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The determinants of failed takeovers in the banking sector: Deal or country characteristics? ☆

Stefano Caiazza [a,*], Alberto Franco Pozzolo [b,1]

[a] Università degli Studi di Roma "Tor Vergata", Italy
[b] Università degli Studi del Molise and Centro d'Agliano, Italy

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ABSTRACT

The consolidation process which characterized the banking industry in the last decades has been widely analyzed, but very few studies have investigated the reasons which bring a number of announced deals to failure. We fill this gap in the literature analyzing the characteristics of failed M&A operations in a large sample, including all the major domestic and cross-border deals in the banking sector announced worldwide between 1992 and 2010. The results show that the most important factors which determine the failure of an announced operation are deal specific characteristics, in particular the hostility of the bidder and the presence of multiple potential acquirers. Moreover, lengthier negotiations have a lower probability of success. Contrary to expectations, cross-border operations are more likely to be successfully completed than domestic ones.

1. Introduction

Corporate transactions have a critical role in market economies. The competition for corporate control is one of the main tools through which inefficient administrators can be removed and unprofitable companies can be reconverted. In the banking sector, the large wave of mergers and acquisitions (M&As) registered in the United States during the '80s (followed a little later in Europe, fostered by the II EU Directive on the Single Market) have increased the efficiency of the credit allocation mechanism significantly (Vander Vennet, 1996; Akhavein et al., 1997; Focarelli and Panetta, 2003). These consolidation processes have been studied extensively and there is now a broad consensus on the determinants of domestic and cross-border M&As: larger and more profitable banks typically acquire weaker financial intermediaries, with the aim to restructure and increase efficiency (Focarelli et al., 2002).[2]

Despite this large literature, there has been no analysis of the elements which determine the abandonment of announced deals. In general, the phenomenon of abandoned deals is not negligible. O'Sullivan and Wong (1998), for example, show that between 1989 and 1995 in the United Kingdom almost 20% of the publicly announced transactions among all types of firms have not been completed. Wong and O'Sullivan (2001) argue that the failure may depend on several factors: the intervention of regulatory authorities; the success of defensive strategies implemented by the management of the target company; the emergence of conditions which determine a volunteer withdrawal by the acquired company. The phenomenon is quantitatively relevant also among banks: on average, about 5% of the deals announced in the world are not completed, with peaks of over 10% in more financially

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* Corresponding author at: Department Economia e Finanza (DEF), Via Columbia 2, 00132 Roma, Italy. Tel./fax: +39 0672595713.

E-mail addresses: caiazza@economia.uniroma2.it (S. Caiazza), pozzolo@unimol.it (A.F. Pozzolo).

[1] Department Scienze Economiche Gestionali e Sociali, Via de Sanctis snc, 86100 Campobasso, Italy. Tel.: +39 0874404338.

[2] Reviews of the literature on bank mergers are provided by Amel et al. (2004) and DeYoung et al. (2009).

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advanced countries. Moreover, abandoned deals are among the most important (in our sample, the average value of transactions which are not successfully completed is more than twice that of the transactions successfully completed). However, to the best of your knowledge, analyses focusing specifically on the banking industry are still lacking.[3] A number of papers (e.g., Focarelli and Pozzolo, 2001; Pozzolo, 2009) have argued that the pervasive influence of information asymmetries (Morgan, 2002) and the stronger role of regulation authorities make the determinants and the pattern of M&As in the banking sector not fully comparable with those of operations among non-financial industries. All these reasons call for a specific analysis on what the determinants to abandon a M&As in the banking sector are.

To fill the gap in the literature, we study the characteristics of abandoned M&As in the banking sector using a sample of more than 20,000 domestic and cross-border operations, announced in over 150 countries around the world between 1992 and 2010. Building on the previous literature on abandoned deals in non-financial sectors, we focus our analysis on three sets of determinants: (i) deal specific characteristics, such as size, duration, method of payment and whether the operation is domestic or cross-border; (ii) features specific of the bidders and of the targets, such as size and leverage; and (iii) country specific characteristics, such as the development of the financial market, the severity of regulations.

We find that deal specific characteristics are by far the most important determinants for the abandonment of an announced deal. In particular, hostile operations, those involving more than a single potential acquirer and those requiring longer negotiations have a significantly lower probability of success. We also find that deals with targets incorporated in countries with stricter regulatory authorities and a more developed banking sector also have a lower probability of success, but in this case the impact is almost negligible. Finally, cross-border deals are more likely to be successful than domestic deals. This is contrary to our expectation that the presence of strong cultural differences, regulations, and other implicit and explicit barriers could determine a higher abandonment ratio in the case of international operations.

The rest of the paper is organized as follows. Section 2 sets the framework of our research, describing the results of the previous literature and the major hypotheses behind our empirical analysis. Section 3 describes the sources of the data and comments the major trends and Section 4 presents the econometric framework. The results of the econometric analysis are presented in Section 5. Section 6 concludes.

2. The determinants of the abandonment of announced M&As

The determinants and the effects of M&As in the banking sector have been extensively analyzed in the theoretical and empirical literature. In a nutshell, the available evidence shows that larger and more profitable banks acquire weaker banks with the aim to restructure them and increase their efficiency (Focarelli et al., 2002). However, acquirers typically register a drop in their stock prices at the moment of the announcement of the deal, especially in the case of diversifying and cross-border operations (DeLong, 2001).

Nevertheless, not all announced deals end up being completed, either because the parties involved do not find a satisfactory agreement or because the target of the operation successfully adopts defensive techniques, or finds an alternative acquirer. Understanding the reasons why some deals are abandoned permits to better assess the likelihood of a planned operation to succeed, reducing the costs of an announcement to the market followed by a withdrawal. In fact, organizing an M&A is very costly because of the required efforts for internal managers and external advisors to plan and organize the operation from an economic, financial and legal viewpoint. This typically requires large teams of highly skilled and highly remunerated professionals to work for months. From the target point of view, evaluating the offer, bargaining on the conditions of the deal and eventually organizing a defense can also be very expensive. This is why we also need evidence to allow them to forecast the likelihood of success of these defensive actions more accurately. In addition, once an operation is announced, its abandonment typically implies a strong negative reaction focused on the stock price of the bidder (Lorenz and Schiereck, 2007). This often leads to the removal of the management, and can in turn transform the bidder in a target of a possible acquisition (Franks and Mayer, 1996; Agrawal and Walkling, 1994).

Despite its practical importance, the theoretical and empirical literature on the determinants of M&A abandonments is rather limited. Specifically, as shown in the survey by Wong and O'Sullivan (2001), most of the available evidence studies large samples of M&A deals, treating operations in different sectors as if they were similar. Due to the higher number of M&A operations organized in the non-financial sector compared to the banking and financial sector, results tend to be driven mostly by the characteristics of non-financial firms, even when bank deals are included in the research sample. Specific features of M&A's in the banking sector, where information asymmetries and regulation are both more relevant, are thus normally overlooked. This, on the other hand, is the focus of our analysis.

In spite of the large number of M&As which took place among banks in the last decades, to the best of our knowledge the only study on abandoned deals in the banking sector is that by Lorenz and Schiereck (2007). In their analysis of 97 operations among European banks between 1996 and 2002, they show that failures are more likely when the bidder is small. This because it offers a high acquiring price and the announcement causes a significant drop in its stock price.

In the following, we attempt to complete the literature by presenting the results of an empirical analysis regarding the abandonment of announced M&As in the banking sector, based on a sample of more than 20,000 cases. The previous literature on the determinants of M&A's in the banking sector and the available evidence on failed takeovers, mostly in the manufacturing sector, suggests that many different features can determine the success of a bank M&A operation. These may range from deal and bank specific characteristics to the properties of the countries where the interested actors operate. In the following we will analyze each of them in detail, setting the theoretical background for our empirical analysis.

2.1. Characteristics of the deal

The most critical feature for the success of an M&A deal is the reaction of the managers of the target company: either friendly or hostile. For example, a relatively common practice which affects the probability of success of an M&A deal is the signing of an agreement between the bidder and the target, with some clauses to put a cost on the abandonment of the operation. This can be done by granting the potential acquirer a call option on the common shares (stock lockup) or on certain assets of the target (asset lockup). This can be applied in case the target merged with another buyer. In alternative, it is possible to grant a compensation in cash to one of the two parties if the operation is abandoned. Deals involving these types of agreements, known as lockup clauses, are obviously less likely to fail (Coates and Subramanian, 2000; Bates and

[3] An exception is the unpublished paper of Lorenz and Schiereck (2007) that we discuss in more detail below.

Lemmon, 2003). In our analysis, we thus check for the presence of lockup clauses.

Oppositions to an M&A deal are also very common. Jensen (1988) defines as hostile all attempts to acquire a company in which the management of the acquirer and that of the target are competing with each other to gain control of the new entity. Hostile takeovers are a fundamental tool in the market for corporate control (Kini et al., 2004; Heron and Lie, 2006), since they introduce an important element of competition, favoring the removal of inefficient or opportunist managers and thus increasing the value of the company. Indeed, hostile takeovers were relatively common in the United States and in the United Kingdom during the '80s (although in the following decades they became drastically less popular), and have become more common also in continental Europe in recent years (Martynova and Renneboog, 2008). Clearly, the management's opposing of a potential target would be particularly fierce in the case of hostile operations, reducing the probability of success (Sokolyk, 2011).

In practice, there are many ways to oppose a hostile takeover, both before the offer occurs (pre-bid defenses) and after it has been made (post-bid defenses). In the first case, a defense strategy can be put in place by organizing a block of shareholders in favor of the incumbent management and asking them to declare themselves unavailable to sell their stakes. In alternative, this group of shareholders can sustain the use of debt to perform buy-back operations, reducing the amount of shares that can be acquired by the bidder. Post-bid defense techniques may take the form of lobbying activities with institutional shareholders, trade unions and consumer groups. These can exert their pressure on the shareholders to reject the tender. A well-known post-bid defense strategy is the organization of a counter-bid on the part of buyers which are in favor of the incumbent management (also known as "white knights"). Additional post-bid defense techniques include the approval of prohibitively expensive restructuring plans, which would make the reorganization of the company following the merger unprofitable. These may include the payment of extraordinary dividends or the announcement of unexpected extraordinary profits (Sudarsanam, 1995; Holl and Kyriazis, 1997; Schoenberg and Thornton, 2006).[4] Clearly, the availability of many different defensive techniques makes hostile operations less likely to succeed as opposed to non-hostile deals (Morck et al., 1989). Holl and Kyriazis (1996) for example, studying a sample of 113 hostile bids between 1978 and 1989, estimate the probability of success of a shared takeover bid with the management of the target company to be 96%. On the contrary, that of a hostile takeover is just 61%. Studying a sample of mergers planned in the United Kingdom between 1989 and 1993, O'Sullivan and Wong (1998) find that in 47% of the cases self-defense techniques prevented the success of hostile takeovers. In our analysis we control whether a deal is considered as hostile by the target's management.[5]

The probability of success of an announced deal also depends on the presence of more than one bidder. The presence of multiple bidders implies by construction that, even if the target is eventually acquired by one of them, all other bidders will be forced to abandon their plans. However, it may also be the case that in presence of multiple bidders the probability of any offer to be successful is lower than with just one offer. This can happen because multiple bids make it clearer to the target's managers and equity holders what the value of their corporation is. The available empirical evidence on this issue is ambiguous: Betton and Eckbo (2000), for example, show that the presence of multiple potential bidders reduces the probability of success. But Cotter and Zenner (1994) show that competing bids increases the likelihood of success, and Walking (1985) and Holl and Kyriazis (1996) find no statistically significant effect. Although the substantial role of regulatory authorities makes multiple bids less likely to take place in the banking sector than in the non-financial sector, in our analysis we will control also for these.

Moreover, the time elapsed from the moment of the announcement of a deal and its successful conclusion or its abandonment can provide information on the ex-ante probability that it will succeed. On one hand, the fact that an announced operation is not abandoned is a proof of the negotiating efforts of the parties involved, suggesting that the probability of finding an agreement is increasing. On the other hand, deals which are profitable for both parties involved are likely to be closed quickly, suggesting that if too much time passes before the conclusion is announced there will be a higher chance of not finding an agreement. In our empirical analysis we will check for the time elapsed between the day in which a deal is announced and that in which it is completed or abandoned.

The choice of the payment method is a crucial characteristic of an M&A (Shleifer and Vishny, 2003; Faccio and Masulis, 2005), and one which can be argued to have a key impact on the likelihood of its success. If an acquisition is paid by exchanging the shares of the merging corporations, its value can be relatively uncertain, reducing the probability of finding an agreement between the parties. Cash payments, instead, eliminate any uncertainty regarding the value of the deal. Chang and Suk (1998), but also Ang and Cheng (2006), provide indirect evidence consistent with the hypothesis that stock payments introduce an additional degree of uncertainty in the value of the deal. This shows that bidders are more likely to use shares as a method of payment when their stock price is overvalued, with respect to what is predicted given its fundamentals. However, regarding the specific issue of abandonment, Asquith (1983) and Jennings and Mazzeo (1993) find that, in the U.S., announced equity-paid M&As are not more likely to be abandoned. They only cause a stronger drop in the bidder stock price than in the announcement of cash-paid deals. In the case of Europe, the evidence is less neat (Martynova and Renneboog, 2008; Goergen and Renneboog, 2004; Jandik and Makhija, 2005). In our empirical analysis, we will check whether the M&As under scrutiny were announced to be paid in cash or through an equity exchange.

Cross-border deals are typically larger and more complicated than domestic deals: they have a higher degree of informational opaqueness, imply higher organizational and legal expenses and are often opposed by national authorities (Serdar Dinc and Erel, 2013). This would suggest that they have a higher probability of failure. On the other hand, this implies a much more thorough initial preparation, leading to a lower probability of failure ex-post. We will verify these alternative hypotheses checking whether a deal is domestic or cross-border.

2.2. Characteristics of bidders and targets

The characteristics of the bidder are likely to influence the probability of success of an announced M&A operation. Clearly, size can matter in absolute terms, as argued above, but it can also have an importance in relation to the dimension of the bidder. Indeed, there is large anecdotal evidence on failures of operations in which relatively small and aggressive buyers were trying to acquire larger companies.

Another crucial characteristic is the ability of the bidder to sustain the financial costs of an acquisition: firms with a higher level

[4] Safieddine and Titman (1999) study the impact of target's leverage as a defensive technique; unfortunately, we do not have enough information in our sample to extend the analysis in this direction.

[5] Interestingly, some European countries do not even allow the use of defensive techniques in the case of deals which involve a bank, requiring explicitly the bank's management to remain neutral (although Belgium, Germany, Italy, Luxembourg and the Netherlands have not adopted the neutrality-rule; European Commission, 2007). In our analysis, this is controlled for by means of country dummies.

of debt over total assets are more likely to propose stock payments, because they have more difficulties to raise the funds needed to pay in cash. This is true ex-ante but also in any instance in which it is required to adapt to evolving conditions during negotiation. Consistent with the findings of Faccio and Masulis (2005), deals in which the bidder has a higher leverage should have a higher probability of failing, even after controlling for the method of payment.[6] In our empirical analysis, we will control for the size of the bidder and for its leverage.

In addition the management's reaction to the announcement of a takeover, some targets have characteristics which make them more difficult to be acquired. The size of the target, in absolute terms and in those relative to that of the bidder, has a critical impact on an M&A's probability of success. On one side, the available evidence suggests that potential buyers are typically attracted by large deals, involving targets of larger size (Sudarsanam, 1995; O'Sullivan and Wong, 1998, 1999). They then tend to organize such bids more carefully, in order to maximize the probability of success. On the other hand, the management of larger companies is more likely to have the capabilities and strength to implement defensive techniques, even informally, reducing the probability of success. The empirical evidence in Wong and O'Sullivan (2001) and Martynova and Renneboog (2008) suggests that, controlling for hostile takeovers, the first effect prevails: M&A bids of larger corporations have a higher probability of success. However, this result may not be confirmed in the case of bank's M&As, for example because regulatory authorities may be unwilling to authorize deals among actors that already have a relevant market share. In our empirical analysis, we will present evidence controlling for the size of the deal.

2.3. Country characteristics

One of the strengths of our analysis is the availability of information on a large sample of deals from over 169 countries, which permits us, among other hypotheses, to verify if the probability of success of an M&A depends on the characteristics of the economic, institutional and regulatory environment of the country where the banks involved operate.

A first characteristic that may be argued to impact on the likelihood of success of M&A deals is its level of economic development, proxied, for example, by GDP per capita. The efficiency of the market for corporate control increases with economic development (Shleifer and Vishny, 1997) and it can be plausibly argued that, ceteris paribus, more efficient markets are associated with a higher probability of success of corporate operations (Kaufmann et al., 2005). The degree of development of the financial sector might also be thought to impact on the probability of success of corporate operations, seeing as more developed financial markets are also in general more efficient. Following the literature, we can proxy financial development with the size of the banking sector and of the stock market, both as a percentage of the GDP. It can also be argued that a stronger stock market as opposed to the banking sector favors corporate transactions, and therefore reduces the probability of failed takeovers. For this reason, in our analysis we will also control for the ratio between the size of the banking sector and that of the stock market. M&A deals are also more likely to be difficult to conclude in countries where the banking sector is more concentrated, because regulatory authorities will be less willing to favor further concentration. Also, pressure from the few other competitors present in the market would be in this case stronger.

Even the regulatory and legal environments can impact on the likelihood of success of M&A deals. We will check this hypothesis by adding the degree of risk aversion of each country's bank regulatory authorities to our analysis. Risk averse regulators are likely to intervene more often and stop some announced deals, but they will also require a more thorough previous organization of any bank M&A deal, thus reducing the probability of failure. It is left to the empirical analysis to determine what effect prevails. Legal systems based on Common Law principles have been shown to be more favorable to corporate operations. Therefore, in our analysis we check for the nature of the legal system.

Finally, since M&As have been shown to follow waves (Baker et al., 2009; Goel and Thakor, 2010; Gorton et al., 2009; Gugler et al., 2012), we do verify if a deal is more likely to succeed if it takes place when the total number of operations is larger or lower. In some specifications we thus control for the total number of announced deals in the bidder's country and in that of the target.

3. Data and summary statistics

We conduct our empirical analysis using a large sample of M&A operations recorded by Security Data Corporation (SDC) in the "Platinum Worldwide Merger and Acquisition Database". For each deal, SDC reports a large set of information on the banks involved (the name, identification codes such as SEDOL and ISIN, the countries of operation) and on the characteristics of the deal (the dates of announcement and conclusion, the value, characteristics such as the type of operation and the method of payment). Table 1 reports the definition of the variables used in the empirical analysis and their sources. Deal specific variables are from SDC. Bank characteristics, such as leverage and liquidity, are from Bankscope: a commercial database produced by Bureau van Dick which records balance sheet information for a large sample of banks in the world. Characteristics of each country's financial structure are from the Financial Structure Database produced by the World Bank (Beck et al., 2000). The measure of regulatory risk aversion is calculated using the most recent version of data from Barth et al. (2004), following the methodology proposed by Buch and DeLong (2008). Finally, data on legal systems are from The World Factbook, produced by US's Central Intelligence Agency.

Our initial sample includes 21,404 deals announced between 1992 and 2010 and involving banks in 169 countries. Of these, 20,464 were completed and 940 were withdrawn (4.4% of the total). The distribution of deals through time is not homogeneous (Fig. 1). Although the total number of M&As is evenly spread over the two periods before and after 2000 (respectively 51% and 49% of the total), the share of withdrawn operations is higher in the first part of the period (65%).

The number and the outcome of the deals is also different across countries. The United States have the highest number of M&As (9673 operations, 443 of which were abandoned), accounting for a bit less than half of the entire sample. They are followed by the UK (1278 of which 26 abandoned), Japan (920 and 29) and Germany (696 and 24). Among the countries with more than 100 operations, the ratio between the number of abandoned and completed operations is highest in Indonesia (13.9%), Norway

[6] Additional factors which are likely to affect the probability of success of an announced M&A are the share of capital already owned by the bidder (the "toehold" effect) and the price offered for the acquisition. Acquirers that already own part of a corporation are more likely to know its functioning, to have good relationships with the management, and to tailor the deal in a way which is satisfactory for the target's equity holders; indeed, Jeon (2009) shows that the probability of success increases when the bidder already owns 5% or more of the capital of the target company. Similarly, Lorenz and Schiereck (2007) find that failures are more likely when the bidder offers a high acquiring price and Betton and Eckbo (2000) find that the probability of success increases with the premium offered with respect to the market stock price. Unfortunately, we are unable to test these additional hypotheses because information on the share of capital already owned and on the premium paid by the bidder are not available for most of our sample, which includes among the targets a large number of unlisted banks.

Table 1
Variable's Description.

Variables	Source	Description
Deal variables		
Withdrawn	SDC	Dummy variable that takes the value 1 if the deal is withdrawn, 0 otherwise
Hostile	SDC	Dummy variable that takes the value 1 if the deal is hostile, 0 otherwise
Lockup	SDC	Dummy variable that takes the value 1 if bidder has a lockup clause, 0 otherwise
Multi-bidders	SDC	Dummy variable that takes the value 1 if there are multiple bidders, 0 otherwise
Stock payment	SDC	Dummy variable that takes the value 1 if the payment of the transaction is settled with stocks, 0 otherwise
Number of days	SDC	Number of days from the day of announcement to the day of conclusion or abandonment
Cross-border	SDC	Dummy variable that takes the value 1 if the deal involves banks from different counties, 0 otherwise
Deal value	SDC	Total value of the transaction
Bidder's tot. assets	Bankscope	Value of bidder's total assets
Deal val./T. ass.(b)	SDC, Bankscope	Ratio of total value of the transaction over value of bidder's total assets
Bidder's leverage	Bankscope	Ratio of net debt over total assets of the bidder
No. M&As (bidder)	SDC	Total number of M&As in the country of the bidder in each year
No. M&As (target)	SDC	Total number of M&As in the country of the target in each year
Regul. risk av. (target)	Barth et al. (2004) Buch and DeLong (2008)	Index of regulator's risk aversion in the target's country, ranging from 0 (low risk aversion) to 12
GDP per capita (target)	IMF	
Credit/GDP (target)	Beck et al. (2000)	Ratio of total credit to the private sector over GDP
Stock market/GDP (t)	Beck et al. (2000)	Ratio of stock market capitalization over GDP
Stock mkt./credit (t)	Beck et al. (2000)	Ratio of stock market capitalization over total credit to the private sector
Concentration (target)	Beck et al. (2000)	Market share of each country's five largest banks based on bank's total assets
Common law (target)	CIA	Dummy variable that takes the value 1 if the target's country adopts a Common law legal system
Mixed law (target)	CIA	Dummy variable that takes the value 1 if the target's country adopts a Mixed law legal system
Common law (bidder)	CIA	Dummy variable that takes the value 1 if the bidder's country adopts a Common law legal system
Mixed law (bidder)	CIA	Dummy variable that takes the value 1 if the target's country adopts a Mixed law legal system

SDC is Security Data Corporation, IMF is the International Monetary Fund, CIA is Central Intelligence Agency's World Factbook.

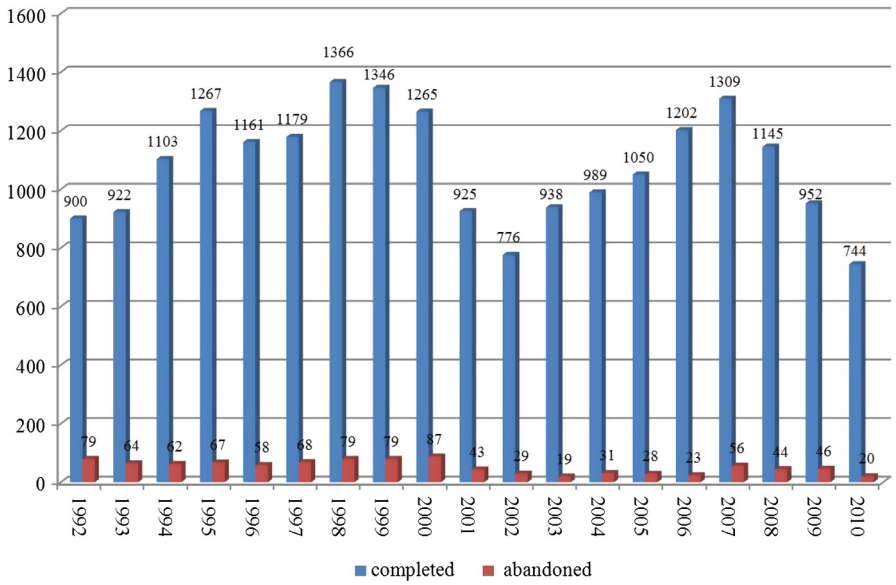

Fig. 1. Completed and abandoned M&As. Completed and abandoned Mergers and Acquisitions between 1992 and 2010, recorded by Platinum Worldwide Mergers and Acquisition Database, provided by Security Data Corporation (SDC).

(12.5%), Philippines (10.7%), Malaysia (8.1%), China (6.7%) and Poland (6.4%). It is particularly low in Russia (1.1%), Singapore (1.4%), the UK (2.0%), Brazil (2.2%), Sweden (2.9%) and Switzerland (3.0%).

Table 2 reports the descriptive statistics for the variables used in the empirical analysis, distinguishing also between completed and failed deals. The average and median size of failed operations is larger compared to that of completed deals, and the difference is statistically significant at the 1% level. Failed operations also show a higher ratio between the value of the transaction and the bidder's total assets. Also in this case the difference is statistically significant at the 1% level. The size of bidders which take part in failed operations is also slightly larger than in the case of successful deals, but the difference is not statistically significant. Bidders from failed M&As also have a significantly lower ratio of net debt over total asset, our proxy for leverage. Failed deals are also on average more likely to be hostile, to be paid in stocks, to require longer negotiations and to have multiple bidders. The incidence of cross-border deals is slightly lower among failed operations than among successful ones, although the difference in means is only significant at the 10% level. Similarly, bids including a lockup clause have a significantly lower incidence among abandoned operations.

Focusing on the characteristics of the countries where the target bank is incorporated, the sample of failed deals shows, on average, a significantly higher per capita GDP and a higher degree of risk

Table 2
Descriptive statistics.

	Number of observations			Mean			Sig.	Median			Standard deviation			5th percentile			95th percentile		
	Full sa.	Comp.	Failed	Full sa.	Comp.	Failed		Full sa.	Comp.	Failed	Full sa.	Comp.	Failed	Full sa.	Comp.	Failed	Full sa.	Comp.	Failed
Abandoned	21,404	20,464	940	0.0439	0	1	***	0	0	1	0.2049	0	0	0	0	1	0	0	1
Hostile	21,404	20,464	940	0.0022	0.0008	0.0319	*	0	0	0	0.0468	0.0288	0.1759	0	0	0	0	0	0
Lockup	21,404	20,464	940	0.0270	0.0275	0.0170		0	0	0	0.1621	0.1634	0.1294	0	0	0	0	0	0
Multi-bidders	21,404	20,464	940	0.0070	0.0042	0.0681	***	0	0	0	0.0831	0.0643	0.2520	0	0	0	0	0	1
Stock payment	21,404	20,464	940	0.1043	0.1004	0.1883	***	0	0	0	0.3056	0.3006	0.3912	0	0	0	1	1	1
Number of days	21,385	20,445	940	2.5895	2.5017	4.4994	***	3.2958	2.9957	4.6775	2.4169	2.4153	1.4812	0	0	1.3863	5.7170	5.6630	6.4785
Cross-border	21,404	20,464	940	0.1763	0.1773	0.1543	*	0	0	0	0.3811	0.3819	0.3614	0	0	0	1	1	1
Deal Value (log)	11,589	11,080	509	3.3191	3.2892	3.9695	***	3.2762	3.2548	3.8063	1.9972	1.9878	2.0894	0.0000	−0.0121	0.6931	6.6433	6.5647	7.6779
Bidder's tot. assets (log)	7790	7397	393	8.3339	8.3310	8.3892		8.2127	8.2127	8.2239	2.5323	2.5358	2.4686	4.2808	4.2739	4.4659	12.6390	12.6566	12.6004
Deal val./T. ass.(b)	5336	5109	227	0.0649	0.0631	0.1050	***	0.0145	0.0141	0.0275	0.1644	0.1612	0.2207	0.0003	0.0003	0.0011	0.2851	0.2763	0.4056
Bidder's leverage	2652	2450	202	25.8696	26.8884	13.5121	***	6.5339	7.0383	2.5750	58.5426	59.7548	39.1272	0.5686	0.6068	0.3195	110.0989	111.9902	52.5566
No. M&As (bidder)	21,404	20,464	940	287.2829	287.1755	289.6223		88.5	91	71.5	305.2061	304.9748	310.3550	4	4	3	847	847	847
No. M&As (target)	21,404	20,464	940	280.9919	280.9914	281.0021		83	83	73	302.6869	302.4997	306.8975	3	3	3	845	845	845
Regul. risk av. (target)	21,017	20,098	919	8.2797	8.2720	8.4472	**	10	10	10	2.2340	2.2355	2.1941	4	4	4	10	10	11
GDP per capita (target)	21,058	20,131	927	7.5963	7.6059	7.3883	***	8.4619	8.4619	8.0855	1.8136	1.8042	1.9969	4.3982	4.4040	4.0378	9.4049	9.4049	9.3900
Credit / GDP (targer)	20,689	19,781	908	134.6058	134.8407	129.4902	***	140.2858	140.7136	135.5139	51.3323	51.2540	52.7798	31.8751	32.0857	28.6558	203.6723	205.7462	203.6723
Stock market / GDP (t)	20,516	19,618	898	98.0627	98.3263	92.3051	***	99.3448	99.3448	90.3500	44.9129	44.8182	46.5888	20.0903	20.3031	17.7638	162.0009	162.0009	162.0009
Stock mkt. / Credit (t)	20,788	19,870	918	1.8026	1.8062	1.7258		1.4433	1.4433	1.4645	8.1143	8.2966	1.0349	0.6803	0.6803	0.7503	3.4093	3.3751	3.8990
Concentration (target)	15,029	14,446	583	59.2604	59.2925	58.4666		56.2072	56.1391	57.2393	22.5985	22.5693	23.3162	28.5443	28.5443	28.5443	96.3422	96.3422	95.8439
Common law (target)	21,404	20,464	940	0.6018	0.6022	0.5915		1	1	1	0.4895	0.4894	0.4918	0	0	0	1	1	1
Mixed law (target)	21,404	20,464	940	0.0291	0.0274	0.0660	***	0	0	0	0.1680	0.1631	0.2483	0	0	0	0	0	1
Common law (bidder)	21,401	20,461	940	0.6425	0.6417	0.6596		1	1	1	0.4793	0.4795	0.4741	0	0	0	1	1	1
Mixed law (bidder)	21,404	20,464	940	0.0520	0.0495	0.1085	***	0	0	0	0.2221	0.2168	0.3112	0	0	0	1	0	1
Commercial banks	21,404	20,464	940	0.4687	0.4985	0.4840	***	0	0	1	0.4990	0.4985	0.4893	0	0	0	1	1	0
Credit institutions	21,404	20,464	940	0.0901	0.2881	0.2427	***	0	0	0	0.2863	0.2881	0.2427	0	0	0	1	1	0
Real Estate	21,404	20,464	940	0.3510	0.4795	0.3970	***	0	0	0	0.4729	0.4795	0.3969	0	0	0	1	1	0
Saving and Loans	21,404	20,464	940	0.0901	0.2847	0.3191	***	0	0	0	0.2864	0.2847	0.3191	0	0	0	1	1	0

Sig. indicates statistical significance of the difference in means test for the samples of completed and failed deals.
*** Indicates statistical significance at the 1% level.
** Indicates statistical significance at the 5% level.
* Indicates statistical significance at the 10% level.

aversion of banks' regulators. On the other hand, it shows lower development of banking and financial markets.

The pairways correlation matrix, reported in Table 3, broadly confirms the evidence provided by mean and median comparisons. The probability of a deal to be abandoned is positively and significantly correlated with it being a hostile operation, with the presence of multiple bidders, with the payment being made in stocks, and with the size of the operation (in absolute terms and as a ratio of the bidder's total assets), and is negatively correlated with the bidder's leverage. It is also positively correlated with the degree of risk aversion of the banks' regulators in the target country and negatively correlated with its GDP per capita and with the development of its banking and financial markets.

However, Table 3 also shows that many of the characteristics of the deals, of the banks and of the countries where targets are located have themselves a significant degree of bilateral correlation. This suggests that more complex patterns may be hidden behind those appearing from simple mean and median comparisons. They may also be hidden behind any bilateral correlations between the probability of failure and the characteristics of the deals, the banks and the countries. For this reason, in the following we report the results of a multivariate econometric analysis, aimed at verifying the combined effect of different characteristics on the probability of abandonment and on the duration of the deal.

4. Econometric specification

To study the probability of abandonment of an announced M&A, our baseline econometric specification is the following binomial model:

$$Pr(Y_{ijkst} = k) = F(X_{ijkst}, BB_{ijt}, CC_{st}, CD_{js}, TD_t), \qquad k = 0, 1 \qquad (1)$$

where $Y_{ijkst} = 1$ if a deal in which bank i of country j bids for bank k in country s in year t is abandoned and $Y_{ijkst} = 0$ if the deal is completed; X_{ijkst} is a vector of characteristics of each deal; BB_{ijt} are the characteristics of bidder banks at time t; CC_{st} is a vector of characteristics of the country of incorporation of the target bank at time t; CD_{js} are country dummies; and TD_t are time dummies. The model is estimated using a probit specification, with standard errors clustered at the level of the country pairs, formed by the bidder and target banks.

In the baseline specification we control for country characteristics including the bidder's and target's country dummies. This allows to control for all time-invariant country characteristics that might impact on the probability of success of an operation. It also reduces the probability of an omitted variable bias to appear in the estimation of the coefficient of deal and bank specific characteristics. However, since we are also interested on the impact of some country specific characteristics that are time-invariant, in additional specifications we substitute countries' dummies with a set of characteristics of the economy and of the banking and financial sectors.

5. Empirical results

5.1. Characteristics of the deal and of bidders and targets

Panel 1 of Table 4 presents the results of the binomial model, including, among the explanatory variables, the characteristics of each deal and controlling for country characteristics with the country dummies. For this baseline specification we have 20,489 observations, with an incidence of failed deals of 4.6%. The pseudo-R^2 of the regression is just below 0.2 (as in most of our specifications).

Consistent with the previous literature, the results show that hostile deals are less likely to be completed, as shown by the positive coefficient, statistically significant at 1% level. The marginal effect is just below 12% (i.e., hostile operations have a 12% higher probability of being abandoned than other operations). Transactions including some type of lockup clause have instead a lower probability of abandonment, also statistically significant at the 1% level, with a marginal effect around 5%. This is consistent with the evidence in Betton and Eckbo (2000), who also show that the probability of success is higher in presence of a previous agreement between the merging companies.

Operations where more than one potential bidder is present also have a higher probability of being abandoned, with statistically significant effect at the 1% level and a marginal effect around 10%. Interestingly, this is true even when we consider multiple bids as a single observation in our sample. We thus avoid the mechanical result determined by the fact that, in case of multiple bidders, only one can eventually acquire the target. This suggests that multiple bidders contrast each other, making it easier for the target to avoid the acquisition.[7]

Transactions in which the payment is made in shares have a lower probability to be completed, as shown by the positive coefficient of the associated dummy variable, although significance is in this case at the 5% level and the marginal effect is negligible (less than 1%). This is consistent with the view that a higher degree of uncertainty, related to the difference between the price of exchange and the future development of the market price reduces the appeal of the deal.

Cross-border deals are less likely to be abandoned, although also in this case the coefficient of the associated dummy variable is statistically significant only at the 5% level and the marginal effect is around 1%. Since there are few doubts on the fact that organizing a cross-border deal entails higher explicit and implicit costs (Focarelli and Pozzolo, 2005; Pozzolo, 2009; Caiazza et al., 2012, 2014), this result suggests that banks follow a risk averse strategy. They start and announce only those operations that have a high probability of success.

Finally, as the length of the negotiation increases, the likelihood of the deal to be completed tends to decrease, as shown by the positive coefficient of (one plus the logarithm of) the number of days between the date of announcement and that of completion or abandonment, which is statistically significant at the 1% level (with a marginal effect of less than 2%, e.g., increasing the length of the negotiation from 0 to 5 days reduces the probability of success by 10%). However, this apparently strong result is in large part due to the fact that 8717 deals are announced and concluded in the same day, while only 33 are announced and abandoned in the same day. In unreported regressions available upon request, we have verified that, focusing on the subsample of deals for which the announcement of the operation and the outcome of the deal do not take place in the same day, the coefficient of (one plus the logarithm of) the number of days is still positive but is only statistically significant at the 10% level. The marginal effect, on the other hand, shrinks to less than 0.5%. All other results are broadly unchanged.

Panel 2 of Table 4 presents the results of a specification similar to that in Panel 1, but in which the dummy variables for payments made by means of stock exchanges is interacted with the number of days before the deal is completed or abandoned. Interestingly, the coefficient of the interaction term is negative and statistically significant at the 1% level, suggesting that in the case of deals paid with stock exchanges, longer negotiations do not have a negative effect on the probability of success. Indeed, while deals paid in stocks still have a higher probability of default, as shown by the

[7] Unreported regressions on a sample in which all operations with multiple bidders had been removed confirm that the impact of all other characteristics is unaffected by the inclusion of multiple bids.

Table 3
Correlation matrix.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	Withdrawn	**1.00**																					
2	Hostile	**0.14**																					
3	Lockup	−0.01	0.00																				
4	Multi-bidders	**0.16**	**0.20**	0.01																			
5	Stock payment	**0.06**	**0.02**	**0.34**	**0.02**																		
6	Number of days	**0.17**	**0.03**	**0.18**	**0.07**	**0.31**																	
7	Cross-border	−0.01	**−0.01**	**−0.07**	0.00	**−0.13**	**−0.10**																
8	Deal value	**0.07**	0.06	**0.14**	**0.07**	**0.14**	**0.21**	**0.18**															
9	Total asset bidder (log)	0.01	0.02	**0.03**	**0.06**	−0.01	**0.09**	**0.32**	**0.50**														
10	Deal value/Total asset bidder	**0.05**	**0.05**	**−0.03**	0.01	**−0.04**	**−0.10**	**−0.04**	**0.10**	**−0.39**													
11	Leverage	**−0.06**	−0.04	−0.03	−0.02	−0.01	**−0.07**	**0.11**	**−0.12**	**0.27**	**−0.16**												
12	No. M&As in bidder's country	0.00	0.01	**0.22**	0.00	**0.27**	**0.33**	**−0.29**	**−0.11**	**−0.16**	**−0.11**	**0.04**											
13	No. M&As in target's country	0.00	0.01	**0.23**	0.00	**0.28**	**0.33**	**−0.31**	**−0.12**	**−0.15**	**−0.11**	**0.05**	**0.96**										
14	Regul. risk aversion target	**0.02**	−0.01	**0.13**	**−0.02**	**0.17**	**0.27**	**−0.27**	**−0.13**	**−0.20**	**−0.07**	0.00	**0.60**	**0.63**									
15	GDP per capita target	**−0.02**	−0.01	**0.14**	**−0.01**	**0.18**	**0.27**	**−0.37**	**−0.06**	**−0.13**	**−0.10**	−0.02	**0.70**	**0.74**	**0.56**								
16	Credit/GDP target	**−0.02**	−0.01	**0.07**	**−0.02**	**0.10**	**0.19**	**−0.30**	0.00	**−0.19**	**−0.03**	**−0.04**	**0.44**	**0.48**	**0.52**	**0.72**							
17	Stock market/GDP target	**−0.03**	0.01	**0.10**	−0.01	**0.12**	**0.12**	**−0.22**	**−0.07**	**−0.32**	**0.08**	**−0.05**	**0.40**	**0.43**	**0.45**	**0.43**	**0.63**						
18	Stock market/Credit target	0.00	0.00	−0.01	0.00	**−0.01**	**−0.02**	**0.03**	**0.02**	**0.14**	**−0.06**	0.01	**−0.03**	**−0.04**	**−0.06**	**−0.06**	**−0.05**	**−0.54**					
19	Concentration target	−0.01	0.00	**−0.16**	0.00	**−0.20**	**−0.26**	**0.28**	**0.06**	**0.12**	**0.09**	0.03	**−0.73**	**−0.78**	**−0.56**	**−0.73**	**−0.48**	**−0.47**	**0.11**				
20	Common law (target)	0.00	0.00	**0.14**	−0.01	**0.16**	**0.20**	**−0.26**	**−0.12**	**−0.23**	**−0.04**	0.00	**0.64**	**0.67**	**0.46**	**0.63**	**0.54**	**0.59**	**−0.07**	**−0.58**			
21	Mixed law (target)	**0.05**	0.00	**−0.03**	0.01	**−0.02**	**−0.02**	**0.10**	**0.04**	**0.04**	0.00	**−0.04**	**−0.14**	**−0.16**	**−0.06**	**−0.26**	**−0.24**	**−0.14**	−0.01	**0.15**	0.01		
22	Common law (bidder)	0.01	0.00	**0.12**	−0.01	**0.15**	**0.19**	**−0.21**	**−0.16**	**−0.30**	0.00	−0.01	**0.62**	**0.60**	**0.50**	**0.52**	**0.48**	**0.59**	**−0.06**	**−0.50**	**0.86**	**−0.02**	
23	Mixed law (bidder)	**0.05**	0.00	**−0.04**	−0.01	**−0.03**	**−0.04**	**0.03**	**−0.07**	**−0.13**	**0.09**	**−0.05**	**−0.21**	**−0.20**	**0.09**	**−0.35**	**−0.18**	0.00	**−0.02**	**0.19**	**−0.15**	**0.55**	**0.09**

Coefficients statistically significant at the 5% level are reported in bold characters.

Table 4
Deal and bank characteristics.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Hostile	1.461***	1.441***	1.636***	1.752**	1.801***	1.726***	1.708***	1.600**
	(0.432)	(0.434)	(0.426)	(0.540)	(0.585)	(0.562)	(0.658)	(0.625)
Lockup	−0.612***	−0.558***	−0.606***	−0.610***	−0.579***	−0.613***	−0.484***	−0.504***
	(0.047)	(0.053)	(0.041)	(0.097)	(0.111)	(0.104)	(0.115)	(0.097)
Multi-bidders	1.228***	1.219***	1.223***	1.319***	1.387***	1.347***	1.319***	1.239***
	(0.102)	(0.103)	(0.099)	(0.178)	(0.190)	(0.186)	(0.180)	(0.177)
Stock payment	0.073**	1.328***	−0.008	0.309***	0.269***	0.300***	0.176*	0.173*
	(0.030)	(0.226)	(0.052)	(0.057)	(0.057)	(0.056)	(0.092)	(0.092)
Number of days (log)	0.202***	0.222***	0.210***	0.107*	0.128**	0.114**	−0.013	−0.035
	(0.020)	(0.013)	(0.031)	(0.062)	(0.061)	(0.065)	(0.094)	(0.095)
Cross-border	−0.137**	−0.134**	−0.456***	−1.230***	−1.249***	−1.175***	−2.071***	−2.013***
	(0.063)	(0.064)	(0.102)	(0.466)	(0.402)	(0.440)	(0.721)	(0.695)
Deal value (log)			0.067***	0.127***	0.038	0.128***	0.099***	0.228***
			(0.013)	(0.025)	(0.038)	(0.039)	(0.033)	(0.034)
Stock* Number of days (log)		−0.265***						
		(0.048)						
Bidder's total assets (log)				−0.107***		−0.107***		−0.167***
				(0.019)		(0.016)		(0.028)
Deal value/Bidder's total assets					0.799***	0.138		
					(0.253)	(0.217)		
Leverage							−0.002**	0.002**
							(0.001)	(0.001)
Pseudo R-squared	0.18	0.19	0.18	0.20	0.19	0.19	0.22	0.23
Share of abandoned deals (%)	4.58	4.58	4.67	4.90	4.90	4.91	6.33	6.39
N	20,489	20,489	10,852	4507	4506	4443	1942	1934

The dependent variable takes the value of one if the deal was abandoned and zero if it was successful. For the definitions of variables, see Table 1. The model is estimated using a probit specification. All specifications include dummies for specialization, bidder countries, target countries and years. Standard errors, reported in parenthesis, are clustered at the target's country level.
*** Indicates statistical significance at the 1% level.
** Indicates statistical significance at the 5% level.
* Indicates statistical significance at the 10% level.

sum of coefficients of the level and interacted variables (which is statistically significant at the 1% level), the length of the negotiation has in this case a statistically insignificant effect.

Panel 3 presents the results of a specification which includes the logarithm of the deal's value. The number of observations in this case drops to 10,852, but the incidence of failed deals remains similar to that of the whole sample: 4.7%. Interestingly, larger deals are found to have a higher probability of being abandoned, as shown by the positive coefficient, statistically significant at the 1% level. But the marginal effect is less than 0.5%. Controlling for the size of the deal, the coefficient of the dummy for stock payment loses its economic and statistical significance.[8] All other coefficients are instead broadly unchanged.

Panels 4–8 present the results of a set of other specifications including additional explanatory variables. Since this information is available for a smaller set of deals than in the original sample, the number observations available for the estimation drops by a large amount in some cases. Reassuringly, the coefficients of the dummies for hostile deals, in those including lockup clauses and in those with multiple bidders, are broadly unchanged. This provides additional evidence of the robustness of the results. The size and the statistical significance of the other coefficients instead show some more variability, although the sign does not change in any of the specifications.

Panel 4 presents the results of a specification which includes the size of the bidder, measured by the logarithm of the value of the bank's total assets. In this case, the number of observations drops to 4507, with an incidence of abandoned deals of 4.9%. While larger operations have a higher probability of default, larger bidders have a higher probability of successfully concluding their deals. The coefficient is statistically significant at the 1% level, and the marginal effect is about 0.5%. In fact, the interplay between size of the deal and size of the bidder is more complex than what it may appear. Panel 5 shows that deals that have a higher value relative to the size of the bidder are more likely to be unsuccessful; and Panel 6 shows that controlling at the same time for the size of the deal and that of the bidder, the coefficient of the relative size of the deal with respect to that of the bidder becomes statistically insignificant. In all these cases, the marginal effects are between 0.5% and 1%. In sum, this evidence suggests that larger deals and those with smaller bidders have a higher probability of being abandoned, but that the relative size of the deal with respect to that of the bidder is unimportant, once these two characteristics are separately controlled for.

Finally, Panels 7 and 8 present the results controlling for the bidder's leverage, measured by the ratio of net debt to total assets. The number of observations drops in this case to just below 2000, and the share of abandoned deals raises slightly to about 6%. Panel 7 shows that bidders with a higher leverage have a higher probability of completing successfully their deals, although the coefficient is statistically significant only at the 5% level and the marginal effect is negligible. However, controlling also for the size of the deal, the coefficient of leverage becomes positive and statistically significant (Panel 8), consistent with what predicted in the previous literature.

Among deal specific characteristics, bidder's hostility, the presence of multiple potential acquirers and the length of the negotiation are by far the factors with the largest explanatory power in explaining the probability of a deal being abandoned. Using dominance analysis (Grömping, 2007), we have verified that in the

[8] In unreported regressions we have verified that the loss in significance of the dummy for payments on stocks is not due to the inclusion of the value of the transaction, but to the different sample size; in additional unreported regressions, we have also verified that the interaction of the dummy for deals paid with stock exchanges with deal's size has no statistically significant effect.

Table 5
Deal, bank and country characteristics.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Hostile	1.490***	1.497***	1.498***	1.274**	1.478***	1.288**	2.430***
	(0.432)	(0.429)	(0.429)	(0.519)	(0.411)	(0.514)	(0.427)
Lockup	−0.582***	−0.578***	−0.578***	−0.524***	−0.637***	−0.517***	−0.536***
	(0.039)	(0.036)	(0.036)	(0.073)	(0.072)	(0.074)	(0.121)
Multi-bidders	1.202***	1.200***	1.202***	1.137***	1.198***	1.151***	1.365***
	(0.102)	(0.103)	(0.103)	(0.148)	(0.108)	(0.157)	(0.195)
Stock payment	0.094***	0.097***	0.096***	0.030	0.071**	0.035	0.084
	(0.031)	(0.031)	(0.031)	(0.069)	(0.033)	(0.067)	(0.064)
Number of days (log)	0.204***	0.204***	0.204***	0.247***	0.197***	0.246***	0.158***
	(0.019)	(0.019)	(0.019)	(0.015)	(0.018)	(0.015)	(0.017)
Cross-border	−0.132**	−0.139**	−0.148**	−0.064	0.003	−0.050	
	(0.063)	(0.063)	(0.064)	(0.075)	(0.058)	(0.069)	
No. M&As in bidder's country	−0.001***		0.001				
	(0.000)		(0.001)				
No. M&As in target's country		−0.001***	−0.002***				
		(0.000)	(0.001)				
Regul. risk aversion target				0.035**		0.020	
				(0.018)		(0.019)	
GDP per capita target				−0.139***		−0.110**	
				(0.055)		(0.050)	
Credit/GDP target				0.004**		0.004**	
				(0.002)		(0.002)	
Stock market/GDP target				−0.005***		−0.005***	
				(0.002)		(0.002)	
Stock market/Credit target				−0.170***		−0.158***	
				(0.061)		(0.055)	
Concentration				0.000		0.001	
				(0.003)		(0.003)	
Common law (target)					−0.147**	0.115	
					(0.067)	(0.107)	
Mixed law (target)					0.545***	0.249**	
					(0.058)	(0.103)	
R-squared	0.19	0.19	0.19	0.19	0.15	0.19	0.11
Share of abandoned deals (%)	4.58	4.58	4.58	3.82	4.40	3.82	4.51
N	20,489	20,489	20,489	13,915	21,381	13,915	9391

The dependent variable takes the value of one if the deal was abandoned and zero if it was successful. For the definitions of variables, see Table 1. The model is estimated using a probit specification. All specifications include dummies for specialization, bidder countries, target countries and years. Standard errors, reported in parenthesis, are clustered at the target's country level.
*** Indicates statistical significance at the 1% level.
** Indicates statistical significance at the 5% level.
* Indicates statistical significance at the 10% level.

specification reported in Panel 1, 37% of the overall variance explained by the model is due to the two dummies for hostile and multi-bidders operations.[9] There is also an additional 25% explained by the (logarithm of one plus the) length of the negotiation, but excluding the cases in which the announcement of the operation and the outcome of the deal do not take place in the same day, the share of variance explained by the length of the negotiation drops to less than 1%, while that of the dummies for hostile and multi-bidders operations raises to 36%. Overall, 66% of the overall explained variance is explained by deal and bank specific characteristics, about 30% by country dummies, and the rest by year and bank type dummies.

5.2. Country characteristics

Table 5 presents the results of a set of regressions controlling also for the number of M&As announced in the bidders' and targets' countries in each year (Panels 1–3), and other characteristics of the countries where banks are incorporated (Panels 4–8). Concerning deal and bank characteristics, we use the benchmark specification presented in Panel 1 of Table 4, which maximizes the number of observations. All specifications presented in Panels 4–8 of Table 5 do not include country fixed effects, so as to exploit the cross-section variability in the estimation of country characteristics. Reassuringly, in all specifications presented in Table 5, the coefficients of the characteristics of the deal and of the banks involved in the operations are broadly unchanged with respect to the previous specifications.

Panels 1–3 test the hypothesis that M&A waves might impact on the probability of them being completed successfully. The negative and statistically significant coefficient of the number of M&As in the target's country shows that during M&A booms, their probability of success is higher. Interestingly, the results on Panel 3 show that what determines a lower probability of success is not if the M&A market is buoyant in the bidder's countries, but rather if it is buoyant in target ones. Overall, the marginal effects of these variables are negligible.

Panel 4 presents the results of a specification which includes a number of characteristics from the countries where targets are located.[10] Consistent with our hypothesis that regulators can have a strong power in hindering M&A deals, operations involving targets

[9] Dominance analysis allows to determine an explicit quantification of the relative importance of each explanatory variable for the response when regressors are correlated. In our analysis, we use the "domin" routine of Stata written by Joseph N. Luchman to calculate the general dominance statistic, that is the average marginal contribution to the overall fit statistic which an independent variable makes across all models where the independent variable is included. Due to the curse of dimensionality caused by the number of regressors in our model, we orthogonalize independent variables using singular value decomposition as proposed by Johnson (2000), using the "epsilon" option applied to a linear regression model instead of the original probit specification. Results are available from the authors upon request.

[10] Since only 18% of the deals in our sample are cross-border, in most cases the characteristics of bidders' and targets' countries coincide.

incorporated in countries where the regulatory authorities have a higher degree of risk aversion are more likely to be abandoned, with a coefficient that is statistically significant at the 5% level. The marginal effect of a 1% increase in the index of risk aversion is an increase of about 2% in the probability of abandonment.

Similarly, abandonments are more likely when the target is incorporated in a country with higher per capita GDP, most likely because they have a more competitive market for corporate control and therefore a larger number of deals are attempted, as confirmed by the strong positive correlation between these characteristics (Table 3). The marginal effect is in this case about 1%. Deals with targets in countries where the banking sector is larger relatively to the GDP have a higher probability of being abandoned, consistent with the view that acquisitions in more developed banking markets are overall more difficult. The marginal effect is in this case about 4%. On the contrary, operations involving targets in countries with a more developed stock market, both relative to GDP and to the size of the banking sector, have a higher probability of being concluded successfully. Marginal effects are in these cases about 3% and 2%, respectively. Finally, the banking sector's degree of concentration in the country where the target is incorporated has no statistically significant effect on the probability of a deal being successful.

Panels 5 and 6 focus on the characteristics of the legal system of the countries where banks are incorporated.[11] Panel 5 shows that, with respect to countries where the legal system is inspired to Civil law, deals with targets in countries with a Common law system have a higher probability of being concluded successfully (with a marginal effect of more than 1%), while those in countries with a mixed system have an even higher probability of being abandoned (with a marginal effect of about 4%). Panel 6 presents the results including also other country characteristics, as in Panel 4. While the coefficient of the dummy in mixed law countries is still positive and statistically significant at the 1% level, that of the dummy for Common law countries becomes negative and statistically insignificant, casting some doubts on the robustness of this result.[12]

Finally, since a large number of deals in our sample are among banks incorporated in the US, we have reported the results of the baseline specification in Panel 7, estimated only on this smaller sample. Reassuringly, all estimated coefficients are broadly in line with those obtained from the estimates on the full sample. The only exception is the coefficient of the dummy for deals paid with stock exchanges: it is positive but statistically insignificant, as in many other specifications.

Consistent with the findings of the specification which includes country dummies, these results show that country specific characteristics have a rather limited explanatory power of the probability that a deal is abandoned. Using once again dominance analysis, in the specification reported in Panel 6 we find that only 7% of the overall variance explained by the model is due to country characteristics, with a stronger impact from the size of the target country and the degree of risk aversion of bank regulators.

6. Conclusions

M&As in the banking sector have helped to radically change financial markets in the past three decades, becoming a characterizing element of the process of international integration which is generically defined as "globalization". Determinants, directions and consequences of bank M&As have been analyzed in detail, but little is known of the reasons why some announced operations have turn out unsuccessful.

In this study we have sought to provide a preliminary answer to this question, analyzing a large data set of over 20,000 announcements of M&As in the banking sector in over 150 countries between 1992 and 2010. Our results show that the most important factors which determine the failure of an announced operation are deal specific characteristics, in particular the hostility of the bidder and the presence of multiple potential acquirers. Moreover, lengthier negotiations have a lower probability of success. These three deal characteristics have a sizeable marginal effect and account for more than 60% of the overall variance explained by our baseline specification, tat includes time and country specific fixed effects.

These results are robust to the inclusion among the explanatory variables of many additional controls. However, although they have a statistically significant effect, these additional factors have in fact a very limited explanatory power on the probability of success. Among the bank specific characteristics, our results show that M&As of larger size and announced by smaller and more levered banks are more likely to be abandoned. Among the country specific characteristics, greater interference by supervisory authorities, that are not always favorable to a fully competitive market for corporate control, leads instead to a higher probability of failure.

Interestingly, cross-border operations are more likely to succeed. At first sight, this result is counterintuitive, since the presence of strong cultural barriers and regulations would suggest that cross-border operations should have a higher abandonment ratio. But it is likely that such operations are only announced when all parties involved have found a preliminary agreement. This suggests that the time chosen to announce an M&A operation might be itself a strategic choice of the bidders, that it might be worth studying.

Two additional sets of interesting questions remain unanswered by our analysis. First, the role of stock market prices: on the one hand, it is likely that the price of the operation has an effect on its probability of success; on the other, the failure of a deal is also likely to impact on the stock market price of the bidder and of the target. The second issue relates to the role of the corporate governance of bidders and targets: some organizations can indeed be better suited than others to successfully organize a defense from an hostile bid. However, both issues cannot be investigated using our data, and we thus leave them to future research.

[11] In unreported regressions we have not been able to find any explicit measures of the rule of law and of corporate governance with a statistically significant effect on the probability of abandonment.

[12] In unreported regressions we have verified that the change in the sign of the coefficient of the dummy for countries with a Common law system depends on the different sample, and not on the inclusion of additional explanatory variables.

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