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# The Effect of M&A Clearance by the European Commission on Return to Shareholders: An Event Study

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## Abstract

In this thesis, I study whether the clearance announcement for M&A deals by the European Commission affects return to shareholders of the target and bidding firms involved. This is done by analysing the Cumulative Average Abnormal Return using event study methodology with four different event windows. I find that for bidding firms no shareholder return is created due to the announcement but for bidding firms two event windows show significant shareholder return for target firms. This indicates that the bureaucratic process by the European Commission holds informational value for shareholders of target firms in M&A deals.

## 1 Introduction

Historically low interest rates have fuelled the European Mergers & Acquisitions (M&A) market in recent years, with the number of cases brought before the European Commission (the Commission) reaching an all-time high in 2018. The European Union (EU) plays a major role in regulating the internal market, which consists of the markets of 27 European countries. EU regulation prohibits mergers and acquisitions that significantly reduce competition in the internal market, i.e. if they create dominant companies that are likely to raise prices for consumers. For example, in 2012 the Commission rejected the merger between Deutsche Börse and NYSE Euronext due to concerns about derivative trading for consumers. This thesis examines the impact of the Commission's clearance of mergers on the respective shares of the companies involved. Both the target and the bidder's share price will be analysed in several event windows. The value of this research will be to provide insight into how the bureaucratic process surrounding M&A announcements in the EU affects abnormal shareholder returns.

This study is a replication of the study by Shah and Arora (2014), which examined a sample of M&A announcements in the Asia-Pacific region from May 2013 to September 2013 to study the effect of M&A announcements on the stock prices of the target and bidding firms. The authors did this by examining the Cumulative Average Abnormal Returns (CAAR) of the target and bidding firms involved during several event windows. They found that the stock prices of the target firms had a significant and positive CAAR across all event windows. Furthermore, they found that the stock prices of bidding firms do not show statistically significant CAARs across all event windows. Another study (Mateev, 2017) studied the effect of M&A announcements with the aim of comparing continental Europe and the UK over the period 2002 - 2010. This study found that European bidders earn positive abnormal returns from takeovers. This is different from what Shah and Arora (2014) found and therefore raises the interest regarding this topic for the EU market.

This thesis replicates the study by Shah and Arora (2014) for EU approved mergers, where the Commission's clearance decision is considered the M&A announcement. The additional

step of the required EU clearance adds another dimension to the M&A announcement process. Therefore, the results of Shah and Arora (2014) cannot be extended to the EU. Studying the EU situation will provide insight into how the announcement process affects the stock market reaction to M&A. Moreover, the different socio-economic circumstances and cultural differences between the EU and the Asia-Pacific region make it worthwhile to study this effect in Europe as well. These influences have been quantified by Chan, Khantavit and Thomas (1996), which states that there are important cultural influences in the pricing of stocks in Asia. Thus, the motivation of this thesis is to investigate how M&A clearance announcements by the EU affect the security prices of the target and bidding firms involved.

This study employs event study methodology to measure the amount of CAAR due to the announcement of the Commission's approval of the merger case. Specifically, the article by Corrado (2010) has been used as a guide to estimate abnormal returns, calculate event windows and create an overall robust event study. Several event windows have been examined, analysing the reaction of stock prices to the M&A announcement. The data used in this thesis is secondary, quantitative data. The M&A announcement is defined as a first phase decision by the Commission, where the decision is that the merger is 'compatible'. It is also possible for the Commission to decide that further investigation is required to reach a final decision, in which case the procedure moves to Phase 2. This study does not focus on this second phase, but only on the first phase. The relevant data is accessible to the public through the Commission's databases, as all procedures are public. There is certainly no shortage of data in this category as the year 2018 yielded 366 'compatible' mergers. Furthermore, the returns are measured by the CAAR which is calculated using historical stock market data, which is publicly available as well.

The aim of this thesis is to understand and measure whether M&A clearance announcements by the Commission generate abnormal returns for the shareholders of the target and bidding firms involved. It is expected that this thesis will generate different results from Shah and Arora (2014), not only because of the socio-economic differences but also due to the legal differences. Due to the public nature of an EU merger investigation, shareholders will already know that a merger may take place once the Commission has been notified of the intention to merge. Therefore, it would be expected that there would be lower or insignificant abnormal returns for shareholders. Moreover, I will investigate which factors, if any, influence the level of abnormal returns to shareholders of target firms by conducting a regression with categorical variables related to the relevant M&A deals. The outcome of this thesis will provide insights into the effect of an announcement, but will also lead to new research questions.

The remainder of this thesis will be structured as follows, the following section will be dedicated to building a Theoretical Framework around the relevant topics in this thesis. In Section 3 the data used will be described and the methodology used will be explained. Following, in Section 4 the results generated by the analysis will be described and discussed. Lastly, in Section 5 a conclusion will be drawn and the limitations of this study will be mentioned.

## 2 Theoretical Framework

This section will discuss the predictor and the outcome of this research, and also the relationship between the two. Firstly, the definition of M&A clearance by the European Commission will be explained. Secondly, I will explain how this thesis defines return to shareholders and the methods used to approach this concept. Thirdly, the relationship between the two concepts will be discussed as it is currently understood in the academic literature.

### 2.1 M&A Clearance by the European Commission

Defining M&A is of course twofold. Mergers occur when two or more companies decide to pool resources under a common entity and an acquisition implies that a firm takes effective control over the assets or management of another company (González-Torres et al., 2020). In this thesis, both definitions will fall under the scope of M&A and will be treated equally.

The Commission does not decide over every merger which happens within the EU; certain turnover thresholds need to be reached. Article 1 of the EC Merger Regulation states that there are two alternatives to reach the threshold. The first alternative is that all merging firms have a (i) combined worldwide turnover of €5000 million and (ii) that at least two of the involved firms have an EU-turnover of over €250 million. The second alternative is that all merging firms have a (i) combined worldwide turnover of €2500 million, (ii) a combined turnover of all the merging over €100 million in each of at least three Member States, (iii) a turnover of over €25 million for each of at least two of the firms in each of the three Member States included under ii and (iv) EU-wide turnover of each of at least two firms of more than €100 million. Furthermore, for both alternative it holds that it does not fall within the scope of the Commission if each of the firms archives more than two thirds of its EU-turnover within only one Member State. The above illustrates that the Commission only examines large merger cases which have an EU dimension.

When examining mergers, the Commission distinguishes two phases (I and II). Phase I is a 25 day phase which starts when the, potentially, merging parties announce their intent to merge to the Commission. In these 25 days the Commission will examine whether they can clear the merger, conditionally or unconditionally, or whether they will go into a phase II investigation. A phase II investigation is a 90 day thorough investigation into the potential merger in which they weigh out the positive and negative effects against one another. As the above illustrates, there are multiple types of approval present in the examination by the Commission. However, for this thesis an M&A clearance by the Commission will entail an unconditional clearance in phase I. Furthermore, it has to be a decision where the Commission acknowledges that the merger falls within the scope of the EU merger regulation.

## 2.2 Return to Shareholders

The purpose of this study is to determine whether there are significant abnormal returns to shareholders for target and bidding firms following the clearance of a merger by the European Commission. These abnormal returns are quantified by evaluating the share prices of the target and bidding firms, therefore this thesis focuses solely on publicly traded companies. The expected returns are subtracted from the actual returns to obtain the abnormal returns, all expressed as percentages. The results are accumulated and averaged to produce the Cumulative Average Abnormal Return (CAAR).

This study will employ the Market Adjusted Model, which uses actual daily market returns to calculate daily abnormal returns within the event window. This method assumes that the best predictor for a particular stock is the current market return (Peterson, 1989).

## 2.3 Relationship between M&A Approval and Return to Shareholders

Shah and Arora (2014) illustrate that abnormal returns do exist in the Asia-Pacific markets for target firms, following an acquisition. Furthermore, they found no significant abnormal returns for bidding firms. The latter findings are partly in consensus with an extensive research by Capron and Pistre (2002), which consisted of an event study and a post acquisition survey on horizontally acquiring companies. The paper reported that bidding competition on the acquisition probably competed away all abnormal returns, when acquirers only receive resources from the acquired company. However, the paper also reported that when acquirers transfer their own resources to the acquired company, they can earn abnormal returns. Moreover, empirical evidence with data from the previous century shows that the CAAR of bidding firms is null on average and that there is a 9% CAAR for target firms in the EU (Campa & Hernando, 2004).

Research has also indicated that the type of merger has an effect on the return to shareholders. On the short term it matters whether a merger is horizontal, vertical or conglomerate; significant differences are found in the reaction of the market on the day of the announcement (Papadatos, 2011). Moreover, past research finds that acquisitions paid for in cash, opposed to those in stocks, generate higher returns for target firms (Wansley et al., 1983). Additionally, Huang and Walking (1987) found that cash acquisitions generate a higher return because of tax advantages.

Swaminathan et al. (2008) showed that the effect of an announcement will be measured significantly different for different event windows, especially for target firms. These findings are also found in multiple other papers (Scholtens & de Wit, 2004; Pandey, 2001). Where Pandey (2001) also finds that target firm valuations increase in the run up to announcements, which suggests information spillover leading up to an announcement.

An event study, and its potential results, can raise questions about the Efficient Market Hypothesis (EMH). An important paper about event studies by Bowman (1983) argues that an event study cannot directly challenge the EMH and that the link is 'weak at best'. Other papers

do reject the EMH due to results which are found in their event studies. Liargovas (2011) for example rejects the semi-strong form of the EMH due to finding significant positive CAARs in banking M&A deals.

Overall, the literature suggest that abnormal returns for target firms are often found surrounding the announcement of M&A's. Whereas abnormal returns for bidding firms are often not significant. The study by Shah and Arora (2014), which will be replicated in this thesis, is consistent with the literature in this case. Given the literature, geographical location and the additional step of the European Commission's M&A approval, I expect no abnormal returns to be found for bidding firms and significant abnormal returns to be found for target firms. Furthermore, I expect a difference in abnormal returns for different event windows.

## 2.4 Differences in abnormal returns

As mentioned in section 2.3, previous research has suggested that there are factors which influence the level of abnormal returns to shareholders following an M&A announcement. Therefore, an extension to Shah and Arora (2014) is put forward in this thesis, which aims to find explanation for the difference in abnormal returns to shareholders of target firms.

First of all, following Papadatos (2011) it will be tested whether the type of merger affects the return to shareholders following the EC clearance. Deals are categorized into four different relationships: horizontal, vertical, conglomerate or congeneric. A horizontal relationship between the firms means that they operate in the same business and serve the same customers. Whereas a vertical relationship entails that the bidder and target operate in the same business but on another level in the supply chain. Moreover, a conglomerate merger means that the bidder has no operations relating to the target. This is the case when an investment firm buys any kind of operating firm. Lastly, a congeneric merger entails that although operations differ, the two firms serve the same clientele. An example of the latter in this thesis is when The Coca-Cola Company acquired Costa, a B2C coffee company, which was a step to start serving hot drinks conjointly with their already existing cold drinks. Another interesting factor to investigate is whether there is a noticeable difference for deals which involve investment firms. However, due to the category 'conglomerate' overlapping completely with the category 'bidding investment firm' this creates an omitted variable and therefore the involvement of an investment firm will not be tested separately.

Another factor which will be taken into account is whether there is a difference in returns for targets listed in the USA and Europe, given that the US market is often deemed more liquid than the EU market. Lastly, it will be tested whether the scale of the investigation by the EU affects the height of shareholder returns. This will be done by creating a binary option 'yes' or 'no' to whether a simplified procedure was applied. A summary table is given in Table 2.1 to illustrate the categorization of the different deals.

Table 2.1: Categorized M&amp;A deals

Variable	Categories	Number of deals
Type	Horizontal	21
	Vertical	4
	Conglomerate	6
	Congeneric	3
Simplified procedure	Yes	19
	No	15
Region	USA	18
	Europe	15

### 3 Data & Methodology

The purpose of this thesis is to understand and analyse whether M&A approval by the European Commission generates abnormal returns to shareholders of target and bidding firms. Empirical evidence surrounding the relationship between the public announcement of approval by the European Commission and abnormal returns to shareholders is not yet available.

As mentioned in section 2.1, the approval by the EU holds as the event which this event study targets. This event will then be the center of the event windows which will be analysed in this study. This study is based on all mergers and acquisitions in the EU between two public companies in the year 2018, which amounts to 34 M&A deals for which data is available. The day on which the announcement of approval is done holds as the day where the Commission has released the press statement regarding the approval.

All data regarding the stock prices of the parties is retrieved from Yahoo Finance and CRSP. The indices used are the S&P500 for companies listed in the USA, S&P Europe 350 for companies listed in Europe, the Nikkei225 is used once for a stock listed in Japan and the Hang Seng Index is used once for a stock listed in Hong Kong. All bidding firms and the used indices can be found in Appendix A and all target firms and the used indices can be found in Appendix B. Moreover, ‘days’ are defined as trading days and not as calendar days which means that all event windows differ in calendar length but contain an equal amount of trading days.

#### 3.1 Normal and abnormal return measurement

The abnormal return is defined as the difference between the actual returns and the expected returns of the stocks involved. Abnormal return of a security  $i$ ,

$$AR_{i,t} = R_{i,t} - E[R_{i,t}] \quad (1)$$

Where  $R_{i,t}$  is the actual return and  $E[R_{i,t}]$  is the expected or normal return.

Applying the Market Adjusted Model to the abnormal return of a security  $i$ , the following formula is obtained:

$$AR_{i,t} = R_{i,t} - R_{m,t} \quad (2)$$

where,  $AR_{i,t}$  is the abnormal return on the stock  $i$ , during event window  $t$   
 $R_{i,t}$  is the return on a particular equity stock  $i$ , during event window  $t$  and,  
 $R_{m,t}$  is the return on the market index during event window  $t$ . The normal return will be approximated by taking a real-time market index, given every event window, which measures the benchmark return that is therefore considered to be a normal expected return by an investor at that point in time in the market.

In Table 3.1 and Table 3.2  $R_{i,t}$  is displayed as  $rtnt$  and  $R_{m,t}$  is displayed as  $mktt$ .

Table 3.1: Summary statistics for bidding firms

Variable	Obs	Mean	Std. dev.	Min	Max
rtn2	34	0.002	0.047	-0.180	0.094
rtn5	34	0.001	0.053	-0.133	0.147
rtn7	34	-0.011	0.066	-0.183	0.137
rtn10	34	-0.010	0.074	-0.195	0.147
mkt2	34	0.000	0.017	-0.051	0.020
mkt5	34	-0.002	0.020	-0.061	0.026
mkt7	34	-0.005	0.031	-0.069	0.040
mkt10	34	-0.009	0.033	-0.088	0.038

Table 3.1 illustrates the summary statistics for the 8 relevant variables used to calculate the abnormal returns to shareholders of bidding firms using four different event windows. The returns are presented in decimals.

Table 3.2: Summary statistics for target firms

Variable	Obs	Mean	Std. dev.	Min	Max
abrtn2	34	0.011	0.028	-0.035	0.110
abrtn5	34	0.013	0.037	-0.065	0.122
abrtn7	34	0.017	0.043	-0.109	0.107
abrtn10	34	0.016	0.054	-0.137	0.128
mkt2	34	-0.005	0.020	-0.051	0.022
mkt5	34	-0.004	0.023	-0.064	0.039
mkt7	34	-0.007	0.029	-0.069	0.040
mkt10	34	-0.008	0.037	-0.123	0.040

Table 3.2 illustrates the summary statistics for the 8 relevant variables used to calculate the abnormal returns to shareholders of target firms using four different event windows. The returns are presented in decimals.

Furthermore, the Market Adjusted Model has been used and not the Mean Adjusted Model. Shah and Arora (2014) did not find the Mean Adjusted Model suitable for their event study because there is a bias in the abnormal returns calculated by the Mean Adjusted Model. This is because the Mean Adjusted Model does not reflect the fair and normal returns of the firms involved in the M&A announcement during the estimation period. A similar hypothesis to Brown and Warner (1985) has been used by Shah and Arora (2014) and will therefore also be used to test the CAAR of the target and bidding firms in this study and is formulated as follows:

$H_0$ : EU clearance does not affect shareholder value of the firms involved in the M&A approval, (CAAR = 0, i.e. abnormal returns are not significant)

$H_1$ : EU clearance affects shareholder value of the firms involved in the M&A approval, (CAAR  $\neq$  0, i.e. abnormal returns are significant)

The hypothesis is tested separately for target and bidding firms for all of the event windows:  $\pm 2$  days,  $\pm 5$  days,  $\pm 7$  days and  $\pm 10$  days. Following, the hypotheses are tested by using t-values at 5% level of significance. A two-tailed t-test is applied to test whether the produced CAARs by target and bidding firms are significantly different from 0.

### 3.2 Investigating factors regarding abnormal returns

To investigate whether the factors mentioned in Section 2.4 have a significant influence on the level of abnormal returns to shareholders of target firms an OLS-regression is performed. Given that this regression looks at the effect of categorical values, dummies are created to be able to perform the technique on this particular data set. The regression is formulated in Formula 3.

$$y_{abnormal\_returns} = \beta_0 + \beta_1 x_{horizontal} + \beta_2 x_{congeneric} + \beta_3 x_{conglomerate} + \beta_4 x_{simplified\_procedure} + \beta_5 x_{USA} \quad (3)$$

Here, the dependent variable  $y_{abnormal\_returns}$  is a variable that indicates abnormal returns in decimals. The variables  $x_{horizontal}$ ,  $x_{congeneric}$  and  $x_{conglomerate}$  are variables that indicate the type of merger. Furthermore,  $x_{simplified\_procedure}$  is a binary variable that indicates one when a simplified procedure has been applied and 0 when it has not been applied.  $x_{USA}$  is a binary variable that indicates whether the target is listed in the USA, if not so it is listed in Europe.

Due to Papadatos (2011) it is expected that there is a significant effect for the type of merger. On another note, it is expected that the presence of a simplified procedure has a negative effect on the abnormal returns. The reason for this is that a simplified procedure might indicate that there was an even smaller chance that the merger would be rejected and thus the announcement holds less informational value. Furthermore, higher returns are expected to be seen for firms listed in the USA, since the stock market is deemed more liquid.

## 4 Results

### 4.1 Interpretation

The two tailed t-test produces t-statistics. If the calculated t-statistic falls within the rejection region, i.e. it is more extreme than the critical value, the null hypothesis is rejected and it is concluded that there is a significant difference between the means. If the calculated t-statistic falls outside the rejection region, the null hypothesis is not rejected and it is concluded that there is not enough evidence to suggest a significant difference between the means. See Table 4.1 for the relevant critical value.

Table 4.1: Critical Value

Degrees of Freedom	Level of Significance	Critical Value
33	5%	$\pm 2.035$

The t-statistic is calculated by the following formula:

$$t = \frac{(CAAR_t - 0) * \sqrt{n}}{s} \quad (4)$$

where  $CAAR_t$  is the Cumulative Average Abnormal Return for event window  $t$ ,  $n$  is the amount of deals, and  $s$  is the standard deviation.

### 4.2 Bidding Firms

For the bidding firms, the t-test results fail to reject the null hypothesis for any of the event windows, as can be seen in Table 4.2. Which means that the CAARs are not statistically significantly different from zero for bidding firms. The p-values are relatively high and therefore this analysis reflects that there is no significant value created for shareholders. Furthermore, these results indicate that there is no informational value created for shareholders of bidding firms, due to the clearance of M&A deals by the European Commission. Also keeping in mind that there is no significant loss for shareholders and thus there is no informational value lost for the shareholders either.

The results for the bidding firms show no apparent differences across event windows; no relationship between window duration and p-value is observed.

The results are mostly in line with Shah and Arora (2014) as no significant CAARs are observed for bidding firms, following an M&A announcement. The consensus in academic literature also coheres with this finding, as discussed in Section 2.3. However, the findings in this study

are related to M&A clearance by the EC and not to an initial announcement of intent to merge. What the findings in this study indicate is that there is no tension among shareholders surrounding the merger-control procedure by the EC. Which means that shareholders do not value the clearance, are indifferent about the outcome of the procedure or already expected the merger to be cleared.

Table 4.2: T-test results for the bidding firms

	CAAR	t-statistic	P-value	Statistical significance at 5%
$\pm 2$ days	0.2%	0.288	0.775	No
$\pm 5$ days	0.3%	0.414	0.682	No
$\pm 7$ days	-0.6%	-0.605	0.550	No
$\pm 10$ days	-0.1%	-0.081	0.936	No

Table 4.3 shows the Cumulative Average Abnormal Returns displayed in percentages with its t-statistic and corresponding p-value.

### 4.3 Target Firms

The analysis regarding the target firms has resulted in the null hypothesis being rejected for three event windows:  $\pm 2$  days,  $\pm 5$  days  $\pm 7$  days. The corresponding t-statistics are above the critical value and therefore the p-value is lower than 0.05, and thus the null hypotheses are rejected. See Table 4.3. The 10 day event window cannot be rejected at a significance level of 5% since the p-value is 0.09. These findings indicate that there are significant CAARs made for target firms surrounding the clearance of an M&A deal by the EC. Meaning that valuable information to the shareholders of target firms is created when the EC announces their decision.

As is confirmed in the literature, significant positive CAARs are often made by target firms following an M&A announcement (Shah & Arora, 2014; Capron & Pistre, 2002; Campa & Hernando, 2004; Liargovas, 2011). Investors therefore confirm that premiums are often paid to target firms in M&A deals. This study indicates that for M&A deals with an EU dimension, these premiums are not yet fully capitalized until after the clearance by the EC.

The significant CAARs which are found are 1.1% for the  $\pm 2$  days event window and 1.3% for the  $\pm 5$  days event window and 1.7% for the  $\pm 7$  days event window. These CAARs are of a different order than the ones observed surrounding an initial announcement of an M&A deal (Shah & Arora, 2014). This is no surprise, as the rate of approval by the EC for M&A deals are quite high and therefore it would be odd to see huge informational value being created by the clearance announcement.

All event windows show positive CAARs, which are rising until the seven days event window. Explaining CAARs is twofold, it is a trade-off between information spillover and/or correct speculation leading up to the event and the market reaction following the event. The increase in CAARs up until the  $\pm 7$  days event window can therefore be explained by either side.

Table 4.3: T-test results for the target firms

	CAAR	t-statistic	P-value	Statistical significance at 5%
±2 days	1.1%	2.403	0.022	Yes
±5 days	1.3%	2.118	0.042	Yes
±7 days	1.7%	2.280	0.029	Yes
±10 days	1.6%	1.726	0.093	No

Table 4.3 shows the Cumulative Average Abnormal Returns displayed in percentages with its t-statistic and corresponding p-value.

#### 4.4 Regression results

To interpret the results from a regression with dummy variables, certain things need to be kept in mind. First of all, the constant is the value which is retrieved when all dummy variables are zero and thus it reflects the values of the reference variables. The coefficients associated with the dummy variables indicate the difference in the dependent variable's mean between the reference category (when the dummy variable is zero) and the category represented by that particular dummy variable. These coefficients show how much the average value of the dependent variable changes when the corresponding categorical variable changes from the reference category to the category represented by the dummy variable. In this regression for 'Type' 'horizontal' is the reference category, for 'simplified procedure' 'no' is the reference category and for 'Region' 'Europe' is the reference category.

Table 4.4: Regression results for target firms

		abrtn2	abrtn5	abrtn7	abrtn10
Type	Vertical	-0.0146 (-0.83)	-0.0074 (-0.32)	0.0085 (0.32)	0.0126 (0.40)
	Conglomerate	0.0087 (0.62)	0.0156 (0.86)	0.0157 (0.75)	0.0134 (0.54)
	Congeneric	-0.0049 (-0.25)	-0.0151 (-0.57)	0.0013 (0.04)	0.0572 (1.59)
Simplified procedure	Yes	0.0010 (0.08)	0.0005 (0.03)	0.0043 (0.25)	0.0271 (1.33)
Region	USA	0.0014 (0.12)	0.0051 (0.34)	0.0135 (0.80)	0.0234 (1.16)
Constant		0.0106 (0.96)	0.0103 (0.71)	0.0050 (0.30)	-0.0204 (-1.02)

In Table 4.4 the coefficients are in decimals and the t-values are displayed beneath the coefficients in brackets. \*p<0.05

In Table 4.4 the results of the analysis are summarized. No significant results are obtained in this regression, meaning that the null hypothesis which says that there is no relationship cannot be rejected. Therefore, this analysis finds no factor which significantly affects the level of abnormal

returns during either of four event windows. However, there are some noticeable figures in the results. For example, the conglomerate coefficient is positive for all abnormal returns and so is the simplified procedure coefficient and the USA coefficient. This does not prove anything since there is no significance but it does raise interest how these coefficients will act if a larger amount of observations is analysed. Which brings one to the next point, which is the main limitation of this regression: the size. Since there are 33 deals which are split up into categories, there is no large base for comparison. This is also reflected in the rejection area being relatively large for the ‘Type’ variables.

Since no significant results are found, all hypotheses about these factors are wrong. Papadatos (2011) findings are not confirmed in this thesis and a simplified procedure does not have a negative effect. As mentioned before, a larger sample is needed to give conclusive answers to these questions.

## 5 Conclusion & Limitations

### 5.1 Conclusion

In this thesis I have looked at the effect of M&A clearance by the European Commission on shareholder value. I have done so by looking at all cleared mergers between two public companies in 2018, which equaled 34 deals in total. Previous research has shown that initial announcements of M&A deals tend to generate added shareholder value for target firms and that the shareholders of bidding firms generally do not receive abnormal returns. The clearance by the European Commission has however never been studied with regard to abnormal returns to shareholders. Therefore, the aim of this thesis was to understand and measure whether M&A clearance announcements by the Commission generate abnormal returns for the shareholders of the target and bidding firms involved.

Event study methodology was used to answer this research question, with four different event windows being used:  $\pm 2$  days,  $\pm 5$  days,  $\pm 7$  days and  $\pm 10$  days. For each of these event windows the market returns were subtracted from the actual returns to create the abnormal returns, which were then analysed using a two tailed t-test. This resulted in three event windows generating significant but small Cumulative Average Abnormal Returns (CAARs) for target firms, with all other event windows having insignificant CAARs.

An extension to Shah and Arora (2014) was also applied in this thesis to investigate if driving factors for the height of abnormal returns could be found. The type of merger, the region and whether a simplified procedure was applied has been taken into account. No significant results were found in this regression analysis and therefore the question about what makes up the difference in abnormal returns between firms remains unanswered.

This thesis therefore concludes that the bureaucratic process of the European Commission re-

garding M&A deals holds informational value for shareholders of target firms and not for shareholders of bidding firms. This thesis suggests that the process of M&A deals subjected to bureaucratic approval contains a secondary important announcement, namely the announcement of approval by the governing body.

## **5.2 Limitations**

Whereas 34 M&A deals were analysed, 39 deals actually fitted the criteria of being a cleared deal in 2018 between two public companies. However, 4 deals were not taken into account because of data unavailability. The other missing deal was between a company listed in Shanghai, but the announcement followed after a 7 day closing of the market due to Chinese New Year and therefore it was decided to exclude this deal.

Furthermore, the usage of the Market Adjusted Model also brings its limitations as there is no adjustment for basic CAPM risk in calculating the benchmark returns. Also, the sample was not a great fit for using categorical variables in a regression since the total sample size is only just large enough for analysis itself. Lastly, the event date has been set as a full day but it could have been narrowed down much further which should capture the announcement effect even better.

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## Appendix A Bidding firms

Case	Bidder	Event date	Index
M.8688	NORTHROP GRUMMAN	9-2-2018	S&P500
M.8761	REASSURE	19-2-2018	S&P350 EUROPE
M.8796	CROWN	5-3-2018	S&P500
M.8818	BROOKFIELD	5-3-2018	S&P500
M.8802	KKR	22-3-2018	S&P500
M.8771	TOTAL	11-4-2018	S&P500
M.8770	PRYSMIAN	8-5-2018	S&P350 EUROPE
M.8865	AIG	29-5-2018	S&P500
M.8678	ABB	1-6-2018	S&P500
M.8660	FORTUM	15-6-2018	S&P350 EUROPE
M.8861	COMCAST	15-6-2018	S&P500
M.8890	BNP PARIBAS	22-6-2018	S&P350 EUROPE
M.8877	LYONDELLBASELL INDUSTRIES	27-6-2018	S&P500
M.8889	TEVA	29-6-2018	S&P500
M.8926	TOTAL	2-7-2018	S&P350 EUROPE
M.8929	APOLLO MANAGEMENT	3-7-2018	S&P500
M.8808	T-MOBILE AUSTRIA (Deutsche Telekom AG)	9-7-2018	S&P350 EUROPE
M.8862	GBT	13-7-2018	S&P500
M.8967	BGZ BNP PARIBAS	16-7-2018	S&P350 EUROPE
M.8837	BLACKSTONE	20-7-2018	S&P500
M.8908	AXA	9-8-2018	S&P350 EUROPE
M.8912	CARLYLE	27-8-2018	S&P500
M.8974	PROCTER & GAMBLE	27-8-2018	S&P500
M.8981	IFF	6-9-2018	S&P500
M.9074	TOTAL	11-9-2018	S&P350 EUROPE
M.8985	BOEING	1-10-2018	S&P500
M.9063	SYNNEX	2-10-2018	S&P500
M.9054	BROADCOM	12-10-2018	S&P500
M.9144	MICHAEL KORS (CAPRI)	7-11-2018	S&P500
M.9108	PEPSICO	30-11-2018	S&P500
M.9124	DANA	5-12-2018	S&P350 EUROPE
M.9150	CHINA RE	17-12-2018	HSI
M.9149	APOLLO MANAGEMENT	18-12-2018	S&P500
M.9122	THE COCA-COLA COMPANY	21-12-2018	S&P500

## Appendix B Target firms

Case	Bidder	Event date	Index
M.8688	ORBITAL ATK	9-2-2018	S&P500
M.8761	actaeon LEGAL & GENERAL	19-2-2018	S&P350 EUROPE
M.8796	signode (CARLYLE GROUP)	5-3-2018	S&P500
M.8818	westinghouse (TOSHIBA)	5-3-2018	Nikkei225
M.8802	UNILEVER baking cooking and spreads business	22-3-2018	S&P350 EUROPE
M.8771	ENGIE	11-4-2018	S&P350 EUROPE
M.8770	GENERAL CABLE	8-5-2018	S&P500
M.8865	VALIDUS	29-5-2018	S&P500
M.8678	GENERAL ELECTRIC industrial solutions	1-6-2018	S&P500
M.8660	UNIPER	15-6-2018	S&P350 EUROPE
M.8861	SKY PLC	15-6-2018	S&P350 EUROPE
M.8890	ABN AMRO BANK LUXEMBOURG	22-6-2018	S&P350 EUROPE
M.8877	A SCHULMAN	27-6-2018	S&P500
M.8889	PGT OTC ASSETS (P&G)	29-6-2018	S&P500
M.8926	DIRECT ENERGIE	2-7-2018	S&P350 EUROPE
M.8929	Generali Belgium (ASSICURAZIONI GENERALI)	3-7-2018	S&P350 EUROPE
M.8808	upc Austria (LIBERTY GLOBAL PLC)	9-7-2018	S&P350 EUROPE
M.8862	HRG	13-7-2018	S&P350 EUROPE
M.8967	RAIFFEISEN BANK POLSKA	16-7-2018	S&P350 EUROPE
M.8837	THOMSON REUTERS F&R BUSINESS	20-7-2018	S&P500
M.8908	XL GROUP	9-8-2018	S&P500
M.8912	the speciality chemical business of AKZO NOBEL	27-8-2018	S&P350 EUROPE
M.8974	MERCK CONSUMER HEALTH BUSINESS	27-8-2018	S&P500
M.8981	FRUTAROM	6-9-2018	S&P350 EUROPE
M.9074	Pont surambre power and Toul power (KKR)	11-9-2018	S&P500
M.8985	KLX	1-10-2018	S&P500
M.9063	CONVERGYS	2-10-2018	S&P500
M.9054	CA	12-10-2018	S&P500
M.9144	Gianni Versace (BLACKSTONE)	7-11-2018	S&P500
M.9108	SODASTREAM INTERNATIONAL	30-11-2018	S&P500
M.9124	OERLIKON DRIVE SYSTEMS	5-12-2018	S&P350 EUROPE
M.9150	chaucer (THG)	17-12-2018	S&P500
M.9149	ASPEN INSURANCE HOLDINGS	18-12-2018	S&P500
M.9122	costa (WHITBREAD)	21-12-2018	S&P350 EUROPE