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Shareholder Value Creation in European M&As

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Abstract

This paper looks at the value generated to shareholders by the announcement of mergers and acquisitions involving firms in the European Union over the period 1998–2000. Cumulative abnormal shareholder returns due to the announcement of a merger reflect a revision of the expected value resulting from future synergies or wealth redistribution among stakeholders. Target firm shareholders receive on average a statistically significant cumulative abnormal return of 9% in a one-month window centred on the announcement date. Acquirers' cumulative abnormal returns are null on average. When distinguishing in terms of the geographical and sectoral dimensions of the merger deals, our main finding is that mergers in industries that had previously been under government control or that are still heavily regulated generate lower value than M&A announcements in unregulated industries. This low value creation in regulated industries becomes significantly negative when the merger involves two firms from different countries and is primarily due to the lower positive return that shareholders of the target firm enjoy upon the announcement of the merger. This evidence is consistent with the existence of obstacles (such as cultural, legal, or transaction barriers) to the successful conclusion of this type of transaction, which lessen the probability of the merger actually being completed as announced and, therefore, reduce its expected value.

Keywords: *mergers and acquisitions*; *Europe*; *event study*.

JEL classification: *G*34, *G*38, *L*44

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1. Introduction

The deregulation and promotion of integration of national markets towards a single European market is one of the key goals established at the Lisbon Summit as a prerequisite for the European Union achieving its desired world leadership. The integration of the corporate sector and the alignment of corporate ownerships and structures along the patterns driven by the economic structure of an integrated Europe are pivotal to the attainment of this objective. The industrial structure across Europe is characterised by having relatively small firms with their activity heavily concentrated within their national borders, especially when compared to the industrial structure of the United States, an economic union approximately equal in size to the European Union (see Midelfart-Knarvik *et al.*, 2000). Furthermore, the concentration of activity taking place in Europe is still very driven by national boundaries.

The integration of the national economies, the increase in deregulation of a large number of economic sectors and the recent listing of a number of large European corporations previously controlled by their national governments has decreased the cost of making corporate acquisitions and transactions across European borders, thus facilitating the restructuring of the European corporate sector.[1] In particular, the introduction of the euro should have decisively fostered this process, through two main mechanisms. Firstly, the introduction of the single currency, by contributing to the integration of national markets, increases the attractiveness of corporate restructuring both as a means to harness the potential opportunities stemming from increasing integration and as a device to protect national markets from a more competitive environment. Secondly, the implementation of EMU, by facilitating the integration of European financial markets, should ease the procurement of the sizeable volumes of funds needed to finance M&A operations (Lamfalussy *et al.*, 2001).

In fact, the volume of M&A activity in Europe did rise significantly in the latter part of the nineties. After nearly doubling in 1998 and 1999, the volume of European M&As peaked in the latter year at USD1.53 billion. European merger activity significantly declined over the next two years to a total value of USD532 billion in 2001. However, this increase in M&A activity has been part of a wider worldwide increase in corporate restructuring and not unique to the European Union. Moreover, European merger activity has also remained heavily concentrated within national borders. Domestic mergers in Europe still account for the lion's share of merger activity. They represent more than 50% of all transactions involving a European firm (see European Commission, 2001).

In this respect, the lack of a specific surge in cross-border M&A operations within the eurozone might be taken as a clear indication that there are still a large number of legal, economic and cultural deterrents to this activity. Among these barriers, those of a regulatory nature should not be overlooked. Takeover rules differ widely among member states. Corporate takeover pills and similar provisions to protect existing management are common. Governments also maintain substantial ultimate control over who owns some large firms through their use of golden shares and numerous regulatory and antitrust provisions prior to the approval of large M&A transactions.

[1] See the study by Braunerheljm *et al.* (2000) on the trends towards more regional specialisation in Europe.

Attempts to standardise and promote Europe-wide regulation on merger activity have proven unsuccessful.[2]

The purpose of this paper is to analyse activity in mergers and acquisitions involving European enterprises. We look at this issue by focusing on the extent to which recent corporate acquisitions announced in the EU since the creation of the euro have resulted in a generation of shareholder value. Short-term cumulative abnormal returns will reflect changes in the expected future cash-flows to shareholders resulting from future synergies in the merged entity or from wealth redistribution among shareholders. Value creation for the shareholders of the target and acquiring firms is only a partial measure of the net social value generated by a corporate restructuring decision. Net social value includes changes to other economic agents such as increases or decreases in consumer welfare. Many acquisitions also involve corporate restructuring leading to lay-offs and other significant changes with direct implications for the welfare of other stakeholders such as workers, suppliers or communities in which the firms operate. Focusing on shareholder returns, however, has the advantage of being easy to observe. More decisively, they also represent the best estimate at the time of the transaction of the expected present discounted value to shareholders generated by the transaction.

The paper focuses on the analysis of differences in the intensity of value creation in different types of transaction. For this purpose, mergers and acquisitions are classified using two alternative criteria: the geographical scope of the merger and the degree of government involvement in the industry in which the deal takes place. This emphasis arises from the observation that the presence of institutional and policy barriers to Europe-wide restructuring is more likely to occur in international deals in sectors that are regulated or with a large involvement of state-owned enterprises. Of course, firms involved in international transactions face many other structural and probably more difficult issues such as cultural integration, labour mobility and deeply rooted different business cultures. However, from a policy perspective, the analysis of the effects that government involvement and regulation have on the success of cross-border activity seems pre-eminent, and most of the proposed regulatory changes have been geared to these issues.

The rest of the paper is organised as follows. The next section provides a literature survey of the broad evidence on the impact of mergers and acquisitions on shareholder value creation. Section 3 describes the data that we use for our analysis and the methodology employed, along with the descriptive information on cumulative abnormal returns from merger announcements. Section 4 describes the main results and section 5 concludes.

2. Summary of the literature

There is an extensive literature on the implications of mergers and acquisitions and the market for corporate control for value creation. We provide here a quick and partial survey of this literature focusing on two specific aspects: the evidence accumulated through event studies on the returns to shareholders of the target and acquiring firm accruing around the merger announcement; and the existing evidence suggesting what type of firm characteristics make it more likely that a particular merger will generate or destroy shareholder value. In this summary, we follow Bruner

[2] In November 2003 the European Union agreed on legislation for a single takeover code after 14 years of negotiations. This agreement is still highly unsatisfactory since it makes key provisions optional for the member countries and it may give rise to national protectionism against foreign bidders.

(2000) but focus on those recent papers that analyse samples of mergers that have taken place during the last decade. A more extensive survey of this literature going back in time can be found in Jensen and Ruback (1983), Datta *et al.* (1992) and Bruner (2002).

2.1. *Cumulative abnormal returns to target firms*

Target firm shareholders enjoy returns that are on average significantly positive in almost all cases. The findings of 13 studies, summarised in panel A of Table 1, reveal returns that are economically significant, despite variations in time period, type of deal (merger vs. tender offer), industry involved, observation period and measure of cumulative abnormal returns. These findings are consistent with those reported in previous surveys of this literature: Jensen and Ruback (1983), Datta *et al.* (1992) and Bruner (2001). These surveys report average cumulative abnormal returns in the 20–30% range. On average, cumulative abnormal returns appear somewhat lower in the financial industry. The studies reported in Table 1 also show large cumulative abnormal returns, although these are significantly smaller for more recent transactions. Most of the studies find that cumulative abnormal returns occur in the days following the announcement, and the larger the event window the greater the marginal increase in the amount and significance of cumulative abnormal returns. Interestingly, positive cumulative abnormal returns are also detected in the days prior to the announcement date, suggesting that the market anticipates information on the deals. Negative returns are only reported in two of the studies for windows smaller than ten days, while negative returns are also reported for windows prior to the event date.[3] In short, as Bruner (2002) concludes an M&A transaction delivers a premium return to target firm shareholders.

2.2. *Cumulative abnormal returns to buyer firms*

The evidence on returns to buyer firms' shareholders is less conclusive. The evidence is evenly distributed between studies that report negative cumulative abnormal returns and those that report zero and slightly positive cumulative abnormal returns. Panel B of Table 1 summarises the findings of 15 studies. These studies have been divided between those that report negative returns to shareholders and those finding positive or zero cumulative abnormal returns.

Panel B1 of Table 1 lists 10 studies that report negative cumulative abnormal returns. The negative returns vary between less than one percent and five percent, with different windows, most of them including periods prior to the announcement date. These cumulative abnormal returns are in most cases also significantly different from zero in statistical terms. The results in these studies contrast with those finding positive returns to acquiring firms. Panel B2 of Table 1 enumerates 7 studies that report zero or positive returns to acquirers. These returns range from zero to 7% and in most cases they are very small, especially when compared to the reported cumulative abnormal returns to target firms in the previous section. In short, the findings are distributed rather evenly among studies showing value destruction and those showing value creation. Thus, we can not conclude that in the aggregate there is strong evidence for either positive or negative cumulative abnormal returns to acquirers.

[3] Danbolt (2002).

Table 1

Summary of Shareholder Return Studies for M&A.

Panel A: Returns to the Target Firm Shareholders

Study	Cumulative Abnormal Returns (%)	Sample Size	Sample Period	Event Window (days)	Pos. Returns	Industry Coverage	Country Coverage	Notes
Maquieira *et al.* (1998)	41.65% conglomerate	47	1963–96	(−60,60)	61.8%	Diversified	U.S.	Study of returns for conglomerate and non-conglomerate stock-for-stock mergers.
	38.08% non-congl.	55			83.0%			
Mulherin and Boone (2000)	21.2%	376	1990–1999	(−1,+1)	N/A	Financial and non financial	U.S.	
Mulherin (2000)	10.14%	202	1962–1997	(−1,0)	76%	Diversified	U.S.	A sample of incomplete acquisitions.
DeLong (2001)	16.61%	280	1988–1995	(−10,1)	88.6%	Banking	U.S.	Studied deals in which at least one party is a bank.
Houston *et al.* (2001)	15.58%	27	1985–1990	(−4,1)	N/A	Banking	U.S.	Deals in which both parties are banks.
	24.60%	37	1991–1996					
	20.80%	64	1985–1996					
Martínez-Jerez (2002)	13.62%	335	1990–1998	(−1,1)	82%	Diversified non financial	U.S.	Pooling of interests versus purchases

Table 1
Continued.

Study	Cumulative Abnormal Returns (%)	Sample Size	Sample Period	Event Window (days)	% Pos. Returns	Industry Coverage	Country Coverage	Notes
Kuipers-Miller-Patel (2002)	35.83% 32.22% 3.60% 23.07%	181	1982–1991	AD−20 to ED+5 AD−5 to ED+5 AD−20 to ED−6 AD−1 to AD 0	N/A	Diversified non financial	OECD countries	AD first announc. date of any bid for US target and the announc. date of the acquirer's first bid for foreign acquirers ED corresponding effective date of the final bid for the target
Danbolt (2002)	−9.44% 2.41% 17.82% 20.23% −2.39% 9.04%	474	1986–1991	(−8,−3) months (−2,−1) months (0,+1) months (−2,+1) months (+1,+5) months (−8,+5) months	N/A	Diversified	UK Domestic Acquisitions	Domestic Acquisitions
	−7.60% 9.06% 21.97% 31.03% 1.30% 22.44%	106		(−8,−3) months (−2,−1) months (0,+1) months (−2,+1) months (+1,+5) months (−8,+5) months		Diversified	UK Cross-Border Acquisitions	Cross-Border Acquisitions
P. Beitel-D. Schiereck-M. Wahrenburg (2002)	14.16% 12.31%	98	1985–2000	(−20,0) (−10,0)	72 73	Financial, Insurance	Developed and Developing countries	Targets worldwide being acquired by European banks

	11.23%			(−5,0)	68			
	11.38%			(−2,0)	74			
	10.48%			(−1,0)	70			
	8.27%			0	64			
	12.39%			(−1,+1)	71			
	13.54%			(−2,+2)	75			
	13.35%			(−5,+5)	71			
	14.39%			(−10,+10)	76			
	16%			(−20,+20)	75			
Goergen and	9.01%	129	1993–2000	(−1,0)		Diversified	18 European	Large acquisitions
Renneboog (2004)	12.96%			(−2,+2)				(over USD 100 million)
	15.92%			(−5,+5)				Countries
	23.43%			(−30,+30)				
	21.78%			(−60,+60)				
	21.59%			(−90,+90)				
Karceski, Ongena	8.48	39	1983–1996	(−7,0)	N/A	Banking	Norway	
and Smith (2000)	−1.52			(+1,7)				
Schwert (1996)	23.4%	1814	1975–1991	(−42,+126)	N/A	Diversified	U.S.	All successful and unsuccessful merger offers in the U.S., 1975–1991.
Schwert (2000)	20.0%	2296	1975–1996	(−63,+126)	N/A	Diversified	U.S.	All successful and unsuccessful takeover bids in the U.S., 1975–1996.

Notes:
Unless otherwise noted, event date is announcement date of merger/bid

Panel B: Returns to Acquiring Firm Shareholders

Panel B1: Studies Reporting Negative Returns to Acquirers

Study	Cumulative Abnormal Returns	Sample Size	Sample Period	Event Window (days)	Pos. Returns	Industry Coverage	Country overage	Notes
Mulherin and Boone (2000)	−0.37%	281	1990–1999	(−1,+1)	N/A	Diversified Non financial	U.S.	
Mitchell, Stafford (2000)	−0.14%[1] −0.07%	366	1961–1993	(−1,0)	N/A			Fama and French 3-Factor Model, applied to monthly returns
Walker (2000)	−0.84%[2] −0.77%	278	1980–1996	(−2,+2)	41.4% 46.4%	Non financial and Non utilities	U.S.	
DeLong (2001)	−1.68%	280	1988–1995	(−10,1)	33.6%	Banks	U.S.	Deals in which at least one party is a bank.
Houston *et al.* (2001)	−4.64% −2.61% −3.47%	27 37 64	1985–1990 1991–1996 1985–1996	(−4,1)	N/A	Banks	U.S.	Deals in which both parties are banks
Martínez-Jerez (2002)	−2.93%	335	1990–1998	(−1,1)	32%	Diversified	U.S.	
Goergen and Renneboog (2004)	0.70% 1.18% 0.39% −0.48% 0.41%	139	1993–2000	(−1,0) (−2,+2) (−30,+30) (−60,+60) (−90,+90)	N/A	Diversified	18 European Countries	Large acquisitions (over USD 100 million)

Kuiper *et al*. (2002)	−2.12%	138 US	1990–1998	AD−20 to ED+5	N/A	Diversified	OECD	AD first announc. date
	−2.14%	target						of any bid for US target
								and the announc.
				AD−5 to ED+5				Date of the acquirer's first
								bid for foreign acquirers.
	−1.32%	138 US	1990–1998	AD−5 to AD+5				ED corresponding effective
		target						date of the final bid
	−0.06%			AD−20 to AD−6				for the target
	−0.92%			AD−1 to AD 0				
P. Beitel-D. Schiereck-	−0.14%	98	1985–2000	0	46	Financial,	Developed and	Targets worldwide
M. Wahrenburg (2002)	−0.01%			(−1,+1)		Insurance	Developing	being acquired by
Doukas-Holmén-	−0.20%			(−20,+20)			Countries	European banks
Travlos (2002)	−2.37%	101	1980–1995	(−5,+5)	46	Diversified	Sweden	Diversifying acquisitions
	−1.12%			(−5,+1)				display negative returns
	−0.52%			(−1,+1)				
	0.62%			(−1,0)				
	−0.91%			(0,+1)				

Notes:

Unless otherwise noted, event date is announcement date of merger/bid

[1]Top return is based on an equal-weighted benchmark portfolio. Bottom-return is based on a value-weighted benchmark portfolio.

[2]Top return is a return adjusted for average market returns. Bottom return is adjusted for return on a matched firm.

Panel B2: Studies Reporting Zero or Positive Returns Acquirers

Study	Cumlative Abnormal Returns	Sample Size	Sample Period	Event Window (days)	Pos. Returns	Industry Coverage	Country Coverage	Notes
Maquieira *et al.* (1998)	6.14% non-conglomerate deals	55	1963–1996	(−60,60)	61.8%	Diversified	U.S.	Study of returns in conglomerate and non-conglomerate stock-for-stock deals
	−4.79% conglomerate	47			36.2%			
Mulherin (2000)	+0.85%	161	1962–1997	(−1,0)	49%	Diversified	U.S.	A sample of incomplete acquistions.
Kohers and Kohers (2000)	1.37% cash deals	961	1987–1996	(0,1);	N/A	Technology	U.S.	Sample of mergers among high-tech firms.
	1.09% stock	673						
	1.26% whole sample	1634						
Raj and Forsyth (2002)	1.60%	340	1994–1998	(−15,+15)	N/A	Diversified	U.K.	Related sample
	0.75%							Unrelated sample
Floreani and Rigamonti (2001)	3.65%	56	1996–2000	(−20,+2)	N/A	Insurance	U.S., Europe, Australia	

P. Beitel- D. Schiereck- M. Wahrenburg (2002)	0.42% 0.14% 0.38% 0.07% 0.06% 0.18% 0.46% 0.24%	98	1985–2000	(−20,0) (−10,0) (−5,0) (−2,0) (−1,0) (−2,+2) (−5,+5) (−10,+10)	53 57 53 52 53 42 46 52	Financial, Insurance	Developed and Developing Countries	Targets worldwide being acquired by European banks
Doukas-Holmén- Travlos (2002)	2.74% 1.38% 1.19% 0.83% 0.95%	101	1980–1995	(−5,+5) (−5,+1) (−1,+1) (−1,0) (0,+1)	46	Diversified	Sweden	Focused acquisitions display positive returns

Notes:
Unless otherwise noted, event date is announcement date of merger/bid

Most of the reported cumulative abnormal returns seem to accrue only around the announcement date. Studies that analyse long-term returns to shareholders of acquiring firms tend to find negative significant cumulative abnormal returns to acquirers.[4] Studies that focus on the cumulative abnormal returns after the completion of the transaction also tend to find negative and significant returns to acquirers. Caves (1989) infers that these findings are due to 'second thoughts' by bidders' shareholders, and/or the release of new information about the deal. But interpretation of longer-run returns following the transaction is complicated by possible confusion on the release of new information surrounding events that have nothing to do with the transaction.

Again, this summary of findings is consistent with previous surveys. Nevertheless, Bruner (2002) suggests that his review of the empirical literature shows a slight tendency for returns to decline over time. He concludes that returns appear to be higher (more positive) in the 1960s and 1970s than in the 1980s and 1990s, except for deals in technology and banking. In these industries returns to bidders increased in the 1990s.

2.3. *Returns to buyer and target firms combined*

The combination of positive cumulative abnormal returns to the target and breakeven returns to the buyer raise the question of the value creation from the merger. A large percentage gain to the target shareholders could be more than offset by a small percentage loss to the buyer shareholders. Studies have looked at the combined weighted return for the buyer and target firms. In Table 2, we report the findings of 6 studies. Almost all the studies report positive combined returns. Nevertheless, it is worth pointing out that the magnitude of the cumulative abnormal returns is relatively low and that Aktas *et al.* (2001), focusing on a sample of mergers conducted in the second half of the nineties, found that half the deals were value-destroying. Overall, the findings in Table 2 coincide with the previous evidence in the literature suggesting that M&As do result in a total increase in the combined shareholder value of the merging firms.

2.4. *Drivers of value in a merger*

Three main value drivers have been highlighted by the literature in mergers: the existence of synergies, the importance of value investing and the key role of management involvement.

Synergies through either the development of economies of scale, cost reduction or the elimination of duplicate activities are almost always mentioned as the justification for a merger. Diversifying (unrelated) mergers tend to be more associated with poor performance than related mergers. The degree of relatedness between the businesses of the buyer and seller is positively associated with returns.[5] There is also evidence that diversified firms trade at a discount relative to non-diversifying firms, although recent evidence suggests that this is not due to firms having diversified.[6] Maquieira *et al.*

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[4] Gregory and McCorriston (2002), Faccio *et al.* (2002) and Raj and Forsyth (2002) report significant long-term negative cumulative abnormal returns to acquirers.

[5] Comment and Jarrell (1995), and Healy *et al.* (1992, 1997), among others, provide evidence on the existence of value destruction from unrelated diversification.

[6] Lang and Stulz (1994) and Berger and Ofek (1995) provided the most comprehensive evidence on the existence of this diversification discount, while more recently Campa and Kedia (2002), Villalonga (2004) and Maksimovic and Phillips (2002) provide results consistent with the existence of this discount even when firms are maximising value.

Table 2

Studies Reporting total Value Creation from an M&A: Combined returns to shareholders of acquiring firm and target firm.

Study	Cumulative Abnormal Returns	Sample Size	Sample Period	Event Window (days)	% Pos. Returns	Industry Coverage	Country Coverage	Notes
Mulherin, Boone (2000)	3.56%	281	1990–1999	(−1, +1)	N/A	Diversified nonfinancial	U.S.	
Mulherin (2000)	2.53%	116	1962–1997	(−1,0)	66%	Diversified	U.S.	A sample of incomplete acquisitions.
Houston *et al.* (2001)	0.14%	27	1985–1990	(−4,1)	N/A	Banking	U.S.	Deals in which both parties are banks.
	3.11%	37	1991–1996					
	1.86%	64	1985–1996					
Kuipers-Miller-Patel (2002)	5.03%	120	1982–1991	AD−20 to ED+5	N/A	Diversified	OECD	AD first announc. date any bid for US target and the announc. date of the acquirer's first bid for foreign acquirers. ED corresponding effective date of the final bid for the target
	4.27%			AD−5 to ED+5				
	3.77%			AD−5 to AD+5				
	0.75%			AD−20 to AD−6				
	2.99%			AD−1 to AD 0				
P. Beitel-D. Schiereck-M. Wahrenburg (2002)	2.01%	98	1985–2000	(−20,0)	63	Financial, insurance	Developed and Developing Countries	Targets worldwide being acquired by European banks
	1.46%			(−10,0)	64			
	1.43%			(−5,0)	63			
	1.38%			(−2,0)	69			
	1.20%			(−1,0)	65			
	0.91%			0	55			
	1.40%			(−1,+1)	59			
	1.70%			(−2,+2)	62			
	1.45%			(−5,+5)	62			
	1.35%			(−10,+10)	64			
	1.29%			(−20,+20)	58			

Table 2
Continued.

Study	Cumulative Abnormal Returns	Sample Size	Sample Period	Event Window (days)	Pos. Returns	Industry Coverage	Country Coverage	Notes
Nihat Aktas-Eric Bodt-Fany Declerck (2001)	0.05%	80	1995–1999	(−5,0)	37	Diversified	France	Value creating business combinations N = 37
	0.45%			(−4,0)				
	0.42%			(−3,0)				
	0.37%			(−2,0)				
	2.07%			−1,0				
	3.2%			0				
	4.41%			(0,+1)				
	5.89%			(0,+2)				
	5.52%			(0,+3)				
	5.65%			(0,+4)				
	5.73%			(0,+5)				
	−0.61%			(−5,0)				Value destroying business combinations N = 43
	−0.96%			(−4,0)				
	−1.10%			(−3,0)				
	−1.56%			(−2,0)				
	−1.56%			(−1,0)				
	−2.63%			0				
	−3.59%			(0,+1)				
	−4.38%			(0,+2)				
	−4.04%			(0,+3)				
	−4.29%			(0,+4)				
	−4.16%			(0,+5)				

Notes:
Unless otherwise noted, event date is announcement date of merger/bid

(1998) found negative but insignificant returns to buyers in conglomerate deals, as opposed to positive and significant returns to buyers in non-conglomerate deals. Houston *et al.* (2001) found a significant relationship between the present value of forecasted cost savings and the announcement day returns in bank mergers.

Value investment is also likely to generate positive returns. Value investment occurs when buyers purchase apparently cheap firms (low book-to-market ratios). Rau and Vermaelen (1998) found that buyers of companies with high book-to-market value ratios obtain significantly negative cumulative abnormal returns in merger deals, while value-oriented buyers earn significantly positive cumulative abnormal returns. Cash is also preferred to stocks by sellers in a merger. Evidence suggests that stock deals are related to negative value creation while cash purchasers have zero or positive cumulative abnormal returns.[7]

Finally, studies suggest that returns to buyer firm shareholders are positively related to share ownership by managers and employees. A related finding is that leveraged and management buyouts (LBOs and MBOs) create value for buyers. Bruner (2002) highlights that the sources of these returns are not only from tax savings due to debt and depreciation shields. Gains also accrue significantly from efficiencies and greater operational improvements implemented after the buyout by the new managers who tend to have a significant portion of their net worth committed to the success of the transaction.[8]

Most of the previous literature has focused on the value drivers of an M&A announcement that are specific to the firms or the business involved. There has not been much analysis of the impact that the institutional context might have on the value that different types of transactions might generate. Our emphasis in this paper is to identify whether there are systematic differences in the value generated by M&As in the European Union depending on the nationality of the firms involved and the characteristics of the industries in which they operate.

3. Cumulative abnormal returns: descriptive statistics

Our empirical analysis is based on a final sample of 262 M&A announcements over the period 1998–2000. Each merger in our sample satisfies the following selection criteria: (a) both the target and acquiring companies are from EU countries; (b) the merging companies are listed; and (c) information on the total return to shareholders is available both for target and acquirer. We have tested the robustness of the results by using a wider sample consisting of those mergers for which information on either the target or the acquirer is available (unmatched panel).[9]

Table 3 provides some information on the sample composition. The distribution of the sample across the EU member states is shown in panel A. Germany accounts for the largest proportion, followed at some distance by the UK, France and Italy. The proportion of mergers in which the target belongs to one of the five largest EU countries is around 70%. The corresponding figure for acquirers is slightly smaller.

[7] Asquith *et al.* (1987), Huang and Walkling (1989), Travlos (1987) and Yook (2000).

[8] You *et al.* (1986) and Healy *et al.* (1997).

[9] See the Appendix for a detailed description of the sample selection process.

Table 3

Sample Composition.

Distribution of the number of M&A announcements by country, industry, time, and number of cross-border transactions, and of those taking place in a regulated industry in a sample of 262 M&A announcements. These merger announcements all took place among publicly traded firms in the European Union during the period 1998–2000.

	Targets	Acquirers
Panel A. Breakdown by Country		
Austria	6	7
Belgium	4	6
Denmark	8	9
Finland	7	11
France	34	36
Germany	61	58
Greece	12	11
Ireland	2	3
Italy	31	34
Luxembourg	1	1
Netherlands	10	9
Portugal	13	14
Spain	25	18
Sweden	11	10
UK	37	35
Panel B. Breakdown by Industry		
Agriculture, For. and Fish.	1	0
Mineral Ind. and Constr.	15	16
Manufacturing	100	82
Transp., Comm. and Utilities.	30	37
Distribution	21	10
Finance, Ins. and Real Estate	74	106
Service Industries	21	11
Panel C. Other characteristics		
1998	40	
1999	71	
2000	151	
National	182	
Cross-border	80	
Regulated	60	

Comparing our sample with the total M&A population, proxied by the SDC M&A database (see European Commission, 2001), UK deals seem to be underrepresented in our sample. As shown in panel B, a majority of M&A deals in our sample took place in financial services and in manufacturing. When comparing with the total population, mergers in the service sector seem to be underrepresented. Over time, the composition of our sample reflects the important growth in the number of operations

in 1999 and 2000. Finally, the share of domestic mergers in our sample (69%) is higher than the corresponding share in the SDC M&A database (54%).[10]

Cumulative abnormal returns from the announcement of an M&A event are calculated relative to the expected returns for windows of different lengths around the announcement date. The measure of cumulative abnormal return is computed as the difference between the return to shareholders during the window, and the expected return to shareholders calculated on the basis of the CAPM model relative to each firm's domestic stock market, with a beta parameter estimated using observations corresponding to 150 days prior to the initial date of the considered window. We have calculated three different measures of cumulative abnormal returns: those that accrue to the shareholders of the acquiring firm, cumulative abnormal returns to the shareholders of the target firm, and total cumulative abnormal returns from the merger, which are the average of the corresponding measures to both firms weighted by their relative market capitalisations.

We have also used different windows in our calculation of the cumulative abnormal return measures to obtain some insight into the timeframe within which cumulative abnormal returns are on average generated and to check for the robustness of our results to the specified window. We have considered seven different windows: three alternative pre-announcement windows, $(t-90, t-1)$, $(t-60, t-1)$ and $(t-30, t-1)$; a short-time window around the announcement day $(t-1, t+1)$; a window of the announcement with a 30-day price run-up $(t-30, t+1)$; and two windows also covering post-announcement returns $(t-1, t+30)$ and $(t-30, t+30)$.

Table 4 reports the average cumulative abnormal returns to merging firms' shareholders over the different time windows. Results are reported both for the whole sample of mergers and for the sample of non-financial mergers. In the case of targets there seems, in both samples, to be a price run-up starting one month prior to the announcement date (cumulative abnormal returns around 5%) and an announcement effect (cumulative abnormal returns of the order of 4%). However, no significant post-announcement returns are found. Note that the difference between cumulative abnormal returns over the windows $(t-1, t+30)$ and $(t-1, t+1)$ or the difference between cumulative abnormal returns over the windows $(t-30, t+30)$ and $(t-30, t+1)$ are not significantly different from zero.

In the case of acquirers, we have not found either a significant announcement effect or significant post-announcement returns. However, there is weak evidence in favour of a price run-up, starting two or three months prior to the announcement date. Nevertheless, for the sample of non-financial mergers we have not found significant cumulative abnormal returns to acquirers for any of the windows used.

In what follows we restrict ourselves to the analysis of the results corresponding to the following subset of windows: $(t-90, t-1)$, $(t-30, t-1)$, $(t-1, t+1)$ and $(t-30, t+30)$. The first two windows should capture potential differences in run-up returns. The third window will capture pure announcement returns, while the last window covers a time period centred around announcement that might include post-announcement news. Table 5 presents the average cumulative abnormal returns for merging firms in our basic sample based on the different windows. The table provides

[10] The SDC M&A database is not confined only to transactions involving two companies from EU countries. Therefore, it includes a number of transactions in which one of the companies does not belong to an EU member state. This accounts for part of the difference in the proportion of cross-border transactions in the two datasets.

Table 4

Differences in Cumulative Abnormal Returns by Window Length.

Differences in cumulative average abnormal returns to target and acquirer between windows of different length. Abnormal returns are calculated as the difference between shareholder returns and expected shareholder returns, measured using the CAPM. Each column of the table reports CAARs over different intervals around the announcement date, t, as well as the p-values of a paired t-test on the significance of the difference between cumulative abnormal returns.

	All mergers		Non-financial mergers	
	Targets	Acquirers	Targets	Acquirers
Cumulative average abnormal returns				
Pre-announcement				
$(t-30,t-1)$	5.30%	0.88%	5.35%	1.10%
$(t-60,t-1)$	5.72%	1.96%	5.12%	1.81%
$(t-90,t-1)$	6.60%	2.61%	5.58%	2.24%
Announcement				
$(t-1,t-1)$	3.93%	0.44%	4.48%	0.70%
$(t-30,t+1)$	8.85%	1.35%	8.89%	1.59%
Post-announcement				
$(t-1,t+30)$	3.24%	−0.22%	3.93%	0.30%
$(t-30,t+30)$	8.90%	0.56%	9.11%	1.25%
Tests on differences in cumulative average abnormal returns by window length (1)				
$(t-60,t-1)-(t-30,t-1)$	0.59	0.10	0.81	0.36
$(t-90,t-1)-(t-30,t-1)$	0.20	0.09	0.85	0.37
$(t-30,t+1)-(t-1,t+1)$	0.00	0.23	0.00	0.30
$(t-1,t+30)-(t-1,t+1)$	0.42	0.29	0.60	0.61
$(t-30,t+30)-(t-30,t+1)$	0.95	0.22	0.83	0.68

(1) The reported numbers are p-values of a paired t-test of the null hypothesis that the differences in returns of the two windows are statistically equal to zero.

the bootstrapped skewness-adjusted t-statistic as well as 5% confidence bands computed following the method described in Lyon *et al.* (1999).[11]

Our results for the complete sample of mergers are consistent with those generally found in the event study literature analysing market-based returns to merging firms' shareholders around the announcement date. Thus, we find that there are positive and significant cumulative abnormal returns to targets ranging from nearly 4% over the period $(t-1, t+1)$ to around 9% over the period $(t-30, t+30)$. Around 60% of the target firms display positive cumulative abnormal returns. These estimated cumulative abnormal returns are somewhat lower than the average reported in the literature which ranges between 20% and 30% (Jensen and Ruback, 1983, and Datta *et al.*, 1992) and more in line with more recent studies reported in the previous section, suggesting that returns might have been declining over time.[12] In contrast, and on

[11] The pattern of results does not significantly change when using the unmatched sample.

[12] Bruner (2002) also reports some evidence that cumulative abnormal returns might have been declining over time.

Table 5

Cumulative Abnormal Returns by Type of Merger.

Sample mean, t-statistic and 5% confidence interval of the distribution of CAARs to target, acquirer and value creation. Abnormal returns are calculated as the difference between shareholder returns and expected shareholder returns, measured using the CAPM. Each column of the table reports the statistics for the distribution of CAARs over an interval around the announcement date, t. The 5% confidence interval on the distribution of excess returns has been adjusted for skewness following the method described in Lyon *et al.* (1999).

		$(t-30,t+30)$	$(t-30,t-1)$	$(t-90,t-1)$	$(t-1,t+1)$
Targets					
All Mergers	Excess return	8.90%**	5.31%**	6.60%**	3.93%**
	t-stat	6.81	5.75	4.60	8.59
	5% conf. band	−2.15	−2.09	−2.08	−2.16
		1.93	2.04	1.96	2.14
National	Excess return	8.57%**	4.92%**	5.98%**	3.86%**
	t-stat	5.24	4.28	3.53	6.98
	5% conf. band	−2.19	−2.31	−2.25	−2.57
		1.99	2.01	2.08	1.81
Cross-border	Excess return	9.66%**	6.18%**	8.01%**	4.08%**
	t-stat	4.52	4.13	2.96	4.94
	5% conf. band	−2.35	−2.19	−2.51	−2.67
		1.98	1.76	2.27	2.01
Regulated	Excess return	4.87%	4.26%**	5.04%*	2.96%**
	t-stat	1.42	2.37	1.58	2.47
	5% conf. band	−3.35	−3.32	−2.49	−5.02
		1.87	1.78	2.12	1.64
Unregulated	Excess return	10.09%**	5.62%**	7.06%**	4.22%**
	t-stat	6.92	5.23	4.38	8.62
	5% conf. band	−2.21	−2.18	−2.16	−2.21
		1.82	1.93	1.91	1.81
Acquirers					
All Mergers	Excess return	0.56%	0.88%	2.61%**	0.44%
	t-stat	0.54	1.20	2.16	1.29
	5% conf. band	−2.14	−2.15	−2.19	−2.25
		2.12	2.13	2.02	2.24
National	Excess return	1.15%	1.05%	3.86%**	0.61%
	t-stat	0.84	1.06	2.64	1.32
	5% conf. band	−2.05	−2.19	−2.41	−2.40
		2.07	1.95	1.98	2.37
Cross-border	Excess return	−0.78%	0.52%	−0.23%	0.05%
	t-stat	−0.56	0.58	−0.13	0.12
	5% conf. band	−2.18	−2.31	−2.08	−2.17
		2.00	2.17	2.15	2.55
Regulated	Excess return	−1.96%	−1.81%**	0.20%	−0.32%
	t-stat	−1.10	−2.07	0.58	−0.41
	5% conf. band	−2.21	−2.00	−2.22	−1.72
		2.11	2.95	2.55	3.39
Unregulated	Excess return	1.31%	1.68%**	3.32%**	0.67%*
	t-stat	1.12	2.13	2.12	1.83
	5% conf. band	−2.22	−2.24	−2.39	−2.60
		1.95	1.90	1.92	2.04

Table 5
Continued.

		$(t-30,t+30)$	$(t-30,t-1)$	$(t-90,t-1)$	$(t-1,t+1)$
Value creation					
All Mergers	Excess return	0.95%	1.16%	3.57%**	1.04%**
	t-stat	0.85	1.46	2.84	3.21
	5% conf. band	−2.26	−2.37	−2.34	−2.40
		2.20	2.19	1.85	1.99
National	Excess return	1.70%	1.43%	4.39%**	1.33%**
	t-stat	1.17	1.33	2.91	3.20
	5% conf. band	−2.19	−2.28	−2.49	−2.53
		2.02	1.92	1.92	1.99
Cross-border	Excess return	−0.70%	0.58%	1.78%	0.40%
	t-stat	−0.44	0.59	0.78	0.81
	5% conf. band	−2.23	−2.35	−2.17	−2.85
		2.25	2.24	2.39	1.88
Regulated	Excess return	−4.40%**	−2.36%**	0.35%	−0.01%
	t-stat	−2.40	−2.04	0.09	−0.03
	5% conf. band	−2.26	−1.79	−1.82	−2.45
		2.39	3.87	2.78	2.36
Unregulated	Excess return	2.20%	1.98%*	4.33%**	1.29%**
	t-stat	1.71	2.21	3.13	3.45
	5% conf. band	−2.09	−2.54	−2.39	−2.57
		2.16	2.32	1.90	2.18

*/**denote significance at the 10%/5% level.

average for all mergers, there are no significant cumulative abnormal returns to acquiring firms, the exception being the cumulative abnormal returns over the window ($t-90$, $t+1$), which reflects the existence of a small statistically significant run-up starting three months prior to the announcement date. The share of acquiring firms displaying positive cumulative abnormal returns is very close to 50%. Overall, the increase in the net present value of acquiring companies around the merger announcement date is essentially zero (i.e. buyers earn their required return). Additionally, it is worth emphasising that, both for targets and buyers, there is a broad range of responses to the announcement of a merger deal from very positive to very negative.

Figure 1 shows the distribution of cumulative abnormal returns to targets and acquirers for the different windows. The range of the distribution of returns increases with the size of the window. More interestingly, target returns are positively skewed while returns to acquirers are more symmetrically distributed. For instance, the 25th percentile of target cumulative abnormal returns over the window ($t-30$, $t-1$) is −3.6% and the 75th percentile is 10.5%. In contrast, for acquirers these percentile values are −4.1% and 5.6%, respectively. Target returns are also more likely to have large positive cumulative abnormal returns than acquirer returns, and the overall dispersion of target returns appears larger than that of acquirers.

The question of the net economic gain from the announcement of an M&A deal can be addressed by examining a weighted average of the cumulative abnormal returns to target and buyer firms (weighted by their relative market values). For the whole sample of mergers, we find that the joint cumulative abnormal returns range, depend-

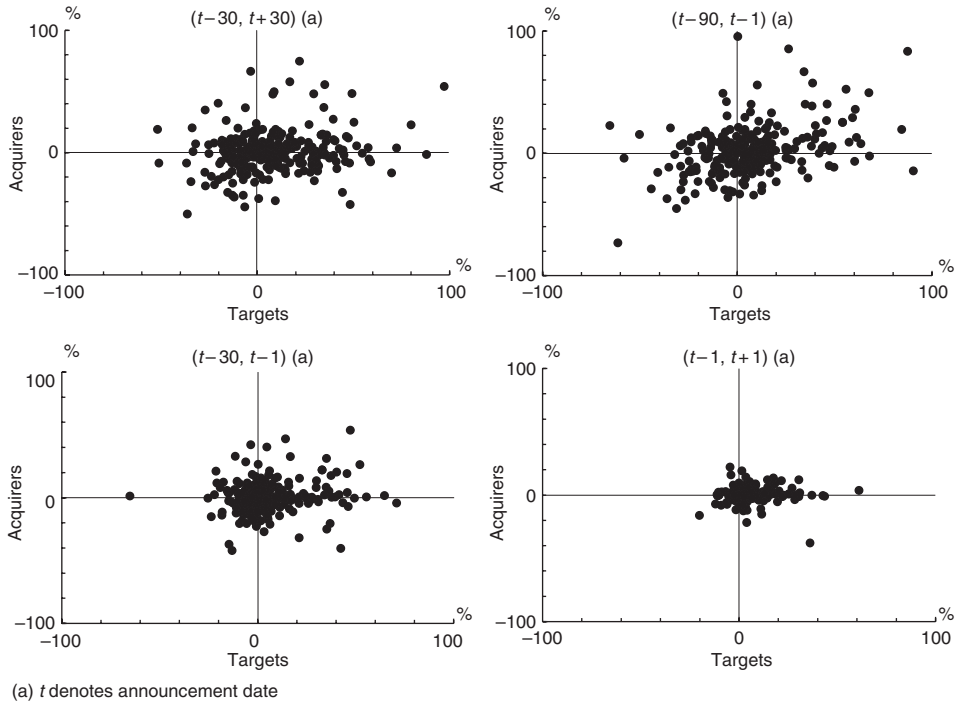

Fig. 1. Abnormal returns to target and acquiring firms, 1998–2000.

ing on the window, from 0.9% to 3.6% and the percentage of mergers creating value (i.e. with positive joint cumulative abnormal returns) varies between 50% and 57%. Therefore, it seems that the positive cumulative abnormal returns to targets are to a large extent offset by the zero cumulative abnormal returns to buyers, given that the acquiring firms are usually substantially larger than targets. Reasonably, the highest value for value creation is obtained over the window ($t-90$, $t-1$) corresponding to the window with the highest average cumulative abnormal returns to acquirers.

3.1. *National vs. cross-border mergers*

One of the goals of the paper is to find out whether there are significant barriers to the restructuring of corporate activity within the European Union. As already highlighted in the introduction, the industrial structure of the EU is more concentrated within national borders than what a truly single market would suggest. This implies that as barriers to cross-border transactions decrease, this type of transaction will occur more frequently. In the absence of these barriers, we should expect the announcement of a cross-border merger to involve, on average, a generation of value at least as large as a similar transaction involving two domestic firms. To the extent that these barriers are high, we would expect the likelihood of a cross-border merger generating value to decrease.

As a first step to ascertain to what extent the profitability of M&A activity differs depending on the national or cross-border nature of the transactions, this section presents some descriptive statistics on the cumulative abnormal returns enjoyed by the shareholders of the merging companies, distinguishing between national and cross-border transactions. The evidence presented in Table 6 shows that the sign of the

difference in average cumulative abnormal returns between national mergers and cross-border deals diverges between targets and acquirers.

In the case of targets, average cumulative abnormal returns are found to be larger in cross-border deals. This difference ranges from 0.2% to 2.0%, but is never significant (see Table 6). The percentage of target firms displaying positive cumulative abnormal returns is slightly higher for the sub-sample of cross-border mergers, with the exception of the shorter time window. Conversely, in the case of acquirers, average cumulative abnormal returns are larger in national mergers. This varies between 0.5% and 4.1%, although it is only significant for the long pre-announcement window. Given the larger average size of the acquiring firms, we find that the joint cumulative abnormal returns (weighted average of the cumulative abnormal returns to target and buyer firms) are larger in national mergers than in cross-border deals. This difference ranges, depending on the window, from 0.8% to 2.6%, but it is only significant in the case of the shorter time window.

The evidence based on the unconditioned differences in cumulative abnormal returns between domestic and cross-border deals displayed in panel A of Table 6 is not conclusive. If anything, it seems to suggest that shareholders of acquiring firms obtain lower benefits in cross-border deals than in national transactions, i.e. acquiring firms are to some extent penalised for engaging in a cross-border merger. A first potential explanation for this outcome is that the market perceives that the acquirer is paying too much. Nevertheless, this explanation is far from convincing because although merger premia paid to target shareholders are larger in cross-border than in national deals, the difference is never significant. This lack of significance is not surprising because acquirers need to make on average a sufficiently attractive offer for the existing shareholders to transfer their ownership. An alternative rationale for the lower cumulative abnormal returns to buyers found in the cross-border transactions is that the expected value of the proposed cross-border transaction is low suggesting that buyers in cross-border mergers might face obstacles of a different nature that offset their advantages when entering new markets.

3.2. *Mergers in regulated industries vs. mergers in unregulated industries*

We compare cumulative abnormal returns arising from merger processes taking into account the type of activity in which the target firm is engaged. More precisely we focus on cases where the target firm operates in an industry that is regulated or in which the involvement of state-owned enterprises is substantial. There is no single definition of what may be considered a regulated industry. At some level all economic activity is regulated to some extent. Our goal with this distinction is to try to capture the probability that private sector restructuring in an industry may be more likely to be confronted with opposition and scrutiny from policy makers. We particularly want to test whether the expectation of such government involvement may result in lower expected returns from the merger announcement.

The likelihood of facing government or regulatory hurdles is industry- and country-specific and not necessarily constant over time, and is possibly also transaction-specific depending on the characteristics of the target and acquiring firm. At the aggregate level it is reasonable to think that such impediments would arise more often in industries that have traditionally been regulated or where the government has had an important ownership stake in their productive assets. For empirical

Table 6

Differences in Cumulative Abnormal Returns by Type of Merger.

Differences in cumulative average abnormal returns to target, acquirer, and value creation between national and cross-border mergers and between mergers in regulated and unregulated industries. Abnormal returns are calculated as the difference between shareholder returns and expected shareholder returns, measured using the CAPM. Each column of the table reports the statistics for the distribution of abnormal returns over four intervals around the announcement date, t.

		$(t-30,t+30)$	$(t-30,t-1)$	$(t-90,t-1)$	$(t-1,t+1)$
A. National vs. Cross-border					
Targets	Cross-border	9.66%	6.18%	8.01%	4.08%
	National	8.57%	4.92%	5.98%	3.86%
	Diff	1.09%	1.26%	2.03%	0.22%
	p-value (2)	0.65	0.72	0.73	0.57
Acquirers	Cross-border	−0.78%	0.52%	−0.23%	0.05%
	National	1.15%	1.05%	3.86%	0.61%
	Diff	−1.93%	−0.53%	−4.09%*	−0.56%
	p-value (2)	0.17	0.35	0.06	0.17
Value creation(1)	Cross-border	−0.70%	0.58%	1.78%	0.40%
	National	1.70%	1.43%	4.39%	1.33%
	Diff	−2.40%	−0.85%	−2.61%	−0.93%*
	p-value (2)	0.13	0.28	0.17	0.09
B. Regulated vs. non-regulated					
Targets	Non-regulated	10.09%	5.62%	7.06%	4.22%
	Regulated	4.87%	4.26%	5.04%	2.96%
	Diff	5.22%*	1.36%	2.02%	1.26%
	p-value (2)	0.07	0.26	0.28	0.22
Acquirers	Non-regulated	1.31%	1.68%	3.32%	0.67%
	Regulated	−1.96%	−1.81%	0.20%	−0.32%
	Diff	3.27%*	3.49%**	3.12%	0.99%
	p-value (2)	0.07	0.01	0.12	0.12
Value creation(1)	Non-regulated	2.20%	1.98%	4.33%	1.29%
	Regulated	−4.40%	−2.36%	0.35%	−0.01%
	Diff	6.60%**	4.34%**	3.98%	1.30%**
	p-value (2)	0.00	0.01	0.10	0.04

*/**denote significance at the 10%/5% level.

(1) Data on value creation are only available for 211 merger deals.

(2) The reported numbers are p-values of a t-test (allowing for different standard deviations between the two subsamples) of the null hypothesis that the difference between the CAARs in the two subsamples is zero.

implementation we define a dummy variable that takes the value of one when the target firm operates in such an industry.[13]

[13] We consider mineral industries, primary metal industries, transportation, communication, electricity, gas, sanitary services and financial institutions as regulated industries in all member countries. More precisely, these industries correspond to the following 2-digit SIC codes: 10, 13, 33, 40, 44–45, 48–49, 60–61, 80.

The evidence presented in panel B of Table 6 uniformly shows that average cumulative abnormal returns to targets and acquirers are smaller for mergers in regulated industries. The difference between the cumulative abnormal return to targets in mergers in unregulated industries and the cumulative abnormal return to targets in mergers in regulated industries ranges from 1.3% to 5.2% although it is not always significant (see Table 6). For mergers in unregulated industries, cumulative abnormal returns to targets are positive and always significant whereas in the case of mergers in regulated industries they are positive although non-significant for some windows (see Table 5). Thus, we find that merger premia paid to target shareholders are smaller in mergers in regulated industries. In fact, the hypothesis of zero cumulative abnormal returns to targets, for some windows, cannot be rejected for these types of industries. The difference between the cumulative abnormal return to acquirers in mergers in unregulated industries and the cumulative abnormal return to acquirers in mergers in regulated industries varies between 1.0% and 3.5% and is (or close to) significant in most cases. Cumulative abnormal returns to acquirers are on average positive and weakly significant for mergers in unregulated industries whereas they tend to be negative and non-significant for mergers in regulated industries.

The regulatory character of the industry also seems to be a relevant factor in terms of the process of value creation. The difference between joint cumulative abnormal returns between transactions in regulated and unregulated industries is positive and, in most cases, significant. More precisely, while mergers in unregulated industries display on average positive expected value creation (depending on the window, the joint cumulative abnormal returns range from 1.3% to 4.3%), the evidence is not as clear for deals in regulated industries (depending on the window, the expected value creation ranges from −4.4% to 0.4%).

Overall, what these results might reflect is the existence of regulatory frameworks in certain industries that represent a hostile environment that hampers the success of the merger processes. In fact, as it is later argued these adverse conditions are more relevant to foreign buyers.

4. Regression analysis

4.1. *Estimation methodology*

We expect the value of cumulative abnormal returns to be correlated with the type of M&A event that is announced. Specifically we would like to test for the existence of systematic differences in two dimensions: whether the merger takes place between two firms in the same country or between firms from two different European countries; and whether the target firm operates in an industry which had (or still has) a large percentage of its total activity controlled by state-owned enterprises or which is actively regulated. As regards this latter dimension, we distinguish between those mergers taking place in the financial sector and those deals occurring in other 'regulated' industries.

The basic model specification that we use is:

$$R^t_{i,j} = \alpha_j + \alpha_1 FRNDLY_i + \alpha_2 SSIC_{i,j} + \alpha_3 RSIZE_{i,j} + a_1 DC_{i,j} + a_2 RNF_j + a_3 FIN_j + a_4 DC^*_{i,j} RNF_j + a_5 DC^*_{i,j} FIN_j + \upsilon^t_{i,j} \quad (1)$$

where R_{ij}^{t} refers to the cumulative abnormal return during a window t from the announcement of a merger between the target firm j and the acquiring firm i; α_j is a country-specific intercept; $FRNDLY_i$ is a dummy variable that takes the value of 1 if the merger was considered friendly by the board of the target firm and zero otherwise; $SSIC_{i,j}$ is a dummy that takes the value of 1 if firms i and j main line of business is in the same two-digit SIC and zero otherwise; $RSIZE_{i,j}$ is the proportion of the market capitalisation of the target firm relative to the sum of the market capitalisation of the target and acquirer; $DC_{i,j}$ is a dummy that takes the value of 1 if firms i and j are from the same country and zero otherwise; RNF_j is a dummy that takes the value of 1 if the industry of the target firm is an industry that is regulated or with a large involvement of state-owned enterprises, excluding financial institutions; and FIN_j is a dummy variable that takes the value of one if the merger takes place in the financial sector.

Our primary focus is in systematic differences arising due to the nationality of the firms involved in the transaction and due to the type of the industry in which the merger takes place. The following table summarises the tests on the existence of systematic differences in cumulative abnormal returns between national and cross-border mergers, on the one hand, and between mergers in regulated and in unregulated industries, on the other.

We have included the variables $FRNDLY_i$, $SSIC_{i,j}$, and $RSIZE_{i,j}$ in the regressions as controls for some of the characteristics of mergers that have been highlighted in the literature as likely to affect excess returns. The definition of a merger offer as hostile is not an exogenous event and normally reflects part of the negotiating process between the target and acquirer (Schwert, 2000). Nevertheless, this distinction is used in the academic literature to reflect potential gains from hostile takeovers resulting from replacing incumbent managers. Merger announcements among firms operating in the same industry are usually perceived to be more value generating due to the exploitation of strategic synergies than those acquisitions that imply diversification strategies (Doukas *et al*., 2002). Finally, the size of the target premium has consistently been

Tests on differences in cumulative abnormal returns	
National vs. Cross-border	
H_0: $a_1 = 0$	No difference between cumulative abnormal returns in national and cross-border mergers, in mergers in unregulated industries.
H_0: $a_1 + a_4 = 0$	No difference between cumulative abnormal returns in national and cross-border mergers, in mergers in regulated non-financial industries.
H_0: $a_1 + a_5 = 0$	No difference between cumulative abnormal returns in national and cross-border mergers, in mergers in regulated financial industries.
Regulated non-financial vs. unregulated	
H_0: $a_2 + a_4 = 0$	No difference between cumulative abnormal returns in mergers in regulated non-financial and in unregulated industries, in national deals.
H_0: $a_2 = 0$	No difference between cumulative abnormal returns in mergers in regulated non-financial and in unregulated industries, in cross-border deals.
Regulated financial vs. unregulated	
H_0: $a_3 + a_5 = 0$	No difference between cumulative abnormal returns in mergers in regulated financial and in unregulated industries, in national deals.
H_0: $a_3 = 0$	No difference between cumulative abnormal returns in mergers in regulated financial and in unregulated industries, in cross-border deals.

found in the literature to be negatively correlated with the size of the target firm relative to the acquirer (Schwert, 2000).

Table 7 displays the results of the regression analysis of the cumulative abnormal returns to target and acquiring shareholders as well as for the weighted average of both cumulative abnormal returns.[14] Regarding the results for target firms, we first observe that, in the case of cross-border deals, firms operating in regulated industries do show lower returns than targets from mergers taking place in other industries. This is particularly the case when the target firm belongs to a financial industry. Thus, irrespective of the time window considered, when we focus on cross-border deals, target firms from financial industries receive significantly lower cumulative abnormal returns than target firms from unregulated industries. Regarding the comparison of cumulative abnormal returns for target firms between domestic and international mergers, we have not found any significant difference for mergers in non-financial industries. However, we do find that domestic mergers in financial industries display higher returns than cross-border mergers in this sector.

We checked whether there were significant national differences among the cumulative abnormal returns to shareholders depending on the country of nationality of the target firm by allowing country-specific intercepts in equation (1). Differences in national regulations, approaches toward hostile takeover activities, and different degrees of government involvement in certain industries can lead to observed differences in the degree of cumulative abnormal return to be obtained from an acquisition. On average, there are no differences in cumulative abnormal return to target firms due to the country of nationality of the merger. A test of the joint hypothesis that all the country-specific intercepts α_j are equal in equation (1) could not be rejected.

For shareholders of acquiring firms the results are slightly less significant. First, according to the evidence shown in Table 7, in the case of mergers in regulated financial industries, we observe significant differences in cumulative abnormal returns between national and cross-border mergers. Nevertheless, these differences are smaller than those observed for target firm shareholders. Second, there is evidence suggesting that cumulative abnormal returns to acquirers are higher for mergers taking place in unregulated industries. More precisely, it seems that shareholders of foreign acquiring firms receive particularly low cumulative abnormal returns in mergers in regulated financial industries.

This evidence suggests that an acquisition of a firm operating in a regulated industry – in particular, in a financial industry – by a foreign company results in heavily penalised returns both for the target and the acquiring companies. Thus, our results suggest that these mergers destroy value for the overall acquisition, so that the total value created in these transactions is negative. We test for this possibility by looking at the total cumulative abnormal value created from the announcement of a merger. In general, the results displayed in the last four columns of Table 7 seem to confirm that merger processes in regulated industries tend to destroy value. This effect is particularly clear in the case of the purchase of a financial company by a foreign acquiring firm.

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[14] The results reported in Table 7 are based on the analysis of the 211 M&As announcements for which there is data on market capitalisation of both merging firms, since this information is required to construct the variable RSIZE and to obtain the joint returns. Nevertheless, the models for target and acquiring cumulative abnormal returns without including RSIZE among the regressors have been estimated for the whole sample of 262 M&As announcements. The results do not significantly differ.

Table 7

Regression analysis of cumulative abnormal returns. Basic specification.

Estimated coefficients of equation (1) in a sample of 211 merger and acquisition announcements. The model allows for target country effects.

		Targets				Acquirers				Value creation			
Variable	Estimated coefficient	($t-30$, $t+30$)	($t-30$, $t-1$)	($t-90$, $t-1$)	($t-1$, $t+1$)	($t-30$, $t+30$)	($t-30$, $t-1$)	($t-90$, $t-1$)	($t-1$, $t+1$)	($t-30$, $t+30$)	($t-30$, $t-1$)	($t-90$, $t-1$)	($t-1$, $t+1$)
DC	a1	−1.41	0.00	−0.82	−1.29	−0.68	0.80	3.39	0.59	0.64	1.43	3.74	0.35
		(0.42)	(0.00)	(0.20)	(0.78)	(0.24)	(0.40)	(1.06)	(0.73)	(0.23)	(0.77)	(1.23)	(0.35)
RNF	a2	−5.41	1.00	−5.14	−2.73	−8.60**	−1.53	−0.97	0.17	−7.88	−1.29	−1.17	−0.33
		(0.77)	(0.18)	(0.47)	(0.64)	(1.99)	(0.72)	(0.10)	(0.17)	(1.69)	(0.55)	(0.12)	(0.21)
FIN	a3	−18.52**	−10.84**	−12.82**	−4.03**	−12.64**	−6.49**	−0.70	−1.48**	−13.31**	−7.66**	−2.82	−1.92*
		(4.56)	(2.72)	(2.53)	(2.14)	(3.11)	(3.08)	(0.14)	(1.97)	(3.77)	(4.23)	(0.61)	(1.95)
*DC*RNF*	a4	−6.38	−4.70	2.25	−0.75	3.64	−6.98	−5.03	−0.51	−0.32	−7.53*	−3.81	−1.47
		(0.68)	(0.68)	(0.17)	(0.17)	(0.59)	(1.57)	(0.46)	(0.28)	(0.05)	(1.67)	(0.36)	(0.64)
*DC*FIN*	a5	12.05**	9.13**	9.45	0.49	9.91*	5.84*	−6.63	1.93	10.50**	7.18**	−4.18	1.37
		(2.06)	(2.12)	(1.34)	(0.19)	(1.96)	(1.96)	(1.09)	(1.53)	(2.37)	(2.67)	(0.69)	(0.98)
FRNDLY	$\alpha 1$	−0.29	−2.73	−6.91*	1.55	−7.85**	−5.72**	−5.90*	−0.25	−6.31**	−4.50**	−5.21*	0.24
		(0.10)	(1.16)	(1.91)	(1.12)	(2.89)	(2.83)	(1.84)	(0.42)	(2.55)	(2.51)	(1.68)	(0.38)
SSIC	$\alpha 2$	3.12	2.32	3.87	0.06	4.74*	1.45	2.17	0.32	4.94**	1.97	2.19	0.23
		(1.00)	(1.04)	(1.08)	(0.04)	(1.90)	(0.74)	(0.65)	(0.66)	(2.17)	(1.12)	(0.69)	(0.32)
RSIZE	$\alpha 3$	−0.19**	−0.09**	−0.07	−0.05**	0.09**	0.05*	−0.10*	0.03*	0.03	0.04	−0.05	0.02
		(3.14)	(2.13)	(1.18)	(1.99)	(2.16)	(1.69)	(1.72)	(1.85)	(0.68)	(1.23)	(0.89)	(0.84)

Table 7
Continued.

Variable	Estimated coefficient	Targets (t−30, t+30)	Targets (t−30, t−1)	Targets (t−90, t−1)	Targets (t−1, t+1)	Acquirers (t−30, t+30)	Acquirers (t−30, t−1)	Acquirers (t−90, t−1)	Acquirers (t−1, t+1)	Value creation (t−30, t+30)	Value creation (t−30, t−1)	Value creation (t−90, t−1)	Value creation (t−1, t+1)
Differences in cumulative abnormal returns between:													
National vs. Cross-border:													
Unregulated		−1.41	0.00	−0.82	−1.29	−0.68	0.80	3.39	0.59	0.64	1.43	3.74	0.35
(H0: a1 = 0)		*0.68*	*1.00*	*0.84*	*0.44*	*0.81*	*0.69*	*0.29*	*0.47*	*0.81*	*0.44*	*0.22*	*0.72*
Regulated Non-financial		−7.79	−4.70	1.43	−2.04	2.96	−6.18	−1.64	0.08	0.32	−6.10	−0.07	−1.12
(H0: a1+a4 = 0)		*0.39*	*0.47*	*0.91*	*0.62*	*0.59*	*0.12*	*0.88*	*0.96*	*0.96*	*0.14*	*0.99*	*0.60*
Regulated Financial		10.64**	9.13**	8.63	−0.80	9.23**	6.64**	−3.24	2.52**	11.14**	8.61**	−0.44	1.72*
(H0: a1+a5 = 0)		*0.03*	*0.02*	*0.17*	*0.68*	*0.03*	*0.01*	*0.53*	*0.02*	*0.00*	*0.00*	*0.93*	*0.10*
Regulated Non-Financial vs. unregulated National		−11.79*	−3.70	−2.89	−3.48*	−4.96	−8.51**	−6.00	−0.34	−8.20*	−8.82**	−4.98	−1.80
(H0: a2+a4 = 0)		*0.07*	*0.38*	*0.70*	*0.07*	*0.29*	*0.04*	*0.23*	*0.83*	*0.08*	*0.03*	*0.30*	*0.32*
Cross-border		−5.41	1.00	−5.14	−2.73	−8.60**	−1.53	−0.97	0.17	−7.88*	−1.29	−1.17	−0.33
(H0: a2 = 0)		*0.44*	*0.86*	*0.64*	*0.52*	*0.05*	*0.48*	*0.92*	*0.86*	*0.09*	*0.58*	*0.91*	*0.84*
Regulated Financial vs. unregulated National		−6.47	−1.71	−3.37	−3.54*	−2.73	−0.65	−7.33*	0.45	−2.81	−0.48	−7.00	−0.55
(H0: a3+a5 = 0)		*0.15*	*0.44*	*0.53*	*0.06*	*0.43*	*0.78*	*0.08*	*0.67*	*0.33*	*0.82*	*0.11*	*0.58*
Cross-border		−18.52**	−10.84**	−12.82**	−4.03**	−12.64**	−6.49**	−0.70	−1.48**	−13.31**	−7.66**	−2.82	−1.92**
(H0: a3 = 0)		*0.00*	*0.01*	*0.01*	*0.03*	*0.00*	*0.00*	*0.89*	*0.05*	*0.00*	*0.00*	*0.55*	*0.05*

*/**denote significance at the 10%/5%level.
t-statistics in brackets. p-values in italics.

As regards the control variables, a negative coefficient is estimated for the variable *FRNDLY*. This negative coefficient is significant for some windows in the equations for cumulative abnormal returns to acquirers' shareholders, what points to the existence of potential gains from hostile takeovers. However, this result should be taken with some caution given the small number of pure hostile mergers in our sample. Regarding the variable SSIC, a positive sign is obtained in all the models what is consistent with the view that conglomerate mergers are more value generating. Nevertheless, the estimated coefficient is non-significant in most cases. Finally, as expected a negative coefficient is obtained for the variable *RSIZE* in the models for targets' shareholders cumulative abnormal returns.

In order to test whether differences exist in the estimated effects among countries with different financial systems and, more precisely, with different corporate governance structures, we focus on the behaviour of the five largest EU countries testing whether the estimated parameters differ between the UK and the continental economies. As a previous step, we repeated the estimation of the basic model restricting the sample to those mergers where the target firm belongs to one of the 5 largest EU countries. This sample represents around 70% of the total number of transactions in our sample. Basically, we observe that the main results found with the larger sample are confirmed. That is:

- When focusing on cross-border deals, target firms from regulated industries display a lower return than those in other industries. This difference is significant when the target firm is a financial institution.
- Acquirers have lower cumulative abnormal returns in mergers in regulated industries, although these differences are not always significant and are of lower magnitude that those observed for target shareholders.
- Mergers in regulated industries show lower joint cumulative abnormal returns. This differential effect is significant when the acquirer is a foreign firm and when the merger takes place in a financial industry.

These results are mostly driven by the effects found in mergers with a target from a country of continental Europe, since mergers with a UK target represent slightly less than 20% of the sample. Thus, as shown in Table 8, the results for the 4 largest EU countries (excluding the UK) broadly reproduce those for the whole sample and those obtained for the sample of the 5 largest EU countries. However, the pattern of results for the sample of mergers with a UK target is significantly different. Overall, the results for this sub-sample are very imprecise given its small size. Moreover, there are no mergers in our sample with a UK financial target. In the case of cumulative abnormal returns to target shareholders we find higher returns in mergers in unregulated industries. For acquirer shareholders, if anything, we find higher returns in cross-border deals than in domestic ones when focussing on mergers in unregulated industries. The results for the joint cumulative abnormal returns display some significant coefficients. Nevertheless, these results are mostly driven by the reduced size of the sample of mergers with a UK target and, in particular, by the fact that within that sample there are only 2 cross-border deals in regulated industries with market capitalisation data available. Thus, when we drop the interaction term from the regression, the rest of the coefficients significantly change.

Table 8

Regression analysis of cumulative abnormal returns. Continental Europe vs. United Kingdom.

Estimated coefficients of equation (1) in a sample of 149 merger and acquisition announcements. For each case the estimated coefficients for two different samples are reported. The first column reports results for the mergers and acquisitions in which the target firm was from Germany, France, Italy or Spain. The second column reports results for mergers and acquisitions where a UK from was the target.

		Targets				Acquirers				Value Creation			
		$(t-30, t+30)$		$(t-1, t+1)$		$(t-30, t+30)$		$(t-1, t+1)$		$(t-30, t+30)$		$(t-1, t+1)$	
Variable	Estimated coefficient	Cont. E.	U.K.	Cont. E.	U.K.	Cont. E.	U.K.	Cont. E.	U.K.	Cont. E.	U.K.	Cont. E.	U.K.
DC	a1	−4.68	12.99**	−2.10	4.24	−2.76	−5.90	0.04	2.49*	−1.07	−2.38	−0.49	2.70
		(1.08)	(2.29)	(1.05)	(1.14)	(0.73)	(1.00)	(0.04)	(1.73)	(0.29)	(0.46)	(0.40)	(1.61)
RNF	a2	−9.73	−1.36	−7.31**	−10.73**	−11.19*	0.58	−0.38	1.15	−9.90*	−7.27	−1.84	−3.16
		(1.35)	(0.05)	(2.26)	(2.46)	(1.94)	(0.11)	(0.30)	(0.91)	(1.68)	(0.57)	(1.19)	(1.52)
FIN	a3	−20.79**	–	−8.33**	–	−10.70**	–	−1.77*	–	−11.42**	–	−3.26**	–
		(4.38)		(3.39)		(2.45)		(1.74)		(2.77)		(2.30)	
*DC*RNF*	a4	−2.43	−13.08	4.08	3.33	13.87**	−26.42	1.35	−6.43	7.25	−21.97	0.88	−2.97
		(0.28)	(0.35)	(1.03)	(0.64)	(2.00)	(3.22)	(0.78)	(0.94)	(0.98)	(1.58)	(0.36)	(0.43)
*DC*FIN*	a5	13.35**	–	4.87*	–	10.34*	–	1.58	–	8.75*	–	2.51	–
		(2.04)		(1.78)		(1.92)		(1.00)		(1.73)		(1.38)	
FRNDLY	α1	−0.92		−0.85		−5.96*		−0.03		−5.36*		−0.13	
		(0.25)		(0.59)		(1.85)		(0.04)		(1.79)		(0.18)	
SSIC	α2	5.09		1.80		4.81		0.94		4.95*		1.28	
		(1.43)		(0.98)		(1.60)		(1.09)		(1.81)		(1.33)	
RSIZE	α3	−0.17**		−0.03		5.42		0.02		0.01		0.02	
		(2.29)		(0.85)		(1.07)		(1.19)		(0.19)		(0.73)	

Difference in cumulative abnormal returns between:												
National vs. Cross-border:												
Unregulated	−4.68	12.99**	−2.10	4.24	−2.76	−5.90	0.04	2.49*	−1.07	−2.38	−0.49	2.70
(H0: a1 = 0)	*0.28*	*0.02*	*0.30*	*0.26*	*0.47*	*0.32*	*0.97*	*0.09*	*0.77*	*0.65*	*0.69*	*0.11*
Regulated												
Non-financial	−7.11	−0.09	1.98	7.57*	11.11*	−32.32**	1.39	−3.94	6.18	−24.35*	0.39	−0.27
(H0: a1 + a4 = 0)	*0.34*	*1.00*	*0.57*	*0.06*	*0.06*	*0.00*	*0.30*	*0.56*	*0.34*	*0.06*	*0.85*	*0.97*
Regulated Financial	8.67*	–	2.77	–	7.58**	–	1.62	–	7.68**	–	2.02	–
(H0: a1 + a5 = 0)	*0.08*		*0.13*		*0.05*		*0.16*		*0.02*		*0.11*	
Regulated												
Non-Financial vs. unregulated												
National	−12.16**	−14.44	−3.23	−7.40**	2.68	−25.84**	0.97	−5.28	−2.65	−29.24**	−0.96	−6.13
(H0: a2 + a4 = 0)	*0.02*	*0.61*	*0.20*	*0.02*	*0.56*	*0.00*	*0.43*	*0.43*	*0.58*	*0.00*	*0.63*	*0.35*
Cross-border	−9.73	−1.36	−7.31**	−10.73**	−11.19*	0.58	−0.38	1.15	−9.90*	−7.27	−1.84	−3.16
(H0: a2 = 0)	*0.18*	*0.95*	*0.03*	*0.02*	*0.05*	*0.91*	*0.77*	*0.36*	*0.10*	*0.57*	*0.23*	*0.13*
Regulated Financial vs. unregulated												
National	−7.44	–	−3.46*	–	−0.36	–	−0.19	–	−2.67	–	−0.75	–
(H0: a3 + a5 = 0)	*0.17*		*0.08*		*0.93*		*0.89*		*0.48*		*0.60*	
Cross-border	−20.79**	–	−8.33**	–	−10.70**	–	−1.77*	–	−11.42**	–	−3.26**	–
(H0: a3 = 0)	*0.00*		*0.00*		*0.02*		*0.08*		*0.01*		*0.02*	

*/** denote significance at the 10%/5% level.
t-statistics in brackets, p-values in italics.

5. Conclusions

The process of economic integration, the deregulation of economic activity in many sectors and the financial integration of national economies in the EU during the last decade have stimulated a significant restructuring of companies operating in the European Union, and particularly in those countries that belong to the euro area. Nevertheless, this restructuring process was also part of a broader wave of mergers and acquisitions among corporations from industrial countries. As a result, the volume of M&A activity in the European Union did not differ significantly from the evolution of this activity in the US. While the number of M&A transactions involving firms from the euro area admittedly increased at a faster rate during the period 1998–2000, most of this increase was due to domestic mergers that have increased the concentration of activity in certain sectors within national borders.

In this paper we have performed an analysis of shareholder value creation upon the announcement of M&As involving European Union firms. The stock market reaction upon the announcement of a merger reflects the changes in expected future cash-flows that will accrue to the shareholders of the firms involved and, as such, is a proxy of expected value arising from the merger. We find that target shareholders receive on average a positive and significant cumulative abnormal return from the announcement of the merger. Conversely, the mean cumulative abnormal return to shareholders of the acquiring firms is not significantly different from zero. In fact, returns to acquiring firms were negative in almost 55% of the transactions. These results are consistent with previous findings in the merger literature reporting zero and negative return to acquiring firms (Bruner, 2002).

The analysis provided here of shareholder value creation from M&A activity in Europe indicates that mergers in industries that had previously been under government control or operating in heavily regulated environments generate lower value than M&A announcements in unregulated industries. This low value creation in regulated industries becomes significantly negative when the merger involves two firms from different euro area countries and is primarily due to the lower positive return that shareholders of the target firm enjoy upon the announcement of the merger. This evidence is consistent with the existence of obstacles to the successful conclusion of the merger – such as cultural, legal, or transaction barriers similar to those often emphasised in discussions about the creation of a truly integrated financial market in Europe (Lamfalussy *et al.*, 2001) – that decrease the probability of the merger actually being completed as announced and, therefore, its expected value.

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Appendix: Data Description

The initial sample analyzed in this study consists of 1,038 M&A announcements over a three-year period from 1998 to 2000. Each merger in our sample satisfies the following selection criteria: a) both the target and acquiring companies are from EU countries and b) the merging companies are listed. Once we exclude those transactions

in which the target and the acquirer is the same company, the sample size drops to 720 deals. This size is further reduced when we exclude those mergers where enough data on stock returns are not available either for the target or for the acquirer. In this sample (unmatched sample) of 672 mergers return information is available for 399 target firms and for 543 acquiring firms. Our basic sample is that consisting of those transactions where return information for target and acquirers is available. This matched sample includes 262 deals. Additional data requirements imply further reductions in the sample size. Thus, market capitalization (sales) for both merging firms is only available in 211 (189) cases. Table A.1 summarises this information.

Table A.1
M&As Samples

	(I) Initial sample	(II) Excluding buybacks	(III) Unmatched sample	(IV) Matched sample	(V) With market value data	(VI) With sales data
Number of M&As	1038	720	672	262	211	189
With data on target return	530	399	399	262	211	189
With data on acquirer return	671	543	543	262	211	189

(I) Original sample
(II) Excluding target = acquirer
(III) Excluding those with a missing value both on target and acquirer return
(IV) Matched sample (Requiring data both on target and acquirer return)
(V) Excluding those without data on market value
(VI) Excluding those without data on sales