
The performance of European Mergers and Acquisitions under the
perspective of bidders shareholders

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Dissertation
Master in Finance

Supervised by
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Calendar Year of Delivery
2018/2019

Acknowledgments

First of all, I want to express all my gratitude to Professor Miguel Sousa for his support, guidance, dedication and readiness throughout the elaboration of this thesis. I also thank him for all the knowledge shared.

I thank to my family because they supported me in all the moments I felt less optimistic and because they have always encouraged me to invest in my education. I would not be able to achieve this without their support.

I thank to my friends who were always with me: to those I know since ever and to those I met during these last couple of years. You were very important to my mental health during the most stressful times of the year.

I also thank all the other professors of the Master's in Finance because I really learned a lot and it was only possible because the staff is excellent.

Abstract

The aim of this dissertation is to investigate the European M&A market. Using a sample of 580 European acquisitions announced between 2003 and 2018 we investigate the effect of M&A announcements on the stock returns of bidders. We have decomposed the short-term wealth creation resulting from the announcement according to some features of the takeover and the companies intervening in the transaction.

We have found evidence of statistically significant positive pre-announcement excess returns for European bidders, which are likely to be related to problems of information leakage. Besides that, there is no evidence that M&As either create or destroy value to the shareholders of European bidders. Regarding our univariate analysis we concluded that cash transactions, cross-country and diversifying deals provide significant positive abnormal returns for European bidders and that UK bidders tend to earn significant negative excess returns around the announcement. Additionally, we have also found evidence that hostility lead to significant worse outcomes for bidders.

From our cross-sectional analysis, we retrieved evidence that proved that European quoted bidders paying in cash and taking over poorly managed quoted companies are rewarded by the markets, whilst on the other hand, if there is hostility from the target or the bidder is from the UK it created a negative impact on the excess returns.

Additionally, we have also studied the determinants of pre-announcement returns and some important conclusions may be drawn: the abnormal returns earned before the intention to merge is disclosed are negatively influenced by cash transactions and the relative size of the companies (bidder and target). Market participants also react adversely when the bidder has a large debt and when both companies are in the same line of business (focusing).

Resumo

O objetivo desta dissertação é investigar o mercado Europeu de Fusões e Aquisições. Utilizando uma amostra composta por 580 aquisições de empresas Europeias anunciadas entre 2003 e 2018, analisamos o efeito do anúncio nos retornos das empresas adquirentes. Para tal, decompusemos o efeito de criação de riqueza de curto prazo resultante do anúncio, de acordo com as características da aquisição e das empresas que intervieram na transação.

Nos nossos resultados encontramos evidência, estatisticamente significativa, de retornos anormais pré-anúncio positivos para os bidders Europeus, os quais muito provavelmente estarão relacionados com problemas de fugas de informação. Para além de tal, não encontrámos evidência de que as fusões e aquisições criem ou destruam valor para os acionistas dos bidders Europeus. Na análise univariada que desenvolvemos, é possível concluir que as transações pagas em dinheiro, realizadas entre empresas de diferentes países e de setores de atividade distintos proporcionam retornos positivos e estatisticamente significativos para os bidders Europeus e, concluímos também que quando o bidder é do Reino Unido recebe, em média, retornos anormais negativos no período em torno do anúncio. Adicionalmente, também encontramos evidência de que quando o target reage com hostilidade à proposta, tal se traduz num resultado pior para o bidder.

Através da análise multivariada, recolhemos evidência que prova que os bidders Europeus cotados em bolsa que paguem em dinheiro e adquiram empresas também elas cotadas e com problemas de gestão são premiados pelo mercado, enquanto por outro lado, quando a empresa target reage à oferta com hostilidade ou o bidder é natural do Reino Unido tal gera um retorno anormal negativo.

Adicionalmente também estudámos os determinantes que influenciam os retornos pré-anúncio e como tal algumas conclusões importantes podem ser retiradas: os retornos anormais gerados antes da intenção de aquisição ser oficialmente divulgada são negativamente influenciados por transações pagas em dinheiro e pela relação de tamanho entre as duas empresas envolvidas na transação; os mercados também reagem negativamente quanto maior o nível de endividamento do bidder ou quando as empresas partilham a mesma linha de negócio.

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1. Introduction

Although there is little question that the future of M&A activity will continue to evolve, reflecting new global competition and changing regulatory climate, it will continue to be possible to draw parallels with the past. These insights should help us to understand how to adapt the structure and financing of future M&A's (DePamphilis, 2011, p. 23).

Mergers and acquisitions (M&A) are efficient means of transferring resources and removing underperforming managers (DePamphilis, 2011) and, by entering a corporate restructuring of the kind, companies aim to achieve economies of scale (create synergies), have access to new geographical regions, improve its technological knowledge, increase its market power or make strategic realignment (DePamphilis, 2011; Mateev, 2017). However, when the motivations to merge are not clear or there is a misalignment of interests between the managers and the shareholders of the companies, the output of a M&A transaction can be very harmful to the organization and, that is why it becomes very important to evaluate which characteristics constitute successful mergers and acquisitions.

Even though the introduction of the Euro, the globalization process and the deregulation and privatization of many sectors have acted as ignitors of M&A activity in Europe and, since the 1990s Continental European (CE) companies are as eager as its UK and US peers to pursue strategies of taking over other companies, the core of research on M&A is focused on US and UK markets and little is known about European deals (Martynova and Renneboog, 2011)

Therefore, the purpose of this study is to analyze European M&As performance, in the perspective of the bidding shareholder's, measured by its short term returns after the announcement, from 2003 to 2018, a sufficient large period to embrace the merger wave of 2003-2007, the financial crisis and this new period of high levels of market activity, that has started in 2014. We examine how the estimated wealth effects vary depending on the method of payment, bid attitude, geographical range, degree of industry relatedness between both intervenient, and other characteristics regarding the deal that we expect to influence the variation in the returns around the disclosure of the intention to acquire.

In order to achieve our goals, a standard event study of CAR for several event windows around the announcement has been applied and several OLS regressions were estimated to determine the impact that each characteristic have in European M&A wealth creation.

The greatest contribution of this study to M&A literature is that it will update previous works focusing on European mergers and acquisitions such as Campa and Hernando (2004), Goergen and Renneboog (2004), Martynova and Renneboog (2011) and Mateev (2017) who presented the last studies on European M&A activity (the sample periods are (1998-2000), (1993-2000), (1993-2001) and (2002-2010), respectively; additionally, we will also investigate the existence of a leakage effect prior to the announcement and we will analyze which features influence the most those pre-announcement returns. To our best knowledge our study will be the first analyzing a sample of transactions occurring after 2010 and that also constitutes an important improvement to literature.

The remaining of the dissertation is organized as follows: in Section 2 we provide an insightful perspective about M&As, its definition, the method used to measure performance in previous studies, evidence about value creation in M&As and the most important factors for such performance; in Section 3 we present the research questions that will guide the analysis; in Section 4 we describe the methodology applied to compute the abnormal returns and the OLS model to estimate the determinants of wealth creation in European M&As, the sources of the data and some sample statistics; in Section 5 we present the results of the wealth effects in a univariate and cross-sectional analysis; in Section 6 we draw our main conclusions.

2. Literature Review

2.1. Mergers and acquisitions

The literature on M&As presents a variety of terms to refer to the process through which one company acquires another.

Following Ross, Westerfield, Jaffe and Jordan (2016) there are three basic forms of acquisition: merger or consolidation, acquisition of stock and acquisition of assets. According to the authors, a merger happens when the acquirer absorbs the target, which ceases to exist, retaining all its assets and liabilities. Mergers are categorized by Gaughan (2007) as horizontal, when two competitors combine, as vertical if the companies have a buyer-seller relationship or as conglomerates when the firms are not competitors neither have a buyer-seller relation. A consolidation is similar to a merger with the exception that both intervenient terminate their previous legal existence and a new firm is created (Ross *et al.*, 2016).

Acquisition of stock occurs when the acquirer buys the voting shares of the target firm in exchange for cash, stock or other securities (Ross *et al.*, 2016), and it can happen as a private offer between the management of both companies or as an offer directly to target's shareholders, in a so called tender offer.

An acquisition of assets usually requires the voting approval of the target's shareholders. However, it does not imply the disappearance of the target since "its shell can be retained" (Ross *et al.*, 2016, p. 881). The advantage of this transaction compared to acquisition of stock is that the acquirer is not left with minority shareholders, as sometimes happens with the latter and from where problems related to holdouts arise.

Takeover is another term, broader and more imprecise, used to refer to the transfer of control of a firm from one group of shareholders to another. As explained by Ross *et al.* (2016), the bidder offers to pay for the stock or the assets of the target, which in case of acceptance will give up the control of those assets.

2.2. Merger and acquisition profitability measure

Halpern (1983) reports that literature on M&As have plenty of studies evaluating the impact on the participants, being the majority of them focused in assessing their profitability from the perspective of shareholders (Cartwright and Schoenberg, 2006). This happens because

shareholders are the ultimate claimholders of companies (Brown and Warner, 1980) and, it also proves the easiest way to observe the impact of an event, as it represents the best estimate of the present discounted value generated by the transaction (Campa and Hernando, 2004).

In the day a takeover is announced important information regarding the deal, as the objective of the acquirer, the attitude of the target and the initial terms of the offer, are revealed. However, new information is released throughout the whole process and therefore, market participants adapt their expectations as information emerges (Asquith, 1983). Additionally, prior to the announcement, some information regarding the deal might be leaked before it becomes public and, that can also affect share prices (Martynova and Renneboog, 2011).

Even though some information is disclosed before and other after the announcement, (Fama, Fisher, Jensen and Roll, 1969), in their study of stock splits, have found evidence that event announcements were completely reflected in prices by the end of the month they were disclosed but, in most of the cases, information were almost immediately incorporated at the announcement day. This leads us to another important issue when assessing M&A deals, which is that one should focus on the date of the announcement instead of the date when the deal is closed, since Dodd (1980) has found no evidence of major changes on share prices, of both bidders and targets around that date. These two aspects regarding the impact of the events provide some insight in explaining why Datta, Pinches and Narayanan (1992) assert that studies examining wealth creation in M&As typically employ a relative short event window around the announcement day.

The research on wealth creation from mergers has been primarily undertaken using the event study methodology (Datta *et al.*, 1992) which was primarily introduced by Fama *et al.* (1969) as a tool to provide evidence on how security prices react to information announcements. The major concern in those studies has been to assess the performance of the securities around the announcement of an event and measure at what extent their returns have been abnormal, that is, how much security's returns move away from those that would have been appropriate, given the model expected returns (Brown and Warner, 1980).

The event study methodology is based on the proposition that markets are efficient (Brown and Warner, 1980; Datta *et al.*, 1992; Halpern, 1983; Martynova and Renneboog, 2011) and that the immediate wealth effect reflect the capital market's unbiased assessment of the

present value of the future benefits of the deal (Datta *et al.*, 1992). The wealth effect is derived from the new information that comes with the announcement of the acquirer over the target (Martynova and Renneboog, 2011) so that, the actual cash flow plus the expected incremental cash flows generated during the transaction are both considered in the assessment (Datta *et al.*, 1992). In the view of Asquith (1983) if the outcome of the bid is well known at the time of the announcement the market will incorporate the information on the press day, or on the other hand, if the outcome is uncertain the abnormal stock return on the press date only contains an evaluation of the merger's probability. He also adds that the size and direction of the returns reflect the uncertainty present and whether the merger was correctly evaluated at the time of the announcement. Even though event studies are mainly used to evaluate the short-term impact of the announcement, some analysis focus on long term windows to assess the impact of the event. However, one should be aware that analyzing long periods may require a revision of the assumptions to make statistical inference possible (Andrade, Mitchell and Stafford, 2001).

M&A performance can also be measured by an operating performance perspective as claimed by (Andrade *et al.*, 2001) in an attempt to identify the sources of value creation and to determine whether the expected gains are ever realized. These studies generally focus on accounting measures of profitability and the selection of an appropriate benchmark is crucial for the conclusions retrieved. However, the findings of Sharma and Ho (2002) suggest that operating performance studies using accounting measures are not consensual about the effect of M&As and, that may be happening because of the accounting methods employed.

In sum, event study methodology provides a direct test to market efficiency (Brown and Warner, 1980) and in the cases that the assumption is violated, securities will under or over react to information announcement which will create significant positive or negative post announcement returns correcting the initial wrong predictions, providing a way to measure the profitability of merger and acquisition activity (Martynova and Renneboog, 2011).

2.3. Evidence of value creation in M&As

Mergers and acquisitions are efficient means of asset reallocation within the economy and, empirical literature suggest that they, on average, lead to improved profitability and wealth creation to the combined entity (Andrade and Stafford, 2004). This is reinforced by

Martynova and Renneboog (2006) as they assert that evidence is unanimous in concluding that M&As create value when the impact on bidders and targets is assessed together.

Mergers are value creating processes according to the literature but, the magnitude of the gains for the parties in the transaction is not the same. Cartwright and Schoenberg (2006) claims that while the benefits for shareholders of target firms are unambiguous, the benefits to investors in bidding firms are more questionable. Some authors even claim that the gains of M&As to a given party are simply the redistributions of the losses of someone else (Jarrell, Brickley and Netter, 1988).

The gains for target's shareholders are undeniable given the results reported by previous analysis: Jensen and Ruback (1983) reviewed 13 studies and concluded that the abnormal returns to targets of successful tender offers are positive and ranged from 16.9% to 34.1% in the month or two around the announcement and, the estimated abnormal return immediately around the announcement ranged from 6.2% to 13.4%. Huang and Walkling (1987) found for their sample of US mergers and tender offers significant target abnormal returns of 30.09% for the event window¹ [-50; +50], results that are very similar to those of Keown and Pinkerton (1981) who reported an average 27.04% excess return in the window [-60; +10]. In the month of the announcement Dodd and Ruback (1977) showed evidence that targets earn abnormal returns of +20.58%. Franks, Harris and Titman (1991) estimated abnormal returns of 28.04% for their sample of US mergers and tender offers in a [-5; +5] event window, Lang, Stulz and Walkling (1989) for the same window achieved abnormal returns of 40.30%, also for US tender offers. Shah and Arora (2014) analyzing Asian mergers estimated abnormal returns of 10% for the window [-5; +5]. For shorter windows [-1; 0], Asquith (1983) reported targets abnormal returns of 6.2%, Dodd (1980) of 13.41% and Hayn (1989) of 14.30%, all for samples of US mergers.

On the other hand, wealth creation for acquirers shareholders' is more ambiguous. Andrade *et al.* (2001) and Kaplan and Weisbach (1992) have found evidence of negative abnormal returns, -0.70% and -1.49%, respectively, whereas Bradley, Desai and Kim (1988) achieved opposed results for their US sample: +0.97% excess return, significant at the 1% level. From the announcement until the close of the deal, Servaes (1991) estimated abnormal returns of -1.07%, significant at 5% level and Dodd (1980) from the day -10 to the closing date obtained

¹ The event window refers to the date of the first public announcement of the offer.

negative returns of -7.22%. Dodd and Ruback's (1977) results present abnormal bidding firms' returns of +2.83% for the announcement month. Other interesting results are also provided by Moeller, Schlingemann and Stulz (2004) who computed for a US sample abnormal bidder returns of +1.10% that were divided by +0.076% to large acquirers and +2.32% to small acquirers. In the Asian market the results of Ma, Pagán and Chu (2009) and Shah and Arora (2014) are similar, reporting abnormal returns of +1.28% and +1.20% for the windows [-1; +1] and [-2; +2], respectively. According to Halpern (1983) positive abnormal returns for the bidding firm may be justified by the synergy and monopoly power hypothesis.

Looking for the returns of the combined entity, the results tend to be positive (Martynova and Renneboog, 2006) but the economic gain is not very significant considering that the average target is much smaller than the average acquirer (Goergen and Renneboog, 2004). Seth, Song and Pettit (2002) reported combined abnormal returns of +7.57% from day -10 of the first bid until day +10 of the last bid, Bradley *et al.* (1988) also achieved cumulative returns of +7.43%, significant at a 1% level. The most expressive result was achieved by Lang *et al.* (1989) with an impressive abnormal return of +11.31% for the window [-5; +5]. The other studies that have computed the combined abnormal return present results ranging from +0.59% in UK deals (Conn, Cosh, Guest, and Hughes, 2005) to +3.9% (Franks *et al.*, 1991)².

2.3.1. Evidence of value creation in Europe

The evidence about wealth creation through mergers and acquisitions in Europe is quite similar to those in US and Asia. Campa and Hernando (2004) estimated for the [-1; +1] event window, abnormal returns of +0.44% and +3.93% to bidders and targets respectively and +1.04% for the combined entity. For UK takeovers, Higson and Elliott (1998) reported that in the month around the announcement the returns for bidders were on average +0.20% and +31.50% for targets (significant at 1%); Franks and Harris (1989) for the same window and market estimated abnormal returns of +1% to bidding firms and +23.30% for target firms. Martynova and Renneboog's (2011) study of European mergers report abnormal returns for different event windows: for [-1; +1] target shareholders earned on average

² For detailed information and results from other studies see Appendix 1.

+12.47% and bidder shareholders +0.72%; for [-5; +5] results are similar, +0.79% and +15.83% for acquiring and acquired firm shareholders', respectively; however, when they broadened the window to [-60; +60] acquirers' returns became negative (-2.83%) whereas target's increased to +26.70%. Regarding the returns for the combined entity Conn *et al.*, (2005) found out that the wealth creation surrounding the announcement is positive and significant.

2.4. Determinants of value creation for bidders

Various sources of value creation in M&As have been referred in previous studies and, according to Martynova and Renneboog (2011) they can be related to the characteristics of the deal or the characteristics of bidders and targets.

2.4.1. The attitude towards the bid

The initial reaction of targets' managers to the offer can be classified as hostile or friendly (Servaes, 1991). A hostile reaction happens when the first offer is opposed by the incumbent management and is friendly if the bidder acquires the target on the basis of its first offer (or a revision of it) (Franks and Mayer, 1996).

The evidence from Servaes (1991) posits that hostile behavior is beneficial for targets and prejudicial to bidders. Resistance is likely to cause bidders to abandon otherwise positive deals (Huang and Walkling, 1987) and lead to higher costs whereas, on the target's perspective, the higher offer price anticipated by the market leads to higher returns (Hayn, 1989).

While on average, a target in a friendly acquisition earned +21.89% the gain increased to +31.77% in hostile bids and for bidders the opposite happened, in hostile acquisition the losses were -4.71% whereas they were only -0.16% in friendly deals (Servaes, 1991), results that are in line with those of Franks and Harris (1989), Franks *et al.* (1991), Huang and Walkling (1987) and Lang *et al.* (1989). Goergen and Renneboog (2004) also reports losses for bidders when the attitude is hostile (-3.43%). In the review done in this dissertation, the only study that reported better results to bidders in hostile acquisitions was Martynova and Renneboog (2011) for the event window [-60; +60] when friendly deals originated losses of -4.35% vs. -1.61% in hostile acquisitions (see appendix 2 for more results).

2.4.2. The relatedness between the firms

The evidence about wealth creation through diversifying and related mergers has not achieved a consensus up to now and to illustrate that, the information presented in appendix 3 is a clear proof.

Even though Jensen (1986) expects that diversifying mergers will generate lower total gains, Martynova and Renneboog (2011) reports that they are expected to create financial and operational synergies and, Akbulut and Matsusaka (2010) and Campa and Hernando (2004) have found evidence that investors perceive diversification as a value creating strategy, even though it is inconsistent with the literature that advocates the existence of a diversification discount (Akbulut and Matsusaka, 2010).

Chevalier (2004) documented a +2.76% wealth creation through diversifying mergers, which were divided by -1.92% to bidders and +29.80% to targets. The results presented by Akbulut and Matsusaka (2010) show equal value creation for the combined entity but when assessing the abnormal returns in the perspective of bidders, they report losses of -0.60% for diversifying deals whereas related mergers experience a loss of -1.30%, which is similar to the results of Cihan and Tice (2014) who reported bidder losses of -0.30% and -1.80% for diversifying and focused mergers, respectively. Aggarwal and Baxamusa (2013) have also documented better results for bidders when they have entered diversifying strategies.

For a broader event window [-2m; +2m], Maquiera, Meggison and Nail (1998) have found evidence that non-conglomerate outperform conglomerate mergers in the bidding shareholders' perspective, irrespective the method of payment.

2.4.3. The geographic focus

Mergers and acquisitions are also analyzed according to their geography. In Europe, mainly because the lower levels of regulation and the restructuring of industries, cross border acquisitions have played a main role in some important studies: Campa and Hernando (2004), Conn *et al.* (2005), Faccio, McConnell and Stolin (2006), Goergen and Renneboog (2004), Martynova and Renneboog (2011) and Mateev (2017) estimated the impact of domestic and cross border mergers in shareholders' returns.

Foreign Direct Investment (FDI) theory predicts that companies might take advantage of imperfections in capital markets and achieve higher gains by investing in foreign markets

(Goergen and Renneboog, 2004). However, what we see in applied literature is that domestic acquisitions lead to greater wealth creation, when both companies are assessed, than acquisitions employing an international strategy (both Campa and Hernando (2004) and Conn *et al.* (2005) have found evidence supporting this claim).

Regarding the value creation for bidders, evidence is less concrete and it is not possible to draw a conclusion about which form is more profitable: Goergen and Renneboog (2004) and Martynova and Renneboog (2011) estimated cross border and domestic returns to be -0.1% and +3.09% and, +0.47% and +0.83%, respectively. In another analysis, Mateev (2017) claims that for both, UK and CE bidders, irrespective of the geographical scope, mergers provide positive abnormal returns, though the difference between the groups is not statistically significant. Faccio *et al.* (2006) estimated that cross border acquisitions outperform domestic bids when the targets are listed.

A quite different analysis was performed by DeLong (2001) analyzing interstate US bank acquisitions. His results are presented in appendix 4 but the major conclusion he retrieved was that acquisitions in different states led to wealth destruction for the overall company.

2.4.4. The method of payment

The form of payment is another factor that has a large impact on the wealth effect (Goergen and Renneboog, 2004) and, the main conclusion is that in general, cash is the form of payment that leads to higher wealth creation. Andrade *et al.* (2001) and Jensen (1986) posit that the takeovers financed with cash or debt are more likely to generate larger benefits than those funded through equity exchange, because the former deserve more reflection from bidders' management since it is very painful to spend the company's money in unprofitable business and, stock is mainly used as mean of payment when acquirers' management perceive that their equity is overvalued (Haleblian, Devers, McNamara, Carpenter, and Davison, 2009), which is consistent with the signaling hypothesis (Travlos, 1987).

Additionally, Martynova and Renneboog (2011) assert that the method of payment provides information regarding the quality of the target: cash offers can be interpreted as a positive signal of the target firm's quality since, when the acquirer pays in cash it means that it does not want to share any future gains achieved with the takeover.

Concerning the returns to bidders shareholders', according to Peterson and Peterson (1991) using cash is the only form of payment that translates in a positive outcome for these

investors. The results of Amihud, Lev, and Travlos (1990), Savor and Lu (2009), Sung (1993) and Travlos (1987) also claim that cash payment is the best form for bidders, or at least the less damaging. However, opposed conclusions were presented by Goergen and Renneboog (2004) and Mateev (2017) to whom stock was the best method of payment to create positive excess returns to the shareholders of bidding firms (see appendix 5 for more detail).

2.4.5. Others

Firm size has been referred by scholars as an impactful characteristic of the parties involved in M&As, and it has been proved to affect their returns (Haleblian *et al.*, 2009). It was studied several times before (Asquith, Bruner, and Mullins, 1983; Campa and Hernando, 2004; Goergen and Renneboog, 2004; Hayn, 1989; Moeller *et al.*, 2004; Peterson and Peterson, 1991) and it is included to control for differential bargaining power (Peterson and Peterson, 1991) or to serve as proxy for the contingency price effect regarding the mean of payment (Hansen, 1987). Moeller *et al.* (2004) showed that small firms overperform large firms when they announce acquisitions and that, that difference is explained by the larger premiums paid by larger acquirers and by deals with negative synergies, which is consistent with the hubris hypothesis³.

Additionally, the level of competition in the deal is another determinant of wealth creation according to Bradley *et al.* (1988), Datta *et al.* (1992) and Franks *et al.* (1991). A larger number of bidders in contest tend to increase returns to targets but for bidders, competition creates a negative impact (Datta *et al.*, 1992).

The Q-ratio was used as a measure of managerial performance in Lang *et al.* (1989) and Servaes (1991) or, as a proxy for growth opportunities in Hyland and Diltz (2002) and Martynova and Renneboog (2011). The evidence suggests that financial markets reward well managed firms that acquire poorly managed companies (Lang *et al.*, 1989), since they are likely to enhance value by improving target's operations (Maquiera *et al.*, 1998).

Grossman and Hart's (1980) free riding theory claim that acquirers have no incentives to buy diffusely held companies in which they had no previous stake, otherwise shareholders would retrieve all the gains that the raider (i.e., the acquirer) could enhance. Consequently, Shleifer and Vishny (1986) claim that if a potential bidder increases the portion of shares of the target

³ An inverse relation between returns and acquirer size was also reported by DePamphilis (2011).

it will result in a lower takeover premium paid and an increase of the market value of the firm, improving the acquirer's returns. The impact that the toehold has on acquirers' returns, which represents the stake hold by the acquirer before launching the bid, was previously studied by Franks and Harris (1989), Martynova and Renneboog (2011) and Sudarsanam and Mahate (2006).

The level of leverage and cash flows are two control variables likely to explain the returns of acquirers. According to Kaplan and Weisbach (1992) acquirers in unsuccessful acquisitions have higher levels of cash flows than in successful transactions and, Maloney, McCormick and Mitchell (1993) posit that debt improve managerial decision making and that acquirer's returns increase with its indebtedness level.

2.5. Agency problems in mergers and acquisitions

In Rossi and Volpin's (2004) opinion, the motivation to merge is a factor that impact the wealth creation related to the announcement. If the deal is motivated by agency problems or managerial hubris of the acquirer's managers, rather than the desire to create synergies and improve the target's governance regime, it is likely that the deal will not create value (Goergen and Renneboog, 2004; Rossi and Volpin, 2004).

The agency cost hypothesis posits that M&As are driven by the self-interest of acquirers' managers rather than the maximization of shareholders' wealth (Sharma and Ho, 2002). In reality, managers have incentives to make their firms bigger than their optimal size (empire building) since it increases their power (Jensen, 1986) and by investing in assets whose value is higher under their expertise, even when such investments are not value maximizing, it enables them to raise their own compensation (Shleifer and Vishny, 1989). Getting their income and employment attached to the risk of the company, managers have the incentive to diversify the risk, by engaging in strategies like the creation of conglomerates, which stabilizes their income streams and reduces the probability of bankruptcy, at the expense of shareholders who could, by their own, diversify in capital markets at lower costs (Amihud and Lev, 1981).

According to Jensen's (1986) Free Cash Flow theory, conflicts of interest between managers and shareholders are especially severe when the company generates substantial free cash

flows. Managers of firms with unused borrowing capacity and large free cash flows⁴ available are more likely to engage in low benefit or value destroying mergers⁵ (Jensen, 1986). A similar conclusion was presented by Akbulut and Matsusaka (2010) and Andrade and Stafford (2004) who measured agency costs by the level of cash flows and growth prospects. According to Andrade and Stafford (2004), the agency costs of free cash flow will be higher in firms with poor growth prospects but with available cash flows, which will translate in overinvestments of such companies.

2.6. The impact of the context on the determinants

The environment in which mergers and acquisitions occur change over time and it impacts the wealth effects to shareholders (Jarrell and Poulsen, 1989).

For instance, Bradley *et al.* (1988) reported that the changes occurred at the institutional level with the introduction of the *Williams Amendments* in 1968 have significantly impacted the distribution of the gains between shareholders of targets and acquirers. Asquith *et al.* (1983), Datta *et al.* (1992) and Schipper and Thompson (1983) analyzed the *1969 Tax Reform Act* and Asquith *et al.* (1983) concluded that the market for mergers had changed, being the target's shareholders the great winners with the transformation. Schipper and Thompson (1983) concluded that both, *Williams Amendments* and the *1969 Tax Reform* has a significantly negative impact on the share value of bidding firms⁶.

Jarrell and Poulsen (1989) documented lower returns for acquirers in the 1980s than in the 1970s. Regarding the 24-month period subsequent to the deal, Higson and Elliott (1998) documented that mergers from 1975-1980, 1981-1985 and 1985-1990 earned abnormal returns of -9.95%, +26.26% and -6.18%, respectively. The analysis of Akbulut and Matsusaka (2010) found that after 1980, returns from diversifying acquisitions fell which made them assert that the findings are consistent with the idea that the value of internal capital markets have declined .

⁴ According to Jensen (1986) Free Cash Flow represents cash flow in excess of that required to fund all projects with positive net present values.

⁵ The findings of Kaplan and Weisbach (1992) give support to the idea that firms with high free cash flows are more likely to waste them in unprofitable investments.

⁶ The results from Jarrell and Poulsen (1989) also provide evidence of significantly lower returns for acquirers after the *Williams Amendments*.

Moeller, Schlingemann and Stulz (2005) report that on average acquisition announcements in the 1990s were, on average, profitable for bidding firm shareholders until 1997 but, from 1998 to 2001 the losses wiped out all the gains gathered before, making the acquisition announcements costly to bidder's shareholders during that merger wave.

3. Research questions

Merger and acquisition performance have been studied several times before and their determinants are somewhat identified. However, the lack of research focusing on European mergers imply that additional research should be performed to shed light about the determinants of wealth creation for European bidders in M&A deals.

Variables such as the method of payment and the attitude of the target management towards the deal have been analyzed by Huang and Walkling (1987), Martynova and Renneboog (2011) and Servaes (1991); the geographic focus was studied by Campa and Hernando (2004), Faccio *et al.* (2006), Goergen and Renneboog (2004) and Martynova and Renneboog (2011); the relatedness between target and acquirer was studied by Aggarwal and Baxamusa (2013), Akbulut and Matsusaka (2010) and Maquiera *et al.* (1998). Additional explanatory variables like size was introduced in Campa and Hernando (2004), Goergen and Renneboog (2004) and Hayn's (1989) models, and the level of leverage, free cash flows, the Q-ratio and the toehold have also been analyzed in other M&A studies.

Research question 1: *Which are the determinants that explain wealth changes for bidders' shareholders in European M&As?*

The motivation to merge play an important role in the performance of M&As and, whenever agency conflicts between managers and shareholders exist there is a higher chance that the deal will not meet the expectations (Jensen, 1986).

The literature posits that indicators such as high levels of cash flows and low leverage (Jensen, 1986) or low growth prospects (Akbulut and Matsusaka, 2010; Andrade and Stafford, 2004) are good predictors of firms suffering from agency problems. That way, Akbulut and Matsusaka (2010) asserts that if agency costs are a determinant factor of merger and acquisition returns, bidding firms with high levels of free cash flows and low Q-ratios are expected to experience lower gains.

Research question 2: *Are bidders' shareholders returns affected by agency costs in European mergers and acquisitions?*

The environment in which merger and acquisition deals take place impact the overall result of the transaction (Jarrell and Poulsen, 1989) and it evolves over time, influencing the results of mergers and acquisitions (Bradley *et al.*, 1988).

A variety of events impacted the returns of mergers and acquisitions to shareholders in the past. In the 1960s the introduction of the *Williams Amendment* and the *Tax reform* influenced negatively the share value for acquirers. Akbulut and Matsusaka (2010), Higson and Elliott (1998), Jarrell and Poulsen (1989) and Moeller *et al.* (2005) all found that the returns from M&As changed when comparing turnaround dates.

Sudarsanam and Mahate (2006) measured the impact of the economic condition at the bid announcement period and found no evidence that it influences wealth changes. Therefore, this dissertation also has the aim to test if the 2008 crisis changed the pattern of wealth creation to shareholders in European M&As.

Research question 3: *At what extent the returns for bidders' shareholders changed after the 2008 financial crisis?*

4. Data and methodology

4.1. Measuring abnormal returns

The objective of this study is to analyze European mergers and acquisitions' performance in the perspective of bidders' shareholders. Therefore, to measure the value created or destroyed with the deal for bidding shareholders event study methodology will be applied, given that it is the method most used to perform this kind of study, as reported in chapter 2.2.

Following the steps of an event study presented by MacKinlay (1997), the first thing to be done is to identify the event of interest over which the security prices will be examined and, their abnormal returns estimated according to the formula:

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

where, $AR_{i,t}$ is the abnormal return, $R_{i,t}$ is the actual daily return and $E(R_{i,t})$ the expected daily return estimated by the market model⁷, which is used to adjust for market wide factors and for risk (Dodd and Warner, 1983). Following MacKinlay (1997), the market model for each security is defined as:

$$R_{i,t} = \alpha_{i,t} + \beta_i * R_{m,t} + \varepsilon_{i,t} \quad (2)$$

where $R_{i,t}$ and $R_{m,t}$ are the period t daily returns⁸ on security i and market portfolio, $\varepsilon_{i,t}$ is the disturbance term and α_i and β_i are the parameters of the model. Even though more complex models could have been employed in order to reduce the variance of the abnormal returns the gains achieved will be limited (MacKinlay, 1997), and in general those models show similar capacity to detect abnormal activity (Brown and Warner, 1985). The market model estimator for each security will be estimated for an estimation window that has 240 days and starts 300 days before the announcement, following the studies of Lang *et al.* (1989) and Martynova and Renneboog (2011). The systematic risk, measured by the beta, is computed using the MSCI-Europe index as in the study of Martynova and Renneboog (2011).

⁷ The market model is a statistical model commonly applied in studies measuring merger and acquisition profitability (see appendix 1) and, establishes a linear relation between the security and market returns (MacKinlay, 1997).

⁸ Daily returns for both, securities and market indices are computed using the natural logarithm as follows:

$$R_t = \log\left(\frac{P_t}{P_{t-1}}\right).$$

The cumulative abnormal return (CAR) for each firm i , for a certain event window is the sum of the abnormal returns starting in the day $t=1$ to the last day of the window:

$$CAR_i = \sum_{t=1}^T AR_{i,t} \quad (3)$$

And, for the purpose of this study, which is to analyze all acquirers in an aggregated way, the cumulative average abnormal return, where N is the number of firms, is calculated as:

$$CAAR = \frac{1}{N} \sum_{i=1}^N CAR_i \quad (4)$$

Regarding the event window used, there is no a defined standard but, as it can be seen in appendix 1 to 5, several horizons have been used in previous studies. However, Andrade *et al.* (2001) argue that in an efficient market, prices adjust quickly to a merger announcement, incorporating any expected value change and, therefore the most commonly used window is the 3-day period surrounding the announcement ($[-1; +1]$). In this study, several windows will be considered to deeply understand the whole impact of the announcement.

4.2. Model

The value of the CARs are expected to be correlated with the type of M&A event announced (Campa and Hernando, 2004). Based on the factors affecting the returns of bidders and, in order to test our research questions, presented in section 3, the following equation is proposed to explain the returns earned by bidders' shareholders:

$$\begin{aligned} CAR_i = & \alpha + \beta_1 * Cash_i + \beta_2 * Hostile_i + \beta_3 * SSIC_{i,j} + \beta_4 * Domestic_{i,j} + \beta_5 * \\ & RSize_{i,j} + \beta_6 * Toehold_i + \beta_7 * High_B_Q_i + \beta_8 * Low_T_Q_i + \beta_9 * Lev_i + \beta_{10} * \\ & Cash_TA_i + \beta_{11} * Agency_i + \beta_{12} * Before_08_i + \beta_{13} * UK_i + \varepsilon_i \end{aligned} \quad (12)$$

Where:

- CAR_i refers to the cumulative average abnormal return of the bidder during the event window around the announcement day. In this study two event windows will be considered: one analyzing the pre-announcement period $[-15;-1]$ and other focusing in the moment the deal was disclosed $[-1;+1]$;

- $Cash_i$ is a dummy variable that takes the value 1 if the acquisition is totally paid in cash, and 0 otherwise⁹. Previous evidence from Servaes (1991) and Sung (1993) posits that it is expected a positive announcement impact of cash transactions on bidding firms CARs, whereas Goergen and Renneboog (2004) estimated that cash offers have a weakly negative impact on short term returns. Therefore, we expect that the coefficient associated to $Cash$ to be positive;
- $Hostile_i$ is a dummy variable that takes the value 1 if the merger was classified as hostile by the board of the target firm and 0 otherwise. Goergen and Renneboog (2004), Hayn (1989) and Servaes (1991) documented negative returns to bidders in contested offers and, in the study of Servaes (1991) hostility reduced acquirers' returns by 8%. Even though Campa and Hernando (2004) had found evidence of a positive impact of hostility, we expect that this coefficient will have a negative impact explaining the CARs earned by bidders' shareholders;
- $SSIC_{ij}$ is a dummy that takes the value 1 if acquirer and target (firms i and j) operate in related business fields, measured by the 2-digit SIC code¹⁰. The evidence is ambiguous, Datta *et al.* (1992) and Hubbard and Palia (1999) report a positive impact of related acquisitions but, Campa and Hernando (2004) and Martynova and Renneboog (2011) estimated the opposite signal and thus, we have no previous expectation about the direction of the effect;
- $Domestic_{ij}$ is a dummy indicator, equals to 1 if the bidder and the target are from the same country, and equals to 0 otherwise. Cross border and domestic acquisitions are mainly analyzed in European studies, however in only one the variable was statistically significant, being the impact negative (Goergen and Renneboog, 2004). Since other studies that found no statistical significance reported the opposite effect, we again make no prior predictions about the signal;
- $RSize_{ij}$ is the natural logarithm of the market value of target's equity divided by the market value of bidder's equity as in Jarrell and Poulsen (1989). The results of Asquith

⁹ We rely on the classification of Datastream to distinguish the method of payment: i) cash transactions are those that the platform classifies as "cash only".

¹⁰ The 2-digit SIC code approach to differentiate between diversifying and related acquisitions were used amongst others by Campa and Hernando (2004), Chevalier (2004), Martynova and Renneboog (2011) and Matsusaka (1993).

et al. (1983), Hayn (1989) and Jarrell and Poulsen (1989) show a positive relation between the size of the target and the CARs earned by acquirers since there is a greater effect of the merger upon its abnormal returns (Peterson and Peterson, 1991). Therefore, we expect the coefficient related to this variable to be positive;

- *Toehold_i* is a dummy variable equals to 1 if the acquirer held a participation of the target before the announcement and 0 otherwise. Consistent with literature, Martynova and Renneboog (2011) and Sudarsanam and Mahate (2006) report that building a stake on the target before launching the offer has a consistent and strong positive impact on acquirers' gains;
- *High_B_Q_i* is a dummy variable that takes the value 1 if the bidder has a Tobin's Q¹¹ in excess of one and zero otherwise¹². Lang *et al.* (1989) and Servaes (1991) concluded that high Q bidders are better equipped to retrieve a better outcome of an acquisition. We expect a positive sign for this coefficient.
- *Low_T_Q_i* is a dummy variable that takes the value 1 if the bidder has a Tobin's Q inferior to one and zero otherwise (same explanation as in footnote 12). Lang *et al.* (1989) report a positive impact of this determinant on acquirers' returns. They argue that when bidders acquire low Q firms they achieve higher returns, whereas Servaes (1991) documents a negative impact when acquiring high Tobin's Q targets. For instance, Lang *et al.* (1989) report that acquirers taking over high Q firms earn 4% less than acquirers taking over low Q firms. Therefore, we expect a positive sign for this coefficient.
- *Lev_i* is the ratio between total debt and total assets. The coefficient was not statistically significant in Martynova and Renneboog (2011) but, in Maloney *et al.* (1993) leverage impacted positively acquirers' returns and thus, a similar effect is expected.
- *Cash_TA_i* is the ratio of total cash and cash equivalents to total assets. Firms with high levels of cash available are more likely to enter in value destroying acquisitions and to experience conflicts of interest between managers and shareholders (Kaplan and Weisbach, 1992; Martynova and Renneboog, 2011). In their works, Akbulut and

¹¹ The Tobin's Q refers to financial and market data of the calendar year prior to the announcement as in Faccio *et al.* (2006).

¹² In this study we applied the approach of Lang *et al.* (1989) to separate high and low Q firms since they argue that firms with ratios below one have marginal investment projects with negative net present value.

Matsusaka (2010) and Sudarsanam and Mahate (2006) found that high cash levels impact negatively acquirers' returns and consequently we expect the same influence.

- *Agency_i* is a dummy variable equal to 1 if the company has large free cash flows (i.e. belong to the third tercile) and low leverage (be part of the first tercile)¹³ or 0 otherwise. We anticipate that this variable will have a negative impact on CAARs since as stated by Jensen (1986) firms with large free cash flows and unused borrowing capacity are more prone to enter in bad acquisitions and therefore they are expected to be penalized by the market.
- *Before_08_i* is a dummy variable that takes the value 1 if the acquisition took place before 1/1/2008 and 0 otherwise. We use this variable in order to capture differences among the period studied.
- *UK_i* is a dummy variable taking the value 1 if the acquirer is UK based and zero if it is from Continental Europe. We expect some differences between both groups since Martynova and Renneboog (2011) have already documented some discrepancies.

4.3. Sample description

This section presents the sample studied in this dissertation and the conditions we have used to select the final panel of deals being analyzed.

We retrieved all company related information from Datastream and Eikon, which are both part of the financial data provider, Thomson Reuters. MSCI-Europe index data was also retrieved from Eikon.

For a M&A deal to be included in the sample, we defined the following requirements: 1 - the bidding company must be based in a Continental European country or in the UK¹⁴; 2 - the transaction needs to be classified as "Completed" during the period comprised between January 1st, 2003 and December 31st, 2018; 3 - only deals classified as "mergers" were

¹³ Since we found no definition of what the threshold to a high level of cash flow and low level of leverage is, because different companies on different industries have their own necessities, we opted to divide the variable CF and Lev in terciles and make our classification based on that division.

¹⁴ Since Russian Federation is part European and part Asian we decided not to include Russian companies. Furthermore, the studies of Campa and Hernando (2004), Faccio *et al.* (2006) and Martynova and Renneboog (2011) have also neglected them.

included; 4 - transactions with reported amount of less than \$10 million were not considered¹⁵; 5 - both, acquirer and target must be public; 6 - acquirers must not belong to the TRBC (Thomson Reuters Business Classification) economic sector “financials”; 7 - there must be a change in the ownership position, i.e., the acquirer should control less than 51% of the target before the deal and more than 51% after. Applying these criteria, we obtained a sample of 660 transactions¹⁶.

Analyzing the raw sample some adjustments were proven necessary. All transactions in which an acquirer is involved in more than one deal in a time span of less than 90 calendar days were excluded, thus 10 deals were removed.

In 26 transactions we have found insufficient data of acquirers' stock prices to estimate the market model with the 240 trading days required. Consequently, those cases were removed from the final sample.

We also excluded 44 deals because we were not able to find the accounting information about the companies implicated in the transaction. Therefore, our final sample includes 580 transactions¹⁷.

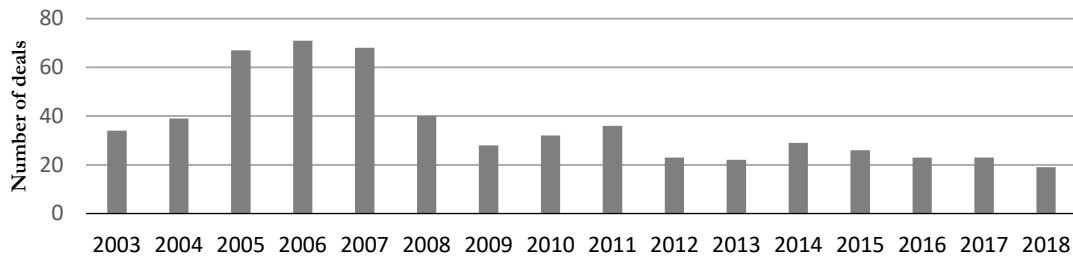
Figure 1 presents how the number of M&A by European public companies evolved during the period studied. The evidence is very clear, during the merger wave that took place between 2003 and 2007, according to the categorization made by DePamphilis (2011), merger activity was very intense all over the world and European companies were not an exception being the greatest number of transactions registered in that period: 67, 71 and 68 M&A deals in 2005, 2006 and 2007 respectively. After that period of great activity, the market has calmed down and the number of acquisitions of public companies by European quoted firms has reduced severely to numbers that have fluctuated between 19 and 40 annual transactions.

¹⁵ All monetary values were converted to US dollars using the platform conversion system, in order to make the analysis feasible.

¹⁶ Since some information available on Datastream were not provided by Eikon and vice versa (as in the case of the percentage hold and acquired), we were forced to cross information of both sources. Therefore, from 702 observations, 42 were excluded originating our sample of 660 transactions.

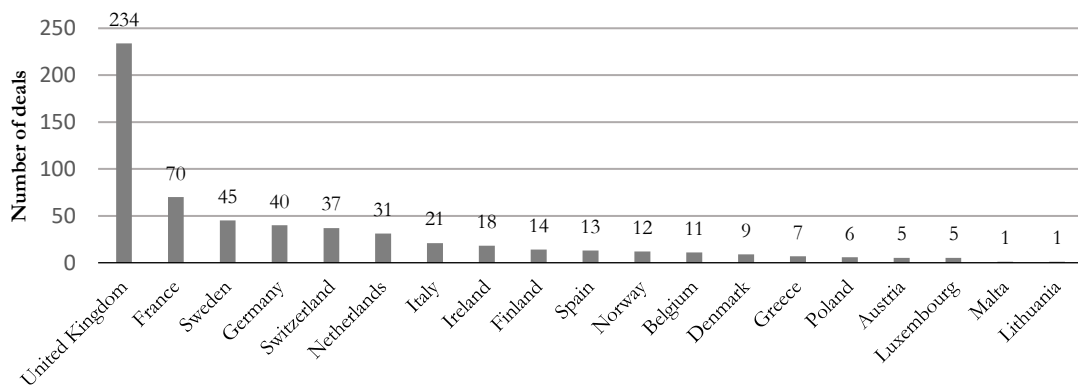
¹⁷ In 11 cases, since the database did not provide information about the year-end before the announcement, we were forced to use the accounting information of the second-year-end before the transaction announcement.

Figure 1 - Number of M&A bids by announcement year



When looking to the origin country of the acquirer (Figure 2) the main feature that must be highlighted is that UK based companies are responsible for 234 transactions, which accounts around 40% of the whole sample. This dominant proportion that UK based companies assume on European M&A activity had already been documented by Martynova and Renneboog (2011). Other important countries to the European market of corporate control are France, Sweden and Germany with 70, 45 and 40 transactions, respectively. However, it must be emphasized that there is as huge gap in the number of M&As conducted by companies from this block of three countries and UK based firms. Swiss, Dutch, Italian and Irish acquirers are responsible for 107 transactions which represents 18.4% of the total sample. The remaining countries of origin of acquirers only have a residual contribution to the overall sample.

Figure 2 - M&As by origin of bidders



In Table 1 we show the specific characteristics of the transactions composing our sample considering the aspects that were exhibited in the literature review. It reveals that about 60% of the deals represent cross country transactions whereas, on the other hand, domestic mergers and acquisitions are only 40%. However, throughout the timespan that the study

focus, the relative number of domestic deals diminished, which is somewhat similar to Martynova and Renneboog (2011)¹⁸.

Table 1 – Sample composition

This table displays the total number of takeovers by partitions of the sample into: (a) domestic and cross border deals; (b) diversifying and focus-oriented transactions; (c) acquisitions in which the bidder had a stake before the announcement; (d) all- cash, all equity, mixed offers and deals with undisclosed terms of transactions; (e) attitude to the bid announcement; and (f) location of the acquirer within Europe geography.

	<i>(deals)</i>
<i>Panel A: Geographic range</i>	
Domestic bids	231
Cross border	349
<i>Panel B: Industry relatedness</i>	
Industry focus	365
Diversification	215
<i>Panel C: Position at the announcement</i>	
Toehold	62
No Toehold	518
<i>Panel D: Payment Method</i>	
All cash	304
All equity ¹⁹	124
Mixed ²⁰	87
Undisclosed ²¹	65
<i>Panel E: Attitude to the bid</i>	
Hostile	15
Friendly	546
Neutral	19
<i>Panel F: Acquirers region</i>	
Continental Europe (CE)	346
United Kingdom (UK)	234
Total number of M&As	580

The degree of relatedness between acquirers and targets is measured by their 2-digit SIC code, being the transaction classified as “focusing” if the pair share the same 2-digit SIC code and as “diversifying” if not. In our sample, almost 63% of the deals occurred between

¹⁸ Additional information regarding the number of M&As announcements per year and by typology is presented in Appendix 6.

¹⁹ Classified as “stock only” or “choice between types of stocks”.

²⁰ Classified as “cash and stock combination” or “choice between cash or stock or combination of both”.

²¹ Classified as “unknown”, “choice involving other non-cash and non-stock consideration” or “other”.

companies in the same line of business (focusing). Even though the weight of each category has changed over time, it was kept relatively constant to infer that focusing acquisitions have been the norm in Europe.

Another important feature of the sample is the existence of an initial participation of the acquirer on the target's equity before the bid announcement. In 10.7% of the deals composing our study, the acquirer had already had a stake of the target before launching the bid.

The preferred form of payment is cash and it happened in 52.4% of the cases. Acquirers used equity to pay to target shareholders in 21.4% of the transactions whereas 15% of the deals were paid with a combination of equity and cash. In the remaining deals, 11% of the total, the method of payment used in the transaction was not disclosed. When comparing the proportions of each way of payment with similar studies, it differs from the sample of Faccio and Masulis (2005) where cash, equity and mixed payments were 80.2%, 8.4% and 11.3%, respectively but, presents data more close to the analysis performed by Martynova and Renneboog (2011) where cash, equity, mixed and undisclosed payments accounted 38.8%, 14.4%, 17.9% and 28.9%, respectively.

Regarding the attitude towards the deal we can claim that friendly mergers are the norm in Europe. From the 580 transactions studied, 546 were classified as friendly by Eikon, which represents a share of 94%. The remaining deals were classified as hostile and neutral, 2.6% and 2.3%, respectively. It is interesting to observe that the deals classified as hostile happened before 2008 and after 2016, which match the period where global M&A activity has been more intense (merger waves). When compared to other studies already developed for Europe, our sample can be considered as "acceptable": Faccio *et al.* (2006) identified 40 hostile transactions in a universe of 4429 deals, i.e., less than 1% of their sample being the remaining deals considered as non-hostile, whereas Martynova and Renneboog (2011) had 7% of the transactions in their study classified as hostile and the remaining as friendly.

Regarding the firm specific characteristics, in Table 2 we can observe that in general acquirers tend to be larger than the targets, whether we look at average or median values of market capitalization or total assets. However, this sample presents a curiosity, that has to do with the fact that bidders and targets have similar growth opportunities (measured by the Tobin's Q), while, *a priori*, we were expecting the acquirers to register the highest ratio. When one

looks to the market to book ratio (MtB) bidders present higher values than targets. Additionally, on average, acquirers also have higher levels of leverage than targets (19.0% versus 17.7% respectively) which is also against our prior expectations. Cash represents about 10.8% of total assets in acquirers' accounts.

Comparisons between UK and CE acquirers can also be drawn and for some characteristics they are quite different. Table 2 shows that CE acquirers are bigger (they have higher values of assets and market value) but have worse growth opportunities, less cash in percentage of total assets and are more levered than UK peers. Some of these differences between groups were also found by Martynova and Renneboog (2011) who explained that they may be the effect of differences in the regulatory regime between the two regions²².

Table 2 - Firm specific characteristics

This table shows the financial and accounting characteristics of the firms prior to the announcement of the takeover deal. We report the information for the whole sample of bidders and targets and for sub-samples of UK and Continental Europe acquirers. For each variable we report the mean and median values. To assess if the sub-groups of UK and CE acquirers and whole sample of bidders and targets are similar, we have tested for the differences and the indicators ⁺⁺⁺, ⁺⁺ and ⁺ and ^{***}, ^{**} and ^{*} correspond to the statistical significance at the 1%, 5% and 10% level, respectively. All variables have been winsorized at 5%.

	UK bidders		CE bidders		All bidders		All targets	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Financial characteristics								
Market value (US\$ mln)	11,287 ⁺⁺	847 ⁺⁺⁺	17,610	4,000	15,0331 ^{***}	2,192 ^{***}	1,171	242
Tobin's Q	2.20	1.86	2.07	1.69	2.12	1.76	2.24	1.71
MtB	2.74	2.12	2.59	2.02	2.64	2.06 ^{***}	2.5	1.92
Accounting characteristics								
Total assets (US\$ mln)	8,587 ⁺⁺⁺	1,012 ⁺⁺⁺	18,101	5,612	14,122 [*]	2,882 ^{***}	1,256	224
Total debt (US\$ mln)	2,424 ⁺⁺⁺	108 ⁺⁺⁺	3,835	1,096	3,202 [*]	487 ^{***}	334	17
Leverage	17,1% ⁺⁺⁺	15,2% ⁺⁺⁺	20.2%	19.2%	19,0% [*]	18,0% ^{***}	17.7%	13.8%
Cash/Total Assets	13,5% ⁺⁺⁺	8,3% ⁺	9.4%	6.7%	10.8%	7.1%		
Observations	234		346		580		580	

²² In Appendix 7 we present the firm specific characteristics without any modification. However, we decided to present the those winsorized at 5% since they improved the statistical inference.

5. Results

5.1. Cumulative Average Abnormal Returns

In this section we present, in a univariate analysis, the effects of bid announcements in acquirers' returns for 7 different event windows²³.

The results of the cumulative abnormal returns for the overall sample are presented in Table 3. The most interesting conclusion we can take from the results is that prior to the announcement, in the event window [-15;-1], the shareholders of the bidding firms earn positive excess returns of 0.502%, significant at the 10% level. This make us assume that there is a leakage of information that enables market participants to trade on private information and create significant abnormal returns. Our results regarding the pre-announcement returns are in line with the Campa and Hernando (2004). Regarding the other event windows, it is worthy to highlight that on the announcement day bidders' share prices have negative excess returns that lead us to say that, on average, investors react adversely to the announcement. However, this result is not statistically significant.

Even though the returns to bidders' shareholders are not statistically significant for any other of the event windows at conventional levels, they are in line with previous studies that had already found no impact of bid announcements for bidders' shareholders in similar event windows, namely, Asquith (1983), Campa and Hernando (2004), Higson and Elliott (1998) and Lang *et al.* (1989).

The percentage of companies that displayed positive abnormal returns around the announcement of the deal is about 50% (a similar portion of deals with positive CAARs were documented by Campa and Hernando (2004)). In the day of the announcement only 48.4% have positive CAR whereas 52.1% of the deals provided positive returns to bidders' shareholders in the [-15,+5] event window.

²³ All the results here analyzed have been winsorized at 5% to mitigate the impact of outliers and to improve the robustness of our conclusions. Nevertheless, we also present the original results in Appendixes 8 to 14.

Table 3 - CARs of all bids

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for the whole sample of bidders for 7 different event windows. The window T=0 stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%. The returns have been winsorized at 5%.

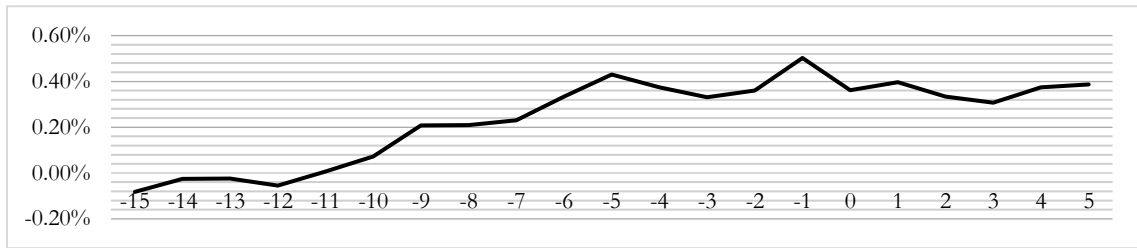
Total sample			
			Positive
[-15;-1]	0.502%*	[0.324%]	52.4%
[-1; 0]	-0.090%	[0.027%]	50.2%
T=0	-0.194%	[-0.105%]	48.4%
[-15;+1]	0.396%	[0.359%]	51.7%
[-1;+1]	-0.009%	[-0.043%]	49.5%
[0;+1]	-0.154%	[-0.082%]	48.1%
[-15;+5]	0.387%	[0.440%]	52.1%
<i>580 deals</i>			

Figure 3 helps to understand how acquirers' returns evolve across the announcement of public M&As as it gives additional information beyond Table 3. The main conclusion that can be retrieved is that acquirers' shareholders earn positive, not statistically significant, excess returns in the 21-day period surrounding the announcement. We clearly see the run - up that starts 12 days before the public announcement of the merger, which makes us speculate that there may exist some information leakage in the days preceding the announcement which may allow stock market participants to adjust their positions and trade on such information or rumors. At the announcement day, as all information becomes available in the market, we document a downward trend that persist until "day +3" and gives place to a phase of stability.

The shape of the graph we present in Figure 3 show a lot of resemblances with the one presented by Asquith (1983) for successful bidding firms and also the conclusions are very similar, in both cases there is a negative adjustment at the press day after a phase of positive returns and then a stabilization period.

Figure 3 - Bidder CAARs around the M&A announcement

This figure shows the daily evolution of the cumulative average abnormal returns for bidding firms starting 15 trading days before the bid announcement up to 5 days after the bid disclosure. The bid announcement day is denoted as day 0. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. Cumulative abnormal returns have been winsorized at 5%.



5.2. Cumulative Average Abnormal Returns according to deal and firm characteristics

In this section we present the abnormal returns according to the characteristics of the deal and of the companies involved: industry relatedness, geographical range, method of payment, participation in target ownership, attitude to the bid, announcement period and location of the acquirer.

5.2.1. Industry relatedness between acquirer and target

From Table 4 we conclude that, in the acquirers' perspective, diversifying acquisitions, on average, outperform focusing transactions, which is according to Aggarwal and Baxamusa (2013) and Akbulut and Matsusaka (2010).

Again, we assist to some sort of pre-announcement run-up in the share prices of bidding firms entering in diversifying acquisitions, an effect that is statistically significant at the 5% level: CAAR equals to 0.872% in the window [-15;-1]. Other important characteristic of the sample is that in the day the official intention to acquire is disclosed, the market react adversely when bidders acquire companies in the same line of business, generating negative abnormal returns of -0.416%, significant at the 10% level.

For differences, we see that even though the highest impact of the announcement is registered in the wider windows, they are significant only in the announcement day or in the

windows of two days surrounding the announcement: in $T=0$ and in the window $[0;+1]$, CAARS are 0.661% and 0.775% higher for unrelated acquisitions than for focusing acquisitions, respectively. On the other hand, the differences on the medians are not statistically significant in any window.

Table 4 - CARs by industry relatedness

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, divided by industry scope, for 7 different event windows. The window $T=0$ stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%. The returns have been winsorized at 5%.

	Industry relatedness						Diff. Diversifying – Focusing	
	Focusing			Diversifying			Mean	Median
			Positive			Positive		
[-15;-1]	0.270%	[0.131%]	50.4%	0.872%**	[0.566%]	55.8%	0.602%	0.436%
[-1; 0]	-0.313%	[0.069%]	50.4%	0.368%	[-0.042%]	49.8%	0.681%*	-0.112%
T=0	-0.416%*	[-0.037%]	49.0%	0.246%	[-0.167%]	47.4%	0.661%*	-0.130%
[-15;+1]	-0.091%	[0.117%]	50.4%	1.241%**	[0.449%]	54.0%	1.332%	0.332%
[-1;+1]	-0.291%	[-0.165%]	48.8%	0.486%	[0.137%]	50.7%	0.777%	0.302%
[0;+1]	-0.444%	[-0.045%]	48.8%	0.331%	[-0.104%]	47.0%	0.775%*	-0.059%
[-15;+5]	-0.232%	[0.351%]	51.5%	1.207%*	[0.965%]	53.0%	1.439%	0.615%
	365 deals			215 deals				

5.2.2. Geographical range

As shown in Table 5 cross border acquisitions deliver higher value to bidders' shareholders than acquisitions where both intervenient in the transaction are from the same country. This results somehow contradict some of the previous studies, such is the case of Campa and Hernando (2004) and Martynova and Renneboog (2011) who had found evidence of lower returns to firms engaging in cross border M&As. Nevertheless, our findings are supported by Conn *et al.* (2005), Faccio *et al.* (2006) and Goergen and Renneboog (2004) who have also documented a positive impact of cross border acquisitions (or at least less negative)²⁴.

Additionally, the other great conclusion to draw is that whilst in the case of domestic acquisitions the major impact is created by the information in the day of the announcement,

²⁴ However, only in the studies of Conn *et al.* (2005) and Goergen and Renneboog (2004) the results are statistically significant. But for a deeper understanding see Appendix 4.

in cross border acquisitions there are abnormal returns prior to the official announcement of the intention to merge, which makes us once more to speculate against the existence of leakage of information: significant excess returns were found in every event window containing the 15-day period prior to the announcement. In domestic acquisitions we found significant negative returns of -0.5% only in the day the merger was disclosed.

Addressing the differences between both types of acquirers, it becomes obvious that cross border M&As deliver more value. In the most extensive window $[-15; +5]$, cross border acquirers have CAARs 1.974% higher than those acquiring targets in the same country and, the gap becomes even broader when median CARs are considered.

Table 5 - CARs by geographical range

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, divided by geographical scope, for 7 different event windows. The window $T=0$ stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%. The returns have been winsorized at 5%.

	Geographic range						Diff. Cross country – Domestic	
	Domestic			Cross border			Mean	Median
			Positive			Positive		
[-15;-1]	-0.001%	[-0.578%]	44.6%	0.833%**	[0.857%**]	57.6%	0.835%	1.435%**
[-1; 0]	-0.553%*	[-0.100%]	48.5%	0.281%	[0.109%]	51.3%	0.834%**	0.208%
T=0	-0.500%*	[-0.186%]	45.9%	0.028%	[0.003%]	50.1%	0.528%	0.189%
[-15;+1]	-0.432%	[-1.070%]	44.6%	0.932%**	[0.867%**]	56.4%	1.364%**	1.937%***
[-1;+1]	-0.507%	[-0.206%]	45.9%	0.305%	[0.071%]	51.9%	0.812%*	0.277%
[0;+1]	-0.431%	[-0.327%]	45.5%	0.033%	[-0.002%]	49.9%	0.464%	0.325%
[-15;+5]	-0.860%	[-0.953%]	46.3%	1.114%**	[1.168%***]	55.9%	1.974%**	2.122%***
	231 deals			349 deals				

5.2.3. Method of payment

When examining the excess returns earned by the shareholders of European acquirers according to the type of payment, as shown in Table 6, we can conclude that cash offers are the only form of payment that delivers significant value creation, corroborating the findings of other studies as Amihud *et al.* (1990), Franks *et al.* (1991), Goergen and Renneboog (2004), Martynova and Renneboog (2011) and Servaes (1991). To confirm the veracity of our results, also the median CARs are positive and statistically different from zero.

Contrarily to cash biddings, all-equity transactions behave in a particular form: they generate insignificant negative excess returns for the smaller event windows but, when we assess the event starting 15 days prior to the announcement the results are the opposite and, in the event window $[-15;-1]$ they are positive and significative at the 10% level as it was in Goergen and Renneboog (2004) and Martynova and Renneboog (2011). Therefore, we can claim that our results are in line with others such as Amihud *et al.* (1990), Franks *et al.* (1991), Peterson and Peterson (1991), Savor and Lu (2009) and Servaes (1991) who have found a negative impact of equity transactions.

However, it seems that the form of payment that includes both cash and equity is the one that creates a higher impact in acquirers' abnormal returns. Mixed payment transactions have a negative impact in all event windows except $[-15;-1]$ and the negative impact is mainly generated at the day the intention to merge is announced: in the day $T=0$, on average, the acquirers' market value depreciate 2.034%, which can lead us to say that investors strongly react to the information. These results are in accordance with Andrade *et al.* (2001), Moeller *et al.* (2004) and Peterson and Peterson (1991).

Looking at the differences, cash transactions generate a median CAR 1.024% higher than equity transactions for the event window $[-1;+1]$, statistically significant at the 10% level, and an average CAR of 2.592% higher than mixed transactions (significant at 1% level). This proves the assertion made by Andrade *et al.* (2001) who declared that acquirers that use any form of equity have had lower abnormal returns compared to its peers that have only used cash. The difference between equity and the mixed form is also statistically significant and, on average, European bidders that acquire public targets using a combination of cash and equity have CARs 1.781% smaller than those that only use equity (at the event window $[-1;+1]$).

Table 6- CARS by method of payment

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, divided by means of payment, for 7 different event windows. The window T=0 stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%. The returns have been winsorized at 5%.

	Payment Method						Diff. Cash – Equity		Diff. Cash – Mixed	
	Cash			Equity			Mean	Median	Mean	Median
			Positive			Positive				
[-15;-1]	0.004%	[0.164%]	51.3%	1.343%*	[0.126%]	50.0%	-1.338%	0.038%	-0.891%	-0.476%
[-1; 0]	0.413%**	[0.204%]	53.9%	-0.166%	[-0.444%]	45.2%	0.579%	0.648%*	2.046%***	1.338%***
T=0	0.317%*	[0.177%*]	54.6%	-0.408%	[-0.723%]	41.9%	0.725%	0.900%**	2.353%***	1.356%***
[-15;+1]	0.538%	[0.448%]	53.6%	0.697%	[-0.967%]	47.6%	-0.159%	1.415%	1.923%**	2.004%*
[-1;+1]	0.524%**	[0.316%**]	53.6%	-0.287%	[-0.708%]	45.2%	0.811%	1.024%*	2.592%***	1.058%***
[0;+1]	0.453%*	[0.151%*]	51.6%	-0.510%	[-0.728%]	45.2%	0.963%	0.879%**	2.883%***	2.407%***
[-15;+5]	0.711%	[0.688%]	53.6%	0.342%	[0.898%]	51.6%	0.369%	-0.210%	2.015%**	2.669%**
			304 deals			124 deals				
							Diff. Mixed – Equity		Diff. Cash – Undisclosed	
	Mixed			Undisclosed			Mean	Median	Mean	Median
			Positive			Positive				
[-15;-1]	0.895%	[0.640%]	54.0%	0.749%	[0.857%]	60.0%	-0.448%	0.514%	-0.744%	-0.694%
[-1; 0]	-1.633%***	[-1.133%**]	42.5%	-0.122%	[0.124%]	52.3%	-1.467%*	-0.689%	0.534%	0.080%
T=0	-2.036%***	[-1.179%***]	36.8%	-0.058%	[-0.072%]	47.7%	-1.629%**	-0.456%	0.375%	0.249%
[-15;+1]	-1.385%	[-1.557%]	47.1%	1.135%	[1.272%]	56.9%	-2.081%	-0.590%	-0.597%	-0.825%
[-1;+1]	-2.068%***	[-0.742%***]	36.8%	0.322%	[0.301%]	55.4%	-1.781%*	-0.034%	0.202%	0.016%
[0;+1]	-2.430%***	[-2.256%***]	33.3%	0.374%	[0.394%]	56.9%	-1.920%*	-1.528%*	0.079%	-0.243%
[-15;+5]	-1.305%	[-1.981%]	43.7%	1.295%	[2.211%]	56.9%	-1.646%	-2.879%	-0.584%	-1.522%
			87 deals			65 deals				

5.2.4. Position at the announcement

In this section we grouped the bidders according to their position on the target firm before the bid, aiming to evaluate whether having a previous stake influences acquirers' gains.

From Table 7 we conclude that our results do not illustrate the positive impact of the toehold described by Martynova and Renneboog (2011). In reality, we have found that having an initial stake on the target provide a worse outcome than launching the bid without any initial position. We have also found evidence of a pre-announcement excess return earned by shareholders of companies entering deals with no initial stake, significant at the 5% level. Nevertheless, the difference is not relevant for both, average and median CARs.

Therefore, these results provide little explanation on the impact that toeholds have on the competitiveness of M&As processes and, neither support the idea that having an initial stake could allow bidders to increase their profits at the expense of other owners of the target firm, corroborating the results of Franks and Harris (1989).

Table 7 - CARs by existence of initial stake

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, divided by the existence, or not, of a stake held by the bidder before the announcement, for 7 different event windows. The window T=0 stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%. The returns have been winsorized at 5%.

	Position at the announcement						Diff. Toehold – No Toehold	
	Toehold			No toehold			Mean	Median
			Positive			Positive		
[-15;-1]	-0.170%	[-0.944%]	46.8%	0.547%**	[0.386%]	53.1%	-0.716%	-1.330%
[-1; 0]	-0.310%	[-0.079%]	48.4%	-0.074%	[0.050%]	50.4%	-0.236%	-0.130%
T=0	-0.445%	[-0.167%]	43.5%	-0.157%	[-0.098%]	49.0%	-0.287%	-0.069%
[-15;+1]	-0.445%	[-1.123%]	46.8%	0.499%	[0.421%]	52.3%	-0.944%	-1.544%
[-1;+1]	-0.375%	[-0.004%]	50.0%	0.033%	[-0.047%]	49.4%	-0.408%	0.043%
[0;+1]	-0.491%	[-0.145%]	50.0%	-0.109%	[-0.082%]	47.8%	-0.382%	-0.063%
[-15;+5]	-0.700%	[0.038%]	50.0%	0.511%	[0.471%]	52.3%	-1.211%	-0.433%
			62 deals			518 deals		

5.2.5. Attitude to the bid

Even though our sample is composed only by a few cases of hostile reactions to bid announcements, which can represent a weakness in our study since it reduces the scope of

the analysis, we have considered important to present the excess returns earned by European acquirers according to targets' reaction to the bid, which would enable us to draw a comparison with previous studies.

From Table 8 we see that the impact of the initial reaction of targets on bidders' returns is ambiguous: surrounding the announcement bidding firms entering hostile transactions have, on average, a negative excess return of -3.04%, statistically significant at the 5% level; however, if we take a look at the results including the 15-day period prior to the announcement a positive (not significant) impact is noticeable. A similar result was also achieved by Martynova and Renneboog (2011) who documented a negative correction in the announcement day after a phase of positive excess returns prior to the official announcement. When a transaction is friendly or neutral the market does not react significantly to the information announcement since the CAARs are not different from zero.

Looking at differences between the returns earned by acquirers of opposed and unopposed offers we see that in the event window [-1;+1] bidders entering hostile deals have CARs 3.108% lower than their peers not facing opposition from the target's management. Overall, our results are in line with Franks and Mayer (1996), Goergen and Renneboog (2004) and Servaes (1991) who reported that hostile bids result in lower returns to acquirers.

Table 8 - CARs by attitude to the announcement

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, divided by attitude towards the bid, for 7 different event windows. The window T=0 stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%. The returns have been winsorized at 5%.

	Attitude to the bid						Diff. Hostile – No Hostile	
	Hostile			No hostile			Mean	Median
			Positive			Positive		
[-15;-1]	2.464%	[1.682%]	64.3%	0.428%	[0.303%]	52.1%	2.036%	1.379%
[-1; 0]	-2.321%*	[-1.713%*]	21.4%	-0.026%	[0.097%]	50.9%	-2.295%*	-1.617%**
T=0	-1.498%	[-0.347%]	35.7%	-0.153%	[-0.102%]	48.8%	-1.345%	-0.245%
[-15;+1]	0.345%	[-1.335%]	42.9%	0.409%	[0.369%]	51.9%	-0.063%	-1.704%
[-1;+1]	-3.040%**	[-1.836%**]	28.6%	0.067%	[-0.012%]	50.0%	-3.108%**	-1.823%*
[0;+1]	-2.134%*	[-1.899%*]	28.6%	-0.053%	[-0.053%]	48.6%	-2.034%	-1.847%
[-15;+5]	1.224%	[-1.040%]	50.0%	0.371%	[0.511%]	52.1%	0.853%	-1.551%
			15 deals			565 deals		

5.2.6. Period of announcement

One of the important questions that we were trying to answer when we have chosen this topic, was to assess whether or not the 2008 financial crisis was a mark that have transformed the gains of European bidders and, looking at Table 9 it seems that we found some interesting differences before and after this event.

Before the 2008 financial crisis the announcement of an acquisition of a public target made European acquirers earned significant average excess returns of -0.4% on the day $T=0$ whereas, that value vanished close to zero after the crisis. However, in the window $[-15;-1]$ the performance of the pre-2008 deals is positive and statistically significant, which once more can give some insight that there may exist private information leakage.

For differences, pre-2008 transactions have median CARs 0.463% smaller than deals occurred after 2008, and that difference is significant at the 10% level. These results showing that bidder shareholders earned lower returns before 2008 may suggest that before the crisis bidders had paid larger premiums for targets, which adversely affected the first assessment of the transaction by the market at the announcement day, after what investors had improved their expectations.

Table 9 - CARs by bid announcement period

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, divided by announcement period, for 7 different event windows. The window $T=0$ stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%. The returns have been winsorized at 5%.

	Announcement period						Diff. Pre-2008 – Pos-2008	
	Pre-2008			Pos-2008			Mean	Median
			Positive			Positive		
[-15;-1]	0.705%*	[0.143%]	51.6%	0.332%	[0.528%]	53.2%	0.373%	-0.385%
[-1; 0]	-0.391%	[-0.228%]	45.9%	0.208%	[0.234%]	54.2%	-0.599%	-0.463%*
T=0	-0.400%*	[-0.168%]	45.5%	0.029%	[0.018%]	51.2%	-0.429%	-0.185%
[-15;+1]	0.673%	[0.351%]	52.3%	0.177%	[0.366%]	51.2%	0.496%	-0.016%
[-1;+1]	-0.040%	[-0.200%]	48.4%	-0.008%	[0.027%]	50.5%	-0.031%	-0.227%
[0;+1]	-0.052%	[-0.150%]	48.0%	-0.245%	[-0.061%]	48.2%	0.193%	-0.089%
[-15;+5]	0.692%	[0.810%]	53.0%	0.020%	[0.348%]	51.2%	0.672%	0.462%
			279 deals			301 deals		

5.2.7. UK vs. Continental European acquirers' CARs

Table 10 shows that bidders' share price reactions to M&As announcements differ among UK and CE based companies. While UK based acquirers earn statistically significant negative abnormal returns in the shortest windows, Continental European acquirers earn positive CARs statistically different from zero, in all the windows that include the 15-day period prior to the information disclosure. Regarding the differences between both groups we have found that there is evidence to claim that CE acquirers outperform UK bidders: CE bidders have average CARs 1.251% higher than UK firms in the 3-day window surrounding the announcement, statistically significant at 1%. And when assessing the results with median values, a similar conclusion is retrieved from the analysis.

These results are accordingly to those reported by Martynova and Renneboog (2011) who documented significantly larger share price increases for CE bidders in the short run, followed by a negative correction that takes place in the subsequent months for both groups, but that is also more expressive for CE acquirers. According to the authors, it seems that UK investors are more reasonable when assessing takeovers gains as the post-announcement corrections are smaller.

Table 10 - CARs by acquirer region

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, according to the region of the acquirer, for 7 different event windows. The window T=0 stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%. The returns have been winsorized at 5%.

	Acquirer region						Diff- CE – UK Acquirers	
	UK acquirers			CE acquirers			Mean	Median
			Positive			Positive		
[-15;-1]	0.363%	-0.205%	48.7%	0.576%*	0.546%	54.9%	0.214%	0.751%
[-1; 0]	-0.631%**	[-0.101%]	47.9%	0.325%	[0.116%]	51.7%	0.956%**	0.217%*
T=0	-0.581%*	[-0.102%]	48.3%	0.037%	[-0.107%]	48.6%	0.618%*	-0.005%
[-15;+1]	-0.259%	-0.191%	48.7%	0.805%**	0.619%*	53.8%	1.064%	0.809%*
[-1;+1]	-0.768%	[-0.206%*]	47.0%	0.483%	[0.032%]	51.2%	1.251%***	0.238%**
[0;+1]	-0.738%**	[-0.289%]	44.9%	0.210%	[0.016%]	50.3%	0.948%**	0.305%
[-15;+5]	-0.573%	-0.787%	46.2%	1.02%**	1.286%**	56.1%	1.593%**	2.073%**
			346 deals			234 deals		

5.3. Multivariate analysis

The results obtained with the univariate analysis suggest that different characteristics affect bidders' announcement returns. Therefore, we will explore those results in this section with a multivariate framework.

5.3.1. Bidders' announcement returns

The determinants of the market reaction to M&A announcements for bidding firms are reported in Table 11. In order to understand the impact of the determinants 4 regressions were estimated. In Eq. 1 we include the characteristics related to the bid announcement, in Eq. 2 and Eq. 3 we estimate the OLS model only with the variables that translate firm specific characteristics and, in Eq. 4 both groups of explanatory variables were combined. However, before proceeding with our analysis, it should be noted that the only difference between Eq. 2 and Eq. 3 is that we substituted the variables Lev_i and $Cash_TA_i$ by $Agency_i$, where the latter is a transformation of the first two and therefore a high level of correlation is observed between them²⁵. Finally, in Eq. 4 both sets of variables were introduced and, once more $Agency_i$ were the one that showed more explanatory power, which led us to present the model with it included instead of Lev_i and $Cash_TA_i$.

From the results presented in Table 11 we conclude that four explanatory variables show significant impact on explaining bidders' CARs originated by M&As announcements. Those variables are the method of payment (in this case cash transactions), the attitude towards the bid, the region of the acquirer (UK vs. CE) and the measure of managerial performance of the target (low Tobin's Q targets).

All cash transactions increase bidder abnormal returns, which means that the market regards cash payments as positive information. This variable is statistically significant at 5% level and our results are supported by Hubbard and Palia (1999), Servaes (1991) and Sung (1993), whose studies had already found evidence of statistically significant wealth creation in cash transactions.

As in the studies of Goergen and Renneboog (2004), Hayn (1989), Martynova and Renneboog (2011) and Servaes (1991) hostile takeovers result in lower announcement returns for bidders. This finding is likely to reflect the higher costs (such as litigation,

²⁵ See Appendix 16 where we present the correlation matrix between the exogenous variables.

management, time, etc.) associated to hostile environments and is consistent with the notion that resistance ultimately leads to a higher offer price (overbidding) (Hayn, 1989). Another plausible explanation to the negative impact that hostility has is that bidders' shareholders may become reluctant that the true motives of the takeover may be related to agency and hubris problems and therefore react adversely (Goergen and Renneboog, 2004).

The Q ratio of targets is an important variable explaining bidders' returns. In Eq. 4 we observe that when bidders acquire targets with low Tobin's Q they earn positive excess returns (significant at the 10% level). Our results are consistent with Lang *et al.* (1989) and Servaes (1991) and, if Q ratio is interpreted as a measure of managerial performance, it supports the assumption that more value is created when an acquirer takes over a poorly managed firm. On the other hand, our results do not show that well managed bidders are able to achieve higher returns as demonstrated in both studies enumerated just before.

Additionally, we have found that UK bidders experience significantly lower announcement returns than that earned by their CE peers. This means that CE investors expect that their firms can capture higher profits in takeovers. Our result is in agreement with Martynova and Renneboog (2011), though they had expected the opposite sign justified by the fact that UK's legal system ensures better investor protection than that guiding CE companies²⁶ which, would ultimately result in higher UK company valuations (La Porta, Lopez de Silanes, Shleifer, and Vishny, 2002).

Regarding the remaining variables, we conclude that they have not influenced the returns earned by bidding firm's shareholders in the years that compose our sample. Therefore, we have not found evidence to justify our prediction that agency problems could be a driver of wealth creation in European M&As. This result, however, is not surprising since Akbulut and Matsusaka (2010) had already failed to justify the implication of the agency cost hypothesis argument in explaining M&As returns.

Additionally, we have also failed to prove that there are any significant differences between the excess returns earned by bidders' shareholders before and after the 2008 financial crisis. Our *a priori* expectations led us to believe that before the crisis bidders may have been

²⁶ La Porta, Lopez de Silanes, Shleifer and Vishny (1997) have found evidence that countries following a legislator-made civil law tradition (where most of European countries lie) have weaker investment protection and less developed capital markets compared to common law countries (that is the norm in English countries).

overpaying as a reflection of the market frenzy, which would translate in lower announcement abnormal returns to bidders' shareholders, which did not prove true.

Table 11 - Regression of bidders' CAR

This table shows the results of the OLS regression of the bidder's CARs for the event window $[-1;+1]$. Eq. 1 presents the impact of bid characteristic in bidder CARs. Eq. 2 and Eq. 3 present the impact of firm specific characteristics in bidder CARs. Eq. 4 presents the effect of both, bid and firm specific characteristics on bidder CARs. Variable definitions are presented in section 4.2. For each variable we list the coefficient and the standard error. $CAR_{[-1;+1]}$ have been winsorized at 5%. All equations were run through a heteroskedastic procedure. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%.

	Eq. 1		Eq. 2		Eq. 3		Eq. 4	
Variable	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
C	-0.005	0.004	0.005	0.009	0.006	0.008	0.001	0.009
Cash	0.011**	0.005					0.012**	0.005
Hostile	-0.028**	0.013					-0.031**	0.013
Before_08	0.000	0.005					0.002	0.005
Domestic			-0.005	0.005	-0.005	0.005	-0.002	0.005
SSIC			-0.007	0.005	-0.007	0.005	-0.006	0.005
Toehold			-0.004	0.007	-0.003	0.007	-0.001	0.007
RSize			0.000	0.001	0.000	0.001	0.001	0.001
High_B_Q			0.002	0.007	0.002	0.007	0.002	0.007
Low_T_Q			0.008	0.006	0.008	0.006	0.010*	0.006
UK			-0.009*	0.005	-0.0010*	0.005	-0.011**	0.005
Lev			0.004	0.019				
Cash_TA			0.010	0.022				
Agency					0.005	0.008	0.005	0.008
Observations	580		580		580		580	
R-squared	0.0170		0.0174		0.0179		0.0344	
Adjusted R-squared	0.0119		0.0019		0.0041		0.0157	
F-statistic	3.3246		1.1204		1.3005		1.8408	
Prob(F-statistic)	0.0195		0.3459		0.2404		0.0446	

5.3.2. Bidders' pre-announcement returns

As we saw in section 5.1 a share price run-up occurs in the days prior to the announcement, and even though it was not significant we believe that analyzing the determinants of such excess returns may be important to conduct a deeper analysis and reach more robust conclusions. In Table 12 we present the parameter estimates that we believe can influence pre-announcement returns.

From the results we have reached in Table 12 we conclude that four variables show statistical impact on bidders' pre-announcement returns. Those are: the method of payment, the industry relation, the relative size and the level of indebtedness of the bidder.

The mean of payment is once more an important determinant of bidders' returns but, this time its impact is negative. Contrarily to what happens when assessing the determinants of announcement returns, all cash transactions are responsible for negative pre-announcement returns for bidding firms. We do not have a direct mean of comparison of our result but according to Martynova and Renneboog (2011) all equity transaction lead to higher pre-announcement returns, which might induce that bidders may be taking advantage of their overvalued equity to acquire the real assets of other companies.

We also show that bidders taking over companies in different industries earn negative pre-announcement excess returns. Our result is consistent with Martynova and Renneboog (2011).²⁷ Furthermore, the relative size of the target has a negative effect on bidders' excess returns. For the announcement period we had anticipated a positive impact of this variable but, Campa and Hernando (2004) had already obtained a negative sign associated to this determinant when assessing pre-announcement returns of European acquirers.

Finally, we have found that the level of leverage of the bidder impacts negatively its excess returns. This somehow contradict our prior expectations since we had anticipated a positive impact of leverage on bidders' returns, as debt is regarded as a characteristic that improves managerial decision making (Maloney *et al.*, 1993) and Jensen (1986) also claims that less levered companies are more likely to enter in wealth destruction deals.

²⁷ Campa and Hernando (2004) are the other authors that also performed a similar analysis. However, their results regarding the period pre-announcement were not significant.

Table 12 – Regression of bidders' CARs

This table shows the results of the OLS regression of the bidder's pre-announcement CARs for the event window [-15;-1]. Eq. 1 presents the impact of bid characteristic in bidder CARs. Eq. 2 present the impact of firm specific characteristics in bidder CARs. Eq. 3 presents the effect of both, bid and firm specific characteristics on bidder CARs. Variable definitions are presented in section 4.2. For each variable we list the coefficient and the standard error. $CAR_{[-15;-1]}$ have been winsorized at 5%. All equations were run through a heteroskedastic procedure. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%.

Variable	Eq. 1		Eq. 2		Eq. 3	
	Coeff.	SE	Coeff.	SE	Coeff.	SE
C	0.009*	0.005	0.023**	0.011	0.032***	0.012
Cash	-0.010*	0.005			-0.020***	0.006
Hostile	0.015	0.019			0.018	0.019
Before_08	0.001	0.005			0.004	0.005
Domestic			-0.005	0.005	-0.007	0.005
SSIC			-0.009	0.006	-0.014**	0.007
Toehold			-0.005	0.010	-0.007	0.010
RSize			-0.002	0.001	-0.003**	0.001
High_B_Q			-0.009	0.009	-0.009	0.009
Low_T_Q			-0.009	0.008	-0.011	0.008
UK			-0.001	0.006	0.000	0.006
Lev			-0.038*	0.020	-0.044**	0.020
Cash_TA			0.024	0.028	0.016	0.028
Observations	580		580		580	
R-squared	0.007		0.027		0.048	
Adjusted R-squared	0.002		0.012		0.028	
F-statistic	1.430		1.752		2.391	
Prob(F-statistic)	0.233		0.075		0.005	

6. Conclusion

This study addressed, in the perspective of the bidding firms, the impact that M&As have on wealth creation. This research focus on the European market for corporate control, its purpose is to determine whether M&As create or destroy value and assess which variables are more determinant in explaining it.

The development of our study is based on an event study methodology that enabled us to determine how securities react to information announcement, particularly in short term analysis. Furthermore, in order to determine which characteristics impact more on wealth creation, an OLS methodology was applied. Our sample comprises 580 M&A deals involving a European listed acquirer taking over a listed target in the period that goes from 2003 to 2018.

Mergers and acquisitions do not create or destroy value to European acquirers in short term windows, except in the pre-announcement window where bidders earn positive excess returns, which make us speculate the existence of information leakage that enable market participants to adjust their positions. This feature of our sample regarding the existence of positive pre-announcement returns is also shared by the study of Campa and Hernando (2004) analyzing European M&As. The results regarding the remaining windows show an inexistence of a real impact of M&As in bidders' wealth creation as had already been proved by Asquith (1983), Campa and Hernando (2004), Higson and Elliott (1998) and Lang *et al.* (1989).

In terms of industry relatedness, our results show that acquirers taking over firms in a different industry earn positive short-term returns, which suggests that the creation of conglomerates leads to wealth creation. Additionally, bidders in cross borders transactions were also rewarded with improved wealth creation, probably because they were able to take advantage of imperfections in capital markets by entering a FDI strategy, as hypothetically proposed by Goergen and Renneboog (2004).

As expected *a priori*, our results show that all cash transactions lead to better results in the acquirers' perspective: we have found statistically significant evidence supporting this claim; and that mixed transactions, including cash and equity, destroy value for bidders' shareholders in the short terms, as proposed by Andrade *et al.* (2001), Moeller *et al.* (2004) and Peterson and Peterson (1991).

We have also found evidence that hostile transactions are not welcomed by the markets which react adversely to such types of deals, leading to negative announcement returns. The location of the bidding firm is another characteristic that enabled us to draw some conclusions: UK based acquirers earn significant negative short-term returns and that fact, according to Martynova and Renneboog (2011) that might be the result of a better assessment of the transaction by UK investors.

Finally, regarding the cross-sectional study of the determinants of wealth creation for European acquirers, we present evidence that the variables that impact the announcement CARs are the method of payment, the attitude of the target towards the bid, the managerial performance of the target and the region of the acquirer: cash transactions have a positive impact on the performance of bidder's shares around the announcement; hostility play a negative role in wealth creation for European acquirers in the short-term; bidding firms taking over poorly managed companies (measured by the Tobin's Q) earn higher abnormal returns; and an acquirer by the simple fact of being based in the UK is more prone to destroy value.

Analyzing the pre-announcement performance, we have found that cash transactions, focusing deals, the relative size and the leverage of the bidder impact its CARs. All variables have a negative impact in the wealth creation previous to the official disclosure of the deal, which suggest that there might exist some information leakage before the official announcement and that insiders might take advantage of it to profit.

Concluding, we have found that, on average, European M&A deals do not create or destroy value at the announcement to bidders. However, we have found a pre-announcement positive excess return. We have determined the variables that affect the excess returns surrounding the announcements, but we did not detect any significant difference in the standards of wealth creation of M&As previous and after 2008, neither we had detected any existence of agency problems in explaining the returns of European bidders.

Further research may be developed by analyzing a sample including both, public and private targets, in order to determine if there are any differences when European acquirers take over a company of a different public status. Additional research may be achieved by evaluating the impact not only to bidders but also by evaluating the impact of the transaction to the combined entity too.

7. Bibliography

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Appendices

Appendix 1 - Resume of empirical evidence regarding value creation in M&As

Author	Sample Period	Event Window	Sample Size	Type of Deal	Model used	Country Coverage	Bidder CAR (%)	Target CAR (%)	Combined CAR (%)
Andrade <i>et al.</i> (2001)	1973 - 1998	[-1; +1]	4256	M	MM	USA	-0.70%	**16%	***1.8%
		[-20; Close]					-3.80%	**23.8%	1.90%
Asquith (1983)	1962 - 1976	[-1; 0]	211	M	MM	USA	0.20%	***6.2%	n.a.
Bradley <i>et al.</i> (1988)	1963 – 1984	[-5; +5 last bid]	236	TO	MM	USA	***0.97	***31.77%	***7.43%
Campa and Hernando (2004)	1998 - 2000	[-1; +1]	262	M	MM	EU	0.44%	**3.93%	**1.04%
		[-30; +30]					0.56%	**8.9%	0.95%
Conn <i>et al.</i> (2005)	1984 - 1998	[-1; +1]	4344	A	MM	UK	n.a.	n.a.	*0.59%
Dodd (1980)	1970 - 1977	[-10; Close]	151	M	MM	USA	-7.22%	33.96%	n.a.
		[-1; 0]					-1.09%	***13.41%	n.a.
Franks <i>et al.</i> (1991)	1975 - 1984	[-5; +5]	399	M and TO	MM	USA	-1.02%	***28.04%	***3.9%
Franks and Harris (1989)	1955 - 1985	month 0	1814	TO and M	MM and CAPM	UK	1.00%	23.30%	n.a.
Goergen and Renneboog (2004)	1993 - 2000	[-2; +2]	228	M greater than \$100M	CAPM	Europe	***1.18%	***12.96%	n.a.
		[-60; +60]					-0.48%	***21.66%	n.a.
Hayn (1989)	1970 - 1985	[-2; +2]	640	TO e M	MM	USA	**2.3%	**17.5%	n.a.
		[-1; 0]					*1.90%	**14.30%	n.a.
Higson and Elliott (1998)	1975 - 1990	month 0	830	Takeovers	MM	UK	0.20%	*31.50%	n.a.
Huang and Walkling (1987)	1977 - 1982	[-50; +50]	204	M and TO	MM	USA	n.a.	***30.09%	n.a.
Jarrell and Poulsen (1989)	1963 - 1986	[-20; +10]	770	TO	n.a.	USA	***1.29%	***28.99%	n.a.
		[-5; +5]					***0.92%	n.a.	n.a.
Kaplan and Weisbach (1992)	1971 – 1982	[-5; +5 last bid]	271	A	MM	USA	***-1.49%	***26.90%	***3.74%
Keown and Pinkerton (1981)	1975 - 1978	[-60; +10]	194	M	MM	USA	n.a.	27.04%	n.a.
Lang <i>et al.</i> (1989)	1968 - 1986	[-5; +5]	87	TO	MM	USA	0.10%	***40.3%	***11.31%

Ma <i>et al.</i> (2009)	2000 - 2005	[-1; +1]	1447	M	MM	Asia	***1.28%	n.a.	n.a.
Martynova and Renneboog (2011)	1993 - 2001	[-1; +1]	2419	TO e M	MM	Europe	***0.72%	***12.47%	n.a.
		[-5; +5]					***0.79%	***15.83%	n.a.
		[-60; +60]					**2.83%	***26.7%	n.a.
Moeller <i>et al.</i> (2004)	1980 - 2001	[-1; +1]	12023	M and TO	MM	USA	***1.10%	n.a.	n.a.
							0.076% L	n.a.	n.a.
							***2.32% S	n.a.	n.a.
Servaes (1991)	1972 - 1987	[0; Close]	704	M and TO	MM	USA	**1.07%	***23.64%	***3.66%
Shah and Arora (2014)	2013	[-2; +2]	37	M	MM	Asia - Pacific	1.20%	**9.50%	n.a.
		[-5; +5]					1.70%	***10.00%	n.a.

Significance level: ***, **, * - statistical significance at 1%, 5% and 10% respectively.

(**A** – Acquisitions; **M** – Mergers; **TO**- Tender Offers)

(**CAPM** – Capital Asset Pricing Model; **MM** – Market Model)

(**L** – Large acquirer; **S** -Small acquirer)

Appendix 2 - Resume of empirical evidence regarding value creation considering the attitude towards the bid

Author	Country	Sample Size	Event Window	Type of Deal	Attitude to the Bid	Bidder CAR (%)	Target CAR (%)	Sample CAR (%)
Franks <i>et al.</i> (1991)	USA	399	[-5; +5]	M and TO	Hostile	-3.54%	***35.32%	***6.10%
					Friendly	-0.17%	***23.58%	***3.14%
Franks and Harris (1989)	UK	1814	month 0	TO and M	Hostile	-0.40%	29.10%	n.a.
					Friendly SB	0.00%	20.60%	n.a.
					Friendly MB	0.30%	28.70%	n.a.
Goergen and Renneboog (2004)	Europe	228	[-2; +2]	M greater than \$100M	Friendly	***1.94%	***11.33%	n.a.
					Hostile	***-3.43%	***17.95%	n.a.
					Multi Bidders	0.85%	***11.28%	n.a.
Huang and Walkling (1987)	USA	204	[-1; 0]	M and TO	Hostile	n.a.	28.30%	n.a.
					Friendly	n.a.	22.60%	n.a.
					Neutral	n.a.	23.10%	n.a.
Lang <i>et al.</i> (1989)	USA	87	[-5; +5]	TO	Friendly	0.80%	***43.40%	***12.10%
					Hostile	-1.40%	***33.40%	***9.55%
Martynova and Renneboog (2011)	Europe	2419	[-1; +1]	TO e M	Hostile	-0.83%	***17.62%	n.a.
					Tender Offer	-0.45%	***16.12%	n.a.
					Friendly	***1.06%	***4.59%	n.a.
			[-60; +60]		Hostile	** -1.61%	***43.85%	n.a.
					Tender offer	2.00%	***32.24%	n.a.
					Friendly	***-4.35%	***10.22%	n.a.
Servaes (1991)	USA	704	[0; Close]	M and TO	Friendly	-0.16%	***21.89%	***3.29%
					Hostile	-4.71%	***31.77%	*5.08%

Significance level: ***, **, * - statistical significance at 1%, 5% and 10% respectively.

(**M** – Mergers; **TO**- Tender Offers)

(**SB** – Single bidder; **MB** – Multiple bidders)

Appendix 3 - Resume of empirical evidence regarding value creation considering industry relatedness

Author	Sample Period	Event Window	Sample Size	Type of Deal	Model used	Country Coverage	Relatedness	Bidder CAR (%)	Target CAR (%)	Combined CAR (%)
Aggarwal and Baxamusa (2013)	1997 - 2007	[-1; +1]	2365	M and TO	MM - No 3 SIC code in common	USA	Diversifying	***0.52%	n.a.	n.a.
		Related					***-0.59%	n.a.	n.a.	
		Diversifying					0.49%	n.a.	n.a.	
		Related					***-1.07%	n.a.	n.a.	
Akbulut and Matsusaka (2010)	1950 - 2006	[-1; +1]	4765	M and TO	FF TFM - No 3 SIC code in common	USA	Diversifying Stock Cash Mixed Other	***-0.60% ***-1.70% ***-0.70% ***-0.80% 1.40%	n.a.	**1.6% 0.1% ***3.8% ***2.1% ***2.7%
							Related Stock Cash Mixed Other	***-1.30% ***-2.30% ***0.50% ***-1.70% -0.10%	n.a.	***1.6% 0.05 ***3.7% ***2.00% ***3.30%
Chevalier (2004)	1980 - 1995	[-5; +5]	289	M	MM - No 2 SIC code in common	USA	Diversifying	-1.92%	29.80%	2.76%
Cihan and Tice (2014)	1981 - 2010	[-1; +1]	1810	M	SIM	USA	Diversified	-0.30%	23.20%	n.a.
							Focused	-1.80%	21.60%	n.a.
DeLong (2001)	1988 - 1995	[-10; +1]	280	M	MM - Clustering	US Banks	Diversifying	***-2.17%	***15.94%	** -0.91%
							Related	** -0.95%	***17.61%	***1.47%
Maquiera <i>et al.</i> (1998)	1963 - 1996	[-2m; +2m]	260	M	MM - RB Herfindahl	USA	Conglomerate Stock Debt	*-4.79% 0.33%	***41.65% 1.22%	3.91% 3.28% 0.44%

					and 1st business		Non-conglomerate Stock Debt	***6.14% ***1.90%	***38.08% 0.50%	***6.91% ***8.58% ***1.44%
Wansley <i>et al.</i> (1983)	1970 - 1978	[-40; +40]	203	M	MM - FTC definition	USA	Non-conglomerate Cash Securities	n.a.	24.43% 33.70% 18.06%	n.a.
							Pure-conglomerate Cash Securities	n.a.	28.09% 32.15% 26.07%	n.a.
							All Conglomerate Cash Securities	n.a.	25.44% 33.49% 17.22%	n.a.

Significance level: ***, **, * - statistical significance at 1%, 5% and 10% respectively.

(**M** – Mergers; **TO**- Tender Offers)

(**FF-TFM** – Fama-French Three Factor Model; **FTC** – Federal Trade Commission; **MM** – Market Model; **RB** – Revenue Based; SIM – Single Index Model)

Appendix 4 - Resume of empirical evidence regarding value creation considering the geographic scope

Author	Sample Period	Country Coverage	Sample Size	Type of Deal	Event Window	Geographic focus	Bidder CAR (%)	Target CAR (%)	Sample CAR (%)
Campa and Hernando (2004)	1998 - 2000	EU	262	M	[-1; +1]	Domestic	0.61%	**3.86%	**1.33%
						Cross-border	0.05%	**4.08%	0.40%
Conn <i>et al.</i> (2005)	1984 - 1998	UK	4344	A	[-1; +1]	Domestic Public Private	***0.68% ***-0.99% ***1.05%	n.a.	n.a.
						Cross-border Public Private	**0.33% -0.09% **0.38%	n.a.	n.a.
DeLong (2001)	1988 - 1995	US Banks	280	M	[-10; +1]	Same State	***-1.46%	***18.30%	0.62%
						Diff. State	***-1.85%	***15.32%	-0.40%
Faccio <i>et al.</i> (2006)	1996 - 2001	Western Europe	4429	M	[-2; +2]	Listed target Domestic Cross Border	-0.87% 0.11%	n.a.	n.a.
						Unlisted target Domestic Cross Border	***1.62% ***1.33%	n.a.	n.a.
Goergen and Renneboog (2004)	1993 - 2000	Europe	228	M greater than \$100M	[-2; +2]	Domestic	-0.10%	***12.72%	n.a.
						Cross-border	***3.09%	***13.51%	n.a.
Martynova and Renneboog (2011)	1993 - 2001	Europe	2419	TO e M	[-1; +1]	Domestic	***0.83%	***12.55%	n.a.
						Cross-border	*0.47%	***11.52%	n.a.
					[-5; +5]	Domestic	**0.76%	***15.61%	n.a.
						Cross-border	**0.84%	***12.17%	n.a.

Significance level: ***, **, * - statistical significance at 1%, 5% and 10% respectively.

(**A** – Acquisitions; **M** – Mergers; **TO**- Tender Offers)

Appendix 5 - Resume of empirical evidence regarding value creation considering the form of payment

Author	Sample Period	Country	Event Window	Sample Size	Type of Deal	Form of Payment	Bidder CAR (%)	Target CAR (%)	Sample CAR (%)
Amihud <i>et al.</i> (1990)	1981 - 1983	USA	[-1; 0]	209	M	Cash	0.44%	n.a.	n.a.
						Stock	**1.19%	n.a.	n.a.
Andrade <i>et al.</i> (2001)	1973 - 1998	USA	[-1; +1]	4256	M	Stock	**1.50%	**13.00%	0.60%
			[-20; Close]			No Stock	0.40%	**20.10%	**3.60%
						Stock	-6.30%	**20.80%	-0.60%
						No Stock	0.20%	**27.80%	5.30%
Faccio <i>et al.</i> (2006)	1996 - 2001	Western Europe	[-2; +2]	4429	M	Listed target Cash Stock Mixed	0.30% **1.81% -0.66%	n.a.	n.a.
						Unlisted target Cash Stock Mixed	***1.17% ***3.90% ***2.14%	n.a.	n.a.
Franks <i>et al.</i> (1991)	1975 - 1984	USA	[-5; +5]	399	M and TO	Cash	0.83%	***33.78%	***6.41%
						Stock	***3.15%	***22.88%	0.42%
						Other	-1.18%	***25.81%	***4.38%
Goergen and Renneboog (2004)	1993 - 2000	Europe	[-2; +2]	228	M greater than \$100M	Cash	*0.90%	***13.56%	n.a.
						Stock	***2.57%	***11.38%	n.a.
						Mixed	0.22%	***13.24%	n.a.
Huang and Walkling (1987)	1977 - 1982	USA	[-1; 0]	204	M and TO	Cash	n.a.	29.30%	n.a.
						Stock	n.a.	14.40%	n.a.
						Mixed	n.a.	23.30%	n.a.

Moeller <i>et al.</i> (2004)	1980 - 2001	USA	[-1; +1]	12023	M and TO	Full sample Cash Stock Mixed	***1.38% ***0.15% ***1.45%	n.a.	n.a.
						Listed target Cash Stock Mixed	0.36% ***-2.02% ***-0.41%	n.a.	n.a.
						Unlisted target Cash Stock Mixed	***1.21% ***1.49% ***1.80%	n.a.	n.a.
Peterson and Peterson (1991)	1980 - 1986	USA	[-1; 0]	272	TO, M or SE	Cash	0.19%	**9.59%	n.a.
						Stock	**0.94%	**4.58%	n.a.
						Cash or Stock	**1.30%	**9.04%	n.a.
						Debt	-0.53%	**3.79%	n.a.
Savor and Lu (2009)	1978 - 2003	USA	[-1; +1]	1773	M	Cash	0.30%	21.60%	n.a.
						Stock	***-3.30%	12.90%	n.a.
Servaes (1991)	1972 - 1987	USA	[0; Close]	704	M and TO	Cash	***3.44%	***26.67%	***8.41%
						Stock	***-5.86%	***20.47%	-3.03%
						Mixed	**3.74%	***21.05%	*5.64%
Sung (1993)	1974 - 1980	USA	[-1; 0]	222	TO	Cash	*-0.60%	n.a.	n.a.
						Stock	***-2.50%	n.a.	n.a.
Travlos (1987)	1972 - 1981	USA	[-10; +10]	167	M and TO	Stock	-1.60%	n.a.	n.a.
						Cash	-0.13%	n.a.	n.a.

Significance level: ***, **, * - statistical significance at 1%, 5% and 10% respectively.
(**M** – Mergers; **SE** – Security Exchange; **TO** – Tender Offers)

Appendix 6 – Sample composition extended

This table displays the percentage of takeovers, by year, according to its characteristics: (a) domestic and cross border deals; (b) diversifying and focus-oriented transactions; (c) acquisitions in which the bidder had a stake before the announcement; (d) all- cash, all equity, mixed offers and deals with undisclosed terms of transactions; (e) attitude to the bid announcement; and (f) location of the acquirer within Europe geography.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Panel A: whole sample																
Total	34	39	67	71	68	40	28	32	36	23	22	29	26	23	23	19
Percentage	5.9%	6.7%	11.6%	12.2%	11.7%	6.9%	4.8%	5.5%	6.2%	4.0%	3.8%	5.0%	4.5%	4.0%	4.0%	3.3%
Panel B: Geographical range																
Domestic bids	58.8%	59.0%	44.8%	40.8%	35.3%	30.0%	50.0%	31.3%	41.7%	21.7%	50.0%	31.0%	30.8%	34.8%	30.4%	31.6%
Cross border	41.2%	41.0%	55.2%	59.2%	64.7%	70.0%	50.0%	68.8%	58.3%	78.3%	50.0%	69.0%	69.2%	65.2%	69.6%	68.4%
Panel C: Industry relatedness																
Industry focus	70.6%	74.4%	61.2%	66.2%	63.2%	57.5%	57.1%	56.3%	63.9%	60.9%	63.6%	62.1%	61.5%	52.2%	65.2%	63.2%
Diversification	29.4%	25.6%	38.8%	33.8%	36.8%	42.5%	42.9%	43.8%	36.1%	39.1%	36.4%	37.9%	38.5%	47.8%	34.8%	36.8%
Panel D: Position at the announcement																
Toehold	11.8%	10.3%	9.0%	16.9%	8.8%	17.5%	14.3%	9.4%	8.3%	8.7%	9.1%	3.4%	3.8%	17.4%	0.0%	15.8%
No Toehold	88.2%	89.7%	91.0%	83.1%	91.2%	82.5%	85.7%	90.6%	91.7%	91.3%	90.9%	96.6%	96.2%	82.6%	100.0%	84.2%
Panel E: Payment method																
All cash	23.5%	30.8%	53.7%	56.3%	63.2%	55.0%	67.9%	50.0%	50.0%	65.2%	50.0%	51.7%	50.0%	60.9%	47.8%	57.9%
All equity	38.2%	17.9%	17.9%	19.7%	8.8%	25.0%	32.1%	28.1%	22.2%	30.4%	22.7%	27.6%	19.2%	4.3%	30.4%	15.8%
Mixed	20.6%	25.6%	13.4%	8.5%	14.7%	10.0%	0.0%	18.8%	19.4%	4.3%	18.2%	10.3%	26.9%	26.1%	21.7%	10.5%
Undisclosed	17.6%	25.6%	14.9%	15.5%	13.2%	10.0%	0.0%	3.1%	8.3%	0.0%	9.1%	10.3%	3.8%	8.7%	0.0%	15.8%
Panel F: Attitude to the bid																
Hostile	0.0%	2.6%	7.5%	5.6%	1.5%	0.0%	0.0%	0.0%	2.8%	0.0%	0.0%	0.0%	0.0%	4.3%	0.0%	10.5%
Friendly	97.1%	89.7%	83.6%	90.1%	95.6%	92.5%	96.4%	100.0%	97.2%	100.0%	100.0%	100.0%	100.0%	95.7%	100.0%	89.5%
Neutral	2.9%	7.7%	9.0%	4.2%	2.9%	7.5%	3.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Panel G: Acquirers region																
Continental Europe	52.9%	43.6%	53.7%	66.2%	60.3%	72.5%	39.3%	59.4%	55.6%	60.9%	59.1%	65.5%	73.1%	69.6%	60.9%	68.4%
United Kingdom	47.1%	56.4%	46.3%	33.8%	39.7%	27.5%	60.7%	40.6%	44.4%	39.1%	40.9%	34.5%	26.9%	30.4%	39.1%	31.6%

Appendix 7 - Firm specific characteristics

This table shows the financial and accounting characteristics of the firms prior to the announcement of the takeover deal. We report the information for the whole sample of bidders and targets and for sub-samples of UK and Continental Europe acquirers. For each variable we report the mean and median values. To assess if the sub-groups of UK and CE acquirers and whole sample of bidders and targets are similar, we have tested for the differences and the indicators ⁺⁺⁺, ⁺⁺ and ⁺ and ^{***}, ^{**} and ^{*} correspond to the statistical significance at the 1%, 5% and 10% level, respectively.

	UK bidders		CE bidders		All bidders		All targets	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Financial characteristics								
Market value (US\$ mln)	12,029 ⁺⁺	847 ⁺⁺⁺	18,210	4,000	15,716 ^{***}	2,192 ^{***}	1,628	243
Tobin's Q	2.25	1.86	2.17	1.69	2.20	1.76	2.34	1.71
MtB	2.43	2.12	2.69	2.02	2.58	2.06 [*]	2.03	1.92
Accounting characteristics								
Total assets (US\$ mln)	10,446 ⁺⁺⁺	1,012 ⁺⁺⁺	19,552	5,612	15,878 ^{***}	2,882 ^{***}	1,679	224
Total debt (US\$ mln)	2,520 ⁺⁺	108 ⁺⁺⁺	4,202	1,096	3,524	487 ⁺	450	17
Leverage	17.4% ⁺⁺	15.2% ⁺⁺⁺	20.4%	19.2%	19.2%	18.0% ⁺	18.8%	13.8%
Cash/Total Assets	13.7% ⁺⁺⁺	8.3% ⁺	9.8%	6.7%	11.4%	7.1%		
Observations	234		346		580		580	

Appendix 8 – CARs of all bids

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for the whole sample of bidders for 7 different event windows. The window T=0 stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ^{***}, ^{**} and ^{*} correspond to the statistical significance at 1%, 5% and 10%.

	Total sample		
			Positive
[-15;-1]	0.5413% [*]	[0.324%]	52.4%
[-1; 0]	-0.007%	[0.027%]	50.2%
T=0	-0.157%	[-0.105%]	48.4%
[-15;+1]	0.413%	[0.359%]	51.7%
[-1;+1]	0.021%	[-0.043%]	49.5%
[0;+1]	-0.129%	[-0.082%]	48.1%
[-15;+5]	0.516%	[0.440%]	52.1%
			<i>580 deals</i>

Appendix 9 - CARs by industry relatedness

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, divided by industry scope, for 7 different event windows. The window T=0 stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%.

	Industry relatedness						Difference	
	Focusing			Diversifying			Mean	Median
			Positive			Positive		
[-15;-1]	0.297%	[0.131%]	50.4%	0.957%**	[0.566%*]	55.8%	0.954%	0.565%
[-1; 0]	-0.246%	[0.069%]	50.4%	0.400%	[-0.042%]	49.8%	0.647%	-0.112%
T=0	-0.413%	[-0.037%]	49.0%	0.279%	[-0.167%]	47.4%	*0.692%	-0.130%
[-15;+1]	-0.149%	[0.117%]	50.4%	1.366%**	[0.449%]	54.0%	1.515%*	0.332%
[-1;+1]	-0.279%	[-0.165%]	48.8%	0.531%	[0.137%]	50.7%	0.810%	0.302%
[0;+1]	-0.446%	[-0.045%]	48.8%	0.410%	[-0.104%]	47.0%	0.855%	-0.059%
[-15;+5]	-0.110%	[0.351%]	51.5%	1.579%**	[0.965%]	53.0%	1.689%*	0.615%
	365 deals			215 deals				

Appendix 10 - CARs by geographical range

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, divided by geographical scope, for 7 different event windows. The window T=0 stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%.

	Geographical range						Difference	
	Domestic			Cross country			Mean	Median
			Positive			Positive		
[-15;-1]	-0.078%	[-0.578%]	44.6%	0.952%**	[0.857%**]	57.6%	1.030%	1.435%**
[-1; 0]	-0.523%	[-0.100%]	48.5%	0.335%	[0.109%]	51.3%	0.858%*	0.208%
T=0	-0.483%	[-0.186%]	45.9%	0.060%	[0.003%]	50.1%	0.543%	0.189%
[-15;+1]	-0.477%	[-1.070%]	44.6%	1.002%**	[0.867%**]	56.4%	1.479%*	1.937%***
[-1;-1]	-0.439%	[-0.206%]	45.9%	0.326%	[0.071%]	51.9%	0.765%	0.277%
[0;+1]	-0.399%	[-0.327%]	45.5%	0.050%	[-0.002%]	49.9%	0.449%	0.325%
[-15;+5]	-0.774%	[-0.953%]	46.3%	1.370%**	[1.168%***]	55.9%	2.144%**	2.122%***
	231 deals			349 deals				

Appendix 11 - CARS by method of payment

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, divided by means of payment, for 7 different event windows. The window T=0 stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%.

Payment Method						Difference (cash-equity)		Difference (cash-mixed)			
T=0	Cash			Equity			Mean	Median	Mean	Median	
	Positive			Positive							
	[-15;-1]	0.054%	[0.164%]	51.3%	1.138%	[0.126%]	50.0%	-1.084%	0.038%	-1.164%	-0.476%
	[-1; 0]	0.538%*	[0.204%*]	53.9%	-0.121%	[-0.444%]	45.2%	0.658%	0.648%*	2.197%***	1.337%***
	[-15;+1]	0.422%**	[0.177%*]	54.6%	-0.363%	[-0.723%]	41.9%	0.784%	0.900%**	2.390%***	1.356%***
	[-1;+1]	0.579%	[0.448%]	53.6%	0.611%	[-0.967%]	47.6%	-0.032%	1.415%	1.639%	2.004%*
	[-1;+1]	0.641%**	[0.315%**]	53.6%	-0.285%	[-0.708%]	45.2%	0.926%	1.022%**	2.610%***	1.056%***
	[0;+1]	0.525%*	[0.151%*]	51.6%	-0.527%	[-0.728%]	45.2%	1.052%	0.879%**	2.802%***	2.407%***
	[-15;+5]	0.725%	[0.688%]	53.6%	0.765%	[0.898%]	51.6%	-0.040%	-0.210%	1.887%*	2.669%**
304 deals			124 deals								
						Difference (mixed-equity)		Difference (cash-undisclosed)			
	Mixed			Undisclosed			Mean	Median	Mean	Median	
	Positive			Positive							
	[-15;-1]	1.218%	[0.640%]	54.0%	0.777%	[0.857%]	60.0%	0.081%	0.514%	-0.723%	-0.694%
	[-1; 0]	-1.660%*	[-1.133%**]	42.5%	-0.122%	[0.124%]	52.3%	-1.539%*	-0.689%	0.660%	0.080%
	[0 ; 0]	-1.969%***	[-1.179%***]	36.8%	-0.042%	[-0.072%]	47.7%	-1.606%*	-0.456%	0.463%	0.249%
	[-15;+1]	-1.060%	[-1.557%]	47.1%	1.229%	[1.272%]	56.9%	-1.670%	-0.590%	-0.650%	-0.825%
	[-1;-1]	-1.969%**	[-0.742%***]	36.8%	0.371%	[0.301%]	55.4%	-1.684%	-0.034%	0.270%	0.014%
	[0;+1]	-2.278%***	[-2.256%***]	33.3%	0.451%	[0.394%]	56.9%	-1.751%	-1.528%	0.074%	-0.243%
	[-15;+5]	-1.161%	[-1.981%]	43.7%	1.311%	[2.211%]	56.9%	-1.927%	-2.879%	-0.586%	-1.522%
87 deals			65 deals								

Appendix 12- CARs by existence of initial stake

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, divided by the existence, or not, of a stake held by the bidder before the announcement, for 7 different event windows. The window T=0 stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%.

	Position at the announcement						Difference	
	Toehold			No toehold			Mean	Median
			Positive			Positive		
[-15;-1]	-0.095%	[-0.944%]	46.8%	0.618%*	[0.386%]	53.1%	-0.713%	-1.330%
[-1; 0]	-0.090%	[-0.079%]	48.4%	0.003%	[0.050%]	50.4%	-0.094%	-0.130%
[0 ; 0]	-0.252%	[-0.167%]	43.5%	-0.145%	[-0.098%]	49.0%	-0.107%	-0.069%
[-15;+1]	-0.806%	[-1.123%]	46.8%	0.559%	[0.421%]	52.3%	-1.365%	-1.544%
[-1;+1]	-0.549%	[-0.004%]	50.0%	0.090%	[-0.047%]	49.4%	-0.639%	0.043%
[0;+1]	-0.711%	[-0.145%]	50.0%	-0.059%	[-0.082%]	48%	-0.652%	-0.063%
[-15;+5]	-0.498%	[0.038%]	50.0%	0.638%	[0.471%]	52.3%	-1.136%	-0.433%
			62 deals			518 deals		

Appendix 13 - CARs by attitude to the announcement

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, divided by attitude towards the bid, for 7 different event windows. The window T=0 stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%.

	Attitude to the bid						Difference	
	Hostile			No hostile			Mean	Median
			Positive			Positive		
[-15;-1]	2.481%	[1.682%]	64.3%	0.493%	[0.303%]	52.1%	1.988%	1.379%
[-1; 0]	-2.315%*	[-1.713%*]	21.4%	0.050%	[0.097%]	50.9%	-2.365%*	-1.810%*
[0 ; 0]	-1.497%	[-0.347%]	35.7%	-0.123%	[-0.102%]	48.8%	-1.373%	-0.245%
[-15;+1]	0.342%	[-1.335%]	42.9%	0.415%	[0.369%]	51.9%	-0.073%	-1.704%
[-1;+1]	-2.958%*	[-1.836%**]	28.6%	0.095%	[-0.012%]	50.0%	-3.053%*	-1.824%*
[0;+1]	-2.139%	[-1.899%*]	28.6%	-0.079%	[-0.053%]	48.6%	-2.060%	-1.847%
[-15;+5]	1.287%	[-1.040%]	50.0%	0.497%	[0.511%]	52.1%	0.790%	-1.551%
			15 deals			565 deals		

Appendix 14 - CARs by bid announcement period

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, divided by announcement period, for 7 different event windows. The window T=0 stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%.

	Announcement period						Difference	
	Pre-2008			Pos-2008			Mean	Median
			Positive			Positive		
[-15;-1]	0.818%*	[0.143%]	51.6%	0.285%	[0.528%]	53.2%	0.533%	-0.385%
[-1; 0]	-0.391%	[-0.228%]	45.9%	0.350%	[0.234%]	54.2%	-0.741%*	-0.463%*
T=0	-0.406%	[-0.168%*]	45.5%	0.074%	[0.018%]	51.2%	-0.480%	-0.185%
[-15;+1]	0.785%	[0.351%]	52.3%	0.067%	[0.366%]	51.2%	0.718%	-0.016%
[-1;+1]	-0.019%	[-0.200%]	48.4%	0.058%	[0.027%]	50.5%	-0.077%	-0.227%
[0;+1]	-0.033%	[-0.150%]	48.0%	-0.218%	[-0.061%]	48.2%	0.185%	-0.089%
[-15;+5]	0.972%	[0.810%]	53.0%	0.094%	[0.348%]	51.2%	0.878%	0.462%
	279 deals			301 deals				

Appendix 15 - CARs by acquirer region

This table reports the average and median (in rectangular brackets) values of the cumulative abnormal returns for bidders, according to the region of the bidder, for 7 different event windows. The window T=0 stands for the day of the announcement. The abnormal returns are computed as the difference between the realized returns and the market model expected returns. The market model is based on the MSCI-Europe index and the parameters are estimated over a period of 240 days starting 300 days before the announcement. T-statistic test and Wilcoxon signed rank test are used to assess the statistical significance of the average and median returns, respectively. ***, ** and * correspond to the statistical significance at 1%, 5% and 10%.

							Difference	
	UK acquirers			CE acquirers			Mean	Median
			Positive			Positive		
[-15;-1]	0.469%	[-0.205%]	48.7%	0.591%	[0.546%]	54.9%	0.122%	0.751%
[-1; 0]	-0.603%*	[-0.101%]	47.86%	0.397%	[0.116%]	51.73%	0.999%**	0.217%*
T=0	-0.540%	[-0.102%]	48.29%	0.103%	[-0.107%]	48.55%	0.643%	-0.005%
[-15;+1]	-0.256%	[-0.191%]	48.7%	0.865%*	[0.619%]	53.8%	1.121%	0.809%*
[-1;+1]	-0.787%*	[-0.206%*]	47.01%	0.568%*	[0.032%]	51.16%	1.356%**	0.238%**
[0;+1]	-0.725%*	[-0.289%]	44.87%	0.275%	[0.016%]	50.29%	0.999%*	0.305%
[-15;+5]	-0.420%	[-0.787%]	46.2%	1.150%**	[1.286%**]	56.1%	1.570%*	2.073%**
	346 deals			234 deals				

Appendix 16 - Correlation matrix between exogenous variables

	Before_08	Agency	Cash	Cash_TA	Toehold	Hostile	High_B_Q	Lev	Low_T_Q	RSize	SSIC	UK
Before_08	1	0.005	-0.050	0.038	0.024	0.082	0.069	0.024	-0.100	0.111	0.060	0.052
Agency		1	-0.049	0.645	0.011	-0.001	0.033	-0.478	-0.038	0.110	0.030	0.160
Cash			1	-0.133	-0.061	-0.019	0.153	-0.028	-0.107	-0.390	-0.059	-0.082
Cash_TA				1	0.050	-0.030	-0.021	-0.352	0.017	0.100	0.011	0.147
Toehold					1	0.084	0.013	0.057	0.002	0.006	0.023	-0.023
Hostile						1	0.011	0.012	-0.024	0.066	0.013	-0.068
High_B_Q							1	-0.014	-0.305	-0.208	-0.011	-0.037
Lev								1	0.125	-0.025	0.021	-0.106
Low_T_Q									1	-0.087	0.056	0.020
RSize										1	0.081	0.084
SSIC											1	0.056
UK												1