

THE LONG-TERM IMPACT OF BANK M&As IN EUROPE: AN INTEGRATED APPROACH

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ABSTRACT

Financial institutions have dominated M&A activity in Europe in the last decades. This study examines the long-term impact of bank M&As in Europe in a sample of 152 deals over the period 1996-2010, consisting of both within-border and cross-border deals. In specific, we examine the long-term financial performance of combined entities and we find that profitability increases after two to three years of operation even though initially the M&A activity negatively impacts profitability. Analogous patterns of profitability are found for the sample of domestic deals, whereas cross-border M&As seem to benefit from synergistic gains yet later. When examining other efficiency and loan quality ratios the full sample and domestic deals alone show that merging banks employ expansionary policies soon after consolidating. In contrast, in cross-border M&As managers seem to be more cautious with their loans portfolio in a finding possibly related to enforcing complex integrating policies in the first years after the deal announcement.

Keywords: Post-merger performance, domestic M&As, cross-border deals, bidders, targets, profitability ratios, buy-and-hold returns

JEL: G11; G14, G21; G34

1. Introduction

Mergers and Acquisitions (M&As) have become a worldwide phenomenon in the recent decades. The value of the deals during the 6th merger wave, 2004-2007, exceeded on average the 1 trillion USD threshold per year and is comparable in size to the 5th merger wave of the late 90s. M&A activity in the banking sector has been particularly pronounced in the recent decades¹. The motives for this consolidation process have been notably different in Europe and the U.S. market. While the traditional driving forces of M&As, such as market power, international expansion, market synergies remain intact in the U.S. market (Gaughan, 2011), the integration of the European banking system has been affected decisively by the introduction of the common currency (Ekkayokkaya et al., 2009) and market deregulation (Campa and Hernando, 2006). The Basel Committee capital adequacy requirements have revitalized the willingness of financial institutions to comply with the tightening regulatory framework while preserving falling profit margins by increasing their market share (Amel et al., 2004). Changes in regulation have inclined banks to improve their efficiency through geographic diversification and extension of their product range.

Event studies show generally consistent results when analyzing the overall short-term outcome for the entities involved in a deal and suggest that on average M&As tend to improve aggregate shareholder value for target banks (DePamphilis, 2010). M&A studies employing long-term accounting measures to analyse post-merger returns find that acquirer firms at best underperform their industry peers (Tuch and O'Sullivan, 2007). More recent evidence shows that the success rate amongst acquisitions may be considerably higher when analysed in terms of the characteristics of the deal (Zola and Meier, 2008).

While short-term value creation has been extensively explored by the academic literature the same does not apply for the long-term impact of M&As, which are relatively under-researched (Drymbetas and Kyriazopoulos, 2014). DeYoung et al. (2009), after reviewing the post-2000 literature on financial institutions M&As conclude that in Europe deals affect positively operating efficiency. However, there is growing demand by investments' professionals for a more thorough knowledge on the efficiency attributes of M&As and the mechanisms underpinning these procedures. Therefore, in an attempt to investigate banks' performance over the long-term, we analyse the impact of the deal on certain profitability, efficiency and loan quality ratios. The analysis of operating performance over time can offer solid evidence on the efficacy of the consolidation process in the European banking system, which is the second largest M&A market worldwide (Hagendorff and Keasey, 2009).

We further attempt to gauge differences in the post-merger operating performance of cross-border and domestic bank M&As. During our examination period, 1996-2010, restriction on bank operations had been relaxed and full scale integration of the European banking sector took place (Beccalli and Frantz, 2009). Turning points in legislation have been proven to offer interesting hindsight towards the forces that affect the bank consolidation processes across different regulatory regimes (Hannan and Pilloff, 2009). Even though the rate of cross-border deals soared during this period the majority of bank M&As still involved domestic consolidations (Lozano-Vivas et al., 2011). However, the fact that the pertinent literature is dearth of empirical results from the post-merger operating performance of cross-border bank consolidations, leaves ample ground for further investigation.

The remainder of paper is structured as follows. Section 2 presents the pertinent literature. Section 3 describes the derived sample and the research design of the study, while section 4 proceeds with the empirical findings. Section 5 summarizes the basic evidence derived from our study.

¹ Especially in 90s and 2000s after the banking deregulation.

2. Relevant literature

Earlier studies on the post-acquisition performance examined the performance of bidders as part of a more comprehensive analysis of takeovers (Agrawal and Jaffe, 2000). In the last decade the related literature placed emphasis exclusively on bidder performance. Beyond event studies, the hypothesis tested by the ongoing academic research is whether M&As improve profitability and performance of acquirers over the long-term. Acquirers' rationale is to increase shareholder wealth through economies of scale and synergies from the combined organization (Hankir et al. 2011), risk diversification (Mercieca et al., 2007) and replacement of inefficient managers (Rad and Van Beek, 1999). However, irrespective of justification, the sheer essence of the consolidation process is primarily cost reduction and centralization of back office operations (Houston et al., 2001), profitability enhancement (Copeland et al., 2003) as well as improvement in operational performance (Altunbas and Marques, 2008). Efficiency can also be achieved in the form of weakening or eliminating rivals and increasing banking services prices in the context of an oligopoly market power (Degryse and Ongena, 2008). In the case of cross-border deals, financial institutions improvement in efficiency is captured through attracting new customers and increasing the geographic and product reach (Amel et al., 2004).

The largest part of the related literature investigates the long-term impact of consolidations through the lenses of accounting measures. One strand of this literature enlightens our knowledge with regard to profit enhancement through the employment of profitability measures such as the return on equity (ROE) and the return on assets (ROA).² The evidence that supports higher profitability is at best weak. The second most notable batch of the literature includes Akhavein et al. (1997), Hannan and Pilloff (2006) and DeLong and DeYoung (2007), among others, that examine cost efficiency measures.

The vast majority of studies reports mixed evidence with regard to improvements in efficiency. Cross-border and domestic samples do not report notable differences on average. Chamberlain (1998) analyses a sample of cross-border deals in the US and finds that bank mergers do not offer operating efficiencies. In the 1990s, post-acquisition performance of institutions involved in M&As improved on average as a result of technological changes and deregulation that assisted such deals (Cornett et al., 2006). Vander Vennet (2002) reports an improvement in profit efficiency in the first year following the M&A eventuation, but neither ROA nor cost efficiency measures point towards the same direction. These findings underline, according to the authors, the barriers to operational efficiency that exist in cross-border deals. Cross-border consolidations perform worse than domestic merged banks in Abraham and Van Dijke (2002). Further major barriers in cross-border consolidations are acknowledged in Berger et al. (2001),³ where once again domestic deals outperform cross-border ones, in profit and cost efficiency terms, when examining a large sample of U.S. and European banks. In an attempt to examine post-acquisition performance of target banks, Correa (2009) finds that performance does not improve in the first two years after the cross-border acquisition, a finding attributed to net interest margins decreases and overhead costs increases in turn.

The domestic consolidations literature provides some mixed evidence. During the 80s datasets focusing on the US market showed evidence of some improvement in profit growth (Akhavein et al., 1997). Nonetheless, in the same study, little change was noted in cost efficiency after M&As. Berger (1998) also reports that profitability recovers after M&As for bidder banks when investigating a diversified sample in

² Indicatively Knapp et al. (2006), Correa (2009), Hagendorff and Keasey (2009), Hagendorff et al. (2012).

³ According to the authors these barriers are in the form of geographical distance, language and cultural differences, currency and accounting systems, as well as regulatory and supervisory structures.

the 90s. Vander Venet (1996) and Diaz et al. (2004) also conjecture that European domestic mergers affect overall profitability. Their findings apply to both large and small deals. Large size mergers are the sole focus of Nnadi and Tanna (2013), who note a decrease in the long-run operational efficiency of merged banks. Significant improvements in profitability and efficiency is observed for targets in the two years following the completion of the acquisition (Campa and Hernando, 2006). Cuesta and Orea (2002) also report that acquisitions lead to higher efficiency than mergers, since a sample of non-merged Spanish commercial banks was proven more efficient than merged counterparts. Efficiency gains amongst Spanish banks are captured in De Guevara and Maudos (2007), which are attributed to declining marginal costs after mergers. Contradicting evidence are provided in two other country-specific studies, whereby Resti (1998) finds improvements in efficiency in the post-merger period for Italian banks, while Lang and Welzel (1999) find no evidence of efficiency gains for German cooperative banks mergers over the 90s. Further evidence from Germany gauge post-merger improvements in costs, but not profitability (Koetter, 2005; Behr and Heid, 2008). Overall costs reductions are found in UK bank consolidations in Ashton and Pham (2007).

More recently, Hangendorff and Keasey (2009) examine both cost ratios and lending activity in the post-merger period for a sample of European deals. They find a cost reduction effect, accompanied with a decrease in the lending activity. They also performed comparisons between European and U.S. M&As and found that post-merger performance in Europe is significantly more notable than that in the U.S. A major further difference found in the two largest M&A markets is that U.S. deals attempt profit enhancement by the use of increased interest and non-interest income, which is made possible by regulatory changes that permit the formation of integrated financial services firms, while in Europe the norm is pursuing cost-cutting strategies after M&As.

Beccalli and Frantz (2009) analyzing a large sample of EU bank M&As up to 2005 find deterioration in profit efficiency as measured by the return on equity. In line with Lozano-Vivas et al. (2011) they deduce that cost efficiency is more observable in cross-border M&As. However, cost reduction is achievable no sooner than 5 years after the M&A eventuation.

Effectiveness is measured via various criteria in Lozano-Vivas et al. (2011). In contrast with the majority of the related literature, they find greater gains for cross-border deals relative to domestic ones, despite the fact that they are notably fewer in number. They claim that merger processes in the European banking system have improved the profit maximization and the cost efficiency ability. Inefficiency is decreased in both domestic and cross-border M&As as evident by the ROA and ROE measures. Moreover, banks involved in M&As are more cost efficient than those that are not.

Hagendorff and Nieto (2013) observe mean reversion in ratios accounting for profitability, capitalisation and liquidity attributes analysed in the context of the long-run financial performance of the entities involved in an M&A. The data used account for the period one year prior and two years after the M&A. They also conclude that bank M&As have an insignificant impact on the safety and soundness of the banks involved in a deal, with the exception of the target bank leverage ratio, as measured by the capital to assets ratio.

3. Data and methodology

The sample of M&As analysed consists of 152 deals during the period 1996-2010. Therefore, it extends throughout a period where major events took place in Europe, including the deregulation of the banking system and the common currency introduction. The sample includes European Union countries plus Switzerland. Analytic information on the distribution of M&As, as well as the profile of the participating banking institutions is provided in Tables 1 and 2.

Certain criteria were imposed to construct our data set:

- a) M&As resulted in a majority stakeholding in the acquired firm (the acquirer being in control of at least 50% of the target institution) and had to be complete.
- b) Acquiring banks are public institutions with available accounting data for the fiscal years $t=-1$ to $t=5$ surrounding the deal completion data.
- c) Multiple M&As in the same year per acquirer were excluded from the sample⁴.

The examined time frames around the deal completion are the following: $[-1, 0]$, $[-1, +1]$, $[-1, +2]$, $[-1, +3]$, $[-1, +4]$, $[-1, +5]$. Data used throughout the paper were extracted from Bloomberg and Bankscope.

Over two thirds of the deals analysed is concentrated during the period 1999-2003. At the peak of the 5th merger wave alone (1999-2000) we have gathered 43 individual bank consolidations. One could ascribe this to the stock market boom of the period and the anticipation for the common currency introduction. 41 deals are spread almost evenly across 2005-2008 that coincides with the peak of the 6th merger wave (Alexandridis et al., 2011). We attempt to capture differences in performance between within-border and cross-border consolidations, as previously documented in the literature (Berger et al., 2001), by including in our sample a significant proportion of deals classified as cross-borders (40 deals in total). Given that the same filtering criteria were imposed for both domestic and cross-border deals we can deduce that during the examination period the number of transnational consolidations converges to the 4 to 1 ratio quoted in the literature (Bruner, 2004; Campa and Hernando, 2006; Lozano-Vivas et al., 2011). To highlight differences pertaining to the subsets employed, we report overall sample results, as well as for the subsamples of domestic and cross-border consolidations.

⁴ Hagendorff and Keasey (2009) followed similar approach.

Table 1. Distribution of bank M&As per year.

| Year | Number of M&As |
|-------|----------------|
| 1996 | 1 |
| 1997 | 0 |
| 1998 | 9 |
| 1999 | 20 |
| 2000 | 23 |
| 2001 | 14 |
| 2002 | 19 |
| 2003 | 13 |
| 2004 | 8 |
| 2005 | 11 |
| 2006 | 10 |
| 2007 | 10 |
| 2008 | 10 |
| 2009 | 2 |
| 2010 | 2 |
| Total | 152 |

Table 2 presents the geographic composition of the sample of M&As. Over half of the sample refers to deals in the Southern European region, while Italy represents the largest market for acquirers and Spain for targets. Germany and France also hold a representative proportion of our sample. Interestingly banks located in Iceland are mostly targets in cross-border M&As. The rest of the sample is relatively evenly spread amongst the countries constituting our dataset and does not seem to be the epicenter of intense M&A activity.

Table 2. Distribution of bank M&As per country.

| Country | Acquirers | | Country | Targets | |
|-------------------|----------------|---------|---------------|----------------|---------|
| | Number of M&As | % | | Number of M&As | % |
| Austria | 1 | 0.66% | Austria | 3 | 1.97% |
| Belgium | 2 | 1.32% | Belgium | 3 | 1.97% |
| France | 18 | 11.84% | France | 12 | 7.89% |
| Germany | 24 | 15.79% | Germany | 19 | 12.50% |
| Denmark | 10 | 6.58% | Denmark | 11 | 7.24% |
| Switzerland | 5 | 3.29% | Switzerland | 6 | 3.95% |
| Greece | 9 | 5.92% | Greece | 13 | 8.55% |
| Iceland | 1 | 0.66% | Iceland | 15 | 9.87% |
| Spain | 16 | 10.53% | Spain | 37 | 24.34% |
| Italy | 36 | 23.68% | Italy | 2 | 1.32% |
| Cyprus | 3 | 1.97% | Cyprus | 1 | 0.66% |
| Luxemburg | 1 | 0.66% | Luxemburg | 1 | 0.66% |
| Great Britain | 6 | 3.95% | Great Britain | 7 | 4.61% |
| Norway | 3 | 1.97% | Norway | 9 | 5.92% |
| Holland | 4 | 2.63% | Holland | 2 | 1.32% |
| Portugal | 5 | 3.29% | Portugal | 9 | 5.92% |
| Sweden | 8 | 5.26% | Sweden | 2 | 1.32% |
| Total | 152 | 100.00% | Total | 152 | 100.00% |
| Cross-border M&As | 40 | 26.31% | | | |
| Domestic M&As | 112 | 73.68% | | | |

Our empirical approach, following Vander Vennet (1996) and Beccalli and Frantz (2009, 2013), utilizes equality testing to control for the statistical significance of mean and median values of the employed ratios. To assess significance level in the case of non-normality the non-parametric Wilcoxon-Mann-Whitney test is used. Long-term performance is tested by use of vector of accounting ratios that covers the period one year prior to the completion of each deal and the five years following. Mean and median values represent the estimated ratios for the combined entities in the post-merger period, whereas for the year prior to the deal, they are the weighted average of bidder and target estimates, whereby total assets are used as weights.

Profit efficiency is measured through representative profit measures including the return on equity (ROE), the return on assets (ROA) and the profit margin in line with Beccalli and Frantz (2009).⁵ Long-run efficiency with emphasis on the loan quality and correspondingly to the safety and soundness of the combined entities is assessed by calculating non-performing assets to loans (NPATL), total loans to total deposits (TLTD), total loans to total assets (TLTA) and loan loss reserves to non-performing assets (LLRNPA). Finally we assess banks' capital adequacy (CAD).

4. Empirical Results

4.1 Long-term profit efficiency

In order to measure the pre-merger performance in the year prior to the M&A event, we gather data for both bidders and targets on an ex-post basis. By analyzing mean and median profitability ratios in the year prior to the M&A and for the five years following, for acquirers alone, we attempt to highlight whether M&A activity impacts the average profitability. For all ratios we report mean and median values for the seven-year examination period (year -1 to year +5). Table 3 reports that profitability increases over time when using all three employed measures (ROA, ROE and Profit Margin). Therefore, direct comparisons of pre- and post-acquisition performance indicate that M&As are a profit enhancing event. The most robust evidence for the overall sample of M&As is the fact that the profit margin grows substantially from 17.969% one year prior to the M&A to 22.126% five years after the deal completion when examining mean values. Results are largely consistent when relying on median profit margin values, while at the same time tests for differences in means and medians show that results are statistically significant. ROA and ROE results exhibit a u-shaped form, initially, soon after the deal completion, displaying profitability inefficiency relative to pre-merger levels, while profitability gradually rebounding after year 3 and reaching peak levels five years after the M&A. The fact that there is a lag of at least two years before credit entities can obtain higher gains is consistent with Diaz et al. (2004). However, differences in means and medians are statistically significant for the (-1, +1), (-1, +2) and (-1, +3) time frames, which are the ones depicting negative to pre-merger period means and medians.

The long-term eventual improvement of profitability is in accordance with the relevant strand of the post-merger literature (Lozano-Vivas et al., 2011; Hagendorff et al., 2012). In contrast with Vander Vennet (2002), who finds imminently after the M&A profit enhancement, improvement in our case takes longer to eventuate. Results corroborate also Hagendorff and Nieto (2013) and Knapp et al. (2005) indicating mean reversion in profitability when evaluating post-merger performance.

⁵ Beccalli and Frantz (2009) use the net margin instead of the profit margin. They calculate the net margin as the net income, which includes commission, interest and trading income, over total revenues.

Table 3. Mean and median values for profitability ratios one year prior and five years after the bank M&A for the total sample.

| | Years | | | | | | |
|---------------------------------|---------|--------|----------|----------|----------|----------|----------|
| Return on Assets (ROA) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 0.658 | 0.647 | 0.584 | 0.558 | 0.555 | 0.614 | 0.711 |
| Median | 0.625 | 0.595 | 0.501 | 0.522 | 0.497 | 0.542 | 0.684 |
| No. of observations | 141 | 143 | 140 | 132 | 122 | 108 | 95 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | -0.011 | -0.06 | -0.07 | -0.10 | -0.103 | -0.044 | 0.053 |
| p-value | 0.821 | 0.237 | 0.160 | 0.039** | 0.046** | 0.441 | 0.341 |
| Differences in medians | -0.030 | -0.094 | -0.124 | -0.103 | -0.128 | -0.084 | 0.059 |
| Wilcoxon p-value | 0.714 | 0.280 | 0.159 | 0.072* | 0.089* | 0.620 | 0.236 |
| | Years | | | | | | |
| Return on Equity (ROE) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 13.319 | 12.614 | 12.033 | 11.296 | 10.955 | 12.635 | 13.724 |
| Median | 13.433 | 12.146 | 11.562 | 11.288 | 11.128 | 12.379 | 14.639 |
| No. of observations | 141 | 143 | 138 | 133 | 116 | 105 | 96 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | -0.706 | -0.58 | -1.29 | -2.02 | -2.364 | -0.684 | 0.405 |
| p-value | 0.326 | 0.447 | 0.090* | 0.008*** | 0.002*** | 0.397 | 0.616 |
| Differences in medians | -1.287 | -0.584 | -1.871 | -2.145 | -2.304 | -1.054 | 1.206 |
| Wilcoxon p-value | 0.178 | 0.414 | 0.039** | 0.004*** | 0.003*** | 0.471 | 0.568 |
| | Years | | | | | | |
| Profit Margin (PM) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 17.969 | 18.006 | 16.708 | 17.386 | 16.787 | 17.611 | 22.126 |

| | | | | | | | |
|------------------------|---------|--------|----------|----------|----------|----------|----------|
| Median | 17.024 | 17.469 | 16.976 | 16.976 | 16.342 | 19.719 | 22.082 |
| No. of observations | 144 | 147 | 143 | 133 | 122 | 109 | 97 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 0.038 | -1.298 | -1.260 | -0.582 | -1.182 | -0.358 | 4.157 |
| p-value | 0.934 | 0.314 | 0.335 | 0.651 | 0.392 | 0.852 | 0.003* |
| Differences in medians | 0.445 | -0.493 | -0.048 | -0.048 | -0.682 | 2.696 | 5.059 |
| Wilcoxon p-value | 0.899 | 0.269 | 0.322 | 0.441 | 0.435 | 0.232 | 0.001*** |

Notes: Differences in means are tested with t-statistic, while differences in medians are tested Wilcoxon-Mann-Whitney test. ***, ** and * denote

statistical significance at the 1%, 5% and 10% level, respectively.

Tables 4 and 5 report the derived results for the subsamples of cross-border and domestic consolidations. The mean reversion phenomenon is also observable in domestic M&As since, indicatively, median ROA diminishes after the deal completion, begins to recover from year 3 onwards and reaches maximum levels in year 5. ROE and ROA differences in means and medians are statistically significant for periods (-1, +2) and (-1, +3), showing almost identical patterns relative to the overall sample. Profit margin results are also underlying the increased profitability finding with differences in means and medians statistically significant at the 1% level in the (-1, +5) time horizon. Campa and Hernando (2006) confirm this temporary pressure in average profitability in domestic consolidations. In contrast cross-border deals do not depict a similar pattern of profitability enhancement. By analyzing profitability at the two ends of the profitability ratios distribution we gather that profit margin results show evidence of significant improvement in the post-merger period, in line with Fraser and Zhang (2009). However, this finding is not supported by ROE and ROA estimates. Therefore, our evidence partly contradict Lozano-Vivas et al. (2011) that report ROA and ROE efficiencies, which are greater in magnitude for banks involved in cross-border mergers. We conjecture that profitability enhancement is only partly observable in cross-border deals because as pointed out by Berger et al. (2001) they are more complicated in terms of regulatory, accounting and cultural differences, thus apparently synergistic gains requiring more time to become observable. Furthermore, assimilation processes in international M&As are more complex and costly.

Table 4. Mean and median values for profitability ratios one year prior and five years after the M&As for the sample of cross-border deals

| | Years | | | | | | |
|---------------------------------|---------|--------|----------|----------|----------|----------|----------|
| | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Return on Assets (ROA) % | | | | | | | |
| Mean | 0.669 | 0.630 | 0.652 | 0.572 | 0.503 | 0.523 | 0.606 |
| Median | 0.639 | 0.585 | 0.663 | 0.556 | 0.438 | 0.501 | 0.593 |
| No. of observations | 44 | 42 | 41 | 38 | 36 | 30 | 28 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | -0.039 | 0.02 | -0.02 | -0.10 | -0.166 | -0.145 | -0.063 |
| p-value | 0.652 | 0.803 | 0.854 | 0.248 | 0.056* | 0.138 | 0.500 |
| Differences in medians | -0.053 | 0.078 | 0.025 | -0.083 | -0.200 | -0.138 | -0.046 |
| Wilcoxon p-value | 0.589 | 0.705 | 0.986 | 0.257 | 0.070* | 0.204 | 0.657 |
| | Years | | | | | | |
| | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Return on Equity (ROE) % | | | | | | | |
| Mean | 14.736 | 14.429 | 13.736 | 12.764 | 11.428 | 12.643 | 13.835 |
| Median | 14.931 | 14.496 | 14.166 | 12.274 | 12.497 | 13.758 | 15.944 |
| No. of observations | 44 | 43 | 39 | 37 | 34 | 29 | 28 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | -0.307 | -0.69 | -1.00 | -1.97 | -3.308 | -2.093 | -0.901 |
| p-value | 0.813 | 0.616 | 0.456 | 0.161 | 0.017** | 0.171 | 0.544 |
| Differences in medians | -0.435 | -0.330 | -0.765 | -2.657 | -2.434 | -1.173 | 1.013 |
| Wilcoxon p-value | 0.753 | 0.717 | 0.529 | 0.152 | 0.022** | 0.321 | 0.999 |
| | Years | | | | | | |
| | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Profit Margin (PM) % | | | | | | | |
| Mean | 20.410 | 20.873 | 22.317 | 22.202 | 18.408 | 19.091 | 22.762 |
| Median | 19.403 | 21.037 | 21.282 | 20.258 | 19.718 | 20.958 | 23.188 |
| No. of observations | 44 | 43 | 41 | 38 | 35 | 30 | 28 |

| | Periods | | | | | | |
|------------------------|---------|--------|----------|----------|----------|----------|----------|
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 0.462 | 1.444 | 1.906 | 1.792 | -2.002 | -1.320 | 2.352 |
| p-value | 0.826 | 0.545 | 0.447 | 0.484 | 0.394 | 0.628 | 0.348 |
| Differences in medians | 1.634 | 0.245 | 1.879 | 0.856 | 0.315 | 1.555 | 3.785 |
| Wilcoxon p-value | 0.575 | 0.823 | 0.438 | 0.590 | 0.668 | 0.708 | 0.127 |

Notes: Differences in means are tested with t-statistic, while differences in medians are tested Wilcoxon-Mann-Whitney test. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Table 5. Mean and median values for profitability ratios one year prior and five years after the M&As for the sample of domestic deals.

| | Years | | | | | | |
|---------------------------------|---------|--------|----------|----------|----------|----------|----------|
| | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Return on Assets (ROA) % | | | | | | | |
| Mean | 0.653 | 0.658 | 0.556 | 0.553 | 0.577 | 0.652 | 0.755 |
| Median | 0.616 | 0.596 | 0.473 | 0.496 | 0.514 | 0.558 | 0.689 |
| No. of observations | 97 | 100 | 99 | 94 | 86 | 77 | 67 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 0.005 | -0.10 | -0.10 | -0.10 | -0.076 | -0.001 | 0.102 |
| p-value | 0.938 | 0.118 | 0.133 | 0.091* | 0.235 | 0.989 | 0.140 |
| Differences in medians | -0.020 | -0.122 | -0.142 | -0.120 | -0.102 | -0.058 | 0.073 |
| Wilcoxon p-value | 0.974 | 0.138 | 0.154 | 0.156 | 0.364 | 0.817 | 0.095 |
| | Years | | | | | | |
| | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Return on Equity (ROE) % | | | | | | | |
| Mean | 12.677 | 11.854 | 11.361 | 10.730 | 10.759 | 12.706 | 13.679 |
| Median | 12.032 | 11.632 | 10.658 | 10.689 | 10.786 | 11.518 | 12.756 |
| No. of observations | 97 | 99 | 99 | 96 | 82 | 75 | 68 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | -0.823 | -0.49 | -1.32 | -1.95 | -1.918 | 0.028 | 1.002 |
| p-value | 0.335 | 0.588 | 0.148 | 0.031** | 0.030** | 0.976 | 0.299 |
| Differences in medians | -0.400 | -0.974 | -1.374 | -1.343 | -1.246 | -0.514 | 0.724 |
| Wilcoxon p-value | 0.210 | 0.447 | 0.051 | 0.018** | 0.045** | 0.929 | 0.370 |

| | Years | | | | | | |
|-----------------------------|---------|--------|----------|----------|----------|----------|----------|
| Profit Margin (PM) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 16.894 | 16.951 | 14.454 | 15.460 | 16.135 | 19.017 | 21.867 |
| Median | 15.807 | 16.172 | 14.818 | 15.573 | 15.039 | 19.306 | 21.282 |
| No. of observations | 100 | 103 | 102 | 95 | 87 | 78 | 69 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 0.056 | -2.496 | -2.440 | -1.434 | -0.760 | 2.123 | 4.973 |
| p-value | 0.967 | 0.090 | 0.097 | 0.316 | 0.653 | 0.224 | 0.003*** |
| Differences in medians | 0.365 | -1.354 | -0.989 | -0.234 | -0.768 | 3.499 | 5.475 |
| Wilcoxon p-value | 0.989 | 0.137 | 0.141 | 0.270 | 0.519 | 0.138 | 0.003*** |

Notes: Differences in means are tested with t-statistic, while differences in medians are tested Wilcoxon-Mann-Whitney test. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

4.2 Long-term loan quality ratios

Table 6 outlines our derived loan quality and long-term efficiency ratios. The employed measures estimated are non-performing assets to total loans (NPATL), total loans to total deposits (TLTD), total loans to total assets (TLTA), loan loss reserves to non-performing assets (LLRNPA) and capital adequacy (CAD). Our main finding is that, to a large extent, consolidated banking institutions are particularly cautious with credit policies in the first years following an M&A. This is confirmed by mean and medians values being no larger than the pre-merger period for the TLTD and TLTA variables. However soon after year 2 credit institutions appear to employ expansionary credit policies. The LLRNPA variable also shows relaxation of credit controls after year 1, while the CAD variable remains unharmed by the consolidation process. This behaviour is substantiated from the gradual shrinking of non-performing loans, which is a further positive sign for the long-run safety and soundness of merged institutions.

Table 6. Mean and median values for efficiency ratios one year prior and five years after the M&A for the total sample.

| | | | | | | | |
|---|---------|---------|----------|----------|----------|----------|----------|
| Non-performing Assets to Loans (NPATL) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 2.453 | 2.570 | 2.519 | 2.573 | 2.470 | 2.252 | 2.241 |
| Median | 1.958 | 2.191 | 2.174 | 2.142 | 2.001 | 1.844 | 1.744 |
| No. of observations | 98 | 104 | 95 | 88 | 80 | 71 | 72 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 0.117 | -0.051 | 0.066 | 0.120 | 0.017 | -0.200 | -0.212 |
| p-value | 0.627 | 0.835 | 0.779 | 0.635 | 0.947 | 0.417 | 0.387 |
| Differences in medians | 0.232 | -0.016 | 0.216 | 0.184 | 0.043 | -0.114 | -0.214 |
| Wilcoxon p-value | 0.831 | 0.972 | 0.878 | 0.860 | 0.868 | 0.420 | 0.383 |
| | Years | | | | | | |
| Total Loans to Total Deposits (TLTD) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 145.135 | 156.075 | 146.812 | 150.406 | 148.815 | 143.659 | 150.527 |
| Median | 131.664 | 134.726 | 139.357 | 136.481 | 137.552 | 144.825 | 150.430 |
| No. of observations | 133 | 136 | 131 | 122 | 113 | 94 | 86 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 10.941 | -9.263 | 1.678 | 5.271 | 3.680 | -1.475 | 5.392 |
| p-value | 0.334 | 0.402 | 0.856 | 0.565 | 0.694 | 0.875 | 0.588 |
| Differences in medians | 3.063 | 4.631 | 7.693 | 4.817 | 5.888 | 13.161 | 18.767 |
| Wilcoxon p-value | 0.512 | 0.856 | 0.691 | 0.281 | 0.251 | 0.207 | 0.053* |
| | Years | | | | | | |
| Total Loans to Total Assets (TLTA) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 53.703 | 54.365 | 54.587 | 53.944 | 53.166 | 52.678 | 54.707 |
| Median | 54.692 | 55.413 | 55.815 | 55.321 | 55.543 | 55.850 | 57.603 |
| No. of observations | 135 | 138 | 137 | 128 | 112 | 97 | 86 |

| | Periods | | | | | | |
|---|---------|---------|----------|----------|----------|----------|----------|
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 0.663 | 0.221 | 0.884 | 0.242 | -0.537 | -1.024 | 1.004 |
| p-value | 0.715 | 0.907 | 0.637 | 0.903 | 0.786 | 0.629 | 0.649 |
| Differences in medians | 0.721 | 0.402 | 1.123 | 0.629 | 0.851 | 1.158 | 2.911 |
| Wilcoxon p-value | 0.621 | 0.835 | 0.485 | 0.647 | 0.809 | 0.916 | 0.312 |
| | Years | | | | | | |
| Loan Loss Reserves to Non-performing Assets (LLRNPA) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 126.762 | 132.998 | 137.117 | 131.700 | 124.312 | 106.162 | 102.922 |
| Median | 92.773 | 100.146 | 93.529 | 87.183 | 89.528 | 87.845 | 85.232 |
| No. of observations | 96 | 99 | 93 | 87 | 80 | 69 | 69 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 6.236 | 4.120 | 10.355 | 4.938 | -2.450 | -20.600 | -23.840 |
| p-value | 0.639 | 0.780 | 0.469 | 0.723 | 0.860 | 0.096* | 0.055* |
| Differences in medians | 7.373 | -6.618 | 0.755 | -5.590 | -3.245 | -4.928 | -7.541 |
| Wilcoxon p-value | 0.766 | 0.899 | 0.881 | 0.850 | 0.638 | 0.399 | 0.188 |
| | Years | | | | | | |
| Capital Adequacy (CAD) | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 0.058 | 0.061 | 0.059 | 0.060 | 0.060 | 0.060 | 0.059 |
| Median | 0.054 | 0.054 | 0.053 | 0.055 | 0.056 | 0.054 | 0.054 |
| No. of observations | 144 | 147 | 143 | 133 | 122 | 107 | 95 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 0.002 | -0.001 | 0.001 | 0.002 | 0.002 | 0.001 | 0.001 |
| p-value | 0.528 | 0.696 | 0.800 | 0.661 | 0.644 | 0.769 | 0.811 |
| Differences in medians | 0.001 | -0.002 | -0.001 | 0.001 | 0.002 | 0.001 | 0.001 |
| Wilcoxon p-value | 0.415 | 0.673 | 0.657 | 0.365 | 0.313 | 0.419 | 0.491 |

Notes: Differences in means are tested with t-statistic, while differences in medians are tested Wilcoxon-Mann-Whitney test. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

The same overall picture is ratified after examining the domestic deals evidence in Table 8. Both overall sample and domestic subsample results appear to endorse a rationale on the part of managers, whereby credit policies are contractionary initially, only to relax soon after the merger as the assimilation process is gradually achievable and risks incurred from the quality of the loan portfolio of the target bank are weakened. Information sharing is robust in domestic deals since market participants are more aware of the risks pertaining to consolidation between entities with almost identical operations, within the same geographic area and possibly with a clientele they mutually share.

On the contrary, Table 7 results can be interpreted profoundly differently. It appears that management considers that risks from the merger of the portfolio of loans of two banks residing in different countries previously, are amplified after the merger. For this reason we observe that loan quality ratios are markedly stricter in the first years following the M&A. We claim that there exist information asymmetries in cross-border M&As that render this behaviour inevitable (Panetta et al., 2009). Long assimilation processes and time needed to investigate further the loans portfolio of targets banks are the major factors behind this observed behaviour. The LLRNPA ratio is marginally smaller than 100% (99.449%) in the pre-merger year. It gradually increases over the pre-merger period reaching the highest level in year 3 (111.184%). Going forward, this finding is justified by the requirement for banks in cross-border mergers to increase reserves as more loans become questionable along the assimilation process (Deysher, 2008). This increase in LLRNPA ratio is congruent with the tightening of the credit policy. In the fourth year the ratio plummets to less than 100% (93.036%), taking its lowest values in the fifth year (91.728%). After international mergers a portfolio restructuring process will probably call for banks writing-off loans in arrears, which enables them gradually to regain their confidence and reserve less money for the non-performing assets. In the same rationale, over the long-term (years 4 and 5) both TLTA and TLTD variables appear to increase, showing that banks start making better use of their assets' portfolio. This delayed (after year 4) expansionary policy is probably the reason why profitability measures do not have enough time to depict this gradual bank expansion procedure revival, thus remaining, even in year 5, in below pre-merger levels. Our results are, to a large extent, consistent with Fraser and Zhang (2009) that found that bank loan ratios are only partially affected by cross-border mergers.

Table 7. Mean and median values for efficiency ratios one year prior and five years after the M&As for the sample of cross-border deals.

| Non-performing Assets to Loans (NPATL) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
|---|---------|---------|----------|----------|----------|----------|----------|
| Mean | 2.534 | 2.499 | 2.279 | 2.235 | 2.390 | 2.368 | 2.183 |
| Median | 2.133 | 2.238 | 2.174 | 2.186 | 1.821 | 1.844 | 1.518 |
| No. of observations | 29 | 31 | 29 | 27 | 28 | 25 | 24 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | -0.034 | -0.221 | -0.255 | -0.299 | -0.143 | -0.166 | -0.351 |
| p-value | 0.937 | 0.616 | 0.539 | 0.450 | 0.743 | 0.719 | 0.433 |
| Differences in medians | 0.105 | -0.064 | 0.042 | 0.053 | -0.312 | -0.289 | -0.615 |
| Wilcoxon p-value | 0.717 | 0.673 | 0.343 | 0.441 | 0.684 | 0.722 | 0.224 |
| | Years | | | | | | |
| Total Loans to Total Deposits (TLTD) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 142.584 | 144.488 | 145.550 | 152.992 | 145.135 | 146.823 | 152.073 |
| Median | 124.076 | 136.165 | 141.093 | 136.229 | 137.619 | 147.926 | 153.017 |
| No. of observations | 42 | 41 | 40 | 37 | 36 | 30 | 27 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 1.904 | 1.062 | 2.966 | 10.408 | 2.551 | 4.239 | 9.489 |
| p-value | 0.890 | 0.943 | 0.837 | 0.483 | 0.855 | 0.760 | 0.505 |
| Differences in medians | 12.089 | 4.928 | 17.017 | 12.153 | 13.543 | 23.850 | 28.941 |
| Wilcoxon p-value | 0.682 | 0.854 | 0.781 | 0.517 | 0.512 | 0.367 | 0.124 |
| | Years | | | | | | |
| Total Loans to Total Assets (TLTA) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 50.339 | 49.385 | 49.233 | 47.307 | 46.660 | 48.789 | 50.986 |
| Median | 50.738 | 50.035 | 50.172 | 50.172 | 50.492 | 53.242 | 53.551 |
| No. of observations | 44 | 41 | 41 | 39 | 35 | 30 | 27 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | -0.954 | -0.153 | -1.106 | -3.032 | -3.679 | -1.550 | 0.647 |

| | | | | | | | |
|---|---------|---------|----------|----------|----------|----------|----------|
| p-value | 0.759 | 0.963 | 0.733 | 0.378 | 0.267 | 0.663 | 0.854 |
| Differences in medians | -0.703 | 0.138 | -0.566 | -0.566 | -0.246 | 2.504 | 2.813 |
| Wilcoxon p-value | 0.772 | 0.934 | 0.718 | 0.438 | 0.487 | 0.991 | 0.776 |
| | Years | | | | | | |
| Loan Loss Reserves to Non-performing Assets (LLRNPA) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 99.449 | 109.408 | 110.294 | 106.776 | 111.184 | 93.036 | 91.728 |
| Median | 78.322 | 83.584 | 84.500 | 82.554 | 85.714 | 76.544 | 77.001 |
| No. of observations | 32 | 30 | 29 | 28 | 29 | 25 | 24 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 9.959 | 0.886 | 10.845 | 7.328 | 11.735 | -6.413 | -7.721 |
| p-value | 0.484 | 0.961 | 0.494 | 0.634 | 0.494 | 0.634 | 0.571 |
| Differences in medians | 5.261 | 0.916 | 6.178 | 4.232 | 7.392 | -1.778 | -1.321 |
| Wilcoxon p-value | 0.602 | 0.940 | 0.603 | 0.739 | 0.857 | 0.45 | 0.456 |
| | Years | | | | | | |
| Capital Adequacy (CAD) | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 0.049 | 0.052 | 0.049 | 0.049 | 0.050 | 0.046 | 0.052 |
| Median | 0.046 | 0.050 | 0.041 | 0.043 | 0.045 | 0.043 | 0.046 |
| No. of observations | 44 | 43 | 41 | 39 | 36 | 30 | 27 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 0.003 | -0.004 | -0.001 | -0.001 | 0.000 | -0.003 | 0.002 |
| p-value | 0.579 | 0.472 | 0.832 | 0.872 | 0.965 | 0.514 | 0.689 |
| Differences in medians | 0.004 | -0.009 | -0.005 | -0.003 | -0.001 | -0.003 | 0.000 |
| Wilcoxon p-value | 0.892 | 0.514 | 0.654 | 0.834 | 0.973 | 0.668 | 0.740 |

Notes: Differences in means are tested with t-statistic, while differences in medians are tested Wilcoxon-Mann-Whitney test. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Table 8. Mean and median values for efficiency ratios one year prior and five years after the M&As for the sample of domestic deals.

| Non-performing Assets to Loans (NPATL) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
|---|---------|---------|----------|----------|----------|----------|----------|
| Mean | 2.419 | 2.600 | 2.625 | 2.723 | 2.513 | 2.173 | 2.269 |
| Median | 1.949 | 2.186 | 2.202 | 2.094 | 2.072 | 1.744 | 1.822 |
| No. of observations | 69 | 73 | 66 | 61 | 52 | 45 | 48 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 0.181 | 0.025 | 0.206 | 0.304 | 0.094 | -0.246 | -0.150 |
| p-value | 0.535 | 0.934 | 0.473 | 0.343 | 0.766 | 0.411 | 0.615 |
| Differences in medians | 0.237 | 0.017 | 0.253 | 0.145 | 0.123 | -0.205 | -0.127 |
| Wilcoxon p-value | 0.623 | 0.858 | 0.500 | 0.523 | 0.886 | 0.511 | 0.814 |
| | Years | | | | | | |
| Total Loans to Total Deposits (TLTD) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 146.312 | 161.379 | 147.367 | 149.280 | 150.536 | 142.102 | 149.820 |
| Median | 132.841 | 135.010 | 138.788 | 136.966 | 136.966 | 141.466 | 145.318 |
| No. of observations | 91 | 94 | 91 | 85 | 77 | 63 | 59 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 15.067 | -14.012 | 1.055 | 2.968 | 4.224 | -4.210 | 3.508 |
| p-value | 0.324 | 0.336 | 0.929 | 0.797 | 0.728 | 0.731 | 0.788 |
| Differences in medians | 2.170 | 3.777 | 5.947 | 4.125 | 4.125 | 8.625 | 12.478 |
| Wilcoxon p-value | 0.620 | 0.903 | 0.752 | 0.386 | 0.357 | 0.432 | 0.245 |
| | Years | | | | | | |
| Total Loans to Total Assets (TLTA) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 55.329 | 56.760 | 56.873 | 56.853 | 56.124 | 54.341 | 56.409 |
| Median | 56.542 | 58.151 | 59.034 | 58.708 | 56.703 | 56.685 | 59.848 |
| No. of observations | 91 | 96 | 96 | 89 | 77 | 66 | 59 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 1.430 | 0.114 | 1.544 | 1.523 | 0.794 | -0.988 | 1.080 |
| p-value | 0.512 | 0.960 | 0.493 | 0.521 | 0.740 | 0.707 | 0.697 |

| | | | | | | | |
|---|---------|---------|----------|----------|----------|----------|----------|
| Differences in medians | 1.609 | 0.883 | 2.492 | 2.166 | 0.161 | 0.142 | 3.306 |
| Wilcoxon p-value | 0.431 | 0.883 | 0.341 | 0.341 | 0.457 | 0.931 | 0.317 |
| | Years | | | | | | |
| Loan Loss Reserves to Non-performing Assets (LLRNPA) % | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 140.419 | 143.254 | 149.272 | 143.528 | 131.777 | 113.128 | 108.892 |
| Median | 109.827 | 119.019 | 116.079 | 96.986 | 97.414 | 93.397 | 90.479 |
| No. of observations | 64 | 69 | 64 | 59 | 51 | 43 | 45 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 2.835 | 6.018 | 8.853 | 3.110 | -8.642 | -27.291 | -31.527 |
| p-value | 0.875 | 0.758 | 0.648 | 0.870 | 0.651 | 0.118 | 0.067* |
| Differences in medians | 9.192 | -2.940 | 6.252 | -12.841 | -12.413 | -16.430 | -19.347 |
| Wilcoxon p-value | 0.982 | 0.916 | 0.960 | 0.779 | 0.543 | 0.463 | 0.261 |
| | Years | | | | | | |
| Capital Adequacy (CAD) | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Mean | 0.062 | 0.065 | 0.064 | 0.065 | 0.064 | 0.065 | 0.062 |
| Median | 0.055 | 0.057 | 0.056 | 0.058 | 0.060 | 0.063 | 0.056 |
| No. of observations | 100 | 103 | 102 | 94 | 86 | 76 | 68 |
| | Periods | | | | | | |
| | (-1, 0) | (0, 1) | (-1, +1) | (-1, +2) | (-1, +3) | (-1, +4) | (-1, +5) |
| Differences in means | 0.002 | -0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.000 |
| p-value | 0.618 | 0.822 | 0.774 | 0.620 | 0.655 | 0.635 | 0.979 |
| Differences in medians | 0.002 | -0.001 | 0.001 | 0.003 | 0.005 | 0.008 | 0.001 |
| Wilcoxon p-value | 0.408 | 0.806 | 0.553 | 0.290 | 0.297 | 0.274 | 0.587 |

Notes: Differences in means are tested with t-statistic, while differences in medians are tested Wilcoxon-Mann-Whitney test. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

5. Conclusions

European banks have operated throughout the last decade in an environment that facilitated domestic consolidations, while aiming at providing the required incentives for the gradual geographic expansion of European credit institutions. Though during this period domestic M&As outnumbered cross-border ones by a rate of 4 to 1, there is ample ground for us to infer that economic integration will grow stronger under the auspices of regulatory authorities calling for more integrated markets.

This paper investigates how M&A operations affect the long-term performance of acquirers. Using a sample 152 deals, comprising of both domestic and cross-border bank M&As from the EU region, we embark on a quest to highlight interesting long-term performance characteristics. During the period under examination major events took place pertaining to the European Union integration process and its regulatory authorities policies, but also the 2008 global economic crisis that particularly struck credit institutions. In this context we illuminate how M&As affect the long-term safeness and soundness of banking institutions in the midst of a highly volatile period.

Our empirical analysis indicates that profit inefficiency is reduced though bank M&As over the long-term, as evident by increasing ROE, ROA and the profit margin. Equally important, this profitability enhancement service, offered by M&A events, is not achieved through increased credit risk. This interesting finding, in line with Fraser and Zhang (2009), provides interesting insights to the well-advocated puzzle of why managers continue to opt for M&As even though they usually furnish short-term losses.

Profit indicators follow a u-shaped form, according to which, they are notably worse in the first one to two years ensuing the M&A completion, thereafter sharply increasing to regain pre-merger levels or even higher profitability four to five years after the event. This phenomenon is less pronounced and occurs even later in the case of cross-border consolidations. We conjecture that this is the result of longer assimilation processes and further time required for synergistic gains to become exploitable.

Additionally, we employ loan quality ratios so as to investigate further how the M&A process impacts banks' future credit policies. We claim that by examining loan quality ratios we can form a clearer picture towards the future safety and soundness of merged institutions complementing Hagendorff et al. (2012). Our analysis indicates that even though the standard regulatory framework measure, capital adequacy ratios (CAD), show no significant effect from the M&A process, all other employed measures are severely impacted. The overall sample and the subsample of domestic deals shows evidence of credit policies relaxing in the first two to three years after the M&A completion. This findings is seemingly related to smaller information asymmetries and less notable concerns on the quality of the loan portfolio of acquired institutions. This affirmation regarding within-border M&As is apparently less notable in the case of cross-border consolidations, where loan quality ratios display evidence of contractionary credit policies and more conservative approaches on the part of managers. International consolidations ultimately result in expanding the loan portfolio and relaxing precautionary measures, but this occurs almost five years after the M&A. Our indication is that high assimilation costs, coupled with other cultural, accounting and management differences, lead banks into following conservative credit policies in the first years that follow an M&A, until feeling secure to relax the temporarily employed strict credit policy measures.

A further line of research would investigate the relationship between cost and profitability efficiency and the operational efficiency of consolidated institutions, placing emphasis on both merged institutions and to the individual entities, in the post-merger period, in the case of acquisitions. Earlier research evidence (Lozano-Vivas et al., 2011) find dissimilarities in the acquirer and target performance in cross-border acquisitions. The exhibited increased success of banks expanding through international deals, in a highly deregulated environment in Europe, could be the epicenter of academic scrutiny in the coming years. The gradual withdrawal of remaining barriers in cross-border consolidations in the European area will further enable the future researcher to examine long-term performance of M&As for even larger samples of international deals.

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