M&A RUMORS: WHY SELLERS HATE THEM

Yan Alperovych
EMLYON Business School
EMLYON Research Centre for Entrepreneurial Finance
23 Avenue Guy de Collongue
Ecully, 69132
France
http://ssrn.com/author=1010455
alperovych@em-lyon.com

Douglas Cumming
York University--Schulich School of Business
4700 Keele Street
Toronto, Ontario M3J 1P3
Canada
http://ssrn.com/author=75390
douglas.cumming@gmail.com

Alexander Peter Groh
EMLYON Business School
EMLYON Research Centre for Entrepreneurial Finance
23 Avenue Guy de Collongue
Ecully, 69132
France
http://ssrn.com/author=330804
GROH@em-lyon.com

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Abstract

We provide large sample evidence on the causes and consequences of takeover rumors. In fact, 55.2% of non-completed M&A deals involve rumors, while only 17.3% of completed deals involve them. Probit regression models reveal that rumors are deal-breakers and reduce the likelihood of deal completion by 37-41%. Simultaneous equations confirm this result, even if rumors are not exogenous events but instead spread on purpose; e.g., in an attempt to prevent an M&A transaction or if caused by unobservable effects. If a rumored transaction still emerges, the rumor has destroyed $7.8 million worth of the value of the median M&A deal.

Keywords: Takeovers, Private Equity, Rumors, Deal Completion

JEL Codes: G12, G14, G18, K22

1. Introduction

A rumor is defined as “a tall tale of explanations of events circulating from person to person and pertaining to an object, event, or issue in public concern” (Petersen and Gist, 1951). Rumors are known to manipulate stock prices (van Bommel, 2003, Putniņš, 2012), hurt employee morale, and impede organizational communication (DiFonzo and Bordia, 1998; 2000; DiFonzo et al., 1994); impede restructuring and layoffs during periods of corporate change (Smeltzer and Zener, 1992; Burlew et al., 1994; Smeltzer, 1991); hurt sales (Bordia and Rosnow, 1998; DiFonzo and Bordia, 1997); adversely affect stock prices (Clarkson, et al., 2006; Ahern and Sosyura, 2015; Leung and Ton, 2015); and potentially impede market efficiency (Han and Yang, 2013; Indjejikian et al., 2014). A potential M&A transaction is an important event for a corporation. Currently, these transactions are most often organized as limited auctions among a selected group of bidders. During these auctions, sellers insist on tight non-disclosure agreements not only with respect to confidential data of their companies but also to the principle that it is for sale. According to the above described effects and intuition, M&A transaction rumors hurt the owners’ interests. This paper provides evidence that sellers should make certain no information about their intention is disclosed.

In the context of a takeover, a rumor refers to a news story in the media that identifies a specific company being for sale or an investor’s possible interest in acquiring a particular target firm. The existing literature on takeover rumors has focused on the impact of rumors on market reaction and the pricing of public takeovers (Clarkson et al., 2006; Chou et al., 2015). In this paper, we build on this important prior work and extend the literature on M&A rumors in three dimensions. First, we enlarge the sample, focusing not only on publicly traded targets but also on privately held ones and corporate spin-offs and provide evidence that rumors strongly affect the likelihood that a takeover is complete. Second, we determine several conditions under which rumors are less likely to spread. Third, we calculate the damage that information leaks have on deal values.

Our findings are robust to the consideration of several potential confounding effects, including that (some) rumors may be spread on purpose. We inference from a sample of 47,262 M&A transactions in the Zephyr Bureau van Dijk database carried out between 1997 and 2013. Among these deals, slightly more than 1/3 are eventually not completed,[1] and a little less than 1/3 involved rumors. Rumors are substantially more likely to be associated with failed transactions: 55.2% of non-completed deals involve rumors, while only 17.3% of completed deals involve them. Using probit regressions, we find that rumors are deal-breakers. Leaked M&A transactions have a 37%-41% lower likelihood of finally being completed than transactions with no prior information disclosure. However, the negative impact of rumors on deal completions is substantially less pronounced in countries with lower levels of corruption, with higher legal quality, and among private equity backed buyouts. We also find several determinants of rumor creation and also that private equity investors eventually perform transactions more discretely than strategic buyers. Additionally, we consider the possibility that information about a planned M&A transaction is spread on purpose to prevent it from being completed or that our analyses are exposed to an omitted variable bias. Therefore, we set up a simultaneous equation model to correct for the potential simultaneity of information leaks, deal completion, and unobserved heterogenei-

[1] Zephyr has two flags for the closing status: "completed" and "completed-assumed" deal. In the former case, the closing of the deal is verified and confirmed. Conversely, if there is no further information about the deal's resolution during two years following the announcement, Zephyr flags the deal as "completed-assumed." This is a deliberate decision on behalf of Bureau van Dijk. In our analyses, we follow a more conservative approach and only consider a deal to be closed when its status in Zephyr is confirmed.

ty. This approach confirms our findings. Finally, we calculate that rumors destroy $7.8 million worth, or about 11%, of the median M&A transaction value of our sample.

This paper is organized as follows. Section 2 describes the data and presents summary statistics and comparison tests. Section 3 presents multivariate analyses on deal completion and the determinants of rumors and their effect on transaction values. Section 4 summarizes and concludes.

2. Data and Summary Statistics

We refer to 47,262 (planned) M&A transactions from the Zephyr Bureau van Dijk database from the years 1997-2013 in 88 countries. Out of these, 17,146 deals (36.3%) were eventually not completed. From the same data source, we also retrieved information as to whether or not there was a rumor in the market about a particular transaction prior to its official announcement date. Zephyr collects the rumor date, which is the date on which a potential transaction is first mentioned in the media, in a company release, or elsewhere. The rumor is an unconfirmed report; examples are provided in Appendix I. If the first mention of the deal is when it is officially announced, then the announcement date is equal to the rumor date and, consequently, no rumor is observed or reported for this transaction. The data supplier employs a large quantity of research staff to monitor M&A markets, companies, and news releases. For this reason, we have strong confidence regarding our sample. Nevertheless, we cross-checked the records for a random selection of the transactions and realized a remarkable precision of the rumor dates. Bollaert and Delanghe (2015) compare the quality of the Zephyr with that of the Securities Data Company M&A database (SDC). They conclude that Zephyr has some disadvantages with respect to consistent information about acquirers and targets and a systematic representation of several key items, such as the deal type. However, Zephyr has strong advantages in terms of information about the vendor and on bidder syndicates. Therefore, they regard Zephyr as a credible source for certain types of precise research questions.

Table 1 cross-tabulates our data according to several criteria. The left-hand side presents the sample in numbers and the right in percentages of all transactions. Rumors are present in 31.05% of all deals in the Zephyr Bureau van Dijk database. Rumors are substantially more likely to be associated with failed transactions: 55.2% of non-completed deals involve rumors, while only 17.3% of completed deals involve them. Buyout transactions comprise 4,877 deals, or 10.3% of the sample. In total, 951 (19.5%) of these buyouts were not completed. In buyouts, we observe significantly less rumors. Only 13.1% of all buyouts are leaked.

[Table 1 About Here]

Table 2 Panel A and Figures 1-3 present statistics on rumors, deal completions, and buyouts versus other takeovers over time. The proportion of rumors in deals has increased over time (12.9% in 1997 vs. 32.9% in 2013), as has the proportion of deal incompletions (3.5% in 1997 vs. 36.8% in 2013). The proportion of buyouts relative to all M&A transactions has decreased (20.7% in 1997 vs. 8.2% in 2013).

[Table 2 and Figures 1-3 About Here]

Table 2 Panel B shows the proportion of deal completions, rumors, and buyouts by industry. Deal completions are most common in Wood, Cork, and Paper (67.3%) and least common in Gas, Water, and Electricity (50.2%). Rumors are most common in Gas, Water, and Electricity

(48.8%) and least common in Public Administration and Defense (17.9%). Buyouts happen most often in Post and Telecommunications (19.0%), while other takeovers are most common in the Primary Sector (96.8%).

Table 2 Panel C shows the patterns by the 18 countries (out of 88) with more than 500 deals in the sample. Non-completed deals are most common in Korea (60.0%) and least common in Finland (18.6%). Rumors are most common in Australia (61.1%) and least common in Finland (12.0%). We observe the largest number of buyouts in Great Britain (31.4%).

Table 3 Panel A presents descriptive statistics for all target companies, the socio-economic indicators of their host country, and information on the transactions. The median target company in the data is 15 years old, has 1 acquirer, and possesses $17.5 million in assets. There is substantial variance in these statistics. We also gather the economic size (GDP) of the host countries for the respective years of deal completion, their legal rights and corruption indices, and their annual private equity investments. These indicators serve as control variables in our regressions. They replace country fixed effects and provide additional insights on socio-economic patterns of deal completion and information leaks. Countries with a higher GDP usually have stronger and well-functioning capital markets. We assume that in these countries the success rate of M&A deal making is higher and that the financial communities are more professional and, therefore, less prone to information leaks. The legal rights index is a composite measure provided by the World Bank which assesses the quality of protection for borrowers and lenders and, thus, access to financing. If access to financing is simple (i.e., high index values) we expect the rates of deal completion to be higher. At the same time, the number of intended rumors might be affected, because information leaks could have a smaller impact on the deal outcome. We hypothesize a similar result for the corruption perceptions index, which is provided by Transparency International. It assesses the overall extent of corruption in the public and political sector of a country. High index values indicate lower corruption. First, we expect lower corruption to yield better deal-making environments, hence, improvement in the rate of deal completion. Second, we might observe more transaction rumors in high corruptive countries. Annual private equity investments serve as a control for the activity in the M&A market, in general, and directly for the additional competition created by financial sponsors. We postulate that deal completion rates are higher if activity is strong, and that this increased competition by very professional players could also yield less information disclosures.

Table 3 further indicates that in 84% of all transactions, the sellers have been bought out completely. Therefore, these were 100% takeovers. The dummy local investors code if (all) bidders and the target companies are headquartered in the same country. This is the case for 65.1% of the deals. The other transactions had at least one cross-border bidder. In 17.9% of our sample deals, a listed investor was involved, and 15.4% were takeovers of listed targets. We also gather total assets of all acquirers at fiscal year-end preceding the transaction to control for the size of the bidders. In case there is a syndicate of bidders, we refer to their average size. Finally, we construct the variable "Price Differential" to measure deal value differences. The computation is as follows. First we determine the deal's market-to-book ratio for each investment target, referring to the deal values and total assets (last reported in the year of the transaction) provided in the Zephyr database. Second, for each deal we calculate the median market-to-book value ratio of comparable transactions. Comparable transactions are defined as M&A deals in the same industry, country, and over the targets with the same public status in the two years prior to the focal deal. Finally, we determine the difference of the focal deal's multiple and the peer group's multiple. Differences larger than zero indicate a higher pricing of the focal deal compared to its peers, while a negative difference signals the opposite. The median of this measurement is zero, accordingly. However, some expensive transactions shift the mean to 0.75.

Not all information is available for the complete sample. Missing observations (i.e., the number of NAs) decrease our sample sizes in the various econometric analyses. The complete set of the variables used in our paper, their sources, and short descriptions are presented in Table 4.

[Table 3 About Here]

Table 3 Panel B presents descriptive statistics for the subsample of the data, where deals were closed versus the non-completed deals. Completed deals are likely to involve younger targets. The completed mean age is 21.2 years, and the non-completed mean age is 23.7 years. The difference between the two means is significant at the 1% level, according to a t-test and a non-parametric Mann-Whitney test. However, the median age of both sub-groups is 15 years. Completed deals, on average, have fewer acquirers, 1.066 compared to 1.084 for non-completed deals, and are smaller (with a mean of $212.9m compared to $462.2m for non-completed). The size differences are expected, as they may reflect the ability of larger companies to implement takeover defenses, and/or the inability of acquirers to bring about financing of larger transactions. Completed deals are more likely in countries with higher legal rights indices, less corrupt countries (with higher indices), and countries with more private equity investment intensity. All reported differences in means are statistically significant at the 1% level.

Table 3 Panel B further indicates that rumors are significantly more likely with non-completed deals (55.2%) versus completed deals (17.3%). Completed deals are more likely to be buyouts (13.0% completed versus 5.5% non-completed). Completed deals are more likely to involve full acquisitions and local investors, but they are less likely to involve listed investors or public targets.

Table 3 Panel C presents summary statistics for the subsample of rumors versus non-rumors. Rumors are more likely among older firms; involve more acquirers on average, larger firms; and are more likely in countries with lower legal rights indices, higher corruption (lower corruption index), and less private equity activity. Additionally, rumors are less likely to be associated with completed deals, with buyouts and full acquisitions, and with transactions of only local bidders. Conversely, they happen more often if targets and/or investors are public companies.

Table 3 Panel D presents summary statistics for the subsample of buyouts versus the other takeovers. Buyout targets are older (average 23.7 years and median 17 years) versus non-buyouts (average 21.9 years and median 15 years) and have smaller average asset values ($237.2m for buyouts versus $310.9m for non-buyouts) but larger median assets ($30.4m for buyouts versus $16.4m for non-buyouts). Buyouts are more often syndicated investments, as suggested by the average numbers of suppliers (1.238 for buyouts, versus 1.053 for other takeovers). They happen more often in countries with a higher GDP, legal quality, risk capital activity, and with lower corruption. They are more often completed with full acquisitions but less often leaked. Buyout sponsors are rarely public entities but more frequently involve public targets (18.4% buyouts versus 15.0% non-buyouts).

Table 5 presents a correlation matrix for the main variables in the data with significant correlations highlighted. Most of the significant correlations are for country-level variables. The exception is Variable 10, the total assets of the target companies as last reported prior to the rumor/deal announcement. This variable is highly correlated with Variable 15, total assets of the acquirers, and with the dummy for being a publicly traded company (Variable 7). Both correlations are expected, as only larger bidders or bidding syndicates have access to "big tickets," since the "big tickets" are eventually public firms. In any circumstance, in our multivariate analyses, we are careful to not include overly collinear variables in the same econometric specifications to bias estimates. In no regression do we include target and acquirers' assets at the same time, and we show a variety of specifications to demonstrate robustness.

[Table 4 About Here]

[Table 5 About Here]

3. Multivariate Analyses

We are primarily interested in the negative consequences of transaction rumors for M&A deal-making and in answering the question of whether or not there are typical settings in which transaction rumors occur more often. Therefore, we firstly we reveal the consequences of transaction rumors on deal completion using probit regressions. We then address the causes of rumors themselves, again using probit models. Subsequently, we consider the possibility that information leaks are not exogenous events but might be spread on purpose or stem from unobservable deal-making conditions. This requires a simultaneous (recursive bivariate probit) equation model to overcome potential endogeneity. Finally, we reveal the pricing impact of rumors on M&A transactions using OLS regressions.

A. Rumors as Deal-Breakers

Tables 6-8 present probit regressions analyzing factors that determine the likelihood of completing an acquisition. The dependent variable is always the dummy indicating whether or not a deal was finally closed. The main variables of interest in the various specifications are if the transaction has been leaked, if the buyer is a private equity firm, and the socio-economic and institutional quality indicators of the target host country. We also add controls for the age of the target, the number of acquirers, the total assets of the target, 100% acquisitions, if all investors are local, if at least one acquirer is listed, if the target is a publicly listed company, as well as the industry, transaction year, and country fixed effects. Table 6 shows results without using interaction terms, while Tables 7 and 8 include interaction terms. In Specification 1 of Table 6, we exclusively regress the dependent variable on the indicator of a leaked transaction and a constant.

[Table 6 about here]

Specification 2 replaces the dummy variable for a leaked transaction by the dummy variable if the (intended) transaction is a buyout initiated by a private equity firm. In Specification 3, we include both dummies simultaneously.

We set up the ceteris paribus conditions to allow inference in Specification 4 and subsequent specifications, introducing the control variables. Specification 4 includes industry dummies, time fixed effects, and country dummies. These dummy variables should be sufficient to control for merger waves (e.g., hot and cold markets where information might leak differently), valuation levels, liquidity situations, and access to debt financing, stock market conditions, particular industry effects, or several other possibly confounding factors. In Specification 5 (and the following specifications) we add age, the number of acquirers, total assets of the target, and the dummies for 100% acquisitions, if all investors are local, if at least one acquirer is listed, and if the target is a publicly listed company. In Specification 6 and the subsequent specifications, we replace the country dummies with more granulated information; i.e. the indicators for socio-economic conditions and institutional quality. Specification 6 includes the GDP, Specification 7 the legal rights index, Specification 8 the corruption index, and Specification 9 the private equity activity levels.

The regressions in Table 6 provide evidence for our hypotheses. The coefficients of determination (Pseudo R^2) are generally high (Specification 2 being the exception), up to 19% in Specification 5, signaling the reasonable explanatory power of the set of independent variables. This result is rather surprising given the nature of our data. We cannot measure particular transaction characteristics which are eventually of importance for M&A deal making, such as the experience, skills, and quality of the deal-preparing teams or the selling and buying pressure of the deal partners (Arcot et al. 2015; Degeorge et al. 2016). Throughout all specifications, the parameter of the indicator for a leaked transaction is negatively significant on a 1% level. Hence, information leakages lower the likelihood of finally closing M&A deals. At the same time, the fact that at least one of the potential buyers is a private equity firm increases the deal-closing propensity. Both dummies are jointly robust in all regressions. Even if their bivariate correlation is only -0.03 (Table 4), we address the question about their independence and exogeneity in a subsequent section. Table 6 further reveals statistically weak evidence that an increasing number of acquirers lowers the chances that the deal goes through. Additionally, the regressions provide strong evidence that the likelihood of deal completion is lower for older and/or larger companies. However, the probability of a closing is higher if 100% of the shares are acquired, if investors are all local, and if they and/or the target company are listed. Furthermore, the deal completion is more likely in countries with higher GDPs, with better legal protection of investors, with lower perceived corruption, and with strong M&A market competition resulting from private equity investments, thus confirming the expectations.

We also calculate the marginal effects of the detected factors (not tabulated) and highlight that they are economically crucial: any M&A transaction which is subject to an information leak has a 37-41% (smallest and largest parameter values in Specifications 1 to 9) lower likelihood of being completed. If a private equity firm (or a syndicate of private equity firms) is the bidder, then the likelihood of closing a deal increases by 12-19% (smallest and largest parameter values in Specifications 2 to 9). The likelihood of deal completion is 4-7% higher if a target shall be acquired completely, 6-8% higher if there is no cross border investor, 4-6% higher if the investor is listed, and 6-7% higher if the target is also listed. Summing up the positive effects on the likelihood of transaction closing, we can conclude that, all else being equal, an intended acquisition has a 32-47% higher chance of being closed if the bidder is a private equity firm, if the bidder is a 100% acquisition, if the bidder is a "local" deal, if both the acquirer and the target are listed, and if the acquisition is not leaked. However, if there are rumors in the market about a potential acquisition of the target, then the deal has a 37-41% reduced chance of finally being closed.

The marginal effects for a target company's age and size, the number of acquirers, and the socio-economic and M&A market conditions are somewhat smaller. All else being equal, an increase of 1 in the standard deviation in the natural log of age lowers the probability of a deal closing by 1%. The effect is of the same magnitude for the natural log of total assets of the target. Here, a standard deviation increase of one decreases the chances for closing a deal by 1-2%. An additional bidder in a syndicate lowers the deal closing propensity by 2.3%. A standard deviation increase of one in the natural log of a country's GDP is associated with a 1.6% increase, a standard deviation increase of one in legal rights with 3.1% increase, a standard deviation increase of one in the corruption index with a 2.4% increase, and a standard deviation increase of one for private equity investments with a 3.4% increase in the likelihood of closing an M&A transaction in the respective country.

In a subsequent step, we analyze the effect of information leaks when the potential deal is a buyout initiated by a private equity firm. The rationale is that a financial intermediary whose profession it is to acquire other companies (and to sell them at a later stage) might have the capability or a stronger incentive to close a transaction, even if it becomes leaked. Therefore, we include an interaction term between the information leak and the buyout transaction in the regressions.

[Table 7 about here]

Table 7 reports the estimates of probit models, as presented in Table 6, but includes an interaction term of the rumor and buyout dummies. Model 1 includes the respective variables and the interaction term only. In Specifications 2 and 3, we further include the industry, the year, the country dummies, and other control variables. Models 4 through 7 replace the country dummies with the measures of socio-economic and legal conditions for each country. The results indicate that the negative effect of rumors and positive effect of buyouts on the deal closing propensity persist and are, again, significant at the 1% level. The average partial effects of the buyout and the rumor dummies remain at the levels of the results presented in Table 6. This is equivalent for the additional control variables on the transaction and the country level.

However, the interaction term suggests that the negative effect of rumors on deal completion is mitigated if a potential deal is sourced by a private equity fund. We recall that the interaction term between information leak and buyout only has a value of 1 if the transaction has been leaked. That means that the negative impact of an information leak (e.g., parameter coefficients are ranging between -1.06 and -1.16) becomes alleviated if the intended transaction is a buyout at the same time. The parameter coefficient of the buyout and rumor interaction term varies between 0.18 and 0.25 in the presented regressions. Calculating the marginal impact of the two counter effects reveals that for a buyout transaction, an information leak is not such a disturbing event as for the other transaction types. A rumor decreases the likelihood of successfully closing a buyout by “only” 7 to 20%, all else being equal.[2]

B. Determinants of Rumors

The previously presented evidence highlights the importance of confidentiality for the success of an intended M&A transaction. Since the propensity of a final closing of a potential acquisition strongly decreases if information about it enters into the market, it is interesting to know what drives a rumor in the first place. It is evident that any person involved in the preparation of the transaction process or any negligence in information gathering and processing may cause a rumor accidentally. However, besides the existence of unintended information leaks, there might be a variety of reasons to voluntarily spread rumors to influence the outcome of a potential acquisition. Competitors, clients, suppliers, bidders, or even consultants might benefit if information about an intended deal is released into the market. It is obvious that it is impossible to retrieve information on the various sources of information leaks for our sample transactions. Nevertheless, we can analyze typical patterns under which the spread of a deal rumor is more likely and provide some evidence on the emergence of rumors in the first place.

Table 8 reports probit estimates for the probability of information leaks. In Model 1, we regress the dummy variable for information leaks on the dummy for buyouts and a constant. We

[2] The effects for the interaction terms are computed following the methodology of Ai and Norton (2003). Standard errors of the partial effects are computed using the Delta method.

then add the industry, the country, and year fixed effects in Model 2. Model 3 includes all control variables, and in Models 4 to 7, we substitute the country dummies by the variables describing socio-economic and institutional conditions.

[Table 8 About Here]

The results reveal that rumors are less likely if the transaction is an intended buyout sourced by a private equity firm. This effect is significant at the 1% level in each of the models. The coefficients vary from -0.10 to -0.22, which converts (after a non-tabulated calculation of the marginal effects of each parameter) to a reduction in the likelihood of a rumor to 3-7%. For the age of a target, we do not get a clear result; but, regarding the number of acquirers and the size of a target, we realize that larger numbers are associated with a higher probability of an information leak. The marginal effect of the number of acquirers is 2%, while it is 5-6% for the total assets of target in terms of a standard deviation increase of one for the respective variable. Furthermore, 100% acquisitions turn into a 1-3% higher risk of being leaked. If the target company is listed, this can increase the likelihood of dissemination of deal information by 14-22%.

However, if investors are all local or if at least one of them is listed, then the risk of a rumor is 14-17%, respectively 2-4% less likely. Furthermore, countries with stronger legal and institutional conditions are less likely to experience rumors. The economic significance is such that a standard deviation increase of one in the log GDP reduces the probability of a rumor by 2.8%. A standard deviation increase of one in the legal rights index reduces it by 2.8%; a standard deviation increase of one in the corruption index (lower corruption) reduces it by 5.8%; and a standard deviation increase of one in private equity activity leads to a reduction of the likelihood of an information leak by 3.2%.

C. Intentional Rumors?

The analyses on deal completion presented in Tables 5 to 7 assume that information leaks are exogenous events which are unrelated to eventually unobserved determinants of the likelihood of a transaction closing. However, it is possible for any person who is opposed to an intended acquisition to voluntarily spread a rumor. As revealed above, an information release significantly decreases the likelihood of successfully closing the deal. Therefore, spreading a rumor might be considered a simple way to oppose an M&A transaction. Hence, an information leak might be the result of an unobservable and hardly measurable variable, "resistance against intended transaction." Resistance of various stakeholders or even among the negotiating parties may provoke other unobservable deal-breaking actions. Resistance can destroy confidence and credibility during negotiations and render deal completion impossible. As a consequence, deal failures and rumors might be simultaneously caused by the same unobservable.

Additionally, we can assume the lack of other idiosyncratic determinants for the likelihood of deal closing: For example, some of the mandated legal advisors, consultants, or investment banking staff might have better skills for completing M&A deals. Since we cannot control for the institutions or the individuals involved in the transactions, these factors remain omitted in the regressions. Similarly valid for the rumors themselves, the existence of information leaks probably also depends on the skills and experience of the teams preparing the M&A transaction. Therefore, rumors might be an endogenous variable, and the coefficients of our probit regressions biased. In any case, it is impossible to claim causality in endogenous settings, and inference is doubtful.

A potential solution to an endogeneity problem is the Heckman (1979) estimation.[3] Unfortunately, it is only applicable if the treatment variable (Rumor) is binary while the outcome variable is continuous. Our outcome variable (Deal Completion) is binary. Although some studies use, notwithstanding the binary outcome, Freedman and Sekhon (2010) clearly conclude that this should not be the case. Consequently, we refine our models in order to accommodate potential endogeneity. More specifically, we set up two simultaneous equations:[4]

$$Rumor = \boldsymbol{X_1 b_1} + \varepsilon_1, \text{ and}$$

$$Deal\ Completion = \boldsymbol{X_2 b_2} + \gamma Rumor + \varepsilon_2,$$

where $\mathbf{X}_i$ are the matrices of previously used independent variables. The first equation corresponds to estimates in Table 7, while the second one relates to Table 6. Endogeneity between Rumors and Deal Completions implies that ϵ_1 and ϵ_2 are correlated (Greene, 2007, pp.746-747). This simultaneous model is a recursive bivariate probit model with an endogenous binary variable. Although imposes strong distributional assumptions on the error terms,[5] it allows taking into account the eventual simultaneity of Rumors and Deal Completion. We apply maximum likelihood to estimate the model parameters. As with the probit model, the parameter estimates cannot be directly interpreted, as sensitivities and marginal effects need to be computed after the estimation. We follow Greene (1996) for that purpose.

The estimation requires a specification of both treatment (Rumor) and outcome (Deal Completion) models. For the treatment model, we use the best-fit specification of Table 8 in

[3] The classic solution to the endogeneity problem is to use an instrumental variable approach. However, its application heavily relies on the availability, relevance, and validity of an instrument for an endogenous variable. Our data presents no variable which could potentially serve as an informative and valid instrument, which is why we turn to alternative techniques.

[4] We drop the observation indices for convenience.

[5] In a bivariate probit model, the errors are assumed to be uncorrelated with the covariates. Further, both ϵ_1 and ϵ_2 are assumed to follow a bivariate normal distribution with the means of 0, the standard deviations of 1, and a tetrachoric correlation of ρ.

terms of the pseudo-R-squared model; i.e., Model 3 (pseudo-R-squared = 0.18).[6] For the outcome model, we always use a specification including a country legal quality/institutional standards variable. In such bivariate models, the matrices of covariates $\mathbf{X}_1$ and $\mathbf{X}_2$ must not be identical; otherwise, the parameter estimates cannot be interpreted. As we use country dummies in the treatment equation, the outcome equation uses country legal and institutional standards.

[Table 9 About Here]

Table 9 presents the results of the recursive bivariate probit estimations. As before, we report the coefficients in the tables and discuss the marginal effects in the main text. Consistent with our previous findings, the fact that the intended deal is a buyout sourced by a private equity firm has a strong positive effect, and an information leakage a strong negative effect, on the likelihood of deal completion. The respective coefficients vary between 0.44 and 0.47 for the former, and between -1.83 and -1.48 for the latter parameter estimate in the four presented model specifications. The coefficients of the country's legal and institutional standards variables range between 0.01 and 0.04. Except for the log of country GDP, which is significant at the 5% level only, all other coefficients are statistically significant at the 1% level.

Since the estimation yields the parameter estimates of the joint probability of occurrence of rumors and deal completion, there are several marginal effects of interest. We first consider the effect of an information leak on deal completion, given that a rumor has taken place; i.e., $\partial E(\text{Deal Completion} = 1 \mid \text{Rumor} = 1, \mathbf{X}_1, \mathbf{X}_2)/\partial \mathbf{X}_\text{i}$. It may be estimated using the discrete dif-

6 As an alternative, we also use Model 6 of Table 8 (pseudo-R-squared = 0.14). The difference between the two models is that the former uses country dummies while the latter makes use of the country corruption index to control for some cross-country heterogeneity. The results of the bivariate probit estimations are virtually identical to the ones presented.

ference of the conditional probability function.[7] The marginal effect is striking. It ranges between -54% and -48% in the various specifications. All marginal effects are statistically significant at the 1% level and can be interpreted in the following way: given that an intended deal gets leaked, whatever the reason, the likelihood that it gets closed decreases by approximately 50%. This result provides very strong evidence of rumors as deal-breakers.

Another interesting marginal effect is the impact of buyout transactions on the likelihood of deal completion. Since the determinant is present simultaneously in both the treatment and outcome equations, there is a direct and indirect effect of the buyout dummy. The indirect effect is a buyout transaction's negative impact on information leaks, and rumors are strong deal-breakers. Buyouts are eventually performed more confidentially; and, therefore, they indirectly increase the chances of a deal being closed. Additionally, buyouts directly increase the probability of closing a deal independent of an information leak. Hence, we are interested in the combination of the two effects. Again, using the discrete difference approach to estimate the marginal combined effect of the buyout dummy on the likelihood of deal completion, we receive results between 16% and 17% (significant at the 1% level). Using an alternative approach suggested by Greene (1996, 2007 p. 743; see, also, Footnote 8) we achieve virtually the same result. We interpret this result as strong support for the notion that intended buyouts are better kept confidential and motivated more strongly toward deal completion. The resulting joint impact of these two effects supports the notion that if an M&A transaction is an intended buyout, the likelihood that it finally gets closed is 16% higher.

[7] Another approach is to disregard the discrete nature of rumors, following the Greene (1996) discussion. The estimates of the marginal effects of rumors in this case is between -42% to -45%, in all cases significant at the 1% level.

We also consider the marginal effects of the country's legal and institutional standards. Since these variables are continuous, the estimation of the marginal effects follows Greene (1996). The total effects are of the 1% order, and all are statistically significant at the 1% level.

Finally, we interpret the estimate of the tetrachoric correlation (athrho) from the bivariate model.[8] It varies between 0.29 and 0.60, depending on the specification, and is significant at the 1% level in all cases. Three tests of zero correlation are reported at the bottom of Table 10. All tests clearly reject the null hypothesis of zero correlation and, therefore, support the assumption of endogeneity and the use of the proposed simultaneous equation model to control for it.

D. Price Impact of Rumors

We presented evidence that rumors are deal-breakers. They might also have consequences on deals that finally emerge. For example, a potential buyer might leak information to create pressure on the seller to speed-up the transaction process or to lower the price. Conversely, the information leak might yield an increase in the number of potential bidders, and this could increase the price. However, the latter argument is less intuitive since if sellers and their consulting affiliates realized price benefits from rumors, we would expect more information leaks. Additionally, in such a case, most of the deals would likely and immediately be marketed as open auctions.

Accordingly, we expect rumors to destruct M&A transaction value and test this on the sample of completed transactions. Therefore, we define a variable "pricing-differential" similar to Arcot et al. (2015): First, we compute the ratio of the deal value at closing to the last reported total assets of the target (DV/TA) for a sub-sample of transactions where this information is pro-

[8] The ML procedure usually makes use of the reparametrization of the correlation in terms of the monotonic inverse hyperbolic tangent to avoid the correlation estimate outside the ±1 interval. See Green (2007), p.878.

vided. The mean of this market-to-book ratio is 2.21 (the median is 1.36 and the standard deviation 2.73). Second, for every deal, we refer to a reference group of M&A transactions within the same country, industry, and with the same public status over the last two years. Then, the "pricing-differential" is calculated as the difference between the DV/TA of the focal deal and the reference group's median of DV/TA. Since the total assets of the target now directly affect the dependent variable, we omit it from the set of independent variables. Nevertheless, to control for transaction size, we add an instrument—the log of the average size (total assets) of the acquirers (or of the single acquirer, in case there is only one). The size of this subsample decreases to 7,148.

[Table 10 About Here]

Table 10 reports OLS estimates of "pricing-differential" on the variables of interest. Standard errors are White-robust. The first specification only includes the rumor dummy, while the next specification focuses exclusively on the controls. Subsequently, we combine the controls with the rumor dummy and add or substitute independent variables. In all models, we find a strong negative effect of rumors on deal pricing. The parameter coefficients range between -0.25 and -0.33 and are significant at the 1% level in all specifications. The economic impact of an information leak on transaction value is striking: a reduction of the market-to-book value by a multiple of 0.25 following a rumor is equivalent to a cut of the mean transaction multiple by 11%, or a loss of $7.8 million on the median deal value. This money is left on the table, from the seller's perspective. Conversely, if a transaction is a buyout, the deal multiples are between 0.5 and 0.73 above those of the average transaction. We interpret this finding as a consequence of the competition in M&A auctions. The leverage typically used by financial sponsors in the transaction financing might allow higher bids to increase the buyout funds' chances to get the deal. Hence, the

M&A transactions with a private equity fund as a sponsor might systematically have higher multiples. Additionally, one could argue that corporate bidders price-in the strategic value; e.g., the synergies in a merged conglomerate. To get the deal, buyout investors need to raise their offers above this strategic value. However, our data does not allow controlling for leverage in the transaction structure for the strategic value of a merging conglomerate, thus leaving this puzzle for further research.

The parameter of the interaction term is only weakly significant in one of the specifications. However, the parameters of two of the institutional quality indicators and the liquidity measure for the private equity market are positively significant. Evidently, transactions in countries with better investor protection and lower perceived corruption are closed at higher deal values. At the same time, more competition by financial bidders increases M&A deal values. These findings are not surprising and confirm other research (Brunner, 2002).

We also realize, from the information presented in Table 11, that the age of the target company has a significant impact on the deal value. For the average target firm (which is 22.12 years old) an increase in ln [years] by 1 is equivalent to aging approximately 38 years. Such an increase is associated with a decline of the market-to-book value multiple by 0.36 to 0.39, according to the different regression specifications. We interpret this finding as a result of decreasing growth expectations for older firms. Younger companies are priced on their growth perspectives in new markets, industries, and regions, while older companies are priced according to their assets in place (Fama and French, 1998).

The regressions further reveal that larger acquirers tend to pay higher prices and that local investors pay less. While we have no explanation for the size effect of the acquirer, being local might lead to less information asymmetry during the deal preparation phase and to better mutual understanding during negotiations, related to common language and cultural proximity. Interestingly, the significance of the parameter estimate of the local investor dummy disappears if we include the corruption index in Specification 7. This suggests that language barriers and cultural proximity are more important if there is perceived corruption, and collusion is high in the target host country.

4. Conclusion

Our paper provides large sample evidence on the causes and consequences of M&A rumors. We find that rumors are deal-breakers. They reduce the likelihood of getting a deal done by 37-41%. Information leaks are less likely if investors are local or listed, in countries with better legal conditions, and among private, equity-backed buyouts. It is possible that the degree of professionalism and experience in transaction-making of buyout funds yields less information leaks. Another potential reason is that buyout funds are relatively small entities with few personnel, thus decreasing the number of persons involved during the bid-preparations in M&A auctions. We interpret the finding that leaks are less likely in transactions with local acquirers because of physical and cultural proximity, yielding easier communication and mutual understanding in transaction processes. Listed investors are under higher public surveillance and exposed to particular regulations for the prevention of insider trading. This may explain why M&A transactions are less often leaked if they are involved. Conversely, if the target itself is a publicly-listed company, the likelihood of an information leak strongly increases. There is no obvious particular reason explaining this characteristic; however, listed companies are more often in the media and individuals might speculate on (potential) acquisitions of publicly listed firms. Spreading rumors on listed firms allows trading strategies and, thus, might increase the number of information releases on them.

Rumors are not only deal-breakers but also have a strong negative effect on the deal value, if a transaction is finally closed. The difference of the transaction values of a deal being leaked or not is striking. A leak corresponds to a loss of 11% or $7.8 million in the deal value of the median transaction. There exists an interesting aspect for future research to assess the overall economic loss of rumors, resulting from their joint impact as deal-breakers, and on the transaction values of the deals that eventually emerge.

Information on a potential M&A deal might be leaked on purpose. Competitors or anybody opposed to a deal completion might try to prevent it by spreading rumors. Bidders could also disclose information because it evidently reduces deal values. Therefore, an information leak might not be an exogenous event but an intended manipulation. Additionally, rumors might be caused by unobservable and unmeasurable deal characteristics. Using simultaneous equation models, we show that, even if there is simultaneity between the left-hand side and an independent variable, and even if there is an omitted variable bias, our results hold.

Value destruction and deal-braking risk induce strong disadvantages for sellers in M&A transactions which add to other damaging effects; e.g., potential loss of reputation and uncertainty for employees, clients, or suppliers. Therefore, sellers are not likely among those who leak deal information. They do not benefit by any means from a transaction rumor. Instead, they insist on tight non-disclosure agreements in limited auction processes. For bidders, a transaction rumor represents a two-sided coin. On one side, the rumor reduces deal values and, consequently, their required offering price. However, on the other side, the rumor lowers the chances of a deal closing and the likelihood for the bidder to close the deal. In equilibrium, these two effects might cancel each other out, leaving the conclusion that rumors destroy wealth, which is reason enough for sellers to hate them.

References

Ahern, K.R., and Sosyura, D., 2015. “Rumor Has It: Sensationalism in Financial Media,” *Review of Financial Studies*, forthcoming

Ai, C. and Norton, E. C., 2003. "Interaction terms in logit and probit models.” Economics Letters, 80:123–129.

Bollart, H. and Delanghe, M., 2015. “Securities Data Company and Zephyr, data sources for M&A research.” *Journal of Corporate Finance*, 33, 85-100.

Arcot, S., Z. Fluck, J.-M. Gaspar, and U. Hege. 2015. “Fund managers under pressure: rationale and determinants of secondary buyouts. *Journal of Financial Economics*, 115, 102–135.

van Bommel, J. 2003. “Rumors,” *Journal of Finance* 58, 1499-1520.

Bordia, P., and R.L. Rosnow, 1998. “Rumor Rest Stops on the Information Highway: A Naturalistic Study of Transmission Patterns in a Computer-Mediated Rumor Chain,” *Human Communication Research* 25, 163–179.

Brunner, R., 2002. “Does M&A Pay? A Survey of Evidence for the Decision-Maker” *Journal of Applied Finance*, 12, 48-68.

Burlew, L.D., J.E. Pederson, and B. Bradley, 1994. “The Reaction of Managers to the Preacquisition Stage of a Corporate Merger: A Qualitative Study,” *Journal of Career Developmen*t 21, 11–22.

Chou, H.-I., G.Y. Tian, X. Yin, 2015. “Takeover rumors: Returns and pricing of rumored targets,” *International Review of Financial Analysis*, 41, 13-27

Clarkson, P.M., D. Joyce, I. Tutticci, 2006. “Market reaction to takeover rumour in Internet Discussion Sites,” *Accounting & Finance*, 46, 31-52.

F. Degeorge, J. Martin, and L. Phalippou, 2015. “On secondary buyouts.” *Journal of Financial Economics*, 120, 124–145.

DiFonzo, N., and P. Bordia, 1997. “Rumor and Prediction: Making Sense (But Losing Dollars) in the Stock Market,” *Organizational Behavior and Human Decision Processes* 71, 329–353.

DiFonzo, N., and P. Bordia, 1998. “A tale of two corporations: Managing uncertainty during organizational change,” *Human Resource Management Journa*l 37, 295–304.

DiFonzo, N., and P. Bordia, 2000. “How Top PR Professionals Handle Heresay: Corporate Rumors, Their Effects, and Strategies to Manage Them,” *Public Relations Review* 26, 173-190.

DiFonzo, N., P. Bordia, and R.L. Rosnow, 1994. “Reining in Rumors,” *Organizational Dynamics* 23 (1994), pp. 47–62.

Fama, E., and K. French, 1998. “Value versus Growth: The International Evidence,” *Journal of Finance* 53, 1975-1999.

Freedman, D. A. and Sekhon, J. S., 2010. “Endogeneity in probit response models.” *Political Analysis*, 18(2):138–150.

W. H. Greene. Econometric Analysis. Prentice Hall, 6th edition, 2007.

W. H. Greene. Marginal effects in the bivariate probit model. Working paper, June 1996.

Han, B., L. Yang, 2013. “Social Networks, Information Acquisition, and Asset Prices,” *Management Science*, **59**, 6, 1444

Heckman, J.J., 1979. “Sample selection bias as a specification error. *Econometrica*, 47(1):153–161.

Indjejikian, R., H. Lu, L. Yang, 2014. “Rational Information Leakage,” *Management Science*, 60, 2762 - 2775.

Leung, H., T. Ton, 2015. “The impact of internet stock message boards on cross-sectional returns of small-capitalization stocks,” *Journal of Banking & Finance*, 55, 37-55.

Peterson, W., and N. Gist, 1951. "Rumor and Public Opinion". *The American Journal of Sociology* **57** (2): 159–167.

Putniņš, T.J., 2012. “Market Manipulation: A Survey,” *Journal of Economic Surveys*, **26**, 5

Smeltzer, L.R., 1991. “An analysis of Strategies for Announcing Organization-Wide Change,” *Group and Organization Studies* 16, 5–24.

Smeltzer, L.R., and M.F. Zener, 1992. “Development of a Model for Announcing Major Layoffs,” *Group and Organization Studies* 17, 446-472.

Sprenger, T.O., A. Tumasjan, P.G. Sandner, I.M. Welpe, 2014. “Tweets and Trades: the Information Content of Stock Microblogs,” *European Financial Management*, 20, 926-957.

Appendix I: Examples of "M&A Rumors and Opportunities"

Example 1:
UnitedHealth makes Aetna approach: WSJ
Target: Aetna Inc.
Estimated value: USD 40,000 million, rumor date: 15th June 2015
Target region: US
Target business: Health, dental insurance provider
UnitedHealth Group has approached Aetna over a possible takeover that would likely value the Connecticut-based health insurer at more than USD 40,000 million, sources told the Wall Street Journal (WSJ). The paper noted a deal would be the latest sign of growing consolidation in the health insurance industry.

Example 2:
Arch Capital eyes Axis: FT
Target: Axis Capital Holdings Ltd
Estimated value: USD 6,560 million
Rumor date: 17th June 2015
Target region: Bermuda
Target business: Property and casualty, accident and health insurance and reinsurance services
Bermudan reinsurer Arch Capital is weighing a bid for smaller rival Axis Capital as consolidation sweeps the industry, the Financial Times (FT) reported. Citing sources familiar with the matter, the paper said Arch has informally proposed a USD 65.00 per share takeover offer that would value Axis at USD 6,560 million. Axis is in the process of merging with PartnerRe, and any offer from Arch would complicate this deal."

Source: Bureau van Dijk, Zephyr "M&A Rumors and Opportunities, Week in Review", Week of June 15, 2015.

Appendix II: Tables

Table 1: Three-way tabulation between completed, buyout, and rumored deals.

Levels		**Percentage of total number of deals**
Total number of deals	47,262	100.0%
Non-completed	17,146	36.3%
Completed	30,116	63.7%

Panel A: Non-completed deals

		Buyouts No	*Buyouts* Yes	Sub-totals			*Buyouts* No	*Buyouts* Yes	Sub-totals
Rumor	No	7,248	427	7,675	*Rumor*	No	15.3%	0.9%	16.2%
	Yes	8,947	524	9,471		Yes	18.9%	1.1%	20.0%
	Sub-totals	16,195	951			Sub-totals	34.3%	2.0%	

Panel B: Completed deals

		Buyouts No	*Buyouts* Yes	Sub-totals			*Buyouts* No	*Buyouts* Yes	Sub-totals
Rumor	No	21,757	3,153	24,910	*Rumor*	No	46.0%	6.7%	52.7%
	Yes	4,433	773	5,206		Yes	9.4%	1.6%	11.0%
	Sub-totals	26,190	3,926			Sub-totals	55.4%	8.3%	

Table 2: Time/Country/Industry patterns.

	N	Non-completed deals	%	Completed deals	%	Non-rumored deals	%	Rumored deals	%	Buyouts	%	Other acquisitions	%
Panel A: Year patterns													
1997	116	4	3.45%	112	96.55%	101	87.07%	15	12.93%	24	20.69%	92	79.31%
1998	194	8	4.12%	186	95.88%	189	97.42%	5	2.58%	29	14.95%	165	85.05%
1999	239	24	10.04%	215	89.96%	231	96.65%	8	3.35%	38	15.90%	201	84.10%
2000	465	176	37.85%	289	62.15%	429	92.26%	36	7.74%	67	14.41%	398	85.59%
2001	921	294	31.92%	627	68.08%	693	75.24%	228	24.76%	124	13.46%	797	86.54%
2002	1,610	534	33.17%	1,076	66.83%	1,102	68.45%	508	31.55%	225	13.98%	1,385	86.02%
2003	1,993	723	36.28%	1,270	63.72%	1,282	64.33%	711	35.67%	294	14.75%	1,699	85.25%
2004	2,488	770	30.95%	1,718	69.05%	1,747	70.22%	741	29.78%	325	13.06%	2,163	86.94%
2005	3,138	1,022	32.57%	2,116	67.43%	2,160	68.83%	978	31.17%	421	13.42%	2,717	86.58%
2006	3,861	1,303	33.75%	2,558	66.25%	2,721	70.47%	1,140	29.53%	539	13.96%	3,322	86.04%
2007	4,638	1,588	34.24%	3,050	65.76%	3,453	74.45%	1,185	25.55%	570	12.29%	4,068	87.71%
2008	4,414	1,634	37.02%	2,780	62.98%	3,154	71.45%	1,260	28.55%	421	9.54%	3,993	90.46%
2009	3,950	1,671	42.30%	2,279	57.70%	2,494	63.14%	1,456	36.86%	287	7.27%	3,663	92.73%
2010	4,244	1,563	36.83%	2,681	63.17%	2,805	66.09%	1,439	33.91%	374	8.81%	3,870	91.19%
2011	5,017	2,087	41.60%	2,930	58.40%	3,388	67.53%	1,629	32.47%	360	7.18%	4,657	92.82%
2012	4,932	1,890	38.32%	3,042	61.68%	3,255	66.00%	1,677	34.00%	364	7.38%	4,568	92.62%
2013	5,042	1,855	36.79%	3,187	63.21%	3,381	67.06%	1,661	32.94%	415	8.23%	4,627	91.77%
Total	**47,262**	**17,146**		**30,116**		**32,585**		**14,677**		**4,877**		**42,385**	

Panel A: Industry patterns

	N	% of total	Non-completed deals	% within the industry	Completed deals	% within the industry	Non-rumored deals	% within the industry	Rumored deals	% within the industry	Buyouts	% within the industry	Other acquisitions	% within the industry
Chemicals	3,602	7.62%	1,308	36.31%	2,294	63.69%	2,454	68.13%	1,148	31.87%	399	11.08%	3,203	88.92%
Construction	2,156	4.56%	795	36.87%	1,361	63.13%	1,558	72.26%	598	27.74%	204	9.46%	1,952	90.54%
Education, Health	1,023	2.16%	278	27.17%	745	72.83%	809	79.08%	214	20.92%	141	13.78%	882	86.22%
Food, beverages, tobacco	2,622	5.55%	1,052	40.12%	1,570	59.88%	1,746	66.59%	876	33.41%	213	8.12%	2,409	91.88%
Gas, Water, Electricity	1,137	2.41%	566	49.78%	571	50.22%	582	51.19%	555	48.81%	40	3.52%	1,097	96.48%
Hotels & restaurants	1,001	2.12%	406	40.56%	595	59.44%	610	60.94%	391	39.06%	155	15.48%	846	84.52%
Machinery & equipment	6,994	14.80%	2,443	34.93%	4,551	65.07%	5,103	72.96%	1,891	27.04%	807	11.54%	6,187	88.46%
Metals & metal products	2,161	4.57%	799	36.97%	1,362	63.03%	1,532	70.89%	629	29.11%	237	10.97%	1,924	89.03%
Other services	13,641	28.86%	4,691	34.39%	8,950	65.61%	9,367	68.67%	4,274	31.33%	1,388	10.18%	12,253	89.82%
Post and telecommunications	116	0.25%	47	40.52%	69	59.48%	69	59.48%	47	40.52%	22	18.97%	94	81.03%
Primary Sector (agriculture, mining, etc.)	1,391	2.94%	663	47.66%	728	52.34%	726	52.19%	665	47.81%	44	3.16%	1,347	96.84%
Public administration and defence	28	0.06%	7	25.00%	21	75.00%	23	82.14%	5	17.86%	3	10.71%	25	89.29%
Publishing, printing	1,465	3.10%	514	35.09%	951	64.91%	1,035	70.65%	430	29.35%	159	10.85%	1,306	89.15%
Textiles, wearing apparel, leather	797	1.69%	318	39.90%	479	60.10%	491	61.61%	306	38.39%	138	17.31%	659	82.69%
Transport	2,196	4.65%	931	42.40%	1,265	57.60%	1,353	61.61%	843	38.39%	167	7.60%	2,029	92.40%
Wholesale & retail trade	6,152	13.02%	2,073	33.70%	4,079	66.30%	4,550	73.96%	1,602	26.04%	650	10.57%	5,502	89.43%
Wood, cork, paper	780	1.65%	255	32.69%	525	67.31%	577	73.97%	203	26.03%	110	14.10%	670	85.90%
Total	**47,262**		**17,146**		**30,116**		**32,585**		**14,677**		**4,877**		**42,385**	

Country patterns (only countries with more than 500 deals)

	N	% of total	Non-completed deals	% within the country	Completed deals	% within the country	Non-rumored deals	% within the country	Rumored deals	% within the country	Buyouts	% within the country	Other acquisitions	% within the country
AU	602	1.27%	323	53.65%	279	46.35%	234	38.87%	368	61.13%	35	5.81%	567	94.19%
BE	1,291	2.73%	366	28.35%	925	71.65%	902	69.87%	389	30.13%	145	11.23%	1,146	88.77%
CN	720	1.52%	512	71.11%	208	28.89%	593	82.36%	127	17.64%	2	0.28%	718	99.72%
CZ	715	1.51%	216	30.21%	499	69.79%	523	73.15%	192	26.85%	43	6.01%	672	93.99%
DE	3,476	7.35%	1,315	37.83%	2,161	62.17%	2,432	69.97%	1,044	30.03%	404	11.62%	3,072	88.38%
ES	3,481	7.37%	983	28.24%	2,498	71.76%	2,778	79.80%	703	20.20%	232	6.66%	3,249	93.34%
FI	1,470	3.11%	273	18.57%	1,197	81.43%	1,293	87.96%	177	12.04%	111	7.55%	1,359	92.45%
FR	3,269	6.92%	689	21.08%	2,580	78.92%	2,439	74.61%	830	25.39%	454	13.89%	2,815	86.11%
GB	7,243	15.33%	1,817	25.09%	5,426	74.91%	4,981	68.77%	2,262	31.23%	1,548	21.37%	5,695	78.63%
IT	2,117	4.48%	835	39.44%	1,282	60.56%	1,396	65.94%	721	34.06%	226	10.68%	1,891	89.32%
JP	2,170	4.59%	1,130	52.07%	1,040	47.93%	1,776	81.84%	394	18.16%	134	6.18%	2,036	93.82%
KR	819	1.73%	491	59.95%	328	40.05%	609	74.36%	210	25.64%	17	2.08%	802	97.92%
NL	2,726	5.77%	838	30.74%	1,888	69.26%	1,924	70.58%	802	29.42%	313	11.48%	2,413	88.52%
NO	1,466	3.10%	641	43.72%	825	56.28%	1,173	80.01%	293	19.99%	80	5.46%	1,386	94.54%
PL	555	1.17%	249	44.86%	306	55.14%	267	48.11%	288	51.89%	29	5.23%	526	94.77%
RU	4,400	9.31%	2,365	53.75%	2,035	46.25%	2,263	51.43%	2,137	48.57%	29	0.66%	4,371	99.34%
SE	1,910	4.04%	740	38.74%	1,170	61.26%	1,551	81.20%	359	18.80%	176	9.21%	1,734	90.79%
US	3,319	7.02%	919	27.69%	2,400	72.31%	2,127	64.09%	1,192	35.91%	604	18.20%	2,715	81.80%
Total	**41,749**	**88.34%**	**14,702**		**27,047**		**29,261**		**12,488**		**4,582**		**37,167**	

Table 3: Descriptive statistics.

Panel A: all sample

	N	NAs	25%	Mean	Median	75%	SD
Target age (years)	47,262	680	8.00	22.12	15.00	27.00	21.86
Number of acquirers	47,262	0	1.00	1.07	1.00	1.00	0.43
Target total assets, mmUSD	47,262	44	5.35	303.30	17.50	87.29	1,165.94
Ln(Target total assets)	47,262	44	1.68	3.23	2.86	4.47	2.03
Ln(GDP)	47,262	911	13.17	14.06	14.30	14.78	1.32
Legal rights index	47,262	911	6.00	6.84	7.00	9.00	2.26
Corruption index	47,262	911	5.36	6.72	7.40	8.30	2.10
Ln(PE investments)	47,262	2,292	5.85	6.89	6.86	8.00	2.32
Completed deal (D)	47,262	0		0.64			0.48
Rumor (D)	47,262	0		0.31			0.46
Buyout (D)	47,262	0		0.10			0.30
Full acquisition (D)	47,262	3,374		0.84			0.36
Local investors (D)	47,262	0		0.65			0.48
Listed investors (D)	47,262	0		0.18			0.38
Public takeover (D)	47,262	0		0.15			0.36
Acquirer total assets, mmUSD	47,262	21,181	23.00	5,610.55	142.00	960.00	50,423.92
Ln(Acquirer total assets)	47,262	21,181	3.14	5.05	4.96	6.87	2.70
Price-differential	47,262	33,648	-0.56	0.75	0.00	0.84	3.25

Panel B: deal closing tabulation

	Completed deals (N = 30,116)				Non-completed deals (N = 17,146)				Tests	
	NAs	Mean	Median	SD	NAs	Mean	Median	SD	*t*	*MW*
Target age (years)	411	21.21	15.00	20.28	269	23.71	15.00	24.31	***	***
Number of acquirers	0	1.07	1.00	0.35	0	1.08	1.00	0.54	***	
Target total assets, mmUSD	23	212.86	13.57	927.69	21	462.22	29.69	1,482.02	***	***
Ln(Target total assets)	23	2.97	2.61	1.91	21	3.69	3.39	2.15	***	***
Ln(GDP)	722	14.08	14.32	1.31	189	14.01	14.24	1.35	***	***
Legal rights index	722	7.03	7.00	2.21	189	6.52	7.00	2.31	***	***
Corruption index	722	6.95	7.50	1.94	189	6.32	7.30	2.29	***	***
Ln(PE investments)	1,635	7.04	6.87	2.32	657	6.62	6.77	2.29	***	***
Rumor (D)	0	0.17		0.38	0	0.55		0.50	***	***
Buyout (D)	0	0.13		0.34	0	0.06		0.23	***	***
Full acquisition (D)	1,650	0.87		0.34	1,724	0.80		0.40	***	***
Local investors (D)	0	0.70		0.46	0	0.56		0.50	***	***
Listed investors (D)	0	0.18		0.38	0	0.19		0.39	***	***
Public takeover (D)	0	0.14		0.34	0	0.18		0.39	***	***
Acquirer total assets, mmUSD	12,248	4,785.35	114.00	46,901.04	8,933	7,405.82	225.00	57,307.51	***	***
Ln(Acquirer total assets)	12,248	4.85	4.74	2.66	8,933	5.49	5.42	2.73	***	***
Price-differential	21,113	0.82	0.05	3.28	12,535	0.60	-0.07	3.18	***	***

Panel C: rumor tabulation

	Rumored deals (N = 14,677)				Non-rumored deals (N = 32,585)				Tests	
	NAs	Mean	Median	SD	NAs	Mean	Median	SD	*t*	*MW*
Target age (years)	256	24.63	15.00	25.74	424	20.99	15.00	19.77	***	***
Number of acquirers	0	1.10	1.00	0.59	0	1.06	1.00	0.33	***	***
Target total assets, mmUSD	10	633.46	54.48	1,717.87	34	154.53	12.36	755.67	***	***
Ln(Target total assets)	10	4.14	4.00	2.25	34	2.82	2.51	1.78	***	***
Ln(GDP)	209	14.06	14.37	1.36	702	14.05	14.28	1.31		
Legal rights index	209	6.74	7.00	2.47	702	6.89	7.00	2.15	***	***
Corruption index	209	6.31	7.30	2.27	702	6.91	7.50	1.98	***	***
Ln(PE investments)	471	6.83	6.83	2.53	1,821	6.91	6.87	2.21	***	
Completed deal (D)	0	0.36		0.48	0	0.76		0.42	***	***
Buyout (D)	0	0.09		0.28	0	0.11		0.31	***	***
Full acquisition (D)	722	0.81		0.40	2,652	0.86		0.35	***	***
Local investors (D)	0	0.52		0.50	0	0.71		0.45	***	***
Listed investors (D)	0	0.19		0.39	0	0.18		0.38	***	***
Public takeover (D)	0	0.28		0.45	0	0.10		0.30	***	***
Acquirer total assets, mmUSD	8,374	11,250.81	348.00	73,381.22	12,807	3,813.07	106.25	40,294.47	***	***
Ln(Acquirer total assets)	8,374	5.90	5.85	2.90	12,807	4.78	4.67	2.58	***	***
Price-differential	9,313	0.75	0.01	3.35	24,335	0.75	0.00	3.18		

Panel D: Buyout tabulation

	Buyouts (N = 4,877)				Other acquisitions (N = 42,385)				Tests	
	NAs	Mean	Median	SD	NAs	Mean	Median	SD	*t*	*MW*
Target age (years)	56	23.73	17.00	22.57	624	21.93	15.00	21.77	***	***
Number of acquirers	0	1.24	1.00	0.64	0	1.05	1.00	0.39	***	***
Target total assets, mmUSD	3	237.16	30.44	833.16	41	310.91	16.42	1,198.10	***	***
Ln(Target total assets)	3	3.62	3.42	1.81	41	3.18	2.80	2.05	***	***
Ln(GDP)	111	14.42	14.65	1.20	800	14.01	14.24	1.33	***	***
Legal rights index	111	7.80	8.00	2.10	800	6.73	7.00	2.25	***	***
Corruption index	111	7.58	7.70	1.26	800	6.62	7.40	2.15	***	***
Ln(PE investments)	302	7.98	7.77	2.15	1,990	6.76	6.77	2.30	***	***
Completed deal (D)	0	0.81		0.40	0	0.62		0.49	***	***
Rumor (D)	0	0.27		0.44	0	0.32		0.47	***	***
Full acquisition (D)	111	0.92		0.27	3,263	0.83		0.37	***	***
Local investors (D)	0	0.73		0.45	0	0.64		0.48	***	***
Listed investors (D)	0	0.04		0.19	0	0.20		0.40	***	***
Public takeover (D)	0	0.18		0.39	0	0.15		0.36	***	***
Acquirer total assets, mmUSD	3,260	6,562.39	18.00	75,744.70	17,921	5,547.63	159.00	48,286.37	***	***
Ln(Acquirer total assets)	3,260	3.30	2.89	2.66	17,921	5.17	5.07	2.66	***	***
Price-differential	3,036	0.71	0.04	3.04	30,612	0.75	0.00	3.28		

The notation t stands for the t-test. MW stands for Mann-Whitney test. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table 4: Definitions of variables.

Name	**Source**	**Definition**
Completed deal (D)	Zephyr	Dummy variable. 1 if a deal is flagged as completed and its closing date is available.
Rumor (D)	Zephyr	Dummy variable. 1 if there is either a difference between the rumor & announcement dates or there is a rum our followed by no further information.
Buyout (D)	Zephyr	Dummy variable. 1 if a deal is a PE-backed buyout.
Full acquisition (D)	Zephyr	Dummy variable. 1 if a deal is a full acquisition from 0% to 100% of equity.
Local investors (D)	Zephyr	Dummy variable. 1 if all acquirers and the target are from the same country.
Listed investors (D)	Zephyr	Dummy variable. 1 if any of acquiring firms is a listed entity.
Public takeover (D)	Zephyr	Dummy variable. 1 if the acquisition is a public takeover.
Ln(Target age)	Zephyr	Natural log of a target age at the rumor date.
Number of acquirers	Zephyr	Number of acquiring entities.
Ln(Target total assets)	Zephyr	Natural log of a target's total assets (in mmUSD) in the last pre-transaction year.
Ln(GDP)	IMF Statistics	Log of target country GDP in mmUSD.
Legal rights index	World Bank	The strength of legal rights index. It measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders, and thus facilitate lending. The index ranges from 0 to 10, with higher scores indicating that collateral and bankruptcy laws are better designed to expand access to credit.
Corruption perception index	Transparency International	Target country bribing and corruption index. This index describes the overall extent of corruption (frequency and/or size of bribes) in the public and political sectors. The index ranges from 0 to 10. Countries where bribery and corruption cases are frequent receive a low rating score.
Ln(Private equity (PE) investments)	Thomson One	Natural log of the target country average venture capital and private equity investments amounts over 3 years before the rumor date in mmUSD.
Ln(Acquirer total assets)	Zephyr	Natural log of acquirer's total assets (in mmUSD) in the last pre-transaction year. If several acquirers are involved, we use the average of their total assets.
Price-differential	Zephyr	Deal enterprise value (in mmUSD) over target total assets (in mmUSD) less the median of this multiple for all deals (except the focal one) in the same country & industry & public status over last two years before the focal transaction.

Table 5: Correlation matrix.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
1. Completed deal (D)	1.00															
2. Rumor (D)	-0.39	1.00														
3. Buyout (D)	0.12	-0.03	1.00													
4. Full acquisition (D)	0.08	-0.07	0.07	1.00												
5. Local investors (D)	0.14	-0.19	0.05	-0.07	1.00											
6. Listed investors (D)	-0.02	0.01	-0.13	-0.10	-0.03	1.00										
7. Public takeover (D)	-0.06	0.23	0.03	-0.24	0.02	0.10	1.00									
8. Ln(Target age)	-0.03	0.04	0.03	-0.04	0.03	0.00	0.11	1.00								
9. Number of acquirers	-0.02	0.04	0.13	0.01	-0.08	0.03	0.00	0.01	1.00							
10. Ln(Target total assets)	-0.17	0.30	0.06	-0.17	-0.09	0.13	0.46	0.14	0.09	1.00						
11. Ln(GDP)	0.03	0.00	0.09	0.06	0.10	0.11	0.25	0.03	0.01	0.24	1.00					
12. Legal rights index	0.11	-0.03	0.14	0.14	-0.01	0.04	0.18	0.03	0.01	0.04	0.13	1.00				
13. Corruption index	0.15	-0.13	0.14	0.18	0.03	-0.01	0.05	0.11	0.01	-0.06	0.11	0.60	1.00			
14. Ln(PE investments)	0.09	-0.02	0.16	0.16	0.08	0.07	0.24	0.02	0.01	0.17	0.83	0.45	0.43	1.00		
15. Ln(Acquirer total assets)	-0.11	0.18	-0.17	-0.18	-0.22	0.36	0.25	0.03	0.03	0.49	0.14	-0.08	-0.15	0.04	1.00	
16. Price-differential	0.03	0.00	0.00	0.06	-0.08	0.03	-0.06	-0.11	0.02	-0.18	0.00	0.02	0.01	0.03	0.07	1.00

Note: correlations greater than 0.4 are highlighted.

Table 6: Determinants of deal completion - main models. Dependent variable: deal closing (no = 0/yes = 1). Simple coefficients.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Deal variables									
Rumor (D)	-1.09^{***}		-1.10^{***}	-1.15^{***}	-1.08^{***}	-1.05^{***}	-1.04^{***}	-1.03^{***}	-1.05^{***}
	(0.01)		(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Buyout (D)		0.56^{***}	0.57^{***}	0.41^{***}	0.44^{***}	0.53^{***}	0.50^{***}	0.51^{***}	0.51^{***}
		(0.02)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	(0.03)
Country variables									
Ln(GDP)						0.04^{***}			
						(0.01)			
Legal rights index							0.04^{***}		
							(0.00)		
Corruption index								0.04^{***}	
								(0.00)	
Ln(PE investments)									0.05^{***}
									(0.00)
Controls									
Ln(Target age)					-0.04^{***}	-0.02^{***}	-0.02^{***}	-0.03^{***}	-0.03^{***}
					(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Number of acquirers					-0.04^{**}	-0.03	-0.03^{*}	-0.03^{*}	-0.03
					(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Ln(Target total assets)					-0.05^{***}	-0.06^{***}	-0.05^{***}	-0.05^{***}	-0.06^{***}
					(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Full acquisition (D)					0.12^{***}	0.23^{***}	0.20^{***}	0.21^{***}	0.18^{***}
					(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Local investors (D)					0.27^{***}	0.20^{***}	0.22^{***}	0.21^{***}	0.19^{***}
					(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Listed investors (D)					0.21^{***}	0.13^{***}	0.13^{***}	0.13^{***}	0.12^{***}
					(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Public takeover (D)					0.20^{***}	0.24^{***}	0.20^{***}	0.24^{***}	0.20^{***}
					(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	No	No	No	Yes	Yes	No	No	No	No
AIC	54668.32	61195.28	53996.27	51150.56	45658.21	46851.30	46702.79	46787.61	45091.83
BIC	54685.85	61212.81	54022.56	52219.70	46751.24	47197.55	47049.04	47133.86	45419.60
Log Likelihood	−27332.16	−30595.64	−26995.13	−25453.28	−22703.10	−23385.65	−23311.39	−23353.80	−22507.91
Deviance	54664.32	61191.28	53990.27	50906.56	45406.21	46771.30	46622.79	46707.61	45015.83
χ^2	7249.32	722.36	7923.37	11005.05	10641.51	8410.35	8558.86	8474.04	8518.98
χ^2 p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pseudo R-sq.	0.12	0.01	0.13	0.18	0.19	0.15	0.16	0.15	0.16
Adj. Pseudo R-sq.	0.12	0.01	0.13	0.18	0.19	0.15	0.16	0.15	0.16
Num. obs.	47262	47262	47262	47261	43254	42463	42463	42463	41176

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table 7: Determinants of deal completion - models with an interaction between rumors and buyout dummies. Dependent variable: deal closing (no = 0/yes = 1). Simple coefficients.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Deal variables							
Rumor (D)	-1.11^{***}	-1.16^{***}	-1.10^{***}	-1.07^{***}	-1.07^{***}	-1.06^{***}	-1.07^{***}
	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Buyout (D)	0.50^{***}	0.33^{***}	0.34^{***}	0.44^{***}	0.41^{***}	0.42^{***}	0.43^{***}
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Buyout (D) × Rumor (D)	0.18^{***}	0.19^{***}	0.25^{***}	0.25^{***}	0.24^{***}	0.24^{***}	0.22^{***}
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Country variables							
Ln(GDP)				0.04^{***}			
				(0.01)			
Legal rights index					0.04^{***}		
					(0.00)		
Corruption index						0.04^{***}	
						(0.00)	
Ln(PE investments)							0.05^{***}
							(0.00)
Controls							
Ln(Target age)			-0.04^{***}	-0.02^{***}	-0.02^{***}	-0.03^{***}	-0.03^{***}
			(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Number of acquirers			-0.04^{**}	-0.02	-0.03	-0.03^{*}	-0.03
			(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Ln(Target total assets)			-0.05^{***}	-0.06^{***}	-0.06^{***}	-0.05^{***}	-0.06^{***}
			(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Full acquisition (D)			0.13^{***}	0.23^{***}	0.20^{***}	0.21^{***}	0.18^{***}
			(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Local investors (D)			0.27^{***}	0.20^{***}	0.22^{***}	0.21^{***}	0.19^{***}
			(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Listed investors (D)			0.21^{***}	0.13^{***}	0.13^{***}	0.14^{***}	0.12^{***}
			(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Public takeover (D)			0.21^{***}	0.24^{***}	0.20^{***}	0.24^{***}	0.19^{***}
			(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	No	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	No	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	No	Yes	Yes	No	No	No	No
AIC	53984.09	51135.93	45634.49	46827.30	46680.12	46765.22	45074.98
BIC	54019.14	52213.83	46736.19	47182.21	47035.03	47120.13	45411.38
Log Likelihood	−26988.04	−25444.96	−22690.24	−23372.65	−23299.06	−23341.61	−22498.49
Deviance	53976.09	50889.93	45380.49	46745.30	46598.12	46683.22	44996.98
χ^2	7937.55	11021.68	10667.23	8436.34	8583.53	8498.43	8537.83
χ^2 p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pseudo R-sq.	0.13	0.18	0.19	0.15	0.16	0.15	0.16
Adj. Pseudo R-sq.	0.13	0.18	0.19	0.15	0.16	0.15	0.16
Num. obs.	47262	47261	43254	42463	42463	42463	41176

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table 8: Determinants of rumors - main models. Dependent variable: rumor (no = 0/yes = 1). Simple coefficients.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Deal variables							
Buyout (D)	-0.15^{***}	-0.10^{***}	-0.19^{***}	-0.22^{***}	-0.21^{***}	-0.17^{***}	-0.22^{***}
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Country variables							
Ln(GDP)				-0.07^{***}			
				(0.01)			
Legal rights index					-0.04^{***}		
					(0.00)		
Corruption index						-0.09^{***}	
						(0.00)	
Ln(PE investments)							-0.04^{***}
							(0.00)
Controls							
Ln(Target age)			0.01	-0.02^{**}	-0.01	0.01^{*}	-0.02^{**}
			(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Number of acquirers			0.06^{***}	0.05^{***}	0.05^{***}	0.06^{***}	0.06^{***}
			(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Ln(Target total assets)			0.21^{***}	0.19^{***}	0.18^{***}	0.18^{***}	0.19^{***}
			(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Full acquisition (D)			0.12^{***}	0.04^{*}	0.04^{**}	0.08^{***}	0.07^{***}
			(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Local investors (D)			-0.46^{***}	-0.49^{***}	-0.52^{***}	-0.52^{***}	-0.50^{***}
			(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Listed investors (D)			-0.06^{***}	-0.12^{***}	-0.12^{***}	-0.11^{***}	-0.12^{***}
			(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Public takeover (D)			0.69^{***}	0.43^{***}	0.43^{***}	0.42^{***}	0.47^{***}
			(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	No	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	No	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	No	Yes	Yes	No	No	No	No
AIC	58513.23	55170.27	44843.84	46210.46	46200.52	45663.47	45041.36
BIC	58530.75	56230.64	45928.20	46548.06	46538.12	46001.07	45360.50
Log Likelihood	-29254.61	-27464.13	-22296.92	-23066.23	-23061.26	-22792.74	-22483.68
Deviance	58509.23	54928.27	44593.84	46132.46	46122.52	45585.47	44967.36
χ^2	51.83	3630.46	9434.10	7023.09	7033.03	7570.08	6822.09
χ^2 p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pseudo R-sq.	0.00	0.06	0.17	0.13	0.13	0.14	0.13
Adj. Pseudo R-sq.	0.00	0.06	0.18	0.13	0.13	0.14	0.13
Num. obs.	47262	47261	43254	42463	42463	42463	41176

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table 9: Checks for the endogeneity / reverse causality between the rumors and deal closings. Dependent variables: rumor (no = 0/yes = 1) and closing (no = 0/yes = 1). Simple coefficients. Rumor equations are based on the the specification (3) of 8.

	(1)		(2)		(3)		(4)	
	Pr(R)	Pr(C)	Pr(R)	Pr(C)	Pr(R)	Pr(C)	Pr(R)	Pr(C)
Deal variables								
Buyout (D)	-0.16^{***}	0.44^{***}	-0.18^{***}	0.44^{***}	-0.17^{***}	0.45^{***}	-0.19^{***}	0.47^{***}
	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)
Rumor (D)		-1.83^{***}		-1.61^{***}		-1.74^{***}		-1.48^{***}
		(0.06)		(0.08)		(0.09)		(0.10)
Country variable								
Ln(GDP)		0.01^{**}						
		(0.01)						
Legal rights index				0.03^{***}				
				(0.00)				
Corruption index						0.01^{***}		
						(0.00)		
Ln(PE investments)								0.04^{***}
								(0.00)
Controls								
Ln(Target age)	0.01	-0.02^{***}	0.01	-0.03^{***}	0.01	-0.03^{***}	0.01	-0.03^{***}
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Number of acquirers	0.06^{***}	-0.01	0.06^{***}	-0.01	0.06^{***}	-0.01	0.06^{***}	-0.02
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Ln(Target total assets)	0.20^{***}	-0.00	0.21^{***}	-0.02^{**}	0.20^{***}	-0.01	0.21^{***}	-0.03^{***}
	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)
Full acquisition (D)	0.13^{***}	0.22^{***}	0.13^{***}	0.20^{***}	0.13^{***}	0.22^{***}	0.13^{***}	0.19^{***}
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Local investors (D)	-0.48^{***}	0.06^{***}	-0.47^{***}	0.11^{***}	-0.48^{***}	0.08^{***}	-0.47^{***}	0.12^{***}
	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)
Listed investors (D)	-0.10^{***}	0.09^{***}	-0.09^{***}	0.10^{***}	-0.09^{***}	0.10^{***}	-0.08^{***}	0.10^{***}
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Public takeover (D)	0.66^{***}	0.35^{***}	0.66^{***}	0.29^{***}	0.66^{***}	0.35^{***}	0.68^{***}	0.27^{***}
	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)	(0.03)
Correlation								
athrho		0.60^{***}		0.40^{***}		0.51^{***}		0.29^{***}
		(0.04)		(0.05)		(0.06)		(0.07)
rho		0.53^{***}		0.38^{***}		0.47^{***}		0.28^{***}
		(0.03)		(0.05)		(0.05)		(0.06)
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	No	Yes	No	Yes	No	Yes	No
Log Likelihood	–45395.42		–45348.10		–45394.71		–44023.37	
χ^2	18566.64^{***}		15442.89^{***}		17086.52^{***}		13695.27^{***}	
Num. obs.	42463		42463		42463		41176	
Tests for zero correlation: $H_0: athrho = 0$ (χ^2 on 1 d.f.)								
LM test	3390.09^{***}		1745.99^{***}		2672.57^{***}		935.88^{***}	
LR test	91.13^{***}		37.26^{***}		28.87^{***}		14.80^{***}	
Wald test	101909.92^{***}		17484.94^{***}		17518.37^{***}		3844.82^{***}	

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table 10: The impact of rumors on the deal pricing. Dependent variable: excess pricing defined as the focal deal value over the target's total assets (DV/TA) less the median value of the DV/TA for transactions within the same industry & country over the last 2 years before the focal deal.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Deal variables								
Rumor (D)	−0.25***		−0.30***	−0.33***	−0.27***	−0.27***	−0.27***	−0.27***
	(0.07)		(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
Buyout (D)				0.50***	0.73***	0.68***	0.71***	0.54***
				(0.16)	(0.21)	(0.21)	(0.21)	(0.19)
Rumor (D) * Buyout (D)					−0.45	−0.45	−0.46*	−0.29
					(0.28)	(0.28)	(0.28)	(0.26)
Country variables								
Ln(GDP)					0.04			
					(0.04)			
Legal rights index						0.08***		
						(0.02)		
Corruption index							0.06**	
							(0.03)	
Ln(PE investments)								0.08***
								(0.02)
Controls								
Ln(Target age)		−0.37***	−0.37***	−0.38***	−0.38***	−0.37***	−0.39***	−0.36***
		(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Ln(Acquirer total assets)		0.11***	0.11***	0.12***	0.11***	0.12***	0.12***	0.11***
		(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Number of acquirers		−0.01	0.02	−0.12	−0.18	−0.16	−0.17	−0.15
		(0.11)	(0.11)	(0.12)	(0.13)	(0.12)	(0.12)	(0.12)
Local investors (D)		−0.28***	−0.28***	−0.27**	−0.17*	−0.20**	−0.15	−0.22**
		(0.11)	(0.11)	(0.11)	(0.10)	(0.10)	(0.10)	(0.10)
Listed investors (D)		−0.18*	−0.19*	−0.15	−0.12	−0.15	−0.13	−0.11
		(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Public takeover (D)		−0.14	−0.07	−0.09	−0.17	−0.19*	−0.13	−0.29**
		(0.16)	(0.16)	(0.16)	(0.13)	(0.11)	(0.11)	(0.12)
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	No	Yes	Yes	Yes	No	No	No	No
Adj. R^2	0.00	0.05	0.05	0.05	0.04	0.04	0.04	0.04
Num. obs.	7148	3767	3767	3767	3741	3741	3741	3576
F statistic	12.47**	3.37***	3.46***	3.57***	4.98***	5.46***	5.07***	4.99***

Constant, industry and year dummies are included as specified. SEs are White-robust. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$