Has the financial crisis changed investor receptions toward M&A announcements?

Evidence from the European M&A market

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Abstract

This thesis analyzes changes in M&A announcement effects on the acquirer's stock during and after the climax of the 2008 global financial crisis in the continental Europe M&A market. While existing literature offers varying results on the matter, generally stocks of acquirers have been historically proven to generate significant negative abnormal returns in proximity of the announcement date in Europe. All-cash deals have historically underperformed all-equity financed deals in abnormal return generation and occasionally being negative, but I find evidence that after the latest financial crisis the announcement effects have started to generate positive abnormal returns on all-cash acquisitions. I apply event study methods as well as two parametric and one non-parametric statistical test to analyze the changes in abnormal returns in three mutually exclusive timeframes between 1/2002 and 10/2016.

Keywords: M&A announcement effect, Financial crisis, Event study

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1. Introduction

Since the start of the recent financial crisis European economies have gone through several business contextual changes: financial system restructurings, government debt issues, lower economic growth rates, the ongoing globalization process and technological advancement in business concepts. The combined shock effect of these eventually affect manager decisions how to increase their shareholder wealth. Has the contextual change Europe is going through changed investor receptions towards M&A investments as also announcement effects tend to vary in magnitude based on macro-level factors (Beltratti, Paladino, 2013)? The abnormal returns generated by M&A announcement effects have been widely researched, though not in the most recent years in Europe.

It has been studied by Martynova and Renneboog (2006) that in Europe the acquiring company statistically significantly outperforms the market near the announcement date though overall the acquirer tends to underperform the market in a 121-day event window around the announcement date. They also find evidence that all-cash deals tend to underperform all-stock deals in abnormal returns in the event window. The timeframe of their analysis however only accounts years 1993-2001 which mostly were times of bull market, which means all-stock deals are favored over all-cash because the acquirer stock is generally over-priced and then cheaper to finance than cash. Therefore, the sample may be unbalanced and undermine all-cash bid announcements. Since the beginning of 21th century all-cash deals have in average been favored over all-equity bids, so an updated sample could reveal different results.

For the recent years the market has instead been bearish, and all-cash deals dominate all-stock deals in quantity. Alexandridis, Petmezas and Travlos (2010) found out all-cash deals outperform all-stock deals in terms of abnormal returns in several uncompetitive markets including Europe excluding UK over a 4-day event window during partly the same timeframe as in Martynova and Renneboog's research. Also the aftermath of the financial crisis has affected economic reality on the old continent since their paper: economic growth has been estimated to stay stagnant for years and interest rates are partly negative. Because of these changes in the economic landscape in Europe, I want to test Martynova and Renneboog's findings to see if especially all-cash deals have been in general affected by consequences of the financial crisis we are now experiencing.

I analyze abnormal returns generated by all-cash M&A announcement effects on the acquiring company's stock in three different time periods, pre-crisis, mid-crisis and post-crisis. I use event study methodologies to statistically test the generated abnormal returns for different event windows and with several statistical test methods

The rest of the paper is organized as follows. Section 2 presents the theoretical background for the possible influencers of all-cash M&A announcement abnormal returns which are impacted by the crisis and its consequences. Section 3 describes my data and its properties. Section 4 shows the methods I use in my analysis as well as discusses critically some uncertainty they present. Section 5 shows the empirical results and discusses them and section 6 concludes and gives suggestion for further research.

2. Overview of current literature

Current literature agrees generally on evidence of significant abnormal returns on the announcement date for the target company. Earliest findings over a period of 1955-1985 suggest abnormal returns of 24% to target shareholders (Franks and Harris 1989) whereas the latest studies report on target announcement abnormal returns of 9% (Goergen and Renneboog 2004). However, for bidding firms the findings suggest abnormal returns varying by the acquirer's home market. Martynova and Renneboog (2006) find significant returns for 6 developed markets in Europe and also for the whole European market at -3% for a 121-day event window, which however is influenced by the dominant representation of developed markets in the sample. Overall the latest studies report contradictory findings on the significance of bidding firm announcement effect abnormal returns. Andrade et al. (2001), Mulherin and Boone (2000), Franks et al. (1991), Healy et al. (1992) report small negative announcement returns for the bidders, and Moeller and Schlingemann (2005), Schwert (2000), Loderer and Martin (1990), Asquith et al. (1983) on the other hand find small positive abnormal returns on the announcement of M&A deals. Alexandridis, Petmezas et al. (2010) find abnormal returns of 2.10% for a 5-day event window for all-cash deals in Europe for the period 1990-2007 and they outperform all-stock deals for event windows two and five days in proximity of the announcement date.

Cyclical macroeconomic factors that influence bid announcement returns include the announcement's timing in respect to the M&A market's activity peak. Bids that are announced in early stages of an M&A wave perform better than those announced in proximity of the activity peak (Shelton 2000). Jensen (2004) argues that managers make poor

acquisitions because there are no good ones left. Managers tend to overpay for the merger because they are overconfident of the performance of the acquisition. The overconfidence stems from slow information processing and self-interest (Harford 2003). Such M&A waves have usually occurred because of positive non-financial and financial influencers, such as technological, political and industrial shocks as well as bullish markets M&A waves tend to start off slower and suddenly due to a negative economic shock. (Martynova, Renneboog, 2008)

Another influential cyclical factor is the cyclical market trend and market volatility. In times of heightened market volatility and bearish trend best-performing companies announce M&A investments more frequently than poor-performing ones (Beltratti, Paladino, 2013). They studied European banking sector's M&A characteristics during the recent financial crisis and they report abnormal returns are greater for more efficient, profitable and less-leveraged banks.

Beltratti and Paladino (2013) also find significant changes in M&A announcement behavior during the recent financial crisis in comparison to pre-crisis circumstances. The announcement effect remains insignificant from zero, but a positive shock is realized with abnormal returns at the date of deal completion. This is hypothesized by increased investor uncertainty. They also find cash deals underperforming equity deals which is in contrary to the signaling effect, which is explained as investor disappointment to cash expenditure in the market's liquidity crisis. They also suggest that investor reactions to M&A announcements may depend significantly on the macroeconomic context, which is overshadowed by analysis of dependencies on different deal attributes.

During the recent crisis corporate capital expenditure did not drop substantially, even though, corporate lending of banks fell significantly. Instead corporations used their internal capital as an alternative financing source. Therefore payout of companies fell sharply in the peak years of the financial crisis 2008-2009 to retain their cash balances and investment plans according to Bliss, Cheng and Denis (2015) because external finance was too costly to make profitable investments. Often these announcements are made at the same moment as investment announcements, which could influence mid-crisis M&A announcement effects.

Rossi and Volpin (2004) find that better investor protection associates with more hostility in bidding as well as increased frequency of all-equity bids. Good investor protection leads also to lower agency costs regarding cash and debt holdings since excess cash is paid out and

opportunistic managers are removed from charge by shareholders. Goergen and Renneboog (2004), as well as Servaes (1991) on the other hand find that hostile attitude of the bid show significantly lower acquirer returns than friendly bids. Hostile bids refer to bids which are targeted straight to shareholders instead of making the bid to the company's management. Higher investor protection would therefore lead to lower acquirer gains.

Alexandridis and Petmezas et. al (2010) find evidence that the incompetitiveness of the European M&A market leads to significant acquirer abnormal returns as the premia are lower and redistribution of gains from the acquirer to the target being smaller than otherwise. Jlassi and Mansour et. al (2012) conclude that overconfidence bias is a driving force of market disturbance, such as abnormal returns, independent from the market circumstances.

Based on these general market phenomena I hypothesize that there is difference between pre –and post-crisis ARs since pre-years were bullish whereas post-years mostly bearish. I also hypothesize during the crisis there are negative abnormal returns post-announcement because of investment and payout announcement simultaneity as well as abnormal return postponing to completion date. I also hypothesize there is a causal effect between low interest rates and increased all-cash abnormal returns.

3. Data

3.1 M&A data set

The M&A transaction data is received from SDC Platinum and it includes 2904 domestic M&A deals announced by public companies in the sixth takeover wave between 1/2002 and 10/2016 in Europe excluding UK. Spin-offs, recapitalizations, self-tenders, exchange offers, and repurchases, as well as deals involving Australian private target companies classified by local legislation (and thus SDC) as public are excluded. All-equity and mixed bids are filtered out as well as bids with unknown or other payment methods. Cross-border deals are left out because their announcement effects have been shown to differ greatly from domestic M&A transactions at -4% compared to -2.5% abnormal returns for domestic transactions (Martynova, Renneboog 2006), which can be reasoned by acquirer gains possible reflections on shifts in investor protection across countries (Bris, Cabolis, 2008). Cases where a single company announced more than one M&A transaction on the same day are left out of the analysis sample as such instances would create unbalanced effects in comparison to the other 95% of my observations in the results. To eliminate diluting in the results minimum transaction value is set to 5 million USD, and the acquirer is required to acquire more than

50% of target's available stocks in the deal, and previously the acquirer is required to have owned less than 10% of the target's available stocks.

For my regression analysis I require the stock price and market index data from t_{20} to t_{-120} of the acquiring companies, where t_0 is the announcement date. Both data sets are obtained from Datastream, companies with incomplete data are filtered out. This leaves a total sample of 337 M&A deals with appropriate price and financing data for the period. See tables 1 and 2 for geographical and annual distribution of the sample. As with similar M&A studies, France, Germany and Sweden dominate the sample with 73, 36, and 43 observations respectively, totaling at 152 which is 45.2% of the total sample. A mentionable difference between sample structures of earlier studies and this one is that past soviet nations Poland and Russia reserve a total of 34 observations together which account 10.1% of the total pre-analysis sample. The sample sizes per year seem to correlate well with annual M&A activity, only 2015 and 2016 have relatively small samples in comparison to the trend as well as 2002 having only 4 observations.

In my analysis I estimate expected returns by a simple market model, which for some stocks indicated high error terms. To improve the robustness of my results I need to take those observations out of consideration. I will discuss this matter later in the methodology and its limitations sections. The analysis sample distributions are also indicated in tables 1 and 2.

I also classify the observations into three period sub-samples based on their observation dates, pre-crisis, mid-crisis and post-crisis. More details on the sub-samples in methodology section. The pre-analysis and analysis distributions per sub-sample and country are shown in tables 3 and 4.

3.2 Limitations of data

The M&A data comprises mostly only data from old market economies in Europe and only two former soviet states have contributing data available, because other Eastern European acquisitions have no adequate data for their financing method nor stock price data which are critical for my hypothesis testing. The data is also quite concentrated in countries such as France, Germany and Sweden, but it is a common problem among M&A research on European markets.

However, similar studies to mine have usually had larger sample sizes which eventually depends on my relatively short analysis timeframe. Especially the post-crisis sub-sample,

which I am going to define later in the paper, on which I am going to base my research question is modestly small. This also is partly due to Datastream, which is my only stock price data source, suffering from lack of European stock price data. Market value data for the sample companies is also not adequately available in Datastream which leads to having deals with relatively low transaction value to the market value of the acquirer in the sample, which eventually may have diluting effects on my results. I hope to subset this limitation with a higher minimum transaction value filter than in other similar studies.

4. Methodology

4.1 Methods used in AR testing

Because my aim is to analyze possible changes during and after the crisis in comparison to pre-crisis I divide my sample into three sub-samples based on the date of announcement. M&A announcements before September 2007 belong to 'pre-crisis' sub-sample, observations after September 2007 and before October 2012 belong to 'mid-crisis' and transaction announcements after that point are part of 'post-crisis' sub-sample. The sub-sample breakpoints are determined by the negative shock in the TED spread in August 2007 and the Q3/12 to Q4/12 exits from the latest statistical recession by several European countries that contribute data to this study.

With event study methodology I can capture the effect of certain events on shareholder wealth. This methodology is developed by Fama, Fischer, Jensen and Roll (1969) and it is widely used in event study papers. I also replicate statistical methods used in an M&A announcement effect study by Banerjee and Deisting, et al. (2012) who study the occurrence of the phenomenon in BRICKS countries, and Martynova and Renneboog (2006) who wrote the latest paper about European M&A announcement effects on abnormal returns.

The event observation timeframe extends from t_{20} to t_{-20} where t_0 is the announcement date. Further I divide the sub-samples into pre–and post-announcement sections to observe possible information leakages, acquisition expectations and insider trading activity, $(t_{-1} - t_{-20})$ and $(t_{20} - t_0)$ respectively. In addition to $(t_{20} - t_0)$ and $(t_{-1} - t_{-20})$ event windows I also examine $(t_{20} - t_{-20})$ window to capture the aggregate effect of announcing a deal and $(t_1 - t_{-1})$ window as well as only t_0 to observe the immediate effect of the announcement more closely. I use stock closing price data of the acquirer and closing values of benchmark market indices ranging from t_{-120} to t_{20} to implement a market regression model similar to Sehgal,

Banerjee & Deisting, which I use to estimate expected return for stock i on day t. Next I convert the daily price data into a return series as follows:

$$Ri, t = log_e (P_{i,t}/ P_{i,t-1}) \tag{1}$$

For each day and stock I receive a dynamic beta which is based on the closing prices of stock i as well as closing values of benchmarked market index of the acquirer's home market from the last 100 market days. This way the expected returns are less static for the whole period and incorporate volatile changes on the stock and market index better than a static one. The model is calculated as:

$$R_{i,t} = \alpha_i + \beta_{i,t} R_{m,t} + \varepsilon_{i,t} \tag{2}$$

$R_{m,t}$ is the market return on day t in the home market of security I, $\varepsilon_{i,t}$ the zero mean error term, α_i is the intercept and $\beta_{i,t}$ the coefficient for the market return, respectively.

As I mentioned above, I try to improve the robustness of my further analysis by only considering transactions for which's acquirer's expected returns the market model shows average coefficient p-values lower than 5%. This does not however remove bias completely, and it should be taken into account when discussing the results of my analysis. My final sample which I use here on includes 208 transactions, further description of the sample and sub-samples is given in appendices 3 and 4.

Next I check 1st order autocorrelation of the market model by using Ljung-Box Q-test. I regress day t returns with day t₋1 returns to receive the autocorrelation coefficients, and remove correlation terms which are insignificant. The test statistic Q follows chi-squared distribution with h degrees of freedom.

$$Q = n(n + 2) \sum_{k=1}^{h} \frac{p^2}{n-k} \tag{3}$$

Null hypothesis about independently distributed data is rejected if:

$$Q > \chi^2_{1-\alpha,h} \tag{4}$$

Where 1-α is the critical level. For each sub-sample there are h = 139 (return observations - 1) lags, based on the estimation timeframe and event window, that are tested at lag k = 1 (day) and n = significant correlation observations. In the mid-crisis sub-sample I detect autocorrelation at 5% significance level and eliminate it by using generalized least squares

estimation with 1st order autocorrelation parameter to receive proper market model parameters.

I define abnormal returns as difference $AR_{i,t}$ = actual return $_{i,t}$ – expected return $_{i,t}$, where expected return is the value $R_{i,t}$ received from the market model. Cumulative abnormal returns, CAR_i, are calculated for each transaction by adding up each days $AR_{i,t}$. The significance of my CAR_i results is tested by calculating the standardized CAR_i as follows:

$$SCAR_{i,t} \quad \frac{CAR_{i,t}}{\sqrt{\frac{n}{n-2}} * \sigma_{i,t}} \tag{5}$$

I find that 58.7% of the deals generate significant abnormal returns in the timeframe post-announcement and 55.8% pre-announcement. These portions do not differ significantly from the ones of pre- and mid-crisis but in the post-crisis sample only 46.8% of announcements generate significant pre-announcement excess returns and 53.2% post-announcement. Further distribution per country and sub-sample is shown in table 5. Next I test the significance of abnormal returns of the event windows of each sub-sample by using two parametric test statistics which are discussed in detail by Brown and Warner (1985), the standardized portfolio test and standardized test for CARs . Therefore I need to also define $CAAR_t$, which stands for cumulative average abnormal returns.

I calculate the cumulative average abnormal returns, $CAAR_t$, for each sub-sample by summing average abnormal returns of each day in the timeframe. To statistically prove the significance of $CAAR_t$ of each sub-sample I calculate $SCAAR_t$, which is the standardized $CAAR_t$.

$$SCAAR_t = \frac{CAAR_t}{\sqrt{\frac{n}{n-2}} * \sigma_{p,t}} \tag{6}$$

$\sigma_{p,t}$ is calculated using Markowitz Portfolio formula to also take into account cross-correlations between abnormal returns of transactions if their event windows overlap.

$$\sigma_{p,t}^2 = \sum_{i=1}^n x_i^2 \sigma_i^2 + \sum_{i=1}^n \sum_{j \neq i} \sigma_i \sigma_j p_{i,j} x_i x_j \tag{7}$$

$p_{i,j}$ is the correlation coefficient between the abnormal returns of stocks i and j on overlapping days, $x_i = x_j = \frac{1}{n}$, where n = sample size to make each stock equally weighted. The $SCAAR_t$ values follow a two-tailed Student t-distribution with n-2 degrees of freedom. The portfolio test assumes abnormal returns are higher with higher variance observations. The method is a good one to take into account correlations of overlapping event window observations, but it

gives less weight on securities with low variance. Therefore I next calculate the standardized test for CARs which gives more weight on low variance securities.

The statistic is calculated as:

$$t_{st} = \sqrt{\frac{N(L_i-4)}{L_i-2}} \frac{1}{N} \sum_{i=1}^{N} \frac{CAR_{it}}{\hat{\sigma}(CAR_{it})} \qquad (8)$$

With L being the size of the estimation window = 100, N sample size, and $\hat{\sigma}(CAR_{it})$ defined as the sample standard deviation of CARs of the individual securities referring to the event window t. While this method gives more weight to low variance abnormal returns it also assumes the true abnormal returns are constant among securities.

Lastly I use the Corrado non-parametric test statistic, which is free from any specific assumptions on the return distribution, contrary to correct specification of other non-parametric tests, for short 5-day event windows as well as for the announcement date. The test statistic has neither hindrance of cross-correlating abnormal returns. To calculate the Corrado test statistics I need to rank the 5-day event window CARs for each security in ascending order where the highest CAR's rank = k. The test statistic for each event window $(t_{-20} - t_{-16}), (t_{-15} - t_{-11}), ..., (t_{16} - t_{20})$ is calculated as:

$$t_{rank} = \frac{\frac{1}{N} \sum_{i=1}^{N} T - 0.5*(W+1)}{\hat{\sigma}(T_{average})} \qquad (9)$$

Where T is the rank of event window CAR of security i, W the amount of event windows, and $\hat{\sigma}(T_{average})$ the standard error of average rank differences' of event windows' compared to the mean statistic value 0.5*(W+1). $\hat{\sigma}(T_{average})$ is calculated as:

$$\hat{\sigma}(T_{average}) = \sqrt{\frac{1}{W} \sum \left[\frac{1}{N} \sum_{i=1}^{N} T - 0.5*(W+1) \right]^2} \qquad (10)$$

Same methodology is applied also to announcement date abnormal returns with W = 41. Under the null hypothesis, t_{rank} follows the standard normal distribution. It is shown by Campbell and Wasley (1996) that compared to parametric test statistics the Corrado test statistic is consistently the best-fit one on many event occasions such as increases in variance on event date, multi-day event windows and clustered event dates. However with the increase of event window size in comparison to the whole data timeframe (estimation window + event window) the statistic loses power (Luoma, Pynnönen, 2010), therefore I have not included the whole pre- and post-announcement event windows to this test measure.

4.2 Limitations of methodology

I replicate methods used in the study of Banerjee, Deisting and Sehgal (2012) who study the same matter as this paper does in semi-developed economies, which have many divergent influencers in comparison to my sample of European economies. They only use the portfolio test statistic which gives weight on high variance observations which are typical for more illiquid markets such as the BRICKS. Their robustness checks for market model coefficients seem inferior in comparison to several similar studies (Martynova, Renneboog, 2006) (Alexandridis, Petmezas, Travlos, 2010). Therefore their methods may not eliminate plausible bias effectively.

I followed the paper closely and used the same methods until I found the paper of Martynova and Renneboog (2006) which I there on followed more closely than the BRICKS paper, and which uses similar methods and in addition the standardized CAR test and the Corrado test, which eventually give more robustness to their findings. However, due to my analysis preparation aim of only -20 and +20 days around the announcement date, I couldn't use the Corrado test for the pre- and post-announcement windows as whole. Also as the analysis framework is slightly different from Martynova and Renneboog, the findings of this paper should not be directly compared to those of Martynova and Renneboog, as my market model which greatly influences the outcome of abnormal return generation is based on daily betas contrary to raw downward biased stock-specific betas. Therefore my results should be taken as slightly uncertain, even though I find significant results on several tests for some sub-samples. The results of my quantitative analysis can be found in tables 6 and 7.

5. Discussion about results

5.1 Description about findings

The findings suggest, that post-crisis cumulative abnormal returns have generally risen. Pre-crisis event window $(t_{20} - t_{-20})$ indicates -1.880% CAARs on 10% significance on standardized CAR test and 1% significance on portfolio test. The pre-announcement negative abnormal returns of -2.130% are significant at 1% level according to both test statistics which is partly conflicting with earlier studies about the subject, but also in line with agency cost theory about cash-piling and information leakages which are usual for illiquid markets. Several sample selection criteria also may affect the contrary result to other studies e.g. the same event window is not used, and that the often M&A research samples dominating UK is not included.

These results could also be reflected by the theory that later M&A transactions in M&A waves tend to show lower performance than those in the beginning of the wave in terms of announcement effect returns. 2006 and 2007 had M&A volumes similar to 1999 and 2000 when the latest M&A peak was and worse acquirer performance for that period has been found in earlier studies. Also years 2002-2004 are relatively inferiorly accounted in the sub-sample as 2005-2007 account for 78.8% of the sub-sample size. 2002-2004 were early of the upcoming bull-market and M&A wave which would according to M&A timing theory create positive abnormal returns whereas 2005-2007 have the opposite effect.

Mid-crisis abnormal returns both pre –and post-announcement change significantly. Pre-announcement cumulative average abnormal returns are found to be significant at 1% confidence with 1.14% whereas post-announcement average abnormal returns are -1.29% with 1% confidence when tested with the portfolio test. However, the standardized CAR test does not find significance even at 10% level for any event window except $(t_1 - t_{-1})$ and t_0. The overall CAAR for the event window is insignificantly different from zero at -0.16% according to both test statistics, which could be hypothesized by the high market volatility and therefore high polarization of observations.

These findings fit to the conclusion that in bear market and higher market volatility conditions M&A's are usually executed by companies with the most stable financial basis which explains the positive pre-announcement abnormal returns. Negative post-announcement CAARs of this event window are in line with the findings of Beltratti and Paladino that during the crisis announcement ARs were realized at the completion of the deal because investors were too uncertain of the outcomes of the bid announcement. Probably transactions before the Lehman crash of this sub-sample could also be affected by the M&A timing theory because the shock ended the wave.

When financial institutions lowered their credit supplies during the crisis the financial resources of companies did not lower significantly because they started to utilize alternative sources of funding, such as lowering payout. These decision announcements are usually given the same moment as investment decisions such as M&A transactions, due to signaling, which would explain the negative post returns, also agency cost theory about cash-financing is in line with this finding.

Post-crisis the analysis results change direction in contrast to the mid-crisis sample. Pre-announcement average abnormal returns become statistically insignificant at 0.261% and post-

announcement average abnormal returns are significant at 1.198% according to portfolio test and standardized CAR test. This sub-sample is the only one which's whole event window has significantly positive CAAR, which it has at 1.459%. These results would imply the negative effect of using cash as a financing method has weakened post-crisis where the results imply negative post-announcement CAARs in average. M&A activity yearly since the financial crisis has been modestly volatile, so I would not find this an implication of an early M&A wave, especially when the economic expectations are also quite moderate.

Also it is to note that the announcement day's abnormal return or the $(t_1 - t_{-1})$ CAAR do not significantly change during pre- and mid-crisis but in post-crisis the initial announcement date reaction has diluted to 0.671% but it still is significant at 1% according to the standardized CAR test. However the Corrado test statistics show quite contrary results to the two other statistics. Announcement day statistics are still significant, however mid-crisis statistic is insignificant. This strengthens the hypothesis that during the crisis the initial announcement reactions were calmer than otherwise. For the 5-day periods there are significant results for some observations, more interestingly mid-crisis has two post-announcement periods which have positive significance contrary to earlier statistics which show negative ARs post-event. This anomaly cannot be even reasoned by early deal completion dates which averagely are 76 days later than the announcement for the mid-crisis sub-sample. It is to note however that the statistic loses statistical power with more event windows, even though it has been studied to be the most constant measure of event study analysis.

5.2 What do my results mean?

Because the standardized CAR test favors low-volatility securities I base my discussion on its values. The portfolio test is too polarizing on the study timeframe which includes high market volatility periods, also small sample sizes amplify its test statistic values, so I place only little weight on it. However, mid-crisis pre –and post-announcement ARs are close to being significant on the CAR statistic, and the average results are in line with existing theories of cash-financing during the liquidity crisis and using payout cash flows as alternative financing sources, which have negative effects on AR post-announcement. The positive pre-announcement ARs are also in line with good-quality companies dominating the sub-sample. These results therefore highly replicate Beltratti and Paladino's findings on M&As within European banking sector during the crisis.

Post-announcement ARs increase post-crisis is the most reliant finding of this paper because it shows constancy among all test parameters. This finding is still in contradiction with most existing literature that state there are no significant ARs, or at best small ones, for acquirers in Europe. The reason why I found significant ARs is due to many studies having long timeframes which typically have included at least one M&A wave and the results have been generalized to one sample whereas I capture one M&A wave in more detail by separating sub-samples. Existing studies also have done sub-sampling and find positive ARs for acquirers at the start of an M&A wave. Although, the period starting from 2008 has had volatile annual M&A activity which leads to my conclusion that we are not experiencing a clear beginning of an M&A wave, where higher ARs are recorded. Current political nor economic circumstances stimulate positive shocks that tend to start M&A waves.

The consequences of the financial crisis have led to very long-sight bearish expectations about future growth. Low internal growth possibilities lead managers to seek growth externally which is welcomed by shareholders and leads more sensitively to positive reactions on the stock market. Also the current loose monetary policy in European countries induces investment and has reduced cost of leverage in recent years which could explain the effects of all-cash bids. However, leverage ratios of European companies have not risen since 2012 according to NYU Stern statistics, mostly because the low interest rates have not been channeled to corporate loans that effectively except for the couple recent years. Leveraging also leads to agency costs, so this argument cannot explain the positive ARs. Corporate governance has neither increased significantly in European countries during the timeframe of my study, which would lead to lower agency costs and more welcomed reaction by the market.

The incompetitiveness of European M&A market is still significant when measured by value of average M&A transaction, which serves as a proxy for paid premia. In comparison to North America the premia are significantly lower in Europe in average throughout the sample timeframe according to Institute for Mergers, Acquisitions and Alliances statistics. Higher premia correlate with lower acquirer ARs, and this parameter has stayed constant throughout the sample timeframe so it cannot explain changes in the sub-samples though it affects my results overall.

It is clear that bid-specific attributes, such as payment method, financing source, bid attitude, domestic vs. cross-border, corporate investment strategy and deal type yield constant results. After all announcement effects are hard to generalize since the outcome of the bid depends on the synergies and market share increases attained, which are the real factors that increase

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incoming cash flows and shareholder value. These benefits are harnessed in varying timeframes, but often take months or years, so there's modest uncertainty of the real outcome at the announcement of the M&A, which are possibly influenced by overconfidence, which is amplified by analyst opinions. The constancy of announcement day positive ARs in this paper and in previous studies is in line with general overconfidence on the announcement date.

6. Conclusions

This paper addresses the need for an update on M&A announcement effects on abnormal returns in Europe, since the financial crisis has had several earlier unseen consequences on the economic context of present day. I find that acquirers experience statistically significant positive post-announcement cumulative abnormal returns post-crisis for 20 days which is in line with incompetitiveness of the European M&A market, and corporate growth seeking when internal growth possibilities are small. This is valued higher by shareholders than recently due to current negative macroeconomic factors.

There's no implication that due to overall low interest rates corporations would be induced to increase investment, so favoring cash as the payment method specifically does not increase all-cash ARs post-crisis. I cannot specify statistical significance for ARs during the crisis, although my insignificant results are otherwise in line with Beltratti and Paladino's study on the matter.

Overall this study about abnormal returns generated by M&A announcement effects brings new findings to existing literature about implications of changes in ARs due to the consequences of the financial crisis but a longer timeframe after the crisis is needed in the future to confirm the findings even more significantly. Also since the causality of macroeconomic variables and M&A ARs is plausible, they should be studied with closer detail if the post-crisis ARs stay significant for a longer period than I have now analyzed. At the moment M&A AR cyclicality cannot be ruled out completely due to such a short analysis timeframe.

Tables

Table 1: Geographical distributions of samples

	Pre-analysis sample		Sufficiently robust coefficients in market model	
Austria	3	0.9 %	3	1.4 %
Belgium	13	3.9 %	7	3.4 %
Denmark	8	2.4 %	5	2.4 %
Finland	18	5.3 %	10	4.8 %
France	73	21.7 %	42	20.2 %
Germany	36	10.7 %	28	13.5 %
Iceland	3	0.9 %	1	0.5 %
Ireland-Rep	8	2.4 %	4	1.9 %
Italy	35	10.4 %	27	13.0 %
Netherlands	17	5.0 %	11	5.3 %
Norway	14	4.2 %	8	3.8 %
Poland	19	5.6 %	2	1.0 %
Portugal	5	1.5 %	4	1.9 %
Russian Fed	15	4.5 %	2	1.0 %
Spain	15	4.5 %	12	5.8 %
Sweden	43	12.8 %	34	16.3 %
Switzerland	12	3.6 %	8	3.8 %
Total	337	100 %	208	100 %

Table 2: Annual distributions of the samples

	Pre-analysis sample		Sufficiently robust coefficients in market model	
2002	4	1.2 %	3	1.4 %
2003	13	3.9 %	8	3.8 %
2004	13	3.9 %	7	3.4 %
2005	27	8.0 %	18	8.7 %
2006	38	11.3 %	26	12.5 %
2007	35	10.4 %	26	12.5 %
2008	24	7.1 %	18	8.7 %
2009	22	6.5 %	9	4.3 %
2010	23	6.8 %	13	6.3 %
2011	35	10.4 %	23	11.1 %
2012	30	8.9 %	15	7.2 %
2013	24	7.1 %	12	5.8 %
2014	27	8.0 %	15	7.2 %
2015	13	3.9 %	8	3.8 %
2016	9	2.7 %	7	3.4 %
Total	337	100 %	208	100 %

Table 3: Analysis version of sub-sample geographical distribution

	Pre-crisis	%	Mid-crisis	%	Post-crisis	%
Austria	1	1.2 %	2	2.5 %	0	0.0 %
Belgium	1	1.2 %	2	2.5 %	4	8.5 %
Denmark	3	3.7 %	1	1.3 %	1	2.1 %
Finland	4	4.9 %	6	7.5 %	0	0.0 %
France	12	14.8 %	17	21.3 %	13	27.7 %
Germany	15	18.5 %	10	12.5 %	3	6.4 %
Iceland	0	0.0 %	1	1.3 %	0	0.0 %
Ireland-Rep	2	2.5 %	2	2.5 %	0	0.0 %
Italy	10	12.3 %	10	12.5 %	7	14.9 %
Netherlands	7	8.6 %	1	1.3 %	3	6.4 %
Norway	1	1.2 %	4	5.0 %	3	6.4 %
Poland	0	0.0 %	1	1.3 %	1	2.1 %
Portugal	1	1.2 %	0	0.0 %	3	6.4 %
Russian Fed	0	0.0 %	2	2.5 %	0	0.0 %
Spain	5	6.2 %	4	5.0 %	3	6.4 %
Sweden	16	19.8 %	13	16.3 %	5	10.6 %
Switzerland	3	3.7 %	4	5.0 %	1	2.1 %
Total	81	100%	80	100%	47	100%

Table 4: Pre-analysis version of sub-sample geographical distribution

	Pre-crisis	%	Mid-crisis	%	Post-crisis	%
Austria	1	1.2 %	2	2.5 %	0	0.0 %
Belgium	3	3.7 %	8	10.0 %	2	4.3 %
Denmark	4	4.9 %	2	2.5 %	2	4.3 %
Finland	7	8.6 %	3	3.8 %	8	17.0 %
France	22	27.2 %	29	36.3 %	21	44.7 %
Germany	17	21.0 %	9	11.3 %	9	19.1 %
Iceland	2	2.5 %	1	1.3 %	0	0.0 %
Ireland-Rep	3	3.7 %	1	1.3 %	4	8.5 %
Italy	14	17.3 %	16	20.0 %	4	8.5 %
Netherlands	9	11.1 %	7	8.8 %	1	2.1 %
Norway	3	3.7 %	5	6.3 %	6	12.8 %
Poland	1	1.2 %	14	17.5 %	4	8.5 %
Portugal	2	2.5 %	3	3.8 %	0	0.0 %
Russian Fed	3	3.7 %	8	10.0 %	3	6.4 %
Spain	6	7.4 %	4	5.0 %	5	10.6 %
Sweden	19	23.5 %	13	16.3 %	10	21.3 %
Switzerland	4	4.9 %	3	3.8 %	4	8.5 %
Total	120	100 %	128	100 %	83	100 %

Table 5: Statistically significant abnormal returns per country in the event window

	Pre-crisis		Mid-crisis		Post-crisis	
	Pre-0	Post-0	Pre-0	Post-0	Pre-0	Post-0
Austria	1	0	1	1	0	0
Belgium	0	1	4	2	1	1
Denmark	3	3	1	1	1	1
Finland	2	2	1	1	5	3
France	7	7	13	11	3	7
Germany	6	8	3	3	2	3
Iceland	0	0	1	1	0	0
Ireland-Rep	1	1	0	0	0	0
Italy	5	4	7	6	3	2
Netherlands	6	4	2	1	0	0
Norway	1	0	3	3	0	2
Poland	0	0	1	2	0	0
Portugal	1	1	3	2	0	0
Russian Fed	0	0	0	0	0	0
Spain	4	4	2	4	2	1
Sweden	8	10	4	8	5	4
Switzerland	2	3	0	2	0	1
Total	47	48	46	48	22	25
% of sub-sample	58.0 %	59.3 %	57.5 %	60.0 %	46.8 %	53.2 %

Table 6: Results of analysis, means bolded, sub-sample test statistics of portfolio test and standardized CAR test below them. Colors indicate significance levels.

	Pre-announcement	Post-announcement	Combined (t-20 - t20)	t-1 - t1	0
Pre-crisis	**-2.130 %**	**0.250 %**	**-1.880 %**	**1.098 %**	**0.854 %**
t(portfolio)	-11.48	1.21	-9.59	4.55	3.36
t(stCAR)	-3.23	0.36	-1.96	2.80	3.20
Mid-crisis	**1.135 %**	**-1.290 %**	**0.156 %**	**1.331 %**	**0.905 %**
t(portfolio)	5.19	-5.16	-0.68	5.08	2.89
t(stCAR)	1.51	-1.54	-0.14	3.16	2.55
Post-crisis	**0.261 %**	**1.198 %**	**1.459 %**	**1.354 %**	**0.671 %**
t(portfolio)	1.07	5.70	6.29	5.65	2.56
t(stCAR)	0.41	2.08	1.69	4.62	2.78

1% significance	5% significance	10% significance

Table 7: Corrado test statistic results per sub-sample

	t-20 - t-16	t-15 - t-11	t-10 - t-6	t-5 - t-1	t0	t1 - t5	t6 - t10	t11 - t15	t16 - t20
Pre-crisis	-0.27	-0.22	1.32	0.97	2.96	-1.51	1.27	-0.52	-1.02
Mid-crisis	-1.12	-0.82	-0.43	-0.73	0.95	0.13	1.37	1.85	-0.26
Post-crisis	0.80	1.42	0.11	1.02	1.42	0.33	0.62	1.79	0.77

1% significance	5% significance	10% significance

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