



The wealth of private firm owners following reverse mergers



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ABSTRACT

I compare the wealth of private firm owners that exit their firms through reverse mergers (RMs) to the wealth that could have been obtained in initial public offerings (IPOs), sellouts, or by remaining private. Private firm owners that use the RM exit mechanism have significantly less post-exit wealth than the wealth that could have been obtained in an IPO. This result is driven by differences in the pre-exit characteristics of firms that choose a RM compared to an IPO (a selection effect), not by use of the RM exit mechanism itself (a treatment effect). The gap between post-exit wealth and the wealth that could have been obtained in an IPO disappears for owners of RM firms whose pre-exit characteristics are sufficiently similar to propensity-score matched IPO firms. The post-exit wealth of RM firm owners is approximately the same as the wealth that could have been obtained in a sellout. The median change in private firm owner wealth as a result of the RM is positive when pre-exit private firm values are inferred from valuations in private–private takeovers. However, the median change in wealth is negative when pre-exit private firm values are obtained from valuations provided in fairness opinions. These conflicting findings appear to be driven by upwardly biased fairness opinion valuations.

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1. Introduction

Private firm owners often hold concentrated equity positions in their firms and can use one of several exit mechanisms to diversify their holdings.¹ An initial public offering (IPO) and the sale of the firm to a public operating company (sellout) are two well-known exit mechanisms (see, e.g., Brau et al., 2003; Ritter and Welch, 2002). A third exit mechanism that has received less attention in the literature is a going-public reverse merger (RM). In a RM, the private firm merges with a public firm and the private firm owners control the combined publicly-traded firm.² From 1996 to 2010, over 2700 private firms executed a RM (Comment, 2010). While the typical RM firm is small, some larger, well-known firms such as Jamba Juice, American Apparel, Summer Infant, and the New York Stock Exchange have used the RM exit mechanism.

Private firm owners can experience significant wealth changes when they exit their firms (see, e.g., Loughran and Ritter, 2002). While Floros and Sapp (2011) and Gleason et al. (2005) find positive wealth gains to investors in public firms involved in RMs, there is little research on the financial consequences to private firm owners of choosing a RM. In this paper, I examine the post-exit wealth (value of equity, cash, and other consideration) of private firm owners and ask two questions: (1) Could RM firm owners have obtained greater wealth if they had instead chosen an IPO or a sellout? (2) Does the wealth of private firm owners

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¹ Private firm owners “exit” their firm, partially or completely, by transforming their ownership claims into cash, publicly traded stock, or other securities. An exit does not necessarily involve a change in control. Private firm owners often own a substantial portion of the firm’s equity following initial public offerings and reverse mergers.

² The public firm in a RM typically has no operations and few assets aside from cash. Appendix A provides institutional details on RMs.

increase as a result of the RM? By providing answers to these two questions this paper deepens our understanding of the exit decisions of private firm owners.

I construct a sample of 110 RMs, 455 IPOs, and 805 sellouts completed from 2005 to 2010. To ensure that RM firms are reasonably comparable to IPO and sellout firms, I require that the common stock of the RM firm, IPO firm, and the public acquirer in the sellout trades on a major U.S. exchange (NYSE, NASDAQ, or AMEX) following the transaction.

To answer the first research question, I compare the wealth of private firm owners following a RM to estimates of what could have been obtained in either an IPO or a sellout. The *wealth maximizing exit mechanism* hypothesis predicts that the wealth obtained through the RM mechanism is equal to, or greater than, the wealth that could have been obtained in either an IPO or a sellout. This hypothesis is based on theoretical models which assume that private firm owners sell their firm by the mechanism that maximizes the value of their wealth (Chemmanur and Fulghieri, 1999; Zingales, 1995). For example, in Chemmanur and Fulghieri (1999), the private firm owner's objective is to maximize the cash flow accrued following the exit. Firm owners should choose a RM if this mechanism provides them with more wealth than an IPO or a sellout. In testing this hypothesis, I control for firm, industry, and market-wide factors that influence the choice of exit mechanism.

The wealth that could have been obtained in an IPO or a sellout is estimated by matching RM firms to IPO and sellout firms by propensity score. I first estimate the likelihood that a firm will choose a RM over either an IPO or a sellout based on pre-exit characteristics. Motivated by theoretical models and empirical studies, these characteristics proxy for information asymmetry, product market competition, private benefits of control, growth potential, and profitability.³ Then I match RM firms to IPO and sellout firms by propensity score. To estimate the wealth that could have been obtained in an IPO (sellout) I multiply the RM firm's sales by the wealth-to-sales ratio of the matched IPO (sellout) firm.

First, I compare the post-exit wealth of RM firm owners to the wealth that could have been obtained in an IPO. For a broad sample of 95 RM firms that can be matched to an IPO firm, the wealth of RM firm owners is significantly lower, on average, than what could have been obtained in an IPO. This finding can be driven by a selection effect (caused by the endogenous choice of firm owners to execute a RM or an IPO), a treatment effect (the effect of the RM mechanism itself on wealth), or a combination of the two effects.

To separate the selection effect and the treatment effect, I increase the quality of the match between RM and IPO firms. A sub-sample of 42 RM firms can be closely matched to IPO firms on pre-exit characteristics, thus mitigating the selection effect. When moving from the sample of 95 RM firms to the sub-sample of 42 RM firms, my measure of the gap between the actual wealth of RM firm owners and what could have been obtained in an IPO drops by 80% in magnitude and the statistical significance disappears. Thus, the RM mechanism itself does not cause firm owners to have less wealth than if they had chosen an IPO (i.e., the treatment effect is not significant). In the full sample, the finding that RM firm owners accept less wealth than if they had chosen an IPO appears to be driven by a selection effect. Firms with more severe information asymmetries and lower growth potential are more likely to choose a RM over an IPO and these firms also tend to generate less wealth for their owners. After controlling for the choice between a RM and an IPO, the evidence is consistent with the *wealth maximizing exit mechanism* hypothesis.

Next, I compare the post-exit wealth of RM firm owners to the wealth that could have been obtained in a sellout. For a sample of 93 RM firms that can be matched to a sellout firm, the post-exit wealth is greater than the wealth that could have been obtained in a sellout in 52% of the observations, and the difference in wealth is not statistically significant, on average. Across a variety of matching criteria and robustness tests, the wealth of RM firm owners is generally the same, or slightly greater, than what could have been obtained in a sellout. This evidence is consistent with the *wealth maximizing exit mechanism* hypothesis.

To answer the second research question, I focus on RM firms and compare the post-exit wealth of firm owners to estimates of their pre-exit wealth. The pre-exit wealth of RM firm owners is estimated by the stand-alone value of the private firm. Because a RM is a voluntary choice, owners should choose to exit when a RM will increase their wealth and choose to remain private otherwise. The *positive wealth gain* hypothesis predicts that the change in wealth from pre-RM to post-RM is greater than zero for the typical RM firm.

Obtaining the pre-exit stand-alone value of private firms in RMs is challenging. Despite knowing the terms of the transaction, the value of the combined firm, and the pre-exit value of the public firm, it is not possible to directly calculate the pre-exit value of the private firm. The reason is that RMs can generate financial synergies, such as an increased ability to fund productive projects, and the total value of these synergies is unknown. Floros and Sapp (2011) and Gleason et al. (2005) document economically large, positive wealth gains to public firm owners, suggesting that public firm owners capture a portion of the synergies generated in RMs. However, the portion of synergies accruing to private firm owners is unknown and this prevents a direct calculation of the pre-exit private firm value. Therefore, I implement two methods to estimate the pre-RM value of the private firm. The first method infers values of private firms in RMs from valuations of private firms that are acquired by other private firms. The second method estimates values of private firms using valuations in fairness opinions sought by public firms in RMs.

I obtain conflicting results regarding changes in wealth around RMs depending on the method used to estimate the pre-RM value of the private firm. When pre-RM values of private firms are inferred from private-private takeovers, the median change in wealth for RM firm owners is positive, consistent with the *positive wealth gain* hypothesis. Conversely, when estimating pre-RM values of private firms using valuations in fairness opinions, the median change in wealth for RM firm owners is negative, inconsistent with the *positive wealth gain* hypothesis.

To sort out the conflicting evidence on wealth gains to private firm owners, I attempt to replicate valuations provided in fairness opinions. A criticism of fairness opinions is the ability to justify nearly any valuation, which can lead to upwardly biased valuations (Bebchuk and Kahan, 1989). I value private firms in RMs by selecting portfolios of comparable transactions based on

³ Theoretical studies include Bayar and Chemmanur (2011), Chemmanur and Fulghieri (1999), and Chemmanur and He (2011). Empirical studies include Bayar and Chemmanur (2012), Brau et al. (2003), and Poulsen and Stegemoller (2008).

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