The Exit of Private Equity after IPOs: Evidence from Secondary Equity Offerings

by

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ABSTRACT

This dissertation provides an analysis of the effects of public secondary equity offerings by private equity sponsors at portfolio firms that have become publicly traded entities via initial public offerings. Such secondary offerings were rare prior to 2000, but in recent years have become an increasingly common form of financial activity. A large sample of these offerings is analyzed within the framework of corporate finance theory, taking into account that they allow a private equity sponsor to sell off a large, controlling block of common stock to dispersed investors. This work provides a basis to draw conclusions about the effects of these secondary offerings on shareholder wealth and the implications for the firm's subsequent operating performance (profitability). The results show that that there is a significant decline in portfolio firm value at announcements of secondary offerings by private equity, and that such offerings are not a precursor of future underperformance. Instead, there is greater share liquidity and higher industry-adjusted performance after these secondary offerings. Moreover, the proportion of portfolio firms that subsequently become bankrupt is significantly less than that of benchmark firms. There is no evidence of an effect of the size of the secondary offering on the magnitude of the change in share price, but the reputation of private equity sponsors has a significant effect on the share price reaction. Overall, the evidence from these secondary equity offerings suggests that private equity successfully prepares portfolio firms for exit from private equity control, implying that the market can expect that the stand-alone public firm will operate effectively after the change in ownership structure associated with the exit of private equity.

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Chapter 1

INTRODUCTION

For a number of years private equity has been a controversial area of corporate finance. Private equity sponsors not only have considerable influence over their portfolio firms but are also viewed as an important element of both the market for corporate control and securities markets. This dissertation focuses on one of the important means of exit for a private equity sponsor after the IPO of a portfolio firm, a follow-on public secondary equity offering. This work is an element of the broader issue is to how private equity exits from its investment in a portfolio firm after the firm has become a publicly traded entity via an initial public offering (IPO). It is well-understood by both scholars and practitioners that private equity (PE) fully exits from an investment in a portfolio firm when there is a sale of the firm to a strategic buyer (operating firm) or a sale to another private equity firm. In both of these cases the private equity sponsor typically receives 100% of the transaction value in cash or other consideration at the completion of the deal and thus no longer has any involvement with the portfolio firm.

However, in the case of an IPO of a portfolio firm, a private equity sponsor typically sells only a small proportion of its stake and often no shares at all in the IPO, a practice that can be rationally explained by well accepted theories in corporate finance. Thus, a private equity sponsor will typically retain a majority of the newly public firm's shares, or at least an important stake, for a considerable period of time after the IPO. During this interval the firm's shares publicly trade and the firm is subject to all of the strictures of federal securities regulation. During this period, the private equity sponsor remains concerned with, and involved in, the management of the portfolio firm, assists in formulating its strategic goals, and can be expected to closely monitor all of the firm's activities, while at the same time private equity can be expected to focus on preparations for its eventual exit from the firm's ownership structure.

Somewhat oddly, academic finance researchers almost universally refer to IPOs as a means of exit for private equity, so there is little previous work on this topic. However, private equity practitioners invariably view an IPO as at best a very partial form of exit because they are

fully cognizant of the reality that it takes a considerable period of time and effort before private

equity will be able to fully exit from a portfolio firm after an IPO.

While there are alternative means of exiting an investment after an IPO that are available

to a private equity sponsor, in this dissertation I focus on one specific means of exit: a follow on,

underwritten (by investment banks) seasoned (that is, post-IPO) public secondary equity offering.

For conciseness in this dissertation these public offerings of common stock will be referred to as

secondary equity offerings. These offerings are often termed "follow on" offerings because they

are post-IPO offerings. Secondary public stock offerings are a form of securities issuance that

allows a private equity sponsor to sell its existing shares in a publicly traded firm to dispersed

capital market participants.[1]

Before these shares can be priced and sold to public investors, typically through an

underwriter, such a secondary offering requires an SEC filing and considerable documentation

that is fully comparable to that required for an IPO or a primary seasoned public stock offering,

even though the secondary offering is initiated by the private equity sponsor and no new shares

are being sold by the registrant firm, that is, the former portfolio firm.[2] Typically, the PE-owned

shares are sold in an underwritten, fixed price cash offering to public investors, primarily financial

institutions, and the associated fees are paid for by the PE seller.

As will be shown in this dissertation, although these secondary offerings appear to be

rare prior to the year 2000, in recent years they have become an increasingly common form of

financial activity. In the preponderance of cases, private equity engages in a series of such

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[1] For purposes of reference, a follow-on offering (an issuance of stock subsequent to the company's initial public offering, that is, it is a seasoned equity offering) can be either of two types (or a mixture of both): primary (dilutive) or secondary (non-dilutive). A secondary public offering is an offering of securities by a shareholder of the company that involves the sale (for cash) of existing shares in a publicly traded firm and generates no proceeds for the registrant firm. A primary offering is an offering by the company itself that involves the sale of new shares for cash, thus serving as a means of external financing for the firm.

[2] The Securities Act of 1933 (the Truth in Securities Act) and the Securities and Exchange Act of 1934 (which established the SEC) require that any offer or sale of securities using the instrumentalities of interstate commerce must be registered with the SEC, unless an exemption from registration exists under the law.

secondary offerings until it finally exits from the portfolio firm's ownership structure. This dissertation examines how the exit of a private equity sponsor by means of secondary offerings after an IPO affects the portfolio firm. I analyze these secondary equity offerings within the framework of corporate finance theory, taking into account that this process allows a PE sponsor to sell off a large, controlling block of common stock to dispersed investors. In broad terms, this dissertation draws conclusions about the effects on a portfolio firm from this form of dissolution of PE ownership and control, based on an analysis of the effects of these secondary offerings on shareholder wealth and the implications for the firm's subsequent operating performance (profitability).

Private equity has become an increasingly important element of the market for corporate control in recent decades, increasing from a minimal amount during the early 1980s to a scale of approximately $3.5 trillion dollars of private equity assets under management by 2013 (according to the commercial reporting service Prequin). In contemporary financial markets private equity is now widely accepted as a fundamental factor in the market for corporate control, in terms of both buyouts of entire firms (public and private) as well as acquisitions of major assets and subsidiaries that are divested by corporations.

Private equity groups, more formally their general partners (GPs), combine the capital raised from their investors, that is, their limited partners (LPs), committed for a period of time (the investment period), with borrowed funds to invest in companies that have a potential for growth in value. Private equity then seeks to enhance the operating performance and increase the value of these businesses over a specified time horizon.

Thus, for the portfolio firms in this study there is a period of private ownership as a result of a buyout by private equity that is followed by an IPO (often termed a reverse leverage buyout or RLBO), then a period of continuing private equity control of the publicly traded entity, that in turn is followed by the exit of private equity typically through subsequent secondary offerings. With the exit of private equity, there is a return of the proceeds of the investment to the limited partners of the relevant fund that has been managed by private equity sponsor.

The increasing size and scope of private equity activity has drawn considerable attention in the business press, and there are numerous issues about the role of private equity in the marketplace. In the political realm, there has been intense, often highly partisan, discussion about the effects of private equity on workers and employees of firms acquired by private equity. The finance literature has intensively focused on the performance of private equity funds and the question of whether this activity has generated excess returns (that is, adjusted for the risk and illiquidity intrinsic to private equity investment) for their limited partners. Despite the conjecture of Jensen (1989) that private equity and leveraged buyouts could be a sustainable form of business organization for many industries over the longer term, in practice, private equity investments have remained tightly constrained with respect to their time horizon. In general, limited partners supply financing to private equity sponsors over a definitive time horizon, which is typically limited to about ten years, indicating the intended transitional nature of private equity ownership.[3]

Aside from bankruptcy, private equity firms can transform their ownership stakes in portfolio companies through one of several mechanisms: an initial public offering (IPO); that is, an initial underwritten offering of shares in the portfolio company (consisting of either new shares or shares owned by private equity) to dispersed capital market investors; a sale of the company to a strategic acquirer through a merger or acquisition (M&A); or a secondary buyout (SBO) of the entity by another private equity firm. The latter two mechanisms are forms of asset sale that typically involve a sharply defined, complete exit of private equity that transforms a portfolio investment into cash (and/or other consideration such as notes) paid to the private equity seller that is immediately available for distribution to the limited partners.

However, an IPO of a portfolio company in itself does not translate into an exit for the private equity sponsor. While an IPO serves as a mechanism to transfer a corporation from the status of a private entity exempt from securities regulation to that of a publicly traded entity, the private equity sponsor only exits its investment when all (or most) of its shares in the portfolio

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[3] In addition to the contracting issue about the length of time an investment fund can persist, there can also be issues with respect to the length of the investment period, which is the period of time that limited partners are committed to providing a specified amount of funds whenever requested by the general partner.

company are sold. The sale of all or most of the common stock held by private equity almost

never occurs in an IPO. Instead, private equity sponsors typically sell only a small stake in the

firm, and often private equity does not sell any shares at all at the IPO. This practice of retaining

a large ownership position in an IPO is consistent with the fact that the finance literature has long

viewed the retention of shares in an IPO as an important signaling device for outside investors,

given the presence of adverse selection bias that is intrinsic to the securities issuance process

and especially to the process of going public (Leland and Pyle (1977)).

Thus, after an IPO, while the potential remains for an exit from the investment at any time

(once a lockup period, usually 180 days, has ended), private equity firms typically are large

blockholders that continue to have control over, or strongly influence, as well as monitor, all of the

operations of the portfolio firm.[4] This oversight includes the selection and monitoring of the firm's

managers and the firm's long term investment plans. As a result, the private equity sponsor is

exposed to business fluctuations and other market risks for a considerable period of time after the

IPO has been completed.

Unlike the case of other controlling shareholders or founders of newly public companies

who typically face few constraints about timing, the process of exit after an IPO is a planned-for

element that is intrinsic to the private equity process. Thus, private equity investments are

invariably intended by their nature to be a transitional rather than a permanent form of ownership.

In this dissertation I begin by analyzing the shareholder wealth effects of secondary

equity offerings by private equity, viewing such offerings as a mechanism through which private

equity can exit an investment after an IPO.[5] A secondary offering by private equity is a registered

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[4] A lock-up is a contractual restriction that prevents insiders who hold a firm's stock before it goes public, from selling stock after the company goes public for a given period, typically 180 days. Insiders include company founders, owners, managers, employees, and private equity. Federal securities law does not require companies that are going public to have a lock-up period. Instead, the lock-up is a contractual arrangement between the company and its investment banks that in practice is widely followed.

[5] Although I focus on private equity exit after an IPO through follow on secondary public equity offerings in this dissertation, my broader program of research encompasses each of the other alternative means by which private equity can exit after an IPO. Such methods include a sale of the now publicly traded firm to a strategic acquirer, a sale of the sponsor's controlling stake to another private equity firm, a private sale (such as a private placement) of its stake to qualified (as defined by SEC regulations) investors, a pro rata share distribution of the shares to the fund's

seasoned equity issuance by which a private equity firm sells a block of its shares in a portfolio company to capital market investors (almost invariably financial institutions) through a fixed price underwritten offering. This type of secondary offering is initiated by the private equity sponsor. In a preponderance of cases, the offering entails only the sale of shares held by private equity sponsors so the total number of firm shares outstanding does not change as a result of the offering. In this dissertation I refer to these offerings as pure secondary offerings. In other cases the offering takes the form of a joint offer to the public of both new primary shares issued by the company (which are a form of external financing) as well as existing shares sold by the private equity sponsor.

The increase in shares outstanding intrinsic to a secondary offering serve to dilute the private equity sponsor's remaining stake in the firm. Unlike sales of stock to qualified, sophisticated investors, federal securities laws require that before any of the offered shares are sold to investors, the securities offering must be registered with the Securities and Exchange Commission (SEC) and sold at a fixed price (as reported in the registration statement), a requirement that applies to all public (as well as initial) stock offerings and that also involves detailed disclosure of corporate information. Thus, a secondary equity offering initiated by any inside shareholder shares the same disclosure characteristics as a primary seasoned offering of equity.

Because rational capital market investors can be assumed to expect that private equity will eventually exit its investment subsequent to the IPO of a portfolio firm, it can be hypothesized that the financial market may appropriately adjust in advance the value of the firm to reflect the expectation that eventually there will be a change in its ownership structure, once the standard lockup period has elapsed. For example, if the exit via a secondary offering (or any other method) is a well anticipated event, then it is possible that little change in shareholder wealth would be observed when news of a secondary offering is announced. Nevertheless, I find that a secondary offering by a private equity firm has an economically important, statistically significant,

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limited partners, or a series of open market (insider) sales of shares.

negative effect on portfolio firm value. The share price effect is less than that observed in prior studies of general primary (seasoned) equity issuance by industrial firms (e.g., Mikkelson and Partch (1985) and Asquith and Mullins (1986)), offerings that raise cash for the firm. Thus, even though private equity ownership can be viewed as a transitional form of ownership for the portfolio firm once an IPO occurs, the decision of a private equity sponsor to exit its ownership or decrease its holding of shares via a public secondary equity offering significantly decreases portfolio firm value.

A decline in share price applies to both the first secondary offering by private equity and to its subsequent secondary offerings. A negative share price response also occurs in the case of a joint offering in which both the private equity sponsor and the portfolio firm participate in the offering, but the market views a firm's intent to use the proceeds from a joint offering to conduct acquisitions in a related area as a favorable signal of value.

I find that secondary equity offerings occur after a period of significant positive cumulative excess returns, a pattern that has been noted in almost all previous studies of primary equity offerings. Results in the literature for primary equity issuance often show a negative effect of offering size (Masulis and Korwar (1986), Korajczyk, Lucas, and McDonald (1991), and Bayliss and Chaplinsky (1996)) on share price reaction, implying that the greater the size of the offering, the more unfavorable the information conveyed by the offering announcement. However, I find that there is no significant effect of the size of the secondary offering on the magnitude of the change in share price. This lack of an effect of the size of the secondary offering applies regardless of whether it is the first secondary offering following the IPO or a subsequent secondary offering.

Previous studies of primary equity offerings such as Loughran and Ritter (1995) and Spiess and Affleck-Graves (1995) find that a firm's decision to raise cash from the equity market is a precursor to poor subsequent operating performance by the firm. This evidence is consistent with the hypothesis that primary offerings convey negative private information about a firm's future prospects. Thus, for standards primary offerings both event study and operating

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performance results closely conform to the predictions of theories of corporate financing developed by Myers and Majluf (1984) and Miller and Rock (1985).

However, I find that there is significantly positive industry-adjusted operating performance after a secondary offering by private equity, and that this improvement in performance does not deteriorate over time. Thus, unlike primary equity offerings, a private equity sponsor's decision to conduct a secondary equity offering does not convey negative private information about the portfolio firm's subsequent operating performance. Moreover, the proportion of portfolio firms that sustain secondary offerings and that are subsequently delisted or become bankrupt is significantly less than the proportion of benchmark firms that are delisted.

The fact that portfolio firms outperform benchmark firms after secondary offerings by private equity and that they sustain a significantly smaller proportion of subsequent delistings than benchmark firms suggest that private equity successfully prepares these firms for exit from private equity control. These results suggest that the market can expect that the stand-alone public firm will operate effectively after the change in ownership structure associated with private equity exit. Thus, the loss in portfolio firm value associated with the announcement of the dissolution of private equity control cannot be ascribed to expectations of poor subsequent operating performance. Instead, the results suggest that the market values the presence of high quality private equity firms as large blockholders, effective monitors, and certifiers of firm activities, so the loss of a private equity sponsor from the ownership structure lessens the value of a given stream of future corporate earnings.

Because a secondary offering is generally sold to institutions via the underwriting process, the portfolio firm's ownership shifts toward a much more dispersed structure and stock liquidity improves. Cross-sectional regressions indicate that the share price reaction to a secondary offering announcement is related to share liquidity and to changes in aggregate institutional ownership. More specifically, the greater the subsequent improvement in stock liquidity, the less unfavorable the share price reaction to news of the secondary offering. Similarly, the greater the ex ante stock liquidity of the firm's shares, the more favorable the share price reaction to news of the secondary offering. This evidence is consistent with the hypothesis

that the greater share liquidity associated with more dispersed ownership is a meaningful substitute for the valuable monitoring provided by private equity blockholders. This finding is consistent with trading-based models of passive monitoring (e.g., Edmans and Manso (2011)).

The empirical results also suggest that the large size of private equity blockholdings and their associated control rights do not necessarily create a greater barrier to exit for a private equity firm if the stock of the portfolio firm is already highly liquid or can be expected to become so as a result of the secondary offering.

In general, variables that reflect metrics for the firm's financial condition or other firm characteristics have little effect on the pattern of share price responses to secondary equity offerings. Instead, it is the liquidity of the common stock and expected changes in liquidity that have an important effect on the share price reaction to a secondary offering by private equity.

Moreover, variables that reflect characteristics of the private equity sponsor have an effect on the firm's share price reaction. In particular, I find that the loss of high reputation private equity sponsors has a more adverse effect on the share price reaction to secondary offerings. I also find that contrary to implications of multi-period models of the IPO process such as Welch (1989), the underpricing of an IPO has no effect on the share price response to subsequent secondary offerings by private equity sponsors. Thus, there is no linkage between a portfolio firm's IPO and subsequent secondary equity issuance by the private equity sponsor.

Overall, the results reported in this dissertation suggest that the market values the presence of high quality private equity sponsors as large blockholders, monitors, and certifiers of firm activities so the loss of a high reputation private equity sponsor from the firm's ownership structure induces the market to more severely discount the future stream of corporate earnings, thus lessening shareholder value.

Nevertheless, the results also indicate that the profitability of the stand-alone public firm will not deteriorate after the change in ownership structure associated with private equity exit, and instead, on average it will significantly improve relative to benchmark firms, despite the negative share price effect of the offering. Taken together, the results indicate that the stand-alone public

firm that emerges after the exit of a private equity sponsor will operate effectively after this important change in ownership structure.

The dissertation proceeds as follows. In Chapter 2, I provide an overview of the nature of private equity and the role that it plays in the activities of a portfolio firm. Although the private equity literature is extensive, there is little previous work that focuses on the role or effects of large private equity ownership in a publicly traded firm, reflecting the tendency for the academic literature to view the IPO of a portfolio firm as a form of exit. In practice, the period after an IPO of a portfolio firm is as an important stage in the continuing ownership of the entity by private equity and it is during this period that the private equity sponsor lays the groundwork for its exit from the ownership of its investment and prepares the firm for its continuation as an entity with a dispersed ownership structure.

In Chapter 3, I present a case study of a typical sample firm over its life cycle, including the period after its IPO until the private equity sponsor fully exited through secondary equity offerings. The specific example used is the Tuesday Morning Corporation, a well-known retailer that is headquartered in Dallas, Texas that was taken private by the private equity group Madison Dearborn. The material included in this chapter is designed to provide the reader with a better understanding of the full private equity process, including the nature of private equity exit after an IPO through the use of secondary offerings.

In Chapter 4, I consider each of the various aspects of the finance literature that are relevant for analyzing the central questions of the dissertation about the effects of the exit of a private equity sponsor from a publicly traded portfolio firm through secondary equity offerings. Because the private equity sponsor typically continues to maintain a large, often controlling, blockholding, I discuss the major alternative hypotheses in the finance literature about the role of a large blockholder in a public firm. I contrast the research that views such a blockholder as providing important benefits to dispersed shareholders (as a result of its incentive to monitor) with the research that views such a blockholding as potentially a source of overmonitoring that is harmful to shareholder interests. The debate in the literature on this topic is a facet of a broader finance literature that considers the effects of concentrated versus dispersed ownership.

The chapter also reviews basic hypotheses associated with stock liquidity, focusing on the debate as to whether a more liquid stock market and the trading activities of (relatively small) investors and financial institutions serve as an effective substitute for the monitoring of a large blockholder. Finally, because this dissertation consists of an analysis of the dissolution of private equity holdings through secondary offerings, the chapter concludes with a summary of the literature on securities issuance, including the debate as to how underpricing of an IPO may affect the subsequent cashing out of inside shareholders.

Chapter 5 describes the process of generating a sample of secondary offerings by private equity. The sources of relevant data are described and descriptive statistics are provided about the sample of secondary offerings and their private equity sponsors.

Chapter 6 presents event study results for announcements of secondary equity offerings by private equity. In the presence of an efficient market, these share price responses provide the market's capitalization of the effects of these offerings on portfolio firms. Empirical results are also generated for various subsamples of these offerings, disaggregating the observations on the basis of several important characteristics of the offering and the private equity sponsor.

Chapter 7 reports the results for cross sectional regressions that utilize both qualitative and quantitative characteristics as independent variables to explain the share price response to secondary offerings. This cross-sectional work entails an examination of how variations in characteristic of the offerings, the portfolio firm, and the private equity sponsor affect the share price response to offering announcements.

Chapter 8 documents the operating performance results for sample firms to determine whether secondary offerings are a precursor to subsequent changes in firm profitability relative to benchmark firms. The ultimate outcomes for these firms after the exit of private equity are also examined. Taken together, the operating performance results provide evidence as to whether private equity has effectively prepared the business for operating effectively as an entity with a dispersed ownership structure.

Chapter 9 concludes the dissertation by providing a summary of the main results. I also present additional research ideas that form a program of future study in the area of the exit of private equity after an IPO of a portfolio firm.

Chapter 2

PRIVATE EQUITY AS A FORM OF CORPORATE STRUCTURE

2.1. Overview

Private equity has become an increasingly important component of the economic landscape. Most of its growth is concentrated in the period after 2000, coinciding with the boom in information technology that has characterized the past two decades (Kaplan and Stromberg (2009)). In addition to its economic importance, private equity has become an important force in the asset management industry. The vast majority of private equity fund raising is now obtained from large institutional investors such as major pension funds and sovereign wealth funds. In contrast, private equity relied on qualified individual investors and college endowments to provide most of the funding in the earlier startup stages of the industry.

A private equity firm, more formally the general partners (GPs), combines capital raised from its investors, that is, its limited partners (LPs), committed for a specified period of time, with borrowed funds, typically in the form of bonds and notes. These funds are used to acquire companies that have a potential for growth in value. Typically, private equity focuses on enhancing the operating performance of these firms within a narrowly focused time horizon. Despite the increasing scope of private equity in the United States and the rest of the world and heightened scrutiny that private equity has drawn in the business press, there remain numerous issues about the role of private equity in the financial marketplace. In the political realm, there has been extensive discussion about the effects of private equity, with a particular focus on the workers and employees of firms acquired by private equity. More broadly, the effects of private equity on the performance of the firms they acquire have been the focus of both continuing economic and political debate.

Much of the finance literature has focused on the relatively narrow question of the performance of private equity funds for their limited partners, that is, seeking to ascertain whether institutional investors have obtained returns that are sufficiently high to justify this investment strategy, given the relatively high fees associated with private equity and the lack of uniform data

that makes it difficult to determine average performance. For example, one of the largest public pension funds in the United States, Calpers (the California Public Employees' Retirement System), has announced (New York Times, that it is terminating all of its investment in hedge funds, a related type of private investment vehicle that pools capital from various investors and invests in securities and other (typically marketable) instruments.

Calpers indicated that the fees and complexity of hedge funds made them an inappropriate investment for the large pension fund. At the same time, however, Calpers indicated that it would not reduce its allocation of assets to private equity, stating that the returns it had earned from its allocation to private equity are sufficient to justify the fees paid. It stated that the system's private equity investments through private equity firms had outperformed its public equity investments over various investment horizons.

Aside from the issue of the returns to private equity, there has been academic debate about the premiums received by the sellers of assets, given the greater competition in the market for assets that is generated by the competition between private equity and other buyers, such as strategic buyers. For example, Bargeron et al (2008) report greater gains (premiums) to targets in mergers and takeovers of stand-alone firms that are acquired by listed operating firms. They ascribe their results to overbidding by listed acquirers that reflects agency problems (such as hubris or empire building discussed by Roll (1986)) at public buyers. The implication of their work is that private equity firms conduct their activity in a highly efficient manner. In this view, the expanding activities of private equity firms help to create more competitive, efficient corporate control infrastructure and a more liquid market for the buying and selling of companies and subsidiaries.

This chapter provides detailed information about the business model of private equity as a basis for understanding the unusual characteristics of this form of business organization that sets it aside from the typical corporate structure that underlies mainline finance. I review the considerable body of literature on private equity that cover such areas as returns to limited partners, operating performance, board of directors, and financing skills. I discuss how private

equity can exit its investments in portfolio firms and in particular, establish the importance of studying the process of their exit after conducting an initial public offering in their portfolio firm.

2.2. The Organizational Structure of Private Equity

The business organizational structure of private equity is quite unlike the case of many large private operating firms that permanently remain as private entities. Among the largest of private firms are such well-known entities as Cargill, Koch Industries, Bechtel, and Mars, companies with considerable histories as private firms and that are typically based on family or other relational ownership structures. Such firms are unlikely to ever sustain the type of transitions that are intrinsic to the private equity process. Thus, it is useful to summarize the basic structure that underlies private equity ownership, taking into account how this structure is related to the transitions that are inherent in private equity activities.

While there is some minor variation in the organizational form used by private equity, the vast majority of private equity funds are organized as partnerships where there are two types of partners: several (or many) Limited Partners (LPs) and one General Partner (GP). The limited partners commit to a pre-specified amount of investment (commonly referred to as "dry powder") in a fund. The funds generated from these commitments are used to acquire assets or companies whenever the general partner so decides, thus calling on the committed money to be actually provided by the LPs. The general partner uses the funds to invest in acquisitions and in return the limited partners receive a share in the fund's profits generated by the investments. Limited partners are not permitted to become actively involved in the fund's operations and thus they can be viewed as playing a role that is similar to that of minority shareholders in a public company.

In practice, although the limited partner's stake is illiquid, there does exist a (mainly illiquid) secondary market for the rights to these portfolios. This market consists of some funds devoted to acquiring such stakes, effectively holding a portfolio of stakes in other private equity funds. Moreover, there are entities that specialize in facilitating these illiquid trades. However, such secondary trading represents only a very minor proportion of private equity activity.

Given this illiquidity of private equity, in practice, limited partners can be viewed as having even fewer rights than minority shareholders in publicly traded corporations, since their stakes are illiquid and cannot be transferred without the permission of the general partner. At the same time, these restrictions allow financial institutions to invest in businesses that will become highly leveraged without their violating various restrictions on control that many financial institutions and other asset managers must operate under. Thus, the private equity structure allows limited partners (such as pension funds) to gain a participation in highly leveraged transactions with a finite investment horizon in a manner that provides a substitute for the limited partner being able to undertake its own leveraged investments, given the restrictions that many limited partners face on such activities.

Private equity partnership agreements that govern a fund are relatively standard and traditionally have a fixed life; the typical fund has a maximum duration of ten years, the full period that the general partner has (potential) access to limited partner funds. After this period the fund is dissolved and the remaining proceeds are distributed to its holders. The fixed life span of private equity funds is a distinctive feature of private equity and makes the decision about exit a central focus of all private equity management decisions and activities. The first five years are termed the investment period, and it is during this time span that general partners select the companies to invest in, perform the appropriate due diligence tasks, and then acquire the asset after calling on the commitments made by limited partners. The last five years are referred to as the divestment period, during which the general partner focuses on preparing portfolio companies for exits, executing the exit process, and initiating the process of fundraising for a new fund.

The general partner manages the day-to-day activities of the fund, focusing on identifying projects according to the terms of the contract, executes "due diligence", and carries out all of the necessary tasks associated with investment in the selected projects. The general partner then monitors the firms that form the portfolio of the fund, provides these firms with managerial expertise and guidance (collecting associated fees for these services), and makes all decisions as to the form and timing of the exit of the investment from the fund's portfolio, which typically occurs via a sale of the asset or an entry into the capital market.

In particular, the general partner appoints the management of the businesses it acquires, and uses its financial and operational expertise to improve businesses operations. In the process, the general partner acquires new information on the quality of the managers it appoints, replaces managers that prove deficient, and in general seeks to maximize the payoff of the entire portfolio of the limited life fund. In recent years, it has become more common practice for general partners to enter into consortiums with other private equity firms for investing in larger projects, which allows for a greater range of investments and improved diversification of each fund's portfolio.

Most limited partners are financial institutions, such as insurance companies, pension funds, and endowments that are usually well-diversified investors with long term investment horizons. Pension funds in particular typically confront important restrictions on their ability to influence management of any operating firm because such actions would affect their claim to limited liability in the event that there are negative actions taken against the partnership. Thus, the limited life span of the private equity fund and the centrality of exit are not legal necessities for them. Instead, the limited life span and the associated pressure for exit can be more usefully viewed as an effective control mechanism.

Limiting the fund's life span allows limited partners to limit the risk they face about general partner quality and to discourage the general partner from retaining profits within the fund by postponing the project's maturity and hiding its quality. The limited life of a fund allows the limited partner to learn about the quality of the general partner, specifically, general partner ability to choose high quality projects and bring them to an expeditious and profitable exit, distributing the proceeds to the limited partners. Restricting the operational period is thus a sensible mechanism for creating incentives for the general partner to build reputation by performing well within a finite horizon. In turn, this reputation is a key factor that enables the general partner to raise money for subsequent portfolio funds. Thus, the exit process is a means for establishing PE reputation.

To maintain their operations on a continuing basis, general partners typically aim to raise a new fund every three to five years. Thus, a general partner's reputation is critical to its ability to

raise new funds and to remain in business. Traditionally, general partners do not begin the process of raising a new fund until at least 75% of its previous fund has been invested in acquisitions and sufficient exits from the portfolio have occurred to produce a stream of cash distributions to limited partners. Moreover, limited partners of previous funds are typically the initial investors in the general partner's next fund. This pressure of being evaluated at frequent intervals serves as an incentive mechanism to induce the general partner to make timely investments and liquidate them relatively quickly in an effective manner that generates sufficiently attractive returns, since the general partner depends on its future fundraising to be able to continue in business beyond the end of the current fund's lifetime. More broadly, the limited time horizon, insures that limited partners are able to end their relationship with a private equity general partner if it has not provided the anticipated performance.

There is a broadly standard pattern for the distribution of payoffs from the fund's investments. The general partner receives an annual management fee, typically, 1.5-2.5% of the total fund size committed by the limited partners. In addition, the general partner receives about 20% (termed "carried interest") of the capital gains generated by the fund, that is, the total proceeds above invested capital received during the fund's life. Thus, limited partners have the seniority of being paid back from the proceeds of the portfolio as the investments are liquidated; only after limited partners are repaid in full for their initial investment does the general partner begin to distribute the remaining profits.

With regard to holdings in portfolio projects that have become public companies but in which the general partner has not fully exited, its stock holdings are sometimes distributed to the limited partners directly and such distributions are made according to their share in the fund. The general partner's share is constant over all of the portfolio projects of the same fund; likewise, a limited partner's concern is about the overall return on the fund, not the return to a specific project.

At first glance, it seems that the different investment horizons of the general partner and the limited partners have a potential to create a conflict of interests, and distort the valuation of projects since a general partner would place a significantly lower value on a project that is not

expected to reach an exit to the public market or a trade sale during the fund's life relative to the value to the limited partners. In practice this factor is not a serious concern because of the rise of secondary buyouts (SBOs) as a form of exit for the original general partner.

An SBO is a transaction in which a private equity firm sells a portfolio asset to another private equity firm, permitting it to exit the investment while allowing the business to remain under private equity ownership. It should be noted that general partner contracts prohibit the sale of a portfolio asset between funds of the same general partner. Thus, SBOs must take place between different private equity firms via arm's length transactions.

Jensen (1989) argued that private equity and leveraged buyouts should be a sustainable form of corporate organization over the longer term for many industries. He argued that the private equity firm combined concentrated ownership stakes in its portfolio companies, with strong incentives for both private equity firm professionals and the executives they hire, and a highly efficient organizational structure. The private equity firm could use a highly leveraged capital structures (often relying on high yield debt) and maintain active governance for portfolio companies in which it invests.

In practice, however, private equity investments have been tightly constrained by their limited time horizon. More specifically, in the standard private equity structure limited partners supply their financing to private equity firms over a definitive time horizon, typically less than ten years. Before the end of the holding period for an investment, private equity firms seek to exit from their ownership in portfolio companies through one of several mechanisms. The major forms of selling this ownership involve an initial public offering (IPO); that is sale of shares in the portfolio company to dispersed capital market investors by a flotation on the stock market; a trade sale of the company to a strategic acquirer through a merger or acquisition (M&A); or a secondary buyout (SBO) by another private equity firm.

The latter two mechanisms are forms of sale that involve a complete exit from the portfolio investment. In contrast, the initial public offering of shares in a portfolio company in itself does not generally entail an exit for private equity. Instead, the private equity firm will only be able to exit its investment when its shares are actually sold on the stock market, which seldom

happens simultaneously with the IPO. In general, private equity firms do not sell a substantial stake in the firm at the IPO. This practice of retaining a large ownership position serves as a signaling mechanism for investors, as originally discussed by Leland and Pyle (1977), given the presence of adverse selection bias that is intrinsic to the securities issuance process.   Thus, after an IPO, while preparing to exit the investment, private equity firms continue to influence the operations of the firm and are exposed to fluctuations and other market risks for a certain amount of time after the IPO is carried out. In this dissertation, I examine the case of secondary offerings by private equity by which private equity eventually exits its investment after the sponsored firm has become a publicly traded firm.

A private equity secondary offering is a registered seasoned equity offering by which an existing private equity firm sells a large block of shares in the portfolio firm to capital market investors (almost invariably financial institutions). A secondary equity offering is initiated by the private equity firm. Unlike block sales to other investors, federal securities laws require that before any of the offered shares are sold, the securities offering must be registered with the Securities and Exchange Commission (SEC), a requirement that applies to all public stock offerings.

Despite the view that public firms tend to overbid for target firms (Roll (1986)), private equity has been able to become an important force as buyers of companies and assets, indicating that they are able to compete effectively in auctions for such assets. The substantial premiums that are typically paid (relative to undisturbed market prices) by successful private equity bidders even though private equity lacks access to the operating synergies that are intrinsic to strategic buyers, raises the broader question of whether these deals ultimately prove to be successful, both with respect to their business success and their ability to generate appropriate risk adjusted returns for the limited partners that ultimately fund private equity.

As noted earlier, the level of returns to limited partners of private equity firms is a controversial topic, in part because of the substantial fees that are associated with private equity relative to other forms of delegated asset management. Moreover, these fees have continued to remain high and stable even as the private equity industry has matured and become a more

substantial vehicle for large institutional investors, many of whom have continued to increase the proportion of their asset holdings that are allocated to private equity.

Issues relative to the magnitude of limited partner adjusted returns have been difficult to resolve due to the private, risky, and illiquid nature of private equity and the fact that there is no central standard source of private equity returns. For example, the problems of selection bias and the determination of appropriate benchmarks for returns have posed serious obstacles for researchers to surmount and have resulted in the coexistence of sharply contradictory views about the level of adjusted returns to the limited partners who invest in private equity.

2.3. Prior Research on Private Equity: Financial and Operating Performance

The ambiguity about the level of adjusted returns to the limited partners who invest in private equity is in contrast to another major class of asset management, that is, mutual funds, to which financial economists have devoted considerable research effort. Since the major securities laws that were adopted during the 1930s and The Investment Company Act of 1940, mutual funds have been subject to strict, uniform SEC standards for reporting fund performance, irrespective of the nature of the parent entity. With the wealth of standardized data generated by this regulation, financial economists have been able to develop numerous models to gauge mutual fund performance (such as the one-factor Capital Asset Pricing Model, the three-factor (Fama and French, 1993) model, and Carhart's (1997) four-factor model to calculate risk-adjusted returns); i.e., to determine alphas.

Each of these alternative models attributes a portion of fund performance to a number of elementary portfolio strategies, providing methods to evaluate and benchmark fund performance. This work has led to near-unanimity among finance scholars about the inability of mutual funds to generate consistently positive alphas over any lengthy period of time.

Although there are numerous academic studies of the returns to limited partners in private equity, the issue of whether limited partner investors have earned positive risk-adjusted returns remains unsettled. Conflicting results from numerous studies are due to the lack of transparency of private equity, the prevalence of selection bias in the reporting of returns, and

methodological difficulties as to how such an illiquid risky investment should be properly benchmarked (see for example, Kaplan and Schoar, 2005; Phalippou and Gottschalg, 2009; Robinson and Sensoy, 2011).

Separately, a large literature has developed that focuses on the question of whether there are gains in operating performance of businesses that are controlled by private equity. In contrast to hedge funds, private equity fund managers are actively engaged in overseeing and directing the operations and strategic development of their portfolio companies. Much of the focus of private equity activity revolves upon strengthening management efforts to improving portfolio firm operating performance. There are numerous academic studies on the operational performance of firms that are taken over by private equity (as well as the returns generated by private equity investments), but this research tends to report ambiguous or conflicting findings.

Some studies show that firms that are controlled by private equity improve their operating performance by reducing employment and lowering capital investment relative to benchmark firms (Kaplan, 1989a, 1989b; Muscarella and Vetsuypens, 1990; Lichtenberg and Siegel, 1990; Liebeskind, Wiersema, and Hansen, 1992; Bharath, Dittmar, and Srivadasan, 2011). Other studies find that productivity changes at such firms are not very different from comparable public firms, and that employment tends to increase (Cornelli and Karakas, 2011; Lerner, Sorensen and Stromberg, 2011; Leslie and Oyer, 2009; Guo, Hotchkiss, and Song, 2011).

There is also a considerable body of evidence that has focused on the relationship between leveraged buyouts and the employment of technological innovation (Kaplan and Stromberg, 2009; Bartel et al. 1998). These studies document that private equity controlled firms typically invest in information technology that facilitates the reorganization of work and involves relevant training for employees and increased human capital. Thus, after buyouts by private equity, firms are able to upgrade their production processes and modernize work practices, taking advantage of the significant improvement in technology that has occurred during the past decade.

However, this literature runs counter to older academic research and considerable anecdotal evidence reported in the business press that views private equity transactions as leading to the loss of employment and of firm specific human capital. In a classic paper Shleifer

and Summers (1988) argued that buyouts allow private equity to breach implicit contracts between managers and workers that are intended to induce employees to invest in firm specific capital. For example, private equity buyouts can lead to a termination of defined benefit pension plans. In this view private equity provides a structure that allows a previously publicly traded firm to escape some employee costs that are no longer essential to production.[6]

The presumed advantages of private equity ownership with respect to corporate governance have been based on three broad characteristics of private equity. On characteristic is stronger incentives for managers whose compensation is typically closely tied to outcomes. A second characteristic is high leverage, which forces management and their private equity partners to effect important improvements in operating efficiency. A third characteristic is the intensity of active managerial monitoring which gives the general partner both strong incentives and the means to intervene in the management decisions of portfolio companies and to dismiss underperforming managers.

Substantial managerial equity ownership is often a characteristic of private equity ownership, strengthening the tie between compensation and performance. At the same time unlike public corporations that typically have a friendly or passive board of directors, the general partner normally exercises tight control over the key strategic decisions of the firm and continually assesses managerial quality. The contrast between the role of the board of directors in a portfolio company versus a public company can be viewed from the perspective of the broader finance literature with respect to boards.

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[6] There has long been controversy in the political arena as to whether a private equity fund should be held liable for the unfunded pension obligations of one of a PE fund's portfolio companies. Courts have traditionally found no such liability based on what is characterized as well-settled case law that the mere holding of a passive investment is not sufficient to constitute a trade or business, notwithstanding the active participation in management by private equity general partners in portfolio firm. However, recently (July 24, 2013), the U.S. Court of Appeals for the First Circuit held that a private equity fund (in the instant case sponsored by Sun Capital Partners) could under certain circumstances constitute a "trade or business" for purposes of ERISA multi-employer defined pension plan withdrawals, creating the potential for such a pension fund liability. See *Sun Capital Partners III v. New England Teamsters & Trucking Industry Pension Fund*, 2013 WL 3814984 (1st Cir. July 24, 2013).

There are two broad approaches to the role of boards: the agency approach (Berle and Means (1932), Jensen and Meckling (1976) and Fama and Jensen (1983)) and the managerial hegemony approach (Mace (1971) and Bebchuk and Fried (2004)). In the agency approach, a separation of ownership from control results from the dispersed ownership of corporations, leading to conflicts of interest between executives and shareholders that reflect factors such as managerial risk aversion (due to their firm-specific capital). In this view, boards monitor managerial activities and reduce agency costs, taking into account the tradeoff between managerial discretion and board monitoring.

In the managerial hegemony approach the board is a management-friendly body that lacks *de facto* authority over the CEO, reflecting dispersed shareholder ownership. Since managers have operational authority, their knowledge about the firm and its environment is more precise than that of directors, and thus in effect managers control the firm and have considerable discretion. A friendly board passively approves managerial decisions, unless the firm sustains reverses or financial distress. Moreover, managers often select board members, encouraging their loyalty, and directors have outside responsibilities, limiting their ability to monitor or to challenge CEO actions.

Adams and Ferreira (2007), Fluck and Khanna (2008), and Harris and Raviv (2008) develop formal information-based governance models that explain why shareholder interests in public firms are best served by a passive board. Fluck and Khanna argue that passivity in a public firm is efficient due to the severity of the board's free rider problem, reflecting the costs of collecting information and making decisions in a group context. They argue that shareholders are better off by inducing optimal effort by managers (such as via compensation policies), and having a passive board (with fixed director compensation), given the severity of this free rider problem. Harris and Raviv examine the tradeoff between agency costs and the value of insiders' information and conclude that if insiders have important information relative to outsiders, shareholders will prefer an insider-controlled board to a more monitoring-intensive board. Adams and Ferreira model the board as an entity that has a role in advising managers but also in monitoring them. Given the intrinsic conflict between these functions and the board's

dependence on CEO-supplied information, Adams and Ferreira conclude that a management friendly board is efficient for firms with dispersed investors except when managers can extract substantial private benefits at a cost to dispersed shareholders.

It is well accepted that boards of portfolio firms controlled by private equity are typically well informed and more interventionist than the boards of most public companies. After an acquisition of a portfolio firm, the general partners of a private equity firm are actively involved in overseeing the strategic direction of the firm. They typically serve as members of the board of directors and can draw on the expertise and experience gained from previous restructurings and their knowledge of the industry. Private-equity boards must take into account the complexity of corporate restructurings and evaluate the effectiveness of long-term growth strategies, while at the same time focusing on the need for the general partner to obtain an exit from its investment. Private-equity boards typically have the advantage of intensive due diligence that precedes an acquisition, and directors are generally chosen because they have highly specific knowledge that allows them to oversee the ongoing business.

Directors of portfolio companies are appointed by the general partners and typically spend a considerable amount of time with their companies in contrast to many independent directors of public companies. Private-equity boards are typically small working groups composed of individuals with considerable operating experience and financial knowledge and have a substantial amount of wealth at stake in the success of the acquisitions. When needed, the representatives of the private equity firm can alter the direction of the company or remove underperforming managers. Their financial acumen also gives them the ability to structure financial incentives for managers so as to reward profitable growth and avoid agency problems such as empire building. Private-equity boards rarely rely upon quarterly or monthly meetings alone. They review a continuing flow of detailed corporate reports, and many directors in portfolio companies engage in weekly and often daily conversations with management. Their orientation is to pursue a candid, informal, and continuing dialogue with management. Private equity boards tend to be smaller than those of public companies and meet more frequently, facilitating rapid decision-making.

Apart from corporate governance issues, private equity may also have a comparative advantage with respect to its financing skills. Private equity buyouts typically entail a relatively small portion of equity and a relatively large portion of outside debt financing. As such, a private equity backed firm raises funds against both its own assets and the reputational capital of the private equity firm, which is at stake in the funding of the firm. Since private equity firms have numerous present and future portfolio companies that raise debt in the capital markets, a private equity firm will be concerned about meeting the payoffs of creditors for the relevant firm. For example, Demiroglu and James (2010) find that the identity of a private equity firm affects the costs of financing for private-equity controlled firms. Thus, the presence of a highly quality private equity sponsor contributes to the ability of a firm to obtain debt financing on terms that enable it to undertake profitable investment projects. A private equity firm's ability to add value to a firm through its financing expertise and ability to finance new investment could also contribute to its ability to add value through operational improvements.

While there has been considerable research on the incentives and effects of private equity, there is less known about the process by which private equity exits its investment, and little research on portfolio firms after they are taken public by their sponsors. Recently the issue of the management fees that private equity controlled firms pay to their sponsors, including the period after the firm has been returned to the stock market, has focused attention on the relation between these public companies and their private equity owners,. For example, information reported by the SEC suggests that it is common for private equity firms to charge the companies they control fees for their services, including fees for monitoring (i.e., charging the portfolio company for efforts intended to improve the company's performance) and for the provision of various business services. This widespread practice has recently drawn critical attention from the SEC.

The potential for excessive fees can be related to the broader issue of the benefits of control for controlling shareholders (such as private equity) and the hypothesis that conflicts of interest may harm minority interests. For example, in the case of public traded, but tightly controlled subsidiaries, a structure that can be viewed as paralleling the case of a private equity-

controlled firm after an IPO, Brudney and Clark (1981) and Bebchuk (1989) argue that parent firms exploit minority shareholders of subsidiaries by conducting various activities that are favorable to the parent at the expense of minority shareholders. This type of expropriation or misalignment of incentives hypothesis predicts that announcements of the exit of private equity sponsor from a public traded portfolio company could increase share prices if the private equity firm was acting in ways that tended harm from minority shareholders.

However, unlike other cases of majority controlled entities, private equity control after an IPO is a form of business organization that is not likely to persist for an extended period of time. Nevertheless, the private equity sponsor firm as a large blockholder generally continues to exercise considerable control over the firm's activities, despite the fact that its time horizon is necessarily limited. Thus, it is possible that its goal is to maximize reported profits over a relatively short horizon. For example, short term profits could be maximized by seeking to maximize sales at the expense of long term earnings, as well as by reducing research and development expenditures, limiting maintenance, and in general deferring expenses to periods after the expected exit of the sponsor. During this period minority shareholders (and capital market investors), who are likely to have a longer time horizon, typically have little influence over the firm's operations. For example, voting rights in such firms generally have little immediate value. From this perspective, the absence of a common time horizon could generate a potential for strategic or opportunistic behavior that reduces firm value.

Of course, to the extent that the market and investors anticipate that the private equity firm has perverse incentives that induce management to behave opportunistically, it will reduce the value they are prepared to pay at the IPO and for the publicly traded shares after the IPO occurs, lessening the gain to the private equity firm. However, the perverse behavior could generate a permanent decline in firm value. For example, if research and development expenditures are delayed until after the exit, some opportunities may be lost that cannot be recovered. In such a case, even if investors appropriately anticipate private equity actions and are not fooled, the value of the business has been harmed by the reduction in the value associated with the lost opportunities.

2.4. The Exit Process after Portfolio Firms Sustain Initial Public Offerings

The objective of my research is to consider how private equity exits an investment that has already been liquefied by conducting an IPO of the investment. The specific focus is on the decision by a private equity firm to dissolve (or sharply reduce) its controlling block of common stock, which affords a unique opportunity to evaluate the information conveyed by this major decision, and to analyze the wealth effects of this change in ownership that is intrinsic to these transactions.

Unlike the case of other controlling shareholders, the process of exit is an intrinsic element of the private equity process because private equity is intended by its nature to be a transitional form of ownership. By its nature, the expected value of the stand-alone asset at PE exit will be related to the amount of restructuring conducted while under PE control. Moreover, there should be a linkage between the ability of a private equity firm to conduct the original acquisitions and the value it can achieve at exit, reflecting the growth in the firm's value while under private equity ownership.

Alternatively, investments may remain under private equity control as public companies in which private equity firm remains a large blockholder for a substantial period after the firm is taken public as long as it is within the given horizon of the fund. The decision as to how long private equity is to retain such a (often controlling) block of equity is at the discretion of the general partner. Although most partnerships end on time, there are cases where general partners need more time than specified in the initial prospectus to extract the value from portfolio companies. Therefore, most partnership agreements allow for term extensions. However, partnership agreements typically require the approval of the limited partners (or an advisory board of limited partners), before the time horizon of a fund can be extended.

It can be presumed that private equity behavior focuses considerable attention during the process of bidding for target firms on the role and probability of potential exit transactions, including both the expected type of exit, and the projected time to exit. Hege, Lovo, Slovin, and Sushka (2011) develop a theoretical auction model in which private equity bidding behavior for an asset or firm is driven by private equity's expectations about exiting the investment. The model

takes into account the fact that some assets can be expected to re-enter the public domain through an IPO, while other assets are more likely to be sold to trade buyers or to another private equity firm (SBO). The sale of an asset to a trade buyer or an SBO is a form of full exit for the initial private equity firm (even though a secondary buyout is not an exit from private equity ownership in general).

Thus, private equity general partners and their limited partners are tightly focused on the ability to manage an investment so as to be able to cash out of their investment expeditiously, either through a negotiated sale (to a strategic buyer or another private equity firm) or by returning the investment to the status of a public corporation. However, these two forms of exit are not equivalent when viewed from the perspective of the liquidity needs of private equity firms and their limited partner investors, since in practice private equity seldom sells an important stake in a portfolio firm at its IPO.

Exits through IPOs are often termed reverse leveraged buyouts. Muscarella and Vetsuypens (1990) examine a sample of 72 reverse LBOs and DeGeroge and Zeckhause (1993) examine a sample of 62 reverse LBOs. DeGeorge and Zeckhauser find that an IPO occurs during a period of peak earnings and they conclude that private equity firms conduct these IPOs at a point that follows the firm's best operating performance. They find that the post-IPO stock price performance of these firms is close to that of benchmark firms, suggesting that the market appropriately discounts this effect. Holthausen and Larcker (1996) find that the operating performance of reverse LBOs is superior to benchmark rivals at the time of the IPO and continues for succeeding years, but their stock market performance matches that of benchmark firms. Cao and Lerner (2009) conduct a related study of reverse LBOs and find that their stock market performance is similar to other IPOs but that over time there is a general deterioration in their stock price performance, a phenomenon that is a pervasive characteristic of IPOs generally.

All of the prior research on the IPOs of firms that had been taken private by a private equity firm typically views the IPO as an exit for the private equity firm. However, since in practice private equity firms retain large stakes in these newly public firms for some period of time, an IPO is at most a very partial exit, unlike the sale of a portfolio asset to a strategic buyer

or another private equity firm through an SBO. Given the asymmetric information problems outlined by Myers and Majluf (1984) and Leland and Pyle (1977), private equity firms can be expected to retain large stakes in reverse LBOs, and thus the IPO of their investments does not represent an exit from the point of view of private equity's limited partner investors. Moreover, there is typically a six month lockup period negotiated by the investment bank that underwrites the IPO so the private equity firm is constrained to retain an important ownership stake for a considerable period after the IPO takes place.

Thus, it is more useful to view the IPO as a liquefying of a portfolio investment in the sense that the asset can be continuously marked to market once the IPO occurs, but the limited partners have no access to their funds until the general partner is willing and able to transform the remaining equity holding into cash. During this period the general partner typically remains in effective control of the portfolio company and its managers, although its actions must be consistent with the legal obligations of any controlling (insider) shareholder of a public company.

The broad purpose of my research is to examine the process by which private equity sponsors cash out of their investments after a reverse LBO has transformed the portfolio investment into a publicly traded company. In general there are five ways in which a private equity firm can cash out or completely exit from its investment after the IPO, once the contractual lockup period (typically six months) provided for in the standard underwriting agreement for the IPO has expired. By the nature of the partnership agreements that limited partners initially agree to, the general partner has full control about the nature and timing of these alternative methods of cashing out from the investment in the newly publicly traded company. As an insider the private equity firm has access to considerable private information about the firm and its future prospects, which provides a framework for assessing the future value of the firm's projects. Nevertheless, the limited timespan of the agreement and the recognition that limited partners (typically financial institutions and fiduciaries) may want access to some cash distributions before committing to a new fund can create constraints on the general partner, in effect limiting its ability to generate a maximum return for the holders of the fund.

One way that private equity can cash out is to sell its (typically controlling) block of equity to another buyer, including another private equity firm, which can be viewed as a variant of a secondary buyout. In such transactions, it is in the interests of the seller of the block (that is, PE) to provide sufficient information to the buyer to counter the adverse selection problem that arises in such a sale. However, these transactions can be expected to be rare since acquirers of majority stakes will typically extinguish the minority interest to eliminate free rider problems.

Two, the portfolio firm's remaining block could be acquired in its entirety by a strategic buyer, with the private equity firm obtaining either cash or stock in the acquirer. In such transactions the entire equity interest is acquired, with minority shareholders typically obtaining the same price per share as the controlling private equity firm.

Three, private equity can gradually sell incremental amounts of its investment through trading activity. To the extent that private equity is legally an insider, it faces SEC and exchange restrictions on the nature of this trading activity that apply to any insider.

Four, private equity can spin-off it's the remainder of its holdings in the entity to its limited partners via a pro rata dividend, thus allowing each of the limited partners in the relevant fund to determine whether they wish to maintain the holding or sell it in the marketplace. This in-kind distribution allows each limited partner to control the timing of the liquidation of its stake, but in this case the private information held by the general partner is in effect dissipated since it cannot be transferred to the limited partners.

Five, although not a pure form of exit, the portfolio company can engage in a dividend recapitalization which provides for a substantial cash dividend payment to all shareholders, including the private equity owners, without any actual reduction of equity interest in the portfolio asset. This process can provide the basis for a substantial flow of cash to the limited partners that choose to sell their pro rata distribution while other holders can retain the shares.

Finally, private equity can conduct a secondary offering, more precisely, a secondary equity issuance, or a series of such offerings for all or part of its holdings. As in the case of the fourth exit, that is a spinoff, the entity is transformed into a publicly traded firm but with initial shareholders being the limited partners, but unlike a spinoff, the shares are sold via an

underwritten offer to capital market investors and the proceeds are collected to be dispersed to limited partners as the fund is liquidated.

The remainder of this dissertation focuses on secondary offerings by private equity, focusing on the share price response to these offerings and the subsequent operating performance of portfolio firms. However, each of the other avenues through which private equity ends its ownership of public portfolio firms will eventually be studied as part of my future research, as discussed in Chapter 9. Such research can provide a fuller understanding of how a portfolio company completes its transformation from a private equity-controlled public firm to a public firm with a fully dispersed ownership structure. A central focus of such future research will be an examination of the factors that influence the choice of the mechanism for dissolving the large blockholdings that private equity typically retains after IPOs.

Chapter 3

MADISON DEARBORN'S ACQUISITION OF TUESDAY MORNING: BUYOUT, IPO, AND EXIT

3.1. Overview

In this chapter I consider in some detail a specific observation in the sample of secondary offerings by private equity to provide a concrete corporate example of the exit process. I cover the early history of the firm, a period when it was owned by its founder, and then discuss its acquisition by private equity. I then discuss the period of private control by private equity, followed by the firm becoming a publicly traded entity again through an IPO, and then finally becoming fully independent as its private equity sponsor exits through secondary offerings. This material provides the reader with a better understanding of the full private equity process, including the nature of private equity exit after an initial public offering (IPO), or more precisely a reverse leveraged buy-out (RLBO), given that a firm that was publicly traded, was taken private by a private equity firm, and then returned to the status of a publicly traded firm. The specific example used is the retailer Tuesday Morning Corporation, headquartered in Dallas Texas.

Private equity has a long history of undertaking deals, many of them highly successful, in the retail space, including such well-known names as Lord and Taylor, Toys R Us, Dollar General, Petco, Michael's, Linens and Things, and Staples, among many others. For this reason, a retailer seems a natural choice to serve as an example of the exit of private equity via secondary offerings. Private equity has long viewed retail firms as presenting an ideal opportunity to purchase highly predictable cash flows at affordable multiples of retail earnings. The relative stability of retailer cash flows allows a private equity sponsor to put together an acquisition with a financial structure that is relatively heavy with debt. Regardless of the level of debt, in almost all cases there is a heavy emphasis on the private equity sponsor implementing a more disciplined operating strategy to make the retailer more efficient and to substantially improve its operating performance.

In some cases (although not for Tuesday Morning) the main objective of private equity is to enhance firm value by unlocking hidden value on the company's balance sheet by implementing a strategy that is targeted at more efficient use of the real estate owned by the retailer. In such deals, private equity acquirers have believed that escalating real estate values provided a basis for lucrative returns, suggesting that the fair property value of the retailer's real estate was not fully reflected in the firm's public valuation. In effect, at least a portion of the retailer's real estate is determined to be more valuable "dead than alive" (meaning its market value is greater in another use). In essence, the success of these acquisitions depends on successfully executing a strategy of determining which of the retailer's stores are seriously underperforming, closing down the relevant stores, and then redeveloping or selling the sites for non-retail uses.[7]

A private equity firm typically has a strong focus on achieving efficiencies by implementing more disciplined operating strategies within a short period of time. Typically, private equity firms attempt to improve cash collection methods, enhance technology, implement new sourcing strategies (often involving outsourcing), and adopt more creative merchandising methods. These changes can lighten the retailer's overhead, improve profit margins, and reduce working capital. While such changes could have been implemented by the previous management, it has long been argued by advocates of private equity that private equity firms are more effective at implementing such dramatic changes because of the sense of immediacy induced by their relatively short investment horizon. In the case of a seriously underperforming target firm, incumbent management is typically replaced by a new strategic executive team with prior experience in implementing turn-around strategies.

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[7] Under these circumstances, most private equity sponsors are likely to employ a real estate advisor as a partner unless they are large private equity groups that already have these capabilities in-house.

3.2. Tuesday Morning as an Independent Firm

The Tuesday Morning Corporation was began by an entrepreneur, Lloyd Ross, who incorporated the enterprise in 1975. Mr. Ross served as founder, CEO, and Chairman of Tuesday Morning in its early years. Ross had been working for a manufacturer and importer of gift merchandise, and he noticed that manufacturers had no reliable way to dispose of their surpluses of high-end inventory, including discontinued items. Lloyd Ross credits that experience with providing him with the idea that an enterprise could be developed to rectify the problem that manufacturers of high-end products had no consistent means to discard their high-end lines of merchandise.

Starting with the concept of buying excess high-end surplus and selling it to various retailers, Ross transformed this concept, enlarged the volume of his purchases, expanded the supply of brand inventories, and sold the items directly to the public. The merchandise generally consisted of gift items such as dinnerware, china and crystal, housewares, bathroom, bedroom and kitchen accessories, linens and domestics, luggage, and seasonal decorations such as Christmas trim, toys, stationery and silk flowers. In summary, he proved that there could be a place in the retail world for an operation specializing in upscale closeout items.

Ross began actual operations in 1974 with a "garage sale" in a warehouse that he rented in north Dallas, selling excess (close out) high quality merchandise at deeply discounted prices. This business plan proved successful, the firm's operations grew quickly with a limited number of stores. For its first several years, the company operated out of temporary locations (typically vacant stores or warehouses). Before long, Tuesday Morning began to expand geographically, primarily in the South and West. The firm's strategy was to keep costs down by selling its merchandise only from low-rent locations and using primarily seasonal, part-time employees.

The stores were demonstrably no-frills operations, relying on the quality of the merchandise rather than decoration to create their character (never selling seconds or irregulars). Tuesday Morning stores relied on brand name merchandise priced at 50-80% below the retail

prices that prevail at department stores. Only a small percentage of its workers were full-time

employees (typically only the store manager). Its customers were primarily women from middle-

and upper-income households, looking for bargains on high quality merchandise, a set of

customers that were unlikely to be too sensitive to the economic cycle. Its prices were

determined centrally and were uniform across stores. Tuesday Morning continued to expand its

merchandise to incorporate items such as upscale crystal and glassware, china, decorative

accessories, lamps, luggage, luxury linens, gourmet foods, cookware, and it covered both

domestic and international brand lines such as Dior, Dockers, High Sierra, Krups, Laura Ashley,

LeCreuset, Lenox, Lindt, and London Fog among others.

Throughout this period, Mr. Ross remained the dominant figure as both owner and CEO

of the business. He held these positions throughout the business's early history, including after it

became a public firm. He remained in all of these capacities until the firm was eventually

acquired by private equity.

Tuesday Morning first attempted to go public in 1984 but withdrew its registration citing

poor market conditions. It then succeeded in going public in March 1986, listing its stock on

Nasdaq, raising $9.5 million of funds to finance its regional expansion. Within one year after the

offering, there were 56 stores, generating sales of $37 million, and by 1987 there were 81

Tuesday Morning outlets operating in 16 states, primarily in the South. By 1996 there were more

than 270 stores and the Tuesday Morning had become national in scope. This substantial growth

in the number of stores in the decade after its IPO is illustrated in Figure 1 and is mirrored in its

rising sales as shown in Figure 2. At the same time its business strategy allowed it to expand its

full time employment at a more modest rate, as shown in Figure 3. Some of the funds from the

firm's IPO were also used to finance renovation of the company's warehouse technology, but the

extensive and rapid growth in sales made handling and tracking its merchandise a problem.

Thus, a decade after becoming a publicly traded corporation, the firm was a highly profitable

business that remained tightly controlled by its founder.

3.3. The Private Equity Buyout

The firm continued to grow rapidly for the next decade and then was acquired by the private equity firm Madison Dearborn in 1997. This transaction was preceded by Tuesday Morning's hiring of SBC Warburg Dillon Read to pursue options for the company, given the fact that Mr. Ross, the Company's Chairman and Chief Executive Officer (and founder) had indicated his desire to lessen his active involvement in the company, to eventually retire, and to ultimately liquidate all of his holding of the company's common stock. In August 1997, Tuesday Morning's board approved the terms of a letter of intent which gave Madison Dearborn until September 30, 1997 to generate a definitive offer to Tuesday Morning.

On September 15, 1997, Tuesday Morning was taken private by Madison Dearborn which purchased the company's stock for around $325 million ($25 per share). Shares of Tuesday Morning rose 8 percent, or $2.25, to $22.625 in response to the initial news of the proposed buyout on August 14, 1997. To finance the transaction, $118 million of equity capital was provided by Madison Dearborn, while the remaining amount of more than $200 million involved debt, primarily in the form of subordinated notes.

Madison Dearborn is based in Chicago and specializes in management buyouts; i.e., friendly transactions. Madison Dearborn took the firm private, acquiring 86% of the firm's outstanding shares and also acquired most of the 30 percent of Tuesday Morning stock held by Mr. Ross, who gave up the post of chief executive as part of the buyout agreement. However, Mr. Ross agreed to remain with the company for two years as Chairman of the Board and remained a stockholder in the firm, retaining about a 4% stake in the firm. He also agreed to a two-year consulting and non-competition agreement which provided that he would both serve as Chairman of the Board and act to facilitate the firm's relationships with third parties and suppliers.

Madison Dearborn Partners, is one of the largest private equity investment firms in the Midwest, and is based in Chicago, Illinois. It was formed by individuals who had previously run the management buyout and venture capital portfolios at First Chicago Corporation. Madison

Dearborn Partners tends to specialize in leveraged buyouts of private or publicly traded companies, including those that are family-controlled or that are closely held.

The Tuesday Morning going private transaction can also be viewed as an interesting example of the gains that can be created when private equity firms acquire closely held target firms (such as those still controlled by founders), gains that might not apply to more standard takeovers. In the case of Tuesday Morning, the private equity deal placed the general (active) partners of Madison Dearborn in direct control of the firm, closely replicating the control position of Mr. Ross, the founder, maintaining the benefits in decision making associated with the tight alignment of interests that characterized the founder's position throughout the prior history of the firm.

However, unlike Mr. Ross's position as a dominant, but risk-averse individual shareholder at a public firm, private equity is a wealth-diversified form of control since the (passive) non-voting limited partners that invest in private equity funds, such as those of Madison Dearborn, are well-diversified wealthy investors and institutions. Thus, Madison Dearborn was in a position to generate future gains in growth from much greater investment and expansion, with associated improvements in firm performance, investments that a dominant, risk averse shareholder such as Mr. Ross might have been unwilling to undertake. In effect, the private equity buyout served as a means to eliminate an underinvestment problem that can be expected to arise when there is a risk-averse dominant shareholder, especially one that is contemplating retirement and is probably seeking to cash out of his large investment, as was the case with Mr. Ross.

In this setting private equity investment offers many advantages to such a retail businesses as a source of new capital for growth and greater management skill, especially to a founder based firm in the retail industry. For example, groups such as Madison Capital can quickly provide retailers with substantial access to capital, fund investment in innovation and technology, develop new distribution channels, and more efficiently manage store portfolios. It may be difficult for a retailer such as Tuesday Morning to fund the level of desired expansion

using existing company resources, especially in a climate of tight lending or in the case of a founder who does not want to undertake new financing that may dilute his dominant interest.

Private equity firms could have a comparative advantage over a founder by utilizing a more efficient corporate governance structure that counters potential problems associated with founder control when no clear succession plan is apparent. Private equity groups can acquire controlling ownership in a retailer and thereby become incentivized to ensure that the business is run more efficiently, so as to ensure a profitable exit from the investment. To accomplish this objective, PE groups typically appoint (or retain) highly skilled executives and also appoint non-executive directors with retail experience to oversee the firm's direction. PE groups typically look to invest for a period of about five to ten years before exiting their ownership, and therefore have a strong incentive to ensure that a retailer is operated effectively over this period so as to insure a successful exit and longer run corporate success, enhancing PE reputation. For example, this longer run horizon can foster investment that may limit the growth in immediate profit but that generates substantial benefits in terms of long-term improvement in profits. PE firms have often executed previous transactions in the sector and this expertise has the potential to vastly improve a retailer's productivity and performance.

Despite instances of PE groups providing retailers with flexible capital for rapid and effective growth, PE is sometimes viewed as creating the potential for distress because of their methods of finance. PE acquisitions typically involve a considerable amount of financial leverage, since PE groups generally use a minimal amount of their own resources, to enhance equity retunes. This high leverage exposes the retailer to the commitment of meeting the interest on the debt and eventually repaying that debt. Thus, such a retailer faces the on-going burden of paying for these debts, regardless of its operating performance, which can be problematic should a severe economic downturn occur.

Retailing, moreover, is traditionally viewed as highly sensitive to changes in the overall economy and thus a slowdown in the economy can poses substantial risk for a retailer. Thus, PE potentially offers a more effective means to fund expansion relative to a retailer's own resources,

especially a retailer controlled by its founder, such as Tuesday Morning, but at the risk that the associated leverage may undermine the retailer's long-term prospects, especially during the period after the exit of the PE firm when the PE sponsor is no longer available to provide additional capital when needed or to oversee negotiations with creditors and suppliers.

After taking Tuesday Morning private, Madison Dearborn appointed as the new CEO, Jerry Smith, who had a long history at the firm. Lloyd Ross continued as Chairman until his retirement in 1999 and then Smith assumed both titles. Under this management, the chain continued to expand rapidly by adding more than 30 stores in 1998.

3.4. Madison Dearborn's IPO of Tuesday Morning and Subsequent Exit

The company operated as a private equity portfolio firm for a period of less than two years. During April 1999 it carried out an initial public offering of 6.6 million shares of common stock offered at a price of $15 per share. The IPO was a joint offering with 5.1 million new shares being offered by the firm and one million shares being sold by various investors. Madison Dearborn did not sell any shares in the IPO, and its stake fell to approximately 75% as a result of the primary offering of shares by the firm. The net proceeds to the firm from the newly issued shares amounted to approximately $76 million which was used to pay down some of the debt incurred as part of the private equity buyout.

Shortly after the IPO, Madison Dearborn installed an outsider, Kathleen Mason, as CEO in 2000 upon the death of Jerry Smith. She was a seasoned retail executive with considerable management and merchandising experience at other firms, having held management positions at several large retail chains, including TJX Companies and Cherry & Webb, as well as senior merchandising positions at The Limited, Mervyns, Emporium and Kaufmanns. The chairmanship of the board was split off from that of CEO and a senior managing director of Madison Dearborn became chairman. Through its majority ownership Madison Dearborn continued to control the firm after the IPO.

Despite the significant leverage it retained from the buyout of the company and the onset of an economic recession, it continued to add stores after going public. In the collapse of the dot.com era it was also able to acquire inventory from several (once-popular) defunct online retailers. During the following years, while Madison Dearborn continued to maintain a substantial ownership stake, the company remained highly profitable despite the economic recession of 2000-2001, as shown by its growth in profit in Figure 4. It expanded its chain of stores rapidly with 46 new stores in 2002, 62 in 2003, and in 2004, 2005, and 2006 it opened 85, 70, and 60 new stores, respectively.

Despite this increase in profit Tuesday Morning sustained a sharp loss in market value during the downturn of 2000-2001, as shown in Figure 5, reflecting the sharp drop in overall stock prices associated with the end of the dot.com bubble. Madison Dearborn continued to maintain its 70% stake in the firm throughout the stock market downturn. Once the economy and stock market rebounded, the market value of Tuesday Morning began a sharp climb and Madison Dearborn began the process of gradually reducing its ownership position in the firm, selling shares through secondary offerings at increasingly higher prices, while still maintaining effective control.

In March 2002, it conducted a secondary offering of 6 million shares, reducing its ownership from 70% to 53%. It subsequently conducted another offering of 6 million shares in October of 2003, reducing its ownership position to 35.5%. It then maintained that position for a two year period, still effectively dominating the company's affairs. It conducted two secondary offerings at somewhat lower prices during 2005 reducing its stake to 27.5%. It maintained this stake until finally exiting the ownership structure in February 2010, after the collapse of the stock market that followed the failure of Lehman Brothers. Thus, it had maintained some of its investment for a total of 13 years. It exited in order to liquidate the fund that had invested in the company, a fund that was established in 1996.

Thus, Madison Dearborn's investment persisted for a lengthy period that was substantially greater than the ten-year duration of most private equity funds. Although the sale of

its final holding of 1.425 million shares occurred at a relatively low price during a period of stock market distress, Madison Dearborn had manage to generate a return of more than $700 million on its $118 million original investment in Tuesday Morning. During the period in which Madison Dearborn maintained a stake in Tuesday Morning, the firm paid down $250 million in debt and at the time of Madison Dearborn's exit, the firm no longer had any long-term debt.

The firm continues today and is generally regarded as an important player in the discount retail sector, but does not have an effective online presence. The discount retail sector remains a highly competitive field, populated by many other well-known names, such as Pier 1. More broadly, it is readily apparent that the central issue in this sector of retailing is whether bricks and mortar stores will be able to continue to compete effectively in the contemporary market against the onslaught of the growth of online retailers. It remains an interesting question as to whether any discount retailer such as Tuesday Morning is sufficiently well-positioned to meet this long term challenge to its business.

Chapter 4

FINANCE LITERATURE ON OWNERSHIP, LIQUIDITY, AND SECURITY ISSUANCE

4.1. Overview

Private equity is intimately associated with issues of corporate governance and ownership structure since it revolves upon reorganizing the ownership structure of firms to enhance their operating performance. After reorganizing the firm, private equity investors often depend on public investors to acquire their interests so as to allow them to exit and realize their gains. In this dissertation, the focus is on exit via secondary offerings subsequent to an initial public offering of the firm that shift its ownership structure from high concentration under private equity sponsorship to more dispersed ownership. Thus, in this chapter I draw upon the finance literature to discuss how issues of ownership structure, stock liquidity, and security issuance form a useful framework for analyzing the effect of secondary offerings by private equity sponsors.

4.2. Ownership Structure

Considerable theoretical and empirical research has focused on the role of large blockholders in modern corporate governance. This work provides valuable perspective for analyzing secondary equity offerings that dissolve private equity's control of a portfolio firms, given that after an IPO of a buyout firm has taken place the private equity sponsor is generally a controlling or dominant blockholder in a public company with minority shareholders. The dominant view of a large blockholder in modern finance theory focuses on the incentives of such a shareholder's incentive to actively monitor a firm's managers. This monitoring can partially offset problems that arise from the separation of ownership from control that is characteristic of most large public corporations and more specifically it can serve to counter the agency problems associated with public firms.

This perspective implies that a private equity sponsor that has either majority-control or a large block of equity serves as an effective monitor of management that seeks to enhance firm value for the benefit of both the private equity firm (and its limited partners) and the minority

shareholders of the firm. As such, dispersed shareholders are able to free ride on the expertise and power of private equity representatives. At the same time, private equity representatives are generally not executives of portfolio firms so issues with respect to the private benefits of control and empire building that pervade firms with dispersed shareholders are unlikely to apply to private equity controlled firms.

In this section, I review relevant research on the value of control and on the role of large blockholders in corporate governance, providing perspective about secondary offerings that dissolve some of the control block held by a private equity sponsor after a buyout firm becomes a publicly traded entity.

Jensen and Meckling (1976), Demsetz (1986), Grossman and Hart (1988), Harris and Raviv (1988), Hart and Moore (1990), Holderness and Sheehan (1988), and Denis and Denis (1994) analyze the potential for insiders at public companies to consume perquisites and to obtain utility as a direct result of their control at the expense of dispersed shareholders. In this view, managers are inefficiently disciplined by product and financial market forces, so they have an incentive to undertake investments or other actions that do not contribute to shareholder value, but that may enhance managerial compensation or prestige or enable corporate executives to diversify their managerial human capital.

The dominant genre of research on blockholders explains how a large shareholder can actively monitor managers and counter the effects of this separation of ownership from control that characterizes most large public corporations, thus increasing firm value. This viewpoint implies that concentration of ownership such as that entailed in a publicly traded firm controlled by a private equity sponsor, fosters an improvement in value for dispersed shareholders of the firm.

For example, Shleifer and Vishny (1986), Admati, Pfleiderer and Zechner (1994), Bolton and von Thadden (1998), and Tirole (2001), view a blockholder as an active monitor that collects private information, evaluates management ability, and can overtly intervene in the firm's affairs to improve value (such as by terminating the CEO), actions that cannot be efficiently conducted by dispersed shareholders for whom information acquisition is costly. From this perspective, the

firm's share price should fall in response to the news of a secondary stock offering by a private equity firm due to the loss of valuable monitoring provided by private equity.

To some extent there is also literature that is concerned with the transfer of wealth from a firm's dispersed shareholders to a controlling blockholder such as a founder or a parent company. In this regard, it can be argued that there is some potential for a transfer of wealth from dispersed minority shareholders to private equity sponsors that could take the form of fees and other reimbursements for contractual services that are of little use to portfolio firms but are generally required by private equity owners.

Pursuing a different line of argument about the negative implications of large blockholders, theoretical models such as Aghion and Tirole (1997) and Burkart, Gromb, and Panunzi (1997) discuss the potential for blockholder overmonitoring of managers. They conclude that a large shareholder may discourage managers from making costly firm-specific investments in human capital, harming firm value, because of the ability of a powerful blockholder to terminate managers prematurely or without sufficient justification. If self-dealing occurs or overmonitoring occurs at portfolio firms, the announcement of the dissolution of private equity control through a secondary offering should increase firm value.

In terms of the prior empirical work on ownership concentration and firm value, there is conflicting evidence. Morck, Shleifer, and Vishny (1988) find that firm performance varies over the spectrum of ownership concentration, with performance improving when concentration rises from very low levels or rises above 25%. However, McConnell and Servaes (1990) find that highly concentrated ownership reduces firm value, although Demsetz and Lehn (1985) and Agrawal and Knoeber (1996) report that there is little relationship between firm value and ownership concentration, and that cross-sectional analyses of this issue are subject to severe reverse causation difficulties.

Most of this empirical work does not distinguish between insider versus outsider blockholdings. However, Slovin and Sushka (1993) report that deaths of large inside blockholders reduce ownership concentration and increase firm value, implying that these management-affiliated blockholders (all human beings) lessen shareholder value. Prior empirical

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studies on ownership concentration simply do not examine the type of active financial blockholder represented by a private equity firm.

The conflicting nature of the conclusions from prior theoretical and empirical work suggests that, a priori, the effects on the value of a public firm as a result of the dissolution of private equity control and the associated change in ownership concentration are ambiguous. One of the goals of my research is to explain the cross-sectional variation in the share price effects of secondary offerings by private equity. In this regard, these offerings are generally sold to passive financial institutions. Thus, a change in a private equity blockholding also offers an opportunity for institutional investors to enter the ownership structure in a way that offers the potential for an alternative source of monitoring to emerge. This insight raises the issue of the effects of changes in liquidity intrinsic to these offerings and the associated effect on corporate monitoring through investor trading.

4.3. Stock Liquidity

Stock (or market) liquidity refers to the transactional liquidity of a securities market. This concept of liquidity relates to the ability to trade a significant quantity of a security at a low cost in a short time. Most early papers on monitoring focus on active monitoring and intervention as the primary governance mechanism for a large shareholder such as a private equity sponsor. More recently, a considerable body of theory links stock liquidity, firm ownership, and corporate governance in a way that generates predictions as to how changes in stock liquidity can influence monitoring by a large shareholder. More specifically, finance theory has encompassed various theories that focus on the potential for the trading activities of active smaller investors to provide an effective source of information collection and monitoring about the firm and its managers.

Hirschman (1970) argued that the presence of highly liquid secondary markets through which investors can easily exit will lead investors to sell shares rather than exercise their ability to influence managers. Moreover, Black (1990) details the extensive federal regulations and restrictions that tend to discourage shareholder actions and limit the ability of institutions to influence corporate outcomes. These legal and regulatory restrictions discourage monitoring and

are thought to lead institutions to prefer to sell their holdings in a poorly managed firm rather than attempt to influence management, a practice that is commonly referred to as the "Wall Street Rule."

In practice, most financial institutions file form Schedule 14G with the SEC, which requires them to attest that their shares are not held for the purpose of changing or influencing control of the firm. Despite this regulatory background, Pound (1988) contends that such institutions can provide effective monitoring of corporate managers at a cost that is lower than that of atomistic shareholders, although he notes that it is also possible that money managers could align with corporate insider interests if there are opportunities to develop profitable side business relations with the firm. In addition, the passage of ERISA in 1974 imposed a requirement on institutional investors that they cast votes on corporate issues in a responsible manner. This mandate has led to the emergence of well-known entities, proxy firms (such as Institutional Shareholder Services) that specialize in providing voting recommendations for institutional clients.

Various researchers have argued that greater stock liquidity induces the entrance of informed, transient investors, resulting in more informative share prices. In turn, the exit of these investors places greater pressure on managers to maximize shareholder value. In contrast to the intervention activities (voice) of large active blockholders, this trading-oriented approach ascribes a passive monitoring role to informed "transient" holders," as detailed in Edmans (2009), Admati and Pfleiderer (2009) and Edmans and Manso (2011).

In this view, by facilitating the ability of shareholders and investors to enter and exit via trading activity, greater share liquidity strengthens the informativeness of share prices. Thus, liquidity stimulates information production and the sale (purchase) of shares by informed investors reduces (increases) the firm's share price and harms (benefits) managers whose wealth is related to the stock price. As a result, informed, but passive shareholders (such as institutional investors) are able to exert pressure on managers through their trading activities, given that managers hold stakes in the firms they manage, incentivizing them to undertake value maximizing decisions.

A more liquid market allows informed investors to enter and exit at low cost in response to their information acquisition. Thus, stock liquidity and trading facilitate a threat of exit by large (passive) shareholders that can serve as mechanism for disciplining managers. This monitoring through trading can serve as an alternative, or complement, to the active monitoring and intervention of traditional blockholders.

Secondary stock offerings by private equity firms provide a basis to evaluate the usefulness of these approaches to monitoring and to examine whether share trading and liquidity are important ingredients for monitoring. Secondary offerings by private equity can be viewed as a shock in liquidity for the portfolio firm, as well as conveying information about the firm's future cash flow (given the adverse selection problem typically associated with equity issuance). Because the private equity firm's shares are almost uniformly sold to financial institutions, the secondary offering can be expected to enhance share liquidity. Thus, the offering can be viewed as entailing a shift from the (more active) control and monitoring of a private equity firm to the (more passive) monitoring of institutions and investors through their trading activities.

Separately, in the market microstructure literature, Benston and Hagerman (1974) model how greater ownership dispersion, a consequence of the secondary offering by the private equity firm, improves share liquidity. Amihud and Mendelson (1986, 1989), Amihud, Mendelson, and Lauterbach (1997), Brennan and Subrahmanyam (1996), and Easley, Hvidkjaer, and O'Hara (2002) argue that illiquid securities must provide higher expected rates of return as compensation for higher trading costs, so liquidity affects the firm's cost of capital.

In this view greater liquidity arising from a secondary offering by private equity results in a lower equity premium and a lower cost of capital that expands the set of positive net present value (NPV) projects for the firm, resulting in an increase in the market value of the firm. Chen, Goldstein, and Jiang (2007) provide evidence that managers incorporate the private information produced by well-informed market participants (traders) into their corporate investment decisions, implying that improved operating performance can be expected from the greater stock liquidity engendered by a secondary offering by private equity.

Corporate secondary stock offerings by private equity firms provide a basis to evaluate the usefulness of these approaches to monitoring and to examine whether share trading and liquidity are important ingredients for monitoring. A secondary offering allows an existing private equity blockholder to dissolve (or substantially reduce) a large blockholding through an underwritten sale of its shares in a publicly traded registrant firm to dispersed investors at a price set after a public announcement of the impending offering and SEC filing requirements are met. The registrant firm does not raise new capital in a pure secondary offering but does raise capital in a joint offering, which are less common.

In a pure secondary offering all proceeds of the offering go to the blockholder firm. It is also possible for managers of the registrant firm to participate in the offerings.   These corporate secondary offerings can be viewed as an exogenous shock in liquidity for the registrant firm, as well as changing the firm's ownership structure, and conveying information about the firm's future cash flow (given the adverse selection problem typically associated with primary equity issuance). Because the private equity firm's shares are almost uniformly sold to financial institutions, the secondary offering can be expected to enhance share liquidity. Thus, the offering can be viewed as entailing a shift from the (more active) control and monitoring of a private equity firm to the (more passive) monitoring of institutions and investors through their trading activities.

4.4. Securities Issuance

Corporate seasoned equity issuance has been extensively studied in the finance literature. However, there is no previous research in the area of securities issuance by private equity. The numerous studies of the issuance of primary securities issuance have established that there is a significantly negative announcement effect on shareholder wealth at announcements of seasoned equity offerings (Mikkelson and Partch (1986), Asquith and Mullins (1986), Masulis and Korwar (1986), and Barclay and Litzenberger (1988)). The predominant explanation for this negative wealth effect in the academic finance literature is the adverse selection model of Myers and Majluf (1984).

Myers and Majluf assume that insiders have private information (that is, information not reflected in share prices) about the value of the firm's assets in place. Thus, at a given point in point in time, the market price of the firm's shares may be too high or too low relative to the information available to insiders. As a consequence, when the stock price is too high relative to their private information, there is an incentive for the firm to conduct an equity issue, while insiders will be reluctant to issue equity when they view the firm's shares as undervalued.

Rational investors understand this decision calculus, and thus they interpret a primary seasoned equity issuance announcement as conveying the signal that insiders view the stock as overvalued, thus inducing the share price to fall. Miller and Rock (1985) develop a model along similar lines that implies that such equity issuance conveys unfavorable information held by managers about the firm's future cash flows.

Since private equity firms exercise some control over portfolio firms and can influence their operations, private equity sponsors are likely to be viewed by market participants as having considerable private information about their portfolio firms so this adverse selection perspective of Myers and Majluf (1984) and Miller and Rock (1985) should also apply to announcements of secondary offerings conducted by private equity firms.

Lucas and McDonald (1990) argue that an undervalued firm has an incentive to postpone an equity offering until managers regard the shares as no longer underpriced, while a firm with overpriced shares has an incentive to issue new shares immediately as investment projects arise. This reasoning suggests that managers time the equity issuance decision, so the firm's share price will fall in response to the issuance announcement to reflect the adverse selection problem and that there should be positive cumulative returns prior to the announcement of the equity issuance.

In contrast, Ambarish, John, and Williams (1987) develop a signaling model that predicts a favorable share price reaction to seasoned equity issuance by high growth firms that have relatively few assets in place. This reasoning is consistent with the finding of Jung, Kim, and Stulz (1996) that high growth firms have more valuable investment opportunities than low growth firms. Thus, if some firms controlled by private equity are relatively high growth, high technology

firms, then there should be a favorable share price effect to a secondary offering. More broadly, there could be a positive share price response to private equity's decision to exit the ownership structure because of the anticipation that the firm will seize growth opportunities that would not be undertaken if the firm were still controlled by private equity.

The potential for adverse selection may also apply to the case of pure secondary offerings, a form of securities issuance in which no new shares are issued so market participants do not have to assess the likely probability of the funds that are being raised by the firm in a primary offering will be used to generate new positive net present value projects. In general, studies of equity issuance also typically find that larger issues have more negative share price effects, indicating the greater severity of adverse selection with large issues.

There are several studies of secondary offerings, but none of them isolate the case of private equity controlled firms. Several studies such as Mikkelson and Partch (1985) and Asquith and Mullins (1986) document that there are negative announcement returns at secondary offerings announcements, and Heron and Lie (2004) and Clarke, Dunbar, and Kahle (2004) find that operating performance after secondary offerings is close to that of industry benchmarks.

However, none of these studies specifically consider secondary offerings by private equity firms, which is also an important change in corporate governance since private equity firms tend to dominate the governance of reverse leveraged buy-outs (RLBOs) for some variable period after the IPO. From this perspective, the dissolution or reduction in private equity blockholdings can be viewed as a shift in corporate governance.

In contrast, announcements of private placements of equity generate significantly positive share price effects which have been interpreted as conveying a positive information effect associated with the willingness of sophisticated investors to purchase these securities (Wruck (1989, Hertzel and Smith (1993)). Such placements entail communication between the issuer and sophisticated private investors that counter the potential for investors to view the firm's shares as overpriced.

4.5. Secondary Offerings of Blockholdings by Private Equity

In this dissertation I examine private equity exits by considering the case of secondary offerings of large blocks of publicly traded stock held by private equity firms. A secondary offering by a private equity firm dissolves or reduces its blockholding and generates cash that is available to be paid to the investors (limited partners) in the fund that owns the portfolio investment. As securities offerings, these transactions are strictly regulated by federal securities law and SEC regulation, a factor that facilitates the analysis.

A pure secondary offering involves the sale of stock by the private equity blockholder but not the subject firm, so the number of shares outstanding remains the same and the subject firm receives no proceeds from the sale. In a joint offering, there is also the sale of new equity issued by the firm which receives the proceeds from the sale of these newly issued shares. Joint offerings permit the newly public corporation to lessen the magnitude of the leverage that it had retained as a private equity controlled company. Alternatively, the proceeds may provide the basis for new investment or expansion of the firm's activities through acquisitions.

Either type of securities offering reduces or dissolves a large blockholding of the private equity owner at a price that is determined after the market has become informed about the impending offering (in contrast to insider sales of shares). An SEC filing is required for a public firm before the selling shareholder can undertake the actual sale of any shares proffered. The decision by a private equity blockholder to announce and conduct such an offering can be expected to have significant informational effects on firm value, as well as having important effects on the firm's ownership structure and its management. These are underwritten offerings.

The relevant secondary offering is an SEC registered sale of stock on behalf of a private equity firm (the actual seller). The securities registration process requires a public filing available to all potential investors that contains relevant information about the subject firm and its operations as well as details about the underwriting arrangements prior to the actual sale of a large number of shares to public investors. The selling firm (private equity) pays all relevant costs associated with this procedure.

A preponderance of secondary offerings by private equity firms represent the first seasoned equity offering after the IPO of the portfolio firm. The issue of the relation between the pricing of an IPO and subsequent sales of equity has drawn considerable attention in the modelling of the IPO market, although none of this research has been generated within the context of private equity firms. Instead, the relevant theoretical models focus on the case of owner/founders who can influence the pricing of an IPO, taking into account the importance of subsequent equity offerings as a means of cashing out that is an alternative to selling shares in the IPO.

Although it is common to think of an IPO as a way for the corporate issuer to raise new external capital, within the realm of the private equity sponsor an IPO may be more accurately viewed as a way for it to gain access to liquidity, because an IPO generates a market valuation of its investment as well as providing a means for the private equity sponsor to eventually cash out. Moreover, in some cases, these two functions can be combined via a joint offering in which shares are sold both by the issuing firm, as well as by existing stockholders (including private equity).

It is a well-known phenomenon in corporate finance that IPOs tend to be underpriced; that is, new shares tend to be offered by underwriters at a price that is below the price at which the financial market will begin trading the newly issued shares. Thus, once an offering price is set by the underwriters of the issue, any excess demand is resolved by quantity rationing rather than an adjustment of the offering price.[8] The issue of the underpricing of initial public offerings has generated a large research literature.[9]

Corporate finance theory has developed a number of models that explain the persistence of underpricing in the IPO market. These theories are generally based upon adverse selection

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[8] The severity of this rationing is indicated by Beatty and Ritter's (1986) observation that it is common for investors in the IPO market to be allocated less than five percent of their requested shares.

[9] Among the major early studies documenting the extent and persistence of underpricing of initial public offerings are Ibbotson (1975), Ibbotson and Jaffe (1975), and Ritter (1987). For example, Ritter (1987) reports that the average initial return (the percentage difference between the firm's market price and the offering price) is approximately 15% for firm commitment issues.

problems and investor ex ante uncertainty about firm value. For the purposes of this dissertation, which focuses on private equity and secondary stock issuance, the theoretical model that is of particular interest is that of Welch (1989).

His multi-period model is based on the assumption that owners/managers have better information than potential investors about the value of the firm, a characteristic that can usefully applied to the case of private equity because of its tight control of portfolio firms. This informational asymmetry creates an adverse selection problem that gives high-quality firms (and their private equity owners) an incentive to use an IPO to communicate the high quality of their information to outside investors. Welch argues that underpricing an IPO is a signal that allows high quality firms to distinguish themselves from low quality firms because of the costs incurred in underpricing.

Welch's model focuses on the possibility that the quality of a firm going public will be revealed through information that is released between the IPO and the decision to conduct a secondary equity offering. Thus, under certain conditions, it is not rational for low quality firms to mimic high quality firms by underpricing. As a result, there is a separating equilibrium in which it is optimal for only high quality firms to absorb the cost of underpricing at the IPO.

Assuming that an IPO will be underpriced, it then makes sense for a high quality company/sponsor to offer the relatively few shares needed to establish an efficient market price, allow the firm's performance to be observed by the public, and then sell more shares in a subsequent secondary offering. As a result, a private equity sponsor of a high quality firm can then return to the financial market and sell additional shares in a subsequent secondary offering after the (relatively liquid) market has established an appropriately high price for the shares. This reasoning relies on the proposition that over time the continuing information that is released by the firm after it becomes a public entity will reveal the true high quality of the firm.

In this view, high quality firms can be expected to retain a large proportion of ownership at the IPO, consistent with the earlier model of Leland and Pyle (1977), and will offer relatively

few (underpriced) shares at the IPO stage.[10] Instead, private equity prefers to sell more shares in subsequent seasoned offerings that reflect the (high) quality of the information that is released by the firm during the period between the IPO and the subsequent seasoned offering.

Moreover, the greater the length of this period between the IPO and the first secondary offering by private equity, the more accurately the firm's public share price will reflect the previously private (favorable) information held by private equity. Thus, Welch's model predicts that there should be a positive relation between the degree of underpricing at the IPO and the share price response to the subsequent seasoned offering at which insider shareholders sell shares, and also a positive effect of the length of the interval between the IPO and the secondary offering.

In contrast, Gale and Stiglitz (1989) develop an alternative IPO model along similar lines but one in which pooling equilibria consistently dominate the separating equilibria so that underpricing is not a means of signaling firm quality. Thus, underpricing will not influence the share price reaction to a subsequent seasoned equity offering, and low quality firms are identified over time by their willingness to undertake a seasoned equity offering. In this regard, the larger the offering the more negative this effect.

In Rock's (1986) model of the going public process, underpricing is not a signal of firm quality and manager/owners do not possess private information about firm value. Instead, in Rock's model there is an auction for the new shares in which uninformed investors face a winner's curse problem because of the presence of well-informed outside investors that results in uninformed investors systematically receiving a disproportionate share of overpriced IPOs. In this framework, underpricing compensates uninformed investors for losses they are expected to incur

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[10] Moreover, it can be argued that at the IPO stage, financial market participants are likely to be more suspicious of private equity selling than selling by founders. Typically, a large proportion of a founder's wealth is invested in the company, including considerable human capital if the founder is actively involved as a manager. This inefficient diversification could generate a severe underinvestment problem for the firm (Bauguess, Slovin, and Sushka (2012)). Thus, going public and selling personal shares permits these founders to diversify their wealth, reduce firm-specific risk, and mitigate an underinvestment problem for the firm, a rationale that is presumably well understood by participants in the market. However, this justification for selling shares in an IPO does not apply to the case of a private equity sponsor selling shares in an IPO since the limited partners of private equity sponsors can be presumed to be already well-diversified.

in this process. From this perspective, underpricing is not a signaling mechanism for managers/owners, and thus should have no effect on the share price reaction to a subsequent secondary equity issue.

Chapter 5

SAMPLE DEVELOPMENT AND DATA

5.1. Overview

In this chapter I discuss the collection of the data that underlies this research and I

provide descriptive statistics about the sample. Relevant methodologies used to test hypotheses

are discussed in each subsequent chapter that utilizes a given methodology.

5.2. Sample Development

One of the major difficulties of conducting research on private equity is that it is not easy

to identify buyouts by private equity and to collect relevant data in the area of private equity. In

part, this difficulty arises because of the secretive nature of private equity and the fact that, in

general, private equity is under no obligation to generate public reports about its participation in a

deal. This lack of a universal reporting requirement (in contrast to the strictures that are applied

to mutual fund activity) creates considerable uncertainty as to whether any given set of data

about private equity is representative of the full spectrum of private equity transactions. Thus, the

issue of selection bias problems is an important concern in almost all studies of private equity,

given this lack of uniform disclosure associated with private equity.

However, because this dissertation focuses on a specific public securities event, a

secondary offering of equity by a private equity sponsor, the potential for selection bias is

relatively limited. All follow-on secondary offerings of equity in the United States are governed by

the strict filing requirements imposed by the Securities and Exchange Act of 1934, as

administered by the SEC, which insures that all relevant offerings are available in the public

record together with required corporate data.

Given this filing requirement, the sample of secondary offerings by private equity firms is

constructed for the period from 1996 to 2013, using the Securities Data Corporation (SDC) Global

New Issues database. This source provides a listing of all secondary equity offerings by

registrant firms. Only the set of registrant firms that have returns at some point in their history on the CRSP (Center for Research in Security Prices) file are retained for further examination.

The SDC database also identifies each selling shareholder involved in the offering and it is a straightforward matter to eliminate the relatively large set of secondary offerings by individuals, operating corporations, foundations, and endowments, leaving the set of financial entities as the remaining set of sellers to examine further. Each offering and the character of the financial seller must be hand checked to eliminate any secondary offerings by hedge funds, asset managers, and other forms of financial institutions so that only private equity-type sponsors remain. Any secondary offering that was not undertaken by at least one private equity firm was eliminated.

Ownership and other relevant data for the registrant firms involved in secondary offerings by a blockholder are collected from registration statements and proxies filed with the SEC's database Edgar and Capital IQ. Registration statements contain detailed, definitive, information about the registrant firm and the selling shareholder, including its ownership stake before and after the offering. These sources also include information on the shareholdings of insiders other than the private equity group. Footnote data are used to evaluate the various relationships among the directors and managers to determine whether insiders are affiliated with the private equity group.

Other information sources for corporate and offering data are the Wall Street Journal, Standard and Poor's Stock Reports, Stock Guide, and Directory of Corporations, SEC filings, the National Stock Summary, and Lexis-Nexis. The announcement date is the initial public report of the secondary equity offering, which is often the date of the initial filing of the registration statement. SEC filing statements are also used to determine whether any of the shares being sold in the secondary offering are new shares being issued by the firm itself.

Thus, a portion of the sample consists of joint offerings in which the portfolio firm issues new shares via a primary offering that is simultaneous with the secondary offering by private equity. Unlike pure secondary offerings, joint offerings provide the firm with new external capital to pay down debt or to finance new investment or acquisitions. Thus, I obtain the use of

proceeds for the sub-set of joint offerings. In these offerings, both the newly issued shares and the existing shares of the selling shareholders are sold at the identical price (pursuant to securities law).

For a secondary offering to be included in the sample, the offering must meet the following criteria: One, the portfolio firm must be listed on the Center for Research in Security Prices (CRSP) file and have sufficient returns around the initial announcement date so that an event study can be conducted to determine the share price reaction. Two, the portfolio firm must be owned by private equity and the sellers of the stock must include a private equity firm. To ensure that the portfolio firm is private-equity backed, I search the description of the selling shareholders and determine their status using information contained in SEC filings and the particular private equity firm's website. For purposes of this study the private equity sponsor may be viewed as being either a buyout firm or a venture capital firm since in recent years private equity firms have made some investments that could be regarded as a form of venture capital, and some financial sponsors have become active in both private equity and venture capital.

To ensure that the equity offering is material and is brought to market (i.e., not withdrawn), I verify whether the ownership of the private equity sponsor in the portfolio firm falls after the issuance date reported in SDC. In addition, data are collected to determine the length of the period from the IPO to the date of the secondary offering and the overall period that the investment has been held by the private equity firm. Information is also collected as to whether the portfolio firm is ultimately taken over, merged with another firm, delisted from the exchange, or remains publicly traded (as of year-end 2014).

5.3. Descriptive Statistics

The full sample consists of 269 private-equity backed secondary offerings, and there are 196 first secondary issues after an IPO. The distribution of events over the sample period is shown in Panel A of Table 1. Three conclusions about such offerings are readily apparent from these data. One, there is a highly cyclical pattern of offerings that parallels the performance of the stock market over the sample period. The data indicate the difficulty of conducting secondary

offerings during a downturn in the stock market (such as the end of the dot.com boom) and the period of the financial crisis (that is, the years of the Lehman crisis).

Two, the use of secondary offerings as a form of exit by private equity is a relatively recent development, given that there were only seven such offerings prior to the year 2000. Three, the use of secondary offerings has increased rapidly in the last several years with 54 such offerings in the year 2013. Moreover, although the data for 2014 are not yet available, there is anecdotal evidence that 2014 will be a record year for such offerings.[11] The date also indicate that a broad range of industries is represented in the full sample, as indicated by the distribution of SIC codes reported in Panel B of Table 1.

Each of the relevant events is verified by hand, based on the details of the offerings, to insure that a secondary offering is legitimately a private equity event. Information is compiled about the identities of the selling private equity firms, including whether the sponsor is among the best known private equity firms (based on the *Private Equity International* list of notable private equity firms).

Panel A of Table 2 reports summary statistics of secondary equity offerings. Secondary equity offerings are large transactions. Mean (median) firm size is $3,014 ($1,400) million. The average (median) gross proceeds of secondary equity offerings is $242 ($149) million dollars. The average (median) ratio of the shares in the secondary offering to the shares outstanding of the portfolio firm is 14.9% (8.4%). Thus, the shares sold in the secondary offering typically represents a major component of the value of the firm.

In approximately one quarter of the sample the portfolio firm is also issuing new shares, with 73 out of the 269 (27%) offerings being joint offerings; that is, the portfolio company issues new primary shares simultaneously with the private equity sponsor selling some of its existing shares. In these cases the control position of the private equity sponsor falls as a result of both

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[11] See for example, "Private Equity: Optimism Replaces Years of Frustration," Forbes, April 1, 2014.

the secondary offering and the dilution of its remaining stake. On average, 86% of the shares offered in these offerings are offered by the private equity sponsor.

Data is collected to determine how long the investment (that is, the portfolio firm) has been publicly traded. One objective is to test whether there is a different share price effect on the registrant firm from a secondary offering when the investment has been publicly traded for a long period. In these cases the fund that legally owns the investment could well be reaching the end of its standard lifetime. From this perspective, a secondary equity offering may be an especially attractive method to liquidate the holding quickly in its entirety (without the need to search for a buyer of the firm or of the private equity interest as a whole), allowing it to sell the investment at a more attractive price relative to piecemeal sales of smaller blocks of stock. Results for tests as to whether the share price effect of a secondary offering announcement are affected by the length of the period that the investment has been publicly traded for a long period are reported in Chapter 7.

On average, the first secondary offering occurs 2.62 years after the private equity sponsor has conducted an IPO of the firm, and the median number of years is 1.64 years. This period is considerably longer than the standard lockup period of 180 days that applies to most IPO transactions. Thus, there is typically a relatively long period after the IPO in which private equity can be expected to have considerable control of the firm's activities. The length of this ownership period runs counter to the implication in the private equity literature that the IPO is a form of exit that occurs when private equity has completed the task of restructuring the firm. Instead, the data suggest that private equity firms continue to hold substantial stakes in these firms for a long period after the IPO.

For the sample of secondary offerings as a whole the average (median) time from the IPO to the secondary offering is 3.32 (2.27) years. Moreover, 62 out of a sample of 269 offerings occur more than five years after the IPO. This result in part reflects the paucity of offerings immediately after the Lehman crisis which had the effect of increasing the difficulty of conducting any type of securities offering. With respect to the IPOs of these portfolio firms, there is considerable underpricing, a phenomenon that applies to IPOs in general. The mean (median)

level of underpricing (first day return), measured as closing price on the first day of trade minus the offering price as a ratio to the offering price is 10.29% (9.26%).[12]

Relevant summary statistics about the ownership structure of registrant firms are reported in Panel B of Table 2. Prior to the offering for the sample as a whole, the average holding of the private equity blockholder is 37.90% of firm shares (median of 36.05%). Thus, the private equity firms are typically large shareholders both before and after a secondary offering. In 61cases the private equity sponsor either sells its entire stake in the portfolio firm and exits the ownership structure, or its ownership remains greater than zero but falls below 5% (nine cases), so that the reporting requirement ends, making it impossible to determine whether the remaining shares are retained or are quickly sold. In the remaining 199 cases private equity retains a 5% or greater holding after the offering.

Insider ownership by officers and directors (excluding private equity directors) averages 7.57% with a median holding of 2.85%, suggesting that in a substantial proportion of these firms, managers hold considerable amounts of their wealth in firm shares, one of the characteristics of private equity controlled firms. Thus, any change in share price generated by the private equity offering announcement can be expected to have a substantial impact on the personal wealth of managers and other insiders of the portfolio firm. Managerial holdings fall to an average of 6.06% (median of 2.33%) after the offering. When private equity holdings and shares held by insiders are taken together, it is apparent that the portfolio firms can be viewed as having a relatively concentrated ownership structure prior to the secondary offering.

In approximately one third of the sample the registrant firm is also issuing new shares with 73 secondary offerings being joint offerings; that is, the company issues new primary shares simultaneously with the private equity shareholders selling some of their existing shares, so the control position of the private equity firm falls as a result of both the secondary offering and the dilution of its remaining stake.

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[12] There is a voluminous literature on underpricing of IPOs, including studies of IPO underpricing in every major country of the world. For reference, Ibbotson, Sindelar and Ritter (1994) report underpricing of 15.8% for a large sample of IPOs in the U.S.

Information about the financial characteristics of portfolio firms around offering is reported in Table 3. The mean (median) value of firm revenue is $533.64 ($181.25**)** million dollars. The mean (median) of assets before the offering is $2507.75 ($930.15) million dollars. The mean (median) leverage ratio measured as total debt over market value is 0.49 (0.22), indicating relatively modest leverage for a private equity portfolio firm. The mean (median) return on assets is 12% (16%), suggesting that on average these relatively large firms are profitable.

Chapter 6

EVENT STUDY RESULTS

6.1. Valuation Effects of Secondary Offerings by Private Equity

In this chapter I report on the basic event study results for secondary offerings by private equity firms for both the full sample of secondary offerings and various subgroups of offerings. These univariate results generate a set of excess returns for the set of sample portfolio firms that capitalize the financial market's response to the announcement of a secondary offering by private equity sponsors. Overall, the observed changes in firm value at these announcements can be the result of expected changes in the future cash flows of the firm and to changes in the discount rate that the market applies to those cash flows.

The set of share price responses will be utilized in the cross-sectional regression work in the next chapter to analyze how various characteristics of the offerings, the portfolio firms, and the private equity sponsors affect the financial market's response to an announcement of a secondary equity offering. In Chapter 8, I analyze the pattern of subsequent operating performance of these firms to provide evidence as to whether the changes in firm value observed at secondary offering announcements can be reconciled with the pattern of their subsequent earnings performance.

Using the CRSP daily returns file, I use event study methodology to calculate average prediction errors and relevant t-statistics using the market model for portfolios of these firms surrounding the date of the first filing of the secondary offering with the SEC or the first published announcement of the intent to issue these securities.

In a well-known set of papers, Myers (1984) and Myers and Majluf (1984) demonstrate that information asymmetry between investors and managers can create an incentive for managers to issue seasoned equity when they believe the firm is overvalued. This adverse selection problem implies that there should be a negative valuation effect at announcements of seasoned common stock issuances. Miller and Rock (1985) argue along similar lines that equity issuance conveys unfavorable information held by managers about the firm's future cash flows.

Moreover, Lucas and McDonald (1990) argue that an undervalued firm has an incentive to postpone an equity offering until managers regard the shares as no longer underpriced, while a firm with overpriced shares has an incentive to issue new shares immediately as investment projects arise.

Consistent with this reasoning, Mikkelson and Partch (1986) find that equity issuance announcements occur after a period of positive and significant cumulative returns, suggesting that managers believe their shares to be overpriced. Moreover, Loughran and Ritter (1995, 1997) find that firms that conduct seasoned equity offerings display deteriorating operating performance in the period after a seasoned equity offering. This poor operating performance following strongly positive returns in the year leading up to the equity issuance is a pattern that suggests that managers time the equity issuance decision. Thus, market participants interpret an equity issuance announcement as conveying the information that the stock is overvalued and rationally reduce the price of the shares.

Given that private equity sponsors are generally in control of portfolio firms after they become publicly trade entities, they are in a position to influence and monitor all aspects of the firm's operations. As such, they are likely to be viewed by market participants as having considerable private information about their portfolio firms so this adverse selection perspective could also apply to announcements of secondary offerings conducted by private equity firms. From this perspective, if a secondary equity issuance by a firm controlled by private equity is a negative signal of firm value, the firm's share price will fall in response to the issuance announcement to reflect this adverse selection problem.

In contrast, Ambarish, John and Williams (1987) develop a signaling model that predicts a favorable share price reaction to seasoned equity issuance by high growth firms. This reasoning is consistent with the finding of Jung, Kim, and Stulz (1996) that high growth firms have more valuable investment opportunities than low growth firms. If some of the firms controlled by private equity are relatively high growth, high technology firms, then the share price reaction to the offering should be positive, especially if the markets believe these firms have valuable investment opportunities.

More specifically, if secondary equity issuance by a private equity sponsor and associated changes in ownership structure and liquidity facilitate the firm's access to market-based financing and reduce the cost of capital, then there should be a favorable share price assuming that the market anticipates that the firm will be able to pursue growth opportunities that would not be undertaken if the firm were still to be controlled by private equity with its concentrated ownership and its short term concern about obtaining an exit. In this view the continuing ownership by private equity generates a potential underinvestment problem because of a difference in investment horizon that is rectified by the exit of private equity and the shift to a more dispersed ownership structure and a more liquid trading environment.

Finally, there are two arguments to be made as to why the market response of zero might be observed. First, it is possible that the subsequent exit by private equity could be fully anticipated by the financial market either at the time of the IPO or during the period after the IPO and prior to the expiration of the lockup associated with the IPO. If this is the case, the result could be that no share price effect is observed when the secondary offering is actually announced.

Alternatively, a zero share price response could apply at news of a secondary offering by private equity because the capital market might view the private equity sponsor as having built up sufficient reputational capital through repeated activity in selling shares to the public so as to assure investors who participate in the secondary offering that the equity being sold is not overvalued. In effect, the private equity sponsor has certified that the restructuring of the portfolio firm is complete and that its future success is assured. From this perspective, the sale of the sponsor held shares intrinsic to the secondary offering reflects the approaching end of the limited partnership that holds the firm's ownership, so that the limited partners in the fund will be able to recover their capital plus any profits and gauge the ultimate return to their investment.

Although there are no previous studies of secondary offerings by private equity, there are numerous empirical studies on primary seasoned equity issuance. These studies, which provide a useful benchmark, consistently document that there are negative share price reactions to these announcements. Mikkelson and Partch (1986), Asquith and Mullins (1986), and Masulis and

Korwar (1986) among others consistently find average excess returns of approximately –3% to –4% at such announcements, and Mikkelson and Partch (1985) and Asquith and Mullins (1986) report similar negative share price effects for samples of secondary offerings. They ascribe these results to the importance of adverse selection for the preponderance of equity offerings.

For my sample of secondary offerings by private equity, I generate market model event study returns, both means and medians with relevant statistical confidence tests, and proportion of returns negative for firms, at the initial announcement of the secondary offering. These results are reported in Table 4. More specifically, excess returns are obtained using the market model, where day 0 is the initial announcement, the pre-event estimation period is -160 to - 41, and the CRSP value-weighted index is used as the market return. The major results reported throughout this chapter are robust with respect to alternative event study methods, including multi-factor models and use of various estimation periods.

For the full sample of 269 secondary offerings the three-day average excess return is -1.94% (significant at the 1% confidence level given a t-statistic of -6.10) and the median return is similar, -2.14% (p<0.01). The percentage of returns negative is 74%, and the distribution of returns by deciles indicates that the average excess return is not the result of outliers. Thus, secondary offerings by private equity generate a negative average excess return that is somewhat smaller than the 3% to 3.5% returns observed at announcements of seasoned equity issuance by industrial firms, as documented in Mikkelson and Partch (1986), Asquith and Mullins (1986), and Masulis and Korwar (1986).

Using previous results for industrial firms serves as a more appropriate benchmark for event study comparisons rather than the full samples of offerings reported in the previous literature because excess returns for equity issues by industrial firms have been shown to be more unfavorable than the returns for utilities and other regulated firms, given that no utilities are included in the sample of private equity secondary offerings. The more favorable returns for utility offerings are presumed to reflect the greater predictability of offerings by utilities and the less severe potential for asymmetric information that applies to utilities, reflecting the important of governmental regulation for this sector of the economy (Asquith and Mullins (1986) and Masulis

and Korwar (1986)). From this perspective, the basic event study results suggest that secondary offerings by private equity sponsors reduce firm value, but do so to a somewhat smaller degree than primary seasoned equity offerings conducted by industrial firms that are not controlled by private equity.

Overall, the negative announcement returns suggest that corporate secondary equity offerings convey negative information about registrant firm value. Thus, on average, any potential benefits expected to ensue to the portfolio firm from the offering, such as through improved liquidity and a more dispersed ownership structure, are not sufficient to offset the negative information effect of the private equity firm's decision to dissolve or reduce its ownership interest.

Previous studies of securities issuance report that there are significant positive cumulative excess returns for the run-up period preceding announcements of primary seasoned equity issues. For example, Mikkelson and Partch (1986) report a cumulative return of 7.6% for the 60 days prior to announcement. A pattern of strongly positive cumulative excess returns also applies to the period prior to announcements of secondary equity offering by private equity, as reported in the table. Each run-up period shows large cumulative average excess returns: for the eight week run-up (-40 to-2) the cumulative average return is 7.30% (t-statistic = 5.90), for the twelve week run-up (-60 to-2) the cumulative average return is 10.52% (t-statistic = 6.32), and for the six month run-up (-120 to -2) the cumulative average return is 16.90% (t-statistic = 5.59), each highly significant. Thus, over each prior period the cumulative average excess return is significantly positive, with a clear pattern that the longer the window examined prior to the announcement, the greater the cumulative returns sustained by the portfolio firm. Thus, the evidence suggests that private equity sponsors announce secondary offerings after a period in which the portfolio firm's shares have significantly outperformed the market and thus may be overpriced.

The subsequent post-event returns are also reported in the table. The results indicate that the share price response in the period immediately after the offering is close to zero and is not statistically significant for the four weeks immediately after the announcement. This result

suggests that there is no evidence that the financial market either under responds or over responds to the news of these offerings by private equity. However, subsequent to this period, the cumulative post-event return becomes modestly positive. Thus, there is some weak evidence that the portfolio firm's shares slightly outperform the market for the two month period after the secondary offering. More detailed longer run buy and hold returns after secondary stock offerings by private equity, together with subsequent operating performance results for portfolio firms are reported in Chapter 8.

The strength of the prior returns for firms that sustain secondary offerings by private equity is broadly consistent with the Lucas and McDonald (1990) argument that an undervalued firm has an incentive to postpone an equity offering until managers regard the shares as no longer underpriced, while a firm with overpriced shares has an incentive to conduct an offering immediately. That this pattern applies to secondary offerings by private equity as well is not surprising since it can be expected the private equity sponsor is very well informed about the firm's prospects and its investment projects.

The superior stock price performance for a lengthy period prior to the secondary offering runs counter to the conclusion of DeGeorge and Zeckhauser (1993) that the decision to conduct an IPO for a portfolio firm coincides with a peak in the firm's performance, so that private equity firms engage in timing the IPO and performance deteriorates after the IPO. Although de George and Zeckhauser apply their argument to IPOs, it is readily apparent that private equity sponsors typically do not sell much of their stake in the IPO of a portfolio firm, and wait to sell their stake later through a secondary offering. Thus, the evidence about secondary offerings can be re-interpreted as being consistent with the general conclusion of DeGeorge and Zeckhauser if the private equity sponsor's exit from a buyout is shifted toward the secondary offering by private equity rather than the IPO of the portfolio firm.

More specifically, the combination of negative announcement returns for the offering after a long period of strongly positive prior excess returns could be viewed as an indication that private equity sponsors time their exit with respect to the secondary offering (in which a large block of shares is sold by private equity) rather than with respect to the IPO (where the private

equity sponsor typically limits any selling). However, the presence of modestly positive excess returns subsequent to the offering, runs counter to the de George and Zeckhuser argument, because the magnitude of the positive returns is modest. These modest returns can be interpreted as simply suggesting that either the market appropriately adjusts returns at the offering announcement or the evolution of the subsequent news reported about the firm is more positive than market participants had expected.

The full pattern of the results is also consistent with the broad framework that Welch (1989) applies in his analysis of the market for IPOs. In his view, the central focus of the founder or entrepreneur is on subsequent equity offerings (such as secondary offerings) as the means of exit for owners of high quality firms (a view that in turn be viewed as a generalization of the Leland and Pyle (1977) theory of owner retention of shares in an IPO). In the Welch model, a founder of a high quality firm sells little if any of the ownership in the firm in the IPO and also engages in substantial underpricing of the IPO to signal the high quality of the firm. Such an owner prefers to sell his shares in subsequent secondary offerings after the firm is public and avoids pooling with low quality firms at the IPO stage. The high quality of the firm will be established by the continuing flow of favorable information (for example, earnings) that occurs after the firm becomes public. The founder can then sell shares at an appropriately higher price through secondary offerings.

6.2. Valuation Effects of Disaggregated Samples

Event study results reported for several subsamples to provide further insight about the share price response to secondary offerings. I first examine whether the share price response is sensitive to whether it is the first secondary offering conducted by the private equity firm, because it is possible that a first secondary offering may not be as well anticipated by market participants as subsequent secondary offerings. There are 196 offerings that represent the first secondary offering by the private equity sponsor. Thus, this sample consists of one offering for each firm in the sample.

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The average excess return, reported in Table 5, is -1.94% (t-statistic of -5.07), which is essentially identical to the return for the full sample. A similar finding applies to the median return, -2.17% (p < 0.01) which is essentially identical to the median return for the full sample. Moreover, the pattern of prior cumulative returns for first offerings is almost identical to that of the sample as a whole, and the share price response in the period immediately after the offering is close to zero and is not statistically significant for either the four week or eight week period after the announcement. Overall, the evidence indicates that the first offering by a private equity firm does not have a stronger effect on portfolio firm value, suggesting that there is no evidence that the financial market is better able to anticipate the timing of subsequent secondary offerings than first offerings.

There are 73 cases in which the news of the secondary offering by private equity indicates that the portfolio firm will simultaneously issue new primary shares for cash. The issuance of new shares by the portfolio firm occurs at the same offering price as the existing shares sold by the private equity firm, to be consistent with standard practices that are employed in firm commitment equity offerings in the United States.[13] These joint offerings, unlike pure secondary offerings, include an element of external corporate financing.

The Myers and Majluf (1984) approach to equity issuance is based on a pecking order approach to corporate financing in which firms in need of financing prefer internal financing to external financing, and when external funds are required, the firm issues the safest security (i.e., debt) first since investors that acquire the firm's debt are less exposed to errors in valuing the firm. Thus, value maximizing managers will avoid issuing new equity in an environment in which they have better information than outside investors and will choose not to have the firm issue new primary shares at a point in time chosen by the private equity sponsor. From this perspective portfolio firms that choose to issue new equity do so as a last resort. Thus, the announcement of

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[13] Under the Securities Act of 1933 and the Securities and Exchange Act of 1934, an underwriter of a fixed priced securities offering cannot sell shares for any price other than the specified offering price. Because the offering price is explicitly stated in the registration statement and in the prospectus, it would be illegal to sell any shares that are part of the offering at any other price.

a primary stock issue jointly with a secondary sale by the private equity firm should reduce the portfolio firm's share price to greater degree than a pure secondary offering by private equity.

For the announcements that represent joint offerings of existing shares by the private equity sponsor and new shares by the portfolio firm, the average excess return is -2.76% (t-statistic of -3.66), as reported in Table 6. Joint offerings are predominantly first offerings (61 of the 73 joint offerings are first offerings). This return is more unfavorable, -1.64% (t-statistic of -4.80), than the return of for the cases of pure secondary offerings (not reported in the table). This difference is suggestive of a more negative effect of joint offerings, although the difference is not statistically significant (calculated t-value of 1.43). A similar result applies to the difference in median returns (p=0.28).

Moreover, the cumulative excess returns for the period prior to the announcement are very strongly positive for joint offerings. For example, the one month run-up (-20,-2) is 9.05% (t-statistic = 4.62), the three month run-up (-60, -2) is 20.99% (t-statistic = 5.82) and the six month cumulative excess returns for these firms is 34.90% (t-statistic = 5.03).   Thus, this evidence suggests that firm managers conduct primary offerings (jointly with the private equity sponsor) after a period in which the firm's share price has had a very sharp run-up in share prices over a considerable period.

In Table 7, I report excess returns for portfolio firms at secondary offerings by private equity sponsors disaggregated by several characteristics. In the Myers and Majluf asymmetric information model, the fall in price in response to equity issues can be expected to depend on the value of the firm's growth opportunities versus its assets in place. More specifically, high quality firms whose assets in place are undervalued will desist from issuing such new equity even if this decision implies that the firm will have to pass on a positive net present value opportunity. From this perspective high technology firms have greater growth opportunities and thus should be more credible issuers of equity since the market's concern about misvaluation centers on asset in place. However, it is also possible that the informational asymmetry between insiders and outsiders is greater for high technology firms, implying a more unfavorable effect for high technology firms.

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Among the sample of secondary offerings by private equity there are 19 high technology firms. This low proportion of high technology firms (7%) in the sample is consistent with prior evidence (e.g. Lehn and Poulsen (1989) and Opler and Titman (1993)) that targets of private equity buyouts tend to have a combination of high cash flow and low research and development expenditures. For the sample of secondary offerings by private equity sponsors of high tech portfolio firms, the average excess return is -4.64% (t-statistic of -3.46), which is more unfavorable that the return of -1.73% (t-statistic of -5.36) for the 250 remaining firms in the sample, a difference that is statistically significant (calculated t-value of 2.37). This result indicates that there is a more negative effect of secondary offerings at high tech firms. A similar result applies to the difference in median returns (p=0.07). These results are inconsistent with the Ambarish, John and Williams (1987) signaling model that predicts a favorable share price reaction to seasoned equity issuance by high growth firms. Instead, I conclude that the severity of the asymmetric information problem at these firms outweighs the benefit of having greater growth opportunities.

Traditionally, IPOs could not meet the minimum listing requirements on NYSE. However, in 1983 the NYSE amended its rules to allow underwriters of IPOs to certify that a firm conducting such an offering could meet and maintain its listing requirements. Since that date, the two exchanges have competed for new listings. Prior literature suggests a NYSE listing is associated with greater stock liquidity, conveys positive information about the firm, and increases investor recognition (Sanger and McConnell (1986), Grammatikos and Papaioannou (1986), and Kadlec and McConnell (1994)). To the extent that the NYSE may provide an element of certification of firm quality and serve as a substitute for other forms of certification, private equity sponsors may prefer a listing on NYSE for their high quality firms. Thus, this listing effect could have an impact on the share response to a secondary offering by a private equity sponsor. To test for such an effect, I disaggregate the sample according to whether the portfolio firm is listed on NYSE.

For the 156 secondary offerings by private equity sponsors of NYSE-listed firms, the average excess return is -2.05% (t-statistic of -5.36), which is similar to the return of -1.78% (t-statistic of -3.25) for the 113 remaining firms in the sample. This difference is not statistically

significant (calculated t-value of 0.46) and a similar result applies to the difference in median

returns (p=0.88). Thus, there is no evidence that the share price response to a private equity

secondary offering incorporates a certification effect for a NYSE listing.

Various studies in finance have argued that high quality auditors, banks, and other

institutions use their reputational capital to monitor and certify firms. For example, there is a

considerable literature that argues that banking intermediaries play an important role in

countering adverse selection problems, including those associated with the issuance of

securities. Diamond (1984, 1989), Ramakrishnan and Thakor (1984), Sharpe (1990), and Rajan

(1992) argue that banking entities have a comparative advantage at collecting private information,

monitoring firm activities, and controlling corporate decisions. Moreover, this advantage can lead

to a certification effect in the case of securities issuance (James and Weir (1990), Slovin, Sushka,

and Hudson (1990), and Puri (1996)).

In this approach to financing activities, non-salvageable capital at risk for these

institutions gives these monitors a strong incentive not to break implicit contracts which gives their

monitoring a high degree of credibility. As a result, financial market participants use the presence

of such reputational capital as a factor in assessing the appropriate share price response to

corporate actions, especially those that are subject to adverse selection problems such as equity

issuance.

In this regard, private equity sponsors engage in repeated fund raising with respect to

limited partners and can be expected to sustain losses in future funding from failing to carry out

the process of monitoring their investments in a way that benefits their limited partners and

various agents that interact with portfolio firms. This reputational capital gives a high quality

private equity sponsor the incentive to monitor its portfolio firms and to generate improvements in

their operating performance. From this perspective, the reputational capital of private equity

sponsors helps to certify the activities of their portfolio firms and the quality of the firm's managers

so as to mitigate ex ante uncertainty about the firm. As a result, the loss of a highly valued

monitor that is implied by the dissolution of a large blockholding held by the private equity

sponsor can be expected to harm shareholder value and the higher the reputation of the monitor

the greater the loss in certification value associated with an equity offering, with a greater loss in firm value in response to a secondary offering of equity by a high reputation private equity sponsor.

Alternatively, these reputation based models can also be used to argue that high reputation private equity groups with well-established track records will find it more costly to engage in selling seasoned equity that is overpriced based on their private information about the firm's future performance. Eventually this private information about the firm will be released in the form of subsequent corporate earnings and other corporate announcements, so investors who acquire the shares sold by high quality private equity sponsors in a secondary offering will expect that there will be continuing, permanent improvements in operating performance at such portfolio firms. These private equity sponsors can be expected to engage in repeated equity issuance activities, including both IPOs and secondary offering activity in the future, providing a basis for strengthening (or weakening) their reputational capital over time.

Kaplan and Schoar (2005) find that private equity performance persists over time so that more experienced funds perform better than new funds, consistent with reputation building. Similarly, Phalippou and Gottschlag (2009) find that and inexperienced funds generate significantly lower performance for their investors after controlling for risk factors and business cycle variables. As a result, a private equity group's reputation may be a reliable indicator of its skill in selecting, restructuring, and monitoring target companies. If this behavior occurs, investors will be more willing to acquire the shares being sold by a high reputation sponsor in a secondary offering at the current market price or at less of a discount to the current market price, relative to the offerings of private equity sponsors of lower reputation. Thus, investors will expect better post-secondary offering performance for portfolio firms of high reputation private equity sponsors relative to those conducted by lesser known private equity sponsors.

As such, private equity sponsors can be viewed as certifying that portfolio firms will continue to be successful with the less concentrated ownership structure that they will have after secondary offerings that allow the private equity sponsor to sell shares. If so, this certification of future performance by high reputation private equity sponsors can mitigate the adverse selection

problem associated with an equity offering, lessening the share price response to a secondary

offering relative to a private equity sponsor with lesser reputation.

To determine whether differences in private equity reputation affect the share price

response, the sample of secondary offerings is disaggregated in accordance with whether the

sponsoring private equity group is a well-known, high reputation private equity entity. For this

determination I use the list of notable private equity firms generated by Private Equity

International. Among the sample of secondary offerings there are 117 offerings by these notable

private equity firms. For these offerings, the average excess return is -2.69% (t-statistic of -5.18),

which is more unfavorable than the return of -1.41% (t-statistic of -3.52) for the 152 cases of

secondary offerings by private equity firms that are not on the list of notable firms. This difference

is suggestive of a more negative effect of offerings by notable private equity firms, and the

difference is statistically significant at the 10% level (calculated t-value of 1.93). A less significant

result applies to the difference in median returns (p=0.15).

Overall, these results suggest that the financial market reduces firm value more severely

when a notable private equity firm dissolves some of its ownership in a portfolio firm. As such,

this evidence suggests that the loss of the monitoring services provided by high reputation private

equity firms outweighs the potential certification effect about future firm performance that could be

associated with a high reputation private equity firm.

Finally, to ascertain whether the size of the private equity blockholding that remains after

the offering is completed influences the valuation effect of the secondary offering, I disaggregate

the sample into ownership ranges. If the monitoring provided by private equity sponsors aligns

interests, then the loss of monitoring services provided by private equity should be a key element

of the valuation effect of a secondary offering by private equity. Assuming that the incentive to

monitor is positively associated with the size of the blockholding of private equity, then there

should be a more modest loss in value for a secondary offering when the private equity sponsor

will still have a large post-offering stake in the portfolio firm.

The pattern of the results reported in Table 8 indicates that there are statistically

significant negative excess returns throughout the ownership ranges that private equity will hold

upon completion of the offering. Nevertheless, there is some evidence that the share price effect is less unfavorable when a large block of shares remains in the hands of private equity subsequent to the offer.

More specifically, for the 107 secondary offerings that leave the private equity sponsor with 25% or more of the portfolio firm's shares, a holding that is likely to be associated with a strong degree of continuing control for private equity, the announcement return is -1.60% (t-value = -3.53). In comparison for the 163 offerings that leave the private equity sponsor with less than 25% ownership the announcement return is -2.16% (t-value = -4.98). Similarly, there are 92 offerings that leave the private equity sponsor with greater than 5% but less than 25% of firm shares, still an important stake in the portfolio firm, the average share price response is -2.03% (t-value = -4.10).

Finally, there are 61 secondary offerings in which the private equity sponsor ends all monitoring of the firm's activities because there is a complete and immediate exit via the offering so that fewer than 5% of firm shares are held by the private equity firm after the offering. For this group of firms there is a negative excess return of -2.28% (t-value = -2.95), a further indication of the extent to which exit transactions reduce firm value.

This general pattern of somewhat more unfavorable returns for transactions that leave less of a stake for private equity is suggestive of the beneficial effect to the portfolio firm when private equity retains an influence over its activities. Nevertheless, differences in means tests between the various ranges of ownership generate calculated t-values that uniformly fall short of statistical significance at the usual confidence levels.   Thus, I defer the resolution of the issue of the effect of the size of the private equity block that remains after the secondary offering to the next chapter and the estimation of cross-sectional regression results which affords an opportunity to estimate the effects of such factors in a multivariate framework.

Chapter 7

CROSS-SECTIONAL REGRESSION ANALYSIS

7.1. Overview

In this chapter I estimate cross-sectional regressions as a means of analyzing how various aspects of the offering, the portfolio firm, and the private equity sponsor influence the share price response to the announcement of a secondary offering. These regressions can be used to test various hypotheses about the relationship between these variables and portfolio firm value. Regression analysis is used to evaluate the relations among the variables, taking into account continuous variables (such as measures of liquidity) that are not readily susceptible to event study analysis. In each regressions, the dependent variable is the set of the three-day excess returns to the portfolio firms at secondary offerings by private equity sponsors.

Regression results are reported for both the full sample of secondary equity offerings by private equity sponsors, reported in Table 9, and for first secondary equity offerings by private equity sponsors, reported in Table 10. Each of the full sample regressions incorporates a qualitative variable that indicates a first secondary equity offerings by the private equity sponsor to assess whether this differentiation is associated with a different level of share price response. Consistent with the event study results reported in the previous chapter, this qualitative variable for first secondary equity offerings consistently obtains a small coefficient that is not statistically significant, indicating that there is no significant difference between the share price reactions of first versus subsequent secondary offerings by private equity. Thus, secondary offerings by private equity have a significant negative effect on value irrespective of their sequencing.

7.2. Results for Pure and Joint Secondary Offerings

As noted earlier in Chapter 6, there are 72 cases in the sample where news of the secondary offering indicates that the portfolio firm will simultaneously issue new primary shares for cash. The issuance of new shares by the portfolio firm occurs at the same offering price to capital market investors as the shares sold by the private equity firm to be consistent with

standard practices employed in firm commitment equity offerings in the United States. These

offerings, unlike pure secondary offerings, are a form of external corporate financing for the

portfolio firm. The Myers and Majluf (1984) model leads to a pecking order approach to corporate

financing in which firms in need of project financing prefer internal financing to external financing,

and when external funds are required, prefer to issue the safest security (i.e., debt) first since

investors that acquire the firm's debt are less exposed to errors in valuing the firm. Thus, value

maximizing managers will avoid issuing new equity in an environment in which they have better

information than outside investors.

From this perspective since portfolio firms issue new equity as a last resort the

announcement of a primary stock issue jointly with a secondary sale by the private equity firm

should reduce the portfolio firm's share price to greater degree than a pure secondary offering.

The issuance of new shares not only provides new capital to the firm, but it also implies that the

holdings of the private equity firm that remain after the offering will sustain some dilution because

of the associated increase in outstanding shares. In the disaggregated event study findings, the

average excess return for announcements of joint offerings are more unfavorable than for pure

secondary offerings, suggesting that there is a more negative effect on shareholder value when

the portfolio firm raises equity capital while the private equity sponsor is selling shares. This

result is consistent with the Myers and Majluf (1984) approach to firm valuation since the firm has

an incentive to issue new shares when managers possess information that suggests capital

market overvaluation of the firm.

Given the event study finding, I specify variables in the regression to reflect the nature of

these joint offerings. First, I include a qualitative variable to indicate such a joint offering.

Second, I include qualitative variables to reflect the use of proceeds that applies to these joint

offerings. This information is based upon the fact that the management of the portfolio firm is

required to provide information in its registration statements about its intended use of the

proceeds of the stock offering.

Almost all firms utilize the broad description of general corporate purposes in any

securities filings, but SEC requirements are generally interpreted as requiring that a firm that

conducts an equity issue should provide more information than this catchall description. The

disclosure requirements about the use of proceeds have resulted from a series of case

precedents that the SEC has used to give specific content to the general disclosure requirements

of the Securities and Exchange Act. Such a requirement does not apply to the case of a pure

secondary offering since the portfolio firm receives no proceeds; the registrant firm must simply

state that it will receive no proceeds from the secondary offering. For each joint offerings,

qualitative variables are used to indicate each use of proceeds to assess whether alternative

decisions about the intended use of proceeds affect the share price response to the secondary

offering.

The results suggest that the joint offering variable typically has a negative sign, and the

coefficients are typically statistically significant or close to being statistically significant. Most of

the specific uses of proceeds have little effect, including a variable indicating that the firm is to

use the proceeds to pay down debt.

The notable exception is the qualitative variable that indicates the firm's intent to utilize

the proceeds to acquire assets that are complementary to the firm's activities. This variable is

strongly positive and statistically significant. The positive effect when a firm intends to use the

proceeds to conduct acquisitions is contrary to theories such as the hubris hypothesis of Roll

(1986) which argues that acquisitions are unlikely to add value because of the tendency of

managers to overbid for target firms. Instead, the regression results suggest that the willingness

of a portfolio firm that is monitored by private equity to raise new capital to conduct acquisitions of

related assets counters the negative signal associated with the raising of equity capital.

For these firms using proceeds for acquisitions, it is also possible that the market

interprets the external capital raising as part of a plan initiated by the private equity sponsor to

generate consolidation in the industry. Given this result, I also conducted an event study of joint

offerings, disaggregating those offerings in which acquisitions is listed in the use of proceeds

section versus those offerings that do not list acquisitions as a use of proceeds (not reported in

the tables). For the 47 announcements that represent joint offerings in which acquisitions is listed

in the use of proceeds, the average excess return is -1.59% (t-statistic of -1.75). For joint

offerings that do not list acquisitions in the use of proceeds (N=22), the return is more

unfavorable, -4.86% (t-statistic of -3.45). This difference is consistent with the cross-section

results and indicates the extent to which the negative effect of joint offerings largely applies to

those offerings where the firm is not raising capital for acquisitions.

Private equity activity that is focused on consolidating assets within an industry is referred

to as a rollup. A roll-up occurs when private equity firms acquire companies in the same market

or industry and consolidate them together. Roll-ups can be used to combine multiple small

companies into a larger entity that is better able to enjoy economies of scale. Private equity firms

have traditionally used roll-ups to rationalize competition in crowded or fragmented markets and

to combine various companies with complementary capabilities into a broader business that

would have greater potential for sustaining a competitive advantage through operating

enhancements or more effective marketing. The regression results suggest that the market may

anticipate that this type of activity will be conducted after the secondary equity offering and will

contribute to value.

7.3. Effects of Firm Characteristics

Several variables that reflect characteristics of the portfolio firm are specified. Previous

studies (e.g., Mikkleson and Partch (1986)) conclude that firms tend to conduct primary seasoned

stock issues following a period in which there is an increase in adjusted stock prices, a finding

that is consistent with the conjecture of Lucas and McDonald (1990) that an undervalued firm has

an incentive to postpone an equity offering until managers regard the shares as no longer

underpriced, while a firm with overpriced shares has an incentive to issue new shares

immediately. Because of the close link between private equity sponsors and their portfolio firm, it

is natural to assess whether the same relation applies to secondary offerings by private equity.

The event study results reported in the previous chapter suggest that there is a pattern of strongly

positive cumulative share price returns prior to secondary offerings by private equity sponsors,

comparable to that found for primary seasoned offerings.

To ascertain whether this market timing effect has an impact on the share price reaction, I specify the cumulative excess return for the firm's shares for the six weeks prior to the offering announcement as an independent variable in each regression. The results consistently indicate a negative effect in the regressions for both full sample of offerings and for the first offering sample. Thus, the greater the cumulative run-up in the firm's share price prior to the announcement, the more unfavorable the share price response to the secondary offering, consistent with hypothesis that there is an incentive for private equity blockholders in a firm with overpriced shares to conduct a secondary offering.

Numerous studies argue that an increase in the severity of asymmetric information increases the value of monitoring, implying a greater value to the type of intensive monitoring provided by a private equity sponsor. For example, Linck, Netter, and Yang (2008) find that information asymmetry, as gauged by high growth opportunities, high R&D expenditures, and high stock return volatility, is important for boards that they describe as more advising intensive. Similarly, Coles, Daniel, and Naveen (2008) find that insiders are valuable in high R&D firms, where their firm-specific private information is important.

This reasoning implies that the dissolution of a private equity blockholding by means of a secondary offering would be more deleterious for firms with high R&D or higher levels of firm-specific information, implying a negative coefficient for such variables. This viewpoint assumes that private equity sponsors, and more specifically their carefully chosen representatives on the board, are engaged in careful and effective monitoring of the firm's management and business activities, as well as having important investment skills, so the dissolution of their blockholding will be more deleterious for such firms.

In contrast, some researchers such as Adams and Ferreira (2007) argue that more intensive (active) monitoring by the board of directors (such as that provided by a private equity firm) may harm value for firms where there is extensive private information. Their theoretical model focuses on the tradeoffs between the board's monitoring and advising functions. They assume that the type of active monitoring that is characteristic of a public firm controlled by private equity will generate a reduced willingness of managers to provide information to board,

harming firm value. If the sale of a large block of shares held by private equity is a form of commitment to a lower degree of monitoring (which also lowers the probability that the CEO will be terminated), then it can result in greater information sharing by the CEO. As a result, a more management-friendly board could enhance the effectiveness of managerial decision-making with respect to the selection of risky projects.

In this context, an active monitoring board is more harmful than a more passive board that allows managerial initiative to create more firm value by allowing the firm to undertake some more risky positive net present value projects that would be rejected in the presence of an active monitoring board. From this perspective, private equity's exiting from the firm's ownership structure will be more beneficial for these risky, high asymmetric information firms relative to less risky firms. This theoretical reasoning implies a positive regression coefficient for metrics of asymmetric information.

To test between these hypotheses, I test variables that proxy asymmetric information as a potential determinant of the share price effect of the dissolution of the blockholding of a private equity sponsor through a secondary offering. I specify a qualitative variable for firms in the high tech sector, on the assumption that these are relatively risky firms where private information problems are especially important. As noted in the event study chapter these firms account for a relatively small proportion of the sample, consistent with the fact that private equity tends to focus its investment activities on mature industries with relatively stable cash flows (such as manufacturing and retailing) rather than firms that have considerable research and development expenditures.

I also specify a quantitative variable, the standard deviation of the idiosyncratic risk associated with the firm's shares, obtained from the regressions used to conduct the event study analysis. This quantitative variable serves as a metric for the risk and asymmetric information of the portfolio firm and can be obtained for the entire sample of offerings.

The regression results indicate that both variables obtain coefficients that are consistently negative, but only the high technology variable is statistically significant. As a whole, this result suggests that the greater the degree of private information at the portfolio firm, the more

unfavorable the share price effect of a secondary offering by private equity, indicating that the market ascribes a greater loss in value when private equity exits from a firm with greater asymmetric information.

7.4. Effects of Liquidity

Several studies have found evidence that liquidity is a priced factor in the cross section of returns (e.g. Pastor and Stambaugh (2003)), so liquidity could be a factor that influences how the financial market responds to news of a secondary offering by private equity. More broadly, as discussed in Chapter 4, the corporate finance literature provides considerable evidence that greater stock liquidity is beneficial to a firm for reasons that pertain to more effective monitoring and governance.

More specifically, greater liquidity generated by the dissolution of a PE blockholding could have the following effects. One, it increases the power of corporate governance by allowing new large shareholders to enter (and then exit) more easily. Two, it facilitates the entrance of smaller informed traders who produce valuable information about the firm that becomes reflected in stock prices. Three, it enhances the effectiveness of tying managerial compensation to market-based metrics by increasing the informativeness of prices. Four, it reduces the cost of equity capital to the firm and thus lower the discount rate applied to corporate cash flows. Five, it mitigates trading frictions that all investors face when they are trading in the market.

Based on this literature that examines the role of stock liquidity in corporate monitoring and governance, by analyzing the effect of a firm's liquidity on the share price response to a secondary offering by private equity. I specify in the regressions a stock liquidity metric that can be constructed with data on CRSP, which reports daily trading volume for all of the portfolio firms in the sample. The metric of ex ante liquidity that I utilize is the Amihud illiquidity measure, which is a measure of price impact over a sample period. It is measured over the three month period prior to the month of the offering announcement, where the offering month is excluded from the calculations.

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The Amihud variable for the liquidity of the firm's shares is consistently negative and highly significant, suggesting that the greater the ex ante illiquidity of the firm's shares, the more unfavorable the ceteris paribus effect on shareholder wealth at news of a sale of shares by private equity through a secondary offering. This evidence suggests that the loss in value at a secondary offering is negatively related to the stock liquidity of the portfolio firm, so illiquidity harms value. Assuming that the financial market regards the private equity sponsor as a valuable monitor, this evidence suggests that the value of the private equity blockholder is negatively related to the liquidity of the firm's shares. This result also implies that there is likely to some substitution between share liquidity and blockholder monitoring, an approach that underlies trading-based models of passive monitoring (e.g., Edmans and Manso (2011)).

Alternatively, this strongly negative impact of ex ante liquidity can be interpreted as supporting Kahn and Winton's (1998) contention that greater stock liquidity lessens the incentive of large shareholders (such as a private equity sponsor) to actively monitor the firm's activities and apply pressure to underperforming managers. In effect, in this view a large shareholder in a highly liquid firm can more easily trade on its private information rather than having a need to actively intervene in managerial activities. However, this interpretation is less likely to apply to the case of a private equity sponsor because the very structure of private equity is designed to provide powerful incentives to closely monitor the firm's activities rather than engaging in the trading of shares.

Underwriters of secondary equity offerings typically sell most of the offered shares to institutional clients, implying that institutional ownership can be expected to increase substantially as a result of the large size of these offerings relative to the shares outstanding. As a result, there is likely to be an important improvement in share liquidity after a secondary offering as the large private equity-held block is transferred to financial institutions. To the extent that this improvement in liquidity and the increase in institutional holdings are likely to be both valuable to financial market participants and highly predictable, the associated gain in shareholder wealth should be capitalized by the market at the initial announcement of the offering. Thus, the change

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in liquidity, using the Amihud measure of illiquidity, and the change in institutional holdings as a proportion of total shares outstanding are specified as independent variables in the regressions.

The coefficient of the change in illiquidity is consistently negative and significant, indicating that the subsequent decline in illiquidity enhances shareholder value. Likewise, the coefficient of the change in institutional holdings is consistently positive and significant. Both of these variables suggest that the greater the gains in liquidity (reduction in illiquidity) and institutional holdings after the secondary offering, the more favorable the share price reaction to the initial announcement of the secondary offering by a private equity sponsor.

The pattern of these results is once again consistent with the hypothesis that an improvement in share liquidity as a result of the dissolution of a private equity blockholding is a meaningful substitute for the monitoring services that are provided by a private equity blockholder. Thus, these results provide support for models that emphasize the importance of investor-based passive monitoring (e.g., Edmans and Manso (2011)). In this view, the improvement in liquidity associated with a secondary offering by a private equity sponsor fosters the information gathering activities of investors and other informed market participants and helps to offset the loss in blockholder monitoring associated with the secondary offering. The result is more informative share prices from the activities of institutional investors and thus greater pressure on corporate managers to maximize shareholder value, serving as a substitute for the lessened blockholder monitoring as a result of the secondary offering by private equity.

7.5. Effects of Certification Variables

As noted in earlier in Chapter 6, a considerable literature argues that intermediaries play an important role in countering adverse selection problems and can credibly certify the quality of a firm. In this approach to monitoring, financial entities have a comparative advantage at information acquisition and monitoring that allows them to counter adverse selection and to develop reputational capital through repeated actions. This non-salvageable capital gives their actions and decisions a high degree of credibility. From this perspective, the reputational capital of private equity that is built up over time helps to certify the activities of its publicly traded

portfolio firms so as to mitigate ex ante uncertainty about the firm. As a result, a secondary equity offering by a high quality private equity firm can be viewed as the loss of a high reputation monitor of a firm's managers and its activities, thus harming firm value.

An alternative interpretation of the role that reputation plays in a secondary offering by private equity focuses on the repeated interactions between high reputation private equity sponsors and capital market participants. In this view, private equity serves an important economic role in certifying sales of private equity, first in the case of the IPO. This certification role is consistent with findings that IPOs of portfolio firms sustain less underpricing than other IPOs (Muscarrella and Vetsuypens (1990)), implying that private equity sponsorship plays a certification role that is similar to that provided by high quality underwriters (Carter and Manaster (1990)).

This certification role of private equity could also serve as a mechanism to certify the future performance of the publicly traded firm after the exit of the sponsor, facilitating the securities issuance process. In this case, the reputation of private equity alleviates the negative share price response to a secondary offering announcement. As a result, the greater the reputation of the private equity firm, the less the share price reaction to the secondary offering. The event study evidence suggests that the exit of a high prestige private equity sponsor via a secondary offering has a more deleterious effect on the share price response for the portfolio firm relative to a private equity sponsor of lesser reputation.

To provide further evidence on the importance of the quality of the private equity sponsor, I include a qualitative variable in the regressions that indicates when the private equity firm is among the list of notable private equity firms generated by Private Equity International. I also include a qualitative variable for foreign private equity firms to assess whether market participants view a foreign private equity firm as having a different level of monitoring capabilities over domestic firms than U.S.-based private equity sponsors. In addition, there has been considerable controversy about the presence of banking institutions in the area of private equity. It should be noted that as a result of the Dodd-Frank Act, the ability of these banking firms to undertake private equity activities has now become sharply limited. Thus, I also include a qualitative

variable for a private equity sponsor that is a banking entity to assess whether there is a differential effect for these private equity entities.

The regression coefficients are broadly consistent with the result of the event studies and suggest that there is a significantly more unfavorable share price effect for a secondary equity offering that is conducted by a notable private equity firm relative to a private equity firm that is not included on the list of notable private equity firms. There is no significant difference in share price effect with respect to the presence of a foreign or bank-related private equity sponsor. Overall, the results suggest that the market attributes value to the monitoring carried out by a high reputation private equity sponsor and that the dissolution of its holding through a secondary offering lessens the value of the portfolio firm.

To ascertain whether the NYSE may provide an element of certification of IPO firm quality and serve as a substitute for the certification provided by the presence of the private equity sponsor, I include a qualitative variable that indicates whether the portfolio firm is listed on NYSE. The variable obtains a negative coefficient that is not statistically significant, suggesting that there is no certification effect from the NYSE listing.

Next, I assess whether the share price response to the secondary offering is affected by the length of time that has elapses since the portfolio firm became a publicly traded entity. One objective is to test whether there is a different share price response to a secondary offering when the investment has been publicly traded for a long period. In these cases the fund that owns the investment could be reaching the end of its normal lifespan. From this perspective, a secondary offering may be an especially attractive method to liquidate a large holding expeditiously without the need to search for a buyer of the blockholder firm or another private equity buyer. Likewise, a secondary offering could allow the private equity sponsor to sell the investment at a more attractive price relative to piecemeal sales of smaller blocks of stock to private investors or in the open market.

Moreover, being a public firm entails the meeting of extensive disclosure requirements, the activity of stock market analysts, and informed trading by investors that can lead to a substantial reduction in asymmetric information. Thus, the longer the time period between the

IPO and the secondary offering, the greater the volume of public information released about the firm, and thus the lower the uncertainty about the firm, so that the firm's true value will become more transparent, lessening the signal content of the secondary offering announcement.

Thus, I include as a variable the number of trading days between the IPO and the subsequent secondary offering by the private equity sponsor. Because this effect is likely to nonlinear, I specify the variable as the reciprocal of the number of trading days from the IPO to the announcement of the secondary offering. This variable obtains a negative coefficient, as expected, indicating that the longer the private equity sponsor postpones a secondary offering after the IPO, the more favorable the market reaction to the offering announcement. However, the variable falls short of being statistically significant at the usual confidence levels.

7.6. Effects of Other Variables

I use the regression specifications to test the effect of several other characteristics of the portfolio firm on the share price response to the offering, none of which prove to have a significant effect. In each case the remaining variable discussed above retain the same pattern in terms of size and levels of significance. Thus, in the interests of conciseness, the results for the coefficients (and t-statistics) for each of these variables are reported in Table 11, without reporting the coefficients for the variables that comprise the full specifications reported in Tables 8 and 9.

As discussed earlier in Chapter 4, the Welch (1989) model of the IPO process predicts that there should be a positive relation between the degree of underpricing at the IPO and the share price response to the subsequent seasoned offering at which founders will sell some of their shares. In effect, founders in high quality firms retain their shareholdings at the IPO stage and use underpricing of the IPO to signal their quality to the market. In contrast, Gale and Stiglitz (1989) argue that pooling equilibria dominate the separating equilibria in an IPO so that underpricing is not a means of signaling firm quality. As such underpricing of an IPO will not influence the share price reaction to a subsequent seasoned equity offering. In a similar manner, in Rock's (1986) model of the IPO process, manager/owners do not possess private information

about firm value, and underpricing is not a signaling mechanism for manager/owners. Thus, underpricing at the IPO stage should have no effect on the share price reaction to a subsequent secondary equity offering.

To test these differing hypotheses, I specify in the regression the underpricing of the portfolio firm's IPO, calculated as the percentage change from the offering price to the closing price on the first day of trading. The coefficient of the underpricing variable is generally positive but it consistently obtains small coefficients that are not statistically significant in any regression. This lack of significance suggests that contrary to the Welch underpricing at the IPO stage does not serve as a signal of firm quality for firms controlled by private equity.

I also assess whether the share price reaction to the secondary offering is related to insider ownership (excluding the shares held by the private equity firm), since dispersed shareholders could regard high managerial ownership as a substitute for the presence of a private equity owner. However, when managerial ownership is included in the regressions there is no evidence that it affects the share price reaction to the secondary offering. I conclude that the decline in value typically associated with the loss of a private equity firm as a blockholder is not mitigated by the presence of substantial insider ownership as an alternative governance mechanism.

Previous studies of securities issuance generally report ambiguous results for the relation between excess returns and offering size. For secondary offerings by private equity, I consistently find that measures of offering size are not significant, irrespective of the specification. Offering size measured relative to the market value of the firm is the metric with the strongest result, but it does not obtain a coefficient that is statistically significant. Non-significant results are obtained for all other metrics of offering size. Taken as a whole, the results suggest that the portfolio's firm's share price response to secondary offerings by private equity firms is not as sensitive to offering size. This finding implies that private equity firms are able to sell large blocks of equity in portfolio firms at a relatively small discount that does not significantly increase with the size of the offering. Moreover, a large secondary offering typically implies a greater change in financial institution holdings of stock and an improvement in subsequent stock liquidity.

Other tests incorporate a variety of independent variables that measure the firm's financial and operating characteristics. Again, none of these variables has a statistically significant effect on the share price response to the offering announcement, nor do these variables affect the coefficients of the remaining variables. Similarly, I examine whether there is an effect on the share response to the offering for a variable that measures managerial ownership (other than that of the private equity sponsor). In principle, insider ownership may serve as a mechanism to align managerial and shareholder interests, so large insider holdings could mitigate the loss of monitoring services engendered by the secondary offering. However, the regression results indicate that there is no cross-sectional effect of insider ownership on the share price reaction to the offering.

Overall, the cross-sectional evidence is consistent with models that emphasize the importance of stock liquidity for corporate monitoring and as a meaningful substitute for active monitoring by blockholders. The relatively high goodness of fit statistics (adjusted) of the regressions that include liquidity variables (often in the range of 0.14 to 0.17), providing further support for the importance of share liquidity and institutional ownership in explaining the shareholder wealth effects of a corporate SEO. Thus, taken as whole, this evidence suggests that a large offering of stock by a private equity blockholder may generate a less unfavorable share price reaction than a more moderate sized-offering because of its effect on liquidity.

Chapter 8

OPERATING PERFORMANCE RESULTS

8.1. Overview

In this chapter I evaluate the subsequent operating performance of portfolio firms. I assess whether the change in portfolio firm value at announcements of secondary equity offerings by private equity sponsors (which is on average negative) is a precursor to a deterioration in operating performance at portfolio firms, as well as to determine more broadly how these firms perform after the secondary offering. My results indicate that sample firms have positive industry-adjusted operating performance for the full sample of firms, as well as when disaggregated by various characteristics of the offering. I use standard Barber and Lyons (1996) methodology to adjust sample firm performance by sets of industry benchmark firms matched by SIC code, market capitalization, and operating performance in the year prior to the secondary offering (year -1).

I examine industry adjusted performance for the sample of firms and over ranges of private equity ownership (including after the exit). I also consider a benchmark analysis that adjusts operating performance by comparing sample firms to firms that have sustained an RLBO in the same year as the IPO of the sample firm but that have not sustained a secondary offering by private equity. In the spirit of the Barber and Lyon methodology these benchmark firms are then matched by industry, market capitalization, and operating performance in year -1. In addition to examining adjusted profitability after a secondary offering by private equity, I obtain the long run buy-and-hold stock returns of these firms as a measure of their long run financial performance. I conclude this chapter with an assessment of the final outcomes of the sample firms and a set of benchmark firms as of year-end 2013 by examining whether the firms are still trading, have merged or been acquired, or have delisted due to financial distress.

8.2. Operating Performance after Secondary Offerings

As discussed in earlier chapters, investors in private equity generally have an objective of enhancing value by improving operating efficiency through intensive monitoring and restructuring of acquired firms. After an IPO, portfolio companies typically remain closely held firms because private equity typically retains a large equity stake. Thus, private equity sponsors continue to have a strong influence on the firm's decision making and can be expected to closely monitor the firm's operational performance.

Given this intensive monitoring, it can be expected that corporate executives will have strong incentives to enhance firm value in response to these pressures, facilitating the opportunity for the private equity sponsor to exit the investment. Moreover, after becoming public entities, these portfolio firms must generate the detailed financial reports and other filings required of all public firms. Thus, in addition to the monitoring activities of the private equity sponsor, other investors, shareholders and other financial market participants can be expected to monitor the firm's activity and performance, so the information gathering activities of such agents should also influence and enhance the value of the firm.

Once the portfolio firm is a publicly traded entity, it can be expected that private equity will be concerned about the potential for exit. In this regard, the ability of private equity to profitably exit its investment through a secondary offering that is sold to dispersed investors will be closely related to whether market participants believe that the portfolio firm has been successfully restructured in the sense that it will be able to maintain or improve its post-secondary offering performance, taking into account the less concentrated ownership structure the firm will have after the secondary offering, and eventually after the complete exit of private equity.

Following a secondary offering by private equity, there should be no deterioration in operating performance if the private equity firm has completed an effective permanent restructuring of the portfolio firm's activities. In contrast, if private equity sponsors use their inside information to make opportunistic timing decisions with respect to a secondary offering that has the effect of transferring bankruptcy risk and expected losses to public investors for firms with

poorer expected future performance, then there should be a pattern of poorer industry-adjusted operating performance after the offering.

There is no previous literature on the operating performance for firms that sustain secondary offerings by private equity. However, there are a several papers that focus on the operating performance of buyout firms immediately around the time that they are taken public, that is, around a reverse leverage buyout (RLBO). However, it should be noted that the vintage of this work, their relatively small samples, and their focus on the firm's operating performance during the period immediately after the IPO, limit the direct relevance of their findings for the issue of whether there is a deterioration in performance after subsequent secondary offerings by private equity.

Muscarella and Vetsuypens (1990) examine 72 IPOs by such firms during the period between 1983 and 1987 and compare the post IPO operating performance to their performance while they were previously public entities; i.e., the period prior to the buyout by private equity. They find substantial increases in profitability (as well as increases in leverage) in the period after the IPO relative to the period prior to the buyout by private equity. Holthausen and Larcker (1996) examine 90 IPOs of buyout firms during the period 1983 to 1988 and find that performance generally exceeds benchmark firms soon after the IPO but that this positive adjusted performance dissipates over time. They conclude that there is no evidence of poor operating performance after the IPO, but that performance does revert to industry norms over time.

De George and Zeckhauser (1993) examine 62 IPOs of buyout firms during a similar time period (1983 to 1987). They report that the operating performance of these firms is superior to benchmark firms prior to the IPO (i.e., while they were private) but that this superior performance deteriorates after they go public. De George ad Zeckhauser argue that a private information problem creates a pattern of superior performance during the phase that the firms are private entities, but that there is disappointing performance after going public. They conclude that private equity engages in a form of market timing with respect to the IPO. They report that these firms generate normal stock price performance after going public, suggesting that market participants expect such market timing behavior.

Consistent with the de George and Zeckhauser findings, Chou, Gombola, and Liu (2006) examine earnings management at buyout firms for the period from 1983 to 1998 for a larger sample of portfolio firms (N=290). They find evidence of significant discretionary current accruals around the time of the IPO, and they conclude that this pattern of behavior indicates earnings manipulation around the IPO period.

With respect to stock price performance around reverse LBOs, de George and Zeckhauser (1993) and Holthausen and Larcker (1996) both find normal price performance after IPOs, a finding that is consistent with Ritter's (1991) findings. They conclude that financial market investors expect a deterioration in subsequent performance and price the shares of going public firms accordingly, which suggests that IPOs of private equity controlled firms are rationally priced. However, Cao and Lerner (2009) find evidence that the buy and hold stock price performance of IPOs of private equity portfolio firms outperform IPOs as a whole.

With respect to the broader securities issuance literature, Loughran and Ritter (1997) document that primary stock offerings are followed by poor operating performance relative to benchmark firms. They conclude that this poor subsequent operating performance is consistent with the generally held view that primary equity issues are conducted when managers believe that the firm's shares are overpriced and that the announcement of an equity offering conveys a negative signal about the firm's subsequent profitability. Heron and Lie (2004) and Clarke, Dunbar, and Kahle (2004) find that operating performance after secondary offerings of equity is close to that of industry benchmarks.

8.3. Operating Performance Results after Secondary Offerings by Private Equity

To asses operating performance subsequent to secondary offerings by private equity, I obtain accounting information based on the CUSIPs of relevant firms from Compustat and Thomson Reuters.[14] I evaluate the subsequent operating performance of portfolio firms to assess

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[14] A CUSIP (Committee on Uniform Security Identification Procedures) is a nine-character alphanumeric code that identifies a North American financial security for the purposes of facilitating clearing and settlement of trades.

whether the decrease in value at secondary offerings by private equity is a precursor to a decline in its operating performance. If the significantly negative returns at announcements of these secondary offerings reflect at least in part the capital market's belief that the private equity firm is selling the shares because of negative private information about the portfolio firm's future profitability, on average there should be a decline in the subsequent operating performance of portfolio firms (relative to industry benchmarks).

Alternatively, if the private equity firm is selling its stake because of the natural termination of the private equity fund and in the belief that the firm has been fully restructured and can maintain its profitability with a more dispersed ownership structure and absent the monitoring influence of private equity, then there should be no subsequent change in the firm's profitability relative to benchmark firms, or perhaps even an improvement in profitability to the extent that the full effects of the restructuring only become apparent in the data reported after the secondary offering.

The tests of operating performance use the Barber and Lyon (1996) adjustment methodology. This procedure utilizes the full range of relevant sets of benchmark firms to control for mean reversion in measures of operating performance. Each sample firm is matched only once, in the same year as the sample firm's previous reported accounting data prior to the announcement of the secondary offering event. The rationale for this procedure is that the sample firm is matched according to its characteristics that are prevalent during the year prior to the offering announcement, to control for mean reversion in earnings. The matching year is referred to as year -1. Subsequent years are referred to as they relate to this match year -1, and use the same set of benchmark firms.

The fiscal year in which the secondary offering occurs becomes defined as year 0. More specifically, the procedure uses year -1 data to match the sample firms with benchmark firms that have the same 2-digit SIC code, a market capitalization that is within a 50% to 150% range of the sample firm, and have operating performance in year -1 that is within a 50% to 150% range of the sample firm. Thus, the benchmark firms are selected in a way that insures that their performance

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is close to that of sample firms in the match year. Benchmark firms are retained only if they have returns on the CRSP file.

Once a benchmark set of firms is determined, the adjusted operating performance of a sample firm in a given year is computed as the performance of that sample firm minus the mean (median) performance in the same year of the benchmark set of firm. This adjustment is performed in each of the following years using the same set of benchmark firms. If any benchmark firm is missing for one of those years, then the remaining benchmark firms in that set are used without replacement. The Student t test and Wilcoxon signed rank test are used to determine the statistical significance for mean and median adjusted returns, respectively.

This procedure seems appropriate for evaluating improvements in operating performance after secondary offerings by private equity. Generally, the firms that are acquired by private equity tend to be found in industries that are relatively mature and that have sufficiently predictable cash flows to provide a reasonable basis for sustaining the degree of leverage that is applied in most private equity deals. Thus, the Barber and Lyons methodology, by controlling for industry and firm size, should control for this industry characteristic.

To the extent that the restructuring capabilities and other skills that are associated with private equity control are private to private equity, it can be hypothesized that an entity controlled by private equity should benefit from operational improvements while under continuing private equity ownership and that these gains should not apply to other (benchmark) firms in the industry. To the extent that the gains generated by private equity are permanent, it can be hypothesized that the gains will persist during the period after secondary offerings dissolve (or partially eliminate) private equity blockholdings. In this regard, the Barber and Lyon procedure again is useful because it controls for mean reversion in measures of operating performance by matching operating performance in the year prior to the offering.

The alternative hypothesis about future performance of sample firms is a corollary of the view of de George and Zeckhauser (1993) that private equity has access to private information during the period that it has a major stake in portfolio firms and that it uses this private information to determine the timing for its exit, so as to benefit private equity at the cost of the dispersed

buyers of its stake. For example, a secondary offering could serve as a means to transfer expected bankruptcy risk and associated future losses to new public investors, which would predict a negative share price response to the announcement of a secondary offering.

In this view there should be disappointing operating performance after private equity blockholdings have been sold to dispersed investors. Such poor industry-adjusted performance after secondary offerings would provide evidence that private equity engages in a form of market timing with respect to secondary equity offerings, or more broadly that these offerings show the same pattern of poor subsequent operating performance that has been shown to apply to primary offerings which serve as a means of external financing for firms.

To generate the tests of operating performance, accounting data for all firms are obtained from the Compustat Industrial and Research database and Moody's Manuals. The operating performance measure that is generally used for this analysis is the return on assets, ROA, as reported in Compustat, which is defined as operating income before depreciation, interest, taxes, and extraordinary items, divided by assets. Results are also reported for the return on sales, ROS, which is the same definition of income divided by sales. Because of the presence of extreme outliers that tend to occur in sales accounting data and can severely distort means, for ROS I only report results in terms of medians which are not sensitive to such outliers.

In Table 12, I report the mean and median operating performance in terms of the ROA of sample firms relative to the performance of firms with secondary offerings by private equity, benchmarked by industry, market capitalizations, and year -1 operating performance. Performance in terms of ROS is reported in Table 13.

For the full sample of secondary offerings by private equity, firms have significant positive industry adjusted performance for both measures of performance each year after the secondary offering. These gains are generally in the range of from two percent to three percent, in terms of both the mean and median, relative to the benchmark firms. The median performance changes are somewhat smaller in magnitude than the mean changes but remain consistently positive and are generally significant. Moreover, there is no evidence that the profitability of these firms reverts to industry norms over time in the years after the secondary offering. The changes in

excess performance relative to year -1 for the years after the offering are also reported in the tables and the results indicate that the excess performance relative to benchmark firms stays in the range of two percent to three percent.

Based on these results, there is no evidence of any deterioration in post-secondary offering deterioration for portfolio firms of the type reported by de George and Zeckhauser (1993) for their sample of IPOs by private equity. Thus, I conclude that there is no indication that the post-secondary offering improvement in operating performance for sample firms is temporary.

When I limit the sample to the set of first secondary offerings (so that no firm is included more than once in the sample), the operating performance results are more strongly positive and the level of significance is greater, but the overall pattern is broadly similar. In the year of the offering, there is a positive adjusted performance of about two percent and by the end of year +3, the adjusted performance rises to more than four percent for ROA and three percent for ROS. The median performance changes are somewhat smaller in magnitude but are consistently positive and strongly significant. Again, there is no evidence of the type of deterioration in operating performance reported by de George and Zeckhauser (1993).

Overall this evidence indicates that portfolio firms display positive industry-adjusted profitability after a secondary offering. Thus, the loss in registrant firm value associated with the dissolution of private equity control cannot be ascribed to the market's expectations of poor subsequent operating performance. Instead, these results indicate that secondary offerings by private equity are the precursor to an improvement in the subsequent operating performance of portfolio firms relative to industry benchmarks, implying that private equity firms conduct these offerings when they are confident that the restructuring of a firm is near completion and that improved future operating performance will reported and will be sustained over time.

This pattern stands in contrast to the poor subsequent operating performance that has been noted in the corporate finance literature for firms that conduct primary seasoned equity offerings (Loughran and Ritter (1995, 1997)) or private placements of equity (Hertzel, Lemmon, Linck, and Rees (2002)). The results also run counter to the conclusions of de George and Zeckhauser (1993) that private equity sponsors engage in market timing behavior, and differs

from the findings of Holthausen and Larcker (1996) that as time elapses from the IPO, firms lose the characteristics that are responsible for their earlier excess performance.

Subsequent to many of the offerings in the sample, the private equity sponsor still retains a substantial equity holding in the portfolio firm. For such firms, managers can be expected to be subject to the influence of private equity. For a subset of the sample, however, the private equity firm either sells all of its shares in the offering or sells sufficient shares to reduce its remaining holdings to below 5% of outstanding shares, so that the reporting requirement no longer applies. More specifically, when an investor's holding falls below 5% of outstanding shares, there is no longer any reporting requirement so it is not possible to ascertain whether or at what date (if any) such (relatively) small holdings are liquidated. In any event, the retention of a small holding by the private equity sponsor is unlikely to persist for a considerable period of time and is not likely to be associated with an influence over the firm's activities.

Thus, for this sample of offerings, the private equity firm can be deemed as having unambiguously exited the firm's ownership structure. As a result, the firm's operating performance subsequent to these offerings reflects a period in which there cannot be an influence from private equity.

The operating performance in terms of ROA for sample firms disaggregated on the basis of whether the private equity firm's ownership has fallen below 5% is reported in Table 14. For the set of firms in which private equity has fallen below the reporting requirement, the subsequent changes in adjusted operating performance remain positive. The magnitude of the excess performance is close to that of the full sample (or first offering) results, and the results are often statistically significant despite the small sample size.

Overall, the positive post offering operating performance of sample firms and the absence of any pattern of deterioration in performance over time suggest that private equity sponsors exit their investments in post-IPO firms because of the natural termination of their restructuring and monitoring activities,. Thus, the operating performance evidence suggests that the firm has been successfully restructured. This evidence supports the conclusion that private equity sponsors have determined that these firms are able to maintain and improve their

profitability with more dispersed ownership structures and in the absence of any further private equity involvement.

8.4. Disaggregated Operating Performance Results

The event study results and the cross-sectional evidence suggest that joint offerings have a more negative share price reaction than pure secondary offerings, suggesting that there is a more negative signal at an offering announcement that conveys the firm's willingness to issue new primary equity in conjunction with the sponsor's sale of its existing shares. Moreover, prior research (Loughran and Ritter (1997)) suggests that primary offerings of equity are associated with poor subsequent operating performance.

Thus, I report the operating performance results for the sample of joint offerings, given that these offerings convey managers' willingness to issue new shares at current market prices. These results, as well as the comparable results for pure secondary offerings, are reported in Table 15 for the full sample and in Table 16 for the sample of first secondary offerings. For joint offering firms, the pattern of improvement in adjusted operating performance is still apparent and the gains in performance are similar in magnitude to that of pure secondary offerings, although the statistical significance of the results is somewhat lower, reflecting the relatively small size of the joint offering sample. A comparison of these results to the results for pure secondary offerings, suggests that the two samples display a broadly similar pattern of performance gains. The relatively small size of the sample of joint offerings makes it impractical to generate operating performance results that are disaggregated by the firm's use of proceeds.

Overall, despite the more negative share price reaction to announcements of joint offerings, there is no evidence that joint offerings are a precursor to poor subsequent operating performance. Instead, the adjusted operating performance results, together with the positive cross-sectional effect observed when new acquisitions are listed as a use of proceeds, suggest that portfolio firms that conduct joint issues are well-performing firms that utilize this means of external equity financing for purposes (such as new acquisitions) that allow these firms to maintain or improve their superior performance relative to benchmark firms.

Both the event study and cross-sectional evidence indicate that secondary offerings by notable private equity sponsors sustain more negative share price reactions than offerings by other private equity sponsors. However, for these firms, as in the case of joint offerings, there is clear evidence (based on both the mean and median measures of adjusted performance) of an improvement in firm profitability after secondary offerings by high reputation private equity sponsors. Moreover, there are no discernible differences in their adjusted performance relative to firms that sustain secondary offerings by private equity sponsors of lesser reputation.

Thus, the more unfavorable share price reaction to secondary offerings by high reputation private equity firms cannot be ascribed to an expectation of poorer subsequent operating performance. Taken together with the cross-sectional regression evidence, the pattern of the empirical results suggests that the capital market attributes the loss in firm value at a secondary offering announcement to the exit of a high reputation monitor, implying an increase in the discount factor applicable to future cash flows rather than an expectation of poorer subsequent performance at these firms.

8.5. Operating Performance Adjusted by RLBOs without Secondary Offerings

As noted earlier, the Barber and Lyon (1996) methodology compares the subsequent operating performance of sample firms to benchmark firms that are drawn from the full range of firms in the same industry in the Compustat database as the basis for assessing the industry-adjusted operating performance of sample firms. This procedure seems appropriate as a means of assessing whether the restructuring capabilities of private equity control generate a permanent improvement in operational performance because these gains in performance should not apply to other (benchmark) firms in the industry.

To further investigate the change in operating performance of portfolio firms after a secondary offering and provide evidence about the hypothesis that market timing is an important characteristic of these offerings, I compare the performance of sample firms to a benchmark sample of IPOs by private equity sponsors that have not (as yet) sustained a secondary offering, using a procedure that reflects the perspective of Barber and Lyon. For this test, for each sample

firm I obtain a benchmark firm controlled by private equity that sustained an IPO by private equity in the same year as the sample firm, has the same 2-digit SIC, and in the year prior to the secondary offering has a market capitalization that is within a 50% to 150% range of the sample firm, and has operating performance in terms of ROA in year -1 that is within a 50% to 150% range of the sample firm.

Because of the necessarily limited number of firms available to create a benchmark, this analysis compares each sample firm to a single benchmark firm. Nevertheless, it provides some indication as to whether private equity sponsors might choose to conduct secondary offerings for those portfolio firms that they regard as problematic, based on their private information, while refraining from secondary offerings and retaining ownership for a longer period in other portfolio firms. If secondary offerings by private equity reflect this type of moral hazard problem, then the operating performance of portfolio firms after secondary offerings should deteriorate relative to the benchmark IPOs for which private equity chooses not to conduct secondary offerings.

The results of this comparison, as reported in Table 17, for the full sample of secondary offerings, for first secondary offerings, and for firms in which the post-offering holding of private equity falls below 5%. The results show that each set of sample firms has strongly significant excess operating performance relative to benchmark firms that are RLBOs controlled by private equity that do not conduct secondary offerings. Once again, the results show no evidence of any deterioration in performance over time. Instead, the same pattern of excess operating performance is observed. This evidence suggests that private equity firms tend to conduct secondary offerings for the set of portfolio firms that have been effectively restructured and refrain from conducting such offerings for the set of firms where restructuring is deemed to be incomplete.

Overall, the operating performance results at firms that sustain secondary offerings by private equity sponsors suggest that these firms demonstrate superior performance relative to benchmark firms subsequent to the offering. Moreover, there is no evidence of any deterioration in this outperformance or reversion to industry averages as time goes by after the secondary offering, even for offerings in which private equity ownership falls below the 5% level that requires

a public filing or for secondary offerings in which the portfolio firm chooses to jointly issue new primary shares. Thus, I conclude that the negative share price response to secondary offering announcements by private equity is not a negative signal about the future profitability of these firms.

8.6. Subsequent Financial Performance

I also obtain the long run buy-and-hold share price returns for sample firms and benchmark returns to assess how the financial market responds to the evolution of public information, including earnings reports, over long periods of time. It should be noted that Barber and Lyon (1997) indicate that long run buy-and-hold returns are subject to numerous serious issues in terms of measurement error, so these results are best viewed as providing a tentative assessment as to whether the immediate share price adjustments that are observed at announcements of secondary offerings are consistent with rational market pricing.

More specifically, if the negative share price reactions reported in the event study material Chapter 6 are an indication that capital market participants expect that firms that sustain secondary offerings by private equity will display subsequent deterioration in operating performance (as has been shown in the literature to apply in the case of primary equity offerings), then over time as new information about firm performance is eventually observed, share prices should gradually adjust upwards to correct the misvaluation that occurred in response to the offering.

In Table 18, I report the mean and median buy and hold returns for the sample of first secondary offerings. The mean buy-and-hold return for sample firms is 21.43% for one year, 24.86% for two years, and 30.69% for the three-year post-period. These buy and hold returns are significantly greater than the long run buy and hold returns on the value-weighted market index. The results for median returns are more ambiguous and none of the differences between sample medians and benchmark medians firms are statistically significant.   In any event, there is no evidence that sample firms underperform the market after a secondary offering.

As a further test of subsequent performance of sample firms, I obtained the same long run return metrics for the sample of benchmark firms. The returns for this group of firms for the first year closely resemble the pattern of returns for the market index. Although the differences between the long run returns and the returns to benchmark firms appear relatively large in absolute size, these differences are not close to being statistically significant, reflecting the very high levels of variance associated with the returns metrics for these samples (relative to that of the market index).

Taken as a whole, it is reasonable to suggest that the relatively good subsequent financial return performance (as well as good industry adjusted operating performance) of sample firms could be interpreted as an indication that the negative share price response to announcements of secondary offerings by private equity is inconsistent with rational market pricing. However, the evidence for this view is relatively weak given the weak statistical power of tests of long run stock performance and the numerous concerns in the literature about the calculation and interpretation of long run returns.

8.7. Corporate Control Outcomes after Private Equity Secondary Equity Offerings

I also investigate the control outcomes for firms with secondary offerings by private equity firms. As noted earlier, if private equity sponsors use their inside information about portfolio firms to make opportunistic decisions to conduct secondary offerings that transfer bankruptcy risk and expected losses for poorer firms to public investors, then should be a pattern of poor subsequent outcomes, such as increased bankruptcies, for these firms. Thus, I examine the pattern of control outcomes for sample firms. I obtain relevant information for each firm for each year following the secondary offering by examining CRSP as well as examining newspaper reports (such as the Wall Street Journal) as well as statements, 10-K reports, and other corporate reports.

Table 19 reports data about the various outcomes for the sample of companies with private equity-backed secondary equity offerings. A majority of these companies 75% are still actively traded enterprises as of December 31, 2014. Of the remainder of the sample of firms,

25% enter into a merger or are acquired and thus cease trading in their original form. On average, for the sample firms that are acquired or merged into another firm, there is a period of approximately 5.5 years, on average, between the date of the most recent secondary offering by a private equity firm and the date that a registrant firm is acquired. Only one of the sample firms is delisted from the exchange because of financial distress or bankruptcy.

Thus, the empirical results suggest that it is highly uncommon for a firm to sustain financial distress and bankruptcy subsequent to the exit of the private equity sponsor through a secondary equity offering. It should be noted that this evidence must be treated with some caution inasmuch as a relatively large proportion of the sample has sustained secondary offerings in recent years, a pattern noted in Table 1 which reports the time pattern of offerings. This time censoring of the data suggests that several more years must elapse before all of the sample firms have sustained a full business cycle subsequent to the exit of private equity and a more accurate assessment can be made as to the ultimate success of the firms that have sustained secondary offerings near the end of the sample period.

To provide further perspective on this issue, I examine whether this outcome distribution for firms with a secondary offering by private equity is different from a comparable firms on CRSP, I obtain an outcome distribution for a benchmark sample of firms. A benchmark firm is chosen for each sample firm. The benchmark firm is chosen as the firm on the CRSP file with the same SIC code that is closest in terms of market capitalization to the sample firm at the time of the first secondary offering by private equity.

By construction, this sample of benchmark firms is subject to the same degree of time censoring as sample firms. The percentage of the benchmark firms that ended in a merger or in being acquired is not significantly different from sample firms: 25% for the sample of firms backed by private equity that sustained a secondary offering, compared to 28% for the benchmark group (on average after a period of 5.0 years). Thus, sample firms sustain mergers and takeovers at a rate that is close to that of comparable firms. As a result, there is no evidence that a secondary offering by private equity enhances or hinders a sample firm's openness to the market for corporate control.

For the benchmark sample, eight of the firms are delisted due to financial distress or bankruptcy, a number that is significantly greater than one comparable delisting that occurs among the sample firms. This difference in the prevalence of financial distress provides further evidence that private equity sponsors that conduct secondary equity offerings typically leave portfolio firms in sufficiently strong financial condition to survive for long periods of time if they are not otherwise acquired.

Overall, the empirical results indicate that there is superior subsequent operating performance for portfolio firms in which private equity sponsors sell some economic ownership through public secondary offerings. Thus, the negative share price response to announcement of secondary stock offerings by private equity is not a precursor to poor subsequent performance by these firms.

Chapter 9

CONCLUSIONS

9.1. Major Findings

It has long been known that private equity seldom exits from its entire investment through an IPO. Instead, a private equity firm typically sells only a small proportion of its stake or often no shares at all in an IPO of a portfolio firm, a form of behavior that is consistent with a broad class of theoretical models in finance that take account of problems of asymmetric information and adverse selection associated with IPOs. Thus, private equity generally retains a controlling stake in these newly public firms for a considerable period of time. During this period of ownership the private equity sponsor is actively involved in the firm's activities and closely monitors the portfolio firm's managers while preparing for its eventual exit from the firm's ownership structure. An important mechanism for such an exit is a secondary equity offering to public investors.

In this dissertation I analyze the effects of secondary stock offerings by private equity firms. These offerings substantially reduce (or dissolve) a large block of equity held by a private equity sponsor. Unlike the case of other controlling shareholders or founders of newly public companies who typically face few constraints about timing, the process of exit after an IPO is a planned-for element that is intrinsic to the private equity process, given that private equity investments are invariably intended by their nature to be a transitional rather than a permanent form of ownership.

In the preponderance of cases examined in this dissertation, the private equity sponsor engages in a series of secondary offerings until its final exit from the firm's ownership structure. Such secondary offerings reduce the portfolio firm's ownership concentration and increase the liquidity of its stock. Unlike sales of stock to qualified investors, secondary offerings must be registered with the Securities and Exchange Commission (SEC), a requirement that applies to all public stock offerings and involves detailed disclosure of corporate information via an information statements and prospectus. Thus, a secondary equity offering initiated by any insider or other holder shares the same transparency characteristics as a primary seasoned offering of equity.

In this dissertation I show that the decision of a private equity sponsor to exit its holding via a secondary offering decreases portfolio firm's share price, implying a decline in portfolio firm shareholder wealth from the exit of its private equity sponsor. The decline in share price applies to both the first secondary offering by private equity and to subsequent secondary offerings. Thus, even though private equity ownership can be viewed as a transitional form of ownership for the portfolio firm once an IPO has been effected, the decision of a private equity sponsor to exit its ownership or decrease its holding of shares via a secondary offering on average significantly decreases portfolio firm value.

I find that secondary equity offerings occur after a period of significant positive excess returns, a pattern that has been noted in almost all of the extensive studies that have examined primary equity offerings. A negative share price response also occurs in the case of a joint offering in which the private equity sponsor sells existing shares and the portfolio firm simultaneously sells new shares to raise equity capital (at the same price), but the negative share price effect is attenuated for those firms that intend to use the proceeds of the offering to conduct acquisitions.

As a result of the secondary offering the private equity firm's shares migrate to financial institutions, so there is enhanced ownership dispersion and an improvement in stock liquidity. I find strong evidence that the share price reaction for the share price of the portfolio firm is inversely related to its ex ante share liquidity and is positively related to subsequent improvements in liquidity and increases institutional ownership. Thus, the greater the improvement in liquidity, the more favorable the share price reaction to news of the secondary offering.

The evidence also suggests that there is a significantly more unfavorable share price effect for a secondary offering by a notable private equity firm relative to other private equity sponsors. The results suggest that the financial market values the presence of high quality private equity firms as large blockholders, monitors, and certifiers, so that the loss of a high reputation private equity sponsor from the firm's ownership structure induces the market to more highly discount the future stream of earnings, thus lessening firm value.

The evidence from secondary offerings by private equity is also consistent with models that emphasize the importance of share trading and liquidity for managerial monitoring and that view market participants as a meaningful substitute for the monitoring and control exercised by a private equity sponsor. In contrast, there is no effect on the share response to the offering for variables that measure managerial ownership, suggesting that insider ownership is not an effective substitute for the presence of private equity.

While the Welch (1989) model of the IPO process implies that there should be a positive relation between the degree of underpricing of an IPO and the share price response to a subsequent seasoned offering at which private equity sells shares, there is no evidence that IPO underpricing has any impact on the share price response of the secondary offering.

The pattern of the empirical results suggest that the large size of private equity blockholdings and their associated control rights are of value to portfolio firms, but this value does not necessarily create a great barrier to exit for a private equity firm if the common stock of the portfolio firm is already highly liquid or if it can be expected to become highly liquid as a result of the secondary offering.

I find that there is positive industry-adjusted operating performance after a secondary offering by private equity, and that this performance that does not deteriorate over time. Instead, I find that the operating performance of portfolio firms improves relative to the industry after secondary equity offerings by private equity sponsors. Thus, unlike primary equity offerings, a private equity firm's decision to conduct a secondary offering does not convey negative private information about a portfolio firm's subsequent operating performance.

Moreover, the proportion of portfolio firms that sustain secondary offerings and that are subsequently delisted or become bankrupt is significantly less than the proportion of benchmark firms that are subsequently delisted. Such findings suggest that the financial market expects that the stand-alone public firm that emerges after the exit of a private equity sponsor will operate effectively after this important change in ownership structure.

The findings reported in this dissertation provide new perspective about the exit of private equity from investments in portfolio firms. In addition, this empirical work also provides new

evidence in support of corporate finance models that analyze how monitoring and liquidity of common stock interact so as to affect shareholder wealth. Thus, a publicly traded firm with concentrated ownership but highly liquid common stock can expect to sustain little if any reduction in shareholder wealth from a secondary offering by a private equity sponsor, especially if the sponsor is not one of the group of highly notable private equity firms. In this setting, the exit of the private equity sponsor through a large secondary offering is unlikely to harm the value of a portfolio firm. However, for a portfolio firm with illiquid common stock that has a prestigious private equity blockholder in its ownership structure, the capital market can be expected to react in an unfavorable manner to news of the decision of the private equity sponsor to exit its investment via a secondary offering, resulting in a substantial decline in shareholder wealth.

9.2. Avenues of Future Research about the Exit of Private Equity

The evidence reported in this dissertation is best viewed as the beginning of a broader program of research on various issues that revolve around the exit of private equity sponsors after portfolio firms have become public companies. As noted earlier, a secondary offering represents one important method of exit for private equity sponsors, a method that has certain costs in terms of the loss in shareholder value in addition to the costs associated with the fact that securities law imposes strict disclosure requirements for all actions related to the offering.

However, it is possible to generate a broader sample of exits by private equity after the IPO of a portfolio firm and I am currently engaged in the development and testing of these samples. These methods include: one, a sale of the publicly traded firm to a strategic acquirer, two, a sale of the private equity sponsor's stake (whether it is a controlling interest or a smaller stake) to another private equity firm, three, a private sale (such as a private placement) of its stake to qualified investors, four, a pro rata share distribution of the shares to its limited partners, and, five, a series of open market (insider) sales of shares.

Each of these methods of dissolving private equity ownership is worthy of intensive study in a manner comparable to the research reported in this dissertation for secondary offerings. For example, there is little research on the issue of whether pro rata distributions of shares to limited

partners is a rare or relatively common method of shifting ownership concentration, even though

spin-offs of corporate operating assets have been extensively studied.[15]

Similarly, although there is considerable evidence that private placements of new equity

to qualified investors by issuing firms generate positive share price effects (Wruck (1989) and

Hertzel and Smith (1993)), there is no evidence on the implications of large private placements (in

effect, privately negotiated transactions) by large private equity blockholders. Nor is there any

understanding of whether such placements are common or rare.

More broadly, there is little or no theoretical and empirical work to explain the choice

among the alternative divestment methods available to a private equity sponsor, including such

mechanisms as sales to strategic buyers, secondary stock offerings, spin-offs, and private

placements. The private equity sponsor's choice among these divestment methods is the focus

of an independent paper. For example, it is possible that the most valuable assets to private

equity are those with strong growth potential and many potential (future) synergistic buyers. After

acquiring such assets a private equity may be able to quickly restructure them and then conduct

an IPO. As a result of the extensive disclosure requirements, the activity of stock market

analysts, and informed trading associated with public trading there will be a substantial reduction

in asymmetric information that allows the private equity sponsor to subsequently sell the firm in

an auction at a fully transparent price.

Private equity may also gain a further increment in value in the form of a premium that

would be paid (and shared by to all shareholders) in the event of a subsequent acquisition by a

strategic acquirer that has synergies with the restructured asset (assuming that there is effective

competition among such strategic bidders so that most of the synergistic gains flow to the private

equity seller). Thus, when a private equity group acquires this type of asset, it will be able to exit

the investment relatively quickly after an IPO through an asset sale to a strategic buyer rather

than conducting secondary stock issues. Thus, it is important to investigate issues related to the

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[15] An exception is Lovo, Slovin, and Sushka (2014) who find that a firm's decision to conduct a spin-off of a block of shares in another firm via a pro rata stock dividend generates a negative share price effect on the subject corporation.

subsequent operating performance of portfolio firms relative to the industry after an IPO for each form of exit mechanism.

The issues surrounding acquisitions of these firms by strategic buyers raise the broader issues of whether such takeovers are common after a firm has undergone restructuring by a private equity sponsor. While other forms of exit by private equity typically retain the portfolio firm as an independent entity, takeovers by strategic acquired transform a stand-alone firm (controlled by private equity) into a division of a much broader firm, presumably because of the importance of potential synergistic gains. However, there is little research on the factors that private equity would weigh in resolving this question of retaining independence after exit versus a sale to strategic buyers.

In addition, there is the issue of whether there is an active control market for portfolio firms, which are tightly controlled by private equity, relative to a set of benchmark firms with more dispersed ownership. Presumably, there must be sufficiently important potential synergistic gains associated with the change in organizational form that occurs when a stand-alone asset controlled by private equity is sold to a corporate acquirer, given that such changes in control typically occur at a substantial premium to market price.

There is already a considerable body of research in corporate finance on the issue of ownership concentration and the openness to the market for corporate control. For example, Stulz (1988) argues that firms with greater insider ownership are less likely to be acquired. However, it is unclear that such a proposition should apply to the case of public firms in which private equity is a large stakeholder, given the concern about exit that is intrinsic to private equity.

Moreover, for the takeovers of these firms that do occur, there is the issue of whether takeovers of such firms elicit premiums that are different from the premiums that apply to other (benchmark) firms. For those firms in which private equity has retained a stake, there is the issue of whether all shareholders uniformly receive exactly the same compensation per share, or whether private equity might sell its control block at a different price.[16] Inasmuch as takeovers of

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[16] It is well established in corporation law that, absent special circumstances, the owner of a controlling block of stock is free to sell the stock to a third party at a premium that is not available

public firms are well tracked by various sources, these issues can be researched without the concerns of selection bias that may apply to other areas of private equity research.

Although there is a considerable literature on IPOs and how IPOs of firms controlled by private equity compare to other IPOs, there is little research on the monitoring, control, and corporate governance aspects of firms that remain under the control of private equity after the IPO process is completed. The characteristics and performance of PE controlled firms after an IPO are readily transparent because such firms are public corporations that must meet the disclosure requirements imposed by SEC rules. Thus, it is natural to investigate, not only the path of the amount of ownership held by private equity, but also issues such as board size, representation on the board by private equity, whether a member of the private equity sponsor serves as an executive officer (or chairman), managerial compensation, whether CEO turnover differs from that of other firms, and how each of these characteristics differs as PE ownership is gradually dissolved.

For example, a majority-controlled company (as most PE-controlled firms are for a period after the IPO) is exempt from the requirements in the NYSE Standards that requires a corporation to have a majority of its directors meet the "independent director" definition under the NYSE Standards and all independent directors as the members of compensation, nominating, and corporate governance committee must be independent directors. However, when private equity sponsors reduce their ownership in a portfolio firm there must be major changes in board structure that are designed to protect the interests of dispersed shareholders.[17] Moreover, it is likely that such an important change in ownership is accompanied by other corporate changes as well.

While this dissertation has drawn important conclusions about the effects of secondary offerings by private equity, there remain numerous issued to be addressed as to the factors that explain how private equity exits from its investment in a portfolio firm once the firm has become a

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to non-controlling shareholders.
[17] Under the standards required by the NYSE, when a company ceases to be a controlled company, there is a transition period that allows the company to phase in its compliance with its independence standards.

publicly traded entity via an initial public offering. Given how important private equity has become as an element of the market for corporate control, as well as in the political arena, it is apparent to me that more intensive research in this area is long overdue.

REFERENCES

Adams, R., Ferreira D., 2007. A theory of friendly boards. Journal of Finance 62, 217-250.

Admati, A., P. Pfleiderer. 2009. The Wall Street walk and shareholder activism: exit as a form of voice. Review of Financial Studies 22, 2645-2685.

Admati, A., P. Pfleiderer, J. Zechner. 1994. Large Shareholder Activism, Risk Sharing, and Financial Market Equilibrium." Journal of Political Economy 102, 1097-1130.

Aghion, P., J. Tirole. 1997. Formal and real authority in organizations. Journal of Political Economy 105, 1-129

Agrawal, A., C. Knoeber. 1996. Firm performance and mechanisms to control agency problems between managers and shareholders. Journal of Financial and Quantitative Analysis 31, 377-397.

Ambarish, R., K. John, J. Williams. 1987. Efficient signaling with dividends and investment. Journal of Finance 42, 321-343.

Amihud, Y., H. Mendelson. 1986. Asset pricing and the bid-ask spread. Journal of Financial Economics 17, 223-249.

Amihud, Y., H. Mendelson. 1989. The effects of beta, bid-ask spread, residual risk, and size on stock returns. Journal of Finance 44, 479-486.

Amihud, Y., H. Mendelson, B. Lauterbach. 1997. Market microstructure and securities values: evidence from the Tel Aviv Stock Exchange. Journal of Financial Economics 45, 365-390.

Asquith, P., D. Mullins. 1986. Equity issues and offering dilution. Journal of Financial Economics 15, 61-89.

Barber, B., J. Lyon. 1996. Detecting abnormal operating performance: the empirical power and specification of test statistics. Journal of Financial Economics 41, 359-399.

Barber, B., J. Lyon. 1997. Detecting abnormal long run financial performance: the empirical power and specification of test statistics. Journal of Financial Economics 43, 341-372.

Barclay, M., R. Litzenberger. 1988. Announcement effects of new equity issues and the use of intraday price data. Journal of Financial Economics 21, 71-99.

Bargeron, L., F. Schlingemann, R. Stulz, C. Zutter, 2008, Why do private acquirers pay so little compared to public acquirers? Journal of Financial Economics 89, 375-390

Bartel, A., C. Ichniowski, K. Shaw. 2007. How does information technology affect productivity? Plant level comparisons of product innovation, process improvement, and worker skills. Quarterly Journal of Economics 122, 1721-1758.

Bauguess, S., M. Slovin, M. Sushka. 2012. Large shareholder diversification, corporate risk taking, and the benefits of changing to differential voting rights. Journal of Banking and Finance 36, 1244-1253

Bayliss, M., S. Chaplinsky. 1996. Is there a window of opportunity for seasoned equity issuance? Journal of Finance 51, 253-278.

Beatty, R., J. Ritter. 1986. Investment banking, reputation, and the underpricing of initial public offerings. Journal of Financial Economics 39, 545-602.

Bebchuk, L., 1989. Limiting contractual freedom in corporate law: the desirable constraints on charter amendments, Harvard Law Review 102, 180-1860.

Bebchuk, L., J. Fried. 2004. Pay without performance: the unfulfilled promise of executive compensation. Harvard University Press, Cambridge, MA.

Benston, G., R. Hagerman. 1974. Determinants of bid-ask spreads in the over-the-counter market." Journal of Financial Economics 1, 353-364.

Berle, A., G. Means. 1932. The modern corporation and private property. MacMillan, New York, NY.

Bharath, S., A. Dittmar, J. Sivadasan. 2011. Does capital market myopia affect plant productivity? Evidence from going private transactions. Unpublished paper. University of Michigan.

Black, B. 1990. Shareholder passivity reexamined. Michigan Law Review 89, 520-608.

Bolton, P., and E. Von Thadden. 1998. Blocks, liquidity, and corporate control." Journal of Finance 53, 1-25.

Brennan, M., A. Subrahmanyam. 1996. Market microstructure and asset prices: on the compensation for illiquidity in stock returns. Journal of Financial Economics 41, 441-464.

Brudney, V., R. Clark. 1981. A new look at corporate opportunities. Harvard Law Review 94, 997-1062.

Burkart, M., D. Gromb, F. Pannunzi. 1997. Large shareholders, monitoring, and the value of the firm. Quarterly Journal of Economics 112, 693-728.

Cao, J., J. Lerner. 2009. The performance of reverse leveraged buyouts. Journal of Financial Economics 91,139-157.

Carhart, M., 1997. On persistence in mutual fund performance, Journal of Finance 52, 57-82.

Carter, R., S. Manaster. 1990. Initial public offerings and underwriter reputation, Journal of Finance 45, 1045-1067.

Chen, Q., I. Goldstein, W. Jiang. 2007. Price informativeness and investment sensitivity of stock price. Review of Financial Studies 20, 619-650.

Chou, D., M. Gombola, F. Liu, 2006. Earnings management and stock performance of reverse leveraged buyouts. Journal of Financial and Quantitative Analysis 41, 407-438.

Clarke, J., Dunbar, C., K. Kahle. 2004. The long-run performance of secondary equity issues: A test of the windows of opportunity hypothesis. The Journal of Business 77, 575-603.

Coffee, J., 1991. Liquidity versus control: the institutional investor as corporate monitor. Columbia Law Review 91, 1277-1368.

Coffee, J., 1999. The future as history: the prospects for global corporate convergence in corporate governance and its implications. Northwestern University Law Review 93, 641-673.

Coffee, J., 2002. Racing towards the top? The impact of cross-listings and stock market competition on international corporate governance. Columbia Law Review 102, 1757-1831.

Coles, J., N. Daniel, L. Naveen. 2008. Boards: does one size fit all? Journal of Financial Economics 87, 329-356.

Cornelli, F., O. Karakas, 2011. Corporate governance of LBOs: the role of boards. Unpublished working paper, London Business School.

Degeorge, F., R. Zeckhauser. 1993. The reverse LBO decision and firm performance: theory and evidence. Journal of Finance 48, 1323-1348.

Demiroglu C., C. James, 2010. The role of private equity group reputation in LBO financing, Journal of Financial Economics 96, 306-330.

Demsetz, Harold. 1986. Corporate control, insider trading, and rates of return. American Economic Review. 76, 313-316

Demsetz, H., K. Lehn. 1985. The structure of corporate ownership: causes and consequences. Journal of Political Economy 93, 1155-1177.

Denis, D., D. Denis. 1994. Majority owner-managers and organizational efficiency. Journal of Corporate Finance 1, 91-118.

Diamond, D., 1984. Financial intermediation and delegated monitoring. Review of Economic Studies 51, 393-414.

Diamond, D. 1989. Reputation acquisition in debt markets. Journal of Political Economy 97, 828-862.

Easley, D., S. Hvidkjaer, M. O'Hara. 2002. Is information risk a determinant of prices? Journal of Finance 57, 2185-2221.

Edmans, A. 2009. Blockholder trading, market efficiency, and managerial myopia. Journal of Finance, 64, 2481-2513.

Edmans, A., G. Manso. 2011. Governance through exit and voice: a theory of multiple blockholders."   Review of Financial Studies 24, 2395-2428.

Fama, E., M. Jensen. 1983. Separation of ownership from control. Journal of Law and Economics 26, 301-325.

Fama, E., K. French. 1993. Common risk factors in the returns on stocks and bonds. Journal of Financial Economics 33, 3-56.

Fluck, Z., N. Khanna. 2008. A theory of corporate boards with endogenous information collection, optimal compensation and strategic voting: When do independent boards dominate rubberstamping ones? Working paper, Michigan State.

Gale, I., J. Stiglitz. 1989. The information content of initial public offerings. Journal of Finance 44, 469-478.

Grammatikos, T., G. Papaioannou. 1986. The informational value of listing on the New York Stock Exchange. Financial Review 21, 485-499.

Grossman, S., O. Hart. 1980. Takeover bids, the free-rider problem, and the theory of the corporation. Bell Journal of Economics 11, 42-64.

Grossman, S., O. Hart. 1988. One share one vote and the market for corporate control. Journal of Financial Economics 20, 175-202.

Guo, S., E. Hotchkiss, W. Song. 2011. Do buyouts (still) create value? Journal of Finance 66, 479-517.

Harris, M., A. Raviv. 2008. A theory of board control and size. Review of Financial Studies 21, 1797-1832.

Hart, O., J. Moore. 1990. Property rights and the nature of the firm. Journal of Political Economy 98, 1119-1158.

Hege, U., S. Lovo, M. Slovin, M. Sushka. 2011. Asset sales and the role of buyers: strategic buyers versus private equity. Unpublished working paper, HEC Paris.

Heron, R., E. Lie. 2004. A comparison of the motivations for and the information content of different types of equity offerings. Journal of Business 77, 605-632.

Hertzel, M., M. Lemmon, J. Linck, L. Rees. 2002. Long run performance following private placements of equity. Journal of Finance 57, 2595-2617.

Hertzel, M., R. Smith. 1993. Market discounts and shareholder gains for placing equity privately. Journal of Finance 48, 459-485.

Hirschman, A. 1970. Exit, voice, and loyalty: responses to decline in firms, organizations and states. Harvard University Press, Cambridge, MA.

Holderness, C., D. Sheehan. 1988. The role of majority shareholders in publicly held corporations: an exploratory analysis. Journal of Financial Economics 20, 317-346.

Holthausen, R., G. Larcker. 1996. The financial performance of reverse leveraged buyouts, Journal of Financial Economics 42, 293 - 332.

Ibbotson, R. 1975. Price performance of new common stock issues. Journal of Financial Economics 2, 235-272.

Ibbotson, R., J. Jaffe. 1975. "Hot issue" markets. Journal of Finance 30, 1027-1042.

Ibbotson, R. G., J. Sindelar, J. Ritter. 1994. The market's problems with the pricing of initial public offerings. Journal of Applied Corporate Finance 7, 66-74.

James, C., 1987. Some evidence on the uniqueness of bank loans. Journal of Financial Economics 19, 217-235.

James, C., P. Weir., 1990. Borrowing relationships, intermediation and the cost of issuing public securities, Journal of Financial Economics 28, 149-171.

Jensen, M. 1989. Eclipse of the public corporation. Harvard Business Review 79, 61-74

Jensen, M., W. Meckling. 1976. Theory of the firm: managerial behavior, agency costs and ownership structure. Journal of Financial Economics 3, 305-360.

Jung, K., Y. Kim, R. Stulz. 1996. Timing, investment opportunities, managerial discretion, and the security issuance decision. Journal of Financial Economics 42, 159-185.

Kadlec, G., J. McConnell. 1994. The effect of market segmentation and illiquidity on asset prices: evidence form exchange listings. Journal of Finance 49, 611-636.

Kahn, C., A. Winton. 1998. Ownership structure, speculation, and shareholder intervention. Journal of Finance 53, 99-129.

Kaplan, S., 1989a. Campeau's acquisition of federated: value destroyed or value added? Journal of Financial Economics 25, 191-212.

Kaplan, S., 1989b. The effects of management buyouts on operating performance and value, Journal of Financial Economics, 24, 217-254

Kaplan, S., A. Schoar, 2005. Private equity performance: returns, persistence, and capital flows, Journal of Finance 60, 1791-1823.

Kaplan, S., P. Stromberg. 2009. Leverage buyouts and private equity. Working paper, University of Chicago.

Korajczyk, R, D Lucas, R. McDonald. 1991. The effect of information releases on the pricing and timing of equity issues. Review of Financial Studies 4, 685-708.

Korajczyk, R., D. Lucas, R. McDonald. 1992. Equity issues with time-varying asymmetric information. Journal of Financial and Quantitative Analysis 27, 397-417.

Lehn, K., A. Poulsen. 1989. Free cash flow and stockholder gains in going private transactions. Journal of Finance. 44, 771-787

Leland, H. D. Pyle., 1977. Information asymmetries, financial structure and financial intermediation. Journal of Finance, 32, 371-387.

Lerner, J., M. Sorensen, P. Stromberg, 2011, Private equity and long run investment: the case of innovation, Journal of Finance 66, 445-477.

Leslie, P., P. Oyer, 2009, Managerial incentives and value creation: evidence from private equity. Unpublished working paper, Stanford University.

Lichtenberg, F., D. Siegel. 1990. The effects of leveraged buyouts on productivity and related aspects of firm behavior. Journal of Financial Economics 27, 165-194.

Liebeskind, J., M. Wiersema, G. Hansen, 1992. LBOs, corporate restructuring, and the incentive-intensity hypothesis. Financial Management 21, 73-88.

Linck, J., Netter J., Yang T., 2008. The determinants of board structure. Journal of Financial Economics 87, 308-328.

Loughran, T., J. Ritter. 1995. The new issues puzzle. Journal of Finance 5, 23-51.

Loughran, T., J. Ritter. 1997. The operating performance of firms conducting seasoned equity offerings. Journal of finance 52, 1823-1850.

Lovo, S., Slovin, M., M. Sushka. 2014. A theory of the choice of divestiture method. Unpublished working paper, HEC Paris.

Lucas, D, R. McDonald. 1990. Equity issues and stock price dynamics. Journal of Finance 45, 1019-1043.

Mace, M., 1971. Directors: myth and reality. Harvard Business School Press, Boston, MA.

Masulis, R., A. Korwar. 1986. Seasoned equity offerings: an empirical investigation. Journal of Financial Economics 15, 91-118.

McConnell, J., H. Servaes. 1990. Additional evidence on equity ownership and corporate value. Journal of Financial Economics 27, 595-612.

Mikkelson, W., M. Partch. 1985. Stock price effects and costs of secondary distributions. Journal of Financial Economics 14, 165-194.

Mikkelson, W., M. Partch. 1985. Valuation effect of security offerings and the issuance process. Journal of Financial Economics 15, 30-60.

Miller, M., K. Rock. 1985. Dividend policy under asymmetric information. Journal of Finance 40, 1031-1051.

Morck, R., A. Shleifer, R. Vishny. 1988. Management ownership and market valuation: an empirical analysis. Journal of Financial Economics 20, 293-315.

Muscarella, C., M. Vetsuypens, 1990. Efficiency and organizational structure: A study of reverse LBOs. Journal of Finance 45, 1389-1413.

Myers, S. 1984. The capital structure puzzle. Journal of Finance 39, 575-592.

Myers, S. N. Majluf. 1984. Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics 13, 187-221.

Opler, T., S. Titman. 1993. The determinants of leveraged buyout activity: free cash flow versus financial distress costs. Journal of Finance 48, 1985-1999.

Pastor, L., R. Stambaugh. 2003. Liquidity risk and expected stock returns. Journal of Political Economy 111, 642-685.

Phalippou, L., O. Gottschalg. 2009, Performance of private equity funds: another puzzle? Review of Financial Studies 22, 1747-1776.

Pound, J. 1988. Proxy contests and the efficiency of shareholder oversight. Journal of Financial Economics 20, 237-265.

Puri, M., 1996. Commercial banks in investment banking: conflict of interest or certification role? Journal of Financial Economics 40, 373-401.

Rajan, R., 1992, Insiders and outsiders: the choice between informed and arm's length debt. Journal of finance 47, 1367-1400.

Ramakrishnan, R., A. Thakor. 1984. Information reliability and a theory of financial intermediation. Review of Economic Studies 52, 415-432.

Ritter, J. 1987. The costs of going public. Journal of Financial Economics 19, 269-282.

Ritter, J. 1991. The long run performance of initial public offerings. Journal of Finance 46, 3-27.

Robinson, D. B. Sensoy. 2011. Cyclicality, performance measurement, and cash flow liquidity in private equity, Unpublished Working Paper, Ohio State University Fisher College of Business.

Rock, K. 1986. Why new issues are underpriced. Journal of Financial Economics 15, 187-212.

Roll, R. 1986. The hubris hypothesis of corporate takeovers, Journal of Business 59, 197-216.

Sanger, G., J. McConnell. 1986. Stock exchange listings, firm value, and security market efficiency: the impact of NASDAQ. Journal of Financial and Quantitative Analysis 21, 1-25.

Sharpe, S. 1990. Asymmetric information, bank lending, and implicit contracts: a stylized model of customer relationships. Journal of Finance 45, 1069-1087.

Sheifer, A., L. Summers. 1988. Breach of trust in hostile takeovers, in A. Auerbach, ed., Corporate takeovers: causes and consequences. University of Chicago Press, Chicago, IL.

Shleifer, A., R. Vishny. 1986. Large shareholders and corporate control. Journal of Political Economy 94, 461-488.

Slovin, M., M. Sushka. 1993. Ownership concentration, corporate control activity, and firm value: Evidence from the death of inside blockholders. Journal of Finance 48, 1293-1321.,

Slovin, M., M. Sushka, C. Hudson. 1990. External monitoring and its effect on seasoned common stock issues. Journal of Accounting and Economics 12, 397-417.

Spiess, D., J. Affleck-Graves. 1995. Underperformance in long run stock returns following seasoned offerings. Journal of Financial Economics 38, 243-267.

Stulz, R., 1988. Managerial control of voting rights: Financing policies and the market for corporate control. Journal of Financial Economics 20, 25-54.

Tirole, J. 2001. Corporate governance. Econometrica, 69, 1-35.

Welch, I. 1989. Seasoned offerings, imitation costs, and the underpricing of initial public offerings. Journal of Finance 44, 421-449.

White, H. 1980. A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. Econometrica 48, 817-830.

Wruck, K. 1989. Equity ownership concentration and firm value: evidence from private equity financings. Journal of Financial Economics 23, 3-28.

Table 1

Distribution of Secondary Seasoned Equity Offerings by Private Equity Sponsors

This table reports the distribution by year and by SIC code of secondary seasoned equity offerings by private equity sponsors for portfolio firms listed on NYSE or Nasdaq over the sample period 1996 to 2013, and that have sufficient share price returns to perform an event study analysis, based on data obtained from the Securities Data Company (SDC) and SEC filings.

Panel A: Issuance Frequency Distribution by Year			Panel B: SIC Code Frequency Distribution by SIC Code			(continued)		
Year	Frequency	Percent	2-digit	Frequency	Percent	2-digit	Frequency	Percent
	(1)	(2)	(1)	(2)	(3)			
1996	1	0.4	7	1	0.4	50	6	2.2
1997	1	0.4	12	1	0.4	51	1	0.4
1998	5	1.9	13	6	2.2	53	4	1.5
1999	0	0.0	14	1	0.4	54	6	2.2
2000	1	0.4	15	2	0.7	56	11	4.1
2001	5	1.9	16	1	0.4	57	4	1.5
2002	8	3.0	17	2	0.7	58	1	0.4
2003	13	4.8	20	4	1.5	59	3	1.1
2004	27	10.0	23	3	1.1	60	1	0.4
2005	28	10.3	24	1	0.4	61	1	0.4
2006	22	8.1	26	2	0.7	62	6	2.2
2007	29	10.7	27	1	0.4	63	11	4.1
2008	6	2.2	28	19	7.0	64	5	1.9
2009	8	3.0	29	1	0.4	67	6	2.2
2010	15	5.5	30	4	1.5	72	1	0.4
2011	22	8.1	32	2	0.7	73	34	12.6
2012	24	8.9	33	1	0.4	78	1	0.4
2013	54	19.9	34	5	1.9	79	1	0.4
Total	269	100.0	35	10	3.7	80	10	3.7
			36	17	6.3	83	2	0.7
			37	14	5.2	87	8	3.0
			38	6	2.2	89	1	0.4
			41	2	0.7	94	1	0.4
			47	1	0.4	99	26	9.6
			48	9	3.3			
			49	2	0.7			
						Total	269	100.0

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Table 2

Descriptive Statistics for Secondary Seasoned Equity Offerings by Private Equity

This table reports descriptive statistics for 269 secondary seasoned stock offerings by private equity sponsors over the sample period 1996 through 2013 for portfolio firms listed on NYSE or Nasdaq and that have sufficient returns to perform an event study analysis. Proceeds is the amount of the offering gross proceeds, including the amount of the overallotment option when executed. Market Value is market capitalization of registrant portfolio firms defined as total shares outstanding multiplied by share price five days prior to the initial announcement of the secondary offering. SEO/SO is secondary shares offered as a percentage of total shares outstanding. SEO/Offer is private equity shares in the offering as a percentage of the shares offered. Insiders indicates the percentage of outstanding shares held by officers and members of the firm=s board of directors, excluding the shares controlled by representatives of the private equity sponsor. Private equity indicates the percentage of outstanding shares held by the private equity sponsor. These statistics are generated from data obtained from the Securities Data Company (SDC), CRSP, Compustat and offering prospectuses.

	Mean	Median	Std. Dev.
Panel A: Offering Characteristics			
Gross Proceeds ($ mil)	263.97	173.02	281.29
Firm Market Value ($ mil)	2603.22	1251.02	5486.33
SEO/SO (%)	13.4	11.11	12.52
SEO/Offer (%)	88.51	100	24.15
Panel B: Ownership (%)			
Insiders before SEO (%)	7.57	2.85	13.05
Private Equity before SEO (%)	37.90	36.05	20.56
Insiders after SEO (%)	6.06	2.33	9.91
Private Equity after SEO (%)	21.57	17.17	19.26

Table 3

Descriptive Statistics for Firms that Sustain Secondary Seasoned Offerings by Private Equity

This table reports selected characteristics of portfolio firms listed on NYSE or Nasdaq that sustain 269 secondary seasoned stock offerings by private equity sponsors over the sample period 1996 through 2013 and that have sufficient stock price returns to perform an event study analysis. Revenue is total revenues in millions of U.S. dollars. Total assets is the book value of total assets before the offering. Total debt is the book value of total debt before offering. Equity is the book value of equity before the offering. Long term debt/Total assets is the book value of long term debt scaled by the book value of total assets before the offering. Short term debt/total assets is the book value of debt due in less than one year scaled by total assets. ROA is net income scaled by total assets. These statistics are obtained from the Securities Data Company (SDC), Compustat and offering prospectuses filed with the SEC.

Firm Characteristics	Mean	Median	Std. dev.
Revenue ($ Mil)	533.64	181.25	935.29
Total Assets	2507.75	930.15	4334.21
Total Debt	867.01	299.76	1636.47
Equity	723.1	243.19	1277.55
Long Term Debt/Total Assets	0.28	0.25	0.28
Short Term Debt/Total Assets	0.03	0.01	0.45
ROA	0.12	0.16	0.70

Table 4

Excess Returns for Portfolio Firms at Secondary Seasoned Offerings by Private Equity

Excess returns in percent (%) for portfolio firms in response to 269 secondary seasoned equity offering announcements by private equity sponsors over the sample period 1996 through 2013 for portfolio firms listed on NYSE or Nasdaq, that have sufficient stock price returns to perform an event study analysis, using market model methodology; t-statistics are in parentheses, proportion of returns positive is in brackets, median return is in braces, N is the sample size. Statistical significance of excess returns is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median and is indicated by *, at the 10% level, ** at the 5% level, and ***, at the 1% level. Day 0 is the date of the initial announcement of the secondary offering. Market model parameters are estimated using least squares over the pre-event period, t = -160 to -41.

| | Three-day Average Excess Return | Distribution of Three-day Excess Returns | | Pre-event Period | | | Post-event Period | | |
| | | Decile | Return | Interval | Return | t-statistic | Interval | Return | t-statistic |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean	-1.94%***	0.10	-6.67	(-20,-2)	4.48	5.62	(2,20)	0.35	0.46
t-statistic	(-6.10)	0.20	-5.35	(-40,-2)	7.30	5.90	(2,40)	2.47	2.18
% negative	[0.74]	0.30	-4.04	(-60,-2)	10.52	6.32			
		0.40	-3.19	(-90,-2)	15.11	6.19			
Median	{-2.14%}***	0.50	-2.14	(-120,-2)	16.90	5.59			
p-value	{<0.01}	0.60	-1.28						
N	269	0.70	-1.05						
		0.80	1.04						
		0.90	4.02						

Table 5

Excess Returns for Portfolio Firms at First Secondary Seasoned Offerings by Private Equity

Excess returns in percent (%) for portfolio firms in response to 196 first secondary seasoned equity offering announcements after an IPO by private equity sponsors over the sample period 1996 through 2013 for portfolio firms listed on NYSE or Nasdaq, that have sufficient stock price returns to perform an event study analysis, using market model methodology; t-statistics are in parentheses, proportion of returns positive is in brackets, median return is in braces, N is the sample size. Statistical significance of excess returns is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median and is indicated by *, at the 10% level, ** at the 5% level, and ***, at the 1% level. Day 0 is the date of the initial announcement of the first secondary offering after the IPO. Market model parameters are estimated using least squares over the pre-event period, t = -160 to -41.

Three-day Average Excess Return	Distribution of three-day Excess Returns		Pre-event Period			Post-event Period		
(-1, 0)	Decile	Return	Interval	Return	t-statistic	Interval	Return	t-statistic
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean -1.94***	0.10	-7.21	(-20,-2)	4.47	4.75	(2,20)	0.57	0.66
t-statistic (-5.07)	0.20	-5.35	(-40,-2)	7.24	4.75	(2,40)	2.44	1.78
% negative [0.75]	0.30	-4.05	(-60,-2)	10.91	5.19			
Median -2.17***	0.40	-3.17	(-90,-2)	16.78	5.42			
p-value <0.01	0.50	-2.17	(-120,-2)	18.84	4.96			
N 196	0.60	-1.30						
	0.70	-0.42						
	0.80	0.59						
	0.90	3.82						

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Table 6

Excess Returns for Portfolio Firms at Joint Secondary Seasoned Offerings by Private Equity

Excess returns in percent (%) for portfolio firms in response to 73 secondary seasoned equity offering announcements by private equity sponsors that have a joint offering of equity by the portfolio firm over the sample period 1996 through 2013 for portfolio firms listed on NYSE or Nasdaq, that have sufficient stock price returns to perform an event study analysis, using market model methodology; t-statistics are in parentheses, proportion of returns positive is in brackets, median return is in braces, N is the sample size. Statistical significance of excess returns is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median and is indicated by *, at the 10% level, ** at the 5% level, and ***, at the 1% level. Day 0 is the date of the initial announcement of the joint offering. Market model parameters are estimated using least squares over the pre-event period, t = -160 to -41.

Joint SEO	Three-day Average Excess Return	Distribution of three-day Excess Returns		Pre-event Period			Post-event Period		
		Decile	Return	Interval	Return	t-statistic	Interval	Return	t-statistic
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean	-2.76***	0.10	-8.58	(-20,-2)	9.05	4.62	(2,20)	1.55	0.92
t-statistic	(-3.66)	0.20	-6.02	(-40,-2)	14.69	5.61	(2,40)	6.07	2.26
% negative	[0.73]	0.30	-4.71	(-60,-2)	20.99	5.83			
Median	{-2.66}***	0.40	-3.93	(-90,-2)	31.30	5.64			
p-value	<0.01	0.50	-2.66	(-120,-2)	34.90	5.03			
N	73	0.60	-1.20						
		0.70	-0.38						
		0.80	1.40						
		0.90	3.46						

Table 7

Excess Returns for Portfolio Firms at Secondary Seasoned Offerings by Private Equity Disaggregated by Several Characteristics

Three-day (-1, +1) average excess returns in percent (%) for portfolio firms in response to secondary seasoned equity offering announcements by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq that have sufficient stock price returns to perform an event study analysis, using market model methodology, disaggregated in accordance with three characteristics: whether or not the portfolio firm is a high technology firm, as defined by Faccio and Masulis (2005); whether the portfolio firm is listed on NYSE or Nasdaq; and whether or not the private equity sponsor is included in the lists of Top 20 or Notable Private Equity Firms compiled by Private *Equity International;* t-statistics are in parentheses, proportion of returns positive is in brackets, median return is in braces, N is the sample size. Statistical significance of excess returns is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median and is indicated by *, at the 10% level, ** at the 5% level, and ***, at the 1% level. Day 0 is the date of the initial announcement of the secondary offering. Market model parameters are estimated using least squares over the pre-event period, t = -160 to -41.

| | High Tech Firms | | | Exchange Listing | | | Private Equity Reputation | | |
| | Hi Tech | p(diff) | Other | NYSE | p(diff) | Nasdaq | Notable | p(diff) | Other PE |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean	-4.64***	(0.02)	-1.73***	-2.05***	(0.68)	-1.78***	-2.63***	(0.06)	-1.41***
t-statistic	(-3.46)		(-5.36)	(-5.42)		(-3.25)	(-5.18)		(-3.52)
% negative	[0.89]		[0.73]	[0.76]		[0.72]	[0.79]		[0.71]
Median	{-3.58%}***	(0.07)	{-2.06%}***	{-2.10%}***	(0.88)	{-2.31%}***	{-2.20%}***	(0.15)	{-2.09%}***
p-value	{<0.01}		{<0.01}	{<0.01}		{<0.01}	{<0.01}		{<0.01}
N	N=19		N=250	N=156		N=113	N=117		N=152

Table 8

Excess Returns for Portfolio Firms at Secondary Seasoned Offerings by Private Equity, Disaggregated by Post-offering Private Equity Ownership

Three-day (-1, +1) average excess returns in percent (%) for portfolio firms in response to secondary seasoned equity offering announcements by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq, that have sufficient stock price returns to perform an event study analysis, using market model methodology, disaggregated in accordance with the percentage of ownership held by the private equity sponsor after the offering is completed; t-statistics are in parentheses, proportion of returns positive is in brackets, median return is in braces, N is the sample size. Statistical significance of excess returns is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median and is indicated by *, at the 10% level, **, at the 5% level, and ***, at the 1% level. Day 0 is the date of the initial announcement of the secondary offering. Market model parameters are estimated using least squares over the pre-event period, t = -160 to -41. The data for ownership after the offering is completed are obtained from SEC filings.

| | PE Ownership Ranges (%) | | | | p(diff in means, medians) | |
	(1) PE >25%	(2) PE <25%	(3) 25% < PE >5%	(4) PE <5%	(1) vs (2)	(3) vs (4)
Mean	-1.60%***	-2.16%***	-2.03%***	-2.28%***	0.39	0.81
t-statistic	(-3.54)	(-4.98)	(-4.10)	(-2.95)		
% negative	[0.75]	[0.74]	[0.73]	[0.76]		
Median	-2.22%***	-2.13%***	-2.13%***	-2.05%***	0.35	0.99
p-value	{<0.01}	{<0.01}	{<0.01}	{<0.01}		
N	107	162	92	70		

Table 9

Cross-sectional Regression Analysis of Excess Returns for Portfolio Firms for the Full Sample of Secondary Seasoned Offerings by Private Equity

This table reports the results of cross sectional regressions in which the dependent variable is the set of three-day (-1, +1) excess returns from the event study for the full sample of 269 secondary equity offerings by private equity sponsors for portfolio firms listed on the NYSE or Nasdaq at announcements of secondary equity offerings by their private equity sponsors, for the period 1996 through 2013. Independent variables reflect characteristics of the secondary offerings, of the portfolio firm, and of the private equity sponsor. The independent variables are defined as follows: First offering is a qualitative variable that takes on the value of 1 when the SEO by the private equity sponsor is the first secondary offering after an IPO and 0 otherwise. Joint offering is a qualitative variable that takes on the value of 1 when the secondary offering is a joint offering by the private equity sponsor and the portfolio firm, and 0 otherwise. Proceeds for Acq is a qualitative variable that takes on the value of 1 when the corporate proceeds from a joint offering by the private equity sponsor and the portfolio firm are to be used for new acquisitions, and 0 otherwise. Pre-month CAR is the firm's cumulative excess return measured from 30 trading days to two trading days prior to the announcement of the offering. IdiosynRisk is the standard deviation of the residuals from a market model regression for the firm's returns estimated over the pre-event period -120 to -10. HiTech is a qualitative variable that takes on the value of 1 for offerings at high technology firms, as defined by Faccio and Masulis (2005), and 0 otherwise. Δ Institutional hldgs is the change in institutional holdings as proportion of the firm's total shares outstanding, measured over the period from three months prior to the announcement of the offering to three months after the announcement. PreAmihud is the average Amihud measure of illiquidity during the three month period prior to the announcement of the offering, excluding the month of the offering announcement. Δ Amihud is the change in illiquidity surrounding the offering announcement using the Amihud measure of illiquidity measured as the difference between average illiquidity for the period three months after the offering announcement relative to the average illiquidity three months prior to the announcement, excluding the month of the offering announcement. HighReputation PE is a qualitative variable that takes on the value of 1 for private equity sponsors that are included in the lists of Top 20 or Notable Private Equity Firms compiled by Private *Equity International*, and 0 otherwise. Bank-related PE is a qualitative variable that takes on the value of 1 for secondary offerings in which the private equity sponsor is a commercial banking group or a major investment banking group, and 0 otherwise. Foreign PE is a qualitative variable that takes on the value of 1 for an offering in which the private equity sponsor is not headquartered in the U.S., and 0 otherwise. NYSE is a qualitative variable that takes on the value of 1 for offering in which the registrant portfolio firm is listed on the NYSE, and 0 otherwise. 1/(Time post-IPO) is the reciprocal of the number of trading days from the date of the IPO to the date of the announcement of the secondary offering. Heteroscedastic-consistent p-values based on White (1980) are reported below the coefficients. Statistical significance is indicated by *, at the 10% level, ** at the 5% level, and ***, at the 1% level.

Full Sample	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First Offering	-1.34	-0.08	-0.22	-0.23	-0.23	0.03	-0.23	-0.03
	(-0.19)	(-0.10)	(-0.27)	(-0.28)	(-0.28)	(0.04)	(-0.28)	(-0.04)
Joint Offering	-2.20**	-3.10**	-3.23**	-3.15**	-3.15**	-2.94**	-3.24**	-3.03**
	(-1.79)	(-2.21)	(-2.31)	(-2.26)	(-2.24)	(-2.07)	(-2.31)	(-2.14)
Proceeds for Acq	3.09**	4.67***	4.41***	4.42***	4.42***	4.14***	4.36%***	4.07***
	(2.27)	(3.05)	(2.89)	(2.90)	(2.89)	(2.66)	(2.85)	(2.62)
6-week Runup	-4.90**	-5.95***	-5.46***	-5.45***	-5.45***	-5.26**	-5.41***	-5.22**
	(-2.44)	(-2.66)	(-2.44)	(-2.43)	(-2.43)	(-2.33)	(-2.41)	(-2.32)
IdiosynRisk	-11.87	-21.23	-24.88	-24.11	-24.04	-24.17	-27.63	-27.77
	(-0.56)	(-0.95)	(-1.12)	(-1.08)	(-1.07)	(-1.08)	(1.22)	(-1.23)
HiTech	-1.27*	-5.17**	-5.01***	-5.00***	-4.99***	-5.07***	-5.01***	-5.09***
	(-1.87)	(-3.04)	(-2.97)	(-2.96)	(-2.95)	(-2.51)	(-2.96)	(-3.00)
Δ Institutional Hldgs		4.34**	4.58**	4.49**	4.48**	5.10***	4.42**	5.03**
		(2.25)	(2.38)	(2.33)	(2.32)	(2.51)	(2.29)	(2.48)
PreAmihud		-10.44*	-11.49*	-11.25*	-11.24*	-11.05*	-12.22**	-12.03*
		(-1.73)	(-1.91)	(-1.86)	(-1.86)	(-1.82)	(-2.00)	(-1.97)
Δ Amihud		-11.54***	-11.55***	-11.50***	-11.50***	-10.87**	-11.24***	-10.61%**
		(-2.49)	(-2.51)	(-2.50)	(-2.49)	(-2.33)	(-2.44)	(-2.28)
HighReputation PE			-1.41	-1.35*	-1.36*	-1.52**	-1.20	-1.35*
			(-1.94)	(-1.85)	(-1.84)	(-2.01)	(-1.59)	(-1.76)
Bank-related PE				1.77	1.77	1.73*	2.11	2.07
				(0.89)	(0.89)	(-0.87)	(1.05)	(1.02)
Foreign PE					0.28	0.38	0.50	0.59
					(0.11)	(0.14)	(0.19)	(0.23)
NYSE							-0.88	-0.88
							(-1.12)	(-1.13)
1/(Time post-IPO)						-1.70		-1.70
						(-1.00)		(-1.00)
Constant	-0.99	-1.06	-1.43	-0.27	-0.27	0.07	0.26	0.05
	(1.29)	(-1.21)	(-0.15)	(-0.26)	(-0.27)	(-0.07)	(0.32)	(0.48)
R² Adj	0.051	0.131	0.143	0.141	0.138	0.138	0.139	0.139
F-statistic	3.37***	4.69***	4.66***	4.30**	3.92***	3.70***	3.72***	3.53***
N	269	221	221	221	221	221	221	221

Table 10

Cross-sectional Regression Analysis of Excess Returns for Portfolio Firms at First Secondary Seasoned Offering by Private Equity after an IPO

This table reports the results of cross sectional regressions in which the dependent variable is the set of three-day (-1, +1) excess returns from the event study for the sample of 196 first secondary equity offerings by private equity sponsors after the IPO for portfolio firms listed on the NYSE or Nasdaq at announcements of secondary equity offerings by their private equity sponsors, for the period 1996 through 2013. Independent variables reflect characteristics of the secondary offerings, of the portfolio firm, and of the private equity sponsor. The independent variables are defined as follows: Joint offering is a qualitative variable that takes on the value of 1 when the secondary offering is a joint offering by the private equity sponsor and the portfolio firm, and 0 otherwise. Proceeds for Acq is a qualitative variable that takes on the value of 1 when the corporate proceeds from a joint offering by the private equity sponsor and the portfolio firm are to be used for new acquisitions, and 0 otherwise. Pre-month CAR is the firm's cumulative excess return measured from 30 trading days to two trading days prior to the announcement of the offering. IdiosynRisk is the standard deviation of the residuals from a market model regression for the firm's returns estimated over the pre-event period -120 to -10. HiTech is a qualitative variable that takes on the value of 1 for offerings at high technology firms, as defined by Faccio and Masulis (2005), and 0 otherwise. Δ Institutional hldgs is the change in institutional holdings as proportion of the firm's total shares outstanding, measured over the period from three months prior to the announcement of the offering to three months after the announcement. PreAmihud is the average Amihud measure of illiquidity during the three month period prior to the announcement of the offering, excluding the month of the offering announcement. ΔAmihud is the change in illiquidity surrounding the offering announcement using the Amihud measure of illiquidity measured as the difference between average illiquidity for the period three months after the offering announcement relative to the average illiquidity three months prior to the announcement, excluding the month of the offering announcement. HighReputation PE is a qualitative variable that takes on the value of 1 for private equity sponsors that are included in the lists of Top 20 or Notable Private Equity Firms compiled by Private *Equity International*, and 0 otherwise. Bank-related PE is a qualitative variable that takes on the value of 1 for secondary offerings in which the private equity sponsor is a commercial banking group or a major investment banking group, and 0 otherwise. Foreign PE is a qualitative variable that takes on the value of 1 for an offering in which the private equity sponsor is not headquartered in the U.S., and 0 otherwise. NYSE is a qualitative variable that takes on the value of 1 for offering in which the registrant portfolio firm is listed on the NYSE, and 0 otherwise. 1/(Time post-IPO) is the reciprocal of the number of trading days from the date of the IPO to the date of the announcement of the secondary offering. Heteroscedastic- consistent p-values based on White (1980) are reported below the coefficients. Statistical significance is indicated by *, at the 10% level, **, at the 5% level, and ***, at the 1% level.

First Sample	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Joint Offering	-2.46*	-3.34**	-3.35**	-3.39**	-3.34**	-3.01*	-3.00*	-3.00*
	(-1.66)	(-2.03)	(-2.05)	(-2.07)	(-2.03)	(-1.81)	(-1.80)	(-1.80)
Proceeds for Acq	3.80**	5.49***	5.23***	5.22***	5.20***	-4.78***	4.65***	4.65***
	(2.40)	(3.18)	(3.03)	(3.01)	(3.00)	(2.72)	(2.63)	(2.63)
6-week Runup	-4.92**	-7.29***	-7.05***	-7.71***	-7.24***	-7.00***	6.93***	-6.93***
	(-2.02)	(-2.78)	(-2.69)	(-2.72)	(-2.74)	(-2.64)	(-2.62)	(-2.62)
IdiosynRisk	-11.037	-20.50	-24.90	-25.71	-25.32	-25.53	-29.20	-29.20
	(-0.47)	(-0.85)	(-1.03)	(-1.06)	(-1.04)	(-1.05)	(1.18)	(-1.18)
HiTech	-3.23*	-5.44***	-5.37**	-5.37***	-5.34***	-5.40***	-5.41***	-5.41***
	(-1.95)	(-2.87)	(-2.33)	(-2.84)	(-2.82)	(-2.86)	(-2.72)	(-2.86)
Δ Institutional Hldgs		5.13**	5.28**	5.38**	5.45**	6.49***	6.56**	6.56***
		(2.26)	(2.33)	(2.37)	(2.39)	(2.70)	(2.72)	(2.72)
PreAmihud		-10.44	-11.51*	-11.69*	-11.67*	-11.36*	-12.45*	-12.45*
		(-1.61)	(-1.77)	(-1.79)	(-1.79)	(-1.74)	(-1.87)	(-1.87)
Δ Amihud		-11.54***	-11.95**	-10.93***	-10.93***	-9.09**	-9.85**	-9.85**
		(-2.49)	(-2.30)	(-2.29)	(-2.29)	(-2.08)	(-2.04)	(-2.04)
HighReputation PE			-1.32	-1.37%	-1.48*	-1.72*	-1.58*	-1.58*
			(-1.54)	(-1.59)	(-1.69)	(-1.93)	(-1.75)	(-1.75)
Bank-related PE				2.46	-1.42	1.59	1.28	-1.28
				(0.61)	(0.60)	(-0.67)	(0.53)	(-0.53)
Foreign PE					0.25	2.84	3.02	3.02
					(0.83)	(0.93)	(0.99)	(0.99)
NYSE							-0.74	-0.74
							(-1.33)	(-0.79)
1/(Time post-IPO)						-2.32		-2.36
						(-1.31)		(-1.33)
Constant	-1.17	-1.24	-0.48	-0.37	-0.41	0.11	0.64	0.65
	(1.57)	(-1.43)	(-0.48)	(-0.37)	(-0.40)	(-0.11)	(0.50)	(0.50)
R^2 Adj	0.063	0.173	0.143	0.177	0.175	0.179	0.177	0.177
F-statistic	3.57**	5.20***	4.93***	4.45***	4.10***	3.92***	3.66***	3.66***
N	196	162	162	162	162	162	162	162

Table 11

Cross-sectional Regression Analysis of Excess Returns for Portfolio Firms at Seasoned Offerings (SPO) by Private Equity for Various Test Variables when incorporated in Specifications Reported Earlier

This table reports the results of cross sectional regressions in which the dependent variable is the set of three-day (-1, +1) excess returns from the event study for the full sample of 269 secondary equity offerings (SPO) and for the sample of 196 first secondary equity offerings by private equity sponsors for portfolio firms listed on the NYSE or Nasdaq at announcements of secondary equity offerings by their private equity sponsors, for the period 1996 through 2013. These independent variables reflect characteristics of the secondary offerings or of the portfolio firm, the results reported below are obtained when each variable is added individually to specification (8), as reported in tables 9 and 10, for the full sample of secondary offerings and the sample of first secondary offerings, respectively. For conciseness, the coefficients of the remaining independent variables, which remain almost identical to the results reported in the tables 9 and 10, are not reported in this table but are available upon request. The independent variables reported below are defined as follows: Underpricing is the percentage change represented by the closing price of the portfolio firm's shares on the first day of trading relative to the offering price for the IPO of the portfolio firm. The variable % PE sold is the percentage of the firm's outstanding shares that are sold by the private equity sponsor in the secondary offering. The variable % PE owned pre is the percentage of the portfolio firm's shares that are owned by the portfolio sponsor prior to the secondary offering. The variable % PE owned post is the percentage of the portfolio firm's shares that are owned by the portfolio sponsor after the secondary offering. Ln proceeds is the logarithm of the gross proceeds of the secondary offering. SPO shares/MV is the ratio of the gross proceeds of the secondary offering scaled by the market value of the equity of the portfolio firm. Ln MV is the logarithm of the market capitalization of registrant portfolio firm defined as total shares outstanding multiplied by share price five days prior to the initial announcement of the secondary offering. Enterprise value is the market capitalization of the portfolio firm plus the book value of its debt. Leverage is the ratio of the book value of the portfolio firm's debt to the market value of its equity. LT Debt/ Total assets is the ratio of the book value of the portfolio firm's long debt to the book value of its total assets. Mkt/Book is the ratio of the share price of the portfolio firm to the book value of shareholders' equity per share. Dividend policy is a qualitative variable that equals one if the portfolio firm pays a dividend and zero otherwise. Heteroscedastic- consistent t-statistics based on White (1980) are also reported in the table. Statistical significance is indicated by *, at the 10% level, ** at the 5% level, and ***, at the 1% level.

| | Full Sample | | First Secondary Offering | |
Variable	Coefficient	t-statistic	Coefficient	t-statistic
Underpricing	0.81	0.39	-1.03	-0.41
% PE Sold	-1.57	-0.27	2.28	0.37
% PE Owned Pre	0.23	0.16	0.54	0.34
% PE Owned Post	0.01	0.54	0.01	0.66
Ln Proceeds	0.41	0.87	0.45	0.87
SPO Shares/MV	-0.63	-0.16	1.98	0.47
Ln MV	0.32	0.73	0.55	1.03
Enterprise Value	0.53	1.13	0.59	1.03
Leverage	1.08	0.92	0.58	0.48
LT Debt/ Total Assets	0.00	0.71	0.00	0.24
Mkt/Book	-0.00	-0.82	-0.00	-0.63
Dividend Policy	-0.36	-0.44	-0.64	-0.74

Table 12

Adjusted Operating Performance, ROA, after Secondary Seasoned Offerings by Private Equity

Changes in adjusted operating performance measured as the return on sales, ROA, for registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient returns to perform an event study analysis. Adjusted performance for each firm is obtained by subtracting the median performance measure for a group of matched firms benchmarked in year -1, the fiscal year prior to the secondary offering. Return on assets, ROA, is operating income before depreciation, interest, taxes and extraordinary items divided by total assets. Results are reported for each year and for spans of various duration relative to year -1. Results are reported for the full sample of 269 secondary seasoned equity offerings, the sample of 196 first secondary seasoned equity offering announcements after an IPO, and the sample of 70 secondary seasoned offerings where the percentage of ownership held by the private equity sponsor after the offering is completed is less than 5%. Statistical significance is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level.

Year	Adjusted Performance Per Year					Changes in Adjusted Performance over Time			
	-1	0	1	2	3	-1 to 0	-1 to +1	-1 to +2	-1 to +3
Full Sample									
Mean	0.34%**	2.01%***	1.68%*	2.12%	3.62%***	1.40%***	1.32%***	1.66%	2.99%***
p-value	0.03	<.01	0.09	0.16	0.01	<.01	0.01	0.15	0.01
Median	0.16%***	1.27%***	1.34%***	1.55%***	2.29%***	0.94%**	1.33%**	1.47%***	2.06%***
p-value	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01
First Offering									
Mean	0.29%***	2.24%***	1.86%***	2.31%***	4.19%	1.60%***	1.56%	1.89%	3.59%**
p-value	<.01	0.09	<.01	0.01	0.14	0.01	0.11	0.23	0.02
Median	0.24%***	1.34%***	1.75%***	1.55%**	1.99%***	1.07%**	1.47%***	1.49%**	1.76%***
p-value	<0.01	0.01	<0.01	0.03	0.01	0.02	<0.01	<0.01	0.01

Table 13

Adjusted Operating Performance, ROS, after Secondary Seasoned Offerings by Private Equity

Changes in adjusted operating performance measured as the return on sales, ROS, for registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis. Adjusted performance for each firm is obtained by subtracting the median performance measure for a group of matched firms benchmarked in year -1, the fiscal year prior to the secondary offering. Return on assets, ROS, is operating income before depreciation, interest, taxes and extraordinary items divided by total sales. Results are reported for each year and for spans of various duration relative to year -1. Results are reported for the full sample of 269 secondary seasoned equity offerings, the sample of 196 first secondary seasoned equity offering announcements after an IPO, and the sample of 70 secondary seasoned offerings where the percentage of ownership held by the private equity sponsor after the offering is completed is less than 5%. Statistical significance is based on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level.

Year	Adjusted Performance Per Year					Changes in Adjusted Performance over Time			
	-1	0	1	2	3	-1 to 0	-1 to +1	-1 to +2	-1 to +3
Full Sample									
Median	0.22%***	1.54%*	2.28%***	2.31%***	2.71%***	1.05%***	1.41%***	1.75%***	2.11%***
p-value	<0.01	0.08	<0.01	<0.01	<0.01	0.01	<0.01	0.01	<0.01
First Offering									
Median	0.17%***	1.74%***	3.25%***	2.57%***	2.94%***	1.17%**	1.78%***	1.90%	2.35%***
p-value	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.11	0.01

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Table 14

Adjusted Operating Performance after Secondary Seasoned Offerings by Private Equity, Disaggregated by Post-offering Private Equity Ownership

Changes in adjusted operating performance measured as the return on sales, ROS, for registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis. Adjusted performance for each firm is obtained by subtracting the median performance measure for a group of matched firms benchmarked in year -1, the fiscal year prior to the secondary offering. Return on assets, ROS, is operating income before depreciation, interest, taxes and extraordinary items divided by total sales. Results are reported for each year and for spans of various duration relative to year -1. Results are reported separately for the sample of 199 secondary seasoned equity offerings where the percentage of ownership held by the private equity sponsor after the offering is completed is greater than or equal to 5%, and the sample of 70 secondary seasoned offerings where the percentage of ownership held by the private equity sponsor after the offering is completed is less than 5%. Statistical significance is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level.

	Adjusted Performance Per Year					Change in Adjusted Performance over Time			
Year	-1	0	1	2	3	-1 to 0	-1 to +1	-1 to +2	-1 to +3
PE > 5%									
Mean	037%***	1.41%***	1.49%*	2.44%**	2.45%***	1.01%*	1.23%	2.18%**	2.14%**
p-value	<0.01	0.01	0.09	0.03	0.01	0.06	0.17	0.05	0.04
Median	0.20%***	1.27%***	1.58%***	1.56%**	2.58%***	0.97%**	1.36%***	1.25%**	2.25%**
p-value	<0.01	0.01	<0.01	0.02	0.01	0.03	0.01	0.02	0.02
PE < 5%									
Mean	0.24%*	3.59%***	2.15%**	1.20%	6.95%*	2.53%***	2.01%	0.61%	1.57%
p-value	0.08	0.01	0.20	0.71	0.07	0.01	0.35	0.96	0.13
Median	0.10%	1.28%**	1.18%	1.27%	1.45%**	0.88%**	1.12%**	1.48%	1.31%*
p-value	0.28	0.02	0.12	0.32	0.05	0.05	0.02	0.40	0.07

Table 15

Adjusted Operating Performance after Secondary Seasoned Offerings by Private Equity, Disaggregated by Type of Offering and Reputation of Private Equity Sponsor

Changes in adjusted operating performance measured as the return on sales, ROA, for registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis. Adjusted performance for each firm is obtained by subtracting the median performance measure for a group of matched firms benchmarked in year -1, the fiscal year prior to the secondary offering. Return on assets, ROA, is operating income before depreciation, interest, taxes and extraordinary items divided by total assets. Results are reported for each year and for spans of various duration relative to year -1. Results are reported separately for the sample of 196 pure secondary seasoned equity offerings versus the 73 offerings by private equity sponsors that have a joint offering of equity by the portfolio firm, and reported separately for the 117 offerings where the private equity sponsor is included in the lists of Top 20 or Notable Private Equity Firms compiled by Private *Equity International* versus 152 offerings by other private equity sponsors. Statistical significance is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level.

	Adjusted Performance Per Year					Change in Adjusted Performance over Time Period			
	-1	0	1	2	3	-1 to 0	-1 to +1	-1 to +2	-1 to +3
Joint Offer									
Mean	0.17%	1.52%*	0.13%	1.81%	3.07%	1.29%	-0.00%	1.62%	2.81%
p-value	0.15	0.07	0.95	0.59	0.16	0.14	0.99	0.63	0.22
Median	0.13%*	1.37%	0.93%	1.64%	3.07%**	0.97%	1.04%	1.36%	2.55%*
p-value	0.07	0.46	0.36	0.73	0.05	0.55	0.35	0.86	0.09
Pure Offer									
Mean	0.38%***	2.15%***	2.17%***	2.22%**	3.80%***	1.44%***	1.73%**	1.67%	3.05%**
p-value	<0.01	<0.01	<0.01	0.05	0.01	0.01	0.02	0.13	0.03
Median	0.18%***	1.25%***	1.59%***	1.55%***	1.63%***	0.90%***	1.36%***	1.47%***	1.47%***
p-value	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01

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Table 15 continued

Top PE									
Mean	0.40%***	2.74%***	2.03%**	2.31%**	3.96%***	1.81%***	1.40%	1.62%	2.93%***
p-value	<0.01	<0.01	0.04	0.04	<0.01	<0.01	0.15	0.14	<0.01
Median	0.25%***	1.60%***	2.21%***	1.79%***	2.88%***	1.20%***	1.47%***	1.58%**	2.28%***
p-value	<0.01	<0.01	<0.01	0.01	<.001	<0.01	<0.01	0.02	<0.01
Other PE									
Mean	0.29%**	1.38%*	1.38%	1.93%	3.27%	1.44%	1.73%	1.67%	3.06%
p-value	0.03	0.08	0.24	0.34	0.12	0.18	0.30	0.42	0.17
Median	0.11%**	0.70%	0.83%	0.96%	1.68%	0.27%	0.63%*	1.04%	1.32%
p-value	0.05	0.34	0.12	0.41	0.21	0.57	0.10	0.28	0.24

Table 16

Adjusted Operating Performance after First Secondary Seasoned Offerings by Private Equity, Disaggregated by Type of Offering and Reputation of Private Equity Sponsor

Changes in adjusted operating performance measured as the return on sales, ROA, for registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis. Adjusted performance for each firm is obtained by subtracting the median performance measure for a group of matched firms benchmarked in year -1, the fiscal year prior to the secondary offering. Return on assets, ROA, is operating income before depreciation, interest, taxes and extraordinary items divided by total assets. Results are reported for each year and for spans of various duration relative to year -1. Results are reported separately for the sample of 196 pure secondary seasoned equity offerings versus the 73 offerings by private equity sponsors that have a joint offering of equity by the portfolio firm, and reported separately for the 117 offerings where the private equity sponsor is included in the lists of Top 20 or Notable Private Equity Firms compiled by Private *Equity International* versus 152 offerings by other private equity sponsors. Statistical significance is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level.

	Adjusted Performance Per Year					Change in Adjusted Performance over Time Period			
	-1	0	1	2	3	-1 to 0	-1 to +1	-1 to +2	-1 to +3
Joint Offer									
Mean	0.07%	1.95%**	1.82%	3.02%	3.25%	1.88%***	2.00%*	3.06%*	3.24%**
p-value	0.46	0.02	0.45	0.45	0.18	<0.01	0.06	0.08	0.03
Median	0.00%	1.48%	1.11%	2.48%	2.29%	1.09%	1.22%*	2.31%	1.97%
p-value	0.27	0.15	0.12	0.71	0.17	0.15	0.08	0.71	0.23
Pure Offer									
Mean	0.21%**	2.22%***	1.42%	2.33%	2.25%*	2.00%***	1.26%	2.27%	2.15%*
p-value	0.02	<0.01	0.33	0.16	0.07	<0.01	0.39	0.17	0.08
Median	0.11%*	1.41%***	2.05%***	2.52%**	0.98%**	1.28%***	1.48%***	2.31%	1.18%
p-value	0.09	<0.01	<0.01	0.02	0.05	<0.01	<0.01	0.11	0.21
Top PE									
Mean	0.40%***	1.81%***	1.40%	1.63%	2.93%***	1.81%***	1.40%	1.62%	2.93%***
p-value	<.001	<.001	0.15	0.13	<.001	<.001	0.15	0.14	<.001
Median	0.25%***	1.20%***	1.47%***	1.58%***	2.28%***	1.20%***	1.47%***	1.58%***	2.28%***
p-value	<.001	<.001	<.001	0.01	<.001	<.001	<.001	0.01	<.001

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Table 16 continued

Other PE									
Mean	0.38%**	2.08%*	2.62%	3.50%	4.93%	1.70%	2.50%	3.28%	4.81%
p-value	0.05	0.08	0.24	0.34	0.12	0.18	0.30	0.42	0.17
Median	0.14%**	1.55%*	1.45%**	1.57%*	2.80%	0.09%	1.64%**	2.05%**	2.85%
p-value	0.02	0.06	0.03	0.09	0.12	0.16	0.03	0.04	0.11

Table 17

Operating Performance after Secondary Seasoned Offerings by Private Equity Relative to Performance of Benchmark RLBOs without Secondary Offerings

Changes in adjusted operating performance measured as the return on assets, ROA, for registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis. Adjusted performance for each firm is obtained by subtracting the performance measure for a matched firm benchmarked by being a firm that sustained a reverse leveraged buyout in the same year as the sample firm, that shares the same 2-digit SIC code, a similar market capitalization (from 30% to 170% of sample firm at filing year of the first secondary offering), and similar operating performance (80% to 120% of the ROA of sample firm in year -1, the fiscal year prior to the secondary offering by the sample firm. Return on assets is operating income before depreciation, interest, taxes and extraordinary items divided by total assets. Results are reported for each year and for spans of various duration relative to year -1. Results are reported separately for the full sample of 269 secondary seasoned equity offerings, the sample of 169 first secondary seasoned offerings after an IPO, and the sample of 70 secondary seasoned offerings where the percentage of ownership held by the private equity sponsor after the offering is completed is less than 5%. Statistical significance is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level.

Year	Adjusted Performance Per Year					Change in Adjusted Performance over Time			
	-1	0	1	2	3	-1 to 0	-1 to +1	-1 to +2	-1 to +3
Full Sample									
Median	0.74%	4.30%***	9.37%***	12.13%***	14.16%***	0.01	6.36%***	8.33%***	5.65%**
p-value	0.11	<.01	<.01	<.01	<.01	0.27	<.01	0.01	0.02
First Offering									
Median	0.02%	3.50%**	9.23%***	12.85%***	14.25%***	0.58%	8.69%***	9.59%**	6.00%
p-value	0.92	0.04	<.01	<.01	0.01	0.62	0.01	0.02	0.13
PE < 5%									
Median	0.74%	4.30%***	9.37%***	12.13%***	14.16%***	1.03%	6.36%***	8.33%***	5.65%**
p-value	0.11	<.01	<.01	<.01	<.01	0.27	<.01	0.01	0.02

Table 18

Long Run Financial Performance of Portfolio Firms after First Secondary Seasoned Offerings by Private Equity Sponsors

Financial performance measured as long run buy and hold returns for 196 registrant portfolio firms that sustain first secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis of the initial announcement of the offering. Buy and hold returns are computed for one year, two years, and three years after the initial announcement of the secondary offering. Buy and hold returns are also reported for the value-weighted NYSE/Amex/Nasdaq market index. Statistical significance is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level. p values are reported for relevant differences in means and medians.

	Value-weighted Market Index	*First SEO Firms*	*p(diff) Market vs First SEO*
	1 Year Buy and Hold Returns		
Mean	9.5%***	21.43%***	<0.01
t-statistic	6.67	3.27	
Median	12.92%***	11.16%***	0.31
p-value	<0.01	<0.01	
	2 Year Buy and Hold Returns		
Mean	16.02%***	24.86%***	<0.01
t-statistic	7.11	3.13	
Median	17.46%***	6.20%***	0.13
p-value	<0.01	<0.01	
	3 Year Buy and Hold Returns		
Mean	19.28%***	30.69%***	<0.01
t-statistic	9.02	2.91	
Median	10.42%***	9.33%***	0.85
p-value	<0.01	<0.01	

Table 19

Frequency of Corporate Control Events following Secondary Seasoned Offerings by Private Equity Sponsors and for Benchmark Firms

Statistics on outcomes for the sample of 196 registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis of the initial announcement of the offering, and for their benchmark firms selected as the firm on the CRSP file that has the same 4-digit SIC code and that is closest in market capitalization to the registrant firm at the announcement date. Data is reported for the number and proportion of firms that are subject to corporate control transactions, that continue to trade as of December 31, 2013, and that are delisted due to financial distress. The p-value (*p(diff)*) reported is for the test of the difference in the proportions between sample firms versus benchmark firms.

	Sample Firms		Benchmark Firms		Difference in Proportions	
Outcome	Number	Percent	Number	Percent	z-statistic	p-value
Still trading	146	74.59%	133	67.86%	1.45	0.15
Merged	50	25.00%	55	28.06%	-0.57	0.57
Delisted	1	0.51%	8	4.08%	-2.36**	0.02**
Total	196	100%	196	100%		

Figure 1

Number of Stores of Tuesday Morning

This figure illustrates the number of stores operated by Tuesday Morning Corporation.

Figure 2

Tuesday Morning Gross Sales

This figure illustrates the gross sales of Tuesday Morning Corporation.

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Figure 3

Tuesday Morning Employees

This figure illustrates the number of persons employed by Tuesday Morning Corporation.

Figure 4

Tuesday Morning Gross Profit

This figure illustrates the gross profit of Tuesday Morning Corporation, defined as earnings before interest, taxes, depreciation, and amortization.

Figure 5

Tuesday Morning Market Value

This figure illustrates the market value of Tuesday Morning Corporation, defined as share price multiplied by total shares outstanding.

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Chapter 9

CONCLUSIONS

9.1. Major Findings

It has long been known that private equity seldom exits from its entire investment through an IPO. Instead, a private equity firm typically sells only a small proportion of its stake or often no shares at all in an IPO of a portfolio firm, a form of behavior that is consistent with a broad class of theoretical models in finance that take account of problems of asymmetric information and adverse selection associated with IPOs. Thus, private equity generally retains a controlling stake in these newly public firms for a considerable period of time. During this period of ownership the private equity sponsor is actively involved in the firm's activities and closely monitors the portfolio firm's managers while preparing for its eventual exit from the firm's ownership structure. An important mechanism for such an exit is a secondary equity offering to public investors.

In this dissertation I analyze the effects of secondary stock offerings by private equity firms. These offerings substantially reduce (or dissolve) a large block of equity held by a private equity sponsor. Unlike the case of other controlling shareholders or founders of newly public companies who typically face few constraints about timing, the process of exit after an IPO is a planned-for element that is intrinsic to the private equity process, given that private equity investments are invariably intended by their nature to be a transitional rather than a permanent form of ownership.

In the preponderance of cases examined in this dissertation, the private equity sponsor engages in a series of secondary offerings until its final exit from the firm's ownership structure. Such secondary offerings reduce the portfolio firm's ownership concentration and increase the liquidity of its stock. Unlike sales of stock to qualified investors, secondary offerings must be registered with the Securities and Exchange Commission (SEC), a requirement that applies to all public stock offerings and involves detailed disclosure of corporate information via an information statements and prospectus. Thus, a secondary equity offering initiated by any insider or other holder shares the same transparency characteristics as a primary seasoned offering of equity.

In this dissertation I show that the decision of a private equity sponsor to exit its holding via a secondary offering decreases portfolio firm's share price, implying a decline in portfolio firm shareholder wealth from the exit of its private equity sponsor. The decline in share price applies to both the first secondary offering by private equity and to subsequent secondary offerings. Thus, even though private equity ownership can be viewed as a transitional form of ownership for the portfolio firm once an IPO has been effected, the decision of a private equity sponsor to exit its ownership or decrease its holding of shares via a secondary offering on average significantly decreases portfolio firm value.

I find that secondary equity offerings occur after a period of significant positive excess returns, a pattern that has been noted in almost all of the extensive studies that have examined primary equity offerings. A negative share price response also occurs in the case of a joint offering in which the private equity sponsor sells existing shares and the portfolio firm simultaneously sells new shares to raise equity capital (at the same price), but the negative share price effect is attenuated for those firms that intend to use the proceeds of the offering to conduct acquisitions.

As a result of the secondary offering the private equity firm's shares migrate to financial institutions, so there is enhanced ownership dispersion and an improvement in stock liquidity. I find strong evidence that the share price reaction for the share price of the portfolio firm is inversely related to its ex ante share liquidity and is positively related to subsequent improvements in liquidity and increases institutional ownership. Thus, the greater the improvement in liquidity, the more favorable the share price reaction to news of the secondary offering.

The evidence also suggests that there is a significantly more unfavorable share price effect for a secondary offering by a notable private equity firm relative to other private equity sponsors. The results suggest that the financial market values the presence of high quality private equity firms as large blockholders, monitors, and certifiers, so that the loss of a high reputation private equity sponsor from the firm's ownership structure induces the market to more highly discount the future stream of earnings, thus lessening firm value.

The evidence from secondary offerings by private equity is also consistent with models that emphasize the importance of share trading and liquidity for managerial monitoring and that view market participants as a meaningful substitute for the monitoring and control exercised by a private equity sponsor. In contrast, there is no effect on the share response to the offering for variables that measure managerial ownership, suggesting that insider ownership is not an effective substitute for the presence of private equity.

While the Welch (1989) model of the IPO process implies that there should be a positive relation between the degree of underpricing of an IPO and the share price response to a subsequent seasoned offering at which private equity sells shares, there is no evidence that IPO underpricing has any impact on the share price response of the secondary offering.

The pattern of the empirical results suggest that the large size of private equity blockholdings and their associated control rights are of value to portfolio firms, but this value does not necessarily create a great barrier to exit for a private equity firm if the common stock of the portfolio firm is already highly liquid or if it can be expected to become highly liquid as a result of the secondary offering.

I find that there is positive industry-adjusted operating performance after a secondary offering by private equity, and that this performance that does not deteriorate over time. Instead, I find that the operating performance of portfolio firms improves relative to the industry after secondary equity offerings by private equity sponsors. Thus, unlike primary equity offerings, a private equity firm's decision to conduct a secondary offering does not convey negative private information about a portfolio firm's subsequent operating performance.

Moreover, the proportion of portfolio firms that sustain secondary offerings and that are subsequently delisted or become bankrupt is significantly less than the proportion of benchmark firms that are subsequently delisted. Such findings suggest that the financial market expects that the stand-alone public firm that emerges after the exit of a private equity sponsor will operate effectively after this important change in ownership structure.

The findings reported in this dissertation provide new perspective about the exit of private equity from investments in portfolio firms. In addition, this empirical work also provides new

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evidence in support of corporate finance models that analyze how monitoring and liquidity of common stock interact so as to affect shareholder wealth. Thus, a publicly traded firm with concentrated ownership but highly liquid common stock can expect to sustain little if any reduction in shareholder wealth from a secondary offering by a private equity sponsor, especially if the sponsor is not one of the group of highly notable private equity firms. In this setting, the exit of the private equity sponsor through a large secondary offering is unlikely to harm the value of a portfolio firm. However, for a portfolio firm with illiquid common stock that has a prestigious private equity blockholder in its ownership structure, the capital market can be expected to react in an unfavorable manner to news of the decision of the private equity sponsor to exit its investment via a secondary offering, resulting in a substantial decline in shareholder wealth.

9.2. Avenues of Future Research about the Exit of Private Equity

The evidence reported in this dissertation is best viewed as the beginning of a broader program of research on various issues that revolve around the exit of private equity sponsors after portfolio firms have become public companies. As noted earlier, a secondary offering represents one important method of exit for private equity sponsors, a method that has certain costs in terms of the loss in shareholder value in addition to the costs associated with the fact that securities law imposes strict disclosure requirements for all actions related to the offering.

However, it is possible to generate a broader sample of exits by private equity after the IPO of a portfolio firm and I am currently engaged in the development and testing of these samples. These methods include: one, a sale of the publicly traded firm to a strategic acquirer, two, a sale of the private equity sponsor's stake (whether it is a controlling interest or a smaller stake) to another private equity firm, three, a private sale (such as a private placement) of its stake to qualified investors, four, a pro rata share distribution of the shares to its limited partners, and, five, a series of open market (insider) sales of shares.

Each of these methods of dissolving private equity ownership is worthy of intensive study in a manner comparable to the research reported in this dissertation for secondary offerings. For example, there is little research on the issue of whether pro rata distributions of shares to limited

partners is a rare or relatively common method of shifting ownership concentration, even though

spin-offs of corporate operating assets have been extensively studied.[15]

Similarly, although there is considerable evidence that private placements of new equity

to qualified investors by issuing firms generate positive share price effects (Wruck (1989) and

Hertzel and Smith (1993)), there is no evidence on the implications of large private placements (in

effect, privately negotiated transactions) by large private equity blockholders. Nor is there any

understanding of whether such placements are common or rare.

More broadly, there is little or no theoretical and empirical work to explain the choice

among the alternative divestment methods available to a private equity sponsor, including such

mechanisms as sales to strategic buyers, secondary stock offerings, spin-offs, and private

placements. The private equity sponsor's choice among these divestment methods is the focus

of an independent paper. For example, it is possible that the most valuable assets to private

equity are those with strong growth potential and many potential (future) synergistic buyers. After

acquiring such assets a private equity may be able to quickly restructure them and then conduct

an IPO. As a result of the extensive disclosure requirements, the activity of stock market

analysts, and informed trading associated with public trading there will be a substantial reduction

in asymmetric information that allows the private equity sponsor to subsequently sell the firm in

an auction at a fully transparent price.

Private equity may also gain a further increment in value in the form of a premium that

would be paid (and shared by to all shareholders) in the event of a subsequent acquisition by a

strategic acquirer that has synergies with the restructured asset (assuming that there is effective

competition among such strategic bidders so that most of the synergistic gains flow to the private

equity seller). Thus, when a private equity group acquires this type of asset, it will be able to exit

the investment relatively quickly after an IPO through an asset sale to a strategic buyer rather

than conducting secondary stock issues. Thus, it is important to investigate issues related to the

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[15] An exception is Lovo, Slovin, and Sushka (2014) who find that a firm's decision to conduct a spin-off of a block of shares in another firm via a pro rata stock dividend generates a negative share price effect on the subject corporation.

subsequent operating performance of portfolio firms relative to the industry after an IPO for each form of exit mechanism.

The issues surrounding acquisitions of these firms by strategic buyers raise the broader issues of whether such takeovers are common after a firm has undergone restructuring by a private equity sponsor. While other forms of exit by private equity typically retain the portfolio firm as an independent entity, takeovers by strategic acquired transform a stand-alone firm (controlled by private equity) into a division of a much broader firm, presumably because of the importance of potential synergistic gains. However, there is little research on the factors that private equity would weigh in resolving this question of retaining independence after exit versus a sale to strategic buyers.

In addition, there is the issue of whether there is an active control market for portfolio firms, which are tightly controlled by private equity, relative to a set of benchmark firms with more dispersed ownership. Presumably, there must be sufficiently important potential synergistic gains associated with the change in organizational form that occurs when a stand-alone asset controlled by private equity is sold to a corporate acquirer, given that such changes in control typically occur at a substantial premium to market price.

There is already a considerable body of research in corporate finance on the issue of ownership concentration and the openness to the market for corporate control. For example, Stulz (1988) argues that firms with greater insider ownership are less likely to be acquired. However, it is unclear that such a proposition should apply to the case of public firms in which private equity is a large stakeholder, given the concern about exit that is intrinsic to private equity.

Moreover, for the takeovers of these firms that do occur, there is the issue of whether takeovers of such firms elicit premiums that are different from the premiums that apply to other (benchmark) firms. For those firms in which private equity has retained a stake, there is the issue of whether all shareholders uniformly receive exactly the same compensation per share, or whether private equity might sell its control block at a different price.[16] Inasmuch as takeovers of

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[16] It is well established in corporation law that, absent special circumstances, the owner of a controlling block of stock is free to sell the stock to a third party at a premium that is not available

public firms are well tracked by various sources, these issues can be researched without the concerns of selection bias that may apply to other areas of private equity research.

Although there is a considerable literature on IPOs and how IPOs of firms controlled by private equity compare to other IPOs, there is little research on the monitoring, control, and corporate governance aspects of firms that remain under the control of private equity after the IPO process is completed. The characteristics and performance of PE controlled firms after an IPO are readily transparent because such firms are public corporations that must meet the disclosure requirements imposed by SEC rules. Thus, it is natural to investigate, not only the path of the amount of ownership held by private equity, but also issues such as board size, representation on the board by private equity, whether a member of the private equity sponsor serves as an executive officer (or chairman), managerial compensation, whether CEO turnover differs from that of other firms, and how each of these characteristics differs as PE ownership is gradually dissolved.

For example, a majority-controlled company (as most PE-controlled firms are for a period after the IPO) is exempt from the requirements in the NYSE Standards that requires a corporation to have a majority of its directors meet the "independent director" definition under the NYSE Standards and all independent directors as the members of compensation, nominating, and corporate governance committee must be independent directors. However, when private equity sponsors reduce their ownership in a portfolio firm there must be major changes in board structure that are designed to protect the interests of dispersed shareholders.[17] Moreover, it is likely that such an important change in ownership is accompanied by other corporate changes as well.

While this dissertation has drawn important conclusions about the effects of secondary offerings by private equity, there remain numerous issued to be addressed as to the factors that explain how private equity exits from its investment in a portfolio firm once the firm has become a

to non-controlling shareholders.

[17] Under the standards required by the NYSE, when a company ceases to be a controlled company, there is a transition period that allows the company to phase in its compliance with its independence standards.

publicly traded entity via an initial public offering. Given how important private equity has become

as an element of the market for corporate control, as well as in the political arena, it is apparent to

me that more intensive research in this area is long overdue.

REFERENCES

Adams, R., Ferreira D., 2007. A theory of friendly boards. Journal of Finance 62, 217-250.

Admati, A., P. Pfleiderer. 2009. The Wall Street walk and shareholder activism: exit as a form of voice. Review of Financial Studies 22, 2645-2685.

Admati, A., P. Pfleiderer, J. Zechner. 1994. Large Shareholder Activism, Risk Sharing, and Financial Market Equilibrium." Journal of Political Economy 102, 1097-1130.

Aghion, P., J. Tirole. 1997. Formal and real authority in organizations. Journal of Political Economy 105, 1-129

Agrawal, A., C. Knoeber. 1996. Firm performance and mechanisms to control agency problems between managers and shareholders. Journal of Financial and Quantitative Analysis 31, 377-397.

Ambarish, R., K. John, J. Williams. 1987. Efficient signaling with dividends and investment. Journal of Finance 42, 321-343.

Amihud, Y., H. Mendelson. 1986. Asset pricing and the bid-ask spread. Journal of Financial Economics 17, 223-249.

Amihud, Y., H. Mendelson. 1989. The effects of beta, bid-ask spread, residual risk, and size on stock returns. Journal of Finance 44, 479-486.

Amihud, Y., H. Mendelson, B. Lauterbach. 1997. Market microstructure and securities values: evidence from the Tel Aviv Stock Exchange. Journal of Financial Economics 45, 365-390.

Asquith, P., D. Mullins. 1986. Equity issues and offering dilution. Journal of Financial Economics 15, 61-89.

Barber, B., J. Lyon. 1996. Detecting abnormal operating performance: the empirical power and specification of test statistics. Journal of Financial Economics 41, 359-399.

Barber, B., J. Lyon. 1997. Detecting abnormal long run financial performance: the empirical power and specification of test statistics. Journal of Financial Economics 43, 341-372.

Barclay, M., R. Litzenberger. 1988. Announcement effects of new equity issues and the use of intraday price data. Journal of Financial Economics 21, 71-99.

Bargeron, L., F. Schlingemann, R. Stulz, C. Zutter, 2008, Why do private acquirers pay so little compared to public acquirers? Journal of Financial Economics 89, 375-390

Bartel, A., C. Ichniowski, K. Shaw. 2007. How does information technology affect productivity? Plant level comparisons of product innovation, process improvement, and worker skills. Quarterly Journal of Economics 122, 1721-1758.

Bauguess, S., M. Slovin, M. Sushka. 2012. Large shareholder diversification, corporate risk taking, and the benefits of changing to differential voting rights. Journal of Banking and Finance 36, 1244-1253

Bayliss, M., S. Chaplinsky. 1996. Is there a window of opportunity for seasoned equity issuance? Journal of Finance 51, 253-278.

Beatty, R., J. Ritter. 1986. Investment banking, reputation, and the underpricing of initial public offerings. Journal of Financial Economics 39, 545-602.

Bebchuk, L., 1989. Limiting contractual freedom in corporate law: the desirable constraints on charter amendments, Harvard Law Review 102, 180-1860.

Bebchuk, L., J. Fried. 2004. Pay without performance: the unfulfilled promise of executive compensation. Harvard University Press, Cambridge, MA.

Benston, G., R. Hagerman. 1974. Determinants of bid-ask spreads in the over-the-counter market." Journal of Financial Economics 1, 353-364.

Berle, A., G. Means. 1932. The modern corporation and private property. MacMillan, New York, NY.

Bharath, S., A. Dittmar, J. Sivadasan. 2011. Does capital market myopia affect plant productivity? Evidence from going private transactions. Unpublished paper. University of Michigan.

Black, B. 1990. Shareholder passivity reexamined. Michigan Law Review 89, 520-608.

Bolton, P., and E. Von Thadden. 1998. Blocks, liquidity, and corporate control." Journal of Finance 53, 1-25.

Brennan, M., A. Subrahmanyam. 1996. Market microstructure and asset prices: on the compensation for illiquidity in stock returns. Journal of Financial Economics 41, 441-464.

Brudney, V., R. Clark. 1981. A new look at corporate opportunities. Harvard Law Review 94, 997-1062.

Burkart, M., D. Gromb, F. Pannunzi. 1997. Large shareholders, monitoring, and the value of the firm. Quarterly Journal of Economics 112, 693-728.

Cao, J., J. Lerner. 2009. The performance of reverse leveraged buyouts. Journal of Financial Economics 91,139-157.

Carhart, M., 1997. On persistence in mutual fund performance, Journal of Finance 52, 57-82.

Carter, R., S. Manaster. 1990. Initial public offerings and underwriter reputation, Journal of Finance 45, 1045-1067.

Chen, Q., I. Goldstein, W. Jiang. 2007. Price informativeness and investment sensitivity of stock price. Review of Financial Studies 20, 619-650.

Chou, D., M. Gombola, F. Liu, 2006. Earnings management and stock performance of reverse leveraged buyouts. Journal of Financial and Quantitative Analysis 41, 407-438.

Clarke, J., Dunbar, C., K. Kahle. 2004. The long-run performance of secondary equity issues: A test of the windows of opportunity hypothesis. The Journal of Business 77, 575-603.

Coffee, J., 1991. Liquidity versus control: the institutional investor as corporate monitor. Columbia Law Review 91, 1277-1368.

Coffee, J., 1999. The future as history: the prospects for global corporate convergence in corporate governance and its implications. Northwestern University Law Review 93, 641-673.

Coffee, J., 2002. Racing towards the top? The impact of cross-listings and stock market competition on international corporate governance. Columbia Law Review 102, 1757-1831.

Coles, J., N. Daniel, L. Naveen. 2008. Boards: does one size fit all? Journal of Financial Economics 87, 329-356.

Cornelli, F., O. Karakas, 2011. Corporate governance of LBOs: the role of boards. Unpublished working paper, London Business School.

Degeorge, F., R. Zeckhauser. 1993. The reverse LBO decision and firm performance: theory and evidence. Journal of Finance 48, 1323-1348.

Demiroglu C., C. James, 2010. The role of private equity group reputation in LBO financing, Journal of Financial Economics 96, 306-330.

Demsetz, Harold. 1986. Corporate control, insider trading, and rates of return. American Economic Review. 76, 313-316

Demsetz, H., K. Lehn. 1985. The structure of corporate ownership: causes and consequences. Journal of Political Economy 93, 1155-1177.

Denis, D., D. Denis. 1994. Majority owner-managers and organizational efficiency. Journal of Corporate Finance 1, 91-118.

Diamond, D., 1984. Financial intermediation and delegated monitoring. Review of Economic Studies 51, 393-414.

Diamond, D. 1989. Reputation acquisition in debt markets. Journal of Political Economy 97, 828-862.

Easley, D., S. Hvidkjaer, M. O'Hara. 2002. Is information risk a determinant of prices? Journal of Finance 57, 2185-2221.

Edmans, A. 2009. Blockholder trading, market efficiency, and managerial myopia. Journal of Finance, 64, 2481-2513.

Edmans, A., G. Manso. 2011. Governance through exit and voice: a theory of multiple blockholders." Review of Financial Studies 24, 2395-2428.

Fama, E., M. Jensen. 1983. Separation of ownership from control. Journal of Law and Economics 26, 301-325.

Fama, E., K. French. 1993. Common risk factors in the returns on stocks and bonds. Journal of Financial Economics 33, 3-56.

Fluck, Z., N. Khanna. 2008. A theory of corporate boards with endogenous information collection, optimal compensation and strategic voting: When do independent boards dominate rubberstamping ones? Working paper, Michigan State.

Gale, I., J. Stiglitz. 1989. The information content of initial public offerings. Journal of Finance 44, 469-478.

Grammatikos, T., G. Papaioannou. 1986. The informational value of listing on the New York Stock Exchange. Financial Review 21, 485-499.

Grossman, S., O. Hart. 1980. Takeover bids, the free-rider problem, and the theory of the corporation. Bell Journal of Economics 11, 42-64.

Grossman, S., O. Hart. 1988. One share one vote and the market for corporate control. Journal of Financial Economics 20, 175-202.

Guo, S., E. Hotchkiss, W. Song. 2011. Do buyouts (still) create value? Journal of Finance 66, 479-517.

Harris, M., A. Raviv. 2008. A theory of board control and size. Review of Financial Studies 21, 1797-1832.

Hart, O., J. Moore. 1990. Property rights and the nature of the firm. Journal of Political Economy 98, 1119-1158.

Hege, U., S. Lovo, M. Slovin, M. Sushka. 2011. Asset sales and the role of buyers: strategic buyers versus private equity. Unpublished working paper, HEC Paris.

Heron, R., E. Lie. 2004. A comparison of the motivations for and the information content of different types of equity offerings. Journal of Business 77, 605-632.

Hertzel, M., M. Lemmon, J. Linck, L. Rees. 2002. Long run performance following private placements of equity. Journal of Finance 57, 2595-2617.

Hertzel, M., R. Smith. 1993. Market discounts and shareholder gains for placing equity privately. Journal of Finance 48, 459-485.

Hirschman, A. 1970. Exit, voice, and loyalty: responses to decline in firms, organizations and states. Harvard University Press, Cambridge, MA.

Holderness, C., D. Sheehan. 1988. The role of majority shareholders in publicly held corporations: an exploratory analysis. Journal of Financial Economics 20, 317-346.

Holthausen, R., G. Larcker. 1996. The financial performance of reverse leveraged buyouts, Journal of Financial Economics 42, 293 - 332.

Ibbotson, R. 1975. Price performance of new common stock issues. Journal of Financial Economics 2, 235-272.

Ibbotson, R., J. Jaffe. 1975. "Hot issue" markets. Journal of Finance 30, 1027-1042.

Ibbotson, R. G., J. Sindelar, J. Ritter. 1994. The market's problems with the pricing of initial public offerings. Journal of Applied Corporate Finance 7, 66-74.

James, C., 1987. Some evidence on the uniqueness of bank loans. Journal of Financial Economics 19, 217-235.

James, C., P. Weir., 1990. Borrowing relationships, intermediation and the cost of issuing public securities, Journal of Financial Economics 28, 149-171.

Jensen, M. 1989. Eclipse of the public corporation. Harvard Business Review 79, 61-74

Jensen, M., W. Meckling. 1976. Theory of the firm: managerial behavior, agency costs and ownership structure. Journal of Financial Economics 3, 305-360.

Jung, K., Y. Kim, R. Stulz. 1996. Timing, investment opportunities, managerial discretion, and the security issuance decision. Journal of Financial Economics 42, 159-185.

Kadlec, G., J. McConnell. 1994. The effect of market segmentation and illiquidity on asset prices: evidence form exchange listings. Journal of Finance 49, 611-636.

Kahn, C., A. Winton. 1998. Ownership structure, speculation, and shareholder intervention. Journal of Finance 53, 99-129.

Kaplan, S., 1989a. Campeau's acquisition of federated: value destroyed or value added? Journal of Financial Economics 25, 191-212.

Kaplan, S., 1989b. The effects of management buyouts on operating performance and value, Journal of Financial Economics, 24, 217-254

Kaplan, S., A. Schoar, 2005. Private equity performance: returns, persistence, and capital flows, Journal of Finance 60, 1791-1823.

Kaplan, S., P. Stromberg. 2009. Leverage buyouts and private equity. Working paper, University of Chicago.

Korajczyk, R, D Lucas, R. McDonald. 1991. The effect of information releases on the pricing and timing of equity issues. Review of Financial Studies 4, 685-708.

Korajczyk, R., D. Lucas, R. McDonald. 1992. Equity issues with time-varying asymmetric information. Journal of Financial and Quantitative Analysis 27, 397-417.

Lehn, K., A. Poulsen. 1989. Free cash flow and stockholder gains in going private transactions. Journal of Finance. 44, 771-787

Leland, H. D. Pyle., 1977. Information asymmetries, financial structure and financial intermediation. Journal of Finance, 32, 371-387.

Lerner, J., M. Sorensen, P. Stromberg, 2011, Private equity and long run investment: the case of innovation, Journal of Finance 66, 445-477.

Leslie, P., P. Oyer, 2009, Managerial incentives and value creation: evidence from private equity. Unpublished working paper, Stanford University.

Lichtenberg, F., D. Siegel. 1990. The effects of leveraged buyouts on productivity and related aspects of firm behavior. Journal of Financial Economics 27, 165-194.

Liebeskind, J., M. Wiersema, G. Hansen, 1992. LBOs, corporate restructuring, and the incentive-intensity hypothesis. Financial Management 21, 73-88.

Linck, J., Netter J., Yang T., 2008. The determinants of board structure. Journal of Financial Economics 87, 308-328.

Loughran, T., J. Ritter. 1995. The new issues puzzle. Journal of Finance 5, 23-51.

Loughran, T., J. Ritter. 1997. The operating performance of firms conducting seasoned equity offerings. Journal of finance 52, 1823-1850.

Lovo, S., Slovin, M., M. Sushka. 2014. A theory of the choice of divestiture method. Unpublished working paper, HEC Paris.

Lucas, D, R. McDonald. 1990. Equity issues and stock price dynamics. Journal of Finance 45, 1019-1043.

Mace, M., 1971. Directors: myth and reality. Harvard Business School Press, Boston, MA.

Masulis, R., A. Korwar. 1986. Seasoned equity offerings: an empirical investigation. Journal of Financial Economics 15, 91-118.

McConnell, J., H. Servaes. 1990. Additional evidence on equity ownership and corporate value. Journal of Financial Economics 27, 595-612.

Mikkelson, W., M. Partch. 1985. Stock price effects and costs of secondary distributions. Journal of Financial Economics 14, 165-194.

Mikkelson, W., M. Partch. 1985. Valuation effect of security offerings and the issuance process. Journal of Financial Economics 15, 30-60.

Miller, M., K. Rock. 1985. Dividend policy under asymmetric information. Journal of Finance 40, 1031-1051.

Morck, R., A. Shleifer, R. Vishny. 1988. Management ownership and market valuation: an empirical analysis. Journal of Financial Economics 20, 293-315.

Muscarella, C., M. Vetsuypens, 1990. Efficiency and organizational structure: A study of reverse LBOs. Journal of Finance 45, 1389-1413.

Myers, S. 1984. The capital structure puzzle. Journal of Finance 39, 575-592.

Myers, S. N. Majluf. 1984. Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics 13, 187-221.

Opler, T., S. Titman. 1993. The determinants of leveraged buyout activity: free cash flow versus financial distress costs. Journal of Finance 48, 1985-1999.

Pastor, L., R. Stambaugh. 2003. Liquidity risk and expected stock returns. Journal of Political Economy 111, 642-685.

Phalippou, L., O. Gottschalg. 2009, Performance of private equity funds: another puzzle? Review of Financial Studies 22, 1747-1776.

Pound, J. 1988. Proxy contests and the efficiency of shareholder oversight. Journal of Financial Economics 20, 237-265.

Puri, M., 1996. Commercial banks in investment banking: conflict of interest or certification role? Journal of Financial Economics 40, 373-401.

Rajan, R., 1992, Insiders and outsiders: the choice between informed and arm's length debt. Journal of finance 47, 1367-1400.

Ramakrishnan, R., A. Thakor. 1984. Information reliability and a theory of financial intermediation. Review of Economic Studies 52, 415-432.

Ritter, J. 1987. The costs of going public. Journal of Financial Economics 19, 269-282.

Ritter, J. 1991. The long run performance of initial public offerings. Journal of Finance 46, 3-27.

Robinson, D. B. Sensoy. 2011. Cyclicality, performance measurement, and cash flow liquidity in private equity, Unpublished Working Paper, Ohio State University Fisher College of Business.

Rock, K. 1986. Why new issues are underpriced. Journal of Financial Economics 15, 187-212.

Roll, R. 1986. The hubris hypothesis of corporate takeovers, Journal of Business 59, 197-216.

Sanger, G., J. McConnell. 1986. Stock exchange listings, firm value, and security market efficiency: the impact of NASDAQ. Journal of Financial and Quantitative Analysis 21, 1-25.

Sharpe, S. 1990. Asymmetric information, bank lending, and implicit contracts: a stylized model of customer relationships. Journal of Finance 45, 1069-1087.

Sheifer, A., L. Summers. 1988. Breach of trust in hostile takeovers, in A. Auerbach, ed., Corporate takeovers: causes and consequences. University of Chicago Press, Chicago, IL.

Shleifer, A., R. Vishny. 1986. Large shareholders and corporate control. Journal of Political Economy 94, 461-488.

Slovin, M., M. Sushka. 1993. Ownership concentration, corporate control activity, and firm value: Evidence from the death of inside blockholders. Journal of Finance 48, 1293-1321.,

Slovin, M., M. Sushka, C. Hudson. 1990. External monitoring and its effect on seasoned common stock issues. Journal of Accounting and Economics 12, 397-417.

Spiess, D., J. Affleck-Graves. 1995. Underperformance in long run stock returns following seasoned offerings. Journal of Financial Economics 38, 243-267.

Stulz, R., 1988. Managerial control of voting rights: Financing policies and the market for corporate control. Journal of Financial Economics 20, 25-54.

Tirole, J. 2001. Corporate governance. Econometrica, 69, 1-35.

Welch, I. 1989. Seasoned offerings, imitation costs, and the underpricing of initial public offerings. Journal of Finance 44, 421-449.

White, H. 1980. A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. Econometrica 48, 817-830.

Wruck, K. 1989. Equity ownership concentration and firm value: evidence from private equity financings. Journal of Financial Economics 23, 3-28.

Table 1

Distribution of Secondary Seasoned Equity Offerings by Private Equity Sponsors

This table reports the distribution by year and by SIC code of secondary seasoned equity offerings by private equity sponsors for portfolio firms listed on NYSE or Nasdaq over the sample period 1996 to 2013, and that have sufficient share price returns to perform an event study analysis, based on data obtained from the Securities Data Company (SDC) and SEC filings.

Panel A: Issuance Frequency Distribution by Year			Panel B: SIC Code Frequency Distribution by SIC Code			(continued)		
Year	Frequency	Percent	2-digit	Frequency	Percent	2-digit	Frequency	Percent
	(1)	(2)	(1)	(2)	(3)			
1996	1	0.4	7	1	0.4	50	6	2.2
1997	1	0.4	12	1	0.4	51	1	0.4
1998	5	1.9	13	6	2.2	53	4	1.5
1999	0	0.0	14	1	0.4	54	6	2.2
2000	1	0.4	15	2	0.7	56	11	4.1
2001	5	1.9	16	1	0.4	57	4	1.5
2002	8	3.0	17	2	0.7	58	1	0.4
2003	13	4.8	20	4	1.5	59	3	1.1
2004	27	10.0	23	3	1.1	60	1	0.4
2005	28	10.3	24	1	0.4	61	1	0.4
2006	22	8.1	26	2	0.7	62	6	2.2
2007	29	10.7	27	1	0.4	63	11	4.1
2008	6	2.2	28	19	7.0	64	5	1.9
2009	8	3.0	29	1	0.4	67	6	2.2
2010	15	5.5	30	4	1.5	72	1	0.4
2011	22	8.1	32	2	0.7	73	34	12.6
2012	24	8.9	33	1	0.4	78	1	0.4
2013	54	19.9	34	5	1.9	79	1	0.4
Total	269	100.0	35	10	3.7	80	10	3.7
			36	17	6.3	83	2	0.7
			37	14	5.2	87	8	3.0
			38	6	2.2	89	1	0.4
			41	2	0.7	94	1	0.4
			47	1	0.4	99	26	9.6
			48	9	3.3			
			49	2	0.7			
						Total	269	100.0

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Table 2

Descriptive Statistics for Secondary Seasoned Equity Offerings by Private Equity

This table reports descriptive statistics for 269 secondary seasoned stock offerings by private equity sponsors over the sample period 1996 through 2013 for portfolio firms listed on NYSE or Nasdaq and that have sufficient returns to perform an event study analysis. Proceeds is the amount of the offering gross proceeds, including the amount of the overallotment option when executed. Market Value is market capitalization of registrant portfolio firms defined as total shares outstanding multiplied by share price five days prior to the initial announcement of the secondary offering. SEO/SO is secondary shares offered as a percentage of total shares outstanding. SEO/Offer is private equity shares in the offering as a percentage of the shares offered. Insiders indicates the percentage of outstanding shares held by officers and members of the firm=s board of directors, excluding the shares controlled by representatives of the private equity sponsor. Private equity indicates the percentage of outstanding shares held by the private equity sponsor. These statistics are generated from data obtained from the Securities Data Company (SDC), CRSP, Compustat and offering prospectuses.

	Mean	Median	Std. Dev.
Panel A: Offering Characteristics			
Gross Proceeds ($ mil)	263.97	173.02	281.29
Firm Market Value ($ mil)	2603.22	1251.02	5486.33
SEO/SO (%)	13.4	11.11	12.52
SEO/Offer (%)	88.51	100	24.15
Panel B: Ownership (%)			
Insiders before SEO (%)	7.57	2.85	13.05
Private Equity before SEO (%)	37.90	36.05	20.56
Insiders after SEO (%)	6.06	2.33	9.91
Private Equity after SEO (%)	21.57	17.17	19.26

Table 3

Descriptive Statistics for Firms that Sustain Secondary Seasoned Offerings by Private Equity

This table reports selected characteristics of portfolio firms listed on NYSE or Nasdaq that sustain 269 secondary seasoned stock offerings by private equity sponsors over the sample period 1996 through 2013 and that have sufficient stock price returns to perform an event study analysis. Revenue is total revenues in millions of U.S. dollars. Total assets is the book value of total assets before the offering. Total debt is the book value of total debt before offering. Equity is the book value of equity before the offering. Long term debt/Total assets is the book value of long term debt scaled by the book value of total assets before the offering. Short term debt/total assets is the book value of debt due in less than one year scaled by total assets. ROA is net income scaled by total assets. These statistics are obtained from the Securities Data Company (SDC), Compustat and offering prospectuses filed with the SEC.

Firm Characteristics	Mean	Median	Std. dev.
Revenue ($ Mil)	533.64	181.25	935.29
Total Assets	2507.75	930.15	4334.21
Total Debt	867.01	299.76	1636.47
Equity	723.1	243.19	1277.55
Long Term Debt/Total Assets	0.28	0.25	0.28
Short Term Debt/Total Assets	0.03	0.01	0.45
ROA	0.12	0.16	0.70

Table 4

Excess Returns for Portfolio Firms at Secondary Seasoned Offerings by Private Equity

Excess returns in percent (%) for portfolio firms in response to 269 secondary seasoned equity offering announcements by private equity sponsors over the sample period 1996 through 2013 for portfolio firms listed on NYSE or Nasdaq, that have sufficient stock price returns to perform an event study analysis, using market model methodology; t-statistics are in parentheses, proportion of returns positive is in brackets, median return is in braces, N is the sample size. Statistical significance of excess returns is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median and is indicated by *, at the 10% level, **, at the 5% level, and ***, at the 1% level. Day 0 is the date of the initial announcement of the secondary offering. Market model parameters are estimated using least squares over the pre-event period, t = -160 to -41.

	Three-day Average Excess Return	Distribution of Three-day Excess Returns		Pre-event Period			Post-event Period		
		Decile	Return	Interval	Return	t-statistic	Interval	Return	t-statistic
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean	-1.94%***	0.10	-6.67	(-20,-2)	4.48	5.62	(2,20)	0.35	0.46
t-statistic	(-6.10)	0.20	-5.35	(-40,-2)	7.30	5.90	(2,40)	2.47	2.18
% negative	[0.74]	0.30	-4.04	(-60,-2)	10.52	6.32			
Median	{-2.14%}***	0.40	-3.19	(-90,-2)	15.11	6.19			
p-value	{<0.01}	0.50	-2.14	(-120,-2)	16.90	5.59			
N	269	0.60	-1.28						
		0.70	-1.05						
		0.80	1.04						
		0.90	4.02						

Table 5

Excess Returns for Portfolio Firms at First Secondary Seasoned Offerings by Private Equity

Excess returns in percent (%) for portfolio firms in response to 196 first secondary seasoned equity offering announcements after an IPO by private equity sponsors over the sample period 1996 through 2013 for portfolio firms listed on NYSE or Nasdaq, that have sufficient stock price returns to perform an event study analysis, using market model methodology; t-statistics are in parentheses, proportion of returns positive is in brackets, median return is in braces, N is the sample size. Statistical significance of excess returns is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median and is indicated by *, at the 10% level, **, at the 5% level, and ***, at the 1% level. Day 0 is the date of the initial announcement of the first secondary offering after the IPO. Market model parameters are estimated using least squares over the pre-event period, t = -160 to -41.

| | Three-day Average Excess Return | Distribution of three-day Excess Returns | | Pre-event Period | | | Post-event Period | | |
		Decile	Return	Interval	Return	t-statistic	Interval	Return	t-statistic
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean	-1.94***	0.10	-7.21	(-20,-2)	4.47	4.75	(2,20)	0.57	0.66
t-statistic	(-5.07)	0.20	-5.35	(-40,-2)	7.24	4.75	(2,40)	2.44	1.78
% negative	[0.75]	0.30	-4.05	(-60,-2)	10.91	5.19			
Median	-2.17***	0.40	-3.17	(-90,-2)	16.78	5.42			
p-value	<0.01	0.50	-2.17	(-120,-2)	18.84	4.96			
N	196	0.60	-1.30						
		0.70	-0.42						
		0.80	0.59						
		0.90	3.82						

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Table 6

Excess Returns for Portfolio Firms at Joint Secondary Seasoned Offerings by Private Equity

Excess returns in percent (%) for portfolio firms in response to 73 secondary seasoned equity offering announcements by private equity sponsors that have a joint offering of equity by the portfolio firm over the sample period 1996 through 2013 for portfolio firms listed on NYSE or Nasdaq, that have sufficient stock price returns to perform an event study analysis, using market model methodology; t-statistics are in parentheses, proportion of returns positive is in brackets, median return is in braces, N is the sample size. Statistical significance of excess returns is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median and is indicated by *, at the 10% level, ** at the 5% level, and ***, at the 1% level. Day 0 is the date of the initial announcement of the joint offering. Market model parameters are estimated using least squares over the pre-event period, t = -160 to -41.

Joint SEO	Three-day Average Excess Return	Distribution of three-day Excess Returns		Pre-event Period			Post-event Period		
	(-1, 0)	Decile	Return	Interval	Return	t-statistic	Interval	Return	t-statistic
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean	-2.76***	0.10	-8.58	(-20,-2)	9.05	4.62	(2,20)	1.55	0.92
t-statistic	(-3.66)	0.20	-6.02	(-40,-2)	14.69	5.61	(2,40)	6.07	2.26
% negative	[0.73]	0.30	-4.71	(-60,-2)	20.99	5.83			
Median	{-2.66}***	0.40	-3.93	(-90,-2)	31.30	5.64			
p-value	<0.01	0.50	-2.66	(-120,-2)	34.90	5.03			
N	73	0.60	-1.20						
		0.70	-0.38						
		0.80	1.40						
		0.90	3.46						

Table 7

Excess Returns for Portfolio Firms at Secondary Seasoned Offerings by Private Equity Disaggregated by Several Characteristics

Three-day (-1 , +1) average excess returns in percent (%) for portfolio firms in response to secondary seasoned equity offering announcements by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq that have sufficient stock price returns to perform an event study analysis, using market model methodology, disaggregated in accordance with three characteristics: whether or not the portfolio firm is a high technology firm, as defined by Faccio and Masulis (2005); whether the portfolio firm is listed on NYSE or Nasdaq; and whether or not the private equity sponsor is included in the lists of Top 20 or Notable Private Equity Firms compiled by Private *Equity International*; t-statistics are in parentheses, proportion of returns positive is in brackets, median return is in braces, N is the sample size. Statistical significance of excess returns is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median and is indicated by *, at the 10% level, ** at the 5% level, and ***, at the 1% level. Day 0 is the date of the initial announcement of the secondary offering. Market model parameters are estimated using least squares over the pre-event period, t = -160 to -41.

	High Tech Firms			Exchange Listing			Private Equity Reputation		
	Hi Tech (1)	p(diff) (2)	Other (3)	NYSE (4)	p(diff) (5)	Nasdaq (6)	Notable (7)	p(diff) (8)	Other PE (9)
Mean	-4.64***	(0.02)	-1.73***	-2.05***	(0.68)	-1.78***	-2.63***	(0.06)	-1.41***
t-statistic	(-3.46)		(-5.36)	(-5.42)		(-3.25)	(-5.18)		(-3.52)
% negative	[0.89]		[0.73]	[0.76]		[0.72]	[0.79]		[0.71]
Median	{-3.58%}***	(0.07)	{-2.06%}***	{-2.10%}***	(0.88)	{-2.31%}***	{-2.20%}***	(0.15)	{-2.09%}***
p-value	{<0.01}		{<0.01}	{<0.01}		{<0.01}	{<0.01}		{<0.01}
N	N=19		N=250	N=156		N=113	N=117		N=152

Table 8

Excess Returns for Portfolio Firms at Secondary Seasoned Offerings by Private Equity, Disaggregated by Post-offering Private Equity Ownership

Three-day (-1, +1) average excess returns in percent (%) for portfolio firms in response to secondary seasoned equity offering announcements by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq, that have sufficient stock price returns to perform an event study analysis, using market model methodology, disaggregated in accordance with the percentage of ownership held by the private equity sponsor after the offering is completed; t-statistics are in parentheses, proportion of returns positive is in brackets, median return is in braces, N is the sample size. Statistical significance of excess returns is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median and is indicated by *, at the 10% level, **, at the 5% level, and ***, at the 1% level. Day 0 is the date of the initial announcement of the secondary offering. Market model parameters are estimated using least squares over the pre-event period, t = -160 to -41. The data for ownership after the offering is completed are obtained from SEC filings.

| | PE Ownership Ranges (%) | | | | p(diff in means, medians) | |
	(1) PE >25%	(2) PE <25%	(3) 25% < PE >5%	(4) PE <5%	(1) vs (2)	(3) vs (4)
Mean	-1.60%***	-2.16%***	-2.03%***	-2.28%***	0.39	0.81
t-statistic	(-3.54)	(-4.98)	(-4.10)	(-2.95)		
% negative	[0.75]	[0.74]	[0.73]	[0.76]		
Median	-2.22%***	-2.13%***	-2.13%***	-2.05%***	0.35	0.99
p-value	{<0.01}	{<0.01}	{<0.01}	{<0.01}		
N	107	162	92	70		

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Table 9

Cross-sectional Regression Analysis of Excess Returns for Portfolio Firms for the Full Sample of Secondary Seasoned Offerings by Private Equity

This table reports the results of cross sectional regressions in which the dependent variable is the set of three-day (-1, +1) excess returns from the event study for the full sample of 269 secondary equity offerings by private equity sponsors for portfolio firms listed on the NYSE or Nasdaq at announcements of secondary equity offerings by their private equity sponsors, for the period 1996 through 2013. Independent variables reflect characteristics of the secondary offerings, of the portfolio firm, and of the private equity sponsor. The independent variables are defined as follows: First offering is a qualitative variable that takes on the value of 1 when the SEO by the private equity sponsor is the first secondary offering after an IPO and 0 otherwise. Joint offering is a qualitative variable that takes on the value of 1 when the secondary offering is a joint offering by the private equity sponsor and the portfolio firm, and 0 otherwise. Proceeds for Acq is a qualitative variable that takes on the value of 1 when the corporate proceeds from a joint offering by the private equity sponsor and the portfolio firm are to be used for new acquisitions, and 0 otherwise. Pre-month CAR is the firm's cumulative excess return measured from 30 trading days to two trading days prior to the announcement of the offering. IdiosynRisk is the standard deviation of the residuals from a market model regression for the firm's returns estimated over the pre-event period -120 to -10. HiTech is a qualitative variable that takes on the value of 1 for offerings at high technology firms, as defined by Faccio and Masulis (2005), and 0 otherwise. Δ Institutional hldgs is the change in institutional holdings as proportion of the firm's total shares outstanding, measured over the period from three months prior to the announcement of the offering to three months after the announcement. PreAmihud is the average Amihud measure of illiquidity during the three month period prior to the announcement of the offering, excluding the month of the offering announcement. Δ Amihud is the change in illiquidity surrounding the offering announcement using the Amihud measure of illiquidity measured as the difference between average illiquidity for the period three months after the offering announcement relative to the average illiquidity three months prior to the announcement, excluding the month of the offering announcement. HighReputation PE is a qualitative variable that takes on the value of 1 for private equity sponsors that are included in the lists of Top 20 or Notable Private Equity Firms compiled by Private *Equity International*, and 0 otherwise. Bank-related PE is a qualitative variable that takes on the value of 1 for secondary offerings in which the private equity sponsor is a commercial banking group or a major investment banking group, and 0 otherwise. Foreign PE is a qualitative variable that takes on the value of 1 for an offering in which the private equity sponsor is not headquartered in the U.S., and 0 otherwise. NYSE is a qualitative variable that takes on the value of 1 for offering in which the registrant portfolio firm is listed on the NYSE, and 0 otherwise. 1/(Time post-IPO) is the reciprocal of the number of trading days from the date of the IPO to the date of the announcement of the secondary offering. Heteroscedastic-consistent p-values based on White (1980) are reported below the coefficients. Statistical significance is indicated by *, at the 10% level, ** at the 5% level, and ***, at the 1% level.

Full Sample	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First Offering	-1.34	-0.08	-0.22	-0.23	-0.23	0.03	-0.23	-0.03
	(-0.19)	(-0.10)	(-0.27)	(-0.28)	(-0.28)	(0.04)	(-0.28)	(-0.04)
Joint Offering	-2.20**	-3.10**	-3.23**	-3.15**	-3.15**	-2.94**	-3.24**	-3.03**
	(-1.79)	(-2.21)	(-2.31)	(-2.26)	(-2.24)	(-2.07)	(-2.31)	(-2.14)
Proceeds for Acq	3.09**	4.67***	4.41***	4.42***	4.42***	4.14***	4.36%***	4.07***
	(2.27)	(3.05)	(2.89)	(2.90)	(2.89)	(2.66)	(2.85)	(2.62)
6-week Runup	-4.90**	-5.95***	-5.46***	-5.45**	-5.45***	-5.26**	-5.41***	-5.22**
	(-2.44)	(-2.66)	(-2.44)	(-2.43)	(-2.43)	(-2.33)	(-2.41)	(-2.32)
IdiosynRisk	-11.87	-21.23	-24.88	-24.11	-24.04	-24.17	-27.63	-27.77
	(-0.56)	(-0.95)	(-1.12)	(-1.08)	(-1.07)	(-1.08)	(1.22)	(-1.23)
HiTech	-1.27*	-5.17**	-5.01***	-5.00***	-4.99***	-5.07***	-5.01***	-5.09***
	(-1.87)	(-3.04)	(-2.97)	(-2.96)	(-2.95)	(-2.51)	(-2.96)	(-3.00)
Δ Institutional Hldgs		4.34**	4.58**	4.49**	4.48**	5.10***	4.42**	5.03**
		(2.25)	(2.38)	(2.33)	(2.32)	(2.51)	(2.29)	(2.48)
PreAmihud		-10.44*	-11.49*	-11.25*	-11.24*	-11.05*	-12.22**	-12.03*
		(-1.73)	(-1.91)	(-1.86)	(-1.86)	(-1.82)	(-2.00)	(-1.97)
Δ Amihud		-11.54***	-11.55***	-11.50***	-11.50***	-10.87***	-11.24***	-10.61%**
		(-2.49)	(-2.51)	(-2.50)	(-2.49)	(-2.33)	(-2.44)	(-2.28)
HighReputation PE			-1.41	-1.35*	-1.36*	-1.52**	-1.20	-1.35*
			(-1.94)	(-1.85)	(-1.84)	(-2.01)	(-1.59)	(-1.76)
Bank-related PE				1.77	1.77	1.73*	2.11	2.07
				(0.89)	(0.89)	(-0.87)	(1.05)	(1.02)
Foreign PE					0.28	0.38	0.50	0.59
					(0.11)	(0.14)	(0.19)	(0.23)
NYSE							-0.88	-0.88
							(-1.12)	(-1.13)
1/(Time post-IPO)						-1.70		-1.70
						(-1.00)		(-1.00)
Constant	-0.99	-1.06	-1.43	-0.27	-0.27	0.07	0.26	0.05
	(1.29)	(-1.21)	(-0.15)	(-0.26)	(-0.27)	(-0.07)	(0.32)	(0.48)
R^2 Adj	0.051	0.131	0.143	0.141	0.138	0.138	0.139	0.139
F-statistic	3.37***	4.69***	4.66***	4.30**	3.92***	3.70***	3.72***	3.53***
N	269	221	221	221	221	221	221	221

Table 10

Cross-sectional Regression Analysis of Excess Returns for Portfolio Firms at First Secondary Seasoned Offering by Private Equity after an IPO

This table reports the results of cross sectional regressions in which the dependent variable is the set of three-day (-1, +1) excess returns from the event study for the sample of 196 first secondary equity offerings by private equity offerings by private equity sponsors after the IPO for portfolio firms listed on the NYSE or Nasdaq at announcements of secondary equity offerings by their private equity sponsors, for the period 1996 through 2013. Independent variables reflect characteristics of the secondary offerings, of the portfolio firm, and of the private equity sponsor. The independent variables are defined as follows: Joint offering is a qualitative variable that takes on the value of 1 when the secondary offering is a joint offering by the private equity sponsor and the portfolio firm, and 0 otherwise. Proceeds for Acq is a qualitative variable that takes on the value of 1 when the corporate proceeds from a joint offering by the private equity sponsor and the portfolio firm are to be used for new acquisitions, and 0 otherwise. Pre-month CAR is the firm's cumulative excess return measured from 30 trading days to two trading days prior to the announcement of the offering. IdiosynRisk is the standard deviation of the residuals from a market model regression for the firm's returns estimated over the pre-event period -120 to -10. HiTech is a qualitative variable that takes on the value of 1 for offerings at high technology firms, as defined by Faccio and Masulis (2005), and 0 otherwise. Δ Institutional hldgs is the change in institutional holdings as proportion of the firm's total shares outstanding, measured over the period from three months prior to the announcement of the offering to three months after the announcement. PreAmihud is the average Amihud measure of illiquidity during the three month period prior to the announcement of the offering, excluding the month of the offering announcement. Δ Amihud is the change in illiquidity surrounding the offering announcement using the Amihud measure of illiquidity measured as the difference between average illiquidity for the period three months after the offering announcement relative to the average illiquidity three months prior to the announcement, excluding the month of the offering announcement. HighReputation PE is a qualitative variable that takes on the value of 1 for private equity sponsors that are included in the lists of Top 20 or Notable Private Equity Firms compiled by Private *Equity International*, and 0 otherwise. Bank-related PE is a qualitative variable that takes on the value of 1 for secondary offerings in which the private equity sponsor is a commercial banking group or a major investment banking group, and 0 otherwise. Foreign PE is a qualitative variable that takes on the value of 1 for an offering in which the private equity sponsor is not headquartered in the U.S., and 0 otherwise. NYSE is a qualitative variable that takes on the value of 1 for offering in which the registrant portfolio firm is listed on the NYSE, and 0 otherwise. 1/(Time post-IPO) is the reciprocal of the number of trading days from the date of the IPO to the date of the announcement of the secondary offering. Heteroscedastic- consistent p-values based on White (1980) are reported below the coefficients. Statistical significance is indicated by *, at the 10% level, **, at the 5% level, and ***, at the 1% level.

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First Sample	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Joint Offering	-2.46*	-3.34**	-3.35**	-3.39**	-3.34**	-3.01*	-3.00*	-3.00*
	(-1.66)	(-2.03)	(-2.05)	(-2.07)	(-2.03)	(-1.81)	(-1.80)	(-1.80)
Proceeds for Acq	3.80**	5.49***	5.23***	5.22***	5.20***	-4.78***	4.65***	4.65***
	(2.40)	(3.18)	(3.03)	(3.01)	(3.00)	(2.72)	(2.63)	(2.63)
6-week Runup	-4.92**	-7.29***	-7.05***	-7.71***	-7.24***	-7.00***	6.93***	-6.93***
	(-2.02)	(-2.78)	(-2.69)	(-2.72)	(-2.74)	(-2.64)	(-2.62)	(-2.62)
IdiosynRisk	-11.037	-20.50	-24.90	-25.71	-25.32	-25.53	-29.20	-29.20
	(-0.47)	(-0.85)	(-1.03)	(-1.06)	(-1.04)	(-1.05)	(1.18)	(-1.18)
HiTech	-3.23*	-5.44***	-5.37***	-5.37***	-5.34***	-5.40***	-5.41***	-5.41***
	(-1.95)	(-2.87)	(-2.33)	(-2.84)	(-2.82)	(-2.86)	(-2.72)	(-2.86)
Δ Institutional Hldgs		5.13**	5.28**	5.38**	5.45**	6.49***	6.56**	6.56***
		(2.26)	(2.33)	(2.37)	(2.39)	(2.70)	(2.72)	(2.72)
PreAmihud		-10.44	-11.51*	-11.69*	-11.67*	-11.36*	-12.45*	-12.45*
		(-1.61)	(-1.77)	(-1.79)	(-1.79)	(-1.74)	(-1.87)	(-1.87)
Δ Amihud		-11.54***	-11.95**	-10.93**	-10.93**	-9.09**	-9.85**	-9.85**
		(-2.49)	(-2.30)	(-2.29)	(-2.29)	(-2.08)	(-2.04)	(-2.04)
HighReputation PE			-1.32	-1.37%	-1.48*	-1.72*	-1.58*	-1.58*
			(-1.54)	(-1.59)	(-1.69)	(-1.93)	(-1.75)	(-1.75)
Bank-related PE				2.46	-1.42	1.59	1.28	-1.28
				(0.61)	(0.60)	(-0.67)	(0.53)	(-0.53)
Foreign PE					0.25	2.84	3.02	3.02
					(0.83)	(0.93)	(0.99)	(0.99)
NYSE							-0.74	-0.74
							(-1.33)	(-0.79)
1/(Time post-IPO)						-2.32		-2.36
						(-1.31)		(-1.33)
Constant	-1.17	-1.24	-0.48	-0.37	-0.41	0.11	0.64	0.65
	(1.57)	(-1.43)	(-0.48)	(-0.37)	(-0.40)	(-0.11)	(0.50)	(0.50)
R^2 Adj	0.063	0.173	0.143	0.177	0.175	0.179	0.177	0.177
F-statistic	3.57**	5.20***	4.93***	4.45***	4.10***	3.92***	3.66***	3.66***
N	196	162	162	162	162	162	162	162

Table 11

Cross-sectional Regression Analysis of Excess Returns for Portfolio Firms at Seasoned Offerings (SPO) by Private Equity for Various Test Variables when incorporated in Specifications Reported Earlier

This table reports the results of cross sectional regressions in which the dependent variable is the set of three-day (-1, +1) excess returns from the event study for the full sample of 269 secondary equity offerings (SPO) and for the sample of 196 first secondary equity offerings by private equity sponsors for portfolio firms listed on the NYSE or Nasdaq at announcements of secondary equity offerings by their private equity sponsors, for the period 1996 through 2013. These independent variables reflect characteristics of the secondary offerings or of the portfolio firm, the results reported below are obtained when each variable is added individually to specification (8), as reported in tables 9 and 10, for the full sample of secondary offerings and the sample of first secondary offerings, respectively. For conciseness, the coefficients of the remaining independent variables, which remain almost identical to the results reported in the tables 9 and 10, are not reported in this table but are available upon request. The independent variables reported below are defined as follows: Underpricing is the percentage change represented by the closing price of the portfolio firm's shares on the first day of trading relative to the offering price for the IPO of the portfolio firm. The variable % PE sold is the percentage of the firm's outstanding shares that are sold by the private equity sponsor in the secondary offering. The variable % PE owned pre is the percentage of the portfolio firm's shares that are owned by the portfolio sponsor prior to the secondary offering. The variable % PE owned post is the percentage of the portfolio firm's shares that are owned by the portfolio sponsor after the secondary offering. Ln proceeds is the logarithm of the gross proceeds of the secondary offering. SPO shares/MV is the ratio of the gross proceeds of the secondary offering scaled by the market value of the equity of the portfolio firm. Ln MV is the logarithm of the market capitalization of registrant portfolio firm defined as total shares outstanding multiplied by share price five days prior to the initial announcement of the secondary offering. Enterprise value is the market capitalization of the portfolio firm plus the book value of its debt. Leverage is the ratio of the book value of the portfolio firm's debt to the market value of its equity. LT Debt/ Total assets is the ratio of the book value of the portfolio firm's long debt to the book value of its total assets. Mkt/Book is the ratio of the share price of the portfolio firm to the book value of shareholders' equity per share. Dividend policy is a qualitative variable that equals one if the portfolio firm pays a dividend and zero otherwise. Heteroscedastic- consistent t-statistics based on White (1980) are also reported in the table. Statistical significance is indicated by *, at the 10% level, ** at the 5% level, and ***, at the 1% level.

	Full Sample		First Secondary Offering	
Variable	Coefficient	t-statistic	Coefficient	t-statistic
Underpricing	0.81	0.39	-1.03	-0.41
% PE Sold	-1.57	-0.27	2.28	0.37
% PE Owned Pre	0.23	0.16	0.54	0.34
% PE Owned Post	0.01	0.54	0.01	0.66
Ln Proceeds	0.41	0.87	0.45	0.87
SPO Shares/MV	-0.63	-0.16	1.98	0.47
Ln MV	0.32	0.73	0.55	1.03
Enterprise Value	0.53	1.13	0.59	1.03
Leverage	1.08	0.92	0.58	0.48
LT Debt/ Total Assets	0.00	0.71	0.00	0.24
Mkt/Book	-0.00	-0.82	-0.00	-0.63
Dividend Policy	-0.36	-0.44	-0.64	-0.74

Table 12

Adjusted Operating Performance, ROA, after Secondary Seasoned Offerings by Private Equity

Changes in adjusted operating performance measured as the return on sales, ROA, for registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient returns to perform an event study analysis. Adjusted performance for each firm is obtained by subtracting the median performance measure for a group of matched firms benchmarked in year -1, the fiscal year prior to the secondary offering. Return on assets, ROA, is operating income before depreciation, interest, taxes and extraordinary items divided by total assets. Results are reported for each year and for spans of various duration relative to year -1. Results are reported for the full sample of 269 secondary seasoned equity offerings, the sample of 196 first secondary seasoned equity offering announcements after an IPO, and the sample of 70 secondary seasoned offerings where the percentage of ownership held by the private equity sponsor after the offering is completed is less than 5%. Statistical significance is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level.

Year	Adjusted Performance Per Year					Changes in Adjusted Performance over Time			
	-1	0	1	2	3	-1 to 0	-1 to +1	-1 to +2	-1 to +3
Full Sample									
Mean	0.34%**	2.01%***	1.68%*	2.12%	3.62%***	1.40%***	1.32%***	1.66%	2.99%***
p-value	0.03	<.01	0.09	0.16	0.01	<.01	0.01	0.15	0.01
Median	0.16%***	1.27%***	1.34%***	1.55%***	2.29%***	0.94%**	1.33%**	1.47%***	2.06%***
p-value	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01
First Offering									
Mean	0.29%***	2.24%***	1.86%***	2.31%***	4.19%	1.60%***	1.56%	1.89%	3.59%**
p-value	<.01	0.09	<.01	0.01	0.14	0.01	0.11	0.23	0.02
Median	0.24%***	1.34%***	1.75%***	1.55%**	1.99%***	1.07%**	1.47%***	1.49%**	1.76%***
p-value	<0.01	0.01	<0.01	0.03	0.01	0.02	<0.01	<0.01	0.01

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Table 13

Adjusted Operating Performance, ROS, after Secondary Seasoned Offerings by Private Equity

Changes in adjusted operating performance measured as the return on sales, ROS, for registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis. Adjusted performance for each firm is obtained by subtracting the median performance measure for a group of matched firms benchmarked in year -1, the fiscal year prior to the secondary offering. Return on assets, ROS, is operating income before depreciation, interest, taxes and extraordinary items divided by total sales. Results are reported for each year and for spans of various duration relative to year -1. Results are reported for the full sample of 269 secondary seasoned equity offerings, the sample of 196 first secondary seasoned equity offering announcements after an IPO, and the sample of 70 secondary seasoned offerings where the percentage of ownership held by the private equity sponsor after the offering is completed is less than 5%. Statistical significance is based on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level.

Year	Adjusted Performance Per Year					Changes in Adjusted Performance over Time			
	-1	0	1	2	3	-1 to 0	-1 to +1	-1 to +2	-1 to +3
Full Sample									
Median	0.22%***	1.54%*	2.28%***	2.31%***	2.71%***	1.05%***	1.41%***	1.75%***	2.11%***
p-value	<0.01	0.08	<0.01	<0.01	<0.01	0.01	<0.01	0.01	<0.01
First Offering									
Median	0.17%***	1.74%***	3.25%***	2.57%***	2.94%***	1.17%**	1.78%***	1.90%	2.35%***
p-value	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.11	0.01

Table 14

Adjusted Operating Performance after Secondary Seasoned Offerings by Private Equity, Disaggregated by Post-offering Private Equity Ownership

Changes in adjusted operating performance measured as the return on sales, ROS, for registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis. Adjusted performance for each firm is obtained by subtracting the median performance measure for a group of matched firms benchmarked in year -1, the fiscal year prior to the secondary offering. Return on assets, ROS, is operating income before depreciation, interest, taxes and extraordinary items divided by total sales. Results are reported for each year and for spans of various duration relative to year -1. Results are reported separately for the sample of 199 secondary seasoned equity offerings where the percentage of ownership held by the private equity sponsor after the offering is completed is greater than or equal to 5%, and the sample of 70 secondary seasoned offerings where the percentage of ownership held by the private equity sponsor after the offering is completed is less than 5%. Statistical significance is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level.

Year	Adjusted Performance Per Year					Change in Adjusted Performance over Time			
	-1	0	1	2	3	-1 to 0	-1 to +1	-1 to +2	-1 to +3
PE > 5%									
Mean	037%***	1.41%***	1.49%*	2.44%**	2.45%***	1.01%*	1.23%	2.18%**	2.14%**
p-value	<0.01	0.01	0.09	0.03	0.01	0.06	0.17	0.05	0.04
Median	0.20%***	1.27%***	1.58%***	1.56%**	2.58%***	0.97%**	1.36%***	1.25%**	2.25%**
p-value	<0.01	0.01	<0.01	0.02	0.01	0.03	0.01	0.02	0.02
PE < 5%									
Mean	0.24%*	3.59%***	2.15%**	1.20%	6.95%*	2.53%***	2.01%	0.61%	1.57%
p-value	0.08	0.01	0.20	0.71	0.07	0.01	0.35	0.96	0.13
Median	0.10%	1.28%**	1.18%	1.27%	1.45%**	0.88%**	1.12%**	1.48%	1.31%*
p-value	0.28	0.02	0.12	0.32	0.05	0.05	0.02	0.40	0.07

Table 15

Adjusted Operating Performance after Secondary Seasoned Offerings by Private Equity, Disaggregated by Type of Offering and Reputation of Private Equity Sponsor

Changes in adjusted operating performance measured as the return on sales, ROA, for registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis. Adjusted performance for each firm is obtained by subtracting the median performance measure for a group of matched firms benchmarked in year -1, the fiscal year prior to the secondary offering. Return on assets, ROA, is operating income before depreciation, interest, taxes and extraordinary items divided by total assets. Results are reported for each year and for spans of various duration relative to year -1. Results are reported separately for the sample of 196 pure secondary seasoned equity offerings versus the 73 offerings by private equity sponsors that have a joint offering of equity by the portfolio firm, and reported separately for the 117 offerings where the private equity sponsor is included in the lists of Top 20 or Notable Private Equity Firms compiled by Private *Equity International* versus 152 offerings by other private equity sponsors. Statistical significance is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level.

	Adjusted Performance Per Year					Change in Adjusted Performance over Time Period			
	-1	0	1	2	3	-1 to 0	-1 to +1	-1 to +2	-1 to +3
Joint Offer									
Mean	0.17%	1.52%*	0.13%	1.81%	3.07%	1.29%	-0.00%	1.62%	2.81%
p-value	0.15	0.07	0.95	0.59	0.16	0.14	0.99	0.63	0.22
Median	0.13%*	1.37%	0.93%	1.64%	3.07%**	0.97%	1.04%	1.36%	2.55%*
p-value	0.07	0.46	0.36	0.73	0.05	0.55	0.35	0.86	0.09
Pure Offer									
Mean	0.38%***	2.15%***	2.17%***	2.22%**	3.80%***	1.44%***	1.73%**	1.67%	3.05%**
p-value	<0.01	<0.01	<0.01	0.05	0.01	0.01	0.02	0.13	0.03
Median	0.18%***	1.25%***	1.59%***	1.55%***	1.63%***	0.90%***	1.36%***	1.47%***	1.47%***
p-value	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01

Table 15 continued

Top PE							
Mean	0.40%***	2.74%***	2.03%**	3.96%***	1.81%***	1.40%	2.93%***
p-value	<0.01	<0.01	0.04	<0.01	<0.01	0.15	<0.01
Median	0.25%***	1.60%***	2.21%***	2.88%***	1.20%***	1.47%***	2.28%***
p-value	<0.01	<0.01	<0.01	<.001	<0.01	<0.01	<0.01
Other PE							
Mean	0.29%**	1.38%*	1.38%	3.27%	1.44%	1.73%	3.06%
p-value	0.03	0.08	0.24	0.12	0.18	0.30	0.17
Median	0.11%**	0.70%	0.83%	1.68%	0.27%	0.63%*	1.32%
p-value	0.05	0.34	0.12	0.21	0.57	0.10	0.24

Table 16

Adjusted Operating Performance after First Secondary Seasoned Offerings by Private Equity, Disaggregated by Type of Offering and Reputation of Private Equity Sponsor

Changes in adjusted operating performance measured as the return on sales, ROA, for registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis. Adjusted performance for each firm is obtained by subtracting the median performance measure for a group of matched firms benchmarked in year -1, the fiscal year prior to the secondary offering. Return on assets, ROA, is operating income before depreciation, interest, taxes and extraordinary items divided by total assets. Results are reported for each year and for spans of various duration relative to year -1. Results are reported separately for the sample of 196 pure secondary seasoned equity offerings versus the 73 offerings by private equity sponsors that have a joint offering of equity by the portfolio firm, and reported separately for the 117 offerings where the private equity sponsor is included in the lists of Top 20 or Notable Private Equity Firms compiled by Private *Equity International* versus 152 offerings by other private equity sponsors. Statistical significance is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level.

	Adjusted Performance Per Year					Change in Adjusted Performance over Time Period			
	-1	0	1	2	3	-1 to 0	-1 to +1	-1 to +2	-1 to +3
Joint Offer									
Mean	0.07%	1.95%**	1.82%	3.02%	3.25%	1.88%***	2.00%*	3.06%*	3.24%**
p-value	0.46	0.02	0.45	0.45	0.18	<0.01	0.06	0.08	0.03
Median	0.00%	1.48%	1.11%	2.48%	2.29%	1.09%	1.22%*	2.31%	1.97%
p-value	0.27	0.15	0.12	0.71	0.17	0.15	0.08	0.71	0.23
Pure Offer									
Mean	0.21%**	2.22%***	1.42%	2.33%	2.25%*	2.00%***	1.26%	2.27%	2.15%*
p-value	0.02	<0.01	0.33	0.16	0.07	<0.01	0.39	0.17	0.08
Median	0.11%*	1.41%***	2.05%***	2.52%**	0.98%**	1.28%***	1.48%***	2.31%	1.18%
p-value	0.09	<0.01	<0.01	0.02	0.05	<0.01	<0.01	0.11	0.21
Top PE									
Mean	0.40%***	1.81%***	1.40%	1.63%	2.93%***	1.81%***	1.40%	1.62%	2.93%***
p-value	<.001	<.001	0.15	0.13	<.001	<.001	0.15	0.14	<.001
Median	0.25%***	1.20%***	1.47%***	1.58%***	2.28%***	1.20%***	1.47%***	1.58%***	2.28%***
p-value	<.001	<.001	<.001	0.01	<.001	<.001	<.001	0.01	<.001

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Table 16 continued

Other PE									
Mean	0.38%**	2.08%*	2.62%	3.50%	4.93%	1.70%	2.50%	3.28%	4.81%
p-value	0.05	0.08	0.24	0.34	0.12	0.18	0.30	0.42	0.17
Median	0.14%**	1.55%*	1.45%**	1.57%*	2.80%	0.09%	1.64%**	2.05%**	2.85%
p-value	0.02	0.06	0.03	0.09	0.12	0.16	0.03	0.04	0.11

Table 17

Operating Performance after Secondary Seasoned Offerings by Private Equity Relative to Performance of Benchmark RLBOs without Secondary Offerings

Changes in adjusted operating performance measured as the return on assets, ROA, for registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis. Adjusted performance for each firm is obtained by subtracting the performance measure for a matched firm benchmarked by being a firm that sustained a reverse leveraged buyout in the same year as the sample firm, that shares the same 2-digit SIC code, a similar market capitalization (from 30% to 170% of sample firm at filing year of the first secondary offering), and similar operating performance (80% to 120% of the ROA of sample firm in year -1, the fiscal year prior to the secondary offering by the sample firm. Return on assets is operating income before depreciation, interest, taxes and extraordinary items divided by total assets. Results are reported for each year and for spans of various duration relative to year -1. Results are reported separately for the full sample of 269 secondary seasoned equity offerings, the sample of 169 first secondary seasoned offerings after an IPO, and the sample of 70 secondary seasoned offerings where the percentage of ownership held by the private equity sponsor after the offering is completed is less than 5%. Statistical significance is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level.

Year	Adjusted Performance Per Year					Change in Adjusted Performance over Time			
	-1	0	1	2	3	-1 to 0	-1 to +1	-1 to +2	-1 to +3
Full Sample									
Median	0.74%	4.30%***	9.37%***	12.13%***	14.16%***	0.01	6.36%***	8.33%***	5.65%**
p-value	0.11	<.01	<.01	<.01	<.01	0.27	<.01	0.01	0.02
First Offering									
Median	0.02%	3.50%**	9.23%***	12.85%***	14.25%***	0.58%	8.69%***	9.59%**	6.00%
p-value	0.92	0.04	<.01	<.01	0.01	0.62	0.01	0.02	0.13
PE < 5%									
Median	0.74%	4.30%***	9.37%***	12.13%***	14.16%***	1.03%	6.36%***	8.33%***	5.65%**
p-value	0.11	<.01	<.01	<.01	<.01	0.27	<.01	0.01	0.02

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Table 18

Long Run Financial Performance of Portfolio Firms after First Secondary Seasoned Offerings by Private Equity Sponsors

Financial performance measured as long run buy and hold returns for 196 registrant portfolio firms that sustain first secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis of the initial announcement of the offering. Buy and hold returns are computed for one year, two years, and three years after the initial announcement of the secondary offering. Buy and hold returns are also reported for the value-weighted NYSE/Amex/Nasdaq market index. Statistical significance is based on the t-test for the mean and on the Wilcoxon signed ranks test for the median, and is indicated by: * significant at the 10% level and ** significant at the 5% level. p values are reported for relevant differences in means and medians.

	Value-weighted Market Index	First SEO Firms	p(diff) Market vs First SEO
	1 Year Buy and Hold Returns		
Mean	9.5%***	21.43%***	<0.01
t-statistic	6.67	3.27	
Median	12.92%***	11.16***	0.31
p-value	<0.01	<0.01	
	2 Year Buy and Hold Returns		
Mean	16.02%***	24.86%***	<0.01
t-statistic	7.11	3.13	
Median	17.46%***	6.20%***	0.13
p-value	<0.01	<0.01	
	3 Year Buy and Hold Returns		
Mean	19.28%***	30.69%***	<0.01
t-statistic	9.02	2.91	
Median	10.42%***	9.33%***	0.85
p-value	<0.01	<0.01	

Table 19

Frequency of Corporate Control Events following Secondary Seasoned Offerings by Private Equity Sponsors and for Benchmark Firms

Statistics on outcomes for the sample of 196 registrant portfolio firms that sustain secondary seasoned equity offerings by private equity sponsors over the sample period 1996 through 2013 for firms listed on NYSE or Nasdaq and that have sufficient stock price returns to perform an event study analysis of the initial announcement of the offering, and for their benchmark firms selected as the firm on the CRSP file that has the same 4-digit SIC code and that is closest in market capitalization to the registrant firm at the announcement date. Data is reported for the number and proportion of firms that are subject to corporate control transactions, that continue to trade as of December 31, 2013, and that are delisted due to financial distress. The p-value (*p(diff)*) reported is for the test of the difference in the proportions between sample firms versus benchmark firms.

Outcome	Sample Firms		Benchmark Firms		Difference in Proportions	
	Number	Percent	Number	Percent	z-statistic	p-value
Still trading	146	74.59%	133	67.86%	1.45	0.15
Merged	50	25.00%	55	28.06%	-0.57	0.57
Delisted	1	0.51%	8	4.08%	-2.36**	0.02**
Total	196	100%	196	100%		

Figure 1

Number of Stores of Tuesday Morning

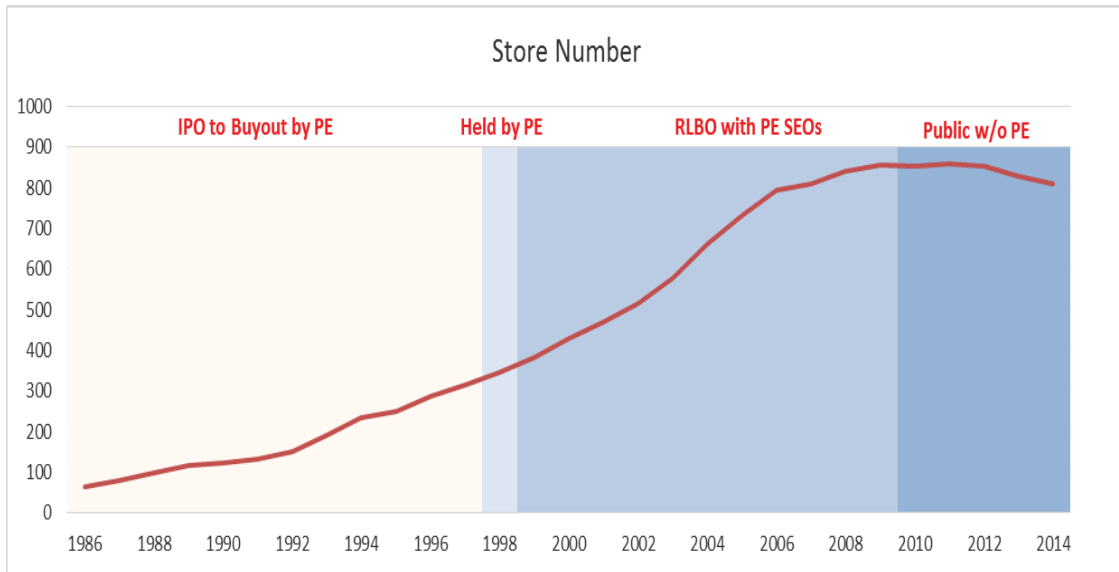This figure illustrates the number of stores operated by Tuesday Morning Corporation.

Figure 2

Tuesday Morning Gross Sales

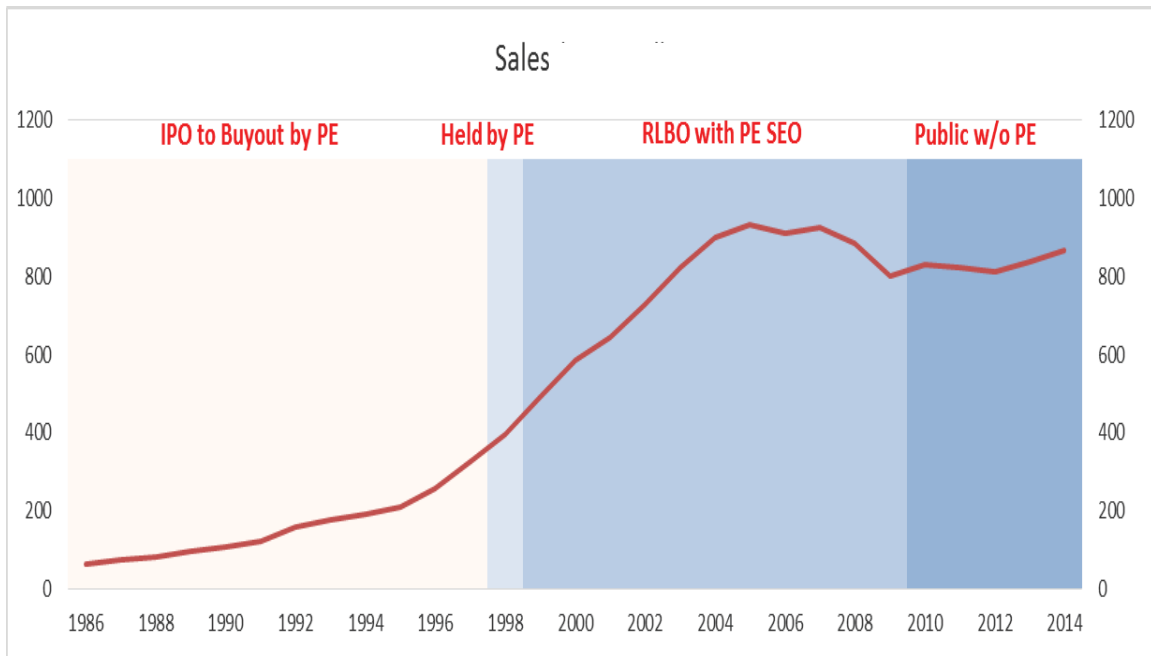This figure illustrates the gross sales of Tuesday Morning Corporation.

Figure 3

Tuesday Morning Employees

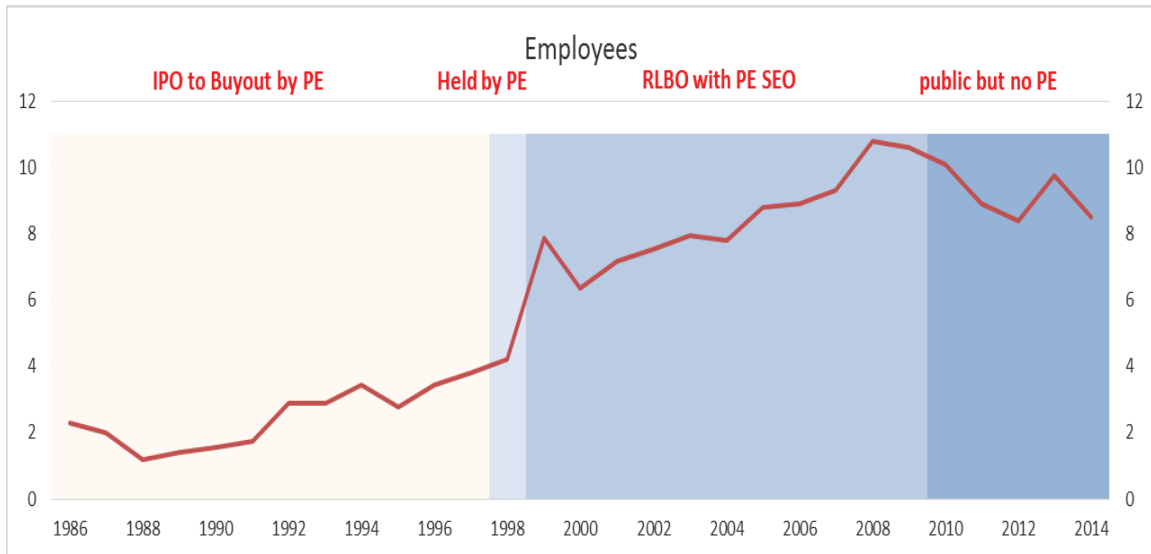This figure illustrates the number of persons employed by Tuesday Morning Corporation.

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Figure 4

Tuesday Morning Gross Profit

This figure illustrates the gross profit of Tuesday Morning Corporation, defined as earnings before interest, taxes, depreciation, and amortization.
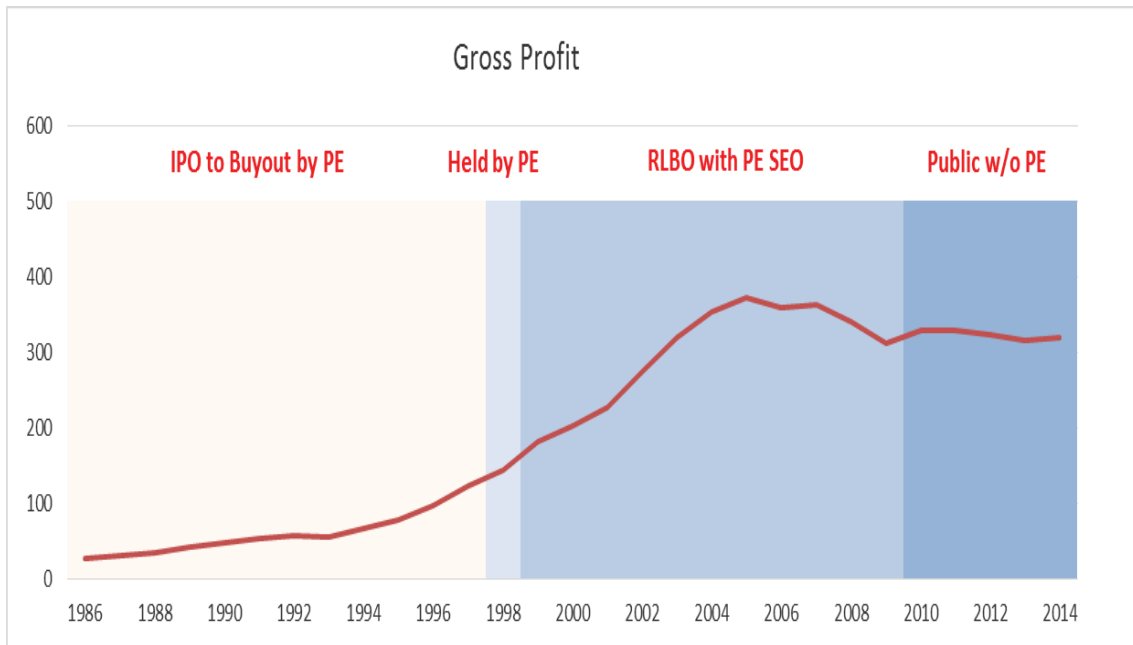
Figure 5

Tuesday Morning Market Value

This figure illustrates the market value of Tuesday Morning Corporation, defined as share price multiplied by total shares outstanding.

Market Value (Norminal)