



## Takeover rumors: Returns and pricing of rumored targets<sup>☆</sup>



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### ABSTRACT

Rumors can be classified into two types according to whether they can credibly predict impending events. An analysis of takeover rumors of publicly US companies shows that the types of rumors are statistically distinguishable by the returns of the rumored targets before the publications of respective rumors. However, market responses to rumors on the day of and the day after the rumor's publication are statistically indifferent. Trading on takeover rumors can be profitable. Moreover, rumored targets display a different return pattern than other takeover targets, and their takeover premiums cannot be explained by the markup pricing or substitution hypothesis.

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### 1. Introduction

A financial rumor is an imprecise and unconfirmed message about an impending financial event. Rumors can be spread through word of mouth or newsletters by insiders, such as the senior managers or directors of a company, or by outsiders, such as investment gurus, professional speculators or financial journalists. They might be based on either undisclosed accounting and financial information or publicly

available accounting and financial data and market information. By nature, not all rumors in financial markets are informative. Although some rumormongers are likely to be honest when disseminating their private information, more often, rumors contain deliberately added noise (Admati & Pfleiderer, 1986, 1990) intended to mislead or manipulate the market.<sup>1</sup> Thus, it is extremely important for an investor receiving a financial rumor to determine whether the rumor conveys a genuine piece of truthful information regarding an impending event or is just a false message intended to manipulate the market. It is also vital to know how and to what extent a rumor affects the market and the value of the associated financial assets.

This paper aims to address these issues by analyzing rumors of Mergers and Acquisitions (M&As) in the US market. Our first goal is to examine whether public information, such as the stock return of a rumored M&A target has predict power of the credibility of takeover rumors. Through the data we have collected, we find that although it is impossible to verify whether the context of each rumor is true or false at the time when the rumor is published, investors in the market can statistically distinguish the rumors that correctly predict impending takeover events from those rumors that will not materialize by analyzing the historical Cumulative Abnormal Returns (CARs) of the rumored takeover targets. In a sense, it shows that market observables reveal fundamentals of a company. Specifically, if we classify takeover rumors

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<sup>1</sup> In information trading, Garcia and Sangiorgi (2011) show that selling imprecise information can be the optimal strategy for a monopolistic information seller.

into two groups according to whether the rumor is followed by a formal takeover announcement,<sup>2</sup> historical CARs before rumor publications are indicative of rumor type. This result suggests that the market price of a target stock can, at least partially, reveal the veracity of a takeover rumor.

Our second goal is to investigate market responses to takeover rumors. On the day of and the day after a rumor's publication, the abnormal returns of targets in the rumor-announced group are statistically indistinguishable from those of firms in the rumor-only group, although historical stock CARs of these two groups were quite different. Moreover, investors can trade on rumors to reap abnormal profits. A simple investment strategy is to buy the stock of a rumored target on the day of the rumor's publication if the target's CAR in the 42 or 21 trading days prior to the rumor's publication is larger than a threshold, and then to hold the position for a pre-specified period (such as one calendar month) or until a takeover bid for the target is announced, whichever comes first. We also apply the propensity score of a rumor being credible to select target stocks for investment, where the propensity score is estimated based on a logit regression of rumored targets' CARs and other accounting and financial variables. Our findings show that, for a wide range of return thresholds or propensity scores and pre-specified holding periods, investing in an equally weighted portfolio of selected rumored targets can earn an economically and statistically significant abnormal return. For instance, consider the strategy of buying rumored targets if their CARs over 21 trading days before rumor publication are greater than 10% and selling them when their takeovers are announced or at the end of a one-month holding period. This strategy yields an Average Daily Abnormal Return (ADAR) of 0.59%. Pound and Zeckhauser (1990) argue that the "market is efficient at responding to published takeover rumor" as they find that trading on rumors cannot make excess returns. Their trading strategy is buying at the closing price on the day the rumor is published and selling in the open market at the closing of the first formal bid announcement day or one calendar year after the rumor day, whichever comes earlier. A key difference between their strategy and ours is that they do not distinguish "winners" – rumored target firms whose historical cumulative abnormal returns are greater than a specified threshold – from "losers". However, even investors do not select winner stocks but follow the Pound–Zeckhauser strategy to buy all rumored M&A targets, our sample still shows that the ADARs are significantly positive. Since selecting winners and/or trading on rumored firms are based on public information, our empirical evidence indicates the inefficiency of M&A markets.

The third goal of this paper is to investigate the effects of M&A rumors on the offer prices by testing the markup pricing and substitution hypotheses of takeovers. It is well documented in corporate control markets that bidder firms pay substantial premiums to acquire control (Betton, Eckbo, Thompson, & Thorburn, 2014; Schwert, 1996). A target's stock price usually has an abnormal price runup before the first takeover bid announcement, and the markup is defined as the difference between the takeover premium and the price runup before the first bid. As Schwert (1996) noted, the way in which the price runup before the announcement affects the takeover premium can test two competing views of capital markets. The efficient markets view predicts that the markup should be independent of the runup because the target firm's stock price increase before takeover bidding reflects the good news about the value of the firm as a stand-alone entity, and such an increase should lead the bidder to increase the takeover premium by an equal amount. On the other hand, the substitution hypothesis assumes that the price runup merely reflects the bidder's private information and does not imply that the market previously undervalued the target. Thus, runup and markup should be negatively correlated, keeping the takeover premium independent of runup. Many authors have argued that the runup of a target's stock price is likely to be driven by leaked

private information from insiders or legitimate market anticipations (Jarrell & Poulsen, 1989; Schwert, 1996). Thus, the takeover rumor is largely responsible for the price runup before a bid is formally announced.<sup>3</sup> To pinpoint the effect of rumors on stock prices, we decompose the conventional runup of a target's abnormal return into two parts: the runup before the takeover rumor is published (hereafter pre-runup) and the runup between rumor publication and the announcement of the first bid (post-runup). Consistent with previous studies, our findings show that both the pre-runup and post-runup components have a significantly positive impact on the takeover premium. However, in contrast to prior research, our findings suggest that the impact is much larger in magnitude.<sup>4</sup> In particular, a 1% increase in the pre-runup (post-runup) of a target's CAR results in about a 1.6% (1.2%) increase in the takeover premium. Thus, neither the markup pricing hypothesis (efficient markets view) nor the substitution hypothesis is supported by our sample with M&A rumors. There are two reasons that can explain why our findings differ from previous findings. First, our sample is biased as it only includes takeovers preceded by rumors, whereas the samples of prior studies such as Schwert (1996), and Betton et al. (2014) are much larger, including all takeovers with and without rumors. The second reason is that our runup period (pre-runup period plus post-runup period) varies across takeover targets; on average, it is longer than 42 trading days, which is the runup period adopted by the aforementioned studies. To be more comparable with previous studies, this paper also uses the same estimation window and event window as Schwert (1996) to test the hypotheses. Under these conditions, the substitution hypothesis is still rejected, and the markup pricing hypothesis is not consistent with our empirical evidence, at least for successful takeovers.

This paper contributes to the existing literature by shedding new insights into the effects of takeover rumors on stock return patterns and pricing of the rumored targets. First, we document that public information on a rumored M&A target, particularly its historical CAR before the initial rumor's publication, is indicative of whether the pending takeover will materialize. This finding is new to our knowledge. The second new finding of this paper is that abnormal returns on the day of and the day after the rumor's publication are statistically indistinguishable between the two groups, although the groups can be distinguished by their historical CARs and other publically available information. Furthermore, trading on rumors is profitable if an investor invests selectively according to the historical CARs of rumored targets or the propensity score of a rumor. The profitability of this trading strategy is in contrast to what has been documented in the prior literature. What is the likely cause for the market overreactions to false M&A rumors and the profitability from trading on M&A rumors? Van Bommel (2003) and Benabou and Laroque (1992) argue that there are rumor followers with bounded rationality, which makes market manipulation by rumor-mongers possible. These followers are likely to fail to utilize public information available before rumor publication, and they appear to act on the rumors irrespective of their veracity. Third, rumors are found to have substantial impacts on stock prices in takeover processes, leading to a relationship between takeover premium and price runup that differs from those revealed by previous studies. For the rumored targets, the projection of takeover premium on the runup tends to be strictly greater than one, suggesting that bidders pay takeover targets "twice" since they revise the takeover offer upwards more than the runup. The difference between our findings and those of previous studies suggests that the very existence of takeover rumors can have some material impact on bidders' pricing strategies and the final realization of takeover premiums. Our findings of overreaction to M&A rumors, profitability of

<sup>3</sup> Betton et al. (2014) assume in their model that the rumor of a pending takeover results in price runup.

<sup>4</sup> For instance, Schwert (1996) finds that a 1% increase in the runup of the target's CAR leads to approximately a 1% rise in the total offer premium, supporting the efficient markets view and markup pricing hypothesis.

<sup>2</sup> We refer to the group in which rumors are followed by a formal takeover bid as the rumor-announced group and the other as the rumor-only group.

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