



The adverse selection effect of corporate cash reserve: Evidence from acquisitions solely financed by stock ☆

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ARTICLE INFO

Article history:

Received 10 August 2007
Received in revised form 9 March 2010
Accepted 7 March 2011
Available online 12 March 2011

JEL classification:

G34
G32

Keywords:

Adverse selection effect of corporate cash reserve
Excess cash reserve
Overvaluation
Synergy
Two-sided information asymmetry

ABSTRACT

Corporate cash reserve has an adverse selection effect. Specifically, if investors know a company does not have to issue to invest, an attempt to do so sends a strong signal of overvaluation. This notion has not been explicitly studied in the extant empirical literature, despite its intuitiveness. Using a sample of acquisitions solely financed by stock to exclude the potential complications of free cash flow, I find that announcement returns are lower for a bidder with a higher excess cash reserve. This effect is stronger in hot equity market years or when a bidder's standalone value is more difficult to evaluate. I also find evidence supporting the idea that targets request cash payment to remove "lemon" bidders in normal (non-hot equity market) years, but accept too many stock offers in hot equity market years. After acquisitions, high-excess-cash-reserve bidders operationally outperform low-excess-cash-reserve bidders. Further, they spend more funds on reducing debt but not more on investments, compared with low-excess-cash-reserve bidders. Combined, these results show that cash reserve has information costs. Further, they highlight the importance of the two-sided information asymmetry framework of Rhodes-Kropf and Viswanathan (2004) in describing merger outcomes without resorting to behavioral or agency explanations.

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1. Introduction

Early research shows that a bidder usually has an unfavorable price reaction at the announcement of a stock-financed acquisition (e.g., Travlos, 1987; Franks et al., 1988; Asquith et al., 1987; Wansley et al., 1987; Servaes, 1991; Martin, 1996). These findings are consistent with the adverse selection effect of Myers and Majluf (1984). In particular, a stock offer sends a signal that the bidder is overvalued, and share prices adjust accordingly. Several recent studies, however, suggest that, for different reasons, share price adjustment upon the announcement of a deal is incomplete. It is therefore possible for a firm to exploit equity overvaluation, in other words to time the market (Baker and Wurgler, 2002; Shleifer and Vishny, 2003; Rhodes-Kropf and Viswanathan, 2004; Rhodes-Kropf et al., 2005; Dong et al., 2006).

Owing to incomplete price adjustment, there is scope for investors to look for and analyze information that is beyond the mere announcement of a stock offer, in turn justifying further price correction. A proper investigation into such additional information

☆ I thank Michael Bowe, Michael Brennan, Ling Cen, Sudipto Dasgupta, Jie Gan, Ian Garrett, Michael Hertzler, Asad Kausar, Edward Lee, Clive Lennox, Weimin Liu, Dean Paxson, Sattar Mansi, Ser-huang Poon, Matthew Spiegel, Norman Strong, Martin Walker, Myke Yest, seminar participants of the Accounting and Finance Group of the Manchester Business School and School of Economics, Finance and Management of the University of Bristol, and the participants and anonymous reviewers of the FMA 2007 annual conference. I gratefully acknowledge the support of ESRC grant RES-061-25-0225. I am especially grateful to the referee whose comments significantly improved the paper. The author assumes all responsibilities for any errors or omissions.

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not only benefits our understanding of how the market processes information, but also provides useful insights for companies operating in a market of incomplete information.

This paper examines the informational aspect of corporate cash reserve. I document evidence consistent with the notion that corporate cash reserve has an adverse selection effect. The theoretical foundation of such an adverse selection effect builds on Rhodes-Kropf and Viswanathan (2004) and Myers and Majluf (1984). In Myers and Majluf (1984), investors are rational but, relative to company managers, they know less about the value of assets in place of an issuing company. Investors correctly spot the conflict of interests between old and new shareholders, and interpret stock issuance as a signal that the issuing firm is overvalued. Myers and Majluf (1984) allude to the adverse selection effect of corporate cash reserve, stating that if investors know that a firm does not have to issue to invest, an attempt to issue sends a strong signal of overvaluation (Myers and Majluf, 1984, p195). However, Myers and Majluf's (1984) focus on information asymmetry is one-sided: on an issuing firm's assets in place. Stock issuance always sends bad news, i.e. overvaluation. To minimize adverse selection costs, a firm follows a pecking order of financing, i.e. it uses internal cash before resorting to external equity. But in the current study, we find that many companies that make stock offers are also cash-rich (Table 1, Panel B). Puzzles then arise when we ask: i) what motivates a cash-rich bidder to use stock, and ii) what induces target managers to accept a stock offer if they understand that the stock offered may be overvalued. Rhodes-Kropf and Viswanathan (2004) speak to these puzzles by emphasizing the two-sided nature of information asymmetry. In particular, target managers face uncertainties about both a bidder's standalone value and the synergies arising from a deal.¹ Although some overvalued bidders want to pay with equity, target managers are not easily fooled. They are rational, sophisticated and value-maximizing.² However, endowed with limited information, they cannot distinguish between high synergies and overvaluation. When overvaluation drives a high stock offer, as Bayesian updaters, target managers attribute part of the offer to positive synergies. They eventually accept the offer because they overestimate synergies (underestimate overvaluation) and mistakenly believe the offer value is greater than their reservation value. Nevertheless, investors understand that target managers can request cash payment to remove a "lemon" bidder that offers overvalued stock. When a bidder has excessive access to cash, a highly possible reason for it not to comply is that the true value of the stock offer is indeed lower. In such a case, investors assign overvaluation a higher weight and synergies a lower weight, thereby further depressing the bidder's share price.³ For a bidder, a stock offer gives two possible benefits besides synergies. First, a bidder may reap a market timing gain because the possibility of positive synergies delays complete correction of misvaluation. Second, an overvalued bidder will expect the target to be overvalued as well because there is a market-wide component of overvaluation (see Rhodes-Kropf and Viswanathan, 2004). By using stock instead of cash, the bidder can avoid overpaying for the target (Hansen, 1987; Fuller et al., 2002).

To sum up, Rhodes-Kropf and Viswanathan (2004) suggest an adverse selection effect of corporate cash reserve. Although such an effect is intuitive, the author is not aware of any previous empirical work that has studied cash reserve from such a unique angle. Moreover, the two-sided information asymmetry framework plays an important role in understanding the adverse selection effect of cash reserve.

On the empirical front, previous M&A literature documents a negative announcement price effect of cash. Most attribute such an effect to the agency cost of free cash flow (Lang et al., 1991; Schlingemann, 2004; Harford, 1999). The baseline argument is that a company tends to spend free cash on value-destroying acquisitions. To avoid the potential complications of agency costs, I exclude from my sample those deals that have an element of cash in the payment. Another advantage of focusing on all-stock offers is that such a sample is biased against finding a significant informational effect of corporate cash reserve, because an all-stock offer is the most adverse case in Myers and Majluf (1984). Signal from announcement is therefore the strongest, and scope for additional information is the smallest.

A second empirical issue is the self-selection bias of OLS regression, because the sampling procedure is non-random. I use a variant of the truncated regression formalized in Eckbo et al. (1990) to estimate the announcement effect (section 4.2). A third empirical issue is to measure a company's disposable cash. Actual cash reserve as a fraction of total assets (henceforth, cash reserve ratio), as is calculated directly from company financial statements, is inappropriate because for two companies with the same cash reserve ratio, one can be cash-rich and the other cash-poor depending on their respective required level of cash reserve (Opler et al., 1999 and Harford, 1999). I estimate a firm's required cash reserve ratio using a pooled time-series cross-sectional OLS regression with year dummies, following Opler et al. (1999). The difference between cash reserve ratio and its required level (henceforth, excess cash reserve ratio) is used to measure a firm's disposable cash.⁴

My first set of evidence shows that in a normal year, a bidder of higher excess cash reserve is less likely to pay with stock. This effect disappears, however, in hot equity market years. This finding is consistent with the view that value-maximizing target managers make efforts to remove "lemon" bidders by requesting cash. However, they are not always successful. In hot equity

¹ See also Brusco et al. (2007) who similarly show that uncertainties about both standalone values and synergies are necessary to describe merger outcomes without resorting to hubris, private benefits or other agency costs.

² Another related paper is Shleifer and Vishny (2003). Their model relies on the assumption of an irrational market and self-serving managers. In contrast, the current paper examines an aspect of market rationality suggested by Rhodes-Kropf and Viswanathan (2004).

³ Several studies show that the stock market is efficient in extracting and processing information, for example see Pagano et al. (1998), Subrahmanyam and Titman (1999) and Luo (2005).

⁴ I also estimate the required cash reserve ratio using industry-year specific regressions. The results do not change qualitatively under this alternative approach. The purpose of the industry-year specific estimation is to better rule out the possibility that a higher excess cash reserve reflects higher growth, as growth is an important motive to reserve cash. The constant term in a regression absorbs the average cash reserve in an industry-year, which in turn better reflects expected growth. I thank the referee for pointing this out.

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