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School of Business, Economics, and Law, Graduate School

MASTER THESIS IN ACCOUNTING AND FINANCIAL MANAGEMENT

Merger & Acquisition Effect on Management Pay

2020-05-27

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Acknowledgement

I want to thank my supervisor Aineas Mallios for guidance and support throughout the thesis process. I would also like to express my gratitude to Simon Schoultz for reviewing and providing feedback.

Abstract

CEO compensation has gathered a lot of attention in recent years, following extreme growth and news of record-breaking salaries. At the same time, Merger & Acquisition (hereafter M&A) activity has accelerated in amount and deal size. Several researchers have tried to quantify and discuss the link between management compensation and M&A, including discussion areas such as established theories of agency problem as well as managerial power and a lot of research done globally to understand the relationship between M&A deal and compensation. However, there is only some limited research looking at the effect of M&A on management compensation in Swedish market. Based on this fact, the purpose of this thesis is to investigate M&A effects on management compensation by analysing listed companies in Nasdaq Stockholm Stock Exchange. A regression and chow test are performed to examine the M&A deal influence on compensation. The empirical findings support the proposition that M&A positively influences compensation. Further, the findings validate previous research that company size, by proxy of firm total assets, has a significant influence on management compensation.

Key words: Merger & Acquisition, Management Compensation, Swedish market, CEO pay

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1 Introduction

Executive pay has gathered a lot of attention in recent years because of the increasingly high sums of money compared to regular workers. There have been discussions about increasing CEO-to-worker compensation levels as well as higher than average wage increases for executives (Mishel & Schneider, 2018; Dahlberg, 2019). CEOs compensation has grown almost 500% since the 1970s and now earns close to 300 times the average worker in the U.S (Cowen, 2019). This trend (as well as the debate) can be seen worldwide. In Sweden we have seen record breaking income listings of some executive management, most notably Spotify's Director of R&D, Gustav Söderström, with annual income of 332 million SEK in 2018 (Blixt, 2020). Even excluding stock options and incentive plans, salaries have risen dramatically for executives in listed companies in Sweden. For example, the CEO of Hexagon, Ola Rollén, had 52MSEK income in 2018 (25% increase) or Börje Ekholm, CEO of Ericsson, had 23MSEK income in 2018 (15% increase) (Dahlberg, 2019). Since the compensation among top executives is so much higher than the average employee, it inevitably draws attention. What activities and performance by management can possibly be worth 300 times the salary of a worker? Are they compensated based on performance, driving the corporate strategy and increasing the company value? Or is the management doing all possible to maximize their own compensation? This is the classic agency problem of conflict of interest between management and shareholders.

Recent years have also seen record amounts as well as record deals for value M&A (Lam, 2015) following globalisation and decade-long economic boom. As of the end of 2019, a report from BCG (Kengelbach, 2019) reveals that deal value of M&A has increased by about 7% globally that year. As we can see no slowing down of M&A activity, the importance of merger performance for companies in any industry cannot be understated. Public M&A activity also increased in the Swedish market. 2019 saw several takeover bids announced in Nasdaq Stockholm main market, notably large one such as SBB's offer for Hemfosa (SEK 23,521 billion) (Sjöman, 2020). A likely cause for this is the increasing amounts of availability to liquidity and low interest rates provided by central banks all over the world (Kengelbach, 2019). Since both executive compensation levels and M&A activity has increased in the last few years, it is not unreasonable to think there might be some correlation.

Among all the decisions management can make, M&A is one instance that often has a clear and noticeable effect on compensation level. Post-merger, it is natural for management to be rewarded

by completing such a vital task (Grinstein and Hribar, 2004), since M&A are typically risk substantial investments for the company, the outcome can heavily impact the company's future.

There is no doubt M&A is important and significant for shareholders and management alike. It is imperative that incentives are aligned for mutual benefit. However, this is not always the case. In fact, it is not uncommon for large deals post mergers that executives gain big salary benefits while share prices go down (Grinstein and Hribar, 2004). Some studies claim that management always has an incentive to perform mergers because the objective company size growth should undoubtedly lead to higher benefits. Therefore, it is interesting to understand how management compensation packages are quantified for M&A deals and it is worthwhile to scrutinize what factor has been placed with the most weight when shareholders determine the paycheck of top executives.

1.1 Purpose

Although agency theory, management compensation and M&A effects on management pay have been studied by many researchers, there are still limited empirical studies in the field. Further research using different markets / data sets is of high interest. Also, most of existent research papers are with main focus on merger deals affecting compensation done in the USA, UK or Canada, a market that has not been studied in great detail is the Swedish market. The thesis therefore aims to investigate M&A effects on management pay by analysing listed companies in Nasdaq Stockholm Stock Exchange (Stockholmsbörsen). One reason being, similarly, Swedish top executive also received significant amount of salary, which draws a lot of public attention, like Ola Rollén's paycheck mentioned above and Swedish market also increased M&A activities. Another reason being Swedish market, comparatively small market, yet it has a transparent and readily available data for M&A, compensation levels etc. So, whether the Swedish CEO will be compensated for a closed M&A deal? If so, is the compensation evaluated based on post transaction company performance will be the interest and purpose of the paper.

1.2 Contribution

This thesis aims to study the top executive compensation reaction on M&A activities for Swedish listed companies. This paper confirms previous studies findings that management pay is positively correlated to M&A deal activity and that post-M&A company size increases have a significant

influence on management compensation. I also confirm that management pay has weak or no correlation to either post deal bidder performance on both financial KPI level and market price level or transaction value.

These findings and conclusions are very much in line with other studies in the field (Girma et al., 2006, Chen, Z. et al. 2017, Conyon and Gregg, 1994, Bugeja, 2012) and should reiterate the need for shareholders to be wary of merger deals due to the potential conflict of interest and agency problem in management. Further, the outcome and discussion will contribute to the ongoing and highly relevant debate by enlightening shareholders to encourage healthy skepticism for proposed mergers by management. Using the collective research should provide a good basis for future study on how to better align incentives of management and shareholders. As shown by the thesis, merger and acquisitions plays a part in compensation, as such it is vital for shareholders to keep M&A in mind when designing effective compensation schemes.

The thesis outline will be described as follows: Section 2 will go through previous literature in the topics of management compensation, and compensation following a merger. In Section 3, the literature review will finally builds up to the hypothesis and then describes the adopted equation and regression model, together with the data collection. Section 4 presents the empirical results, the analysis for the result and robustness test. Finally, section 5 presents the conclusion and discussion of results.

2 Theoretical review

In this chapter, an overview of relevant theoretical framework and related works in the concepts of management compensation and M&A will be presented.

2.1 Management Compensation

There are two dominant theoretical views regarding management compensation (Chen, 2017). One of them sees management compensation as a tool to resolve the conflict of interest between shareholders and management. The agency cost is the traditional view - the shareholder's willingness is to create company value for a long term, whereas management wants to seek relatively short-term reward or even 'build empires' (Girma, 2006). Compensation contracts or packages are designed to reduce this agency cost, by linking the managers compensation together with the company performance, for instance market stock return or accounting profitability KPIs. Shareholders and management's goals are unified by it.

Another theory of 'managerial power', proposed by Bebchuk (2002), believes that the compensation should be regarded as a part of the agency problem rather than a device to minimize the agency cost. Since top executives have a power in influencing board decisions, which has been shown in many occasions (van Essen, 2015). For instance, management has the ability to affect the shareholder meetings agenda. The CEO with stronger managerial power will gain more rent and get overly compensated during tenure by having a compensation package that is optimal for the management but suboptimal to shareholders. This implies that the contract between CEO and shareholder is not limited in regulating the compensation based on company performance like discussed for agency theory mentioned above but detach the pay from company performance by some other justification. For instance, an irregular business deal - a M&A deal that requires extra time and effort from the CEO will be a justification for a new bonus, regardless of the actual performance, sometimes even at the expense of shareholders.

Bebchuk mentioned these two points of view can be explained jointly- that compensation contract can be a reflection of both managerial power and a mechanism to minimize the principal and agency problem. Management pay typically consists of plural components. They can include monetary terms such as salary, cash bonus, termination pay, and can include equity terms for instance, stock options, etc. Widely accepted research suggests the annual salary and cash bonus is

a reward for past company performance (Baker et al, 1988), while the equity reward is an incentive for future company performance increase. Since the CEO is not permitted to trade his shares under vesting period (mostly five years), this regulation encourages CEO to create long term value.

2.2 Management Compensation Following M&A

M&A is one of the most significant investment decisions management can determine. In the optimal world, a company should conduct M&A strategically to maximize the expected value with even expense at the near-term earnings and also reward the CEO or top executive for having a long term return mindset, which reconciles against the shareholder interest.

The results of M&A can be among increase in size, revenue, market share, profits, staff count, etc. but these results are differently linked to management compensation. Top executives in companies have an incentive to increase their compensation by initiating mergers (Girma et al., 2006). The paper suggests that mergers will lead to acquiring company expansion, which lead to sales or size growth, which will further affect the management compensation. Executive compensation is in most cases explained by a company size measure, such as total assets (Farris et al., 2014), instead of company performance. In some cases, Girma found that aside from the company size, shareholders will evaluate management performance based on the quality of merger performance in terms of valuation (Girma et al., 2006). Shareholders will differentiate the compensation for wealth enhancing transactions from wealth reduction within a time span of three years.

This view that managers can improve their compensation by enlarging the company size though M&As is reiterated in a few studies from different markets. For example, in UK firms (Conyon and Gregg, 1994) or in Australian firms (Bugeja, 2012) both found that executive compensation increased post-merger, at the same time did not necessarily increase shareholder value.

It can also be in the self-interest of the management to perform mergers. This can lead to the management in the company focusing on size expansion and empire building, at the cost of valuation and shareholders' benefit. Indeed, a multitude of papers suggest that target company's shareholders will experience positive gains post-merger, while the acquirer' shareholders will suffer destruction of value (e.g., Agrawal et al., 1992; Loughran & Vijh, 1997; Rau & Vermaelen, 1998; Moeller et al., 2005, Rao-Nicholson et al., 2016).

Another school of thought by Grinstein and Hribar (2004) believe that management with more power or influence in the decision-making process of M&A will be compensated at an increasing rate. That is to say, compensation after M&A is dependent on managerial power. For instance, CEOs have the highest managerial power in the decision-making process in a merger transaction, so CEOs will receive the most lucrative compensation packages among all the top executives. This article also found that the size growth of the bidder together with the measured effort by management is another factor that affects executive compensation, rather than the actual deal performance in the US market.

Further, according to Bebchuk et al. (2002) managerial power hypothesis, CEOs can actually gain greater power over the board by acquiring other firms to ultimately manage larger enterprises. This, by extension, means those CEOs have more power to influence the salary and compensation process to earn even more than before.

At the same time, other studies suggest alternative reasons for management to engage in M&A that are not purely for immediate compensation increases. For example, Avery et al. (1998) found little difference in compensation between executives who engage in M&A to those who do not. Instead, executives want to lead larger firms that improve status, prestige and long-term career possibilities that does not necessarily improve wealth or compensation.

Some other scholars have performed similar studies by looking at industry specific characteristics. Chen, Z. et al. (2017), also argues that compensation is positively related to company size growth in the banking industry and states that the company expansion initiated by management can be at expense of shareholder interest, merely to pursue personal benefit. Also, a multitude of studies have found that the operating performance tends to decline in the years following an M&A (Rao-Nicholson et al., 2016; Moeller et al., 2005). So, after all these studies, it begs the question, what actually determines the CEO compensation post M&A deal in Sweden?

3 Method

The different perspective on the concept leads to this paper's final hypothesis. In this chapter I will begin with presenting the hypothesis, following with adopting an equation for the hypothesis. Then I will focus on describing how to collect relevant data, clean the data and describe data characteristic in a preliminary scrutiny. In the last part of this chapter, I will apply the data to the method designed. The illustration of the result is presented in the next chapter.

3.1 Hypothesis development

According to the literature mentioned above, there is a clear link between M&A deal and top executive compensation. The question to be addressed in this paper is that under Swedish environment, whether executive compensation is influenced by merger, from an acquirer's perspective. In other words, whether Swedish firm's management compensation can decouple from the merger activity. Based on the mainstream studies before, M&A has a positive influence on CEO pay and underpaid CEOs are willing to conduct M&A to increase their remuneration. This argument has been verified by Bliss and Rosen (2001) and many more others like mentioned in literature review. Therefore, the following null hypothesis will be empirically tested:

Hyposthesis 1:

H_0: Top executive compensation is not affected by M&A deals in Sweden.

If there is a significant link, what is the main driver or determinants for compensation? Is the driver acquirers' characteristic, for instance company's size, sales? or is the driver transaction's characteristic? Or is the driver company performance evaluation? Furthermore, how and to what extent is compensation affected? Therefore, analysis in this research will be carried out on multiple variables and conclude on which factors play the most important role on management compensation and to which extent compensation will be influenced by performing Chow test and the corresponding null hypothesis is

Hyposthesis 2:

H_0: The management compensation for the company has conducted M&A deals and the company without are affected by the same variable (company size, company performance and transaction characteristic) and to the same extent.

Chau test has a norm null hypothesis, which assumes that the two groups of data share the same coefficient. So, in this paper, I will adapt the standard assumption as well, to see if the result shows M&A group and control group are affected by different variables and which variable has the most power of influence.

3.2 Method and Equation Development

Given that the dependent variable compensation is capturing different independent variables' existence and absence, and in order to isolate compensation being associated with M&A activity, the equation is designed as the following:

$$\Delta Compensation_{i,t} = \beta_1 \Delta Asset_{i,t} + \beta_2 \Delta ROA_{i,t} + \beta_3 \Delta StockPrice_{i,t} + \beta_4 TransactionValue_{i,t} + \beta_5 Dummy + \varepsilon$$

The equation variables are carefully chosen and designed based on previous research in combination to fulfil the purpose of this thesis and to test the hypothesis. In order to proxy company size, a common variable among previous research is 'total assets' (see Bugeja, et al., 2012 who tested on Australian market or Chen, et al., 2017 who tested on US banks with success). Total asset was deemed sufficient and straight forward proxy for company size and was therefore chosen as a variable. Next, 'ROA' was chosen as a proxy for company accounting performance. Again, we can see it used with success on previous studies (Chen, et al., 2017, Bugeja, et al., 2012 and Grinstein, Y. and Hribar, P., 2004). The variable 'stock price' (annual average adjusted stock price) was chosen to test the market reaction or market performance post-merger. It was inspired by Chen's variable 'Change in firm value due to change in industry index' but adapted to test individual companies' performance instead of "industry-wide fluctuations" (Chen, et al., 2017). 'Transaction value' has been selected with inspiration from Grinstein, Y. and Hribar, P. (2004), who indexed transaction characteristics with deal size and found, the higher deal size is, the more remuneration will be paid out in the U.S. market. With the inspiration of the pervious literature, the equation has been formed with compensation being a function of change in asset, ROA, stock price and transaction value. This model can help solve a few questions. Dummy can control if M&A has any influence on compensation at all. The asset variance can control if compensation is company size driven, which to some extent, verifies the managerial power theory. The other two company performance variables, ROA and stock price, are to verify the traditional agency theory for compensation rewinded in the literature review section. In the end, transaction value has been

included in the equation to test if transaction characteristics per se play any role on management compensation.

First of all, compensation is measured by the top executive annual salary along with cash bonus. Something worth mentioning here is that I have deliberately not adjusted the stock options benefit or any long-term incentive plans to the dependent variable for a few reasons. To test the null hypothesis, management's compensation will not be affected by M&A deal, compensation should be a reflection of the 'pure' transaction passively, meaning that compensation is deemed as a reward/punishment from shareholders and cannot be manipulated by management per se. If Employee Stock Option (ESO) or other equity-based compensation has been taken into consideration, the compensation is affected by other factors, for instance: granted timing and market price etc. Adjusting ESO for management compensation is more suitable for studying the relationship between management incentive and company performance. Moreover, the stock price is most likely to plunge after the merger announcement as a bidder. Like what Ordu and Schweizer (2015) suggest, management has an incentive to hedge the long-term loss from the stock merger announcement by buying put options or collar options. So, the management not only benefits from value creating transactions, but also hedge their compensation from the potential loss, which violates the model's assumption. Saying either case can help the manager to avoid the upcoming share price drop. Therefore, I have not made any adjustments to ESO or any other LTIP benefits into compensation variables.

Secondly, letter i, in the equation, indexed firm and letter t indexed transaction close year. To determine which period should be in scope and which type of companies shall be included, I considered the compensation impact can be delayed after M&A due to various reasons. When the deal has been finalized in year one for instance, the compensation for year one does not necessarily reflect the whole picture of the current year. The compensation can be deferred to later years. So, I included more than one year compensation data after the deal closed to take lagged dependent variable into consideration. Some studies suggest that lag may exist due to shareholders intentionally smoothing the paycheck through years to avoid the adverse publicity (Kole and Lehn, 1999). The reason can also simply be the compensation or bonus arrangement has inertia and was not released timely. Therefore, a 3 years interval deemed to be sufficient and reasonable for catching the M&A effect on compensation. This is saying, again, if a deal closes in year one, the post M&A compensation is the average of year one, two, three's compensation, and same logic, for pre-M&A compensation is the average of year zero, minus one and minus two.

For the company range, I selected all the companies that are listed in Stockholm stock exchange as my research scope, due to public company information being of transparency and accuracy. The company that has merged or acquired a subsidiary within the research period mentioned above has been classified in the research group, while in the same period, the company with no merger or acquisition is in the control group.

Finally, the explanatory independent variables and descriptions have been listed in the table below. Company's size is proxied by assets' book value, which can directly capture the M&A size-enhancing effect after the M&A deal. Company's performance is proxied by ROA and stock price. The increase of these two variables depicts the value creation effect after M&A. Two variables have been chosen to capture the performance, so that both book value and market value can be taken into consideration. Transaction characteristics have been populated by the absolute deal value.

Table 1 - Independent variables' description

This table illustrates how independent variables in the equation have been populated.

Variable	Description
Δ Asset	That total asset balance in the consolidated report of the year that deal closes, minus the asset in the annual report of one fiscal year earlier, populates the Δ Asset variable. In another word, Δ Asset refers to the asset acquired during a M&A transaction. The control group Δ Asset has the same meaning, which is the change of asset in the annual report under the exact same corresponding period.
Δ ROA	ROA is calculated by EBIT (earnings before interest and tax) through assets. Δ ROA refers to the change of ROA after and before the transaction is closed. Δ ROA for the control group contains the same information.
Δ Stock Price	Stock price refers to the adjusted stock price, which both share split and dividend have been adjusted to reflect the true picture of stock price movement. Also, since the stock price can fluctuate from days to days easily, annual average stock price has been used. Therefore, the result after the average stock price with range from the day the deal is closed till one year after, deducts the average stock price from the deal closed day back to one year earlier, has been used to proxy the Δ Stock price variable. The average adjusted stock price during the same period has been used to proxy the control group.

Δ Transaction Value	For the research group, transaction value is the deal closed value. For the control group, transaction value equals zero.
Dummy	Any company that had a M&A deal during the research period has been proxied with one, otherwise zero.

I expected to find that the constructed regression model can help me to isolate the effect from M&A transactions. Further considering the purpose and the characteristic of the model, the dummy containing two groups of data have drawn my attention. Before applying the data into the model, my expectation is sample group compensation and control group compensation do not necessarily reflect on the same independent variable, especially not to the same degree. In other word, if running these 2 sub-groups of data, the coefficient of these two regressions doesn't necessarily being the same. In this case, it is not optimal to run the sample jointly. To solve this issue, a Chow test will be performed to analyze two different sub-groups via the same equation mentioned above but without dummy, see the equation below, to control testing remuneration reaction under different circumstances. In the end F-test will be carried out to see if these two subgroups result are the same in nature and can be interpreted by the same equation (pooled). When the result shows statistically significance, it means the result reject the null Chaw test hypothesis and the two sets of the data cannot be explained by the same coefficient.

$$\Delta Compensation_{i,t} = \beta_1 \Delta Asset_{i,t} + \beta_2 \Delta ROA_{i,t} + \beta_3 \Delta StockPrice_{i,t} + \beta_4 TransactionValue_{i,t} + \varepsilon$$

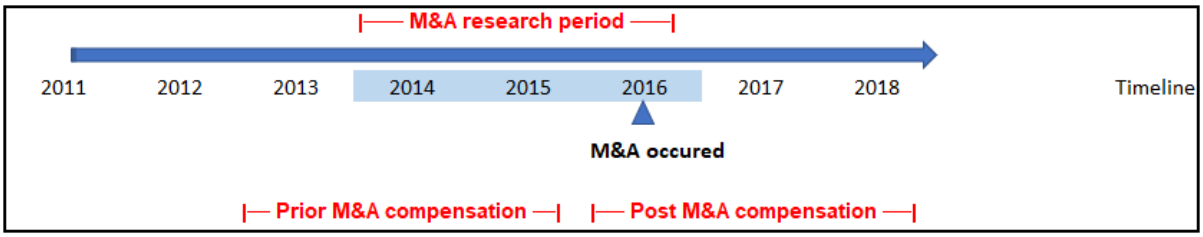
3.3 Data description

All the data have been retrieved from S&P Capital IQ, Retriever, Yahoo Finance and company's annual report. I have started to work on this paper from the first quarter 2020, when 2019 financial information has not been fully released (In Sweden, companies are obliged to submit an annual report to bolagsverket before the end of June in the following year). With the limited information about 2019, I decided to focus on the data from FY 2018 and before. As mentioned above in section 3.2, three years delay of compensation has been considered, so back count three years has been selected as the ending point for M&A deal range. After determining the end period of transaction data, the beginning period is determined based on the data availability and completeness. To

conduct fair comparison for compensation, analysis should be made on an individual level, meaning the compensation should be compared for the same individual through a relatively long time period. Significant amount of CEOs' tenure does not last as long as the research covered period. Therefore, a three-year M&A period has been used. Another consideration for the time span is that when selecting the public firms, there are firms that are recently listed, meaning that the firm stock price availability is limited. To sum up, the applied timeline has been presented below.

Table 2 Sample collection timeline

This table depicts the timeline and time scope for chosen M&A deal and other variables.



For each company, CEO compensation, asset value, return on asset and stock price change, together with the transaction closed value have been obtained and the data has been cleaned with the steps mentioned below to assure the reasonability of input data. First, each selected sample's position in the company has been controlled. Reading each top executive's short resume description facilitates me to assure the selected personnel is, for instance, CEO, CFO and other external top management, rather than chairman of the board, who are not within the scope of the paper. Second adjustment has been performed when the top executive did not work for a whole fiscal year. In this case, the salary will be extrapolated to full year with the percentage of worked months. Otherwise, a non-full year salary will significantly affect the testing result. The last adjustment has also been made on compensation. Due to inflation and the development of a company, the annual salary of top executives grows naturally. To precisely capture the change of compensation triggered by the M&A deal solely, I have eliminated this gap by increasing the pre-transaction compensation with 5% annually, which is calculated based on control group's data, so that the deviation of the compensation does not include the effect of natural compensation growth.

After all the preparation work, 276 available samples have been selected and will be further used for this research. Among these companies, 130 samples have successfully closed M&A deals within the chosen period and the rest 146 samples are for the controlling purpose. These 146 control

companies are in the same vein, with available accounting and remuneration information for the corresponding time span, but without identifiable deal (NB, the 130 samples do not mean 130 companies, if the sample company has more than one top executive compensation data available, then this circumstance will be regarded as several samples. When presenting the data on company level, there are only 103 companies with available information that have M&A transactions under fiscal year 2014-2016).

Table 3 depicts the frequency of M&A transactions among the 103 companies identified during 2014 to 2016. 57 companies closed one transaction during these three years span, 21 companies closed 2 transactions and so on. Surprisingly, there is a bounce of numbers when coming to 5 deals and I have read through these 12 companies' main business areas. Most of them belong to property companies, which is in line with the industry characteristics. The table 4 presents the transactions per year level and there is an increasing trend of transactions through the years.

Table 3 Frequency of M&A transactions

This table depicts the frequency of M&A transactions with y axis for amount of companies and x axis for amount of closed deals

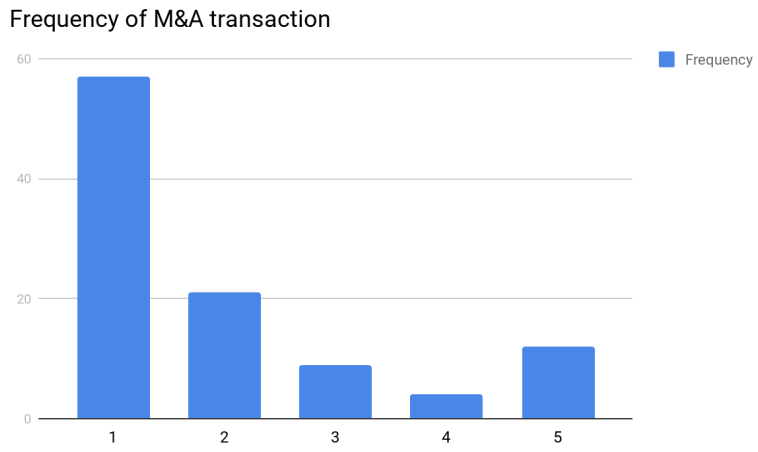
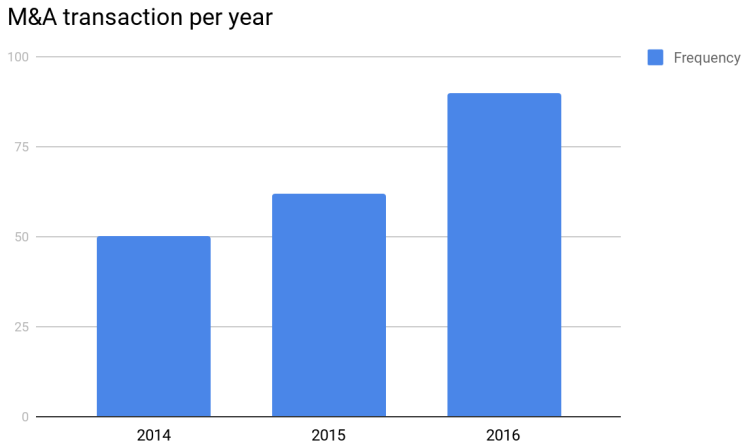


Table 4 M&A transactions per year

This table depicts amount of annual M&A deals with y axis for amount of deals and x axis for year timeline.



A preliminary overlook of the data has been shown in the table below. Table 5 is a description of the raw data on an absolute number level (NB, this not the direct number used in the equation. The variance number has been used in equation and presented in table 6). Some information in the table is as expected. The assets of an acquiring firm grow considerably compared to pre-acquisition, since the acquired company's assets will be consolidated into the mother company's annual report. When the asset scale grows after the deal, ROA (EBIT / Asset) grows from 1,8 to 2,6 illustrates that after the deal is finalized, company's EBIT increases as well with a pace faster than the growth of assets. Growing EBIT reflects good operational performance and it comparatively verifies the investment decision to be correct and effective. Interestingly, the factors that have higher value after deal than before also include stock price. Since there are many studies that argue that after a deal closes, the stock return is not usually promising, the number shown below actually did not agree with the previous study by showing the stock increase averagely from 43 SEK to 52 SEK. However, it is too early to conclude anything regarding it now, since the stock price before M&A is significantly lower than the control group under the same corresponding time period. Finally, the top executive compensation experiences growth after the deal closes. The average management pay rises as almost 25% thereafter. Table 6 presents the standard statistics summary of the data that has been applied in the model. Since this data depicts the change of variable over a selected period, the negative number in the min column represents the most significant drop over this time.

Table 5 Descriptive statistics of raw data

This table depicts the standard deviation and mean of asset, ROA, stock price and transaction values for both sample group before and after M&A deals and control group. The table is generated from the same raw data as shown in table 6. The reason why this has been presented is such way is that this table make it easier to read, to understand the characteristic of the data and to be familiar with the data.

	Period after M&A		Period before M&A		Control group	
	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean
Compensation (Tkr)	5 960,2	6 082,4	5 770,8	4 891,9	5 725,8	4 792,1
Asset (Mkr')	30 697,4	12 370,9	28 151,4	10 651,4	347 190,4	57 621,9
ROA	9,3	2,6	13,0	1,8	35,2	-4,7
Stock price	59,6	52,4	52,5	43,0	59,7	47,7
Transaction value (Mkr)	952,2	443,6	N/A	N/A	0	0

Table 6 Descriptive statistics of data for the designed model

This table depicts the amount., mean, standard deviation, min number and max number of the change of asset, change of ROA, change of stock price and transaction values for both sample group and control group jointly. These data are also the data which has been applied in equation 1.

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	mean	sd	min	max
Δ Compensation (Tkr)	276	774.8	2,041	-7,204	13,514
Δ Asset (Mkr)	276	773.5	6,367	-89,386	23,911
Δ Roa	276	1.408	10.93	-29.16	92.25
Δ Stock price (kr)	276	8.551	29.42	-281.9	148.8
Transaction Value (Mkr)	276	209.0	688.9	0	7,080

In table 7, the correlation matrix for variables is provided, which verifies the validity of selected variables in the regression. According to the matrix below, there is no significant correlation of two variables and the risk of multicollinearity is reduced.

Table 7 Variables matrix

This table depicts the collinearity of the variables.

	(1)	(2)	(3)	(4)	(5)	(6)
Δ Compensation	1					
Δ Asset	0.1380*	1				
	0.0219					
Δ Roa	0.0365	0.0467	1			
	0.546	0.440				
Δ Stock price	-0.0926	0.0395	0.0251	1		
	0.125	0.514	0.678			
TransValue	0.1675*	0.2751*	0.1272*	0.000500	1	
	0.00530	0	0.0347	0.994		
Dummy	0.1925*	0.1405*	-0.0542	0.0271	0.3220*	1
	0.00130	0.0196	0.370	0.653	0	

*** p<0.01, ** p<0.05, * p<0.1

4 Empirical Results and Robustness

In the first half part of this section, empirical results from regression and Chow test are presented and interpreted and in the later part of this section, robustness rest has been performed for verifying the validity of this model.

4.1 Empirical Result

Table 8 shows the empirical result for the compensation equations, from which we can see whether M&A transactions affect management pay and what the main drivers are of management pay growth. Dummy is the only significant variable and is positive in the result, suggesting that compensation is positively associated with the existence of M&A transactions. When M&A exist, compensation will increase accordingly. Asset change as the size measurement is not statistically significant. Also, ROA change and stock change as alternative measures for company performance suggest that the performance variable's impact on compensation is weak. This result can conclude on rejecting the first null hypothesis by arguing that M&A deals do have a positive effect on management pay.

Table 8 the impact of M&A on management compensation in Sweden

This table depicts the regression result run for the equation 1.

VARIABLES	ΔCompensation	
ΔAsset	0.0303	(0.0196)
ΔRoa	5.968	(11.12)
ΔStock price	-7.033*	(4.081)
ΔTransactionValue	0.259	(0.192)
Dummy	635.1**	(255.1)
Observations	276	
R-squared	0.068	

t statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The empirical result above does not draw any conclusion on other independent variables' influence, since the result does not reject that CEO pay is not affected by the change of total asset value nor

the change of company performance after M&A transaction. Since an increase of the asset is an unavoidable and unmanipulated consequence of M&A from a bidder perspective, my expectation is that among the independent variables, at least increase in asset will have a significant impact on CEO pay given M&A do have a significant impact based on the result above. Therefore, it is interesting to further consider why asset does not have a strong correlation on CEO pay, while dummy does play a significant role. As the preliminary thought mentioned in the method section, this can due to there being two sets of data with different coefficients. When each set of the data has its own coefficient and there is a breaking point in the middle of two sets of data, a joint regression statistic method prevents a summary of the data pooling together and the joint result will not show significance. To verify this idea and further test on what are the main drivers of management compensation, a Chow test has been applied. I group the original data into two subgroups, where group 1 is for all the research samples, whereas group 2 only contains the data from the control group and I examine if the result can reject the second null hypothesis for Chow test. The result has been listed below in table 9.

Table 9 the impact of M&A on management compensation based on Chow test

The table depicts the regression result run for Chow test.

VARIABLES	ΔCompensation	
Group1	825.5***	(3.91)
ΔAsset 1	0.212***	(3.44)
ΔRoa1	-5.530	(-0.31)
ΔStock price1	6.936	(0.75)
ΔTransactionValue 1	-0.138	(-0.59)
Group2	468.7**	(2.81)
ΔAsset 2	0.0103	(0.51)
ΔRoa2	10.69	(0.78)
ΔStock price2	-10.82*	(-2.43)
N	276	

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001

To attest whether it can reject the second null hypothesis and if these two groups of data cannot be pooled, the coefficient test is presented as below.

F (5, 267) = 5,11

Prob > F = 0,0002

The result illustrates P is statistically significant at 0,001 level and rejects the null hypothesis of the Chow test, meaning that the two subgroups of data do not have the same coefficients. Subgroup results can better describe the true nature of the data than the joint one illustrated in table 8. Therefore, I took a closer look at the result received from the subgroup regression in table 9. (NB, in group 2, there is not a line called transaction value 2 because the transaction value is populated with zero for the control group and data is omitted because of collinearity issues.) So, by performing Chow test and subsequently analysing the regression separately, I found that the asset variable has a notable significant impact on compensation where a M&A deal took place. A million increase in asset results in 212 SEK increase in compensation. This result is in line with previous studies, such as Baker (1998), Girma et al., (2006), Farris et al., (2014) etc, who believes that compensation is positively correlated with the acquirer company size expansion after M&A transactions. The variables capturing the company performance, both ROA and stock price continually show a weak impact on managerial remuneration by none of them being statistically significant. ROA change even shows negative influence among some of the samples. This result is in line with a strand of literature, in which states that compensation cannot be explained by company performance, but simply linked to the company size (Farris et al., 2014). Similar to the performance variable, transaction value has a weak link to CEO remuneration. The CEO pay increases regardless of the deal's size. In the meanwhile, the control group with its own coefficient illustrates that the management compensation in the firm without M&A deal is affected by other elements. First, stock price is statistically significant at 5% and interestingly compensation is negatively related to stock price increase. This can be explained by that the CEO compensation data is retrieved without stock options as explained before. The cash salary and bonus management can be primarily linked to company's performance based on financial report or other measures, rather than stock reaction. When including management option benefit into compensation package, this might show better result, but again, including option benefit will disturb the purpose of this paper and complex the model. Secondly, both increase in asset and ROA have a positive impact on management pay, but this result is not significant.

4.2 Robustness

Robustness test is built with change of variable. According to previous study, there are few variables suitable to proxy company size and both company revenue and assets being the common ones. Girma (2002) proxy the company size with a variety of revenue indicators and Chen (2017)

proxy company size with assets. Therefore, I replaced asset variance with company total sales variance to test if it shows similar results as the one with revenue and to verify the justification of the original model. The joint regression result and chow test results have been shown in the same table 10. Also, the coefficients for two corresponding subgroups in Chow test is not similar enough to be pooled since the P value is statistically significant. Therefore, the result separately (in the right-hand side of the table) can better describes the situation. Reading through the result below, again, the dummy is still a significant variable, meaning that the existence of M&A transactions will have a positive impact on CEO pay. However, unlike the result in table 9, no variable shows confidence level on 95% level, including revenue. According to this empirical result, on a 90% level, revenue rises will lead to a negative reaction of management pay. The Robustness test only to some extent, supports the result from the first model. It only agrees with the idea that a successful closed deal has a positive influence on top executive pay, but size expansion is not the determined element to pay raises. Or at least, revenue is not the ideal variable to proxy company size change.

Table 10 Robustness test

The table depicts the regression result run for both equation 1 with replacement of change in asset with change in revenue for robustness (left-hand side) and its Chow test (right-hand side).

	Regression result with Δ Revenue		Chow test with Δ Revenue	
VARIABLES	ΔCompensation		ΔCompensation	
Group 1			992.4***	(4.66)
Δ Revenue (1)	-0.0628	(0.0634)	-0.187*	(-2.00)
ΔRoa (1)	6.169	(11.15)	-1.611	(-0.09)
ΔStock price (1)	-6.710	(4.090)	10.31	(1.11)
ΔTrans. Value (1)	0.353*	(0.188)	0.425*	(2.21)
Dummy	653.1**	(255.4)		
Constant	467.9***	(170.9)		
Group 2			454.3**	(2.64)
Δ Revenue2			0.0368	(0.43)
ΔRoa2			10.66	(0.76)
ΔStock price2			-10.78*	(-2.39)
Observations	276			
R-squared	0.063			

t statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.3 Analysis

By comparing and analysing the results with previous research and studies we can validate and confirm consistency of the findings for the thesis in the research field. First, not surprisingly and in line with research across several western markets, I found that in Sweden, management pay is also positively correlated to M&A deal activity. Then, similar to the U.S. market (Grinstein, Y. and Hribar, P. 2004; and Chen, et al., 2017), Australian market (Bugeja et al., 2012) and UK firms (Conying and Gregg, 1994), asset variable has a notable significant impact on compensation in Sweden as well.

I found a weak correlation to executive compensation is M&A transaction value or 'deal size'. This is in contrast to Grinstein and Hribar who found a positive correlation and believed the higher the deal size, the higher remuneration management receives (Grinstein and Hribar, 2004). I theorize this difference may be due to the M&A deal sample having a significant difference in deal scale, I skim through the deal sizes in Sweden, which are mostly closed with million SEK and few billions SEK, whereas U.S. deals almost all have billions USD mega size. Also, the deal size through acquirers' size is insignificant compared to Grinstein and Hribar's study. In other words, Swedish deals do not have the same weight and significance compared to the deals in the U.S and this can be a reason why compensation packages are designed with less consideration of deal size. My proxy variables for company performance, ROA and Stock Price, also did not show significant results. The previous studies for this area are more divided, for example Chen et al. (US market) found that CEO pay is positively related to both accounting performance (ROA) and market performance (Stock Price) (Chen et al., 2017). Both Bugeja, et al., (Australian market) and Conyon and Gregg (UK market) also found positive correlation. However, a large body of previous research found that executives can gain big salary benefits post-merger while share prices go down (Grinstein and Hribar, 2004). It has been suggested that CEO pay cannot be explained by company performance, but simply linked to the company size (Farris et al., 2014).

Thus, since there is a correlation between CEO compensation, yet there is a weak link to post merger market and accounting performance, my study highlights the agency problem between shareholders and top executives. Also, my findings further reiterate that the managerial power is the main driver of management pay.

5 Conclusion & Limitations

By studying 130 samples of management compensation following M&A deals between 2014 and 2016 in Sweden, I have been able to isolate the M&A impact on CEO pay and come to several findings.

This paper answers the question set in the beginning, that management pay is positively correlated to M&A deal activity in Swedish market. On a significant level, as long as a management has successfully launched and closed a M&A deal, they will receive a bigger compensation package compared to what he or she normally received on a regular business basis. This additional compensation gain does not consider any nature of the deal, but only the existence of an M&A deal. Secondly, I find, in common with much of existing literature, post-M&A company size increases have a significant influence on management compensation. Even though this result is only valid when size is proxied by company asset increase, but not by revenue. Thirdly, also similar to many existing papers, the management pay has weak or no correlation to post deal bidder performance on both financial KPI level and market price level. In addition, there is also no obvious relationship observed between management pay and the transaction value.

This paper investigated the agency problem inferred from management compensation and M&A deal. By comparing to the counterpart control group, the study result has overall the same conclusion as the same topic conducted for other countries as background. CEOs in Swedish entities have the incentive to initiate M&A, simply because it will increase their compensation. Whether this transaction creates any value to the firm is not an essential item for evaluating the remuneration. In summary, management can decouple their paycheck from the company long term performance, which severed the agency cost. This paper also to a certain degree verifies the managerial power theory, M&A can be viewed as a justification for extra effort and time management has input to receive higher pay. Thus, this paper can also be an inspiration for shareholders to keep professional skepticism when CEO proposes with M&A deal and to actively seek and set up a more effective bonus schedule, which better mitigates the agency cost between shareholder and management, so that two part's conflict interest and been aligned.

During the study process, I have noticed a few flaws or limitations of my method. I have listed them below, so that these items can be considered when my further research is done for the same topic. To begin with, no consideration has been placed on de-investment. When a company divested or spun off some department, assets of this company will naturally decrease. How will

management compensation react to that? Will the compensation of top management decrease accordingly? Future research should take divestment into account to see if it has the same effect on compensation as investment. In my sample pool, this kind of company has not been separately grouped. The companies with both M&A transaction and divestment deals in my samples during the research period, it has been simply regarded as a research sample and no adjustment has been made.

Moreover, how to measure company size needs to be more carefully considered in the future, As shown in the empirical result and robustness result, when size has been proxied with asset and revenue, the result shows differently. What are the pros and cons to depict company size with revenue and assets? Are there some indicators more suitable to measure company size, for instance market share? These can be further examined.

In the end, the method section I mentioned there is no adjustment made for any ESO or LTIP for the CEO compensation, which means that the reward led by management self-incentive is not included. To some extent, this paper cannot validate the correlation between compensation and company performance post M&A transaction completely for some reasons listed following. Firstly, the empirical result does not show statistically significant, no conclusion can be drawn based on it. Secondly, the compensation variable does not include the gain of stock option, which only explains the half of the story between M&A deal and management pay. That is, how management is affected by M&A deal passively without management incentive to align their own earnings and company's long term value. Further research can improve this paper by reviewing how post M&A company performance is related to the existence or absence of ESO, so that the link between post M&A performance and compensation will be clearer and the picture will be more completed. Originally, I planned to study for this topic mentioned above to show a complete picture of M&A deal and management compensation, the reason why I cut the stock option part was due to the availability of data. In Sweden, companies are not obligated to disclose the information of employee stock options, which makes it really hard to quantify the real management compensation. To sum up, these items listed can be considered in further research, to facilitate the research and improve the method and resolve similar questions with an easier manner.

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