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8 i 9 de juny de 2017, IESE Business School

The Sixth Merger Wave and wealth effects of M&A announcements: An analysis of large European bidding companies

Presented by:
Xavier Auguets, CFA

PhD Candidate
IQS School of Management-Universitat Ramon Llull-Barcelona-Spain
xavier.auguets@gmail.com

Authors:
Xavier Auguets, CFA
Mònica Martínez Blasco, PhD
Josep García Blandón, PhD





- The main objective of this research is analysing the informational content transmitted to the financial market for bidder firms during M&A announcements. We center our attention in large companies of the Eurozone in the so called “Sixth Wave” of mergers.
- If information is transmitted to the financial market during the announcement, we will see:
 - abnormal stocks returns (Beaver, 1968),
 - volatility (Beaver, 1968),
 - and volumes (Kim and Verrecchia, 1991) around the announcement day as investors response to the information release.
- We compute abnormal returns as the difference between actual and normal returns, while normal returns are defined as expected returns without conditioning on the occurrence of the event.
- We compute expected or normal returns by using the market model. Then we assume that normal return is given by a linear relationship between the stock return and the market return.
- Then we estimate the absolute value of abnormal returns to calculate the returns volatility and the average abnormal volume on day t.

Thus, abnormal return for stock i on day t will be expressed as:

Where:

$$\underbrace{R_{it}}_{\text{Actual Return}} = E(R_{it} | X_t)_{it} + \underbrace{AR_{it}}_{\text{Abnormal Return}}$$

Actual Return

$$R_t = \ln \frac{P_t + D_t}{P_{t-1}}$$

P_t is the closing price

D_t the dividend paid

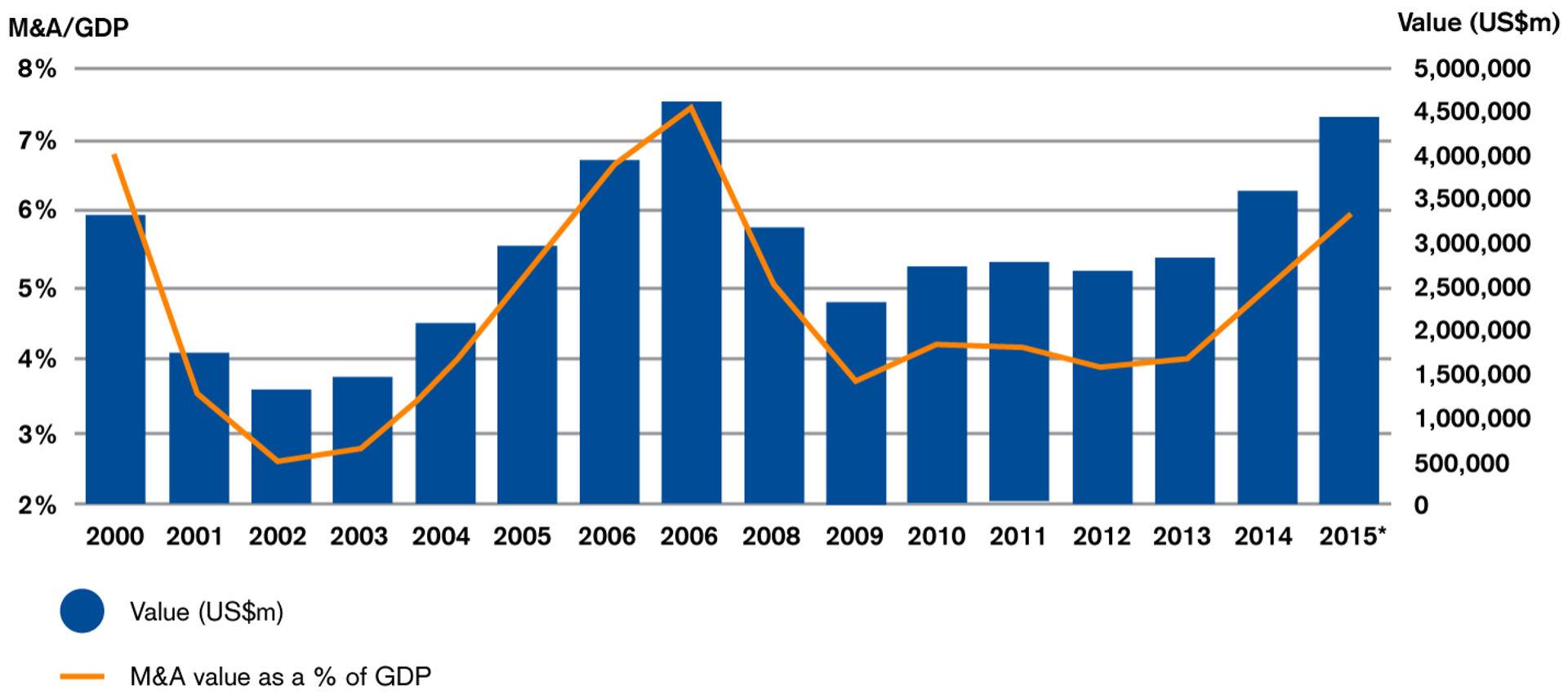
R_{it} is the return in stock i for period t

Expected Return

$$E(R_{it} | X_t)_{it} = a_i + b_i R_{mt}$$

$$R_{mt} = \ln \left(\frac{EUROSTOXX50_t}{EUROSTOXX50_{t-1}} \right)$$

$E(R_{it} | X_t)_{it}$ is the expected return



M&A comes in waves.

Source: credit-suisse.com



- This study contributes to the existing literature on the relevance of M&A transaction announcements in:
 - Most of all existing literature investigates Anglo-Saxon countries,
 - We address the release of value-relevant information during M&A announcements in large European companies,
 - We investigate not only returns but also trading volumes and returns volatility around M&A days,
 - We focus in a very recent time period, in the so called Sixth Wave of Mergers,

- According to previous literature, several determinants of price reaction to M&A announcements, have been studied:
 - Segments in the Merger Wave
 - Deal attitude (friendly or hostile)
 - Geographical Scope (domestic or crossborder)
 - Means of payment
 - Strategy (focus or diversification)
 - Type of Acquisition (minority, majority or full bid)
 - Size of transaction

- We found relevant factors determining abnormal reactions of prices such as:
 - Relative Size of transaction versus bidder market cap
 - 1st stage in the Merger Wave
 - Full Bid Offers



Following the Brown and Warner (1985) method, our hypotheses have been postulated in their null forms:

- **Hypothesis 1** (H01): For investors of Eurostoxx 50 companies, stock returns on the day of the announcement of an M&A transaction will not differ from those on ordinary days.
- **Hypothesis 2** (H02): For investors of Eurostoxx 50 companies, volatility stock returns on the day of the announcement of an M&A transaction will not differ from those on ordinary days.
- **Hypothesis 3** (H03): For investors of Eurostoxx 50 companies, the number of shares traded on the day of the announcement of an M&A transaction will not differ from those on ordinary days.



	N=125		N=125		N=123	
	Panel 1		Panel 2		Panel 3	
Event Day	AAR	t-test	AAAR	t-test	AAV	Corrado
-5	-0.0008	-0.6244	0.0016	2.2353 **	-0.0183	-1.1353
-4	-0.0007	-0.5497	-0.0004	-0.5617	-0.0039	-1.1474
-3	-0.0005	-0.4197	0.0009	1.2643	0.1111	1.2798
-2	-0.0003	-0.2605	0.0003	0.4850	0.0524	0.6846
-1	-0.0012	-0.9618	0.0009	1.2588	0.0871	1.1912
0	-0.0003	-0.2727	0.0033	4.4340 ***	0.3907	4.3735 ***
1	-0.0021	-1.7804 *	0.0021	2.7794 ***	0.3428	2.6181 ***
2	-0.0014	-1.1780	0.0022	2.9124 ***	0.3143	2.7118 ***
3	-0.0002	-0.1778	0.0013	1.7188 *	0.1871	1.8500 *
4	0.0007	0.5793	0.0008	1.1024	0.1900	1.1035
5	-0.0018	-1.5368	0.0009	1.1882	0.0774	0.2262
	CAAR	t-test	CAAAR	t-test	CAAV	Corrado
[-5,0]	-0.0037	-1.2610	0.0068	3.7215 ***	0.6192	2.1419 **
[-1,0]	-0.0015	-0.8729	0.0043	4.0254 ***	0.4778	3.9349 ***
[0,1]	-0.0025	-1.4517	0.0054	5.1006 ***	0.7336	4.9438 ***
[0,5]	-0.0053	-1.7825 *	0.0106	5.7706 ***	1.5024	5.2595 ***
[-5,5]	-0.0086	-2.1656 **	0.0140	5.6735 ***	1.7309	4.1476 ***

Whole sample: There is no abnormal reaction in returns but positive informational content detected in volatility and volumes



There is not a significant AAR in the whole sample on the M&A transaction announcement day.

Our first null hypothesis H01 cannot be rejected.

There is a significant abnormal return volatility in the whole sample on the M&A transaction announcement day.

Our second event study null hypothesis H02 is rejected.

There is a significant AAV in the whole sample on the M&A transaction announcement day.

Our third event study null hypothesis H03 is rejected.

Conclusion: There is informational content that is transmitted to the market but investors do not agree about buying or selling the stocks.



	N=92		N=92		N=91	
	Panel 1		Panel 2		Panel 3	
Event Day	AAR	t-test	AAAR	Corrado	AAV	Corrado
-5	-0.0011	-0.8929	0.0007	0.7328	-0.0426	-0.8415
-4	-0.0004	-0.3398	-0.0009	-0.7180	-0.0559	-1.6234
-3	0.0013	1.0586	0.0012	0.7433	0.1740	1.6181
-2	-0.0004	-0.2955	0.0017	2.5405 **	0.1170	1.4239
-1	-0.0023	-1.8949 *	0.0012	-0.0612	0.0968	0.5441
0	-0.0029	-2.4143 **	0.0033	2.9861 ***	0.4543	3.4294 ***
1	-0.0017	-1.4171	0.0030	3.3408 ***	0.3570	1.4934
2	-0.0019	-1.5966	0.0026	3.3810 ***	0.3319	2.2601 **
3	-0.0006	-0.5159	0.0010	2.0463 **	0.2011	1.7917 *
4	0.0010	0.7922	0.0008	1.4086	0.2032	0.9074
5	-0.0023	-1.9045 *	-0.0001	0.2217	0.0781	0.0151
	CAAR	t-test	CAAR	Corrado	CAAV	Corrado
[-5,0]	-0.0057	-1.9509 *	0.0072	2.5407 **	0.7436	1.8577 *
[-1,0]	-0.0052	-3.0470 ***	0.0045	2.0682 **	0.5511	2.8097 ***
[0,1]	-0.0046	-2.7092 ***	0.0063	4.4738 ***	0.8113	3.4809 ***
[0,5]	-0.0085	-2.8806 ***	0.0106	0.6656	1.6257	4.0405 ***
[-5,5]	-0.0113	-2.8404 ***	0.0145	5.0117 ***	1.9149	3.3222 ***

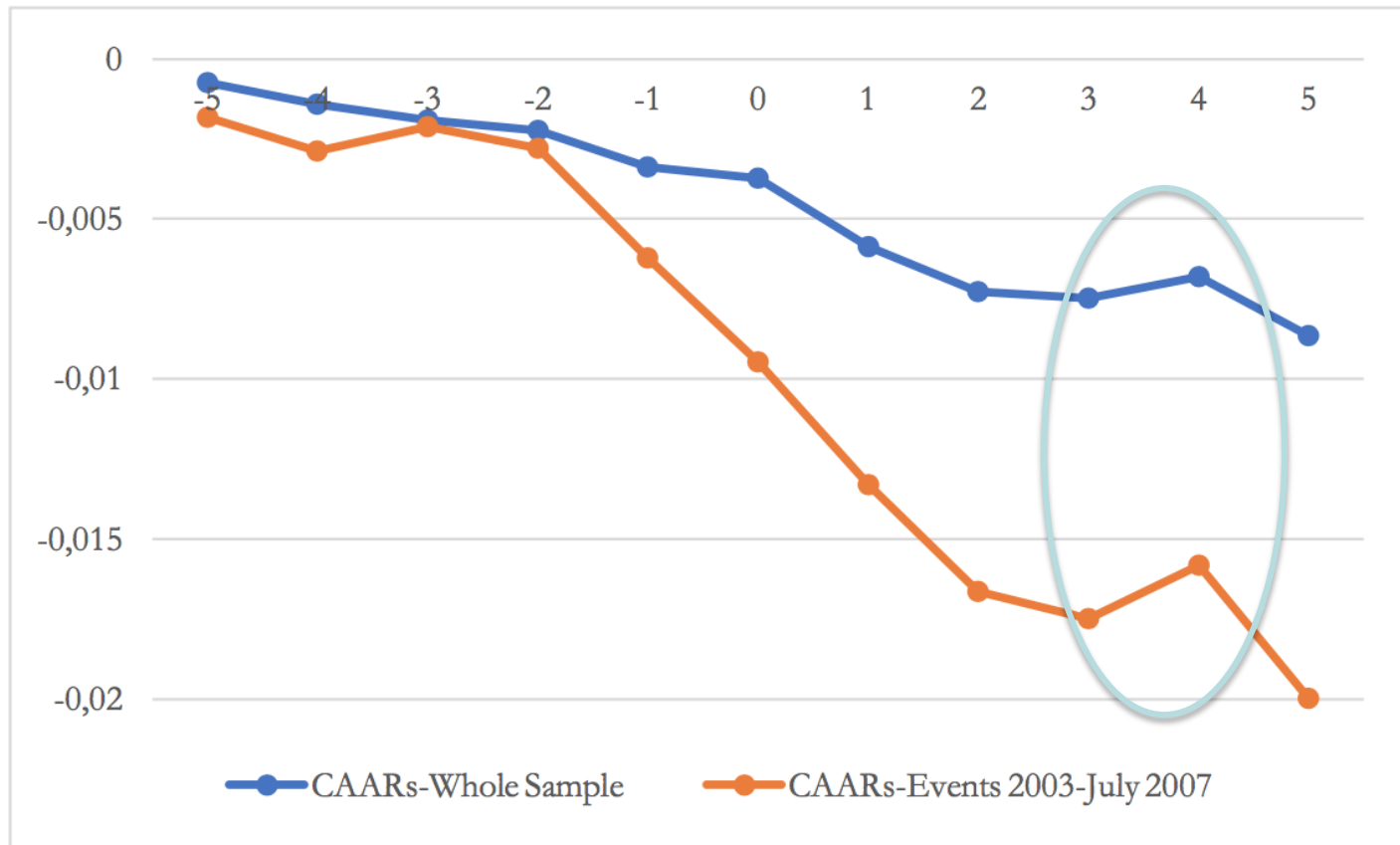
First part of the wave (2003-2007): More pronounced
and significant in returns



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**First part of the wave (2003-2007): More pronounced
and significant in returns**



	N=43			N=43			N=42	
	Panel 1			Panel 2			Panel 3	
Event Day	AAR	t-test		AAAR	Corrado		AAV	Corrado
-5	-0.0019	-0.9103		0.0014	1.3890		-0.0367	-0.3563
-4	0.0001	0.0469		-0.0005	-0.5522		-0.0319	-0.1077
-3	-0.0008	-0.3949		0.0012	1.5177		0.1020	1.2816
-2	0.0033	1.6022		0.0022	2.0598 **		0.1522	1.6507 *
-1	-0.0044	-2.1601 **		0.0039	1.4602		0.3072	2.1967 **
0	-0.0028	-1.3553		0.0108	5.7966 ***		0.9703	5.1008 ***
1	0.0021	-1.0136		0.0046	3.0558 ***		0.8750	4.5036 ***
2	-0.0024	-1.1616		0.0039	3.2184 ***		0.6862	2.4069 **
3	-0.0006	-0.3023		0.0033	2.1309 **		0.3731	1.6661 *
4	0.0022	1.0572		0.0029	2.3579 **		0.5168	2.3223 **
5	-0.0054	-2.6355 ***		0.0030	2.0700 **		0.1102	1.8071 *
	CAAR	t-test		CAAR	Corrado		CAAV	Corrado
[-5,0]	-0.0065	-1.2948		0.0191	4.7647 ***		1.4632	3.9869 ***
[-1,0]	-0.0072	-2.4858 **		0.0146	5.1313 ***		1.2775	5.1601 ***
[0,1]	-0.0048	-1.6751 *		0.0153	6.2596 ***		1.8453	6.7913 ***
[0,5]	-0.0110	-2.2091 **		0.0285	1.8077 *		3.5316	7.2695 ***
[-5,5]	-0.0147	-2.1791 **		0.0367	7.3883 ***		4.0245	6.7755 ***

Relatively larger transactions: size matters in terms of M&A events



	N=42		N=42		N=41	
	Panel 1		Panel 2		Panel 3	
Event Day	AAR	t-test	AAAR	Corrado	AAV	t-test
-5	0.0039	1.6032	0.0022	1.3966	0.0311	0.3532
-4	-0.0012	-0.4956	-0.0016	0.1995	0.0375	0.4262
-3	0.0003	0.1430	0.0014	-0.7509	0.1077	1.2233
-2	-0.0001	-0.0230	-0.0029	-2.2309 **	-0.1266	-1.4388
-1	-0.0006	-0.2537	-0.0009	-0.5369	-0.1425	-1.6188
0	0.0013	0.5408	-0.0011	-0.3482	0.0114	0.1291
1	-0.0023	-0.9464	-0.0011	0.9649	-0.0008	-0.0036
2	-0.0042	-1.7599 *	-0.0010	1.9735 **	0.0503	0.5709
3	-0.0015	-0.6438	0.0000	0.0979	0.0436	0.4958
4	0.0008	0.3192	-0.0012	-0.4716	-0.0572	-0.6503
5	0.0020	0.8361	0.0011	0.2394	0.1259	1.4299
	CAAR	t-test	CAAR	Corrado	CAAV	t-test
[-5,0]	0.0036	0.6184	-0.0029	-0.9270	-0.0815	-0.3780
[-1,0]	0.0007	0.2030	-0.0019	-0.6259	-0.1311	-1.0534
[0,1]	-0.0010	-0.2868	-0.0021	0.4360	0.0106	0.0852
[0,5]	-0.0040	-0.6752	-0.0012	-0.0948	0.1731	0.8029
[-5,5]	-0.0016	-0.2050	-0.0030	0.1608	0.0803	0.2750

Relatively smaller transactions: size matters in terms of M&A events



	N=27			N=27			N=27	
	Panel 1			Panel 2			Panel 3	
Event Day	AAR	Corrado		AAAR	Corrado		AAV	Corrado
-5	0.0010	0.6527		0.0039	1.9314 *		0.0020	0.1183
-4	0.0003	0.2057		-0.0002	0.4507		0.0170	0.2317
-3	0.0027	0.6448		0.0013	0.2052		0.0161	0.1863
-2	0.0015	-0.0158		0.0032	1.5773		0.1692	1.1518
-1	-0.0090	-2.9352 ***		0.0036	0.3259		0.2300	1.2295
0	-0.0082	-1.9819 **		0.0107	3.6254 ***		1.2494	4.2459 ***
1	-0.0002	-1.6536 *		0.0063	2.7039 ***		1.1204	3.6141 ***
2	-0.0034	-2.0333 **		0.0068	3.9553 ***		0.9448	3.0050 ***
3	-0.0017	-0.5855		0.0025	1.2675		0.5444	1.9358 *
4	0.0011	0.6329		0.0036	2.2090 **		0.6345	2.1367 **
5	-0.0030	-2.1322 **		0.0044	1.5773		0.2731	2.1173 **
	CAAR	Corrado		CAAAR	Corrado		CAAV	Corrado
[-5,0]	-0.0117	-1.4002		0.0224	3.3133 ***		1.6837	2.9244 ***
[-1,0]	-0.0172	-3.4769 ***		0.0142	2.7940 ***		1.4795	3.8717 ***
[0,1]	-0.0084	-2.5706 **		0.0170	4.4755 ***		2.3698	5.5578 ***
[0,5]	-0.0155	-0.6121		0.0343	1.5458		4.7666	6.9626 ***
[-5,5]	-0.0190	-2.7743 ***		0.0460	5.9786 ***		5.2010	6.0219 ***

“Full bid” events among the few segments that generate abnormal returns



We have analysed the market reaction to big M&A announcements made by European companies during the sixth wave. To our best knowledge, this is the first study to not only analyse the European M&A market for big transactions during the sixth wave, but also the first one to use three indicators of the market reaction.

The use of returns volatility and trading volume in addition to returns is crucial to understand investors' reactions to the announcements. Thereby, the use of returns alone, when not significant, may lead us to conclude that investors are not reacting to announcements when the market can be reacting to the announcements with an increase in volatility and the number of shares traded. The framework is particularly useful when M&A information is not probably interpreted equally by all the investors, and therefore we cannot observe a direct response in the returns. This is the case for the whole sample studied.



The analysis of the sixth takeover wave has allowed us to divide the announcements before the global financial crisis. Our results are clear about investors' reaction to an M&A announcement during the first half of the wave: selling their stocks with an important increase in the number of shares traded.

Moreover, we also concluded that 'size matters' in terms of M&A events. The Eurozone equity markets reacted more on average in the short term around the acquisition announcement dates, and the greater is the relative size of the transaction with respect to the market capitalization of the acquiring company.

Among other studied factors, both the size and type of acquisition (minority, majority or full bid) help the investors consider to take action or not, regarding their investment portfolio. Full bids make the investors react similarly to event announcements during 2003 to July 2007, this is, selling their stocks.



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