Journal of Banking & Finance 35 (2011) 3417–3431

Contents lists available at ScienceDirect

Journal of Banking & Finance

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

Monitoring via staging: Evidence from Private investments in public equity

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ARTICLE INFO

Article history:
Received 11 November 2010
Accepted 30 May 2011

JEL classification:
G14
G30
G32
G34

Keywords:
Private investment in public equity (PIPE)
Staging
Monitoring

ABSTRACT

I study the causes and consequences of staging in the setting of private investments in public equities (PIPEs). I find that, in PIPE investments, as in venture capital staging, the staging strategy is used by investors as a monitoring mechanism to mitigate information asymmetry and agency problems. Moreover, strategic investors and investors investing alone are more likely to utilize staging. I show also that staging reduces the cost of financing and has positive implications for PIPE issuers' long-run stock performance.

1. Introduction

The market for private investment in public equity (the PIPE market) has been developing rapidly since 1995, having grown from $1.4 billion in 1995 to $124 billion in 2008 before shrinking somewhat in 2009–2010 due to the broad market crash and the ensuing recession.[1] Over this 16-year period (1995–2010), more than 17,000 PIPE transactions occurred, raising approximately $460 billion.[2] The same period also featured rapid growth in private equity funds and hedge funds—the most influential players in the PIPE market—as their impact on the overall economy increased accordingly. A long-debated issue in the literature on private placements since Wruck (1989) is whether and how private placement investors monitor managers. Given dramatic changes in the landscape of the private placement market since 1995, this paper aims to shed new light on this issue using a sample of US PIPE transactions that occurred from 1996 to 2007.

Most PIPE issuers are small, young, and risky public companies (see Dai, 2007; Brophy et al., 2009; Chaplinsky and Haushalter, 2010; Chen et al., 2010b; Dai et al., 2010). PIPE investors therefore need to understand how to mitigate the agency and information problems that typically accompany such investments. Extant studies show that investors request higher discounts and/or aggressively negotiate for investor-friendly contracts when facing substantial agency costs (Chaplinsky and Haushalter, 2010; Anderson and Dai, 2010; Bengtsson and Dai, 2010). In addition, a few studies document the practice on the part of some private placement investors of requesting board seats so that they can directly monitor managerial activity (e.g., Wruck, 1989; Dai, 2007; Anderson and Dai, 2010). On the other hand, Hertzel and Smith (1993) do not find a monitoring effect after controlling for information cost. Wu (2004) and Barclay et al. (2007) argue further that most private placement investors are passive investors even though they sometimes hold large stakes in issuers. In this paper, I examine whether private placement investors monitor via staging, the sequential disbursement of capital from an investor or a group of investors to a company, based on whether the company meets certain performance hurdles. Furthermore, I examine the following two questions: First, what are the determinants of staging in PIPE investments? Second, what are the implications of staging for the cost of financing and the long-run performance of PIPE issuers? While staging in venture capital investments is widely studied, this is, as far as I know, the first paper to examine the utilization of staging as a monitoring tool in public equity investment, in particular private placements by public companies.

The PIPE market offers several advantages as a setting in which to investigate the causes and consequences of staging and their relation to theory. First, the literature on staging is limited to

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[1] PIPE statistics given are reported by Sagient Research (www.sagientresearch.com/pt).

[2] Ibid.

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doi:10.1016/j.jbankfin.2011.05.022

private equity investments. The lack of access to financial data on private firms often serves as a basis for criticism of these empirical studies. In this paper, I explore the role of staging in public equity investments, which arguably allows for greater precision when measuring agency costs and performance. Second, the PIPE market exhibits substantial heterogeneity across both issuers and investors. This feature allows me to further examine whether the utilization of staging and its effect conditional on investor characteristics.

As modeled in much theoretical work (see e.g., Sahlman, 1988, 1990; Hellman, 1994; Neher, 1999; Cornelli and Yosha, 2003; Wang and Zhou, 2004; Yerramilli, 2008), staging helps address agency problems associated with information asymmetry, moral hazard, and potential hold-up and helps address the problem of inefficient continuation (Admati and Pfleiderer, 1994). Based on this line of reasoning, I conjecture that the utilization of staging in PIPE investments is positively correlated with PIPE issuers' agency costs. To empirically test this hypothesis, following the literature on venture capital staging (see e.g., Gompers, 1995; Hege et al., 2003; Krohmer et al., 2009; Tian, 2011), I examine whether PIPE issuers receive multiple rounds from the same lead investors, the length of time that passes between rounds (an inverse proxy for monitoring intensity that I henceforth call 'duration'), the amount of total financing, and offer size per round. In contrast to venture capital investments, PIPE investors show greater heterogeneity in terms of investment objectives and horizons, as discussed in Dai (2007) and Anderson and Dai (2010). I expect that the utilization of staging in PIPEs is conditional on these investor characteristics. Presumably, investors with larger ownership stakes, strategic investors, and those investing alone have a more compelling need to monitor managers and thus are more likely to utilize staging. Third, if staging effectively reduces agency cost and moral hazard and prevents inefficient continuation, as the theories propose, I anticipate finding that staging reduces financing costs and predicts better long-run performance on the part of PIPE issuers. I estimate PIPE discounts as a proxy for financing cost. To measure long-run performance, I examine both stock performance and operating performance up to 2 years subsequent to a PIPE offering.

Using a sample of 3135 US PIPE transactions between 1996 and 2007 with available data, I show that agency costs of issuing firms are important determinants of staging in PIPE investments. I find, for instance, that analyst coverage significantly reduces the probability of staging and the total number of rounds while issuer bid-ask spread and financial leverage significantly increase the probability of staging and the total number of rounds. Furthermore, duration is positively correlated with analyst coverage but negatively associated with the bid-ask spread and financial leverage. Analyzing the total amount of financing and investment size per offering, I find that firms with staged financing receive about \$3 million more in financing than firms that receive a single round do. The round size of staged financing, on the other hand, is significantly smaller on average than is the average single round sample. Moreover, both the total amount of financing and round size decrease with agency cost. More specifically, these figures increase with analyst coverage but decrease with the ratio of enterprise value to assets. These findings suggest that, as is the case with staging in private equity investment, staging is used by investors to mitigate agency problems in PIPE investments.

I find that, in addition to the agency cost of PIPE issuers, some investor characteristics also condition the utilization of staging in PIPE investments. In particular, I show that strategic investors (including corporations, VCs, and PEs) are more likely to utilize staging than other investors are. Moreover, investors are more likely to stage their investments when they are investing alone. These findings support the notion that staging is used as a monitoring tool to alleviate information asymmetry and investment uncertainty.

In the second set of analyses, I examine the effect of staging on the cost of financing measured by PIPE discounts and on long-run firm performance. I show that, on average, firms offer lower discounts to investors in staged financing, indicating that staging helps mitigate the agency and information problems, resulting in lower financing costs. As far as I know, this study provides, for the first time, direct empirical evidence of the effect of staging on the cost of financing to firms issuing PIPES. In addition, I find that staging is significantly and positively related to the long-run stock performance of PIPE firms. In particular, PIPE issuers with staged financing outperform their peers with single-round financing by 6%, 10%, and 9%, respectively, at 100 days, 250 days, and 500 days subsequent to PIPE offerings. This evidence extends the findings reported in Gompers (1995), Krohmer et al. (2009) and Tian (2011) that examine staging in venture capital investments.

This paper contributes to the literature on staging and PIPEs along several dimensions. First, the paper extends existing empirical work on staging in venture capital investments by providing new evidence pertaining to the determinants and consequences of staging in public equity offerings. The findings are, in general, consistent with predictions in theoretical work that staging is used as a monitoring tool in the face of severe agency and information asymmetry problems and that it benefits issuers in the sense that it helps reduce financing costs and improves long-run performance.

Furthermore, this paper provides new evidence that, in addition to direct control (voting rights and board seats) and contractual protections (see e.g., Dai, 2007; Chaplinsky and Haushalter, 2010; Anderson and Dai, 2010; Bengtsson and Dai, 2010), PIPE investors also utilize staging to monitor managerial actions and interim firm performance. This finding reflects the diversity of mechanisms that private placement investors utilize to monitor managers. Yet this approach is neglected in the literature that examines whether investors monitor managers in private placements, which potentially leads to an underestimation of the monitoring effect provided by private placement investors.

As PIPE financing grows increasingly popular, especially among small and risky firms, concerns have been raised that the structure of these offerings allows sophisticated investors to take advantage of companies with a desperate need for funds.[3] The evidence provided in this paper that staging helps to reduce issuers' financing costs and improves long-run stock performance runs counter to such an argument. More importantly, our findings suggest that heterogeneity in the design of PIPE transactions needs to be taken into account when deciding whether and to what extent PIPE issuers (as well as investors) benefit from this increasingly important financing tool.

The remainder of the paper is organized as follows. Section 2 summarizes the relevant literature on staging and PIPEs and develops testable hypotheses. Section 3 describes the data and the sample. Section 4 presents empirical analysis of the determinants of staging in PIPE investments. Section 5 examines the effects of staging on the cost of financing and on long-run firm performance. In Section 6, I summarize the primary findings of the paper and discuss their implications.

2. Literature review and hypotheses development

2.1. Literature related to PIPEs

A private placement is a sale of unregistered securities by a public company to a selective group of individuals or institutions. PIPE securities are issued pursuant to Section 4(2) of the Securities

[3] See, for example, "A Troubling Finance Tool for Companies in Trouble", *The New York Times* (March 15th, 2006).