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Value Creation By M&A Transactions In The European Insurance Market

Andreas A. Schertzinger[α], Dirk Schiereck[Ω]

Abstract - The European insurance sector went through a radical transformation in the 1990s. Harmonization of EU regulation lead to a strong increase in M&A, and several factors indicate a new wave of transactions. We analyze the influence of transaction timing, geographical and industry strategy, and experience on short- and long-term value creation by M&A of European insurers. Transactions in the bottom of the M&A cycle, fully focusing or diversifying transactions, and transactions by inexperienced and most experienced acquirers created more long-term value. These findings are mostly contrary to short-term capital market reactions and results of previous research on the U.S. market.

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I. Introduction

The European insurance sector went through a radical transformation, which began in the 1990s and is still continuing. Deregulation, implementation of the EMU, progress in information and communication technology, and economic forces such as favorable financial markets, highlighted solvency concerns and soft insurance markets drove the transformation process (Swiss Re, 1999 and 2000, and OECD, 2000a). Regulatory harmonization took a quantum leap with the introduction of the Third Generation Insurance Directives for life and non-life insurance in 1992, which for example eliminated price and product regulations, ensured cross-recognition of licenses and restricted host country control to solvency requirements (OECD, 2000b). Later directives brought European operating environment further into line, e.g. the Insurance Group Directive in 1998 (OECD, 1998), and the Reinsurance Directive in 2005 (European Commission, 2005).

European insurers reacted promptly. Dealogic reports 1,225 completed M&A transactions between European insurers in the years 1995 to 2005. While the number of insurance companies operating in the EU-25 decreased only slightly from 5,083 in 1993 to 4.933 in 2004, the market share of the 10 largest life and non-life insurers increased remarkably from 49.5% to 75.1%, and 59.0% to 80.6% respectively (CEA, 2006).

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Insurers were far more enthusiastic about seizing opportunities and withstanding competition from a single market for financial institutions than banks: Cross-border transactions clearly dominated insurance M&A activities between 1990 and 2005 with 63% of the total transaction volume. Nonetheless, insurers were reluctant to diversify their activities across sub-industries: Only 70% of insurance transactions were focused on expanding current business, an atypically small proportion compared to other industries (Focarelli and Pozzolo, 2000).

Today, there are indications for a new wave of transactions. Extending outreach of the EU and the EMU are only two of many factors indicating a pickup in M&A activity. Other major signals include further simplification of jurisdictions (e.g., European Societas and IFRS), persisting cost-efficiency gaps, aspiration for fast growth in the CEE and Asia, and an expected softening of non-life and reinsurance prices. The trend is further underlined by insurers' excess capital awaiting profitable investment, and revived interest of private equity investors with almost quadrupled transaction volumes from 2005 to 2006.

Despite the fundamental market transformation and current relevancy for the European insurance industry, there has been little empirical research in this field so far. Cummins and Weiss (2004) obtain an acquirer CAR of -0.61% and a target CAR of 7.50% for European insurance M&A, whereas all other studies with a focus on the U.S. market report significantly positive acquirer CARs and notably higher for targets. Findings of studies on value creation by M&A in the U.S. insurance industry may thus not apply for the European insurance sector.

However, only Cummins and Weiss (2004) focus their analyses on the European market, but they do not study combined entity returns (CERs) short-term around announcement of transactions, omit a multivariate analysis on drivers of value creation, and do not examine long-term value creation after the announcement at all. Floreani and Rigamonti (2001) cover Europe as one of many regions with only 16 observations. Long-term value creation for European insurers has not been investigated so far. Only Boubakri et al. (2006) analyze long-term abnormal returns, but restrict their analyses to the U.S. insurance market and P&C acquirers. The purpose of this study is to extend the empirical evidence by analyzing short- and long-

term value creation and its determinants for European insurance M&A.

The paper is structured as follows. In section 2, we derive hypotheses on value creation and its determinants. In section 3, we present descriptive statistics on our data sample. In section 4, we briefly review the applied event study methodology. In section 5, we present results on the short- and long-term horizon. Finally, we discuss the results and derive conclusions in section 6.

II. Research Agenda

Although concentration especially in the European primary insurance sector increased notably between 1993 and 2004, a new wave of M&A is likely to catalyze investors' pressure on management to create value again. This finding confronts with a paradox: Empirical studies of M&A in the financial services industry frequently doubt value creation, in particular in the U.S. and the European banking industry (Beitel et al. 2004; Pilloff and Santomero 1998). In contrast, evidence for the insurance industry is more promising. Insurance M&A transactions in the U.S. and world market created value (Akhigbe and Madura 2001; Floreani and Rigamonti 2001; Cummins and Weiss 2004; Cummins and Xie 2005; Boubakri et al. 2006). To understand whether M&A value creation in the European market, we examine whether M&A transactions in the European insurance industry also yield positive abnormal returns.

Three non shareholder-value focused motives are more likely to prevail during years of high M&A activity. According to the *free cash flow hypothesis*, managers with high free cash flow at their discretion are more likely to carry out M&A transactions than returning capital to shareholders (Jensen 1986). The *bandwagon hypothesis* suggests that management is more inclined to carry out transactions in M&A peak times, even in case of doubtful rationale, seeking to maintain its relative market power. The *empire building hypothesis* argues that management may use M&A as a defensive strategy against hostile takeovers of the own company, thus securing personal income, power, prestige, and job security. We analyze whether less value is created by transactions during periods of high M&A activity. For the analysis, we introduce an independent variable *TIMING* which categorizes announcement years into the four M&A market phases bottom (1990 - 1995, 2001 - 2005), upswing (1996), peak (1997 - 1999), and downturn (2000).[1]

A crucial decision for management is whether to seek inorganic growth in a related or an unrelated industry or geography. M&A in related industries or geographies may strengthen *market power* or support *economies of scale*, whereas M&A in unrelated industries or geographies may support *economies of scope*. Prior research on M&A in the insurance market obtains mixed results in comparisons of focus and diversification strategies. Generally, focus strategies proved more successful in the U.S. and world market (Floreani and Rigamonti 2001; Cummins and Xie 2005; Boubakri et al. 2006), but geographical diversification within the EU yielded somewhat higher abnormal returns in the European market (Floreani and Rigamonti 2001; Cummins and Weiss 2004).We analyze whether the transaction strategy influences value creation by testing whether diversifying transactions achieve higher abnormal returns than fully focused transactions. We introduce the categorical variable *STRATEGY* as a polytomous dummy variable to distinguish between national/within-industry[2], national/cross-industry, cross-border within EU/within-industry, cross-border within EU/cross-industry, cross-border world/within-industry, cross-border world/cross-industry. If cross-border or cross-industry transactions generate more value than national or within-industry transactions, economies of scope are assumed to dominate market power effects or scale economies.

Pablo et al. (1996) argue that "although better outcomes [of transactions] are associated with choosing a better target, negotiating a better financial deal, or expertly identifying and successfully sharing key strategic complementarities, the degree to which these events are likely to occur depends upon characteristics of the process used to make and implement acquisition decisions". We examine whether the acquirers' transaction experience is as a major determinant for successfully *conducting the transaction process*. The independent variable *EXPERIENCE* categorizes acquirers into insurers with no, few, extensive and most transaction experience based on their transaction history in the previous three years.[3]

In the multivariate analyses, we control for size, region, and industry of the transaction partners. The metric independent variable *LNSIZE* is introduced to control for the acquirers' size, measured by logarithm of its market value at announcement date. The metric independent variable *GROWTH* adjusts for the influence of acquirers' growth on value creation, whereas growth is measured as relative change of market value over the estimation window of the short term analysis. The metric independent variable *LNRELVOLUME* corrects for the influence of the relative transaction volume on abnormal returns, operationalized as the logarithm of the transaction volume divided by acquirer size. The

[1] The chosen classification into four phases based transaction volume relative to peak volume results in a superior regression model fit.

[2] Industries are classified into Life, P&C, Reinsurance, Agents/Brokers, Investment Management and Other.

[3] Due to its superior statistical properties, the four categories are built from quartiles of aggregated 3-year transaction volumes of acquirers, excluding the current transaction.

categorical independent variables *ACQREGION*, *TARREGION*, *ACQINDUSTRY*, and *TARINDUSTRY* control for differences in value creation across regions and industries of acquirers and targets. Regions are categorized in Western European countries (EU-15), Central and Eastern European countries (other EU-25), Switzerland and Norway. Industries are classified into Life, P&C, Reinsurance, Agents/Brokers, Investment Management and Other.

III. Data Sample

We identify European insurance M&A transactions between 1990 and 2005 based on two primary data sources, Thomson Financial SDC Platinum, and Dealogic Merger & Acquisition database. The Dealogic database only covers transactions from 1995 onwards. Both deal lists are integrated, verified and amended through extensive press research. Capital market data and company account data we obtain primarily from Datastream, and complement this data with Bloomberg and annual reports for early transactions.

The following filter criteria are applied to identify relevant M&A transactions.

- The transaction was announced between 1.1.1990 and 31.12.2005.
- The transaction has been closed.
- The transaction volume was equal to or larger than USD 100 mn.[4]
- A change of control occurred through the transaction, i.e. the initial stake of the acquirer in the target before the transaction was smaller than 50%, and the final stake after the transaction is higher than 50%.
- The acquirer was member of EU-25 or Switzerland or Norway. The location of the target country is not restricted.
- The acquirer SIC and the target SIC were 63* (Insurance Carriers). Additionally, targets include SICs 6282 (Investment Advice), 6411 (Insurance Agents, Brokers, and Service), 6719 (Offices of Holding Companies, Not Elsewhere Classified), 6722 (Management Investment Offices, Open-End), and 6726 (Unit Investment Trusts, Face-Amount Certificate Offices, and Closed-End Management Investment Offices).
- The acquirer was a listed company.
- The acquisition object was shares, not only assets or liabilities of a target company.

Table 1 presents an overview of the 176 transactions between 1990 and 2005 that satisfy our general set of criteria.[5] The short-term analysis additionally requires targets to be listed, so that combined entity effects can be computed. The reduced sample contains 54 observations, which is still larger than data sets for combined entities in prior research. Clearly, the implementation of the Third Generation Insurance Directives in 1992 set the starting point for a steadily increasing transaction number and volume, culminating in 1999, when the stock market boomed and the EMU was implemented, with 27 transactions worth USD 51.6 bn. Cummins and Weiss (2004) find the same sample pattern in their data. Between 1990 and 2005, national, cross-border within and outside of Europe transactions accounted each for about a third of the total transaction numbers and volumes. After the implementation of the Third Generation Insurance Directives however, volume share of cross-border transactions within Europe rose from 43% in 1992 to 94% in 1994. The introduction of the Euro produced a similar effect: Volume shares of cross-border transactions rose from 17% in 1999 to 52% in 2000.

[4] Transactions with missing volumes were included or rejected based on the volume obtained through press research; transactions with undisclosed financial terms were excluded.

[5] Following the proposal of Pilloff and Santomero (1998) we have not dropped transactions with multiple bidder activity. We introduced the industry classification "Reinsurance", which is not distinguished by SIC, based on the Top-150 reinsurance provider lists published by S&P in the S&P Global Reinsurance Highlights reports.

Table 1 : Summary overview of identified transactions

			Geographical focus			Industry focus	
Year of announcement	**No. of transactions**	**Average transaction volume** in USD mn	**National**	**Cross-border within Europe**[a]	**Cross-border outside of Europe**	**Within-industry**	**Cross-industry**
1990	6	834	1	2	3	3	3
1991	2	323	1	1	0	1	1
1992	3	313	1	1	1	2	1
1993	4	721	1	2	1	2	2
1994	8	619	1	6	1	6	2
1995	10	534	4	0	6	5	5
1996	16	1,668	9	4	3	8	8
1997	22	2,077	10	7	5	13	9
1998	20	1,295	5	5	10	13	7
1999	27	1,909	9	8	10	13	14
2000	15	2,771	3	6	6	9	6
2001	13	691	2	2	9	7	6
2002	7	882	4	3	0	4	3
2003	11	489	6	3	2	8	3
2004	4	587	0	3	1	2	2
2005	8	2,407	3	2	3	5	3
Total							
absolute	176	1,439	60	55	61	101	75
in percent	100.0%		34.1%	31.3%	34.7%	57.4%	42.6%

[a] Europe is defined as all member states of EU-25, Norway and Switzerland

Sources: Thomson Financial SDC Platinum, Dealogic M&A database, press research

Table 2 : Number of transactions and transaction volume (USD mn) by country

			Target country																																	
			EU-15												EU-25					Nor-way	Swiss	World															Overall
Acquirer country			FR	BE	DE	DK	ES	FI	GB	IE	IT	LU	NL	SE	Tot.	CZ	HU	PL	Tot.	NO	CH	AU	BM	BR	CA	CL	HK	IL	JP	LK	MX	SG	TW	US	Tot.	Total
EU-15	FR	No.	4	3	1				3	1			2		14						1	1		1	1		1		1					4	9	24
		USD bn.	13.5	4.1	0.5				2.4	0.2			3.1		23.7						0.2	0.8		0.5	0.3		0.1		2.0					2.3	5.9	29.9
	AT	No.									1				1	1	1		2																	3
		USD bn.									0.1				0.1	0.1	1.7		1.8																	2.0
	BE	No.		2											2																					2
		USD bn.		1.1											1.1																					1.1
	DE	No.	1		5					1	3	1		1	12																			5	5	17
		USD bn.	5.2		5.8					0.4	1.3	0.1		0.1	12.9																			10.6	10.6	23.5
	DK	No.				3								1	4																			1	1	5
		USD bn.				0.5								0.5	1.1																			0.6	0.6	1.7
	ES	No.					1								1																					1
		USD bn.					0.3								0.3																					0.3
	FI	No.						2							2			1	1																	3
		USD bn.						0.4							0.4			0.2	0.2																	0.5
	GB	No.	2		1		1		24	1		1	1	1	32							1	1		2	1			1			1	1	9	17	49
		USD bn.	2.3		0.3		0.3		49.4	0.4		1.3	0.8	7.0	61.8							0.2	0.2		0.7	0.1			0.2			0.2	0.1	6.8	8.5	70.4
	IE	No.								1					1																					1
		USD bn.								2.7					2.7																					2.7
	IT	No.	3		2						15				20						1							1						1	2	23
		USD bn.	1.2		5.5						17.6				24.3						1.2							0.3						0.3	0.6	26.1
	NL	No.							1						1										3	1					2			5	11	12
		USD bn.							1.2						1.2										0.8	0.1					1.0			20.8	22.7	23.9
	SE	No.																		1																1
		USD bn.																		3.8																3.8
Total		No.	10	5	9	3	2	2	28	4	19	2	3	3	90	1	1	1	3	1	2	2	1	1	6	2	1	1	2		2	1	1	25	45	141
EU-15		USD bn.	22.3	5.2	12.0	0.5	0.6	0.4	53.0	3.7	19.0	1.4	3.9	7.6	129.7	0.1	1.7	0.2	2.0	3.8	1.4	1.0	0.2	0.5	1.7	0.2	0.1	0.3	2.2		1.0	0.2	0.1	41.4	49.0	185.9
Norway	NO	No.																		1																1
		USD bn.																		0.5																0.5
Swiss	CH	No.	3	2	1		2		6		1		1		16						2									1	1			14	16	34
		USD bn.	1.3	0.2	1.1		0.4		40.8		0.4		0.3		44.4						2.4									0.1	0.1			19.8	20.0	66.9
Overall		No.	13	7	10	3	4	2	34	4	20	2	4	3	106	1	1	1	3	2	4	2	1	1	6	2	1	1	2	1	3	1	1	39	61	176
Total		USD bn.	23.6	5.4	13.1	0.5	1.0	0.4	93.8	3.7	19.4	1.4	4.2	7.6	174.1	0.1	1.7	0.2	2.0	4.4	3.8	1.0	0.2	0.5	1.7	0.2	0.1	0.3	2.2	0.1	1.1	0.2	0.1	61.2	69.0	253.3

Sources: Thomson Financial SDC Platinum, Dealogic M&A database, press research

Table 2 documents the distribution of transactions by country. British insurers were most active acquirers (49 transactions worth USD 70.4 bn), the second most popular targets (34 transactions worth USD 93.8 bn) and generally accounted for most transactions (24 national transactions worth USD 49.4 bn). Only U.S. insurers were acquired more frequently (39 transactions), however with a notably smaller volume (USD 61.0 bn). Swiss acquirers were almost as active as British insurers with 34 transactions worth USD 66.9 bn, but only involved 4 times as target. The leading role of British insurers in European M&A is also reflected in the data sample of Cummins and Weiss (2004).

With respect to industry activity, *Table 3* illustrates that life insurers were the most frequent acquirers (131 transactions worth USD 203.9 bn), accounting for 80% of the total transaction volume between 1990 and 2005. Further on, life insurers were the preferred target (103 transactions worth USD 177.0 bn). Consequently, life-life transactions dominated M&A activities in general (85 transactions worth USD 162.5 bn, 63% of total volume). The largest average transaction volume was reached by a single merger between a P&C insurer and an investment management company (USD 3.3 bn; acquisition of Pimco by Allianz), whilst the largest average formed by multiple acquisitions was reached by life insurers buying agents/brokers (9 transactions with the average of USD 2.6 bn).

Table 3 presents the relative transaction volumes compared to the market value of the acquirers at announcement. On average, transactions amounted to 10.8% of the acquirers' market capitalization. Diversifying transactions however were smaller compared to either industry or geographically focused transactions. Within-industry transactions showed 14.1% and national transactions even 36.3%. The latter include also the only transactions, where the transaction volume was larger than the acquirer.

Table 3 : Number of transactions and transaction volume by industry

		Target industry[a]						
Acquirer industry[a]		**Life**	**P&C**	**Reinsur-ance**	**Agents/ Brokers**	**Invest. Mgmt.**	**Other**	**Total**
Life	No.	85	18	2	9	11	6	131
	USD bn	160.7	6.9	1.7	23.3	10.0	1.4	203.9
P&C	No.	7	7	1	0	1	0	16
	USD bn	12.0	7.8	0.5	0.0	3.3	0.0	23.6
Reinsur-	No.	11	8	9	0	0	0	28
ance	USD bn	4.2	9.5	11.8	0.0	0.0	0.0	25.5
Agents/	No.	0	0	0	0	0	1	1
Brokers	USD bn	0.0	0.0	0.0	0.0	0.0	0.2	0.2
Other	No.	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	USD bn	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total	No.	103	33	12	9	12	7	176
	USD bn	177.0	24.2	14.0	23.3	13.3	1.6	253.3

[a] Industry clusters are built from the following SICs: Agents/Brokers (6411), Invest. Mgmt. (6722), Life (6311), P&C (6321, 6331, 6351), Reinsurance (reclassified), other (6371, 6399, 6719)
Sources: Thomson Financial SDC Platinum, Dealogic M&A database, press research

Table 4 : Relative volume of transactions compared to acquirer size

	Deal volume / market value of acquirer[a]					
	Geographical focus			Industry focus		
Year of announce-ment	National	Cross-border within Europe[b]	Cross-border outside of Europe	Within-industry[c]	Cross-industry	Total
1990	163.8%	9.8%	15.2%	7.4%	22.1%	15.9%
1991	35.3%	7.3%	n/a	7.3%	35.3%	14.7%
1992	169.9%	34.1%	6.9%	56.3%	6.9%	28.0%
1993	16.1%	39.4%	5.0%	39.4%	8.1%	30.3%
1994	178.2%	13.7%	2.4%	18.8%	7.8%	12.8%
1995	10.6%	n/a	15.6%	25.2%	7.2%	14.0%
1996	62.3%	16.9%	28.3%	55.5%	11.0%	38.3%
1997	30.0%	23.7%	5.3%	14.2%	22.0%	18.0%
1998	55.4%	3.7%	2.6%	11.0%	1.0%	6.9%
1999	30.9%	6.4%	5.1%	13.1%	4.4%	8.5%
2000	67.8%	27.6%	4.0%	28.3%	2.0%	14.4%
2001	7.9%	4.2%	1.8%	2.2%	2.5%	2.3%
2002	43.0%	31.9%	n/a	35.7%	40.5%	38.0%
2003	10.0%	3.4%	3.9%	6.4%	2.5%	5.7%
2004	n/a	11.6%	2.3%	11.4%	5.1%	8.1%
2005	103.3%	17.0%	13.0%	20.2%	15.2%	17.7%
Total	**36.3%**	**13.3%**	**4.9%**	**14.1%**	**6.8%**	**10.8%**

[a] Total deal volume in USD divided by total market value of acquirers at announcement date

[b] Europe is defined as all member states of EU-25, Norway and Switzerland

[c] Industry clusters are built from the following SICs: Agents/Brokers (6411), Invest. Mgmt. (6722), Life (6311), P&C (6321, 6331, 6351), Reinsurance (reclassified), other (6371, 6399, 6719)

Sources: Thomson Financial SDC Platinum, Dealogic M&A database, press research

IV. Methodology

To examine value creation of M&A transactions in the insurance industry with European acquirers the short-term analyses follow the event study methodology devised by Dodd and Warner (1983), and Brown and Warner (1985). We additionally examine absolute created value, defined as the market value of the acquirers and targets multiplied with the cumulative abnormal return. The long-term analyses are based on buy-and-hold-abnormal returns (BAHRs) relative to a control-firm benchmark, as suggested by Lyon et al. (1999), Barber and Lyon (1997), and Kothari et al. (2004). Here, we compute absolute created value as the market value of the acquirer multiplied with its BAHR.

The abnormal returns $AR_{i,t}$ of firm i at time t for each acquirer and target is measured as the difference between daily total returns to shareholder $R_{i,t}$ of firm i and the benchmark return $E(R_{i,t})$ for firm i

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

Abnormal returns of the acquirer $AR_{acquirer,t}$ and the target $AR_{taget,t}$ are weighted with their market values MV_t to compute the combined entity return $AR_{transaction,t}$

$$AR_{transaction,t} = \frac{AR_{acquirer,t} \cdot MV_{acquirer,t} + AR_{t\,\mathrm{arg}\,et,t} \cdot MV_{t\,\mathrm{arg}\,et,t}}{MV_{acquirer,t} + MV_{t\,\mathrm{arg}\,et,t}} \quad (3)$$

-

Benchmark returns are defined as the OLS-regression estimate of the standard market model on the estimation window at times t between [-270; -21] trading days before announcement. The market return $R_{M,t}$ is defined as the daily TRS of the Datastream European Insurance Index. The CARs are the equally weighted average of the abnormal returns on a specified event period from times t_{e1} to t_{e2}. We define value created as the market value of the combined entity at the end of the estimation period (t = -21 days) multiplied with the CER on the entire event period [-20; +20]. The significance of mean abnormal returns and

cumulative abnormal returns is tested with the parametric Dodd-Warner Z-statistic (Dodd and Warner, 1983), and the test-statistic suggested by Boehmer et al. (Boehmer et al., 1991; Harrington and Shrider, 2007). The significance of the difference between mean abnormal returns and cumulative mean abnormal returns of two samples is tested with the parametric two-sample t-test.

To examine long-term value creation buy-and-hold abnormal returns $BAHR_i$ for individual acquirers are computed from monthly firm TRS $R_{i,t}$ and benchmark TRS $E(R_{i,t})$ based on the model

$$BAHR_i = \prod_{t=1}^{t_{e2}}(1+R_{i,t}) - \prod_{t=1}^{t_{e2}}(1+E(R_{i,t})) \quad (3)$$

We study value generation in the event windows for times t between [0; +1y], [0; +2y], and [0; +3y] years after the announcement date. The benchmark returns are computed based on the control firm approach (Lyon et al., 1999; Barber and Lyon, 1997; Kothari et al., 2004). The control firms are selected annually from the constituents of the Datastream European Insurance Index (DEII) based on firm size and book-to-market ratio:

- For each acquirer and each period in the event window, a short list of DEII constituents with firm size between 70% and 130% of the acquirer[6] is created.
- For each acquirer and each period in the event window, a single control firm from this short list based on the lowest difference in book-to-market ratio between the firms contained in the short list and the acquirer is selected.

The computation of the net value generated is based on the buy-and-hold abnormal return over 3 years. The significance of BAHRs is tested with the two-sided t-statistic and the skewness-adjusted two-sided t-statistic (Lyon et al., 1999). Further on, a bootstrapped version of the skewness-adjusted two-sided t-statistic is implemented, following the procedure devised by Lyon et al. (1999).

V. Empirical Findings

a) Short-term value creation

Overall value creation (hypothesis 1): The results presented in *Table 5* show that M&A created value of USD 1.8 bn in the 20 days before and after announcement, with a significant CER of 2.1%. These findings support hypothesis 1 on the short-term horizon.

Table 5 : Results on short-term value creation

	Number of trans-actions	Volume of trans-actions[a]	Value creation[b]	Success ratio[c]	CER[d]	CAR Acquirer[d]	CAR Target[d]
Entire sample	54	152.3	1.8	48%	2.1% *	0.5%	13.8% ****
Timing of transaction							
Bottom	11	15.9	-0.9	36%	-3.3%	-2.1%	4.5%
Upswing	7	19.8	-0.6	57%	6.3%	-1.7%	15.6% ***
Peak	30	77.3	0.5	43%	2.0%	0.9%	16.0% **
Downturn	6	39.2	2.7	83%	7.2% **	5.6% **	17.9% *
Transaction strategy							
National, within-industry	11	48.0	1.7	64%	2.6%	-0.1%	8.8% ***
National, cross-industry	7	7.5	-0.5	43%	-0.7%	-5.0%	16.2%
Cross-border EU, within-industry	10	35.7	1.5	70%	6.3%	6.7% *	16.9%
Cross-border EU, cross-industry	4	6.2	-0.4	25%	-0.2%	-0.1%	5.4%
Cross-border world, within-industr	10	45.7	0.4	40%	1.4%	0.0%	17.1% **
Cross-border world, cross-industry	12	9.1	-0.9	33%	1.0%	-0.4%	14.5%
Transaction experience							
No experience	25	44.5	-1.1	48%	1.3%	0.2%	8.3% **
Little experience	2	7.4	0.6	100%	3.1% ****	-0.9% ****	9.1% **
Extensive experience	12	34.0	1.2	58%	3.9% *	1.5%	18.7% *
Most experience	15	66.3	1.1	33%	1.6%	0.2%	19.7%

[a] In USD bn.

[b] Defined as market value of acquirers and targets at the end of the estimation period [-21], multiplied with cumulative abnormal return of the combined entity [-20; +20] days around the announcement day. In USD bn.

[c] Defined as number of value creating transactions divided by number of transactions.

[d] On the event window [-10; +10] days around the announcement day.

*-**** Statistically significant at 10%, 5%, 1% or 0.1% level according to Boehmer test

[6] Lower and upper bound of the size range are extended by 10%pts, if there is no benchmark firm in the original size range

The findings are consistent with prior research in that insurance M&A creates value, but reveal that abnormal returns in Europe tend to be smaller than those in the U.S. and global market. For the U.S., Akhigbe and Madura (2001) report a significant CER of 13.11% between [-1; 0], and Cummins and Xie (2005) find a significant CER of 3.71% between [-1; +1]. Floreani and Rigamonti (2001) obtain a significant CER of 5.27% on their international sample, while the highest significant CER in our analyses is 2.06% in [-10; +10].

Results on timing of transaction (hypothesis 2): Transactions during the peak phase of the M&A cycle generated value in the short-term, while transactions in the bottom phase destroyed value on a short horizon.[7] Although abnormal returns mostly remain insignificant in these phases,[8] the differences between CERs are significant on most event windows. A CER of 4.1% is achieved on the event window [-5; +5]. Thus, we conclude that hypothesis 2 does not hold on the short-term horizon, but rather the opposite.

Results on transaction strategy (hypothesis 3): National and cross-border EU within-industry transactions generated most value in the short-term while cross-industry transactions generally destroyed value at the announcement. Cross-industry transactions yielded an insignificant negative CER on a national (-0.7%) and cross-border EU (-0.2%) basis. An analysis of the difference between CERs yields mixed results. These findings neither consistently support nor oppose hypothesis 3. However, in the short-term geographically diversifying transactions within the boundaries of the EU are overall rewarded by capital markets, and industry focus generally creates more value than cross-industry M&A.

Consistently, prior research reports that focus strategies are superior to diversification strategies. Floreani and Rigamonti (2001) show that national transactions yield higher CERs (4.63% in the EU, 7.37% in the U.S.) than cross-border transactions (3.43% and 5.01%, respectively). Cummins and Xie (2005) observe a CER of 4.08% for U.S. within-state transactions, and 3.64% of U.S. cross-state transactions. Further on, they present evidence that within-industry transactions yield a CER of 5.01%, compared to a CER of -0.20% of cross-industry transactions.

Results on transaction experience (hypothesis 4): While inexperienced acquirers significantly destroyed value for their shareholders, the combined entity returns reveal positive results and indicate some wealth transfer from acquirer to target shareholders. The highest and significant abnormal returns were reported for entities with little experience (3.1%) and extensive experience (3.9%). However, the difference to CERs of acquirers with no or most experience is not significant. We interpret this finding as evidence that capital markets do not consider transaction experience in their short-term reactions to M&A announcement.

i. *Multivariate analyses*

In this section, we analyze the joint influence of transaction timing, strategy and experience, while controlling for size, regional and industry factors on short-term value creation. We apply a multivariate linear regression model, and test three major assumptions of ordinary least square fitting: Model specification based on Ramsey's (1969) Reset test, absence of or weak multicollinearity according to Variance Inflation Factors (VIF), and normal distribution of regression residuals using the Kolmogorov-Smirnov (K-S) test.

The categorical independent variable *TIMING* is modeled as three dichotomous variables with reference category "bottom phase" in order to test peak time against bottom time transactions, *STRATEGY* as five dichotomous variables with reference "national/within-industry" to test diversification against focus, *EXPERIENCE* as three dichotomous variables with reference "no experience" to test transactions of experienced acquirers against those of inexperienced acquirers, *ACQREGION* and *TARREGION* as four dichotomous variables with reference "EU-15", and *ACQINDUSTRY* and *TARINDUSTRY* as four dichotomous variables with reference "P&C". *Table 8-1* in the appendix shows the coding of the categorical variables and presents descriptive statistics for metric and categorical variables.

The regression results are presented in *Table 6*. The CER and acquirer CAR model are well specified according to the Ramsey Reset test. Only weak multicollinearity is present between independent variables: All VIFs are below the critical value of 10, but those of *LNSIZE* and *EXPERIENCE3* are above 5. A linear ordinary least squares regression of all independent variables except for *LNSIZE* against *LNSIZE* as dependent variable reveals that multicollinearity is driven by *EXPERIENCE*, *STRATEGY*, and *ACQREGION*. The hypothesis of normally distributed regression residuals cannot be rejected.

[7] The sub samples of transactions during upswing and downturn shall not be interpreted due to insufficient observations.

[8] The only significant result is a CER of -3.1% in the event window [-5; +5] in the bottom phase.

Table 6 : Results of short-term multivariate regression analysis

	CER			CAR Acquirer			CAR Target			VIF
Model specification	DF	sig DF		DF	sig DF		DF	sig DF		
Ramsey Reset	0.0279	97.3%		0.0702	93.2%		8.5751	0.1%		
Normality of residuals	Z	asy sig		Z	asy sig		Z	asy sig		
K-S	0.5882	88.0%		0.8644	44.4%		0.5206	94.9%		
Model fit	R-square	Adj. R-square		R-square	Adj. R-square		R-square	Adj. R-square		
R-squared	0.6686	0.4145		0.5592	0.2213		0.4707	0.0650		
Model significance	Coeff.	F/t		Coeff.	F/t		Coeff.	F/t		
Entire model (F)		2.6313	***		1.6549	*		1.1601		
(Constant)	0.0610	0.7823		-0.0101	-0.1086		0.7179	1.8283	*	
TIMING1	0.1126	4.1876	****	0.0616	1.9093	*	0.3455	2.5502	**	2.8
TIMING2	0.0526	2.6292	**	0.0571	2.3795	**	0.2480	2.4586	**	3.4
TIMING3	0.0605	2.4905	**	0.0407	1.3986		0.2053	1.6778		2.0
STRATEGY1	-0.0144	-0.5953		-0.0166	-0.5725		0.0903	0.7429		2.2
STRATEGY2	0.0479	1.9539	*	0.0501	1.7043	*	0.1838	1.4891		3.1
STRATEGY3	0.0671	1.7142	*	0.0326	0.6947		0.2639	1.3385		3.6
STRATEGY4	0.0646	2.2481	**	0.0558	1.6200		0.3173	2.1928	**	4.2
STRATEGY5	0.0446	1.7624	*	0.0181	0.5958		0.1508	1.1818		3.8
EXPERIENCE1	-0.0663	-1.4705		-0.1270	-2.3494	**	-0.1028	-0.4523		2.5
EXPERIENCE2	-0.0003	-0.0146		-0.0352	-1.4483		0.1105	1.0820		2.4
EXPERIENCE3	0.0335	1.1316		-0.0135	-0.3800		0.2136	1.4300		6.0
LNSIZE	-0.0150	-1.6740		-0.0046	-0.4299		-0.0492	-1.0907		6.4
GROWTH	-0.0250	-1.2676		-0.0217	-0.9195		-0.3476	-3.5044	***	1.9
LNRELVOLUME	0.0010	0.1824		-0.0004	-0.0643		-0.0245	-0.8476		3.2
ACQREGION2	-0.0223	-1.0837		-0.0064	-0.2605		-0.0942	-0.9083		2.2
TARREGION2	0.0521	0.7705		0.0483	0.5960		0.1040	0.3054		2.8
TARREGION3	0.1382	2.5827	**	0.1185	1.8467	*	-0.2120	-0.7864		1.8
ACQINDUSTRY1	0.0128	0.6250		0.0071	0.2900		-0.1601	-1.5470		3.2
ACQINDUSTRY2	-0.0148	-0.5119		-0.0260	-0.7504		-0.3119	-2.1407	**	3.9
ACQINDUSTRY3	0.0233	0.4583		0.0318	0.5226		-0.1103	-0.4309		1.6
TARINDUSTRY1	0.0344	1.6601		0.0248	0.9958		0.0321	0.3076		3.6
TARINDUSTRY3	0.0059	0.1977		0.0351	0.9756		-0.1606	-1.0619		1.6
TARINDUSTRY4	0.0101	0.3913		0.0125	0.4016		-0.0840	-0.6433		3.9

DF: Change in F-statistic between initial and extended regression model according to Ramsey Reset test.

sig DF: Significance of change in F-statistic DF. Z: Kolmogorov-Smirnov Z-statistic.

asy sig: Asymptotic significance of Z-statistic Z. F/t: F-statistic for entire model, t-statistics for coefficients.

VIF: Variance Inflation Factors for coefficients.

*-**** Statistically significant at 10%, 5%, 1% or 0.1% level according to t-test

Especially CERs in the event window [-5; +5] days around announcement are well explained. The regression yields an adjusted R-square of 0.43 on N=54 observations. Despite the large number of polytomous variables in the model, adjusted R-squares are high compared to prior research. The independent variable coefficients are jointly significant for CERs and acquirer CARs at 1% and 10% level, respectively.[9]

Two robustness tests are conducted. Firstly, a model with weaker multicollinearity is set up by stepwise exclusion of independent variables *ACQREGION* and *STRATEGY*[10], lowering the highest VIF below the threshold of 5. The adjusted R-square is reduced by 0.0115, but model and coefficient significance remains strong. Coefficients change compared to the full model, but the order of coefficients remains constant amongst indicators for independent variables. Secondly, a

[9] The indicator variable *TARREGION4* is omitted because it is perfectly linear in *STRATEGY4* and *STRATEGY5*.

[10] Amongst the suspects *LNSIZE*, *EXPERIENCE*, *STRATEGY*, and *ACQREGION*, stepwise removal of *ACQREGION* and *STRATEGY* shows least significant reduction of F-statistic, and results in a model with all VIFs below 5.

reduced model[11] is examined. This model has higher explanatory power. The independent variables are jointly significant and individual significances for the remaining independent variables change only slightly. Coefficients change compared to the full model, but the order of coefficients remains constant amongst indicators for independent variables. *Table 8-3* in the appendix presents detailed results.

The obtained results counter hypothesis 2. Mostly significant positive coefficients of *TIMING* variables show that short-term abnormal returns of the acquirer, the target, and the combined entity are higher in the upswing, peak, or downturn phase of the M&A cycle than in the bottom phase. However, hypothesis 3 is supported. Except for national cross-industry transactions, all *STRATEGY* coefficients are significantly positive for combined entity returns, implying that diversifying transactions create more value than geographical and industry focused transactions. A definite conclusion on hypothesis 4 cannot be drawn from the results, since coefficients for EXPERIENCE indicators are mostly insignificant. Similarly, coefficients of control variables are also mostly insignificant.

Prior research only addresses transaction strategy in short-term multivariate analyses. Our results are consistent with Floreani and Rigamonti's (2001) observation that cross-border transactions within Europe have negative impact on the acquirers' CARs, whilst cross-border world deals by European acquirers positively affect their CARs. However, Cummins and Xie (2005) find on their U.S. P&C sample that any geographical or industry diversification is significantly worse than full geographical and industry focus with respect to CARs of acquirers.

b) Long-term value creation

i. *Univariate analyses*

Results on overall value creation (hypothesis 1): The results presented in *Table 7* show that M&A created no value on a long-term horizon. BAHRs are insignificant negative on all examined time horizons,[12] leading us to conclude that hypothesis 1 does not hold in the long run. From prior research, only Boubakri et al. (2006) carry out a long-term analysis, and find that U.S. P&C acquirers achieved a positive BAHR of 57.3% on a 3-year horizon.

Results on timing of transaction (hypothesis 2): Significant BAHRs are obtained for transactions in the upswing (-15.3% after one year) and peak (-13.5% after two years) of the M&A market. Acquirers in the upswing phase perform significantly worse than bottom phase acquirers according to 1-year and 2-year BAHRs. The latter results provide weak support for hypothesis 2.

Results on transaction strategy (hypothesis 3): Only fully diversifying transactions yielded a significant positive BAHR after three years (14.0%), which is significantly higher than abnormal returns of all other strategies except for national within-industry transactions. Cross-border EU transactions significantly destroyed value (BAHRs below -25%). Cross-border EU within-industry transactions performed significantly worse than national within-industry and cross-border world cross-industry transactions, and cross-border EU cross-industry transactions performed significantly worse than cross-border EU within-industry and cross-border world transactions. These results support hypothesis 3 on the long-term horizon, but contradict findings of Boubakri et al. (2006) on a U.S. P&C sample.

Results on transaction experience (hypothesis 4): None of the experience subsamples show consistent significant results. Hypothesis 4 is not supported.

[11] Based on the full model, coefficients with change of F-statistic less significant than 10% are excluded stepwise. The following independent variables are excluded (in order): *LNRELVOLUME*, *ACQINDUSTRY*, *ACQREGION*, *EXPERIENCE*, *GROWTH*, *LNSIZE*, *STRATEGY*. Afterwards, independent variables more significant than 10% would be included stepwise. No variable fulfills this criterion.

[12] The difference implies that large acquirers achieved higher BAHRs than small acquirers, since value creation is a value-weighted aggregation of individual firm BAHRs, and BAHRs are an equally-weighted aggregation thereof.

Table 7 : Results of univariate analyses on long-term value creation

	Number of trans-actions	Volume of trans-actions[a]	Value creation[b]	Success ratio[c]	1-year BAHR	2-year BAHR	3-year BAHR
Entire sample	158	229.0	20.6	49%	-4.7%	-10.0%	-6.6%
Timing of transaction							
Bottom	58	37.6	51.2	47%	-1.7%	-1.3%	-8.2%
Upswing	16	26.7	-17.8	38%	-15.3% *	-34.1%	-23.5%
Peak	69	123.2	-69.6	48%	-4.6%	-13.4% **	-4.0%
Downturn	15	41.6	56.8	73%	-5.8%	-2.0%	6.2%
Transaction strategy							
National, within-industry	36	77.4	13.8	61%	-4.5%	-11.0%	9.4%
National, cross-industry	18	12.2	-18.2	33%	-2.0%	-24.8%	-13.0%
Cross-border EU, within-industry	29	50.3	-58.0	28%	-2.9%	-10.8%	-26.2% ***
Cross-border EU, cross-industry	19	29.8	-0.2	47%	-16.4% *	-38.0% ***	-29.5% *
Cross-border world, within-industr	25	37.5	39.6	56%	1.1%	2.9%	-10.3%
Cross-border world, cross-industry	31	21.6	43.6	58%	-5.8%	7.4%	14.0% *
Transaction experience							
No experience	67	63.6	-36.5	54%	-2.1%	-3.2%	2.8%
Little experience[e]	5	11.7	-8.9	20%	-18.2% ***	-61.4%	-61.7%
Extensive experience	33	56.9	-22.9	39%	-9.2%	-23.5%	-26.8%
Most experience	42	90.2	96.3	55%	-5.0%	-4.5%	3.5%

[a] In USD bn.

[b] Defined as market value of acquirers and targets at the end of the estimation period [-21], multiplied with cumulative abnormal return of the combined entity [-20; +20] days around the announcement day. In USD bn.

[c] Defined as number of value creating transactions divided by number of transactions.

[d] On the event window [-10; +10] days around the announcement day.

[e] Statistical significance evaluated based on skewness adjusted p-value without bootstrapping due to insufficient observations.

*-**** Statistically significant at 10%, 5%, 1% or 0.1% level according to Boehmer test

ii. *Multivariate analyses*

In this section, we analyze the joint influence of transaction timing, strategy and experience on long-term value creation, while controlling for size, regional and industry factors. We model the categorical variables and build the multivariate linear regression model analogous to section 5.1.1. *Table 8-2* in the appendix presents the coding of the categorical variables and descriptive statistics for metric and categorical variables. Additionally, we include the dichotomous variable *TARNOTLISTED* to distinguish between listed (N = 51, *TARNOTLISTED* = 0) and non-listed targets (N = 107, *TARNOTLISTED* = 1), i.e. to control for differences between the short- and long-term deal sample.

Table 8 reports the regression results of the full model and the reduced model on 3-year BAHRs. Both models are well specified according to the Ramsey Reset test. The independent variables are only weakly multicollinear. The hypothesis of normally distributed regression residuals cannot be rejected. Both models explain BAHRs well, and the independent variables are jointly significant above 5% level. However, EXPERIENCE is the only hypothesis-related and significant variable in the full model. The reduced model additionally yields significant coefficients for STRATEGY.[13] The results provide no support for hypothesis 2. Regression coefficients of indicator variables for the upswing, peak and downturn phase of the M&A cycle are insignificant.

With respect to transaction strategy, we find strong support for hypothesis 3. The reduced model yields significantly positive coefficient estimates for the indicator variable STRATEGY5. Full diversification of transactions significantly increases the 3-year BAHR compared to full focus transactions. In contrast, industry-focus in cross-border EU transactions significantly destroys value. These results are contrary to findings of Boubakri et al. (2006), who observe significantly lower BAHRs for cross-border transactions on their U.S. P&C sample.

[13] A regression on 2-year BAHRs additionally yields significant estimates for TIMING coefficients. The respective results are mentioned in the text.

Table 8 : Results of long-term multivariate regression analysis

	BAHR			**BAHR** (Reduced)		
Model specification	DF	sig DF		DF	sig DF	
Ramsey Reset	0.0028	99.7%		0.0317	96.9%	
Normality of residuals	Z	asy sig		Z	asy sig	
K-S	0.8467	47.0%		0.8781	42.4%	
Model fit	R-square	Adj. R-square		R-square	Adj. R-square	
R-squared	0.2645	0.1125		0.2486	0.1626	
Model significance	Coeff.	F/t	VIF	Coeff.	F/t	VIF
Entire model (F)		1.7405 **			2.8902 ****	
(Constant)	-0.9090	-1.4860		-0.8520	-2.8610 ***	
TIMING1	-0.2160	-0.9100	1.49			
TIMING2	-0.1060	-0.6220	2.08			
TIMING3	-0.0330	-0.1400	1.38			
STRATEGY1	0.1820	0.7170	1.88	0.1510	0.6410	1.72
STRATEGY2	-0.3190	-1.5580	1.82	-0.3390	-1.8130 *	1.61
STRATEGY3	-0.1030	-0.3800	2.25	-0.1020	-0.4290	1.83
STRATEGY4	-0.1150	-0.4990	2.04	-0.1250	-0.5980	1.80
STRATEGY5	0.3880	1.5280	2.94	0.3830	1.6710 *	2.55
EXPERIENCE1	-0.5740	-1.5800	1.26	-0.6460	-1.9410 *	1.12
EXPERIENCE2	-0.3160	-1.8660 *	1.45	-0.3260	-2.0880 **	1.30
EXPERIENCE3	-0.0280	-0.1230	3.04	-0.0900	-0.5560	1.65
LNSIZE	0.0190	0.2590	3.83			
GROWTH	0.3830	2.5140 **	1.51	0.3700	2.9190 ***	1.11
LNRELVOLUME	0.0430	0.7220	2.99			
ACQREGION2	-0.0830	-0.4560	1.54			
TARREGION1	0.3940	0.6680	1.26			
TARREGION2	-0.1960	-0.4760	1.21			
TARREGION3	-0.2430	-0.4430	1.09			
ACQINDUSTRY1	0.2810	1.2150	3.01	0.1930	0.9300	2.59
ACQINDUSTRY2	-0.0880	-0.3090	3.21	-0.2380	-0.9850	2.47
ACQINDUSTRY3	0.8980	1.1160	1.18	0.8650	1.1250	1.14
TARINDUSTRY1	0.4640	2.3870 **	2.69	0.5040	2.7860 ***	2.46
TARINDUSTRY3	-0.1840	-0.6050	1.45	-0.1710	-0.5940	1.37
TARINDUSTRY4	0.2320	1.0650	2.06	0.2690	1.3660	1.79
TARNOTLISTED	-0.0340	-0.2210	1.48			

DF: Change in F-statistic between initial and extended regression model according to Ramsey Reset test.
sig DF: Significance of change in F-statistic DF. Z: Kolmogorov-Smirnov Z-statistic.
asy sig: Asymptotic significance of Z-statistic Z. F/t: F-statistic for entire model, t-statistics for coefficients
VIF: Variance Inflation Factors for coefficients.
*-**** Statistically significant at 10%, 5%, 1% or 0.1% level according to t-test

However, hypothesis 4 is partially opposed by the obtained results. Little or extensive experience even has significant negative value impact, and the difference between BAHRs for inexperienced and most experienced acquirers is significantly negative. Thus there may be two distinct classes of insurers: Those focused on organic growth and those "in the M&A game". The findings of Boubakri et al. (2006) are

directionally consistent. They report that BAHRs increase significantly with the number of transactions by the acquirer in the same year.

VI. Conclusion

We analyze short- and long-term value creation by M&A of European insurers between 1990 and 2005 and the influence of major determinants (transaction timing, geographical and industry strategy, and transaction experience), while controlling for size, region and sub-industry of the transaction partners.

Our analyses yield significant positive CERs around announcement. However, capital markets seemed less enthused by European transactions compared to U.S. or global transactions: Further on, we find insignificant BAHRs one to three years after announcement whereas Boubakri et al. (2006) detect strongly positive BAHRs for the U.S. market (e.g., 57.3% on a 3-year horizon). Since the performance differential between Europe and the U.S. occurs on the short- *and* long-term horizon, we assume that investors' short-term hesitance towards European transactions may be driven by rationale considerations.

Capital markets reward transactions during phases of strong M&A market momentum shortly around announcement. CERs in the peak phase are 5.3% higher (significant at 5% level) than in the bottom phase. By contrast, BAHRs in phases of strong momentum are (partially significant) negative. Investors' appreciated diversifying transactions shortly around announcement. Geographical diversification increases CERs by more than 4% compared to fully focused transactions. These results are consistent with Floreani and Rigamonti's (2001) observation that cross-border transactions within Europe have negative impact on the acquirers' CARs, whilst cross-border world deals by European acquirers positively affect their CARs. Over a three year horizon, only full diversification across geographies and industries adds significant value (3-year BAHR +38.3%) compared to fully focused transactions. Cross-border European expansion tends to lead to a decrease of BAHRs. These results are contrary to findings of Boubakri et al. (2006), who observe significantly lower BAHRs for cross-border transactions on their U.S. P&C-focused sample. We suppose that short-term capital market reactions express investors' high expectations on benefits from international expansion, especially European integration, but long-term results imply that realization of full benefits from focus (e.g., market power, economies of scale) or diversification (e.g., economies of scope) requires an "either-or" strategy. Further on, the inferiority of cross-border European transactions indicates that M&A momentum from harmonization of European regulation may have lead management to pursue transactions even in case of doubtful rationale.

Lastly, we examine the influence of acquirers' transaction experience on value creation, and find that short-term reactions of capital markets do not depend on transaction experience. In the long-term, transactions by acquirers with little or extensive experience even create less value than those by inexperienced or most experienced acquirers. We assume that a positive experience effect may still exist, but that it realizes only for truly M&A focused players, whereas acquirers with no experience may have chosen their transactions more carefully.

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Appendix

Table 8-1 : Descriptive statistics for variables in short-term multivariate regression model

Statistics	*CER**	*CAR Acquirer**	*CAR Target**	*LNSIZE*	*GROWTH*	*LNRELVOLUME*
Mean	1.1%	-0.6%	12.1%	8.9781	1.3072	-1.8792
St.dev.	5.2%	5.4%	20.8%	1.5536	0.3803	1.7021
Min	-8.9%	-17.1%	-9.8%	4.6958	0.3193	-5.7228
Max	17.0%	20.9%	91.4%	11.6487	3.8566	1.2295
N	54	54	54	54	54	54

Cat.	*TIMING*	Freq.	*STRATEGY*	Freq.	EXPERIENCE	Freq.
0**	Bottom	11	National/within-industry	11	No experience	25
1	Upswing	7	National/cross-industry	7	Little experience	2
2	Peak	30	Cross-border EU/within-industry	10	Extensive experience	12
3	Downturn	6	Cross-border EU/cross-industry	4	Most experience	15
4			Cross-border world/within-industry	10		
5			Cross-border world/cross-industry	12		
N	total	54	total	54	total	54

Cat.	*ACQREGION*	Freq.	*TARREGION*	Freq.	*ACQINDUSTRY*	Freq.	*TARINDUSTRY*	Freq.
0**	EU-15	44	EU-15	30	P&C	8	P&C	9
1	EU-25	0	EU-25	0	Life	36	Life	30
2	Swiss	10	Swiss	1	Re	9	Re	0
3	Norway	0	Norway	1	Agents/Brokers	1	Agents/Brokers	3
4	World	0	World	22	Other	0	Other	12
N	total	54	total	54	total	54	total	54

* Event window [-5; +5].
** Reference category.

Table 8-2 : Descriptive statistics for variables in long-term multivariate regression model

Statistics	***BAHR****	***LNSIZE***	***GROWTH***	***LNRELVOLUME***
Mean	-6.6%	8.5095	1.2836	-2.1693
St.dev.	75.6%	1.6172	0.4751	1.6956
Min	-246.2%	4.6958	0.3193	-5.7228
Max	284.6%	11.6487	3.8566	1.2295
N	158	158	158	158

Cat.	***TIMING***	Freq.	***STRATEGY***	Freq.	***EXPERIENCE***	Freq.
0*	Bottom	11	National/within-industry	36	No experience	67**
1	Upswing	7	National/cross-industry	18	Little experience	5
2	Peak	30	Cross-border EU/within-industry	29	Extensive experience	33
3	Downturn	6	Cross-border EU/cross-industry	19	Most experience	42
4			Cross-border world/within-industry	25		
5			Cross-border world/cross-industry	31		
N	total	54	total	158	total	147**

Cat.	***ACQREGION***	Freq.	***TARREGION***	Freq.	***ACQINDUSTRY***	Freq.	***TARINDUSTRY***	Freq.
0*	EU-15	125	EU-15	94	P&C	15	P&C	30
1	Other EU-25	0	Other EU-25	2	Life	116	Life	90
2	Swiss	32	Swiss	4	Re	26	Re	0
3	Norway	1	Norway	2	Agents/Brokers	1	Agents/Brokers	9
4	World	0	World	56	Other	0	Other	29
N	total	158	total	158	total	158	total	158

* 3-year horizon.

** Reference category.

*** 1st quartile overrepresented due to large amount of acquirers with no transaction in last three years.

**** Only transactions after 31.12.1992 allocated due to lack of transaction history.

Table 8-3 : Results of robustness tests of short-term multivariate regression model

	CER (Full model)			**CER** (Weaker multicoll.)			**CER** (Reduced)		
Model specification	DF	sig DF		DF	sig DF		DF	sig DF	
Ramsey Reset	0.0279	97.3%		2.1109	13.7%		0.0228	97.7%	
Normality of residuals	Z	asy sig		Z	asy sig		Z	asy sig	
K-S	0.5882	88.0%		0.7713	59.1%		0.7226	67.3%	
Model fit	R-square	Adj. R-square		R-square	Adj. R-square		R-square	Adj. R-square	
R-squared	0.6686	0.4145		0.6058	0.4030		0.5400	0.4459	
Model significance	Coeff.	F/t	VIF	Coeff.	F/t	VIF	Coeff.	F/t	VIF
Entire model (F)		2.6313 ***			2.9877 ***			5.7387 ****	0.0
(Constant)	0.0610	0.7823		-0.0426	-0.7066		-0.0683	-3.9555 ****	0.0
TIMING1	0.1126	4.1876 ****	2.8	0.0955	3.8945 ****	2.3	0.0899	4.6490 ****	1.5
TIMING2	0.0526	2.6292 **	3.4	0.0433	2.4360 **	2.6	0.0336	2.3792 **	1.8
TIMING3	0.0605	2.4905 **	2.0	0.0548	2.3738 **	1.8	0.0534	2.6443 **	1.4
STRATEGY1	-0.0144	-0.5953	2.2						
STRATEGY2	0.0479	1.9539 *	3.1						
STRATEGY3	0.0671	1.7142 *	3.6						
STRATEGY4	0.0646	2.2481 **	4.2						
STRATEGY5	0.0446	1.7624 *	3.8						
EXPERIENCE1	-0.0663	-1.4705	2.5	-0.0858	-1.9397 *	2.3			
EXPERIENCE2	-0.0003	-0.0146	2.4	-0.0149	-0.8208	1.9			
EXPERIENCE3	0.0335	1.1316	6.0	-0.0064	-0.3098	2.8			
LNSIZE	-0.0150	-1.6740	6.4	-0.0038	-0.5141	4.3			
GROWTH	-0.0250	-1.2676	1.9	-0.0092	-0.5386	1.4			
LNRELVOLUME	0.0010	0.1824	3.2	-0.0027	-0.5168	2.6			
ACQREGION2	-0.0223	-1.0837	2.2						
TARREGION2	0.0521	0.7705	2.8	0.0076	0.1278	2.1	-0.0574	-1.3834	1.1
TARREGION3	0.1382	2.5827 **	1.8	0.1796	3.7841 ****	1.4	0.1716	4.0809 ****	1.2
TARREGION4				0.0199	1.3548	1.7	0.0201	1.7818 *	1.1
ACQINDUSTRY1	0.0128	0.6250	3.2	0.0181	0.9369	2.7			
ACQINDUSTRY2	-0.0148	-0.5119	3.9	-0.0009	-0.0328	3.2			
ACQINDUSTRY3	0.0233	0.4583	1.6	0.0243	0.4990	1.4			
TARINDUSTRY1	0.0344	1.6601	3.6	0.0519	2.8227 ***	2.8	0.0461	2.8907 ***	2.2
TARINDUSTRY3	0.0059	0.1977	1.6	0.0129	0.4364	1.5	0.0173	0.6393	1.4
TARINDUSTRY4	0.0101	0.3913	3.9	0.0307	1.3695	2.9	0.0266	1.4481	2.1

DF: Change in F-statistic between initial and extended regression model according to Ramsey Reset test.

sig DF: Significance of change in F-statistic DF. Z: Kolmogorov-Smirnov Z-statistic.

asy sig: Asymptotic significance of Z-statistic Z. F/t: F-statistic for entire model, t-statistics for coefficients.

VIF: Variance Inflation Factors for coefficients.

*-**** Statistically significant at 10%, 5%, 1% or 0.1% level according to t-test

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