % of CAR above zero is also shown in the table. In the bottom line the differences in means between the sub-groups is stated. The symbols *, ** and *** denotes statistical significance at 10%, 5% and 1% respectively.

	Obs.	CAAR	Std. Dev.	t-stat	% CAR>0
Total	294	3.03%***	13.80%	3.7656	56.46%
Advisor	134	1.91%*	12.49%	1.7733	50.75%
Non-advisor	160	3.97%***	14.78%	3.3942	61.25%
Differences in mean		2.05%		1.2713	

As seen in table IV, the distribution of CAR in our sample is widely spread from below -15% to above +15% during our time window. The distribution is to be considered as normal, with a slight skew towards positive returns.

Table IV

This table presents the distribution of CAR in acquisitions made in the pharmaceutical industry during 2012 – 2016. The CAR is presented in the total number of deals in each category and by percentage of all deals included in each category.

Magnitude	Number of observed abnormal return	Number of observed abnormal return in %
CAR < -15%	7	2.38%
-15% < CAR < -10%	12	4.08%
-10% < CAR < -5%	22	7.48%
-5% < CAR < 0%	88	29.93%
0% < CAR < 5%	92	31.29%
5% < CAR < 10%	28	9.52%
10% < CAR < 15%	20	6.80%
CAR > 15%	25	8.50%

4.2 Pairwise correlations

In table IV, pairwise correlations between the main dependent variable (CAR (-1,1)), the two different main independent variables (Advisor, Top-Advisor) and our other independent control variables, for both the total sample and the advisor sub-sample, are shown. In both samples no correlation between the dependent and the main independent variable is found. In the total sample we found some significant correlations. CAR is positively correlated to payment method (0.1586). Advisor is positively correlated to deal value (0.2640) and size

(0.1826), suggesting that in large deals and in deals where the acquirer has a large market capitalization, the acquirer is more likely to use an advisor.

When looking at the advisor sub-sample we also found that CAR is positively correlated to relative size (0.2856), which could imply that in a deal where the deal value is high relative to the acquirer's market capitalization, the acquirer is more likely to achieve a high abnormal return. We also found that top advisor, in the same way as advisor, is positively correlated to deal value and size, but also to previous acquisitions (0.3523), proposing that an acquirer that has made many prior acquisitions is more likely to employ a top advisor. Top advisor is also negatively related to payment method (-0.1849), which would imply that in deals where the payment includes stock the acquirer is less likely to employ a top advisor. However, no high correlation could be found in the total sample or sub-sample between our variables of interest and control variables.

Significant correlations could be observed between the control variables. Deal value and size is positively correlated to previous acquisitions. This could be interpreted as that in large deals and deals where the acquirer has a large market cap the acquirer is more likely to have taken part in many other acquisition prior to this acquisition. Payment method is negatively correlated to size (-0.1148) and previous acquisitions (-0.2286). A negative correlation could suggest that if it is a deal where the acquirer has a large market capitalization or has participated in many previous acquisitions, the payment is less likely to include stock. Payment method is also positively correlated to relative size (0.1737) and domestic (0.1411). Yet significant correlations could be observed between the control variables, the number of high correlated variables are low.

Table V

In this table pairwise correlations between the dependent variable (CAR), the two different main independent variables (Advisor, Top advisor) and our six different independent control variables is provided. The symbols *, ** and *** denotes statistical significance at a 10%, 5% and 1% level, respectively.

A. Total Sample

	CAR	Advisor	Deal value	Size	Relative size	Payment method	Domestic
1. CAR (-1, 1)							
2. Advisor	-0.0742						
3. Deal value	-0.0043	0.2640***					
4. Size	-0.0658	0.1826***	0.4909***				
5. Relative size	-0.0988*	0.0665	0.0695	-0.0792			
6. Payment method	0.1586***	0.0672	0.0686	-0.1148***	0.1737**		
7. Domestic	0.0539	-0.0499	-0.0681	-0.0154	-0.0077	0.1411**	
8. Previous acquisitions	-0.0881	0.0428	0.3179***	0.3523***	0.0212	-0.2286***	-0.1366**

B. Advisor sub-sample

	CAR	Advisor	Deal value	Size	Relative size	Payment method	Domestic
1. CAR (-1, 1)							
2. Top advisor	0.0368						
3. Deal value	-0.0445	0.4429***					
4. Size	-0.0611	0.3525***	0.4909***				
5. Relative size	0.2856***	-0.0513	0.0695	-0.0792			
6. Payment method	0.2284***	-0.1849**	0.0686	-0.1148**	0.1737**		
7. Domestic	0.0413	-0.0469	-0.0681	-0.0154	-0.0077	0.1411**	
8. Previous acquisitions	-0.0201	0.3523***	0.3179***	0.3523***	0.0212	-0.2286***	-0.1366**

4.3 Regressions analysis

In table VI, the main event window, CAR (-1,1) for the total sample, have been regressed on *Advisor* and the six control variables. CAR (-1,1) for the advisor sub-sample have also been regressed on *Top Advisor* and the six control variables. In model 1, (M1), the CAR for the total sample have been regressed on *Advisor* and all the control variables. As in table V, no significant relationship is found between CAR and *Advisor*. The R^2 for the model is 0.0574.

In model 2, (M2,) the CAR for the advisor sub-sample have been regressed on *Top Advisor* and all the control variables. As in table V, no significant relationship is found between CAR

and *Top Advisor*. The R^2 for the model is 0.1414 in (M2). In the same model we have a significant positive relationship, on a 5 % level, between CAR and *Payment Method*, which suggests that a deal where the acquirer employs an advisor and the payment includes stock will have a positive reaction in abnormal return over a 3-day period around the announcement date, compared to deals without. We can also observe a significant positive relationship at the 5% level between CAR and *Relative size*, suggesting that as the deals increases in fraction of the acquirer market capitalization the deal tend to generate a higher CAR during the observed time window.

Table VI
OLS regression analysis on Bidder CAR

The table presents results of a OLS regression of acquisitions in the pharmaceutical industry worldwide during 2012 – 2016 and of acquisitions using a financial advisor during the same time period over a three-day period (-1, 1). The symbols *, ** and *** denotes statistical significance at a 10%, 5% and 1% level, respectively. N denotes number of observations. T-statistics are presented in parenthesis.

	A. Total sample	**B. Advisor sub-sample**
	(M1)	**(M2)**
Intercept	0.1036	-0.0065
	(1.02)	(-0.05)
Advisor	-0.0053	
	(-0.35)	
Top-advisor		0.0303
		(1.34)
Ln(Deal value)	-0.1550	-0.0138
	(-1.35)	(-1.51)
Ln(Size)	0.0098	0.0117
	(1.18)	(1.22)
Relative size	0.0099	0.0220**
	(1.02)	(2.55)
Payment method	0.0458*	0.0625**
	(1.79)	(2.18)
Domestic	-0.0007	0.0058
	(-0.05)	(0.29)
Previous acquisitions	-0.0003	0.0001
	(-0.31)	(0.12)
N	294	134
R^2	0.0574	0.1414

As earlier discussed, there are reasons to believe that the choice of advisor is not exogenously decided, why a Heckman two stage least squares was conducted. The two instrument variables, prior acquisitions involving an investment bank and prior acquisitions involving a top-tier investment bank, were created and showed a statistically significant correlation (0.2911 and 0.3725, respectively). These two variables are called scope in the regression, as

earlier mention and similar instrument variables have been used by Golubov et al. (2012). A weak instrument test was performed, rejecting the null-hypothesis that neither instrument would be weak. In model 3 (M3), seen in table VII, the first stage regression shows that our instrument is highly significant as an instrument in the regression. The choice of using an advisor is also highly positively related to deal size and negatively to acquirer size and number of previous acquisitions. The pseudo-R^2 for the model was 0.2284. The z-value of the inverse Mills ratio was 0.13, suggesting that no self-selection is observed in the model, proposing (M1) to be reliable. Model 5 (M5) show that choosing a top-advisor is related to the deal value at 1% significance level. No significant relatedness with the instrument could be observed. With a pseudo-R^2 at 0.3205, the model explains about 30% why firms choose a top-advisor. The z-value of the inverse Mills ratio was 0.14, again suggesting that no self-selection is observed in the model, proposing (M2) to be reliable.

Table VII

Heckman two-stage procedure regression analysis on Bidder CAR

The table presents result of a Heckman two-stage procedure of acquisitions in the pharmaceutical industry worldwide during 2012 – 2016 and of acquisitions using a financial advisor during the same time period over a three-day period (-1, 1). Scope is the instrument used in the regression and represents the variable of interest. The symbols *, ** and *** denotes statistical significance at a 10%, 5% and 1% level, respectively. N denotes number of observations. T-statistics are presented in the parenthesis.

	A. Total sample		**B. Advisor sub-sample**	
	(M3)	**(M4)**	**(M5)**	**(M6)**
	Selection	**Outcome**	**Selection**	**Outcome**
Intercept	-4.1942***	-0.0775	-8.5787***	0.1545
	(-5.14)	(-0.41)	(-4.50)	(0.17)
Scope	0.7243***		0.2631	
	(3.75)		(0.81)	
Ln(Deal value)	0.5016***	-0.0092	0.3720***	0.0035
	(6.60)	(-0.53)	(2.70)	(0.10)
Ln(Size)	-0.2628***	0.0111	0.0287	-0.0102
	(-3.78)	(0.96)	(0.22)	(-0.72)
Relative size	-0.0917**	0.0213***	-0.0622	0.0201
	(-1.98)	(3.06)	(-0.39)	(1.07)
Payment method	0.3212	0.0606**	-0.4397	0.0615
	(1.55)	(2.53)	(-1.25)	(1.01)
Domestic	0.2499	0.0077	0.2277	-0.0379
	(1.45)	(0.37)	(0.82)	(-1.15)
Previous acquisitions	-0.0310***	0.0002	0.0113	0.0012
	(-2.62)	(0.13)	(0.57)	(0.74)
N	294	294	134	134
Pseudo R^2	0.2284		0.3205	
Inverse Mills ratio		0.0071		0.0184
		(0.13)		(0.14)

4.4 Robustness analysis

As we earlier mentioned, additional time windows have been used to do a robustness analysis and check for pattern over time. Table VIII shows CAARs for the two additional time windows. In the additional short-time window (-3,3) we see the same pattern as in the main time window. We have a significant positive CAAR-value, on 1 % level, for both the total sample and a significant positive CAAR-value, on 10 % level, for the advisor sample. For the non-advisor sample, we still have significant positive CAAR-value, but now only significant on a 10 % level. For the run-up period (-42,-1), defined by Schwert (1996), we still have positive values on the CAARs for all the samples, all though now statistically insignificant.

Table VIII
Cumulative Average Abnormal Returns

The table presents data regarding CAR within the total sample and in selected sub-groups during the time windows (-3, 3) and (-42, -1). Number of observations, standard deviations, t-statistics and % of CAR above zero is also shown in the table. The symbols *, ** and *** denotes statistical significance at 10%, 5% and 1% respectively.

		Obs.	CAAR	Std. Dev.	t-stat	% CAR>0
(-3, 3)	Total	293	2.18%**	15.37%	2.43	55.29%
	Advisor	133	2.00%*	12.15%	1.90	53.38%
	Non-advisor	160	2.36%*	17.65%	1.67	56.88%
	Differences in mean		0.36%		0.19	
(-42, -1)	Total	291	1.35%	26.65%	0.86	49.48%
	Advisor	131	1.27%	15.90%	0.93	49.62%
	Non-advisor	160	1.41%	32.98%	0.54	49.38%
	Differences in mean		0.17%		0.04	

Table IX shows OLS-regressions on all independent variables for the two additional time windows. As for the main time window (-1,1), shown in table V, we find no significant relationship between CAR and Advisor/Top Advisor, in either of the two samples, for the two additional time windows. This is an indication that the model is robust to additional time windows.

Table IX
OLS regression analysis on Bidder CAR

The table presents results of a OLS regression of acquisitions in the pharmaceutical industry worldwide during 2012 – 2016 and of acquisitions using a financial advisor during the time window (-3, 3) and (-42, -1). The symbols *, ** and *** denotes statistical significance at a 10%, 5% and 1% level, respectively. N denotes number of observations. T-statistics are shown in parenthesis

	A. Total sample		**B. Advisor sub-sample**	
	(-3, 3)	**(-42, -1)**	**(-3, 3)**	**(-42, -1)**
Intercept	0.0867 (0.78)	0.1476 (0.99)	0.0849 (0.76)	0.0845 (0.55)
Advisor	0.0114 (0.77)	0.0166 (0.66)		
Top-advisor			0.0095 (0.42)	0.0255 (0.92)
Ln(Deal value)	-0.0077 (-1.03)	-0.0132 (-0.80)	-0.0071 (-0.96)	0.0011 (0.12)
Ln(Size)	0.0039 (0.51)	0.0040 (0.35)	0.0025 (0.30)	-0.0060 (-0.64)
Relative size	0.0062 (0.67)	0.0027 (0.69)	0.0155 (1.38)	-0.0025 (-0.45)
Payment method	0.0262 (1.00)	0.0475 (1.05)	0.0599** (2.08)	0.0661* (1.75)
Domestic	-0.0230 (-1.51)	0.0002 (0.01)	-0.0007 (-0.03)	0.0257 (1.14)
Previous acquisitions	-0,0008 (-0.69)	0.0008 (0.52)	-0.0007 (-0.60)	-0.0005 (-0.41)
N	293	291	133	131
R^2	0.0237	0.0129	0.1421	0.0684

In Table X, Heckman two-stage regressions is shown for the two additional time-windows. As for the main time window (-1,1), shown in table VII, looking at the inverse Mills ratio, no significant relationship between CAR and the two different Scope-variables is found, in neither of the additional time windows. This indicates that the model is robust to additional time windows.

Table X

Heckman two-stage procedure regression analysis on Bidder CAR

The table presents result of a Heckman two-stage procedure of acquisitions in the pharmaceutical industry worldwide during 2012 – 2016 and of acquisitions using a financial advisor during the time window (-3, 3) and (-42, -1). Scope is the instrument used in the regression and represents the variable of interest. The symbols *, ** and *** denotes statistical significance at a 10%, 5% and 1% level, respectively. N denotes number of observations.

	A. Total sample				B. Advisor sub-sample			
	(-3, 3)		(-42, -1)		**(-3, 3)**		(-42, -1)	
	Selection	**Outcome**	**Selection**	**Outcome**	**Selection**	**Outcome**	**Selection**	**Outcome**
Intercept	-3.0141***	0.0474	3.3706***	-0.1026	-8.9423	-1.1061	-7.6753***	-0.1145
	(-4.01)	(0.29)	(-4.30)	(0.48)	(-4.59)	(-0.71)	(-4.26)	(-0.11)
Scope	0.0663***		0.7023***		0.2940		0.2851	
	(3.65)		(3.70)		(0.91)		(0.88)	
Ln(Deal value)	0.1727***	-0.0055	0.4301***	-0.0018	0.3240***	0.0383	0.3692***	0.0209
	(2.78)	(-0.60)	(5.89)	(-0.09)	(2.92)	(0.80)	(2.67)	(0.48)
Ln(Size)	-0.0282	0.0027	-0.2396***	-0.0031	0.0895	0.0895	-0.0067	-0.0166
	(-0.47)	(0.35)	(-3.52)	(-0.23)	(0.81)	(0.81)	(-0.05)	(-1.02)
Relative size	0.0121	0.0155***	-0.0746	-0.0019	-0.0087	-0.0087	-0.0814	0.0008
	(0.30)	(2.71)	(-1.64)	8-0.23)	(-0.09)	(-0.09)	(-0.48)	(0.04)
Payment method	0.2864	0.0600***	0.1153	0.0658**	-0.3213	0.0392	-0.4929	0.0233
	(1.49)	(2.57)	(0.57)	(2.16)	(-0.91)	(0.45)	(-1.34)	(0.30)
Domestic	0.1428	-0.0003	0.2360	0.0247	0.0970	-0.0056	0.1086	-0.0025
	(0.89)	(-0.01)	(1.40)	(0.95)	(0.35)	(-0.10)	(0.40)	(-0.07)
Previous	-0.0166)	-0.0007	-0.0214*	-0.0002	0.0076	0.0011	0.0137	0.0009
Acquisitions	(-1.52)	(-0.50)	(-1.86)	(-0.10)	(0.39)	(0.38)	(0.69)	(0.45)
N	293	293	291	291	133	133	131	131
Pseudo R^2	0.1090		0.1853		0.3258		0.3071	
Inverse Mills ratio		0.0082		-0.0205		0.1966		0.0652
		(0.16)		(-0.31)		(0.89)		(0.40)

5. Discussion

This study was performed on acquisitions in the global pharmaceutical industry from 2012 to 2016. An average positive return of 3.03% on the acquisitions was observed, significant on a 1% level. This results confirms

the findings of Higgins and Rodriquez (2006), that found positive CAR in acquisitions in the pharmaceutical industry. On the other hand, the findings of scholars such as Agrawal and Jaffe (2000), where no positive CAR could be observed, are contradicted. One should notice that the previous mentioned study with negative CAR was performed on the overall M&A market, while Higgins and Rodriguez (2006), just as this study, was conducted in the pharmaceutical industry. This results could suggest that the efficiency of acquisitions differentiates between sectors. One could hypothesize that acquisitions is profitable in the pharmaceutical industry based on the findings of Higgins and Rodriquez (2006) and the data presented in this study. Based on the hypothesis that M&A actually creates value in the pharmaceutical industry, the existence of the phenomena "Big pharma" could be seen as ever more logical.

It is today still no clear picture of whether M&A transactions create value for the acquirer shareholders. This study supports further investigations whether or not it exists differences in profitability between industries in these type of transactions. Furthermore, one should keep in mind that this study was conducted on acquisitions during a five-year period. In order to increase the reliability of the overall performance of M&A transactions, it is suggested to increase the period of transaction record even more. Also, a cyclicality in number of mergers and acquisitions during a business cycle, could be another reason for further research with a wider time window.

The pharmaceutical industry is an industry with decades of increasing numbers of Mergers and Acquisitions. Based on our results, one would argue that this increasing number of acquisitions on average are rational and in the interest of the shareholders and fulfil the profit maximization purpose, as stated by Roe (2001). However, the actual motive of the acquisitions was not studied in this paper, but is a relevant topic for further research.

One should also keep in mind that we have chosen to focus on time windows closely related to the date of announcement and thereby only focusing on the short term bidder return. However, scholars have presented doubts regarding the long term profit in M&As. As an example, Loughran and Vijh (1997) found that deals paid with stocks had a negative excess return during a five-year period. Also, as the development time in the pharmaceutical industry is fairly long, it would be of interest for future studies to observe the long term shareholder value of an acquisition and differences if the deal involved a financial advisor or not.

Nevertheless, the positive effect on bidder return found in this study does not reflect the effect on long term shareholder growth.

One of our hypotheses in this study was that financial advisors positively affect the bidder return. We hypothesized that the financial advisors contribute positively by reducing the asymmetric information. As stated in the skilled-advice hypothesis (Bao and Edmans, 2011), one would expect financial advisors to be an important part in the transaction, especially in a sector as the pharmaceutical. However, our results propose that no additional effect by hiring a financial advisor could be seen. In fact, the average CAR within the advisor sub-sample was insignificant positive, while the non-advisor sub-sample was significant positive on a 5% significance level. Even though the difference in means were insignificant, it raises questions about the efficiency of financial advisors in acquisitions in the pharmaceutical industry. Additionally, these findings could support the rationales behind the phenomenon described in the article written in the Wall Street Journal (Mattioli, 2016, 10 May) regarding the increased number of acquisitions exercised in-house compared to advised acquisitions. This literature summarized might reveal a nature in the industry, where industry expertise is crucial and could be pronounced through the high number of in-house deals, as seen in our dataset (about 50% of the total deals) or through alliances and sales experiences, as described by Higgins and Rodriquez (2006).

As proposed in the passive execution hypothesis and shown in the study by Servaes and Zenner (1996) one would like to further investigate what financial advisors actually contribute with. Also, it is of great importance to understand what drives different studies in opposite directions regarding their contribution, in order to understand the value of M&A. One could hypothesize that as the asymmetric information increase, the passive execution hypothesis become more applicable. If financial advisors do not affect CAR positively, they might be passive executors, just following the instructions given by their clients.

Higgins and Rodriguez (2006) find that sales experience affect CAR positive. If this is correct, then it could explain why companies that perform the acquisition in-house and use their own experience from the industry would perform as good as or better than those that rely on external advisors. Also, by incorporating additional companies in adjacent sectors the pharmaceutical company can increase their sales experience and thereby their efficiency in acquisitions. This too would strengthen the uprising of the Big pharma industry. If the

companies themselves knows best what creates value one could hypothesize that companies does not only acquire in order to gain economies of scale or medical knowledge, but also knowledge needed for future acquisitions. The pharmaceutical industry is a wide and complicated industry with continuous research, in comparison to many other industries, one could only imagine the extensive knowledge needed by the financial advisor, to contribute to a lowering of the asymmetric information. A wider study whether or not there exist differences in the efficiency of financial advisors in different industries would be of great interest to further investigate this hypothesis.

Golubov et al. (2012) suggests that top-tier financial advisors provide sufficient better advice than the average financial advisor in a public deal. Similar findings are also presented by Cressy et al (2007). Our study cannot confirm these results. We did not find any difference in bidder CAR between non-top-tier and top-tier banks. Further, one should remember that previous studies have examined the whole M&A market, while this study focused only on one industry. Yet, this result finds support in previous studies, such as Rau (2000), where they linked a higher market share for the advisors to a more negative acquirer return. Even though we did not found a negative return among top-tier banks, it still raises the questions about the efficiency of top-tier banks.

The authors believe that there might exists an asymmetric information problem in the pharmaceutical industry that the average investment bank are unable to handle in an optimal way. However, in order to deepen the knowledge whether such issue exists, one would need to further investigate the relation between the pharmaceutical industry and financial advisors. Golubov et al. (2012) uses some more complex control variables that this study did not replicate. In order to gain more understanding regarding this topic studies including variables as this is recommended.

Walter et al. (2008) writes about the difficulties of evaluating the true effect on industrial specialization in investment banks as it seems to be affected by choices of payment and reputation. Our results show a significant effect on CAR when using stocks in the deals where a financial advisor was hired. If Walter et al. (2008) is right about their hypothesis, this could be a bias in our result and explain the difference in effect on CAR when using stocks between the two sub-samples.

One could also discuss whether League tables and top-tier definition is the best way to measure industry specialization. Even though earlier studies used League tables, they have not been industrial specific studies and thereby not been focusing on industrial specialization as much as this study has. Is the total value or the number of prior acquisitions the most important factors or would a percentage of total deals in a specific industry be a better measurement? This study contributes to the existing literature by creating self-made, industry specific league tables with an aim to catch an industrial specialization among the financial advisors through a league table. In order to gain knowledge of financial advisors and industrial specialization, further research is needed to understand what makes an advised deal profitable and what makes a financial advisor industry specialized.

One should have in mind that our models have restrictions to take in to considerations. The number of controls included in the model is less than found in similar studies. In comparison to Golubov et al. (2012), our R^2 are lower in all regressions. Previous studies have included one or a few more complex controls, which seems to be a factor that make the R^2 of their models higher. M&A and the stock market are complex and affected by numerous of factors, which makes it plausible that well developed control variables plays an important role in explaining the relationship between these phenomena.

The scope instrument for the top-tier used in this model was based on the similar instrument developed by Golubov et al. (2012), although with some differences. However, the instrument did not show any significance in the probit model, in comparison to shown by Golubov et al. (2012). Therefore, one could question the validity of the instrument. In the study by Golubov et al. (2012) 39% of the advisors were top-tier advisors, while only 26% were top-tier in our study. If the number of deals performed by top-tier advisors decrease nowadays, it could lower the validity of the instrument and therefore explain the insignificance. However, when testing for weak instrument, it was rejected as weak, which propose that the instrument is valid. The insignificance viewed in our probit model could be due to a relative low number of top-tier observations, 47, which is much lower than Golubov et al. (2012).

On the other hand, our Heckman two stage least squares confirms in many ways what our OLS-regressions show regarding our variable of interest, which propose that our results from those regressions are reliable. Also, our robustness analysis confirms these findings in our additional time windows. The findings in this study raise questions about the efficiency of

financial advisors and encourage further research in differences in outcome from acquisitions between industries, performed with and without financial advisors.

6. Conclusion

This study has examined three different hypotheses. First, if acquisitions create value in the pharmaceutical industry, second, if the choice of hiring a financial advisor matter for the value and last if the choice of financial advisor matter.

The study was performed using the event-study methodology on a sample of 294 transactions between 2012-2016. The findings of this study suggest that acquisitions in the pharmaceutical industry on average creates a positive abnormal return around the announcement date of 3.03%. A difference in means could be noticed in cumulative abnormal return between the subgroups, with an advantage for the non-financial advisor group. However, no significant difference could be found. Further, no significant abnormal return could be assigned to deals including a financial advisor or the choice of employing a top-advisor.

This results support our first hypothesis that M&A create shareholder value on short term basis. However, it does not support our second and third hypothesis that employing an advisor or top-tier advisor does positively affect the abnormal return. This contradicts the skilled-advice hypothesis and embrace the passive execution hypothesis.

Based on the results in this study one would suggest that acquisitions within the pharmaceutical industry is profitable when performing an in-house deal. However, in order to deepen the knowledge about what create a successful acquisition and to what extent a financial advisor contribute to it, further research is needed. As an example, future studies should deepen the knowledge in how to measure industrial specialization in the M&A industry, as a comparison to the commonly applied League Tables.

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APPENDIX A
League tables used to create dummy variable

2011

	Financial Advisor	Total deal value th USD
1	**Goldman Sachs Group Inc.**	35 523 651
2	**Morgan Stanley**	32 897 162
3	**JP Morgan**	29 332 046
4	**Credit Suisse Securities (USA) LLC**	27 244 000
5	**BNP Paribas SA**	23 907 555
6	**Credit Suisse**	21 354 528
7	**Deutsche Bank AG**	20 712 981
8	**Evercore Partners Inc.**	20 100 000
9	SG Corporate & Investment Banking	20 100 000
10	Bank of America Corporation	9 792 467

2012

	Financial Advisor	Total deal value th USD
1	**Goldman Sachs Group Inc.**	34 459 944
2	**Credit Suisse**	32 069 886
3	**Morgan Stanley**	24 782 700
4	**Bank of America Corporation**	20 976 850
5	**Citigroup Inc.**	12 430 252
6	**Barclays Capital plc**	11 200 000
7	**Deutsche Bank AG**	9 258 114
8	**Evercore Partners Inc.**	7 000 000
9	Blackstone Advisory Partners LP	5 846 850
10	Lazard	4 084 684

2013

	Financial Advisor	Total deal value th USD
1	**JP Morgan**	14 983 997
2	**Citigroup Inc.**	12 017 201
3	**Bank of America Corporation**	11 251 450
4	**Goldman Sachs Group Inc.**	11 122 019
5	**Morgan Stanley**	10 970 426
6	**Deutsche Bank AG**	9 037 156
7	**Glass Lewis & Company LLC**	8 956 947
8	**Institutional Shareholder Services**	8 912 450
9	Egan-Jones Rating Company	8 529 521
10	Greenhill & Company LLC	8 529 521

2014

	Financial Advisor	Total deal value th USD
1	**JP Morgan**	60 733 906
2	**Morgan Stanley**	48 379 764
3	**Greenhill & Company LLC**	24 244 506
4	**Bank of America Corporation**	23 629 118
5	**Centerview Partners LLC**	22 941 081
6	**Barclays plc**	21 765 741
7	**Deutsche Bank AG**	19 541 107
8	**Ernst & Young**	17 134 717
9	Goldman Sachs Group Inc.	16 562 114
10	Moelis & Company LLC	15 100 000

2015

	Financial Advisor	Total deal value th USD
1	**JP Morgan**	186 783 334
2	**Goldman Sachs Group Inc.**	111 642 244
3	**Morgan Stanley**	83 075 286
4	**Bank of America Corporation**	78 155 727
5	**Centerview Partners LLC**	73 267 577
6	**Lazard**	53 358 439
7	**Citigroup Inc.**	39 924 539
8	**Deutsche Bank AG**	35 550 000
9	Guggenheim Securities LLC	35 113 000
10	Ernst & Young	23 321 550

APPENDIX B
League tables used to create scope

2007

	Financial Advisor	Total deal value th USD
1	**Goldman Sachs Group Inc.**	42 523 373
2	**Merrill Lynch**	35 797 607
3	**Morgan Stanley**	21 334 583
4	**ABN Amro**	17 636 844
5	**UBS**	11 030 446
6	**Bear Stearns & Co Inc.**	10 223 463
7	**Lazard**	8 547 917
8	**JP Morgan**	8 289 277
9	Deutsche Bank AG	5 630 380
10	Nomura Securities Co., Ltd	4 564 027

2008

	Financial Advisor	Total deal value th USD
1	**UBS**	26 337 708
2	**Merrill Lynch**	22 958 174
3	**Morgan Stanley**	17 651 009
4	**JP Morgan**	16 863 663
5	**Lehman Brothers**	13 703 000
6	**Lazard**	13 613 122
7	**Bank of America Corporation**	13 345 000
8	**Deutsche Bank AG**	13 286 519
9	Goldman Sachs Group Inc.	8 940 467
10	Credit Suisse	5 718 840

2009

	Financial Advisor	Total deal value th USD
1	**Goldman Sachs Group Inc.**	161 163 928
2	**JP Morgan**	117 871 625
3	**Morgan Stanley**	113 365 554
4	**Bank of America Corporation**	75 597 328
5	**Barclays Capital plc**	75 140 000
6	**Evercore Partners Inc.**	72 000 000
7	**Citigroup Inc.**	71 847 769
8	**Barclays Bank plc**	68 000 000
9	Greenhill & Company LLC	46 800 000
10	Credit Suisse	8 400 000

2010

	Financial Advisor	Total deal value th USD
1	**Citigroup Inc.**	34 925 105
2	**Credit Suisse**	33 516 543
3	**Greenhill & Company LLC**	28 627 000
4	**Goldman Sachs Group Inc.**	21 129 313
5	**Morgan Stanley**	19 744 024
6	**Deutsche Bank AG**	12 840 575
7	**Lazard**	10 093 009
8	**Barclays Capital plc**	7 986 822
9	Guggenheim Partners LLC	7 200 000
10	Perella Weinberg Partners LP	7 200 000

2011

	Financial Advisor	Total deal value th USD
1	**Goldman Sachs Group Inc.**	35 523 651
2	**Morgan Stanley**	32 897 162
3	**JP Morgan**	29 332 046
4	**Credit Suisse Securities (USA) LLC**	27 244 000
5	**BNP Paribas SA**	23 907 555
6	**Credit Suisse**	21 354 528
7	**Deutsche Bank AG**	20 712 981
8	**Evercore Partners Inc.**	20 100 000
9	SG Corporate & Investment Banking	20 100 000
10	Bank of America Corporation	9 792 467

2012

	Financial Advisor	Total deal value th USD
1	**Goldman Sachs Group Inc.**	34 459 944
2	**Credit Suisse**	32 069 886
3	**Morgan Stanley**	24 782 700
4	**Bank of America Corporation**	20 976 850
5	**Citigroup Inc.**	12 430 252
6	**Barclays Capital plc**	11 200 000
7	**Deutsche Bank AG**	9 258 114
8	**Evercore Partners Inc.**	7 000 000
9	Blackstone Advisory Partners LP	5 846 850
10	Lazard	4 084 684

2013

	Financial Advisor	Total deal value th USD
1	**JP Morgan**	14 983 997
2	**Citigroup Inc.**	12 017 201
3	**Bank of America Corporation**	11 251 450
4	**Goldman Sachs Group Inc.**	11 122 019
5	**Morgan Stanley**	10 970 426
6	**Deutsche Bank AG**	9 037 156
7	**Glass Lewis & Company LLC**	8 956 947
8	**Institutional Shareholder Services**	8 912 450
9	Egan-Jones Rating Company	8 529 521
10	Greenhill & Company LLC	8 529 521

2014

	Financial Advisor	Total deal value th USD
1	**JP Morgan**	60 733 906
2	**Morgan Stanley**	48 379 764
3	**Greenhill & Company LLC**	24 244 506
4	**Bank of America Corporation**	23 629 118
5	**Centerview Partners LLC**	22 941 081
6	**Barclays plc**	21 765 741
7	**Deutsche Bank AG**	19 541 107
8	**Ernst & Young**	17 134 717
9	Goldman Sachs Group Inc.	16 562 114
10	Moelis & Company LLC	15 100 000

2015

	Financial Advisor	Total deal value th USD
1	**JP Morgan**	186 783 334
2	**Goldman Sachs Group Inc.**	111 642 244
3	**Morgan Stanley**	83 075 286
4	**Bank of America Corporation**	78 155 727
5	**Centerview Partners LLC**	73 267 577
6	**Lazard**	53 358 439
7	**Citigroup Inc.**	39 924 539
8	**Deutsche Bank AG**	35 550 000
9	Guggenheim Securities LLC	35 113 000
10	Ernst & Young	23 321 550