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Impact of Mergers and Acquisitions on European Insurers: Evidence from Equity Markets[1]

Petr JAKUBIK – Dimitris ZAFEIRIS***

Abstract

The current macro-economic and financial conditions remain extremely challenging for the European insurance sector. Due to the ongoing low-yield environment and competitive pressure from new players, in particular technology--focused start-ups entering the markets, insurers are changing their business models and looking for new investment and business opportunities to improve their profitability and overall solvency positions. This is also reflected in increasing interest in mergers and acquisitions to achieve sufficient returns. However, there is no clear answer in the literature as to whether this strategy brings the anticipated positive results. This study empirically tests the effects of mergers and acquisitions (M&A) on the share prices of European insurers via an event study. Our results do not confirm the positive impact of such strategies on acquirers' share prices delivering abnormal returns for shareholders.

Keywords: *mergers and acquisitions, abnormal return, event study, insurers*

JEL Classification: G14, G22, G34

Introduction

The ongoing mergers and acquisitions (M&A) in financial services, particularly in the insurance industry, can be attributed to several factors, such as changes in risk and interest rates, market saturation, improvements in computing

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and communication technology, insurance premium deregulation, and economic forces (Okura and Yanase, 2013). Furthermore, the development of EU-wide solvency standards (Solvency II), the standardisation of accounting rules (IFRS 4), and the European Union's Third Generation Insurance Directives in 1994, which deregulated the European insurance market, have led to an increase in transactions across national boundaries (Farny, 2011).

Moreover, the ongoing low-yield environment poses a risk for European life insurance companies with long-term liabilities and a significant portion of guaranteed return products. These insurers are struggling to maintain a reasonable level of profitability and to meet their obligations towards policyholders. Additionally, competitive pressure from new players, in particular technology-focused start-ups entering the markets, has put pressure on insurance product pricing and ultimately on insurers' cost efficiency. As a response, insurers are changing their business models and looking for new investment and business opportunities, including mergers and acquisitions.

The recent surge in consolidation activity in the insurance sector has revived one of the fundamental debates in the financial literature concerning whether mergers are value-enhancing for shareholders. There is a considerable amount of contradicting research that attempts to explain the rationale behind and the impact of consolidating activities. Based on economic theory, any impact on a valuation due to a merger should be the result of changes in the net cash flows steaming from synergies, or alternatively, lower riskiness of the combined entity. The synergies are based on economies of scale and economies of scope, while lower risk is associated with diversification benefits (Cummins and Weiss, 2004). When large conglomerates include various lines of business or various geographical areas of activity, this could potentially limit the income volatility of the firm and consequently reduce the firm's specific risk. Market intelligence also suggests arguments ranging from outright balance sheet growth to regulatory implications.

Although the majority of studies find valuation gains for target firms, the impact on acquirers – usually the initiators of a consolidation process – is still inconclusive. A survey of the relevant literature by Martin and Sayrak (2003) makes reference to the fact that although conventional wisdom suggests that large diversified institutions trade at a discount compared to the market (the diversification discount), a number of studies support the contrary. In order to obtain a holistic view, we collect market information on the European insurance sector to identify any patterns that could help to link the mergers and acquisitions literature with empirical results. The topic of consolidation activity in the insurance sector is of significant interest not only due to the potential impact on shareholder wealth, but also on the perception of riskiness and/or stability of the

sector. In the aftermath of the recent financial crisis, such activities are viewed not only in terms of sometimes short-term shareholder profit or loss, but also in the broader perspective of financial stability. From this point of view, discussions on issues such as the market perception of the riskiness of large diversified entities versus smaller, focused entities, has become extremely relevant.

This article is organised as follows. First, we present a literature overview of the alternative rationales for M&A activity and the corresponding results. Second, we describe the theoretical framework applied in this study. Third, we describe the data sample for the empirical part. Fourth, we discuss the results of our empirical analysis. Finally, we conclude based on the obtained results and identify areas that deserve further research.

1. Related Studies

There is an extensive and diverse literature on the rationale and impact of M&A activity, mostly based on commercial firms, but more limited for the financial sector and, particularly, the insurance sector. We distinguish three main categories and further elaborate on the literature directly or indirectly relevant to the insurance sector. The first category includes research based on production theory assumptions, the second category refers to literature discussing diversification benefits, while the third category includes references which cannot be directly linked to the two main categories but still exhibit theoretical and practical relevance to the discussion, such as merger-induced systemic risk effects.

Bruner (2002) conducts a survey on the impact of M&A activity by summarising the evidence of 130 studies between 1971 and 2001. For the purposes of this survey, four approaches for measuring the M&A impact are discussed. (i) Event studies assess the impact of the merger by calculating abnormal returns to shareholders as the difference between the returns realised post-merger versus the returns predicted by a market model. (ii) Accounting studies assess the impact of M&A activity by analysing the financial statements, profitability, and performance of firms pre- and post-consolidation. They can be less controversial than event studies as they are not based on any market model assumptions. (iii) Surveys of executives and (iv) clinical-case studies are alternatives to the previous two. The survey concludes that overall M&A activity is beneficial as it presents a mostly neutral impact for acquiring firms and a positive impact for the shareholders of target firms. Consistent with the above, Campa and Hernando (2004) study the shareholder value creation of European M&As and find that the acquirer's shareholders receive cumulative average abnormal returns close to zero after the announcement of a merger, while the target firm's shareholders

receive significant cumulative average abnormal returns. Interestingly, the study finds that mergers in industries that have been under government control or operating in heavily regulated frameworks are less beneficial than mergers in unregulated industries.

For the insurance sector, the literature suggests a value creation that motives M&A activities (Cummins and Xie, 2009). However, despite the dramatic increase in M&A activity and the theoretical logic, there has been limited empirical evidence of a positive impact on acquirers' share price delivering abnormal returns for shareholders in the insurance sector as well as in financial services industries. Scholars focusing on M&A transactions in the financial sector regularly doubt value creation or even reveal value destruction (DeYoung, Evanoff and Molyneux, 2009). Berger, Cummins and Weiss (2000) distinguish between the hypotheses using profit scope economies, which measure the relative efficiency of joint versus specialized production, taking both costs and revenues into account. They discuss cost scope economies when combining Life with P&C insurance within a firm due to lower costs associated with shared databases, IT infrastructure, and logistics. Revenue economies of scope can be present due to sharing clientele and creating a 'one stop shop' for all insurance needs of customers. Upon recognition of potential diseconomies of scale, the authors test if scope economies vary according to scale and product mix and outline a regression analysis of scope economies to assess the types of firms most likely to realise scope economies. They construct an alternative methodology to measure scope economies which uses separate cost, revenue, and profit functions for life, property, and causality insurance. The results suggest that the realisation of scope economies depends on the size, type, and business model of the insurer. Large insurers with vertical distribution systems tend to realise profit scope economies as opposed to small institutions with horizontal distribution systems. Cummins and Weiss (2004) assess the impact on shareholder value after the unprecedented wave of mergers and acquisitions in the European financial sector that followed the deregulation of financial services (with the exception of solvency requirements) during the early nineties. By conducting a standard market--model event study methodology, the authors attempt to capture the market expectations as the best proxy for the net effect of M&A activity on the present value of the expected net cash flow of firms. The results of the analysis demonstrate that European M&As in the insurance sector generated small negative cumulative average abnormal returns (CAARs) for acquirers. These negative returns were more profound for domestic consolidation activity, while for cross--border transactions the impact was neutral. However, for consolidation targets the results seem to demonstrate overall gains, which were significant in some

cases. These findings are broadly consistent with the conventional wisdom in the M&A literature that suggests a null to negative impact on the shareholder wealth of acquiring firms in the commercial sector (Bruner, 2002). Conversely, Cummins, Klumpes, and Weiss (2015) find small but statistically significant gains for acquirers in the European insurance sector, at least for some windows of the event study. In line with other studies, the results also suggest large and significant gains for targets in the overall sample.

Another research question that is investigated in this paper is whether corporate diversification is more successful than a strategic focus. In this respect, Martin and Sayrak (2003) provide an extensive survey of the literature. In order to streamline the voluminous and quite diverse literature on the topic, they classify the existing literature into three categories according to the conclusion they reach concerning the impact of corporate diversification on shareholder value. The first category includes research claiming that large, diversified firms destroy value, have a lower Tobin's Q (Montgomery and Wernerfelt, 1998; Lang and Stulz, 1994; Lins and Servaes, 2002; Berger and Ofek, 1995; Berlin, 1999; Lelyveld and Knot, 2009), and trade at a discount of approximately 15 per cent when compared to the sum of their parts. The second category of literature advocates that corporate diversification does not destroy value. It is a series of research that challenges the link between market discounts and diversification, claiming that most firms were trading at a discount before deciding for diversification (Graham, 1999; Lang, Ofek and Stulz, 1996). The third category of research claims that diversified firms do not trade at a discount but at a significant premium and that the different conclusions of other research is the result of incorrect estimations. A major argument for the existence of diversification premium is based on the existence of internal markets where firms can seek cheap internal capital (Hadlock, Ryngaert and Thomas, 2001).

Specific to the insurance sector, Elango, Ma and Pope (2008) investigated the relationship between product diversification and firm performance in the US property-liability insurance industry over the period 1994 – 2002. Their results suggest that performance benefit associated with product diversification are contingent upon an insurer's degree of geographic diversification. Liebenberg and Sommer (2008) use a sample of property and causality insurers over the period 1995 – 2004 and conclude that diversified firms underperform specialised firms and that this underperformance is actually measured as 1 per cent over the return on assets or 2 per cent over the return on equity by using Tobin's Q. As property and causality insurers can choose to focus on a specific line of business or expand to more lines of business, thus achieving a more diversified corporate portfolio, they pose a good sample to assess the impact of diversification on shareholder

value. The authors' model accounting and market performance as a function of a binary diversification indicator and a range of other performance correlates. The findings suggest that undiversified insurers outperform diversified insurers as the costs and inefficiencies of diversification outweigh the potential benefits and risk reduction. There are also interesting results with respect to some of the control variables as both size and capitalisation are positively related to accounting performance, suggesting that customers are willing to pay an increased premium for insurers they perceive to have lower insolvency risk. The relation between size and performance may also be explained in terms of scale economies, as discussed in the previous section. Using the same event study methodology as in the case of the overall impact of M&A activity on insurers' shareholders, Cummins, Klumpes, and Weiss (2015) find evidence of outperformance of focusing rather than diversifying consolidation transactions and conclude that acquiring insurance companies should be very sceptical about cross-industry acquisitions. Staikouras (2009) conducts an event study analysis of M&A transactions involving insurance companies and banks and finds that insurance acquirers experience significant losses, while bank acquirers earn significant positive returns. Bank--insurance divestments are either value-neutral or produce significant negative returns. Chen and Tan (2011) investigate the wealth and risk effect for acquirers in M&As between insurers and banks in which the acquirers were European banks. They indicate that acquirers' total risks remain constant, and there are no changes in systematic risk (beta) with respect to the home banking index and the world market. The study presents a significant positive wealth effect from the transaction for acquirers. Additionally, Focarelli and Pozzolo (2008) investigate the determinants of cross-border M&As for banks and insurance companies. They find that distance and economic and cultural integration are important determinants for insurers' and banks' expansions abroad. Implicit barriers to foreign entry are less important in explaining the behaviour of insurance companies than for banks.

Cross-border consolidation of financial institutions within Europe has been relatively limited, possibly reflecting efficiency barriers to operating across borders, including distance; differences in language, culture, currency, and regulatory/supervisory structures; and explicit or implicit rules against foreign competitors. EU policies such as the Single Market Programme and European Monetary Union attenuate some but not all of these barriers (Berger, Deyoung and Udell, 2001). Stoyanova and Grundl (2014) investigate the link between insurance regulatory frameworks and merging decisions. More specifically, the authors perform an analysis of Solvency II framework and, in particular, the standard formula. They apply a model to assess an insurer's decision to merge in order to

take advantage of regulatory geographic diversification benefits and conclude that the framework may be the source of M&A activity. Mühlnickel and Weiss (2013) study the relationship between consolidation in the insurance industry and systemic risk by analysing a sample of global domestic and cross-border mergers. Using Marginal Expected Shortfall as a measure of acquiring insurance companies' contribution to moderate systemic risk, in combination with lower tail dependence coefficients as a second measure of extreme systemic risk, they find mixed empirical evidence in support of a destabilising effect of consolidation in the insurance industry. While the results indicate a strong positive relationship between M&A activity in insurance and moderate systemic risk, this effect does not carry over to extreme systemic risk.

2. Description of the Applied Methodology

The majority of research on M&A transactions in the insurance industry obtains inconsistent results regarding the success of M&A activity; hence, the overall effect of these activities remains controversial and inconclusive. According to numerous authors, there are various ways to measure the success of M&A transactions. The main differences exist with regard to the dimension of success, the perspective from which success is evaluated (Meglio and Risberg, 2010), the choice of the metric of success (Schoenberg, 2006), and the timeframe for measuring success (Schertzinger, 2008). Many scholars agree that the different use of performance metrics has contributed to the contradictory findings. Furthermore, most research on insurance M&A has focused on the short-term effects, while yielding vague results with regard to the average wealth effect of the acquirer (Cummins and Xie, 2005; 2009; Fields, Fraser and Kolari, 2007; Staikouras, 2009). There has been little empirical evidence of the long-term effects of insurance M&A. Boubakri, Dionne and Triki (2006) argue that there is a strong positive relationship between the financial success of acquiring insurance companies and M&A engagement over a three-year post-M&A horizon, while Schertzinger (2008) provides empirical evidence for the opposite relationship between long--term success and insurance M&A transactions. Given the controversial results in the literature, some scholars have gone further by identifying a second problem area, namely the significance of the average overall results. However, according to Schertzinger (2008), the average effect does not transmit the substantial variation that is present among different M&A transactions. In general, there is little empirical evidence on the potential variable that might influence the success of M&A in the insurance industry, and the available literature does not provide answers as to how to improve the success rate of insurance M&A.

Hence, in this study we use equity prices to identify the potential impact of consolidation activity on shareholder wealth. We assume that equity prices serve as the channel of information on shareholder expectations after the announcement of consolidation activity. An event study measures the impact of an economic event, such as the announcement of a merger or acquisition, by using financial market data. In our analysis, we employ an economic model event study based on MacKinlay (1997). In particular, we use the Capital Asset Pricing Model (CAPM) to calculate expected returns. Given the rationality in equity markets, the effects of an event should be reflected in the observed security prices, and a measure of the event's economic impact can be constructed using equity prices collected over a relatively short period. We use daily returns in order to estimate expected and abnormal returns. We define a 10-day event window from one day before the announcement ($t - 1$) until 8 days after the announcement ($t + 8$). We then calculate abnormal return as the difference between the observed market and expected return for time $\tau = t-1,\ldots,t+8$.

Daily expected returns are defined for all acquirers i and all time periods $\tau = t-1,\ldots,t+8$ as

$$R_{i,\tau}^{m} = r_f + \beta_i (r_{i,\tau}^{m} - r_f) \tag{1}$$

where

r_f – risk free rate,

β_i – beta of the security i,

$r_{i,\tau}^{m}$ – expected relevant market return for the security i and time τ.

Furthermore, the abnormal return for the security i and time τ corresponds to

$$AR_{i,\tau} = R_{i,\tau} - R_{i,\tau}^{m} \tag{2}$$

where

$R_{i,\tau}$ – observed return for the security i and time τ.

We further need to aggregate the abnormal return observed trough the time and across the securities. Given N events, the sample aggregated abnormal return for period τ is calculated as

$$\overline{AR}_{\tau} = \frac{1}{N}\sum_{i=1}^{N} AR_{i,\tau} \tag{3}$$

The average abnormal return can then be aggregated over the event window to obtain the cumulative abnormal return.

$$\overline{CAR} = \sum_{\tau=t-1}^{t+8} \overline{AR}_{\tau} \tag{4}$$

The null hypothesis that the abnormal returns are zero could be tested via the following test statistic (MacKinlay, 1997).

$$\theta_1 = \frac{\overline{CAR}}{var(\overline{CAR})^{\frac{1}{2}}} \tag{5}$$

where

$$var(\overline{CAR}) = \sum_{\tau=t-1}^{t+8} var\left(AR_{i,\tau}\right) \tag{6}$$

and $var\left(AR_{i,\tau}\right)$ corresponds to the variance of the abnormal returns at time τ for $i = 1,\ldots,N$.

This test statistic is asymptotically standard normal distributed under the null hypothesis. However, with the null hypothesis either a mean or variance effect might drive the results. In our case, we are interested only in the mean effect. Hence, we expand the null hypothesis to allow for changing variance. This can be done by using cross-section variance of cumulative abnormal returns in the testing statistics (Boehmer, Masumeci and Poulsen, 1991).

$$\theta_2 = \frac{\overline{CAR}}{var(\widehat{CAR})^{\frac{1}{2}}} \tag{7}$$

where

$$var(\widehat{CAR}) = var(\sum_{\tau=t-1}^{t+8} AR_{i,\tau}) \tag{8}$$

where the variance of abnormal cumulative returns is calculated for the sample including securities $i = 1,\ldots,N$.

Moreover, as a robustness check, we use a non-parametric test based on the following statistics (Corrado, 1989).

$$\theta_3 = \frac{1}{N}\sum_{i=1}^{N}(K_{i,0} - 2)s(K) \tag{9}$$

where

$K_{i,0}$ – rank of the abnormal return in the event day.

$$s(K) = \sqrt{\frac{1}{10}\sum_{\tau=t-1}^{t+8}\left(\frac{1}{N}\sum_{i=1}^{N}\left(K_{i,\tau} - 2\right)\right)^2} \tag{10}$$

This test statistic is also asymptotically standard normal distributed under the null hypothesis. Finally, the above methodology is applied to investigate the null hypotheses for the European insurance sector as well as for different types of M&A activities separately. In particular, we will further distinguish M&A transactions that attempt to diversify versus reinforce existing business activities. Additionally, the null hypotheses will be tested for cross-border versus domestic M&A separately.

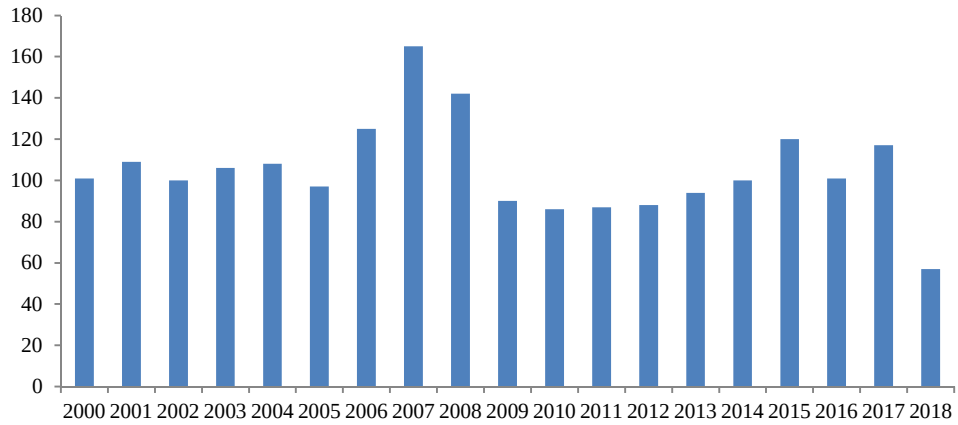
3. Data Sample and Descriptive Statistics

The purpose of our data sample is twofold. First, we want to describe market developments in European M&A activity in this millennium and, second, we aim to empirically test the impact of the observed transactions on auguries' share prices to identify any potential benefit of the transactions that would motivate for consolidation.

We construct our sample based on Bloomberg data for the period of January 2000 to June 2018 for M&A activity in Europe in which either the acquirer or target was an insurance company (acquirer or target country ISO code corresponds to any country of the European Economic Area). Although we wanted to go even further into the history, data prior to 2000 were very limited and could have biased our results and conclusions. Our original sample database refers then to 1,993 cases (Figure 1).

F i g u r e 1

M&A Activity in the European Insurance Sector (number of transactions)



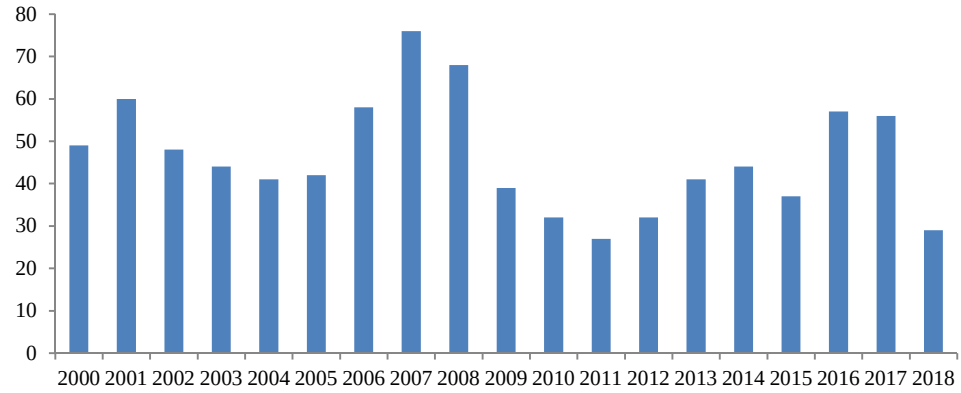
Notes: M&A activity in Europe where either the acquirer or target was an insurance company. The number of transactions associated with 2018 corresponds to the period of January-June only.

Source: Bloomberg.

However, in order to further analyse the data, we need to adjust for data availability and suitability for the analysis. We therefore filter our results by selecting only the acquirers that are listed in stock exchanges and for which information on the deal amount is available. Thus, we construct a sample consisting of 880 transactions and the market observations (Figure 2).

F i g u r e 2

M&A Activity in the European Insurance Sector in which Acquirers are Listed in Stock Exchanges (number of transactions)



Notes: M&A activity in Europe in which either the acquirer or target was an insurance company and the acquirer is listed in stock exchanges. The number of transactions associated with 2018 corresponds to the period of January-June only.

Source: Bloomberg.

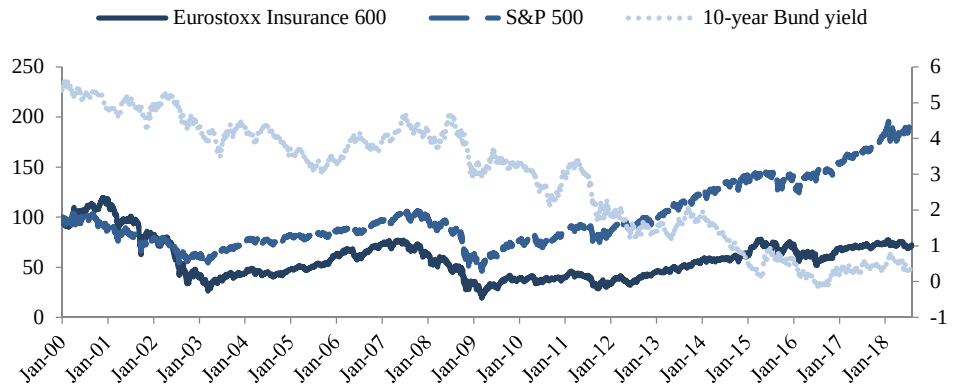
During the investigated period, the performance of the insurance market was generally worse than the overall market. While the global market recovered fully after all drops in this millennium, particularly the subprime mortgage crisis, the European insurance market (measured by the STXE 600 Insurance Index) remains at less than 75% of its value in January 2000. This suggests that the overall macroeconomic conditions were less favourable for the insurance sector than other industry-specific sectors. This is mostly driven by the substantial drop in the risk-free rate over the investigated period.

While the German 10-year government bond yield was over 5% in the beginning of this millennium, it dropped to values close to zero, with even a short period of negative values in 2016. This development negatively affects mainly life insurance companies with long-term liabilities and a significant portion of guaranteed return products.

An initial overview of the data indicates that there is a significant variation in M&A activity over time and that this variation can partially be explained by economic factors and equity market performance (Figure 2).

Figure 3

Market Performance and Risk Free Yield Development

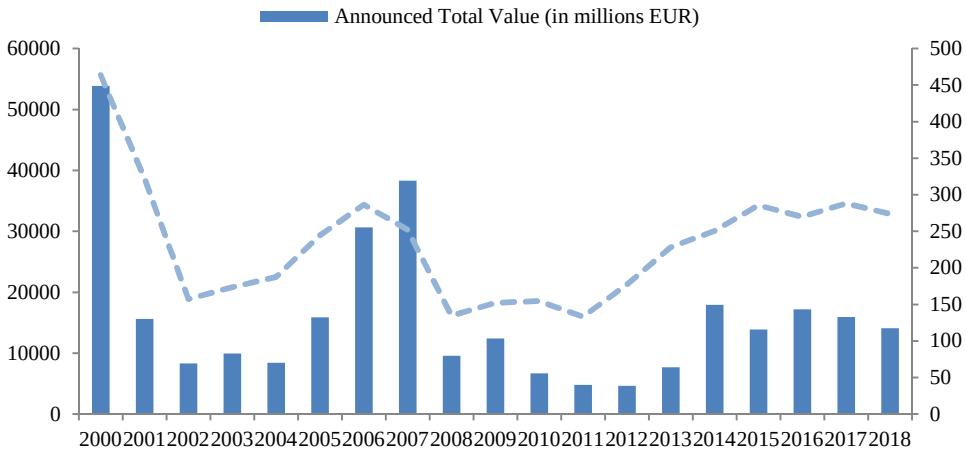


Notes: Eurostoxx Insurance 600 and S&P 500 are displayed as indices with 1st January 2000 as 100 (primary axis), the yield of German 10 year government bond is expressed in per cent (secondary axis).

Source: Bloomberg.

Figure 4

M&A Activity in the European Insurance Sector (deal value) **and Eurostoxx Insurance 600**



Notes: M&A activity in Europe in which either the acquirer or target was an insurance company and the acquirer is listed in stock exchanges (primary axis). The deal value of transactions associated with 2018 corresponds to the period of January-June only. Eurostoxx Insurance 600 is displayed on the secondary axis.

Source: Bloomberg.

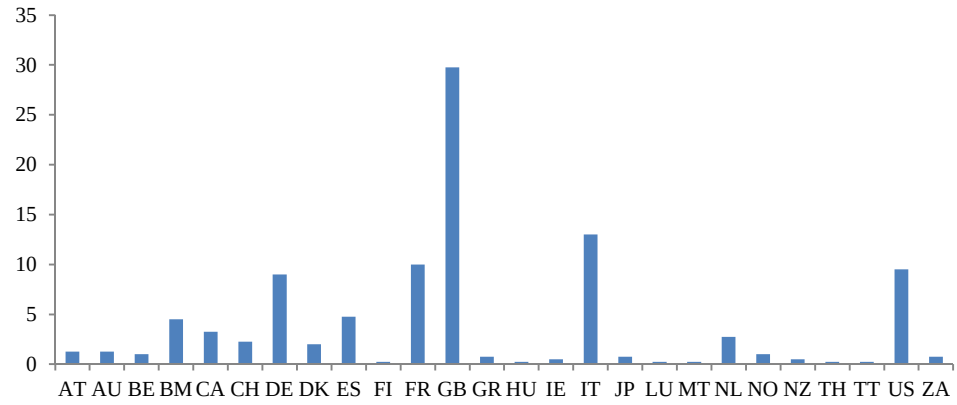
The overall picture indicates that there appears to be some degree of correlation between the market performance of the European insurance sector and consolidation activity. Peaks in activity followed a strong equity market performance

in the late nineties and 2006 – 2007, and a significant drop is observed in the aftermath of the global financial crisis in 2008. Improvement in the last few years coincides with overall market performance, but does not seem to confirm the expectations of an M&A activity peak due to Solvency II introduction. On the other hand, EU consolidation activity seems to lag behind the US, although several more years of observations would be needed before concluding unequivocally in this respect.

We further focus our analysis on the 'decision maker'. Hence, we select M&A activity where the acquirer was an insurer. For this reason, our sample is reduced to 538 cases. In order to use this sample for an event study, based on market returns, the following information is needed: market prices at all observation periods, beta before the event window (we use beta at one month before the deal announcement) for the acquirer as well as sub-sector,[2] and the country of domicile of both the acquirer and target. Our study sample is thus limited to 400 transactions that fulfil the above requirements. Furthermore, when constructing our sample based on all selected transactions, we had to adjust data for weekends.[3] A geographical location of acquires in our final sample show a high degree of concentration in some countries (in particular in the United Kingdom).

F i g u r e 5

A Geographical Location of Acquires (in per cent)



Notes: A geographical location of acquires is reported as a share on the total final sample used in our empirical analysis. AT = Austria, AU = Australia, BE = Belgium, BM = Bermuda, CA = Canada, CH = Switzerland, DE = Germany, DK = Denmark, ES = Spain, FI = Finland, FR = France, GB = United Kingdom, GR = Greece, HU = Hungary, IE = Ireland, IT = Italy, JP = Japan, LU = Luxembourg, MT = Malta, NL = Netherlands, NO = Norway, NZ = New Zealand, TH = Thailand, TT = Trinidad and Tobago, US = United States, ZA = Zambia.

Source: Bloomberg.

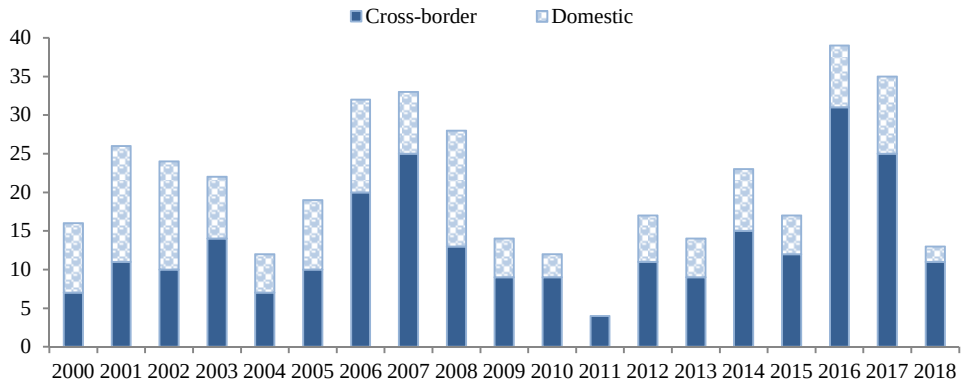
[2] The following classifications is used: Life/Health Insurance, Property/Casualty Insurance, Multi-line Insurance, Reinsurance, Insurance Brokers, Financial Guarantee Insurance.

[3] This means Monday was taken as the next day after Friday.

To assess the geographical focus of these transactions, we distinguish our sample into ”domestic” and ”cross-border” transactions and observe for any trend over time. The domestic transactions were defined as a transaction in which the acquirer and target have their domiciles in the same country (Figure 6). At least for our sample, there is a gradual shift in the focus from domestic to cross-border consolidation activities that may be attributed to the internationalisation of markets and, particularly, the creation of a single market in the EU (Figure 8).

F i g u r e 6

Type of Consolidation – Feographical (number of transactions)

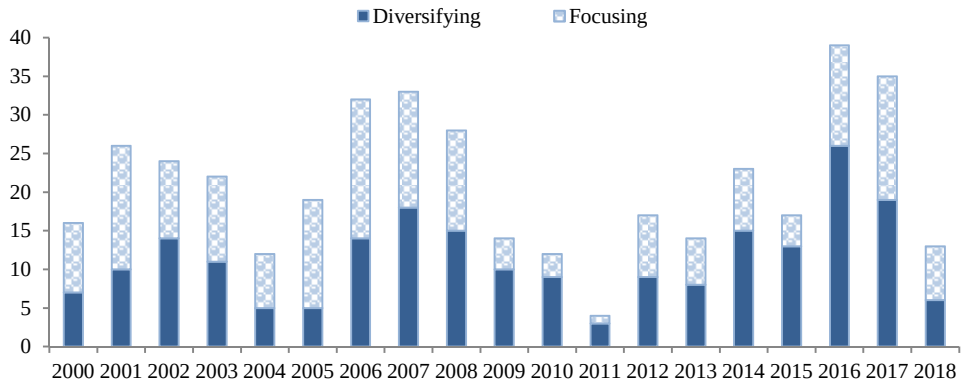


Notes: M&A activity in Europe in which the acquirer was an insurance company and the acquirer is listed in stock exchanges. The data for 2018 corresponds to the period of January-June only.

Source: Bloomberg.

F i g u r e 7

Type of Consolidation – Sectoral (number of transactions)



Notes: M&A activity in Europe in which the acquirer was an insurance company and the acquirer is listed in stock exchanges. The data for 2018 corresponds to the period of January-June only.

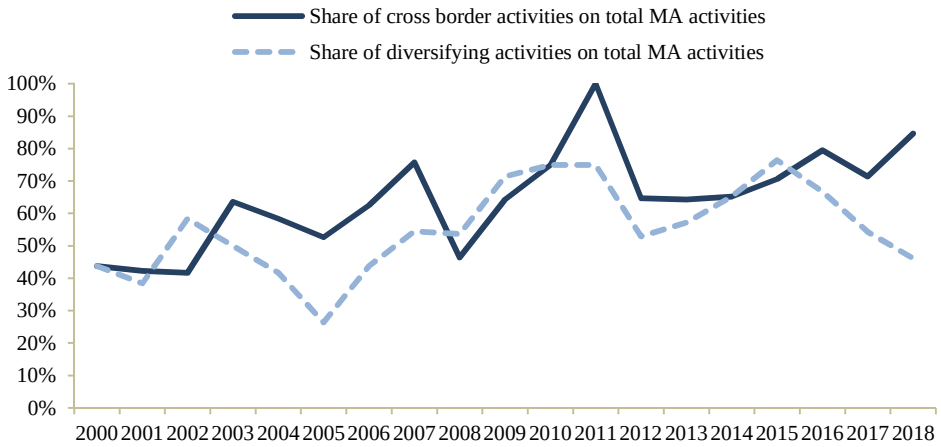
Source: Bloomberg.

Furthermore, differentiating between "diversifying" versus "focusing'" transactions in our sample, based on the subsector of the merging entities, could yield interesting results (Figure 7). The focusing transaction was defined as a transaction in which the acquirer and target operate in the same subsector (Life/Health Insurance, Property/Casualty Insurance, Multi-line Insurance, Mutual Insurance, Reinsurance, Insurance Brokers, Financial Guarantee Insurance).

Although with variations over time, there is a tendency of firms to pursue diversifying or complementary activities when engaging in M&A activities rather than following a focused approach (Figure 8). This tendency deserves further analysis, particularly when considering the contrary or, in the best case, inconclusive discussions on the topic in the relevant literature.

F i g u r e 8

Share of Cross-border Activities on Total MA Activities



Notes: M&A activity in Europe in which the acquirer was an insurance company and the acquirer is listed in stock exchanges. The data for 2018 corresponds to the period of January-June only.

Source: Bloomberg.

By viewing our sample in terms of the announced deal size rather than the number of transactions, we obtain similar results for the geographical focus, but conflicting results for the sectorial focus.

4. Empirical Results

We investigate the hypothesis that M&A activity could bring positive additional value to an acquirer's shareholders using a data sample based on M&A activities in Europe in which the acquirer was an insurance company and the acquirer is listed in stock exchanges described in the previous section.

The calculation of abnormal cumulative returns (CAR) shows only marginally prevailing cases with positive CAR for the whole sample (54%). The results are similar for all sub-categories investigated except for domestic M&A activities with only 50% cases with positive CAR (Table 1).

T a b l e 1

Share of Cases with Positive Abnormal Cumulative Returns (in %)

	Diversifying	Focusing	Cross-border	Domestic	Total
2000	71	56	43	78	63
2001	40	69	73	47	58
2002	50	80	90	43	63
2003	55	36	43	50	45
2004	40	57	43	60	50
2005	60	57	60	56	58
2006	57	67	75	42	63
2007	28	27	24	38	27
2008	40	54	62	33	46
2009	70	25	56	60	57
2010	56	33	44	67	50
2011	67	0	50	–	50
2012	44	63	55	50	53
2013	38	50	44	40	43
2014	40	63	47	50	48
2015	85	50	75	80	76
2016	65	62	68	50	64
2017	47	50	44	60	49
2018	67	57	64	50	62
Total	53	55	55	50	54

Notes: M&A activity in Europe in which the acquirer was an insurance company and the acquirer is listed in stock exchanges. The data for 2018 corresponds to the period of January-June only.

Source: Bloomberg.

Similarly, the total CAR accounts for 0.8% of the whole sample. The results are similar cross all investigated categories, including the domestic M&A activities with total CAR accounting for 1.1%.

Despite the overall positive total CAR, we further test whether these results are statistically significant using the event study approach described in the second section. We applied this methodology for the whole sample as well as for the discussed subsamples – diversifying, focusing, cross-border and domestic M&A activities. Based on our test statistics obtained for all subsamples (formulas 5, 7, 9), we could not reject the null hypothesis that CAR is zero for any of the test statistics and subsamples considered, even at the confidence level of 20% for which the absolute value of tested statistics would need to be greater than 1.282.

The existence of the positive total CAR observed does not appear to be statistically significant. Hence, a positive additional value of M&A activities for acquirers' shareholders cannot be confirmed. As a robustness check, we further test the situation for the overall insurance market to determine whether a marginally positive total CAR for the sample is not driven by the positive development of

the whole insurance sector at the selected time windows. To this end, we construct a new sample using the time of events and corresponding event windows to include the data of the hypothetical average insurance company represented by the European Insurance Index (STXE 600 Insurance). We then apply the same methodology used for the original sample.

T a b l e 2

Average Cumulative Abnormal Returns (in %)

	Diversifying	**Focusing**	**Cross-border**	**Domestic**	**Total**
2000	0.8	2.1	–0.4	3.1	1.6
2001	–0.1	1.4	2.0	0.0	0.8
2002	0.4	3.1	4.7	–0.7	1.5
2003	1.4	–0.4	–0.4	2.1	0.5
2004	1.7	3.2	0.7	5.3	2.6
2005	0.5	1.3	1.5	0.7	1.1
2006	–1.9	2.3	0.8	–0.1	0.5
2007	–1.8	–1.8	–2.2	–0.5	–1.8
2008	1.5	–0.5	2.6	–1.2	0.6
2009	1.1	–0.6	1.6	–1.2	0.6
2010	0.2	0.0	0.3	–0.4	0.2
2011	–2.2	–6.4	–3.2	0.0	–3.2
2012	–0.2	4.6	0.1	5.6	2.1
2013	0.8	0.7	1.5	–0.6	0.8
2014	0.8	2.4	0.6	2.8	1.3
2015	5.5	–2.4	–0.4	13.3	3.6
2016	1.8	0.6	1.9	–0.4	1.4
2017	0.0	–0.3	–0.2	0.0	–0.1
2018	1.0	1.0	0.6	2.9	1.0
Total	0.7	0.9	0.6	1.1	0.8

Notes: M&A activity in Europe in which the acquirer was an insurance company and the acquirer is listed in stock exchanges. The data for 2018 corresponds to the period of January-June only.

Source: Bloomberg and own calculations.

T a b l e 3

Statistical Results

	Average CAR (in %)	**Test statistic** θ_1	**Test statistic** θ_2	**Test statistic** θ_3
Total Sample	0.793	0.122	0.121	0.924
Diversifying	0.682	0.114	0.116	0.902
Focusing	0.925	0.131	0.155	0.949
Cross-border	0.623	0.118	0.133	0.864
Domestic	1.087	0.133	0.147	1.026

Source: Own calculations.

T a b l e 4

Statistical Results

	Average CAR (in %)	**Test statistic** θ_1	**Test statistic** θ_2	**Test statistic** θ_3
Test sample	–0.497%	–0.114	–0.119	1.028

Source: Own calculations.

The results show that the European insurance sector accounts for a marginally negative total CAR for the periods that were included in the sample with M&A

events. Furthermore, the null hypothesis that the abnormal returns are zero could not be rejected. Hence, we can conclude that our results are not influenced by a positive development of the insurance sector in the considered time frame.

Overall, our empirical analysis did not confirm that M&A activities would bring positive additional value to acquirers' shareholders. However, our work is based on event study methodology that has many limitations. Hence, we cannot rule out some positive long-term effect that might not be reflected in share prices at the time of announcement.

Conclusion

The topic of M&A activity and its impact on shareholder value remains ambiguous in the literature, with limited studies dealing with insurance sectors. Although the studies indicate neutral to negative results for acquirers, firms continue engaging in M&A activities, in particular in the current low-yield environment. Our study contributes to the debate on the impact of consolidation activity through a market model event study, as introduced by MacKinlay (1997). The results of our analysis indicate that within the European insurance sector, when the acquirer is an insurance company, there are no significant positive abnormal returns. We obtain similar results for cross-border versus domestic consolidation activities, as well as for diversifying versus focusing on the same business lines consolidation activities. Although we observe marginally positive total cumulative abnormal results in all cases, none of the results appears to be statistically significant.

Our finding on the impact of corporate (as opposed to portfolio) diversification on the value of an insurer is in line with the portfolio theory. Any reduction of firm-specific risk claimed by the diversification proponents could be better performed by the investors themselves by holding a diversified portfolio of firms specialising in different lines, probably more effectively than a firm that diversifies its activities. Hence, there should be no reward or premium paid by the markets and, to the extent that conglomeration includes increased costs or intragroup subsidies for less efficient business lines, there may even be a diversification penalty. However, we observe firms still engaging in diversification of activities either through M&A transactions or organic growth. Further research on the topic would be of added value, supplementing the analysis of consolidation impact based on event studies with a study on key factors that motivate insurers engaging in consolidation activities. Additionally, cross-sectoral analysis might reveal important differences in this pattern for insurers, banks, or non-financial companies.

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