



What premiums do target shareholders expect? Explaining negative returns upon offer announcements

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ABSTRACT

We find, in a sample of 7581 merger offer announcements from 1990 to 2013, shareholders of 1283 (or 17%) target firms responded to the offer with negative market returns. These investors were disappointed at the offer, despite the price premium. To explain their disappointment, one must understand how target shareholders form expectations of premium to be received. We use a novel empirical design to find the relative weights of the rational vs. behavioral factors underlying the process of expectation formation. The estimated expected premiums are shown to have predictive power in the subsamples of both the positive and negative market responses. We also compare how the weights of the expectation factors change under different market conditions: hot vs. cold M&A regimes, bull vs. bear stock market, financial crisis vs. non-crisis periods, and dotcom bubble vs. no bubble.

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1. Introduction

It is the consensus in the literature on mergers and acquisitions (M&A) that target firms' shareholders reap most of the benefits from such deals. However, these studies also document that a substantial proportion (15–20%) of target firms responded with negative abnormal stock returns at announcements, even for eventually completed deals.² This is unexpected given that merger premiums have been generally substantial. Despite the significant frequency with which they occur, negative announcement returns have not been analyzed.

It can be generally agreed that the negative announcement response is the result of investors' disappointment at the actual offer in comparison with the amount they expected. That is, it is the target investors' expectation of the merger offer premium that determines the target's share price response. Understanding the market response is equivalent to understanding how expectations concerning merger premiums are formed by the investors.

In the current state of research in finance, we are expected to consider both behavioral and rational explanations in the formation of investors' expectations. Rational expectation has its place in how market forms expectations, as the market is dominated by professional investors. They possibly own most of the target's shares and are mainly concerned with material profits. They likely

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² See, for example, [Betton et al. \(2008\)](#), [Bradley et al. \(1988\)](#), [Bruner \(2002\)](#), [Eckbo and Thorburn \(2000\)](#), [Houston et al. \(2001\)](#), [Kaplan and Weisbach \(1992\)](#), [Kohers and Kohers \(2000\)](#), [Mitchell and Stafford \(2000\)](#), and [Mulherin and Boone \(2000\)](#).

form expectations of the merger premium based on their valuation of the target and information they can observe from recent mergers. Behavioral explanations, on the other hand, may be justified by their influence on non-professional investors and some professional investors at the margin. For instance, loss aversion may provide a plausible explanation for target shareholders' reluctance to take a loss upon exit. Since the probability that such loss to occur in a merger depends on the cost basis of the target shareholders, benchmarks that serve as important indicators of the cost basis of target investors may also enter into their formation of a behavioral expectation of the merger premium. For target shareholders who acquired their shares during a given time interval, their cost basis lies within the highest and lowest prices during the period. Loss averse target investors thus form their expectation of the offer premium as a function of both their basis plus a cushion, a behavioral premium.

We model target investors' expectations as a weighted function of both rational and behavioral expected offer premium. Testing the hypothesis that (negative) market response to offer announcement is due to the market's disappointment requires measures of market expectations. In terms of our model, this requires an empirical estimate of the parameters of the expectation model. An innovation in this paper is that we develop a novel approach to estimate the expectation parameters, which will also allow us to measure the relative importance of rational versus behavioral variables in determining market expectations.

Our approach to estimate parameters of the expectation model comes from the insight that market response is neutral (or, zero abnormal returns) when the offer price matches the market's expectation of offer price. Therefore, knowing the offer premium, which is now equal to the weighted expected premium, we can estimate the weights of the components of expectation (rational and behavioral) from data. The data consists of the subsample of targets with zero or near zero abnormal returns. Having the expectation parameters, we in turn estimate the expected premiums for the rest of the targets.

We can now estimate a measure of investors' disappointment, calculated as the divergence of actual offer premium from the expected weighted average premium. Our empirical test is to verify the joint hypothesis that market response is a function of market disappointment and that the estimated model captures the market's expected premium.

We use a sample of 7581 U.S. mergers and acquisitions deals, announced between 1990 and 2013. The results show that the sources of offer premium expectations are from both rational and behavioral expectations. We also compare how the weights of the expectation factors change under different market conditions: dotcom bubble vs. no bubble period, hot vs. cold M&A regimes, bull vs. bear stock market, and financial crisis vs. non-crisis period. Namely, we find the market demands much higher premium in non-crisis versus crisis period. In the crisis period, the market reveals a much reduced basis, and shows greater willingness to take a loss (this is reflected by the negative coefficients on the basis variables, the 52-week high and 52-week low) and to rely on more recent returns to form a more realistic premium expectation. We document similar findings in the bear market classification.

On the other hand, our model-derived expected offer price reveals that the sample firms received more than their expected offer price (the estimated reference point). The results also support the prediction of our hypothesis that target firms with negative announcement returns received lower actual offer premiums compared to expected offer premiums; hence, investors were likely disappointed. This result provides a univariate test of the joint hypothesis that a negative announcement return is due to disappointment in the actual offer and the expectation model adequately captures investors' expectations. The findings are robust to use of the initial offer premium or the final offer premium. Results of our multivariate tests also support our model's prediction, as we find that the estimated expected premiums predict market responses in the positive and negative subsamples. We find that the market's response to merger announcement is sensitive to offer above (below) expectations; in other words, the relationship between target announcement return and excess offer price (*initial offer minus expected offer*) is positive and highly significant regardless of the control variables included in the model. The results lend support to the role of disappointment in explaining market response.

In our model the behavioral expectation of the offer premium is based on the notions of loss aversion and disposition effect. We conduct additional tests and find that the coefficient for loss (offer below the reference point) is greater than the coefficient for gain (offer above the reference point) for the whole sample of targets. We conduct these tests under various market conditions, and we also find strong supportive evidence of loss aversion.

Our paper makes three contributions to the finance literature: One, we provide a more rigorous explanation of why investors of target firms are disappointed (elated) over merger offer announcements. Two, we propose an approach to calibrate investors' expectations. We estimate, empirically, the role played by both rational and behavioral expectations. Since we can justify our variables from a model and results from data, we avoid the ad hoc manner in which behavioral variables are introduced in analysis. Three, we show how an empirical study can incorporate both rational and behavioral factors in a more formal way, as revealed by the data.

The rest of the paper is organized as follows: we review the relevant literature in [Section 2](#); we present the model, methodology, and data set in [Section 3](#). We dedicate [Section 4](#) to presenting the empirical findings, and finally we conclude in [Section 5](#).

2. Literature review

Anchoring and adjustment bias refers to the notion that people make estimates by starting from an initial or easily available reference value that they adjust to arrive at the final estimate. Yet adjustments are naturally insufficient; that is, different starting points result in different estimates that are biased toward the salient initial value (e.g., [Slovic and Lichtenstein, 1971](#); [Tversky and Kahneman, 1974](#)). [Kahneman and Tversky \(1979\)](#) extend the work on reference-dependence and empirically motivate what is known as Prospect Theory, which challenges the expected utility theory. Prospect Theory posits that individuals value absolute levels of goods and wealth, in addition to changes in wealth relative to established reference points. The theory also postulates that investors are loss averse such that they strongly prefer to avoid losses more than they prefer to win gains of equal value. In other words, the authors develop a value function that is shaped like a kinked "S"; that is, it is "concave for gains, commonly convex for losses, and

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