Do domestic banks Mergers and Acquisitions Still Create Value? Recent Evidence from Europe

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Abstract

We study the M&A phenomenon in Europe during an extensive period spanning 1996-2010 using a sample of 118 domestic bank Ms&As. We compare the short-term impact of acquirer and target share prices around the announcement period and find significant abnormal returns for target banks for the 3-day event window. We argue that prior profitability can explain short-term price effects for both acquirers and targets since ROA affects positively cumulative abnormal returns when employing cross-sectional regression analysis. Accordingly, bidder banks, displaying prior low return on equity, experience losses in the post-event 10-day period, while target banks losses expand throughout our 21-day event window, underlying the important role of ROE on the formation of investment decisions and overall market perception. Investors favour both acquirers and sellers with high prior profitability.

JEL: G11; G14, G15; G34

Keywords: Banks, domestic Ms&As, abnormal returns, acquirers, targets

1. Introduction

The European banking sector has witnessed extensive consolidation over the last two decades. A number of factors have fuelled this tendency. Most importantly, one can suggest the European integration process coupled with the common currency introduction. The gradually loosening regulatory environments as well as, more recently, the financial crisis that calls for more consolidated markets, have also played a crucial role. The forces that drive value creation, however, through mergers and acquisitions (Ms&As), remain open to further scrutiny by researchers (Hagendorff et al., 2008). Amongst the motives for bank Ms&As that the literature has suggested, we mainly find the idea of increased market power, economies of scale and synergies for the combined entities (Hankir et al., 2011). Scholars claim that these factors lead to improvements in efficiency and profitability (Copeland et al., 2003). Merged institutions can reduce labor costs, decrease their operating costs by merging branches and centralize back office operations (Houston et al., 2001). It is often advocated however that diversified banking activities do not necessarily reduce overall cost and risks associated with their activities (Mercieca et al., 2007). Economies of information can be achieved by reducing monitoring costs in the context of credit risk (Panetta et al., 2009). Ms&As do not only result in fewer players dominating capital markets, but also entail significant changes in the market value of the parties involved (Hankir et al., 2011). The wealth of knowledge regarding bank consolidation comes from the US studies whereas European banks have been largely underexplored even though this trend is gradually reversed (Beltratti and Paladino, 2013; Hagendorff et al., 2012; Lozano-Vivas et al., 2011 and Van Lelyveld and Knot, 2009, among others). While cross-border bank M&A transactions became increasingly popular since the mid- 90s, even today the number of within-border (domestic) bank Ms&As outnumber them by far (Lozano-Vivas et al., 2011). The ratio of domestic to cross-border bank Ms & As in the European area has steadily been around five to one (Campa and Hernando, 2006).

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Therefore, we consider that a further exploration of an up to date sample of bank Ms & As has useful feedback to offer to scholars and practitioners alike. International research remains inconclusive on the event announcement outcome on short-term abnormal returns.[3] Providing a viable answer, therefore, is a major objective of the current study. A second discernible goal of the paper is the role of profitability of both targets and bidders in construing wealth effects to M&A announcements. Based on the inefficient market hypothesis, we hypothesize that prior to M&A profitability plays a crucial role in the formation of investment decisions and overall market perception. Apart from the study of Vander Vennet (2002), this is the first study that assesses market reaction to Ms&As taking into account prior profitability of both involved parts, thus providing a new evidence to the field. Finally, we capture some evidence of the 2008 crisis and how it affected domestic bank Ms&As in Europe. In an attempt to test for possible value creation for target and bidder banks in the short-run, we employ a wide sample of domestic bank Ms&As for an extensive period 1996-2010. A further reason for probing deeper into domestic bank Ms&As is to assess the speed of information dissemination process in stock markets.Our results support the existence of short-term abnormal returns for target banks around the deal announcement date, even though some contradicting evidence from low profitability target banks lead us into probing deeper in the role of profitability ratios in explaining value effects. Cross-sectional regression analysis shows that past operational performance influences positively short-term target bank stock returns in the event of an M&A transaction announcement. The remainder of paper is organized as follows. Section 2 provides a critical evaluation of the existing literature. Section 3 presents some descriptive statistics and describes the research design. Section 4 provides the empirical analysis of the study, while Section 5 discusses the main findings and implications of our results.

2. Literature Review

The importance of the banking sector in the European economy has increased over the past 20 years (Campa and Hernando, 2006). Despite the gradual increase in the number of cross-border bank Ms&As due to deregulation (DeYoung et al., 2009), the vast majority of Ms&As took the form of large institutions increasing their market share by absorbing smaller financial institutions within national borders. Banks view the consolidation of their position domestically as a first essential part of their overall strategy before considering cross-border expansion. This is fuelled by the understanding that the cross-selling of financial products is easier through domestic Ms&As rather than geographic diversification, which is deemed to be inherently riskier (Berger et al., 2001).[4] The existing literature has repeatedly explored the value creation effects arising from domestic bank Ms&As. Most US studies conducted before 2000, being at the forefront of the relevant research, show that in the short-run, targets, gain at the expense of acquirers (Hudgins and Seifert, 1996). The marginal losses experienced by bidders in the vast majority of studies (Hannan and Wolken, 1989), were found to be zero in other studies (Pilloff, 1996). The latter is confirmed in Rad and Van Beek (1999) for a European sample. European samples have almost consistently verified trivial profits or insignificant losses for acquirers around the announcement date even for the most recent samples (Campa and Hernando, 2006; Beltratti and Paladino, 2013). In the study by Hagendorff et al. (2008) European bidders enjoy marginal positive returns around announcement dates, though non-significant. Therefore, the results from European Ms&As signify a departure from the pre-2000 consensus of the literature over zero or negative short-term abnormal returns for bidders.

Less notable differences between European and US Ms&As, in terms of acquirers' performance, are found in Ismail and Davidson (2005) who reported minimal but significant returns for acquirers in the (-2, +2) event window for a sample of European transactions. In line with Cybo-Ottone and Murgia (2000), Ismail and Davidson (2005) concluded that for the 2-day announcement window (-1, 0) domestic Ms&As are more profitable than cross-border ones, but abnormal returns for target banks are relatively small. Campa and Hernando (2006) examined the financial industry in Europe during 1998-2002 and found positive short-term returns for target firms around the announcement day, while abnormal returns for bidders were zero.

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[3] The popular notion of targets gaining value to the expense of acquirers for short to medium term time horizons is strongly debated nowadays (Campa and Hernando, 2006).

[4] Berger et al. (2001) claim that owning and operating a financial institution in another nation incorporates difficulties including managing and monitoring from abroad, different regulatory and supervisory structures as well as socioeconomic issues.

Some meager positive short-term abnormal returns for bidder banks were found in Hagendorff et al. (2008) who argued that "bidding bank shareholders need to be rewarded for an increased risk of expropriation by insiders encountered in a low protection environment where takeover markets are illiquid and there are high private benefits of control".[5] Lensink and Maslennikova (2008) analyzed the value gains to acquirers for a period spanning 1996-2004. The empirical results from the event study analysis revealed positive and statistically significant abnormal returns for the whole acquisition sample of 79 European Ms&As. Lensink and Maslennikova (2008) claimed that the derived positive abnormal returns for acquirers were a strong indication of the well-founded move of the European financial industry towards consolidation. In an attempt to highlight differences in shareholder value effects during different time periods, Ekkayokkaya et al. (2009) examined the impact of the move towards, and introduction of, the euro on the announcement returns to shareholders of bidding banks. Their empirical evidence lends support to the notion that bidder gains fell after the common currency adoption in 2002. Pre-euro adoption and run-up to the euro domestic Ms&As were already non-profitable for bidders. Beltratti and Paladino (2013) carried out their research on a sample of acquirers during 2007-2010 and found zero abnormal returns for bidder banks in the short-run. Bidders' returns were found to be positively affected by bank profitability and efficiency. Finally, Nnadi and Tanna (2013) employed a sample of 62 bank mega-mergers[6] that occurred in the European Union during the period 1997-2007 and used the classical market model to determine cumulative standardised abnormal returns to acquiring banks around the announcement date of both cross-border and domestic merger deals. The authors' findings were generally consistent with prior studies in that domestic transactions elicit relatively higher abnormal returns for acquirers than cross-border transactions. However, there were significantly negative cumulative abnormal returns for acquirers in cross-border transactions, while the returns in domestic transactions were marginally negative but insignificant.

When trying to summarize the burgeoning literature of M&A shareholder value effects in Europe in the last 20 years we conclude that in domestic bank Ms&As, pertinent literature has largely supported the idea that target banks mostly benefit, while bidder banks earn zero or close to zero returns. Notwithstanding the fact that some studies claim to have derived positive abnormal returns for acquirer banks, we cannot support the idea of dramatically different results found in Europe vis-a-vis the US. We can, however, deduce that Europe constitutes a more favourable environment for bidder bank shareholders around the announcement date of M&A deals, probably due to the late deregulation of the market and the backing for consolidation from European authorities.

3. Data and Methodology

Our sample consists of 118 domestic bank M&A deals during the period 1996-2010, collected from the Bloomberg database. The sample of Ms&As spreads over 12 countries of the greater European area, excluding Eastern Europe. In order to be sampled, mergers and acquisitions had to be complete and paid by cash, while acquirer and target banks should have the same 2-digit Standard Industrial Classification (SIC) code[7]. We further opted for acquisitions where the procedure resulted in a 100% stockholding in the target bank, that is, (i) cases where targets were merged with bidders and (ii) cases of an acquisition of 100% of targets by bidders (i.e. taking into account existing ownership by same bidder). Similar to Asimakopoulos and Athanasoglou (2013), possible multiple Ms&As by the same bidder were excluded in order to isolate the information content of specific deals. The collected stock data and relevant benchmark stock indices include daily closing prices for the period 250 days prior to the M&A announcement and the 10 days following. Table 1 presents our final M&A sample. Around half of the domestic bank Ms&As (57 deals) took place during 1999-2002, which coincides with a period of capital market and economic growth. We conjecture that the merger activity was particularly strong during that bull market period as a result of the upcoming introduction of the Europe's common currency. In 2008, in the midst of the financial crisis, twelve deals were identified, while very little activity is observed at the two tails of our sample.

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[5] Hagendorff et al. (2008) claim that low investor protection environments suffer from increased agency conflict thus representing less liquid markets for corporate control. In high shareholder protection environments bidding conditions are more competitive, bid premiums are necessarily higher and consequently bidders' stock experiences losses.

[6] Deal values of over £1 billion.

[7] These are investment, commercial, savings and cooperative banks.

Table 1: Distribution of Domestic Bank M & as Per Year

Year	Number of Domestic M&As	%
1996	1	0.85
1998	7	5.93
1999	10	8.47
2000	15	12.71
2001	16	13.56
2002	16	13.56
2003	9	7.63
2004	4	3.39
2005	9	7.63
2006	8	6.78
2007	8	6.78
2008	12	10.17
2009	1	0.85
2010	2	1.69
Total	118	100.0%

The geographic composition of the sample is given by Table 2. Italy, having experienced strong financial market consolidation, appears at the top of our list of domestic Ms&As with 36 deals, followed by Germany with 26 deals. Greece and Spain are in third and fourth place, respectively, while the rest of M&A deals are scattered across the rest of European countries.

Table 2: Distribution of Domestic Bank M& as per Country

Country	No. of obs.	%
UK	4	3.4
Italy	36	30.5
France	8	6.8
Spain	11	9.3
Germany	26	22.1
Portugal	4	3.4
Sweden	2	1.7
Denmark	5	4.2
Greece	13	11.0
Switzerland	5	4.2
Cyprus	2	1.7
Norway	2	1.7
Total	118	100.0%

Table 3 provides descriptive statistics for our sample of bidder banks one year prior to domestic M&A announcements. Average total assets exceed €350 million, while liabilities in turn slightly lag this threshold. On the other hand, the mean ROA is lower than 1% and the mean ROE just above 10%. In addition, the average net profit margin is 15.98%. Total debt to total capitalization is calculated at 80.32%, while total loans to total assets are just below 65%.

Table 3: Descriptive Statistics for Bidders One Year before the Announcement of Domestic Ms&As

	Mean	Median	St. Deviation	Max	Min
Net income (in millions)	2,296.54	76.20	11,231.90	73,283.00	-743.89
Total assets (in millions)	366,326.53	21,275.71	1,899,562.79	13,645,082.00	222.35
Total equity (in millions)	22,930.72	1,003.64	123,486.87	898,804.00	43.26
Total liabilities (in millions)	343,333.73	20,312.15	1,776,276.88	12,746,277.00	5.63
ROA	0.73	0.56	0.87	5.41	-1.63
ROE	10.82	10.09	10.21	66.36	-29.67
Profit Margin	15.98	14.55	15.62	73.50	-47.99
Total Loans to Total Assets	64.49	62.18	16.21	95.55	22.92
Total Debt to Total Capitalization	80.32	85.80	19.47	98.63	0.00

To analyze investor reactions to domestic bank M&As, we employ the market model in order to measure abnormal returns (ARs) around an event window of 21 days (-10, +10). The market model presupposes a linear relation between the returns of the company's stocks and the market benchmark portfolio:

$$R_{it} = a_i + \beta_i R_{mt} + \varepsilon_{it} \qquad (1)$$

For each stock, we calculate abnormal returns, AR, using the market model, based on the parameters we have estimated for the period t=−250 to t=−11:

$$AR_{it} = R_{it} - [\hat{a}_i + \hat{\beta}_i R_{mt}] \qquad (2)$$

For robustness purposes we also use the market-adjust returns model. This model assumes an alpha coefficient of zero and beta equal to unity, thus being expressed as follows:

$$AR_{it} = R_{it} - R_{mt} \qquad (3)$$

We calculate cumulative abnormal returns (CAR) for different sub-periods during the 21 trading days (-10, +10) symmetrical to the M&A announcement date (day 0). The null hypothesis presumes the event should have no impact on the mean or on the variance of the two involved parties stock. We use the standardized cumulative abnormal return (SCAR) (Bessler and Murtagh, 2002; Nnadi and Tanna, 2013).

$$SCAR_{t(event)} = \frac{CAR_{t(event)}}{\sigma_{i(event)}} \qquad (4)$$

Apart from daily average abnormal returns (AAR) we set out our calculations of cumulative average abnormal returns (CAARs) for shorter event windows of 2-days, ($t=−1$ to t=0), 3-days ($t=−1$ to t=+1), 5-days (t=-5 to t=-1 as well as t=+1 to +5), 11-days ($t=−5$ to t=+5 as well as t=-10 to t=-1 and t=+1 to t=+10) and 21-days ($t=−10$ to t=+10), where t=0 is the announcement date. The CAR is the sum of the abnormal returns for each separate bank during that event window. We assume that, due to the use of a 240-day estimation window (-250, -11), the standard normal distribution provides a reasonable approximation of the distribution of the SCARs. Lastly, we test the null hypothesis for every security comprising our data set within each event. We hypothesize that a cross-section average CAR that is positive and significant, signals that the market assumes that the M&A creates value for shareholders and that investors view the benefits of the deal as outweighing its weaknesses.

4. Empirical Results

4.1 The Short-Term Price Impact of M& as on Acquirer Banks

Table 4 depicts the daily AARs and the CAARs ten days before and after the announcement of an M&A deal, for the banks constituting our data set. On average, we find moderate impact on bidder bank prices around the announcement date.

In specific, the average AR is -0.138% on the announcement date, as calculated by the market-adjusted model, and -0.133% as found from the market model. However, the results are not statistically significant at any conventional level. These results, in line with Beltratti and Paladino (2013), suggest the absence of any positive short-term price reaction for bidder banks.

Table 4: Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) Of Acquirers around the M&A Announcement Date for the Sample of Domestic M&As

	Market Model			Market-adjusted		
Day	AAR %	t-statistic	CAAR%	AAR %	t-statistic	CAAR%
-10	-0.148	-0.58	-0.148	-0.135	-0.69	-0.135
-9	-0.185	-0.72	-0.333	-0.194	-1.32	-0.330
-8	0.301	1.18	-0.031	0.166	0.77	-0.164
-7	0.626**	2.45	0.595	0.593***	3.31	0.429
-6	-0.248	-0.97	0.347	-0.248	-1.59	0.182
-5	0.144	0.56	0.491	0.247	1.50	0.428
-4	0.265	1.04	0.756	0.468***	2.94	0.896
-3	-0.070	-0.27	0.686	-0.092	-0.55	0.804
-2	0.089	0.35	0.775	0.025	0.12	0.829
-1	0.106	0.42	0.881	0.206	1.16	1.035
0	-0.133	-0.52	0.748	-0.138	-0.74	0.897
1	-0.095	-0.37	0.653	-0.192	-0.52	0.705
2	-0.089	-0.35	0.564	-0.169	-0.92	0.536
3	-0.134	-0.52	0.430	-0.208	-1.10	0.328
4	0.390	1.53	0.820	0.339*	1.81	0.667
5	-0.492*	-1.92	0.328	-0.372*	-1.71	0.295
6	-0.245	-0.96	0.084	-0.317	-1.54	-0.022
7	-0.134	-0.52	-0.050	-0.224	-1.19	-0.246
8	0.007	0.03	-0.042	-0.011	-0.05	-0.257
9	-0.237	-0.93	-0.279	-0.213	-1.15	-0.471
10	-0.369	-1.44	-0.648	-0.326	-1.33	-0.797
Period	CAAR %	t-statistic		Period	CAAR %	t-statistic
(-10 -1)	0.881	1.10		(-10 -1)	1.035	1.35
(-5 -1)	0.534	0.95		(-5 -1)	0.853	1.58
(-1 0)	-0.027	-0.08		(-1 0)	0.068	0.20
(-10 +10)	-0.648	-0.56		(-10 +10)	-0.797	-0.72
(-5 +5)	-0.018	-0.02		(-5 +5)	0.114	0.14
(-1 +1)	-0.122	-0.28		(-1 +1)	-0.124	-0.30
(+1 +5)	-0.419	-0.74		(+1 +5)	-0.602	-1.11
(+1 +10)	-1.396*	-1.75		(+1 +10)	-1.693**	-2.21

Notes: Average abnormal returns are calculated using the market model as follows: $AR_{i,t} = R_{i,t} - (\hat{a}_i + \hat{\beta}_i R_{m,t})$ where $R_{i,t}$ is the return of firm i on day t and $R_{m,t}$ is the market return on day t. Average abnormal returns are calculated using the market-adjusted model as follows: $AR_{i,t} = R_{i,t} - R_{m,t}$.

***, ** and * denote statistical significance at 1%, 5% and 10%, respectively.

When examining CAARs, the previous assertions still hold. CAARs for the time intervals (-10, -1) and (-5, -1) are positive at 1.035% and 0.853% respectively for the market-adjusted model and 0.881% and 0.534% when the market model is used. While the above are non-significant, noteworthy are the CAARs on the post-event window. When considering time horizons starting one day after the announcement day and ending five or ten days after the announcement day (+1, +5 and +1, +10) we find significant negative excess returns for the 10 day event window (+1, +10). CAARs are equal to -1.396% for the market model and -1.693% for the market-adjusted model. Our estimations bear significance at the 10% and 5% significance level, respectively.

These results are consistent with previous findings on domestic financial institutions' M&As, where markets priced poorly acquirer stocks after the announcement date (Campa and Hernando, 2006). Moreover, we can induce that markets gradually, within this 10-day event window, decode the negative signal for the acquirer, arising from the M&A process already initiated. Also notably this result allows us to infer that the well documented information leakage phenomenon (i.e. pre-announcement positive abnormal returns due to rumours) for bank M&A deals (Cybo-Ottone and Murgia, 2000) is not observed in our data. The results for the 3-day CAAR (-1, +1) are equal to -0.122% and -0.124% for the two models employed, complement those of Rad and Van Beek (1999) who also find a slightly negative CAAR of 0.29% around the same event window for a sample of domestic bank M&As in the European Union area. They are also consistent with Campa and Hernando (2006) and Ekkayokkaya et al. (2009) who report similar results. In contrast, Ismail and Davidson (2000) and Beitel et al. (2004) find a mean CAR of 0.66% and 0.62% respectively. Our interpretation of this finding is consistent with that of Cybo-Ottone and Murgia (2000) who asserted that markets do not embrace the market overlap hypothesis any longer.[8] Furthermore, costly integration processes in domestic deals involving dissimilar institutions in terms of loan, earnings, cost, deposit and size strategies are further considerations affecting bidder bank shareholders perception (Altunbas and Marques, 2008). Instead market participants examine the prospects of the deal from the bidder's perspective on a case by case basis, thus the reserved reaction around the announcement date emanates from the initial cautiousness towards the implications of the deal.

The lack of positive abnormal returns for bidder stocks is consistent with the misevaluation hypothesis, whereby acquirers are overpriced (John et al., 2013). We further investigate the shareholder value effects of domestic M&A deals in the banking sector by splitting our sample of bidding banks into those bearing below mean return on equity (ROE) and the ones with above mean ROE (13.66%). According to the inefficient management hypothesis, M&As can create shareholder value if efficient banks acquire inefficient banks and succeed in conveying their efficiency (Rad and Van Beek, 1999). Using the return on equity (ROE) as a proxy for efficiency, we hypothesize that a higher ROE implies higher bank efficiency. In this respect, we form two discrete portfolios, the first consisting of above mean ROE acquirer banks and the second group the below mean ROE ones. To form the two sub-samples we use as benchmark the ROE of the year of announcement (year 0).

Table 5 shows the estimated results for acquirer banks belonging to the sub-sample of high ROE. Overall, results on CAARs for higher ROE acquirers depict non-significant abnormal returns throughout the estimation period. This finding is partially contrasting our derived negative and significant returns in the (+1, +10) event window for the sample of bidders irrespective of ROE, while significant negative returns around the event announcement are found in a sample of both cross-border and domestic bank M&As (Rad and Van Beek, 1999). However, we should stress the fact that our results, in the present context, are still negative, but not significant. On the post-event window our sample furnishes negative returns of -0.939% and -1.077%, when using the market model and the market-adjusted model, respectively. For smaller post-event periods (+1, +5), CAARs are marginally positive (0.072%) when using the market-adjusted model, whereas returns become negative with the use of the market model (-0.016%). Within the pre-event short-term time period CAARs are equal to 0.897% and 0.802% for the (-10, -1) and (-5, -1) event windows, whereas the market-adjusted model offers slightly superior results of 1.006% and 1.067% for the two event windows analyzed. The minor opportunities for an investor to exploit the information power of the event announcement could also be attributed to the lack of inside information, as indicated previously for the total sample. Therefore, the efficient market hypothesis of Fama et al. (1969) seems to hold.

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[8] According to the market overlap hypothesis when involved parties in a deal have a larger geographic overlap in their operations, improvements in productive efficiency are more probable.

Table 5: Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) of Acquirers with high Return on Equity (ROE)

ROE>13.66 Day	Market Model AAR %	t-statistic	CAAR%	Market-adjusted AAR %	t-statistic	CAAR%
-10	-0.186	-0.61	-0.186	-0.159	-0.53	-0.159
-9	-0.472	-1.55	-0.657	-0.608***	-2.80	-0.767
-8	0.394	1.30	-0.264	0.366	1.41	-0.400
-7	0.809***	2.66	0.545	0.904***	3.54	0.504
-6	-0.450	-1.48	0.095	-0.565*	-1.89	-0.062
-5	0.156	0.51	0.251	0.096	0.46	0.034
-4	0.494	1.63	0.745	0.771***	3.19	0.805
-3	-0.009	-0.03	0.736	-0.065	-0.26	0.740
-2	-0.028	-0.09	0.708	-0.137	-0.50	0.602
-1	0.190	0.62	0.897	0.403	1.46	1.006
0	-0.162	-0.53	0.735	-0.237	-0.68	0.768
1	-0.387	-1.27	0.349	-0.428	-1.18	0.340
2	0.032	0.10	0.381	-0.015	-0.07	0.326
3	-0.109	-0.36	0.272	-0.221	-0.75	0.105
4	0.311	1.02	0.583	0.275	0.88	0.380
5	0.137	0.45	0.720	0.460	1.58	0.840
6	-0.368	-1.21	0.352	-0.331	-1.20	0.510
7	-0.079	-0.26	0.273	-0.095	-0.36	0.415
8	-0.166	-0.55	0.107	-0.291	-0.83	0.124
9	-0.250	-0.82	-0.143	-0.162	-0.80	-0.038
10	-0.060	-0.20	-0.203	-0.270	-0.98	-0.309

Period	CAAR %	t-statistic		Period	CAAR %	t-statistic
(-10 -1)	0.897	0.93		(-10 -1)	1.006	0.89
(-5 -1)	0.802	1.18		(-5 -1)	1.067	1.34
(-1 0)	0.028	0.07		(-1 0)	0.166	0.33
(-10 +10)	-0.203	-0.15		(-10 +10)	-0.309	-0.19
(-5 +5)	0.625	0.62		(-5 +5)	0.902	0.76
(-1 +1)	-0.359	-0.68		(-1 +1)	-0.262	-0.42
(+1 +5)	-0.016	-0.02		(+1 +5)	0.072	0.09
(+1 +10)	-0.939	-0.98		(+1 +10)	-1.077	-0.95

Notes for table 5: Average abnormal returns are calculated using the market model as follows: $AR_{i,t} = R_{i,t} - (\hat{a}_i + \hat{\beta}_i R_{m,t})$ where $R_{i,t}$ is the return of firm i on day t and $R_{m,t}$ is the market return on day t. Average abnormal returns are calculated using the market-adjusted model as follows: $AR_{i,t} = R_{i,t} - R_{m,t}$. ***, ** and * denote statistical significance at 1%, 5% and 10%, respectively.

Table 6 reports the extracted AARs and CAARs for the period spanning 10 days before and 10 days after the announcement of the M&A deal between two banks operating in the same country. This sub-sample contains banks bearing a ROE smaller than 13.66% in the year of deal announcement. When comparing the above results with those of Table 5, we deduce that for the sample of acquirer banks with low ROE the market reaction is more moderate in the eve of the M&A announcement. This is also evident from the CAAR (-1, +1) which is 0.138%, whereas for the sub-sample of high ROE acquirer banks is equal to -0.079%. From the above findings we can assert that the market reaction to domestic bank M&As is stronger and negative in the case of high ROE acquirers vis-à-vis bidders with low ROE, where returns are positive. Both figures though show no statistical significance. However, we conjecture by this result that investors, at least at announcement date, might be viewing the upcoming M&A of two domestically operating banks as an opportunity for low ROE bidder banks to increase their profitability through this process. For high ROE bidder banks the M&A process is viewed as potentially threatening to their overall profitability and consequently to their future ROE as well.

This apparent reluctance of investors to favour M&As for highly profitable institutions is consistent with Lozano-Vivas et al. (2011) who find that in within-border bank M&As, acquirer banks tend to be larger and more efficient than target banks. However, this initial positive reaction of low ROE bidder banks shareholders is significantly weakened, if not overturned completely, over short-term post-event examination horizons. During the 10-day post-event period CAARs of low ROE banks (-2.125%) are more notably negative and significant at the 5% significance level when applying the market-adjusted model while the high ROE banks' corresponding result is -1.077%. Analogous strongly negative CAARs for the sample of low ROE banks are exhibited in the (-5, +5) period since we report a CAAR of -0.759% with the use of the market model whereas from high ROE banks are the upper tail of the distribution of returns with a positive but not significant 0.625% return. Relative uncertainty in our derived results is further underlined by the finding that low ROE bidder banks experience increasing price losses in the days after the announcement of the deal, as evident from the 5-day post-event CAAR of -0.898% and -1.182% with the use of the market model and the market-adjusted model, respectively. On the contrary, in the case of high ROE acquirer banks the short term post-event period produces excess returns equal to zero (-0.016% 5-day CAAR with the use of the market model and 0.072% when using the market-adjusted model), as someone can see at the table 6.

Table 6: Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) of Acquirers with low Return on Equity (ROE) for the Sample of Domestic M& as

ROE<13.66	Market Model			Market-adjusted		
Day	AAR %	t-statistic	CAAR%	AAR %	t-statistic	CAAR%
-10	-0.105	-0.27	-0.105	-0.109	-0.44	-0.109
-9	0.140	0.36	0.035	0.160	0.23	0.052
-8	0.199	0.51	0.234	0.155	0.66	0.207
-7	0.416	1.06	0.650	0.434	0.96	0.641
-6	-0.014	-0.04	0.635	-0.096	-0.35	0.545
-5	0.131	0.33	0.766	0.114	1.60	0.659
-4	0.012	0.03	0.778	0.033	0.68	0.691
-3	-0.135	-0.35	0.643	-0.122	-0.54	0.569
-2	0.215	0.55	0.858	0.201	0.65	0.770
-1	0.021	0.05	0.880	0.005	0.02	0.775
0	-0.105	-0.27	0.774	-0.139	-0.43	0.636
1	0.222	0.57	0.996	0.064	0.10	0.700
2	-0.232	-0.59	0.764	-0.251	-1.19	0.449
3	-0.163	-0.42	0.601	-0.192	-0.84	0.257
4	0.478	1.22	1.079	0.410	1.10	0.666
5	-1.203***	-3.08	-0.124	-1.212**	-2.27	-0.546
6	-0.108	-0.28	-0.232	-0.103	-0.97	-0.649
7	-0.190	-0.49	-0.422	-0.160	-1.32	-0.808
8	0.191	0.49	-0.231	0.287	0.93	-0.521
9	-0.222	-0.57	-0.453	-0.270	-0.85	-0.791
10	-0.696*	-1.78	-1.149	-0.698	-1.25	-1.489
Period	CAAR %	t-statistic		Period	CAAR %	t-statistic
(-10 -1)	0.880	0.71		(-10 -1)	0.775	0.73
(-5 -1)	0.244	0.28		(-5 -1)	0.230	0.31
(-1 0)	-0.084	-0.15		(-1 0)	-0.134	-0.28
(-10 +10)	-1.149	-0.64		(-10 +10)	-1.489	-0.97
(-5 +5)	-0.759	-0.59		(-5 +5)	-1.091	-0.98
(-1 +1)	0.138	0.20		(-1 +1)	-0.070	-0.12
(+1 +5)	-0.898	-1.03		(+1 +5)	-1.182	-1.57
(+1 +10)	-1.924	-1.56		(+1 +10)	-2.125**	-2.00

Notes: Average abnormal returns are calculated using the market model as follows: $AR_{i,t} = R_{i,t} - (\hat{a}_i + \hat{\beta}_i R_{m,t})$

where $R_{i,t}$ is the return of firm i on day t and $R_{m,t}$ is the market return on day t. Average abnormal returns are calculated using the market-adjusted model as follows: $AR_{i,t} = R_{i,t} - R_{m,t}$.

***, ** and * denote statistical significance at 1%, 5% and 10%, respectively.

In the pre-M&A period (-10, -1 and -5, -1), CAARs for high ROE bidders are close to 1% by the two models, while those of low ROE bidders are much smaller, though all statistically insignificant at any conventional level. Therefore, we can assert that information leakages were very limited before the official announcement of M&A deals.

All in all, the subsamples analysed exhibit differences that do not allow us to make clear-cut inferences. During the 21-day event window, as well as most other smaller event windows, losses are significantly larger for the sample of low ROE bidder banks compared to those of high ROE banks. Therefore, high ROE acquirer banks' price is less vulnerable to the short-term turbulence caused by the announcement of an M&A transaction looming ahead. However, around the announcement of the transaction high ROE banks exhibit losses, while low ROE banks depict marginal profits when utilizing the market model. Nonetheless, since the 10-day post-event period furnishes statistically significant results for both the full sample results and the low ROE bidder banks we can assume that our most robust finding is that of significantly large negative abnormal returns in the (+1, +10) event window, which are more notable in the case of low ROE banks signalling a cautious market reaction on the prospects of increasing profitability in the future. Given that, as Vander Vennet (2002) points out, before M&A transactions acquirers outperform target banks, shareholders of low profitability bidder banks might question the profit improvement service that could be offered by the M&A of an already below average profitability institution with an even less profitable target.

4.2 The Short-Term Price Impact of M& as on Target Banks

Table 7 presents the results for the short-term M&A announcement impact on the price of target banks. In line with the relevant literature on M&A announcements, we find a positive and significant abnormal return on the date of an M&A news release. More specifically, an AAR of 1.146% is found by the market model and a 0.953% by the market-adjusted model that are significant at the 1% and 10% level, respectively. Statistically significant negative abnormal returns, though smaller in magnitude than the previous two-day gains, are found on day 2, which could be interpreted as temporarily reaping the benefits of the short-term price upsurge after the deal announcement. When investigating short-term CAARs statistically insignificant abnormal returns are observed for the two post-event windows (+1, +10 and +1, +5), implying a gradual absorption of the M&A news from the market. On the contrary, when calculating the short-term CAARs around the announcement date we find positive and statistically significant market reaction.

The two-day CAAR (-1, 0) yields a 1.505% abnormal return for the market model and 1.293% for the market-adjusted model. Cumulative abnormal returns are even greater in the case of the three-day CAAR (-1, +1), where the market model delivers a positive AAR of 2.273% and the market-adjusted model slightly lower at 2.017%, significant at the 1% level. However, Campa and Hernando (2006), derive even higher CAARs of 2.99% for the same event window (see table 7. All in all, the above results confirm prior studies on possible target stock gains from M&A announcements (Hagendorff et al., 2008), which by far verify that domestic bank M&As elicit positive abnormal returns opportunities for target stockholders. Furthermore, our results do not support the view that target returns appear to be shrinking over time because of the unwillingness of bidders to pay high premiums in competitive environments in which profitability margins are becoming smaller (Ismail and Davidson, 2005). This could be attributed to the relatively balanced composition of our sample as addressed in Section 3.

Table 7: Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) of Target Banks in Domestic M& as

	Market Model			Market-adjusted		
Day	AAR %	t-statistic	CAAR%	AAR %	t-statistic	CAAR%
-10	0.188	0.64	0.188	0.085	0.40	0.085
-9	-0.257	-0.87	-0.069	-0.410	-0.44	-0.325
-8	0.104	0.35	0.035	0.384	1.44	0.059
-7	0.029	0.10	0.064	-0.100	-0.41	-0.041
-6	0.233	0.79	0.297	0.235	1.11	0.194
-5	-0.124	-0.42	0.173	-0.129	-0.61	0.065
-4	0.397	1.35	0.570	0.402	1.54	0.467
-3	0.044	0.15	0.614	0.184	0.66	0.651
-2	0.105	0.36	0.719	0.276	0.77	0.927
-1	0.358	1.22	1.077	0.341	1.19	1.267
0	1.146***	3.90	2.224	0.953*	1.81	2.220
1	0.768***	2.61	2.992	0.724	1.21	2.944
2	-0.545*	-1.85	2.448	-0.562***	-2.76	2.382
3	-0.195	-0.66	2.252	-0.272	-1.08	2.110
4	0.005	0.02	2.258	-0.088	-0.38	2.022
5	0.216	0.73	2.473	0.355	1.44	2.377
6	-0.329	-1.12	2.144	-0.512**	-2.39	1.865
7	0.094	0.32	2.238	0.345	1.63	2.210
8	-0.243	-0.83	1.995	-0.317	-1.38	1.894
9	-0.343	-1.17	1.652	-0.220	-0.89	1.674
10	-0.281	-0.96	1.371	-0.278	-1.10	1.396
Period	CAAR %	t-statistic		Period	CAAR %	t-statistic
(-10 -1)	1.077	1.17		(-10 -1)	1.267	1.18
(-5 -1)	0.781	1.20		(-5 -1)	1.074	1.41
(-1 0)	1.505***	3.66		(-1 0)	1.293***	2.69
(-10 +10)	1.371	1.03		(-10 +10)	1.396	0.90
(-5 +5)	2.177**	2.26		(-5 +5)	2.183*	1.94
(-1 +1)	2.273***	4.51		(-1 +1)	2.017***	3.42
(+1 +5)	0.250	0.38		(+1 +5)	0.157	0.21
(+1 +10)	-0.853	-0.93		(+1 +10)	-0.824	-0.77

Notes: Average abnormal returns are calculated using the market model as follows: $AR_{i,t} = R_{i,t} - (\hat{a}_i + \hat{\beta}_i R_{m,t})$

where $R_{i,t}$ is the return of firm i on day t and $R_{m,t}$ is the market return on day t. Average abnormal returns are calculated using the market-adjusted model as follows: $AR_{i,t} = R_{i,t} - R_{m,t}$.

***, ** and * denote statistical significance at 1%, 5% and 10%, respectively.

In an attempt to assess the heterogeneous market response of target banks, we probe deeper into the shareholder value effects arising from M& as by dividing our sample of target banks into those that have a ROE below the mean value in the year of announcement (year 0) and those that have a ROE above the mean. Our results allow us to infer that investors favour high profitability targets since the computed CAARs at announcement date are significantly greater both with regard to the overall sample and especially when compared with the abnormal returns of low ROE targets. More specifically, the first sub-sample includes target banks with ROE>6.71% as depicted in Table 8 (at the next page) . When observing the collective abnormal returns for the period preceding the event day, we find positive and statistically significant abnormal returns for the (-10, -1) period amounting to 1.559% and 1.843% for the market and market-adjusted model, respectively.

For the periods subsequent to the announcement of the deal, abnormal returns are still positive, in partial contrast to the full target dataset results outlined in Table 7. This result shows a stronger reaction from the market on the news of a target bank with high ROE merging, presumably implying high expectations from the market for the future profitability of an already highly profitable institution. Since Vander Vennet (2002) reports that in domestic bank M&As targets merge with more profitable counterparts, the likelihood that the profitability of the merged institution will rise is high. In addition, this finding is totally contradicting to the negative post-event results found for the sample of high ROE bidder banks. Nonetheless, the pertinent literature supports our evidence (Hagendorff et al., 2008). In addition, it is expected that highly performing targets could be subject to bidding contests between alternative acquirers (Hagendorff et al., 2012).

Table 8: Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) of Targets with high Return on Equity (ROE) Around the Announcement Date of the Domestic M&A deal

ROE>6.71	Market Model			Market-adjusted		
Day	AAR %	t-statistic	CAAR%	AAR %	t-statistic	CAAR%
-10	0.343	0.92	0.343	0.192	0.54	0.192
-9	0.319	0.85	0.662	0.355	1.08	0.547
-8	0.134	0.36	0.795	0.110	0.43	0.657
-7	0.087	0.23	0.882	0.052	0.20	0.709
-6	0.336	0.90	1.218	0.176	0.40	0.885
-5	-0.263	-0.70	0.955	-0.012	-0.05	0.872
-4	0.405	1.09	1.360	0.534	1.49	1.406
-3	-0.030	-0.08	1.330	-0.030	-0.08	1.376
-2	0.468	1.25	1.798	0.552	0.79	1.927
-1	-0.239	-0.64	1.559	-0.085	-0.26	1.843
0	0.652*	1.75	2.211	0.574*	1.92	2.417
1	1.081***	2.89	3.292	1.103**	2.50	3.520
2	-0.330	-0.88	2.961	-0.370	-1.23	3.150
3	-0.264	-0.71	2.698	-0.415	-1.08	2.735
4	0.200	0.54	2.898	0.013	0.04	2.748
5	-0.230	-0.62	2.668	-0.106	-0.36	2.642
6	0.029	0.08	2.697	0.098	0.68	2.740
7	0.194	0.52	2.891	0.189	1.05	2.929
8	0.147	0.39	3.038	0.116	1.37	3.045
9	-0.514	-1.37	2.524	-0.572	-1.44	2.473
10	-0.247	-0.66	2.278	-0.221	-0.93	2.252
Period	CAAR %	t-statistic		Period	CAAR %	t-statistic
(-10 -1)	1.559**	2.32		(-10 -1)	1.843*	1.78
(-5 -1)	0.341	0.41		(-5 -1)	0.958	1.31
(-1 0)	0.413	0.78		(-1 0)	0.489	1.06
(-10 +10)	2.278**	2.33		(-10 +10)	2.252**	2.50
(-5 +5)	1.450	1.17		(-5 +5)	1.757	1.62
(-1 +1)	1.494**	2.31		(-1 +1)	1.592***	2.81
(+1 +5)	0.457	0.55		(+1 +5)	0.225	0.31
(+1 +10)	0.067	0.06		(+1 +10)	-0.165	-0.16

Notes: Average abnormal returns are calculated using the market model as follows: $AR_{i,t} = R_{i,t} - (\hat{a}_i + \hat{\beta}_i R_{m,t})$ where $R_{i,t}$ is the return of firm i on day t and $R_{m,t}$ is the market return on day t. Average abnormal returns are calculated using the market-adjusted model as follows: $AR_{i,t} = R_{i,t} - R_{m,t}$.

***, ** and * denote statistical significance at 1%, 5% and 10%, respectively.

Table 8 shows CAARs that are smaller in magnitude compared to those of the full sample of targets. However, when analyzing low ROE target banks (Table 9) we see that CAARs around the announcement date for this sub-sample are relatively higher than those of the full sample and those of the high ROE sub-sample. High ROE banks are definitely efficient in exploiting the profitability opportunities created by their shareholders' equity. Therefore, in the short-run, the news of an M&A deal from the point of view of a target high profitability bank is conceived with relative scepticism from market participants. However, these reasonable doubts are not transformed into a sell side attitude. A reason mitigating possible reservations of high ROE target banks shareholders could be the observed improvements in target banks performance after M&As as it has been documented (Campa and Hernando, 2006). As indicated previously, in the post announcement short-term period, the market appears to incorporate in the stock price the future opportunities arising for the soon to be merged target bank. Still, CAARs for high ROE target banks, verify the indubitable conclusion of short-term profit opportunities arising for target banks stockholders around announcement dates. The 3-day CAARs are positive (1.494% and 1.592% from the two models) and statistically significant at the 5% and 1% level, respectively. For the target banks exhibiting below mean ROE, AARs are slightly higher compared with the sample of above mean ROE. On the announcement date, the AAR is equal to a statistically significant 0.980%, as computed by the market model, whereas the market-adjusted model yields an AAR of 0.735%.

Table 9: Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) of Targets with low Return on Equity (ROE) Around the Announcement date of the Domestic M&A deal

ROE<6.71	Market Model			Market-adjusted		
Day	AAR %	t-statistic	CAAR%	AAR %	t-statistic	CAAR%
-10	-0.160	-0.18	-0.160	-0.189	-0.89	-0.189
-9	-1.769**	-2.02	-1.929	-1.768*	-1.84	-1.958
-8	0.189	0.22	-1.740	0.233	0.29	-1.724
-7	-0.837	-0.95	-2.577	-0.919	-1.45	-2.644
-6	0.493	0.56	-2.085	0.364	1.05	-2.280
-5	0.126	0.14	-1.958	0.206	0.33	-2.074
-4	0.061	0.07	-1.897	0.269	0.54	-1.806
-3	0.134	0.15	-1.763	-0.061	-0.06	-1.866
-2	-1.047	-1.19	-2.810	-0.984	-0.87	-2.851
-1	-0.632	-0.72	-3.442	-0.637	-1.21	-3.487
0	0.980***	2.92	-2.583	0.735***	2.61	-2.752
1	1.233	1.41	-1.350	1.531	0.73	-1.221
2	-1.266	-1.44	-2.616	-1.350***	-2.77	-2.571
3	-1.160	-1.32	-3.776	-0.956	-1.17	-3.528
4	-0.405	-0.46	-4.180	-0.374	-1.12	-3.902
5	-0.041	-0.05	-4.221	-0.233	-0.47	-4.134
6	-0.502	-0.57	-4.723	-0.516	-1.12	-4.651
7	-0.011	-0.01	-4.734	-0.399	-0.50	-5.050
8	-0.862	-0.98	-5.596	-0.864	-1.26	-5.913
9	0.363	0.41	-5.233	0.386	0.58	-5.527
10	0.855	0.97	-4.378	0.680	0.75	-4.847
Period	CAAR %	t-statistic		Period	CAAR %	t-statistic
(-10 -1)	-3.442	-1.24		(-10 -1)	-3.487	-1.52
(-5 -1)	-1.357	-0.69		(-5 -1)	-1.207	-0.74
(-1 0)	0.227	0.18		(-1 0)	0.098	0.10
(-10 +10)	-4.378	-1.09		(-10 +10)	-4.847	-1.46
(-5 +5)	-2.136	-0.73		(-5 +5)	-1.855	-0.77
(-1 +1)	1.461	0.96		(-1 +1)	1.629	1.30
(+1 +5)	-1.638	-0.83		(+1 +5)	-1.382	-0.85
(+1 +10)	-1.795	-0.65		(+1 +10)	-2.095	-0.91

Notes: Average abnormal returns are calculated using the market model as follows: $AR_{i,t} = R_{i,t} - (\hat{a}_i + \hat{\beta}_i R_{m,t})$ where $R_{i,t}$ is the return of firm i on day t and $R_{m,t}$ is the market return on day t. Average abnormal returns are calculated using the market-adjusted model as follows: $AR_{i,t} = R_{i,t} - R_{m,t}$.

***, ** and * denote statistical significance at 1%, 5% and 10%, respectively.

Looking at the 3-day event window (-1, +1), we find positive, however, non-significant CAARs, contrary to the full sample and the high ROE sub-sample results, where returns were even greater in magnitude and statistically significant. Interestingly, pre-announcement short-term CAARs of 10-days are highly negative and significant as computed from the market-adjusted model. These results underline the existence of forces that make the M&A process for low ROE target banks not attractive to the investment community (Ismail and Davidson, 2005). This information leakage process preceding the event announcement impacts negatively on low ROE banks shareholders that possibly fear low bid premiums being offered for their slow growth stocks. It seems, however, that the initial negative shock is gradually mitigated as information on the possible bid announcement is gradually absorbed from the market. Finally, another noteworthy difference between low and high ROE targets is the heterogeneous market reaction in the post-event period. Specifically, high ROE target banks still experience positive price appreciations up to 10 days as displayed by the CAAR. Contrarily, low ROE target banks undergo price pressures 10 days in the aftermath of the M&A deal announcement. The above results confirm that the event of the M&A brings about stronger value effects to target banks experiencing high profitability one year before the announcement compared to those with milder bank profitability.

Table 10 summarizes our empirical findings, offering an overview of the results for the whole sample of acquirers and targets. These results underline our robust finding of positive and significant short-term returns at announcement date for our sample of target banks, in accordance with Hagendorff et al. (2008) who came up with similar results for a closely matching sample of EU deals. The apparent tendency of shareholders to opt for high efficiency stocks in the midst of an M&A transaction under way, holds for targets and bidders alike. In this respect, notably negative and significant returns are found on the short-term post-announcement event window for the sample of bidders in contrast with Beltratti and Paladino (2013) that found zero abnormal returns for a similar sample of M&As. The reported by the literature dissimilarities in acquirer and target banks' efficiency (Lozano-Vivas et al., 2011), could be a driving force explaining these striking differences in abnormal returns reported for banking institutions with profoundly different, prior to the M&A, profitability. This positive relationship between abnormal returns and profitability is in line with Beltratti and Paladino (2013) who report larger abnormal returns for more efficient banks.

Table 10: Collective Information for Cumulative Average Abnormal Returns (CAAR) of Acquirers and Targets around the Announcement date of the Domestic M&A deal

Period	Total sample Market Model	Market-Adjusted	High ROE Market Model	Market-Adjusted	Low ROE Market Model	Market-Adjusted
(-10 -1)	+	+	+	+	+	+
(-5 -1)	+	+	+	+	+	+
(-1 0)	-	+	+	+	-	-
(-10 +10)	-	-	-	-	-	-
(-5 +5)	-	+	+	+	-	-
(-1 +1)	-	-	-	-	+	-
(+1 +5)	-	-	-	+	-	-
(+1 +10)	- *	- **	-	-	-	- **

Targets						
Period	Total sample Market Model	Market-Adjusted	High ROE Market Model	Market-Adjusted	Low ROE Market Model	Market-Adjusted
(-10 -1)	+	+	+ **	+ *	-	-
(-5 -1)	+	+	+	+	-	-
(-1 0)	+ ***	+ ***	+	+	+	-
(-10 +10)	+	+	+ **	+ **	-	- *
(-5 +5)	+ **	+ *	+	+	-	-
(-1 +1)	+ ***	+ ***	+ **	+ ***	+	+
(+1 +5)	+	+	+	+	-	-
(+1 +10)	-	-	+	-	-	-

Notes: + denotes positive abnormal returns and – denotes negative abnormal returns. *, ** and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

4.3 Factors Explaining Domestic Bank M&A Value Creation Effects

We investigate the determinants of the value creation effects surrounding domestic bank M&As using regression analysis and an array of explanatory variables that assist us in interpreting the forces behind abnormal returns for the group of target banks. To accommodate this, we use AARs on the announcement date as dependent variable and a set of control variables including systematic risk (beta) calculated by the market model in the estimation period (-250, -11), return on assets (ROA), total assets (in logarithm), net income (in logarithm), total loans to total assets and long-term debt to equity, one year prior to the M&A deal. Untabulated results from the correlation matrix show that our model is free of the multicollinearity problem. Following this approach we derive statistically significant results for control variables pertinent to financial institutions operations, as calculated for one year prior to the M&A deal. Table 11[9] includes three models that we identified as the ones bearing the highest explanatory power for the derived AARs for the sample of target banks. All results reported are statistically significant. More specifically, model 1 shows that ROA exerts a positive impact on abnormal returns. This can be interpreted as high ROA target banks attracting a positive market response to the M&A announcement, in partial agreement with Hagendorff et al. (2008) that find positive association between target ROE and abnormal returns. Moreover, the marginally negative beta coefficient implies that high systematic risk affects negatively AARs.

Model 2 provides evidence of a small impact of total assets, net income and the ratio of total loans to total assets of target banks on abnormal returns. While high total assets seem to exert a negative impact on the market perception to the announced deal, the remaining two variables estimated coefficients infer a positive impact on target banks prices. Even though in the case of high net income it is quite straightforward to justify these findings, the results are quite puzzling when trying to explain the positive effect of total loans to total assets ratio on AARs. Possibly the existence of an expansionary credit policy that promises high interest income for target banks is perceived as an asset in view of the M&A process under way. Moreover, it can be seen as markets rewarding dynamic banks during a period that financial markets experienced extensive growth. Lastly, the third multivariate regression model incorporates the long-term debt to equity ratio amongst the factors that explain M&A value creation effects. We deduce that a high long-term debt rather than short-term debt to equity is seen as a more balanced capital structure framework for the soon to be merged financial institution, thus affecting positively abnormal returns. Put differently, market participants view banks with high long-term debt as being able to raise capital with favourable terms relative to their high short-term debt to equity counterparts.

Table 11: Factors Explaining Domestic M&A Value Creation Effects

	Model 1	Model 2	Model 3
Intercept	0.011	-0.037	-0.040
	(0.88)	(-1.49)	(-1.45)
Beta	-0.001		
	(-0.07)		
ROA	0.012		
	(1.75)*		
Log of Total Assets		-0.001	-0.001
		(-7.34)***	(-7.25)***
Log of Net Income		0.001	0.001
		(5.19)***	(5.32)***
Total Loans to Total Assets		0.001	0.001
		(2.23)**	(2.22)**
Long-term Debt to Equity			0.001
			(0.32)
Country effects	Yes	Yes	Yes
Adjusted-R^2	0.02	0.02	0.02
F-statistic	2.87***	2.56**	2.32**
No of obs.	88	83	83

Notes: *, ** and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

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[9] Due to missing important variables, the maximum number of bidders including to regressions falls to 88 instead of 118.

5. Conclusions

Our study examines the short-term value creation effects for a sample of domestic bank M&As in the greater European area. By investigating M&A activity for the period 1996-2010, we attempt to highlight distinctive features in investor behaviour. We conjecture that domestic bank M&As, on average, can still create value for the shareholders of the majority of target banks involved in this transaction, with the notable exception of low prior profitability institutions. Consistent with the pertinent literature, we find that positive abnormal returns for targets are existent. This finding is particularly supported by the 3-day cumulative abnormal returns around the announcement date. Both the market model and market-adjusted model provide sound justification of a positive reaction to the M&A deal. However, excess returns gradually vanish after the announcement date supporting the efficient market hypothesis of Fama et al. (1969). Moreover, pre-announcement information leakages are found to be minimal. In line with Campa and Hernando (2006), Hagendorff et al. (2008) and Beltratti and Paladino (2013), we estimate that short-term cumulative abnormal returns for acquirers are almost zero. However, on the 10-day event window following the actual event, abnormal returns become persistently negative. Less efficient banks acting as acquirers seem to be particularly influenced by this post-event negative pattern of returns, even though we find, around the announcement date, some meagre positive abnormal returns. Likewise, high ROE acquirer banks experience marginal losses both on the announcement day and the post-event short-term period, though of a smaller magnitude.

In attempting to test the inefficient management hypothesis, whereby M&As can create shareholder value if efficient banks acquire inefficient banks, we employ ROE as a measure of bank efficiency. When attempting to extract inferences for the target banks sample judging by their prior profitability (as measured by ROE), we find high expectations from the market for highly profitable financial institutions in the post-event period. As reported in Hagendorff et al. (2012) more profitable targets (high ROE) can expect a higher bid premium, which provides sound justification for this finding. Contrary to this result low ROE targets experience significant price erosions throughout the 21-day event window employed in this study. We suggest that low ROE banks shareholders believe that the gradual revival of their investment will eventuate through an internal restructuring process rather than a mere M&A deal. We further study the factors construing the value creation effects of domestic target banks. Abnormal returns are mainly explained by high profitability as expressed by the return on equity. Net income and the ratios of total loans to total assets as well as long-term debt to equity also affect positively abnormal returns, though less in magnitude. A small negative impact on abnormal returns is exerted by the sheer size of the target bank. The general implication of the latter is that no indubitable rule exists for predicting the price behaviour of target banks. Researchers should attempt to scrutinize further factors affecting abnormal returns during different states of the economic cycle.

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