CASH, ACCESS TO CREDIT, AND VALUE CREATION IN M&As

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Abstract

The worldwide availability of easy external financing has been an essential driver of recent M&A activity and a growing perception exists that such conditions may have resulted in a large number of non-value increasing transactions. This paper evaluates the interaction between credit conditions, the method of payment and value creation in a sample of European M&A transactions. The contribution of the paper is twofold. First, we analyze to what extent more generous financing conditions lead to deals that were less-likely to be value creating. Second, we estimate a joint model on the likelihood of choosing cash as a method of payment and the amount of value-created by such deals, controlling for the impact of financial conditions. We find that lower corporate bond spreads are correlated with less value creation in M&A deals suggesting that easy financial conditions may have resulted in M&A deals less-likely to generate value. We also find that higher leverage and a better cash-flow position of the target are more likely to result in cash deals and these deals provide higher excess returns to targets although do not generate value for the deal.

1 Introduction

The worldwide volume of announced M&A transactions reached in 2007 an all time high of $4,367 billion, a 21% increase relative to 2006. This value was above the level reached in 2000, the year when the previous peak in M&A activity happened. The volume of M&A activity drastically dropped in the second half of 2007, with a 19% decline relative to the first semester of that year. This drop was more dramatic in the US, where the volume fell 36%. M&A volumes in Europe reached $1,794 billion and were higher than in the US.[1] Such volume of M&A activity continued an increasing trend throughout the first part of the decade.

There is a widely held perception that this expansion in activity during this period could have been fuelled in part by the increase in liquidity, and the favourable monetary conditions in the major industrialized countries [ECB (2006a)]. Overall, monetary conditions and low worldwide real interest rates had remained at historically low levels for most of that period, especially at the far end of the yield-curve, during most of this century. These lax monetary conditions led to a boom in credit growth in the economy. In particular, in the case of the euro area, bank credit grew at rates of over 8% over the period 2005-2007 and a large portion of this growth was channelled to non-financial corporations. Credit growth was also much larger in those countries most active in M&A activity. In fact, the strong correlation between M&A activity and the evolution of liquidity in financial markets strongly suggests such a relationship. M&A volumes peaked during the first semester of 2007 and drastically dropped after the beginning of the liquidity crisis in July of that year.

This upsurge in M&A transactions and credit growth has led to concerns on the value generated from these recent M&A transactions and the potential overall increase in risk that this corporate activity may result in the long-run [ECB (2006a)]. The underlying rationale for these concerns is that some of the M&A deals, especially during the latter part of the period, might have been driven by favourable firm valuations and ample and cheap liquidity rather than by efficiency or strategic motives.

This pattern of liquidity increase and high M&A volume has evolved with the increasing perception that financial risk in debt markets was not being appropriately priced and that financial disintermediation had gone too far. Supporting this perception, observers argue that the composition of participants in the M&A market had also changed drastically. Private equity accounted for 41% of the US market through the first semester of 2007 while their contribution dropped to only 15% of volume in the second semester. A second feature is that the current surge in M&A activity has been characterised by an increase in cash-based transactions [ECB (2006a)].

The first contribution of this paper is to analyze to what extent more generous financing conditions lead to deals that were less-likely to be value creating. Value creation is defined as the net change in shareholder value for the acquiring and target companies as the result of the deal. The size and sources of value creation from an M&A transaction differ depending on the underlying synergies driving the deal and the monetary and financial conditions that may make the deal more attractive from the financial point of view. Lower financing costs and more relaxed financing conditions may help in generating value to the

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1. The data in this paragraph comes from Thomson Financial.

extent that make the access to financing more attractive in economies with more constrained financial markets. However, to the extent that this access to finance is not properly managed or the risk is not price correctly, the likelihood of financing being allocated to non-value created deals increases. The experience of the latest cyclical upswing suggests that the existence of a favourable financing environment increases both the likelihood of M&A deals occurring, and the likelihood that these transactions will be in cash. However, the impact in terms of value creation of this merger wave, favoured by easy credit conditions, is uncertain. This is the first question addressed in this paper. To this end, we use a sample of M&A deals based in the European Union for the period 2000-2007.

The context of the European Union provides a unique setting for evaluating the impact of the development of more relaxed financing conditions on the impact of M&A. As described above, European M&A grew tremendously during the last decade resulting in a higher overall volume of M&A in 2007 than the United States. This evolution was in large part fostered by the creation of the euro, and the establishment of a monetary environment that allowed the development of large markets for international debt. Corporate financing in Europe had traditionally been very bank focused and access to corporate debt markets was highly unlikely. However, since the creation of the euro the growth in international debt markets in euro has been spectacular. The share of the supply of debt securities issued in euro in the world was 48.4% in 2007, much larger than that of the U.S. dollar which stood at 34.9%.[2] Furthermore, this share had increased since the inception of the euro by 16 percentage points. Further evidence of this increase in the reliance in financial markets is that the number of corporations from the euro area with rating increased by 123% from 1998 to 2006. In comparison, the number of UK firms with rating increased by 39% during the same period.[3] Such a fast and profound development of international debt markets is likely to have had a deep impact on the amount and extent of M&A activity that Europe has observed.

Beyond the issue of the development of these markets for corporate debt and their impact on value creation from M&A, the paper also provides some evidence on the determinants of the likelihood of providing a cash-payment and the value generated by doing so. The M&A literature has documented that both the abnormal returns to shareholders of the target firm and the premia paid by the acquirer are larger for cash than for stock-based deals [Wansley et al. (1983), Eckbo and Langohr (1989), Huang and Walkling (1987), Franks et al. (1988), Davidson and Cheng (1997), and Draper and Paudyal (1999)]. This result is somewhat surprising since, from the target's point of view, cash is a safer and more liquid method of payment and, as such, we would expect that the premium paid to the target should therefore be lower in cash transactions.

A number of potential explanations for this puzzling result have been put forward in the literature. Some of these have to do with the likelihood of the deal going through. In this context, cash is most likely used in competing bids as a form to make the bid more attractive relative to rivals' bids, and also take shorter to complete and are more certain than stock deals so that excess returns around announcement fail to reflect the full premium embedded in an offer in stock. Others have to do with the signalling effect it has on the likelihood of the deal being value-generating [see Bruner (2004) for a summary of these arguments]. Two of them are related to value generation through increases in leverage and a larger use of debt. First, debt is a lower cost, and more tax-efficient form of financing. The second argument

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points to the monitoring benefits of leverage. A leveraged transaction will require stricter monitoring from the creditors that provide the financing. Higher monitoring is more likely to result in a value increasing transaction. A third argument highlights the role of asymmetric information. A purchase with stock implies two transactions: the M&A itself and an increase in the equity of the buying firm. An announcement of a stock-based M&A transaction is a signal to shareholders of the buying company that managers may perceive their stock to be overvalued [see, for instance, Shleifer and Vishny (2003)]. Shareholders may therefore react by selling the stock upon announcement.

This literature has focused on the value generated by a given method of payment and not on how the method of payment chosen itself may also depend on the existing financial conditions as well as affect the value created from the deal. Against this background, the second contribution of this paper is to estimate a joint model on the likelihood of choosing cash as a method of payment and the amount of value-created by such deals. In doing so, we explicitly control for the impact that financial conditions have on the likelihood of performing cash transactions and on resulting in a value creating deal.

The results in the paper provide evidence on the line that easily available financial conditions may have resulted in M&A deals less-likely to generate value. Lower interest rate spreads for the acquirers result in lower value creation from M&A deals in the sample. The results also suggest that the spread was the only determinant of the credit markets that provide statistically significant evidence. Neither the evolution of credit ratings in the industry nor the proxies for a higher access to credit markets are relevant determinants the likelihood of a cash payment or of the magnitude of value creation. The paper confirms previous finding that cash-payment results in a value creation for the target shareholders but we find that it is not a source of value generation overall for the deal. This confirms that a cash payment is more a way to make a deal more attractive than a source of value in itself.

The rest of the paper is organised as follows. Section 2 describes the basic features of the recent wave of M&A activity in the euro area non-financial corporate sector. Section 3 provides an overview of the theoretical and empirical literature dealing with the relationship between credit conditions, method of payment and value creation in M&A transactions. Section 4 presents an empirical strategy to evaluate the influence of the payment method on value creation. Section 5 documents our sample of M&A deals. Section 6 presents the results on the analysis of the determinants of paying with cash and on the link between payment method and value creation. Section 7 concludes the paper.

2 Recent trends in M&A activity in the Euro area non-financial corporate sector

M&A activity in Europe had been increasing at very high rates until the second quarter of 2007, when quarterly M&A volume reached an all-time high slightly above $600 billion. M&A activity had been increasing consistently from an annual volume of $600 billion in 2003 to more than triple that amount in four years. This increase took place in a context of very favourable financing conditions (with interest rates at historically low levels) and ample liquidity. It also coincided with years of strong profit performance by corporations [see ECB (2006a) and European Commission (2007)].

This large amount of activity was coupled with changes in the structure of the M&A industry due to the presence of new large players. Private Equity firms took a more active role increasing the number and value of transactions in which they participated, so that by the first half of 2007, private equity firms accounted for more than 30 percent of the value in European M&As.

This trend drastically changed in the second half of 2007 with the appearance of the financial turmoil in developed markets. M&A activity by value dropped by more than 50 percent in the second half of the year relative to the first half, and the same happened to the activity initiated by private equity firms. The drop in terms of numbers of deals was even larger. During the first four months of 2008 announced private equity buyouts have dropped to less than 300 deals, a number similar to what we had observed at the beginning of the last merger wave in the second half of 2003.

Looking at the industrial composition, the M&A wave in the late 1990s was mainly driven by the stock market boom in IT-related industries and the deregulation and consolidation of the telecommunication sectors. By contrast, the recent merger wave rather than being concentrated on specific sectors has been more broadly distributed across industries. For instance, acquisitions in the telecommunications, media and technology industries accounted for only 22% of the value of all M&A transactions in 2005. In contrast, deals in the energy, utility and mining industries accounted for 17%, the same share than financial transactions. More recently, this trend towards a lower share of the IT based industries and a higher share of industrial and utility deals has become more pronounced, specially within large deals. In the first four months of 2008 announced M&As in these industries accounted for 5.2% of overall volume while deals in the energy, mining and utility sectors accounted for 45.5% of overall volumes.

In terms of the geographical scope of the deals, domestic M&A transactions are still predominant, although acquisitions of firms located in Central and Eastern Europe has shown an increasing importance. Moreover, while over the 1990s the share of acquisitions of non-EU firms in total EU acquisitions increased, this trend was reversed in the first half of the current decade [Garnier (2007)].

The world share of acquisitions of EU firms by extra-EU firms decreased continuously over the 1990s. This trend has only started to reverse in 2005, mainly due to the increasing attractiveness of some EU services sector firms [see Garnier (2007)]. Overall, it appears that the process of European economic integration has not been enough to offset

the loss of interest of non-EU investors on EU firms motivated by the integration of international markets.

3 Credit conditions, form of payment and value creation in M&As

The analysis of M&A activity with an historical perspective reveals that this activity appears in waves [see, for instance, Bruner (2004)]. Different types of shocks (technological innovations, regulatory changes, distortions in market valuations,…) have been identified as triggers in past merger waves [Andrade et al. (2001)]. Although the precise characteristics driving each merger wave (industry focus, type of transaction, prevalence of hostile deals, relative importance of different forms of payment and financing,…) differ across M&A waves, all these episodes share some common elements. Periods of high M&A activity are usually associated to a growing economy, a period of strong technological innovation in certain industries, a buoyant stock market, and low interest rates.

Among the different potential explanations for the procyclicality of M&A activity, the role of interest rates and access to financing are particularly relevant. Lower interest rates imply that the same stream of expected future cash-flows has a higher present value, therefore increasing asset valuations. Low interest rates also reduce the opportunity cost of holding cash by corporations. Firms set cash holdings at a level that equates their marginal cost and benefit. As a result cash holdings of euro area firms rose in the first half of the current decade.[4]

Beyond the impact that low or falling interest rates have on cash-holdings and M&A activity, more favourable financing conditions also imply a combination of lower risk-premium associated with a certain degree of leverage or external financing, and a higher likelihood of obtaining the necessary financing. These conditions increase the present value of future cash-flows through lower risk and higher tax-savings from leverage and are likely to result in successful merger deals. Higher credit availability also facilitates cash-financed transactions through increased leverage. Therefore to evaluate the impact on value creation from more easing on financing conditions we also need to take into account that the method of payment is likely to also be affected by the credit conditions existing in the market.

The existing academic literature has analyzed the relative attractiveness of using different form of payments in M&A transactions as well as the relationship between the form of payment and the premium generated for the different investors and the overall likelihood of the deal resulting in value creation. Let's analyze them in tandem.

3.1 Cash vs. stock
The appropriate payment method is a key issue to explain the likelihood of M&A transactions and their successes. Bruner (2004) suggests that cash is the predominant form of payment in M&A deals and that its prevalence is larger in smaller acquisitions and when the stock market is depressed. Cash is favoured as a form of payment in M&A deals in periods of easy financing conditions. Cash is also more usual in hostile deals and when the target's ownership is concentrated. Nevertheless, the empirical literature has pointed to a number of other factors conditioning the choice of the method of payment.

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4. ECB (2006b) suggests this lower opportunity cost of holding cash (i.e. low profitability of alternative financial investments) and the expected increase in the share of intangible assets (that tend to increase the cost of external finance as the fraction of non-collateralized assets increases) as the two main drivers of this increase in cash.

Martin (1996) explores the motives underlying the payment method in a sample of US corporate acquisitions. He finds that the likelihood of stock financing increases with the acquirer's growth opportunities and the pre-acquisition market and acquiring firm stock returns. The likelihood decreases with higher cash availability, higher institutional shareholdings and blockholdings, and in tender offers. Similarly, Faccio and Masulis (2005) argue that the choice of the method of payment is the result of a trade-off between bidder corporate control threats, which discourage stock financing, and bidder financing constraints, which encourage stock financing. They find that both types of forces are relevant for their sample of European deals.

3.2 Payment Method and Merger Premium

Target shareholders are not indifferent to the form of payment proposed in a transaction. As mentioned in the introduction, from the targets' point of view, a cash offer is both a more liquid and a less uncertain form of payment than a stock offer. This makes an equal offer in terms or prices more valuable to the target shareholders when made in cash rather than stock. We would expect that the premium that the buyer needs to pay to the seller should therefore be lower rather than higher in cash transactions. However, the empirical literature has found that both the abnormal returns to shareholders of the target firm and the premia paid by the acquirer are larger for cash than for stock-based deals [Wansley et al. (1983), Eckbo and Langohr (1989), Huang and Walkling (1987), Franks et al. (1988), Davidson and Cheng (1997), and Draper and Paudyal (1999)].

Several explanations have been put forward for this puzzling finding. The observed higher premium may be partially due to the mechanics of the transaction. Acquirer excess returns in stock deals are negative on average. Given that the stock of the acquirer is also the mean of payment, the post-announcement realized premium for the seller is lower than the expected premium prior to announcement. However, one should expect shareholders to anticipate this and require a higher ex-ante premium. A second explanation focuses on the fact that cash is most likely used in case of competing bids. In this case, competition for the target bids up the market premium and makes cash a more attractive mean of payment. A third explanation suggests that closing in stock-deals is more uncertain and takes longer to complete so that excess returns around announcement fail to reflect the full premium embedded in an offer in stock. A final explanation has to do with tax structures. Usually in cash deals, the target's shareholders pay immediately taxes on capital gains reducing the effective after-tax premium on the deal. In contrast, in stock deals the underlying tax obligation from capital gains is usually postponed until the shareholders of the target firm actually sell the shares of the acquiring firm that they received in the transaction.

3.3 Payment Method and Value Creation

Less explored in the literature is the impact that payment method also has on value creation from a deal in these circumstances. Cash is often viewed as the payment method that most likely will generate value in a deal. The two well-known value increasing effects highlighted in the literature from cash transactions are: discipline and tax saving motives.

In most cases, buyers have to borrow to finance cash deals. In these cases, there is a discipline effect associated to debt financing. Monitoring by creditors may be helpful in order to bind managers to achieve the targeted levels of performance after the transaction. Bharadwaj and Shivdasani (2003), analysing a sample of 115 cash tender offers between 1990 and 1996, find that acquisitions entirely financed by banks are associated with large and significantly positive acquirer announcement returns. They interpret their results as supportive

of the hypothesis that bank debt performs an important certification and monitoring role for acquirers in tender offers. Raad and Wu (1994) also find that acquirer returns are negative when payment is made in stock, and particularly when the acquiring firm leverage decreases. In contrast, when leverage increases or when management ownership is high, the acquiring firms experience significant positive returns.

The literature has also highlighted the role that the payment method can have in situations of information asymmetries or the existence of market distortions in company valuations. To the extent that managers perceive that their firms' stocks are overpriced and those of potential targets are underpriced, they will try to address stock based deals. In this line, Dong et al. (2006) using two alternative valuation ratios find that high valuation bidders are much more likely to use stock rather than cash and tend to pay a much higher premium. Shleifer and Vishny (2003) argue that merger waves take place usually in periods of stock market buoyancy when distortions in stock market prices tend to be more frequent.

In this sense, payment with shares may be taken as a signal of low value creation as this could indicate that the deals have been addressed to take advantage of stock market distortions rather than as a result of strategic considerations or the attempt to accomplish efficiency gains. Eckbo et al (1990) provide a theoretical signalling framework in which the bidder's post-acquisition value is directly related to the percentage of payment made in cash. Hansen (1987) also shows that when there is asymmetry in the knowledge on the value of the target, the acquirer will prefer to offer stock, since the contingency payment implicit in the payment with stocks will partly address the information asymmetry.

Consistent with these arguments, share price gains surrounding takeover announcements for the bidder and for the combined firm are significantly lower in stock-financed acquisitions [see, among others, Travlos (1987), Loughran and Vijh (1997), and Heron and Lie (2002)]. Furthermore, there is also evidence that managers that conduct stock-financed acquisitions might have used discretionary accruals to temporarily inflate their reported earnings and consequently increase the purchasing power of their stock [see Erickson and Wang (1999)].

The second argument for value generating cash deals is the tax implications from increasing leverage. Higher debt implies higher interest payment, a deductible expense, and lower tax obligations. Therefore, from the acquirer's standpoint cash deals reduce tax expenses and are more advantageous in terms of value creation [see Sullivan et al. (1994)].

Nevertheless, if the predominance of cash acquisitions is motivated by an excess of cash holdings as a result of a protracted period of high profits, these acquisitions might turn out being value destroying. According to the free cash flow theory of Jensen (1986), managers may opt for making investments that are not value increasing for the shareholders instead of paying out dividends. Harford (1999) reports evidence in favour of the free cash flow hypothesis. He finds that the abnormal stock price reaction to acquisition announcements by cash rich firms is negative and decreasing in the amount of excess cash held by the acquirer. He also finds a negative change in the operating performance of the combined firm after an acquisition by a cash rich firm.

3.4   Credit Conditions and Value Creation from M&A
The above discussion seems to directly lead to a relationship between more relaxed financing conditions increasing the likelihood of cash transactions that result in also more likely value

creating M&A deals. However, this relationship does not need to be so straightforward. Asset prices may also depend on the existing financing conditions and are likely not to be exogenous to them making it more likely that overpayment maybe taking place. The kind of deals that suddenly become feasible to finance maybe quite different and those chosen not necessarily be value creating.

The easing of financial conditions may also stimulate acquisitions deals motivated by managerial particular interests rather than by a value maximization objective. In particular, an excess of cash holdings may potentially lead to an increase in the likelihood of addressing value destroying transactions. It has been often argued that deal size is a value-maximizing strategy for managers even if it does not imply higher synergy values. The prevalence of advantageous credit conditions increases the ability to finance large acquisitions. Therefore, an extended period of favourable financing conditions increases the likelihood of bigger deals, than in turn, may end up being value destroying transactions. Consistently with this view, Moeller et al. (2004) find, using a sample of acquisitions by US public firms from 1980 to 2001, that the announcement return for acquiring-firm shareholders is roughly two percentage points higher for small acquirers irrespective of the form of financing and after controlling for other firm and deal characteristics. Moeller et al. (2005) corroborate this result by finding that the average negative excess returns around announcement, for a sample of US M&A deals over the period 1998-2001, is explained by a small number of acquisitions with negative synergy gains by firms with extremely high valuations.

The goal of the paper is to determine to what extent the observed link between cash payment and value creation in M&As is a function of the existing financing conditions and how changes in such environmental conditions affect the likelihood that deals generating shareholder value actually take place.

4   Empirical implementation

We develop an empirical model of payment methods in M&A announcements so as to evaluate the impact that external financing conditions have on value creation. An M&A transaction implies the combination of two existing corporations into a single entity with a unified business plan. The likelihood of an acquirer engaging in a merger is a decision that involves the expected value creation from the transaction. This value creation depends on the expected synergies to be developed within the new business plan for the joint entity and the value creation through the deal structure. Such a transaction is stated to generate value when

$$V_I^t > V_T^{t-1} + V_A^{t-1},$$

where the subscripts T, A, and I refer to the target, acquiring, and resulting joint firm after the transaction, the superscript t is the announcement date of the transaction, and V refers to the value of the corporation.

The value of a corporation is the present value of the expected equity cash-flows (CF) the company will obtain in the future discounted at the cost of capital (K), $V_I = PV(CF_I, K_I)$. Value creation from the transaction, VC, results when

$$VC = V_I^t - (V_T^{t-1} + V_A^{t-1}) = PV(CF_I, K_I) - (PV(CF_T, K_T) + PV(CF_A, K_A))$$

Value creation arises either from a higher ability by the joint entity to generate cash-flows than that of the two independent entities or a change in the cost of capital that result in a higher present value of those expected cash-flows. These sources of value creation are generally referred to in the literature as synergies. Synergies, usually captured as higher cash-flows in the expression above, are of two broad types: cost synergies arising from economies of scale in the technology or from cost savings from eliminating redundant operations; and, revenue synergies arising from a higher ability to perform cross-selling to existing clients or to access new customers.

Value can also arise from changes in the discount factor. Common arguments for changes in the discount factor due to the transaction include: changes in the capital structure, in access to financing, and in the risk perception of the joint entity. All these factors affect the discount rate and to the extent that the effective discount factor declines, result in value creation.

One of the key components of the deal structure is the method of payment. Cash payment is the preferred method of payment by selling shareholders. Cash is the most liquid form of payment and it tends to be the most certain form of payment, certainly relative to payment in shares of the acquiring firm. As such, it reduces uncertainty to target shareholders and it increases the likelihood that the deal goes through while at the same time reducing the time from announcement to completion. Relative to a payment with stocks, cash also generates an important component of signalling to investors. Payment with shares is more likely when managers of the acquiring firms believe its own shares are overvalued. Therefore, a share deal tends to be viewed with scepticism by investors.

We model value creation from the deal (VC) as a function of a set of specific characteristics of the deal (X), the method of payment (C) and other environmental characteristics (W):

$$VC_{it} = \beta X_{it} + \delta C_{it} + \alpha W_{it} + \upsilon_{it} \qquad (1)$$

Among the specific deal characteristics we include those aspects that are specific to the target and acquiring firms involved and affect the value generated from the deal but are pre-determined by the characteristics of these firms. Such variables include dummy variables to indicate whether the firms operate in the same industry or are from the same country.

Regarding the method of payment, we measure the use of cash. We use two alternative measures: CASH, is a dummy that takes the value of 1 if the payment is 100% cash and zero otherwise, and PCASH is the percentage of the payment made in cash. Finally, we include other variables that may affect the value creation from the deal but are exogenous to the deal itself. Mainly we include controls for the credit conditions in the industry and country, and time effects.

The acquiring firm chooses the payment method based on the characteristics of the target firm and its own situation. As such, the variables C are endogenous variables and likely to be correlated with other determinants of value creation in the deal such as the expected evolution of the business plan of the deal and the environment. Firms that have or generate more cash from operations, and that operate in industries with an easier access to raising debt in financial markets, are more likely to engage in transactions involving a higher percentage of cash payments. Furthermore, to the extent that the determinants of the variable C are correlated with the error term v, the estimated coefficients on the Cash variables will be biased.

We model the endogeneity of the payment variables, C. Valid instruments are variables (Z) capable of predicting the likelihood of a cash transaction and likely not to be correlated at the same time with value generated from the deal. Natural instruments with these characteristics are those of the acquiring company that explain the firm's financial condition. A more relaxed financial situation in terms of existing cash position, capital structure and ability to generate cash from operations will help determine the likelihood of a payment in cash and do not have much to do with the future value creation from the deal in terms of expected generated synergies. Proxies for access to financial markets and for the cost of credit are also likely to be good predictors of a cash transaction.[5]

Therefore, we model C as:

$$C_{it} = \Phi(Z_{it}, W_{it}; \phi, \varphi) \qquad (2)$$

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5. It could be argued that our instruments might be capturing not only the probability of paying with cash but also the extent to which the acquirer is financially constrained. If this were the case, and assuming that those companies that are financially constrained might only engage in M&A deals that are more likely to create value, our estimation of the value creation of using cash could be biased upwards as we could be capturing the selection effect of those firms that are financially constrained. Nevertheless, it has to be mentioned that some of our instruments (spreads and ratings-related variables) are measured at the industry level, which mitigates the risk of self-selection.

where (ϕ, φ) are parameters to be estimated, and the specific functional form $\Phi(.)$ depends on the cash variable being instrumented. For the case of PCASH, it will be a linear polynomial function, while for CASH it will be a probit model.

The total value created from the deal is measured as the sum of the value created for the target and the value created for the acquirer.

$$VC_{it} = VC_{it}^{T} + VC_{it}^{A} \qquad\qquad (3)$$

We measure VC for each of the firms as the excess return to shareholders from the acquiring and target firm around the announcement of the merger deal. We measure these excess returns for windows of different length. The overall length for the observation windows goes from three months prior to announcement to up to a year after announcement.

We are interested not only in determining the value creation from the deal but also on improving our understanding of the distribution of the rents between the target and acquiring shareholders. Therefore, we estimate separately equations (1) and (2) for the value creation measure of the acquiring and target firms.

$$VC_{it}^{T} = \beta X_{it} + \delta C_{it} + \alpha W_{it} + \upsilon_{it}^{T}$$
$$VC_{it}^{A} = \beta X_{it} + \delta C_{it} + \alpha W_{it} + \upsilon_{it}^{A} \qquad\qquad (4)$$

The exogenous determinants of the deal, X, in the specification include: DOMESTIC, a dummy that takes the value of one if the target and acquiring firm are from the same country and zero otherwise; SAMESIC, a dummy that takes the value of one if the target and acquiring firm main activity is in the same industry and zero otherwise; and, DEALVALUE, which is the log of the value of the deal, measured as the actual value transacted of the target firm.

The key interest is the role that external credit market conditions have on the form of payment and likelihood of value generation. We created a number of variables to proxy for the creditworthiness and credit availability of the acquirers. These variables include: AVERATING, the log of the average rating of the companies in the same sector and country as the acquirer;[6] LOWRATING, the percentage of firms in the same sector and country as the acquirer with a rating below A-; NEWLYRATED, increase in the number of rated companies in the same sector and country as the acquirer; and, RELUPDOWN, a measure that proxies the sign of the changes in ratings in the same sector and country as the acquirer.[7] In addition, we also consider a measure of the cost of credit faced by the acquirer. We are interested in evaluating the part of the cost of credit that is likely to result in value creation for a deal. Such concept does not depend on the overall level of the interest rates in the economy, since this may affect the overall value of financial assets but not the relative value created from a particular deal. Instead we want to capture the differential cost for the acquirer from obtaining debt financing in the markets. We measure this differential by

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6. The data on ratings is obtained from the CreditPro database that contains the ratings by Standard&Poors. We assign a numeric value (going from 1 to 17) to each of the S&P ratings. One is the lowest rating (C/CCC) and seventeen is the highest (AAA).

7. RELUPDOWN is defined as the number of upgrades minus the sum of the numbers of downgrades, defaults and non-rated divided by the total number of rated companies, in the same country and industry as the acquirer.

the average corporate bond spread faced by a firm in the same industry and country as the acquirer (SPREAD).[8] This latter variable depends on the average rating of the industry of the acquiring firm as well as on the level of corporate spreads for the different ratings. Therefore, the SPREAD variable, as the credit availability proxies based on the ratings data, depends on the creditworthiness or risk faced by the acquirer, but it also depends on the price of risk. Finally, we include a set of industry dummies. These variables are the key environmental characteristics that affect the deal value as well as the likelihood of a cash transaction, W.

Finally, among the set of exogenous instruments that affect the likelihood of a cash transaction in equation (2), the matrix Z, we include: OPCASH which is the amount of operating cash-flow generated by the acquiring firm; ACASH, the amount of cash and cash equivalents of the acquiring firm the year prior to the transaction; and, LEVERAGE the ratio of net debt to total assets of the acquiring firm. Recall, that these variables in order to be valid instruments should help in predicting the likelihood of a cash transaction but not to be correlated with value generated from the deal. This lack of correlation makes these measures of the financial condition of the acquiring firm natural instruments. Proxies for access to financial markets and for the cost of credit are also likely to be good predictors of a cash transaction. However, these factors are also likely to affect the value generation from the deal and they are included both in equations (1) and (2) above.

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8. This variable is obtained from Datastream and it is defined as the corporate bond spread applied to a company with the average rating of the companies in the same sector and country as the acquirer. It is expressed in percentage points.

5   Data Sample and Description

We obtain our sample of mergers from Thomson Financial´s M&A database. The selected sample includes M&A transactions announced over the period January 1, 1999-March 31, 2007 in which both firms involved in the transaction: 1) belong to EU-15[9] countries, 2) were non-financial companies, and 3) were publicly traded firms. We also required that a minimum of 20% of the target company was acquired in the transaction and that the deal value was known and greater than $1 million. We excluded those deals in which the buyer already owned 20% of the target company before the deal. Our initial sample included 611 deals.

From this initial sample we excluded those deals for which we lack information on total return to shareholders for either the target or the acquirer (122 deals dropped). We also decided to drop from the sample some outliers in terms of the excess returns to either the acquirer or the target firms[10] (19 deals dropped). The resulting final sample includes 470 transactions.

Table 1 provides some information on the sample composition. It is noteworthy the high proportion of mergers involving a UK company, reflecting the fact that the market for corporate control is particularly developed in that economy. Over time, the composition of our sample reflects the intense M&A activity that took place in 1999 and 2000.[11] Domestic mergers (76%) as well as focus mergers, i.e. involving two firms from the same 2-digit SIC code (62%) are predominant in our sample (70%).

As regards the evolution of the proxies for corporate creditworthiness and access to financial markets, Figure 1 displays a reduction in the average (across countries and industries) rating of rated companies over the sample period (panel 1) and, consistently, an increase in the proportion of companies with low ratings (panel 2). These developments are explained by an increase in the number of rated companies over most of the sample period (panel 3) and by a predominance of downgrades (panel 4). The increase in the number of rated companies reflects the greater access of the corporate sector to financial market financing —although, on average, newly rated companies start with a lower than average rating— while the large number of downgrades might be explained by the substantial increase in corporate leverage as a consequence of the loose credit conditions. In this respect, Figure 2 shows that corporate bond spreads, remained at historically low levels over the period 2003-first half of 2007. Interestingly, these spreads display a negative correlation with M&A activity in the European Union, proxied both by the number of deals and by their volume, which is consistent with a potential link between merger waves and cyclical access to liquidity. Moreover, looking at disaggregated data by industry and year, there is a positive correlation between the number (and volume) of merger deals and the increase in the number of rated companies.

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9. Throughout this paper, we have considered the European Union of 15 countries, before enlargement on 1 May 2004.
10. More precisely, we drop a deal from the sample if the excess returns of either the target or the acquirer computed for different windows around the announcement date (t) exceed 100%.
11. The number of deals in 2006 seems particularly low given the intense M&A activity during that year. A partial reason is that the sample only includes completed deals and the database was constructed at the end of 2007Q1. Note that we include in the sample only those transactions with a deal value higher than $1 million and that this variable is not available for pending deals.

6 Results

6.1 Cumulative abnormal returns

We performed event studies around the announcement date of the merger (t). We obtained the cumulative excess returns to the target and acquirer through several distinct periods around this date: pre-announcement period ([t-30, t-1] and [t-90, t-1]), announcement period ([t-30, t+1] and [t-1, t+1]) and post-announcement period ([t-1, t+30] and [t-30, t+30]). We also looked at longer intervals and evaluated the cumulative excess returns a year after the merger announcement ([t-1, t+360] and [t-30, t+360]).[12] Cumulative excess returns are defined as the difference between total shareholder return of the company involved during the event window minus the return to the national stock market index during that period.

Table 2 reports summary statistics on excess returns to targets and acquirers. Our results for the complete sample of mergers are consistent with those generally found in the event study literature analysing market-based returns to shareholders of the merging firms. Target companies experienced a positive excess return around the announcement of the merger. This excess return was on average 6.14% from the day prior to the merger announcement to the day after the announcement. There are also significant returns during the run-up period. Excess returns over the periods [t-90, t-1] and [t-30, t-1] are positive and statistically significant. In contrast, the difference in excess returns between the small windows around announcement and the return windows that include a larger post-announcement period is very small indicating that after the first day of the announcement excess returns are small and insignificant.

For acquirers, average excess returns are close to zero in almost all return windows. There appears to be a significant excess return during the run-up period prior to announcement although is very small. Long-run returns are also negative and much larger in absolute value.

Table 3 offers a first insight on the impact of the payment method on the profitability of M&A deals. It compares average and median excess returns enjoyed by the shareholders of the merging companies distinguishing between cash-based and stock-based transactions. A cash-based transaction is when the payment is done 100 percent in cash while a stock-based transaction in this table refers to those for whom payment occurs 100 percent in stock. Columns 5 and 6 of the table report mean and median excess returns for transactions that had payment in a combination of cash and stock.

Average and median excess returns of target firms differ by method of payment. The shares of the target companies display significantly higher excess returns in the case of cash-based deals (see last two columns of Table 3).

Excess returns to bidding firms' shareholders also tend to be higher if cash payments are offered to target companies' shareholders. However this effect is only significant both in terms of means and medians for the shorter announcement window.

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12. The consideration of a long-run window results in a substantial reduction of the sample of targets.

As an alternative to the analysis of the link between method of payment and value creation, we also explore the relationship between the method of payment and the premia paid by the acquirers. A deal premium is defined as the difference between the price offered and the trading price (1 day, 1 week or 4 weeks) before the announcement. Premia paid to target shareholders are larger in the case of cash-based deals, although the difference is only significant in terms of medians (see Table 4).[13]

Figure 3 shows a positive relationship between the premium paid to target shareholders (measured in this case as the difference between the offer price and the target trading price 1 day before announcement) and the excess return to targets. This positive relationship exists both for cash and stock deals. However, most of the observations lie below the 45° line, indicating that the premium size is significantly larger than the excess return upon announcement. This difference could be due in part to the fact that expected returns are on average positive. Most likely, however, is that the difference indicates a partial recognition in the post-announcement target price of the premium offered. This partial recognition could be due to uncertainty on the successful completion of the deal on the terms announced or the timing of the completion. For stock deals, the smaller excess return may also be due to the negative reaction of the stock market price of the acquirer that diminish the attractiveness of the ex-ante premium. The difference between ex-ante premium and excess returns increases with the size of the premium suggesting that the likelihood of success of the deal maybe negatively related with the size of the premium offered, for very large premia.

Figure 4 provides some evidence along this line. The difference between the size of the premium offered and the excess returns upon announcement is positively correlated with the time to completion that the deal took from the announcement. This evidence suggests that excess premium partly compensate for the difficulty of getting the deal completed.

The second and third panels of Table 4 provide some characteristics of cash-based and stock-based deals. Deals paid with shares are on average larger than cash-based deals. Although the main difference is that some of the very large deals tend to be paid with stocks, while for deals of more normal size the use of cash or stock is not that different.

Completion time (i.e, the number of days elapsed between the announcement date and the date in which the transaction is completed) is significantly higher in the case of stock-based deals. The average (median) completion time is 117 (81) days in the case of stock-based deals whereas is 82 (66) in the case of cash-based deals. Stock-based deals are more complex and uncertain since they tend to require a capital increase from the acquirer that is often subject to regulatory and/or shareholder approval. Excess returns around announcement are likely to incorporate a discount on the full premium embedded in a stock offer that takes into account this longer completion period.

Focusing in the subsample of deals for which we know whether or not existed competing bids, we observe that the fraction of deals with competing offers is 37% in the case of cash-based deals and only 4% in the case of stock-based transactions. This is consistent with the above-mentioned hypothesis suggesting that the competition for the target increases the market premium and increases the likelihood of using cash as a

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13. Data on premia is only available for 392 out of the 470 deals included in the final simple.

way to increase the attractiveness of the offers. Finally, cash transactions are more likely to occur in international deals or transactions that imply industry diversification.

In what follows we first analyze the determinants of paying with cash by estimating equation (2) and then we evaluate the impact of a cash payment on value creation by estimating equation (2) using the set of regressors of equation (2) as instruments for the cash variable.[14]

6.2 Determinants of paying with cash

The determinants of a cash payment in an M&A transaction are defined in equation (2) above. The variables used capture the ability of the acquiring firm to generate cash and the credit conditions existing at the time of the transaction. Three variables capture the cash situation of the acquirer: OPCASH, the ratio of operating cash-flow generated by the acquiring firm to the deal value; ACASH, the ratio of cash and cash equivalents of the acquiring firm the year prior to the transaction to the deal value; and, LEVERAGE the ratio of net debt to total assets of the acquiring firm. Credit and financial access conditions are captured by three variables: AVERATING, the log of the average rating by all firms in this industry and country; NEWLYRATED, the increase in the number of firms in the industry and country with rating; and SPREAD, the corporate bond spread applied to a company with the average rating of the companies in the same sector and country as the acquirer. The former two are proxies for the creditworthiness of the acquirer while the latter reflects the cost of credit that, in its turn, depends not only on the level but also on the price of risk.

The results of the probit estimation are reported in Table 5. The acquiring firm cash conditions are important determinants of a cash transaction. Both the amount of operating cash-flow generated by the acquiring firm and its volume of cash and cash equivalents the year prior to the transaction show a positive and significant impact on the likelihood of a cash transaction. The amount of leverage is also positive and significant. This finding is somewhat puzzling suggesting that companies that foresee a cash transaction might increase their leverage well in advance of the deal. The coefficients on the variables that proxy credit and financial access conditions and the cost of credit are not significant (either jointly or individually).[15]

An alternative approach is to use as a dependent variable not just a dummy variable, but the percentage of cash used in the transaction. We have also estimated a linear probability model using this alternative dependent variable. The results are along similar lines to those reported in Table 5, although significance varies. The variables proxying for the cash generation of the acquirer had a positive, although insignificant effect, while the leverage variable remains positive and significant. Finally, the credit conditions are again non-significant in this specification.

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14. Alternatively, we also evaluate the impact that the method payment has on value creation by estimating a two-stage approach. In the first-stage we estimate the likelihood of a cash payment following equation (2). In the second stage, we use the predicted values from equation (2) as instruments for the cash variable in the value creation analysis. Results are qualitatively similar to those of the one-stage approach reported below.

15. Similar results are obtained when the acquirer creditworthiness is proxied by the percentage of firms in the same sector and country as the acquirer with a rating below A- (LOWRATING) and by a measure that proxies the sign of the changes in ratings in the same sector and country as the acquirer (RELUPDOWN).

6.3 Value creation and method of payment

The results from the value creation analysis are reported in Table 6[16]. We break the estimation of the value creation from the cash transaction in parts. We first estimate separately the effects on value creation for targets and acquirers by looking at the behaviour of their excess returns. We then look at value creation from the deal, measured as the weighted average, measured by sales[17], between target and acquirer excess returns.

Target excess returns are positively correlated with cash transactions and with the level of the interest rate spread. Looking at the (t-1, t+30) window a cash deal results on average with a 0.2 excess returns from a non-cash deal. These returns are statistically significant. Somewhat more puzzling however, is that such excess returns appear to exist even prior to announcement, suggesting that potential links in news about the transaction not only involved the transaction itself but also the terms in which such transaction will take place.

The interest rate spread for the average company in the acquirer industry has a positive and significant effect on the target value creation. This evidence is consistent with the view that more relaxed credit conditions, reflected in a lower interest rate spread, were less likely to relate with value-generating transactions. The effect is quantitatively moderate. The mean spread throughout the sample of a company with an A rating was 0.79 percentage points (pp), with a range from a minimum of 0.46 pp in 2005 to a maximum of 1.21 pp in 2001. The estimated coefficient for the SPREAD variable is of the order of 0.03. For instance, for the larger window [-30,+30] the estimated coefficient was 0.033. This implies that an increase of 1 pp from the mean of the SPREAD would result in an estimated excess return of 3.3%. None of the measures based on industry ratings result in statistically significant effects neither jointly nor individually.

Less obvious are the results for acquirers. Excess returns to acquirers do not appear to be influenced by the terms of the deal. In general, excess returns to acquirers are noisy and very close to zero. It is not surprising that correlations between excess returns and exogenous determinants are mostly insignificant.

The last panel of Table 6 reports the results for value creation, measured as the weighted average between target and acquirer excess returns. Here again the SPREAD variable is consistently positive and significant for most of the estimated windows. Value creation (as well as target excess returns) is positively correlated with the interest rate spread, again suggesting that more relaxed credit conditions, reflected in low spreads, have resulted in deals less likely to be value creating. The quantitative size of the effects is also moderate. The point estimate of the coefficient of the SPREAD variable varies somewhat across windows. It fluctuates between 0.006 and 0.026, suggesting that a decrease of 100 basis points in the spreads could have resulted in lower value creation of the order of 1.5%.

The proxies for the access to financial markets, once again, do not provide any additional explanatory power to that reported by the spread suggesting that the interest rate is by itself a sufficient indicator of extant market conditions.

Value creation in cash deals also results in weak and insignificant excess returns for the combined entities. The point estimates for the cash variable have, in some cases,

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16. We omit the results of the regressions for the long-run windows as they are very imprecisely estimated, because of the reduced sample of available targets.
17. Market capitalization was not available for a significant fraction of the sample.

negative values. These excess returns may sound surprising given the separate effects to target and acquirers. For instance, we find that value creation is -4.3% in the (t-30, t+1) period, while the excess returns to target were 17.9% and to acquirer were 3.1% respectively. Value creation weights differently target and acquirer returns based on their market capitalization. The top two panels tend to overweight, relative to the third panel, smaller deals. Therefore, the negative result for value creation indicates that positive excess returns are expected to be negatively correlated with the size of the target and acquirer[18]. We checked for this non linear interaction between the cash dummy and the size of the transaction, by including an interaction term in the specifications reported in Table 6. As expected, the estimated coefficient of this interaction term tended to be negative for both target and acquirer although not always significant (results not reported).

Finally, we would like to provide some evidence on the importance of controlling for the endogeneity of the method of payment in the analysis of the value creation from a deal. Table 7 reports the comparison the coefficients of the variable CASH in the excess returns regressions estimated by OLS with those estimated by instrumental variables, i.e. once we control for the potential endogeneity of the method of payment. The point estimate of the coefficient on the CASH variable is of the order of two to three times larger in the instrumental variable estimation than in the OLS. This suggests that there is a significant bias in the traditional OLS estimations and confirms that cash payment is the most profitable (most liquid and least uncertain) and most attractive method of payment for selling shareholders. However, the CASH variable does not result in any significant value creation for the acquirers or for the overall value being created from the deal. This evidence points in the direction that cash payment is an additional mean to make the deal sweeter for target shareholders so that the deal goes through.

The last two rows of each panel in Table 7 also report the tests on the joint significance of the proxies for credit availability and the cost of credit. As we have been indicating above, those variables, with the exception of the interest rate spread, do not prove useful in determining the value creation from M&A deals. However, the interest rate spread is an important determinant of such value being created.

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18. This results is consistent with the findings in Moeller et al. (2005) who show, for a sample of US M&A deals over the period 1998-2001, that the average negative excess returns around announcement is explained by a small number of acquisitions with negative synergy gains by firms with extremely high valuations.

7   Conclusions

M&A transactions are highly procyclical with financial markets. M&A transaction volume reached a historical peak in 2007 despite a sharp decrease during the second half of the year due to the negative evolution of international financial markets. This cyclical pattern on M&A activity suggests the existence of a strong link between access to liquidity in financial markets and M&A activity.

This paper has focused on the extent that liquidity and credit conditions over the last decade have affected the likelihood of cash payments and whether or not such payments have resulted in deals less likely to generate value. The paper has analyzed these effects in the context of the European financial markets that have experienced an unprecedented development in international debt markets driven by the creation of the euro.
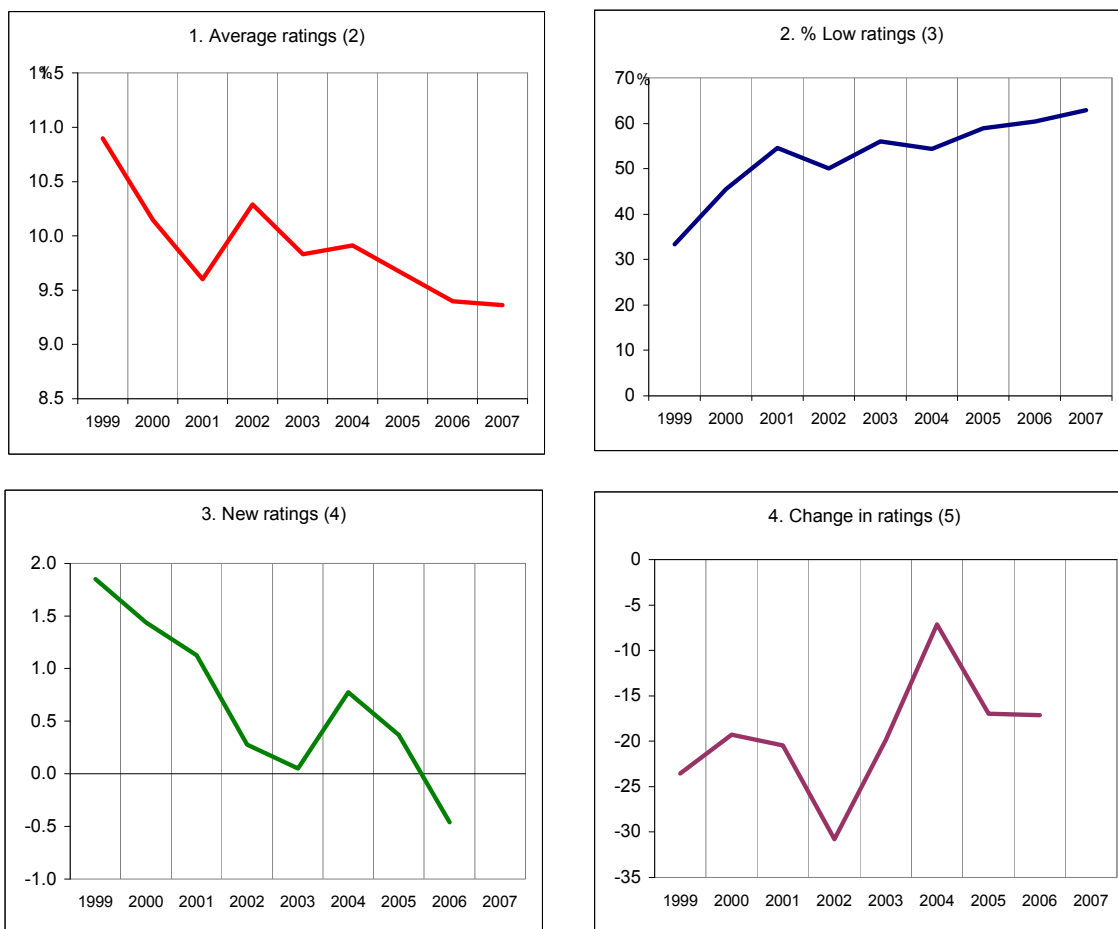
The paper finds evidence that lower spreads in financial debt, suggesting more generous financing conditions, are correlated with a lower amount of value-creating deals and more value-destroying effects. The paper also shows that cash deals are more likely in situations when the acquirer has a positive cash position, and a strong ability to generate higher cash-flows in the future either via operational improvements or through leverage. Industry access to financial markets seems to be less important in determining a cash payment. Cash deals also result in a higher excess return to target shareholders. The ex-ante premium paid in cash deals is somewhat larger than in non-cash deals, and the difference between the ex-ante premium and the excess returns was positive and increasing with the size of the premium. This suggests that excess returns around announcement are partially driven by a higher probability of success in the transaction and a lower time from announcement to completion in cash relative to non-cash deals.

The cyclicality of M&A activity with financial market conditions is a strong empirical fact. However, this fact does not necessarily imply that more activity is necessarily related with lower value creation, at least around announcement. It could be that market agents expect short-run financial conditions to last over longer horizons and that short-term value creation may not be correlated with longer-run performance. Campa and Hernando (2006) show some evidence along these lines. The current paper also provides evidence suggesting that lower risk assessment by financial markets may encourage firms to engage in deals that are less likely to create value, measured by the stock market reaction around the announcement of such deals. This evidence suggests that financial markets may tend to overweight the degree to which short-run conditions will continue in the longer run. If that were the case, a more appropriate management of medium term expectations is crucial for long-run decisions such as M&A transactions.
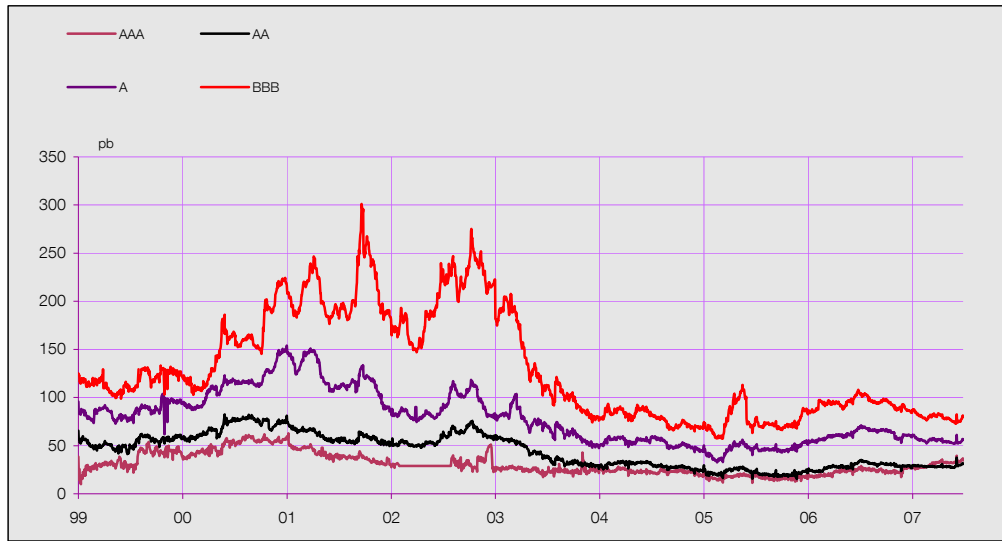
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FIGURE 1. Evolution of corporate ratings (1)

Note:
(1) The data on ratings is obtained from the CreditPro database that contains the ratings by Standard&Poors. We construct the different indicators shown in this figure for each country, SIC-1 digit industry and year. This figure displays the average values across countries and industries of these indicators.
(2) We assign a numeric value (going from 1 to 17) to each of the S&P ratings. One is the lowest rating (C/CCC) and seventeen is the highest.
(3) Percentage of firms with a rating below A-.
(4) Increase in the number of rated companies.
(5) Number of upgrades minus the sum of the number of downgrades, deafults and non-rated divided by the total number of rated companies.

Source: Datastream

a. JP Morgan Maggie Industrials Index 7-10 years - Government spread

Figure 3

Excess returns and premium paid

Figure 4

Time to completion and gap between premium paid and excess returns to target
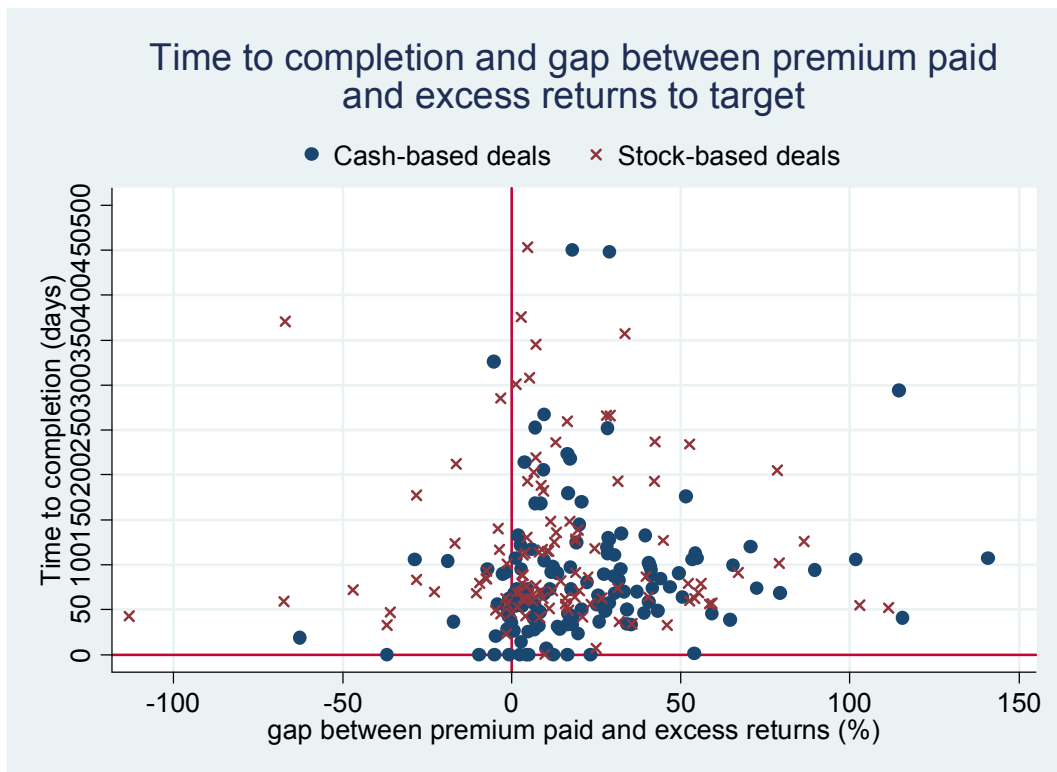
Table 1. Sample description

This table shows a description of the sample. The sample includes a sample M&A transactions announced over the period January 1, 1999-March 31, 2007 in which both firms involved in the transaction: 1) belong to EU-15 countries, 2) were non-financial companies, and 3) were publicly traded firms; and that a minimum of 20% of the target company was acquired in the transaction and the deal value was known and greater than $1 million. Initial Sample refers to the 611 transactions that satisfied these criteria. Cleaned sample refers to 470 transactions after excluding missing obsrevations and outliers in the estimation of excess returns.

Panel A. Breakdown by country

	Initial sample		Cleaned sample [1]	
	Targets	Acquirers	Targets	Acquirers
Austria	2	4	1	3
Belgium	12	18	9	12
Denmark	13	18	11	16
Finland	16	16	12	10
France	101	96	84	79
Germany	45	47	33	37
Greece	14	14	7	7
Ireland	5	5	4	4
Italy	9	20	7	16
Luxembourg	6	2	1	1
Netherlands	28	20	17	12
Portugal	5	3	3	1
Spain	23	28	18	23
Sweden	48	45	24	24
UK	284	275	239	225
	611	611	470	470

Panel B. Breakdown by sector

	Targets	Acquirers	Targets	Acquirers
Agriculture, For. and Fish.	1	3	1	2
Mineral Ind. and Constr.	42	42	35	34
Manufacturing (SIC-2)	98	101	80	85
Manufacturing (SIC-3)	90	91	69	70
Transp, Comm. and Utilities.	69	82	57	66
Distribution	60	55	44	42
Finance and Real Estate	100	101	71	67
Service Industries (SIC-7)	124	112	93	82
Service Industries (SIC-8)	26	24	19	22
Service Industries (SIC-9)	1	0	1	0
	611	611	470	470

Panel C. Other characteristics

1999	145	100
2000	135	98
2001	83	64
2002	50	40
2003	47	38
2004	37	31
2005	61	54
2006	47	39
2007	6	6
Total	611	470
Cash	206	165
Stock	173	126
Mixed	122	93
Unknown	110	86
Total	611	470
Cross-border	153	112
Domestic	458	358
Total	611	470
Diversifying [2]	239	181
Focus [2]	372	289
Total	611	470

[1] After removing missing observations and outliers in total return indexes

[2] Focus/Diversifying deals: deals between firms with the same/different 2-digit SIC codes

Table 2. Differences in Cumulative Abnormal Returns by Window Length

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

	Means (1)		Medians (2)	
	Targets	**Acquirers**	**Targets**	**Acquirers**
Cumulative average abnormal returns				
Pre-announcement				
(t-30,t-1)	6.26% **	0.58%	4.53% **	0.36%
(t-90,t-1)	9.76% **	2.91% **	10.44% **	2.57% **
Announcement				
(t-1,t+1)	6.14% **	-0.02%	2.47% **	0.05%
(t-30,t+1)	13.43% **	0.37%	11.05% **	0.18%
Post-announcement				
(t-1,t+30)	6.70% **	-0.01%	4.59% **	-0.53%
(t-30,t+30)	14.93% **	0.45%	12.77% **	0.09%
Long-run				
(t-30,t+360)	3.29%	-7.02% **	11.86% **	-1.29%
(t-1,t+360)	-2.49%	-7.72% **	6.89%	-1.89%
Tests on differences in cumulative average (median) abnormal returns by window length (3)				
(t-90,t-1) - (t-30,t-1)	0.00	0.00	0.00	0.13
(t-30,t+1) - (t-1,t+1)	0.00	0.49	0.00	0.33
(t-1,t+30) - (t-1,t+1)	0.34	0.99	0.89	0.96
(t-30,t+30) - (t-30,t+1)	0.01	0.87	0.13	0.96
(t-1,t+1) - (t-1,t+360)	0.40	0.00	0.49	0.24
(t-30,t+1) - (t-30,t+360)	0.45	0.00	0.40	0.24

(1) */** denote significance at the 10%/5% level. Confidence intervals on the distribution of excess returns have been adjusted for skewness following the methods described in Lyon et al. (1999).
(2) */** denote significance at the 10%/5% level.
(3) The reported numbers are p-values of a paired t-test of the null hypothesis that the differences in returns of the two windows are statistically different from zero.

Table 3. Differences in Cumulative Abnormal Returns by method of payment

This table reports mean and median cumulative abnormal returns to target, acquirer, and value creation between cash-financed and stock-financed deals. Mixed refers to those deals that were paid by a combination of cash and stock. Abnormal returns are calculated as the difference between shareholder returns and the total national market return for the firm. Each row of the table reports statistics for the distribution of abnormal returns over a different interval around the announcement date, t. The last two column report the mean and median differences in excess returns between those deals paid completely in cash or in stock.

	Cash		Stock		Mixed		Differences Cash/Stock	
	Means (1)	Medians (2)	Means (1)	Medians (2)	Means (1)	Medians (2)	Means (2)	Medians (2)
Targets								
(t-30,t-1)	10.51% **	7.63% **	3.83% **	2.60% **	4.41% **	3.57% **	6.68% **	5.03% **
(t-90,t-1)	15.52% **	14.70% **	3.55%	5.49% **	10.68% **	13.06% **	11.97% **	9.21% **
(t-1,t+1)	8.53% **	4.24% **	5.43% **	2.47% **	4.69% **	1.67% **	3.09% *	1.78%
(t-30,t+1)	20.18% **	20.25% **	10.33% **	8.43% **	11.09% **	10.53% **	9.85% **	11.82% **
(t-1,t+30)	8.63% **	4.24% **	3.93% **	3.29% **	7.88% **	8.32% **	4.70% **	0.95%
(t-30,t+30)	22.02% **	20.84% **	9.73% **	9.37% **	14.23% **	12.00% **	12.29% **	11.47% **
(t-30,t+360)	12.71%	15.53% *	-46.11% **	-9.31%	-7.94%	11.33%	58.82% *	24.85%
(t-1,t+360)	4.41%	9.70%	-52.70% **	-20.86%	-9.55%	5.15%	57.11%	30.56% *
Acquirers								
(t-30,t-1)	-0.24%	-0.03%	1.65%	0.74%	-1.00%	0.10%	-1.89%	-0.77%
(t-90,t-1)	1.57%	0.23%	1.82%	1.63%	3.60%	2.98%	-0.24%	-1.39%
(t-1,t+1)	0.52%	0.15%	-1.50% **	-0.69%	-0.80%	0.31% *	2.02% **	0.84% *
(t-30,t+1)	0.43%	0.63%	-0.39%	-0.38%	-2.14% *	-0.91%	0.82%	1.01%
(t-1,t+30)	-0.53%	-1.66%	-3.90% **	-3.16% **	1.79% *	1.95%	3.38% *	1.50%
(t-30,t+30)	-0.75%	-0.82%	-2.59%	-2.50% **	0.61%	1.68%	1.84%	1.68%
(t-30,t+360)	-5.52% *	-2.15%	-18.63% **	-10.37% **	-7.05%	-0.59%	13.11% **	8.22%
(t-1,t+360)	-5.32% *	-1.90%	-20.75% **	-11.93% **	-5.66%	0.57%	15.43% **	10.03% *

(1) */** denote significance at the 10%/5% level. Confidence intervals on the distribution of excess returns have been adjusted for skewness following the methods described in Lyon et al. (1999).

(2) */** denote significance at the 10%/5% level.

Table 4. Differences in deal characteristics by method of payment

This table presents differences in premiums to targets and other characteristics between cash-financed and stock-financed deals. Premiums are defined as the difference between the offer price and the target trading price (1 day, 1 week or 4 weeks) prior to the original announcement date, expressed as a percentage. Data on premium exists for only 392 of the 470 observations. Deal value is the value of the purchase in $ millions.Completion time is the number of days elapsed between the announcement date and the date in which the transaction is completed. Focus is a dummy that takes the value of one when the target and acquirer companies are from the same country and zero otherwise. Focus is a dummy that takes the value of one when the target and acquirer companies are from the same industry and zero otherwise. Competing offers is a dummy that takes the value of one when there was more than one offer active against the same target. Average rating is a count value that goes from 1 for the lowest rating (C/CCC) of firms in the same industry/country/year than the acquiror to seventeen for the highest rating (AAA).

	Cash		Stock		Differences	
	Means	Medians	Means	Medians	Means (1)	Medians (1)
1-day premium	32.9	27.1	28.1	14.1	4.8	13.0 **
1-week premium	37.0	32.7	35.2	20.0	1.8	12.8 **
4-weeks premium	41.7	39.4	33.6	20.0	8.1	19.4 **
Deal value	869.4	112.2	2390.2	130.6	-1520.8 *	-18.4
Relative size	20.0%	16.1%	31.4%	27.7%	-11.4% **	-11.6%
Completion time	82.0	66.0	117.0	81.0	-35.0 **	-15.0 **
% domestic	67.3%		84.9%		-17.6% **	
% focus	49.7%		65.9%		-16.2% **	
% with competing offers	37.2%		4.2%		33.0% **	
Average rating (2)	10.2	10.1	9.9	10.0	0.3	0.1

(1) */** denote significance at the 10%/5% level.
(2) One is the lowest rating (C/CCC) and seventeen is the highest (AAA).

Table 5. Probability of acquiring with cash

This table reports the estimated coefficients, significance levels, and standard errors from a probit estimation. The dependent variable (CASH) is a dummy that takes the value 1 if the transaction is paid with cash. OPCASH is the ratio of operating cash-flow generated by the acquiring firm to the deal value. ACASH is the ratio of cash and cash equivalents of the acquiring firm the year prior to the transaction to the deal value. LEVERAGE is the ratio of net debt to total assets of the acquiring firm. AVERATING is the log of the average rating of the companies in the same sector and country as the acquirer. NEWLYRATED is the increase in the number of rated companies in the same sector and country as the acquirer. SPREAD is the corporate bond spread applied to a company with the average rating of the companies in the same sector and country as the acquirer.

	Coef.		Std. Err.
OPCASH	0.283	***	0.104
ACASH	0.271	***	0.094
LEVERAGE	1.400	***	0.371
AVERATING	-0.126		0.544
NEWLYRATED	0.041		0.036
SPREAD	-0.027		0.071
sic1	0.743		0.393
sic2	0.309		0.348
sic3	0.930		0.416
sic4	0.116		0.365
sic5	0.140		0.411
sic7	-0.160		0.404
sic8	0.712		0.464
constant	-0.839		1.438

Number of observations	271
Pseudo_R2	0.26
Log Likelihood	-137.17
Joint significance (chi2(19))	47.09
Joint significance (averating,newlyrated)	0.52
Joint significance (averating,newlyrated,spread)	0.70

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 6. Regression analysis of excess returns

The dependent variable are estimated excess returns around the announcement of the transaction relative to the performance of the national market index, over the window in days indicated in the top of the column. CASH is a dummy that takes the value 1 if the transaction is paid with cash, and it is instrument with the set of regressors included in the probit model reported in table 5. AVERATING is the log of the average rating of the companies in the same sector and country as the acquirer. NEWLYRATED is the increase in the number of rated companies in the same sector and country as the acquirer. SPREAD is the corporate bond spread applied to a company with the average rating of the companies in the same sector and country as the acquirer. DOMESTIC is a dummy that takes the value 1 if the transaction involves two companies of the same country. SAMESIC is a dummy that takes the value 1 if the transaction involves to companies belonging to the same (2-digits) SIC code. DEALVALUE is the log of the value of the deal, measured as the actual value transacted of the target firm.

Event Window	(1) (t-30,t-1)	(2) (t-90,t-1)	(3) (t-1,t+1)	(4) (t-30,t+1)	(5) (t-1,t+30)	(6) (t-30,t+30)
Targets						
CASH	0.119	0.285**	0.07	0.179	0.213*	0.313**
AVERATING	-0.004	0.126	-0.067	-0.076	0.023	-0.009
NEWLYRATED	0.002	0.005	0	0.002	-0.002	-0.001
SPREAD	0.022**	0.055***	0	0.023***	0.015	0.033***
DOMESTIC	0.053	0.059	-0.008	0.059	0.041	0.105*
SAMESIC	-0.026	-0.035	-0.012	-0.022	-0.032	-0.046
DEALVALUE	0.018***	0.041***	-0.001	0.022**	0.008	0.029**
Observations	266	266	266	266	266	266
RMSE	0.146	0.253	0.137	0.192	0.197	0.246
Acquirers						
CASH	-0.05	0.028	0.04	0.031	0.057	0.033
AVERATING	-0.003	-0.047	0.062**	0.066	0.049	0.059
NEWLYRATED	0	0.004	-0.001	-0.001	0	-0.001
SPREAD	0	0.001	0.01	0.01	0.01	0.011
DOMESTIC	-0.004	0.029	-0.002	0.01	0.003	0.011
SAMESIC	-0.005	0.001	-0.012	-0.02	-0.02	-0.028
DEALVALUE	0.001	-0.001	0.001	0.003	0.003	0.005
Observations	266	266	266	266	266	266
RMSE	0.111	0.200	0.062	0.126	0.122	0.163
Value creation						
CASH	-0.074	0.023	0.004	-0.043	0.044	-0.024
AVERATING	0.033	0.062	0.025	0.067	0.047	0.085
NEWLYRATED	-0.001	0.003	-0.002	-0.003	-0.001	-0.003
SPREAD	0.013	0.024**	0.006	0.020**	0.013*	0.026***
DOMESTIC	-0.003	0.03	0.001	0.012	0.028	0.034
SAMESIC	-0.001	-0.004	-0.005	-0.004	-0.014	-0.014
DEALVALUE	0.003	0.011*	-0.001	0.004	0.004	0.008
Observations	266	266	266	266	266	266
RMSE	0.110	0.166	0.075	0.122	0.115	0.152

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7. Selected results of the regression analysis of excess returns

The dependent variable are estimated excess returns around the announcement of the transaction relative to the performance of the national market index, over the window in days indicated in the top of the column. CASH is a dummy variable that takes the value 1 if the payment is 100% cash (in the IV regression, it is instrumented with the set of regressors included in the probit model reported in table 5). AVERATING is the log of the average rating of the companies in the same sector and country as the acquirer. NEWLYRATED is the increase in the number of rated companies in the same sector and country as the acquirer. SPREAD is the corporate bond spread applied to a company with the average rating of the companies in the same sector and country as the acquirer. DOMESTIC is a dummy that takes the value 1 if the transaction involves two companies of the same country. SAMESIC is a dummy that takes the value 1 if the transaction involves to companies belonging to the same (2-digits) SIC code. DEALVALUE is the log of the value of the deal, measured as the actual value transacted of the target firm.

| | (1) | (2) | (3) | (4) | (5) | (6) |
Event Window	(t-30,t-1)	(t-90,t-1)	(t-1,t+1)	(t-30,t+1)	(t-1,t+30)	(t-30,t+30)
Targets						
OLS						
Cash-coefficient	0.036**	0.077**	0.009	0.057**	0.019	0.070**
F-test credit conditions	0.75	0.12	0.21	0.45	0.83	0.97
F-test credit conditions+spread	0.08	0.00	0.33	0.00	0.46	0.02
IV						
Cash-coefficient	0.119	0.285**	0.070	0.179	0.213*	0.313**
F-test credit conditions	0.74	0.15	0.26	0.48	0.84	0.98
F-test credit conditions+spread	0.03	0.00	0.34	0.00	0.40	0.00
Acquirers						
OLS						
Cash-coefficient	-0.016	-0.014	0.016**	0.006	0.003	-0.012
F-test credit conditions	0.97	0.49	0.07	0.33	0.69	0.63
F-test credit conditions+spread	0.97	0.68	0.15	0.42	0.84	0.78
IV						
Cash-coefficient	-0.050	0.028	0.040	0.031	0.057	0.033
F-test credit conditions	0.97	0.51	0.10	0.35	0.70	0.64
F-test credit conditions+spread	0.99	0.68	0.20	0.45	0.84	0.79
Value creation						
OLS						
Cash-coefficient	-0.005	0.007	-0.002	-0.001	-0.012	-0.017
F-test credit conditions	0.73	0.33	0.30	0.25	0.57	0.27
F-test credit conditions+spread	0.33	0.16	0.37	0.01	0.31	0.00
IV						
Cash-coefficient	-0.074	0.023	0.004	-0.043	0.044	-0.024
F-test credit conditions	0.78	0.33	0.30	0.27	0.58	0.28
F-test credit conditions+spread	0.63	0.14	0.40	0.08	0.38	0.01

* significant at 10%; ** significant at 5%; *** significant at 1%

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