Journal of Financial Economics 000 (2018) 1–24

Contents lists available at ScienceDirect

Journal of Financial Economics

journal homepage: www.elsevier.com/locate/jfec

Bid anticipation, information revelation, and merger gains☆

Wenyu Wang

Indiana University, 1275 E. 10th St., Bloomington, IN 47405, USA

ARTICLE INFO

Article history:
Received 26 September 2016
Revised 15 February 2017
Accepted 15 February 2017
Available online xxx

JEL classification:
C51
G34

Keywords:
Mergers and acquisitions
Revelation
Anticipation
Merger gains

ABSTRACT

Because firms' takeover motives are unobservable to investors, mergers are only partially anticipated and often appear as mixed blessings for acquirers. I construct and estimate a model to study the causes and consequences of bid anticipation and information revelation in mergers. Controlling for the market's reassessment of the acquirer's stand-alone value, I estimate that acquirers gain 4% from a typical merger. The total value of an active merger market averages 13% for acquirers, part of which is capitalized in their pre-merger market values. My model also explains the correlation between announcement returns and firm characteristics, as well as the low predictability of mergers.

1. Introduction

A large body of research documents that market reactions to takeover announcements are, on average, neutral or even slightly negative for acquirers (e.g., Andrade et al., 2001; Betton et al., 2008; and references therein). That evidence presents a value-creation puzzle: Why do acquirers pursue takeovers if they do not overtly benefit from the deals? The puzzle seems to contradict both the common assumption that acquirers are value-maximizers and the neoclassical theory of mergers and acquisitions (M&As).

Recent literature provides several possible explanations for this puzzle. The first, often known as the anticipation effect, argues that part of the market's reaction occurs before the acquisition becomes public; the announcement returns capture only the unanticipated component of acquirers' takeover gains, thus biasing estimates downward. The second view, usually referred to as the revelation effect, argues that takeover announcements induce the market to reassess acquirers' stand-alone value, thus confounding estimates of merger gains.

This paper attempts to reconcile the value-creation puzzle with the neoclassical theory of M&As by pursuing a quantitative assessment of the anticipation and revelation effects. First, the paper formalizes these effects within the context of a neoclassical firm optimization model. A model that can explain both the *causes* and *consequences* of the

☆ This paper was previously titled "Are Takeovers Truly Bad Deals for Acquirers?" I thank the editor William Schwert and an anonymous referee for their encouragement and very insightful comments. I am also grateful for the discussions and suggestions from Briana Chang, Espen Eckbo, Alex Edmans, Andrew Ellul, Bjørn Eraker, Vincent Glode, Michael Gofman, Joao Gomes, Gerard Hoberg, Mark Jenkins, Oliver Levine, Doron Levit, Andrey Malenko, Marc Martos-Vila, Elizabeth Odders-White, Mark Ready, Michael Roberts, Nikolai Roussanov, Pavel Savor, Enrique Schroth, Ivan Shaliastovich, Mathieu Taschereau-Dumouchel, Lucian Taylor, Toni Whited, Jide Wintoki, Randall Wright, Youchang Wu, Liu Yang, John Zhu, and seminar participants in Econometric Society North American Summer Meeting 2012, European Finance Association Meeting 2013, Wharton School of Business, Wisconsin School of Business, Johns Hopkins, University of Washington, Michigan State University, University of Texas - Austin, Indiana University, and University of Maryland. All errors are mine.

E-mail address: wenywang@indiana.edu

https://doi.org/10.1016/j.jfineco.2018.02.010
0304-405X/

anticipation and revelation effects is yet to be studied.[1] Second, the anticipation and revelation effects are hard to measure in data since they require a counterfactual valuation of the firm. A natural approach in the absence of good empirical instruments for these effects in a large sample study is to construct a structural estimation of the model. Third, the value-creation puzzle is intertwined with other stylized facts in M&As. Acquirer announcement returns are highly dispersed, and they correlate strongly with certain firm characteristics. Whether this evidence suggests that mergers are highly risky, or whether it simply reflects large cross-sectional variation in the anticipation and revelation effects, remains unclear. The model can help to understand these questions as well.

In this paper, I address these issues in a unified framework. The model features different takeover motives and incorporates the anticipation and revelation effects as part of the market's reactions to mergers. I argue that mergers convey information that identifies the model parameters and allows the estimation of the anticipation effect, the revelation effect, merger gains, and cross-sectional variation of M&A announcement returns.

The model's main premise is that each firm maximizes its value by making optimal takeover decisions based on its own fundamental characteristics, which I refer to as state variables. Motivated by Grossman and Hart (1986) and Hart and Moore (1990), I depict each firm's state variables as a pair of complementary assets that determine the firm's profitability. The specification of such complementary assets can be generic in the model. For example, they can represent a firm's productivity and its growth option. Both of these state variables are subject to idiosyncratic shocks to which a firm adjusts privately. The market cannot perfectly observe a firm's state variables or its shocks, but it can partly infer them from the firm's observable characteristics. The market evaluates each firm based on these inferences, taking into account the probability of the firm acquiring or merging with another. In this sense, the anticipation effect is captured in the firm's pre-merger market value in the model, and it varies across firms and correlates with firm characteristics.

The revelation effect emerges as the market's reaction to a self-selection problem induced by firms' takeover decisions. Firms decide to acquire, be acquired, or remain independent in response to shocks they privately observe. As a result, when a firm announces that it is acquiring or merging with another firm, the market learns something new about the firm's state variables and reassesses its stand-alone value. A significantly positive shock to a firm's productivity, for example, may induce the firm to expand quickly through acquisitions in order to accommodate growth. A significantly negative shock to a firm's growth prospect may compel the firm to restore its competitiveness through acquisitions in order to keep up with its peers. Since the realizations of such shocks are unobservable to the market, the market conjectures the underlying takeover motives based on its own information set. A positive (or negative) revelation effect occurs when the market perceives that a positive (negative) shock to productivity (growth prospect) is more likely to have occurred for a given acquirer. This market-perceived probability correlates with firm characteristics in equilibrium, allowing the model to produce an endogenous correlation between the revelation effect and firm characteristics. To the best of my knowledge, this is the first model in which both positive and negative revelation effects are unified and linked endogenously to firms' takeover motives and characteristics. Such a model enables us to analyze the various aspects of empirical facts consistently. It also provides a laboratory for addressing more quantitative questions that are difficult to answer using reduced-form empirical techniques.

I explore the quantitative implications of this model for the value-creation puzzle. The structural estimation adopted in the paper uses the model-implied equilibrium outcome to evaluate the variables of interest. To meet this goal, the structural estimation must identify firms' takeover motives and the market's information set that determine the distribution of the anticipation effect, the revelation effect, and merger gains. The structural approach infers these unobservable quantities from the patterns of merger events and the associated market reactions observed in data.

I estimate the model parameters by applying the simulated method of moments (SMM) to U.S. M&A transaction data from 1980 to 2012. The model closely matches the observed patterns in the data, including the persistence and variance of firm profitability, the probability of bid incidence, characteristics of acquirers and targets, the average and dispersion of cross-sectional announcement returns, market reactions to bid terminations, and the low predictability of acquirers and targets.

The estimates indicate five main findings. First, M&As on average create significant value for both acquirers and targets, with the acquirer, rather than the target, capturing the lion's share (about 63%) of the total gains. Second, the revelation effect is economically sizable and clouds the traditional interpretation of acquirers' announcement returns. Specifically, I estimate the revelation effect to average about −5% with significant cross-sectional variation for different acquirers. Though acquirers are estimated to gain 4% from a typical merger, the revelation effect brings down their average announcement returns to −1%, creating the misleading impression that acquirers gain little from M&As. Third, the merger gains estimated from acquirers' announcement returns do not capture the total value of an active merger market. Using a model simulation to perform a counterfactual analysis in which no M&As are allowed, I estimate that the value of an active merger market is about 13% for acquirers, part of which is capitalized in their pre-merger market value because of the anticipation effect.[2] Fourth, a variance decomposition of acquirer announcement returns shows that only 30% of the

[1] The few exceptions include Jovanovic and Braguinsky (2004) and Margsiri et al. (2008), but the revelation effect is always negative and lacks cross-sectional variation in these models.

[2] The difference between 13% and 4% reflects both the potential gains from repeated M&As in an acquirer's lifetime and the anticipation effect.

Please cite this article as: W. Wang, Bid anticipation, information revelation, and merger gains, Journal of Financial Economics (2018), https://doi.org/10.1016/j.jfineco.2018.02.010