

**The evolution of capital structure and operating performance after leveraged buyouts:
Evidence from U.S. corporate tax returns**

Jonathan B. Cohn

Lillian F. Mills

Erin M. Towery

The University of Texas at Austin
Red McCombs School of Business

November 2011

ABSTRACT

This study uses U.S. corporate tax return data to examine the evolution of firms' financial structure and performance after leveraged buyouts for a comprehensive sample of 317 LBOs taking place between 1995 and 2007. We find little evidence of improvements in operating performance subsequent to an LBO on average, inconsistent with Jensen's (1989) view that LBOs are intended primarily to solve a free cash flow problem. Further, firms do not reduce their leverage after an LBO, even if they generate excess cash flow. Our results suggest that effecting a one-time change in capital structure is a primary purpose of LBOs.

The Internal Revenue Service (IRS) provided confidential tax information to Mills and Towery pursuant to provisions of the Internal Revenue Code that allow disclosure of information to a contractor to the extent necessary to perform a research contract for the IRS. None of the confidential tax information received from the IRS is disclosed in this treatise. Statistical aggregates were used so that a specific taxpayer cannot be identified from information supplied by the IRS. We appreciate comments and suggestions received from Andres Almazan, Aydoğın Altı, Sugato Bhattacharyya, Merle Erickson, Peter Finley, Cristi Gleason, John Graham, Justin Hopkins, Michael Lemmon, Todd Milbourn, Bob Parrino, Berk Sensoy, Doug Skinner, Sheridan Titman and participants at the UBC Winter Finance Conference, Texas Finance Festival, University of North Carolina Tax Symposium, Washington University in St. Louis Corporate Finance Conference, Texas Tech University, University of Waterloo, University of Kentucky and University of Texas at Austin. We gratefully acknowledge research support from the McCombs Research Excellence Fund. Prasart Jongjaroenkamol provided excellent research assistance in collecting publicly-available news stories.

The evolution of capital structure and operating performance after leveraged buyouts: Evidence from U.S. corporate tax returns

A defining feature of the market for corporate control in recent years is the prominent role of private equity-led leveraged buyouts (LBOs). Kaplan and Strömberg (2009) report that private equity acquirers took almost three percent of the U.S. stock market (by market capitalization) private in LBOs in 2006 alone. Understanding the consequences of these transformative events for the firms that undergo them has long been regarded as important. However, the lack of public data for most private firms, at least in the United States, has remained an impediment to financial studies of LBO firms post-buyout. Existing studies have been limited to relatively small, non-random samples of LBO firms for which public financial information happens to be available.

This paper is the first to study post-LBO financial performance and behavior for approximately the universe of U.S. LBO firms over any period. We overcome the lack of public financial data for most LBO firms by instead analyzing confidential federal corporate tax return data. Because all U.S. corporations must file tax returns, we can observe post-LBO income and balance sheet information for nearly all U.S. LBO firms. Our primary sample consists of 317 previously-publicly-traded firms acquired in LBOs between 1995 and 2007, with at least \$10 million of assets. This represents approximately 90% of all LBO firms during this period with \$10 million or more of assets.

We use this large, representative sample to test a number of long-standing hypotheses regarding the motivation for LBOs and their role in the economy. Arguably the most influential view on LBOs is that of Jensen (1989), who regards the LBO structure as superior to the structure of the publicly-traded firm. He argues that the newly concentrated ownership better monitors managers and that the higher leverage disciplines managers. Together, the monitoring

and discipline prevent wasteful investment of free cash flow. In fact, Jensen argues that private equity acquirers may lever up the firms they acquire beyond a sustainable level in order to strengthen incentives for managers, who can only bring leverage down to a sustainable level by generating improvements in cash flow necessary to pay down debt.

Although solving the free cash flow problem appears to have been an important driver of LBOs in the 1980s, it is unclear whether it played a role in driving LBOs in the 1990s and 2000s. An alternative view that some private equity firms have advanced is that they can directly improve the operating performance of their portfolio companies through their operational expertise. For example, private equity firms TPG Capital and KKR both maintain full-time operational staffs of 60 professionals responsible for working with their portfolio companies. In this view, it is private equity ownership itself, rather than the LBO structure, that is conducive to improvements in performance.

Although both of these arguments suggest a virtuous role for LBOs, a more sinister view is that private equity firms use LBOs to plunder healthy companies, paying themselves large dividends while leaving the acquired firm in a weakened long-run financial position. One vocal proponent of this view is Franz Müntefering, who, as Chairman of the Social Democratic Party in Germany in 2005, referred to private equity firms as "locust swarms, who measure success in quarterly intervals, suck off substance and let companies die once they have eaten them away."¹

Another explanation for the LBO structure is that it is intended to achieve a more desirable capital structure by increasing the financial leverage of a firm that cannot or will not increase leverage on its own. In spite of the tax benefits of debt, publicly-traded firms in the

¹ An often-cited example in the U.S. is that of fruit-by-mail company Harry & David, which, after it obtained substantial debt financing, paid a \$110 million dividend in 2005 to its private equity owner, Wasserstein & Co. Harry & David began to struggle financially in 2008 and ultimately filed for Chapter 11 bankruptcy in 2011.

U.S. operate with surprisingly little debt in their capital structures (Graham (1996)). Increasing leverage could benefit equity holders by increasing the value of the firm's interest tax shield.²

We begin our analysis by studying changes in operating performance around LBOs. Kaplan (1989b), Smith (1990) and Smart and Waldfogel (1994) find that 1980s U.S. management buyouts (MBOs) – LBOs in which management acquires most of the firm's equity – led to large increases in profitability.³ Guo, Hotchkiss and Song (2011) find smaller but still substantial improvements in operating performance after U.S. LBOs in the 1990s and 2000s. For example, they find a 12% increase in EBITDA/Sales relative to a matched sample of firms that did not go private in LBOs.⁴ All of these papers analyze samples of firms that have public financial statements available for at least part of the time they are private either because they have public debt outstanding or because they subsequently go public again and disclose historical financial information at that point. One concern is that these are non-random samples of firms, and therefore the results of these studies may not generalize to the broader population of LBO firms.

Using the tax return data, we find little evidence that LBOs in the 1990s and 2000s result in improvements in operating performance, on average. Mean and median pre-interest return on sales, return on assets, and a measure of economic value added (EVA) are all essentially flat from the two years before to the three years after LBOs. Relative to publicly-traded firms

² This argument leaves unanswered the question of why publicly-traded firms don't simply lever up on their own if doing so would increase the value of equity. A partial explanation is that risk-averse managers may prefer to limit debt in order to reduce the likelihood of bankruptcy, which is often accompanied by removal of the CEO.

³ Lichtenberg and Siegel (1990) find an increase in total factor productivity at the plant-level post-LBO in the U.S. for a more general sample of 1980s LBOs. Harris, Siegel and Wright (2005) find operating improvements for LBOs in the U.K. in the 1980s and 1990s.

⁴ Leslie and Oyer (2009) find no evidence of improvements after U.S. LBOs during a similar period, though their sample consists predominantly of LBOs of already-private firms and they do not compare performance to a matched sample of firms that did not go private. Acharya, Gottschalg, Hahn and Kehoe (2011) and Weir, Jones and Wright (2008) find modest improvements in operating performance after LBOs in the U.K during this period. Boucly, Sraer and Thesmar (2009) and Bergström, Grubb and Jonsson (2007), in contrast, find large improvements in operating performance after LBOs during this period in France and Sweden, respectively.

matched on industry and operating performance the year before the LBO that did not undergo LBOs, LBO firms experience a slight increase in pre-interest return on sales (less than 2%) but no improvement in the other performance measures. Moreover, the change in performance measures around LBOs does not vary with the age of the private equity acquirer. We thus find no evidence that experienced private equity acquirers are better able to help firms improve performance.

These results are difficult to reconcile with the view that LBOs are motivated by opportunities to improve a firm's operational performance, either through the disciplining effects of leverage and private equity ownership, or through the operational expertise of private equity acquirers. However, one might imagine that different LBOs are motivated by different factors, and that the opportunity to improve operational performance is unlikely to have motivated LBOs of firms that were already “healthy” pre-buyout. As an example, when Texas Pacific Group and Warburg Pincus acquired Neiman Marcus in 2005, “Neiman Marcus had nothing wrong with it. The chain was coming off its strongest year ever, thanks to a boom in the luxury retail market.” The scope for improving operations was unlikely to have been very large in this case, and indeed “TPG and Warburg Pincus always said they wouldn't meddle, and (Neiman Marcus CEO Burt) Tansky said they've kept their word, allowing the company to move forward with long-term goals while continuing to dominate the red-hot luxury retail market.”⁵

We therefore separately examine changes in operating performance around LBOs of firms where the scope for improving performance was largest - those of firms that were unprofitable pre-LBO. We do find some evidence that operating performance improves after LBOs for “loss” firms, but not compared to our matched firms. The apparent improvement in

⁵ Source: “Hands-Off Approach at Neiman Marcus,” *Dow Jones News Service*, November 20, 2006.

the operating performance of these loss LBO firms on an unadjusted basis appears to be due to simple mean reversion in performance.

We also examine how firms' growth rates change around LBOs. While our data does not include investment measures such as capital expenditures, we can observe firms' total asset levels and sales in the years before, during and after LBOs. The patterns here are somewhat unclear. On average, LBO firms' assets grow in the first year after the buyout but then shrink in the second and third years after the buyout. Sales, in contrast, are lower the year after the buyout than the years before, but then grow in the second and third years after the buyout. The fact that LBO firms in the 1990s and 2000s do not systematically shrink after buyouts suggests that these LBOs were not intended to unwind past wasteful investment of free cash flow in publicly-traded firms.

We next turn our focus to the evolution of capital structure after LBOs. Kaplan (1989a) finds that firms taken private in MBOs in the 1980s pay down approximately 25% of their debt in the first two years after the MBO. In contrast, Kaplan (1991) finds that firms acquired in LBOs between 1979 and 1986 that remain privately-owned at the end of 1989 have leverage ratios comparable to those at the time the LBO was completed. However, he observes leverage ratios for only a fraction of the LBOs in his sample at the end of 1989, and acknowledges that this "leaves open the possibility of ex post selection bias." We are aware of no comparable analysis for the 1990s and 2000s. Such an analysis is important, as LBOs in the 1990s and 2000s lead to smaller increases in leverage than those in the 1980s. This makes it less likely that firms will seek to reduce leverage post-LBO, but also results in lower interest payments, freeing up more cash flow to reduce debt if these firms do choose to do so.

We find that the increases in leverage and debt levels in LBOs in the 1990s and 2000s are highly persistent post-LBO. If anything, leverage actually drifts upwards slightly in the years after an LBO, and is higher than leverage at the time the LBO was completed, even five years afterwards. Of course, not all LBO firms generate enough cash flow to pay down their debt, especially in light of the large interest payments that these firms must make. However, we find that even firms with cash flow in excess of their investment needs do not reduce their leverage post-LBO.

The sustained high leverage does not support the argument that private equity firms load up their targets with excessively high levels of debt to create pressure on managers to generate cash flow in order to pay down debt. Another view of the reliance on debt added to the target firm's balance sheet to finance LBOs is that it minimizes transactions costs. For example, Axelson, Strömberg and Weisbach (2009) argue that such financing minimizes costs associated with information asymmetries between the private equity acquirer and outside investors. While we do not test this theory directly, our results suggest that the use of debt is motivated by a conscious effort to change a firm's capital structure rather than a transactional motive, since an LBO firm would plausibly be expected to pay down at least some of its debt as it generates cash flow if the motive were transactional.

Our capital structure results have important implications for researchers studying the value of the interest tax shields created by the debt taken on in LBOs (e.g., Kaplan (1989b), Guo, Hotchkiss and Song (2011), Jenkinson and Stucke (2011)). Such analyses must make assumptions about how persistent the increase in debt is, and the value of the tax shield is sensitive to these assumptions. Our results suggest that an assumption that debt remains at its level immediately after the buyout for at least several years is justified. This suggests that the

value of tax shields is likely to be at the high end of the previous range of estimates. Indeed, this may help bridge the gap that Guo, Hotchkiss and Song (2011) find between the financial returns to private equity acquirers in LBOs and the returns that can be explained by observed factors such as operating performance improvements and increased tax shields.

Next, we study dividend distributions from LBO firms. Data on dividends is only available in our sample for the period from 2005 through 2009. We find that LBO firms pay surprisingly little in dividends during this period. The median LBO firm pays no dividends in the two years after an LBO and only a minimal amount in the third year after the LBO. Even the 90th percentile of dividends divided by transaction value is only 0.1% in the first year after the LBO and 1.7% in the second year after the LBO. These payout rates are actually lower than payout rates in the years prior to the LBO. These results hold when we look only at firms whose excess cash flow post-buyout creates the capacity to pay dividends. The absence of large payouts combined with sustained firm size post-LBO suggests that concerns about private equity firms looting the firms they acquire lacks foundation. This is important because such concerns are one basis for arguments that private equity firms should be more heavily regulated.

In summary, the results of our analysis are most consistent with LBOs in the 1990s and 2000s being driven primarily by the desire to effect a one-time, sustained shift in a firm's capital structure. We do not find support for Jensen's (1989) free cash flow argument for the role of LBOs. It also does not appear that private equity firms loot their targets, as some commentators have argued.

As a final step, we study how LBO firms exit LBO status. We find that firms that experience bigger improvements in operating performance are more likely to exit successfully via an IPO or acquisition. Thus, while LBOs do not appear to lead to improvements in

performance on average, acquirers do appear to be rewarded for those that do, since such exits typically take place at high multiples of purchase price (Guo, Hotchkiss and Song (2011)). Successful exit is more likely in hot-IPO years, even after controlling for performance. Not surprisingly, firms with worse operating performance are more likely to go bankrupt. Further, the likelihood of bankruptcy is also positively related to the amount of leverage the firm has immediately after the LBO is completed. This suggests that, while a large debt load may be desirable in terms of maximizing tax shields, it does, as one would expect, expose the firm to greater risk of financial distress.

The remainder of the paper is organized as follows. Section I describes the sample and research design. We discuss the operating performance and growth results in detail in Section II, and the capital structure and dividend results in Section III. Section IV presents our duration analysis and Section V concludes.

I. SAMPLE AND RESEARCH DESIGN

A. Sample

We begin by identifying LBOs between 1995 and 2007 of publicly-traded, stand-alone firms using Dealogic's Mergers & Acquisitions database and Thomson Financial's SDC Platinum mergers database.⁶ Panel A of Table I summarizes our sample construction. We exclude LBOs of bankrupt firms, partial LBOs and LBOs of firms with less than \$10 million of assets. This gives us an initial sample of 479 possible LBOs. We then hand-collect news articles discussing each of these transactions. Based on these news articles, we remove LBOs that were never actually completed, misclassified LBOs, LBOs of firms merged into other entities, and REIT and

⁶ Although over-the-counter (OTC) securities are generally considered publicly-traded, we exclude them from our sample because the OTC firms we identify are not required to file financial statements with the Securities and Exchange Commission pre-buyout.

partnership LBOs.⁷ This leaves us with 354 LBOs, which we then attempt to match with IRS data.

Insert Table I here

Where possible, we match LBO firms with their corporate tax return data using the Employer Identification Number (EIN) recorded in Compustat.⁸ If we cannot match based on the EIN, we match based on company name. We are able to match 353 of the 354 total LBOs to the IRS tax return data.

Because we are interested in tracking operating performance and leverage post-LBO, we require that IRS data be available for the year prior to the LBO through two years after the LBO for inclusion in our sample. Tracking a firm in the IRS data over this four year period is complicated by the fact that, in an LBO transaction, the private equity acquirer sometimes creates a holding company that it merges with the acquired firm. As a result, the firm's EIN may change after the LBO. In addition, the surviving company sometimes retains the name of the holding company rather than the name of the acquired firm. When we cannot find a match using the EIN or the name of the acquired firm, we search news articles and public filings to identify the name of the company post-buyout. We then attempt to match the LBO firm to the tax return data using this name.

We succeed in identifying tax return data for the year before, year of and two years after the transaction for 317 LBOs, 90% of the 354 total LBOs. Thus, our full sample closely

⁷ We eliminate LBOs of REITs and partnerships because these firms complete different income tax returns (REITs file Form 1120-REIT and partnerships file Form 1065). In general, we find that corporations acquired in LBOs file Form 1120 both before and after the transaction, suggesting minimal changes in tax structure resulting from the buyout.

⁸ The Dealogic and SDC databases do not capture a firm's EIN to match with tax return data, so we obtain EINs by merging these datasets with Compustat.

approximates the universe of U.S. LBOs of publicly-traded companies with assets of at least \$10 million. We also conduct long-run tests, which require tax return data for the year before, year of and five years after the transaction. This long-run sample consists of 153 LBOs.⁹ Panel B of Table I shows the number of LBO firms for which we have different quantities of post-LBO data by year. We see a significant increase in the number of LBOs in 2006 and 2007 relative to prior years. Nevertheless, firms with LBOs in these two years represent less than one-third of our full sample. Panel C of Table I presents the LBO outcomes. Of the 317 sample LBO firms, 33% were sold, 11% went public, 15% ended in bankruptcy and 41% were still privately held as of December 2010.

B. Corporate tax return data

All of the financial variables used in this study are constructed using corporate tax return data collected by the IRS in its Business Return Transaction File (BRTF).¹⁰ Although these data do not constitute a complete set of financial statements, they are sufficient to compute standard measures of operating performance and interest-bearing debt. The benefit of using tax return data rather than financial statement data is the unique ability to examine performance and leverage for firms during periods in which they are not filing public reports.¹¹

Our measures of operating performance are based on tax reporting definitions of revenues

⁹ We acknowledge that survivorship bias could affect the long-run sample. This is especially likely to be an issue in analyzing changes in operating performance after buyouts, since the likelihood that a firm exits the sample in the years after the buyout may be systematically related to its profitability.

¹⁰ Prior studies have used tax return data transcribed by the Statistics of Income (Mills (1998); Mills and Newberry (2001)). Although the BRTF captures a broader sample of firms, it contains more limited data items than the Statistics of Income data and far less than the entire tax return as filed.

¹¹ Various authors compare financial data to tax return data to estimate tax payments (Lisowsky (2009)), simulated marginal tax rates (Graham and Mills (2008)), or book-tax differences (Manzon and Plesko (2002)). Although none of these papers focuses specifically on whether taxable income provides a reasonable measure of operating income, Manzon and Plesko (2002) concludes that differences between book and taxable income could be estimated consistently over time. Thus, although our measure of operating performance is based on taxable income rather than financial statement income, our cross-time tests should control for consistent differences between book and taxable income.

and expenses and are necessarily subject to any tax avoidance incentives.¹² We are therefore careful to interpret our results for firm-level changes in operating performance in light of the extent to which tax reporting incentives could have changed for our firms. We return to this point in Section II.D, where we discuss why our conclusions would likely be strengthened if we could undo the effects of any changing tax incentives.

Although the tax return balance sheet unlikely represents the exact entities and consolidation methods that would be reported in a public financial statement, the balance sheet conveniently uses a book basis of measurement. For example, the tax return balance sheet includes only the assets and liabilities of affiliated U.S. entities and reports foreign subsidiaries using the equity method. Since our tests relate to within-firm changes post-LBO, any consolidation differences between the tax return balance sheet and a public financial statement should not present a problem.

C. Operationalizing post-transaction operating performance and leverage

To study general trends in operating performance and leverage before and after the LBO transaction, we adopt an event study approach by lining up the LBO years across firms. We designate the first tax return filed on or after the LBO completion date as the year t observation. We employ three measures of operating performance. The first measure is pre-interest return on sales (*PreInterestROS*), which equals *PreInterestIncome*, computed as pretax income for tax purposes (*NetIncome*) plus the interest deduction (*IntDeduction*), divided by gross receipts (*Sales*). We use pre-interest income because we are interested in studying operating performance

¹² Prior research broadly suggests that privately-held firms place less weight on book income and are therefore more willing to avoid tax in ways that could decrease book income in a conforming manner. See Cloyd (1995); Cloyd, Pratt and Stock (1996); Mills and Newberry (2001); and Badertscher, Katz and Rego (2011). However, to the extent that leverage becomes a substituted tax shield (MacKie-Mason (1990); Graham (1996); Dhaliwal, Trezevant and Wang (1992); Cloyd, Limberg and Robinson (1997); Graham, Lang and Shackelford (2004)), our LBO firms may use fewer non-debt tax shields. Because the data we presently have do not include book income for all observations, we cannot directly examine this trade-off.

before financing. This measure is analogous to earnings before interest and taxes (EBIT) as computed from a firm's financial statements. The second measure is pre-interest return on assets (*PreInterestROA*), which equals *PreInterestIncome* divided by lagged *TotalAssets*, but substituting year t assets as the scalar for all years prior to year t+1. This substitution controls for any book basis adjustments resulting from the LBO.¹³

Our third measure of operating performance is *PreInterestEVA*. Economic value added (EVA) is technically defined as free cash flow less a charge reflecting the opportunity cost of the capital that the firm employs. Because we do not observe depreciation or capital expenditures, our tax return data do not allow us to compute free cash flow. Instead, we calculate a measure of EVA using *PreInterestIncome* as a substitute for free cash flow. This makes the level of *PreInterestEVA* we calculate difficult to interpret. However, the change in the measure over time should capture information about the amount of value a firm creates. We therefore focus on the change in *PreInterestEVA* from year t-k to t+i, which we define directly as:

$$[(PreInterestIncome_{t+i} - PreInterestIncome_{t-k}) - ((TotalAssets_{t+i} - TotalAssets_t) * IndCostCap_{t-1})] / TotalAssets_t$$

IndCostCap equals the industry median cost of capital in year t-1, where industry is defined by 3-digit NAICS code. We again substitute year t total assets for total assets in pre-LBO years

¹³ Business combinations treated as acquisitions under Accounting Standards Codification (ASC) 805 require restating most assets and liabilities to fair market value on the book balance sheet. The tax return balance sheet should reflect book accounting rules. However, tax rules come into play if any companies mistakenly report tax basis assets. Taxable purchases of free-standing C corporations create asset and liability revaluation if the acquirer elects to treat the acquisition as an asset purchase under Internal Revenue Code Section 338. However, such elections are rare because they require the target corporation to pay tax on any resulting gain (Scholes, Wolfson, Erickson, Maydew and Shevlin (2009); Erickson (1998)). We refer to effects from either book or tax revaluations broadly as basis adjustments.

If firms make basis adjustments in year t, the denominator of year t-2/t-1 *PreInterestROA* would reflect the original asset measure while the denominator of year t+2 *PreInterestROA* would be affected by any book basis adjustments. For the change in *PreInterestEVA*, the change in assets from pre-LBO to post-LBO might similarly be affected by basis adjustments. It seems more likely that profitable LBOs could experience asset write-ups whereas loss LBOs would experience asset write-downs. Asset write-ups would diminish ROA/EVA, all else equal, but asset write-downs would improve ROA/EVA.

Guo, Hotchkiss and Song (2011) raise the same issue. They estimate the amount of the accounting adjustment using Form 10-K filings and add the adjustment to pre-transaction assets. We are unable to estimate this adjustment using public filings because most firms in our sample do not file public financial statements post-buyout.

because of the basis adjustment issue. Appendix A reports results for our analysis of changes in *PreInterestROA* and *PreInterestEVA* using lagged total assets instead of year t total assets as the scalar, and inferences are unchanged.

Our leverage measure (*DebtToAssets*) equals interest-bearing liabilities (*IntBearingLiab*) divided by *TotalAssets*, where *IntBearingLiab* equals short-term and long-term mortgages, notes and bonds payable.

D. Summary statistics

Table II provides descriptive information for the LBO firms in our sample for year t-1 (pre-LBO) and year t+2 (post-LBO). All of the data in this table are obtained or constructed from the tax return data. Panel A describes all 317 LBO firms. Panel B describes the 250 LBO firms that were operationally profitable (positive *PreInterestIncome*) in year t-1. We refer to these firms as 'profit LBO firms.' Panel C describes the 67 LBO firms that were operationally unprofitable (negative *PreInterestIncome*) in year t-1. We refer to these firms as 'loss LBO firms.'

Insert Table II here

Panel A indicates that the mean (median) LBO firm in our sample has pre-transaction *TotalAssets* of \$921 (\$253) million. Profit LBO firms are larger than loss LBO firms, with median total assets of \$264 million and \$134 million, respectively. The mean (median) firm has surprisingly high *DebtToAssets* of 44.7% (43.2%) in year t-1. This increases to 82.7% (77.5%) in year t+2. Loss LBO firms appear to be more levered than profit LBO firms both pre- and post-buyout. 83% of profit LBO firms have positive tax payments in year t-1, before the LBO transaction increases their leverage. This declines to only 42% in year t+2. Meanwhile, the

percentage of loss LBO firms with positive tax payments increases from 3% in year t-1 to 28% in year t+2.¹⁴ The mean (median) firm in our sample has *PreInterestROS* in year t-1 of 8.9% (6.3%) and *PreInterestROA* in year t-1 of 4.4% (5.1%). By construction, the profit LBO firms have positive pre-interest operating performance and the loss LBO firms have negative pre-interest operating performance in year t-1.

II. OPERATING PERFORMANCE RESULTS

A. Trends in operating performance

Table III presents the trends in operating performance around LBOs. Panels A, B and C present trends in *PreInterestROS* for all LBO firms, profit LBO firms and loss LBO firms, respectively. We focus our analysis on the pre- and post-LBO years rather than the year of the LBO itself (year t) because the firm switches from public to private status during year t, making it a mixed year.¹⁵ As Panel A shows, LBOs are, on average, accompanied by neither an increase nor a decrease in *PreInterestROS* for the full sample of LBO firms. Mean (median) *PreInterestROS* changes from 8.9% (6.3%) in year t-1 to 10.7% (6.9%) in year t+1, 9.3% (6.8%) in year t+2 and 8.0% (6.4%) in year t+3. The inconclusive pattern suggests that LBOs generally do not produce improvements in performance on average. Panel B shows that *PreInterestROS* declines for profit LBO firms. However, Panel C shows that *PreInterestROS* improves for loss LBO firms, consistent with firms with greater ex ante scope for improvement experiencing greater post-buyout improvement.

Insert Table III here

¹⁴ Firms with a net loss could still owe Alternative Minimum Tax.

¹⁵ We require tax return data in years t-1 through t+2, but not for years t-2 or t+3, for inclusion in the sample. Thus, there are fewer observations reported for years t-2 and t+3 than for the other years.

Panels D, E and F of Table III show analogous trends for *PreInterestROA*.¹⁶ The trend in Panel D suggests that, in the aggregate, operating performance remains relatively constant for LBO firms from before to after the LBO. The trend in Panel E suggests a decline in performance for profit LBO firms. However, Panel F shows that loss LBO firms experience improved operating performance after the buyout, consistent with the improvement in *PreInterestROS* for loss firms. Figure 1 depicts the operating performance trends graphically. Panels A, B and C of Figure 1 depict the trends in *PreInterestROS* for all sample firms, profit LBO firms and loss LBO firms, respectively. Panels D, E and F depict the trends in *PreInterestROA*.

Insert Figure 1 here

B. Tests of changes in operating performance after LBOs

The trends shown in Table III suggest that LBOs do not result in improvements in operating performance, except in the case of firms that were unprofitable pre-LBO. However, we do not observe the counterfactual: how would a firm's operating performance have evolved had it not undergone an LBO? This is important because the trends we observe could be explained by mean reversion in profitability, the types of firms private equity acquirers choose to acquire, or industry- or market-level trends that affect profitable and unprofitable firms differently.

We address this issue using two approaches. The first approach is to examine industry-adjusted changes in *PreInterestROS/ROA/EVA*. This allows us to control for any changes in industry conditions that might drive changes in an LBO firm's profitability. We define industry-adjusted change in *PreInterestROS/ROA/EVA* as firm-level change in *PreInterestROS/ROA/EVA*

¹⁶ We do not present annual trends in the change in *PreInterestEVA* because it is a measure of change and not of performance in an individual year.

from year t-1 to year t+2 minus the industry median change in *PreInterestROS/ROA/EVA* over the same three-year period. We define industries by 3-digit NAICS codes, which are available in the tax return data.

Our second approach to addressing the lack of an observed counterfactual is to match each LBO firm to the publicly-traded firm in the same industry-year with the most similar level of profitability in the year before the LBO.¹⁷ We require performance match firms to have operating performance within 80% and 120% or within -0.01 and 0.01 of the LBO firm's operating performance in year t-1. This second approach allows us to more directly confront the possibility of mean reversion in profitability that might drive changes in profitability after LBOs.^{18,19}

Table IV presents the results for statistical tests of changes in *PreInterestROS*, both unadjusted and using each of the two approaches described above. We examine mean and median changes in *PreInterestROS* over different time horizons, as there is no standard time horizon for assessing the effects of an LBO on operating performance. Because the number of profit LBO firms is over four times the number of loss LBO firms, we split the profit LBO firms into 'high profit LBO firms' and 'low profit LBO firms' using median *PreInterestROS* in year t-1. Panels A, B, C and D present the tests for all LBO firms, high profit LBO firms, low profit LBO firms and loss LBO firms, respectively.

¹⁷ We define industries by 3-digit NAICS codes. If there are no match firms with the same 3-digit NAICS code, we relax this criterion and look for match firms with the same 2-digit NAICS code or 1-digit NAICS code.

¹⁸ Our performance level-adjusted results are inferentially similar when matching on the change in operating performance from year t-2 to t-1 rather than the level of operating performance in year t-1. Our results are also inferentially similar when relaxing the constraint that the matched firm's performance level must be between 80% and 120% or within -0.01 and 0.01 of the LBO firm's operating performance in year t-1.

¹⁹ Publicly-traded firms undergoing leveraged recapitalizations would also be an interesting control group to use because the firms take on a substantial amount of leverage at the transaction but do not go private as LBO firms do. However, there were too few of these transactions identified in SDC for us to create a viable sample. We thank John Graham for this suggestion.

Insert Table IV here

For all LBO firms (Panel A), the mean and median changes in unadjusted *PreInterestROS* are not statistically distinguishable from zero. We do observe statistically significant increases in median changes in industry- and performance level- adjusted *PreInterestROS* over most time horizons, but the magnitudes of these increases are relatively small (less than 2% in all cases).²⁰

Panel B shows a generally significant decline in unadjusted *PreInterestROS* for high profit LBO firms, but mixed results for industry-adjusted and performance level-adjusted *PreInterestROS*. Panel C shows inconsistent changes in *PreInterestROS* for low profit LBO firms. In Panel D, loss firms generally experience an increase in unadjusted and industry-adjusted *PreInterestROS* after LBOs. However, changes are mostly insignificant after adjusting for performance level- adjusted *PreInterestROS*. This indicates that similarly unprofitable firms that were not taken private also experienced improvements in operating performance. In sum, *PreInterestROS* increases for loss firms and decreases for high profit firms, but both trends disappear when we adjust for the performance trend of firms with similar pre-LBO performance that were not acquired in LBOs. This suggests that the changes in *PreInterestROS* for loss and high profit LBO firms in our sample are driven by simple mean reversion and would have taken place even in the absence of the LBO.

Table V presents the same set of tests for changes in *PreInterestROA*. The first row of Panel A shows that the changes in unadjusted *PreInterestROA* are generally not statistically significant. We do see some improvement in industry-adjusted, but not performance level-

²⁰ Note that the number of firms in the performance level-adjusted sample is slightly smaller than the total number of LBO firms because we are unable to find matches with t-1 operating performance within the stated tolerances for some of the LBO firms.

adjusted *PreInterestROA*. At best, Panel A supports only small improvements in operating performance after an LBO.

Insert Table V here

Similar to the *PreInterestROS* results above, Panel B of Table V shows a decline in unadjusted operating performance for firms that were highly-profitable pre-LBO (splitting profit sample on median *PreInterestROA*), although the performance level-adjusted results are generally insignificant. Panel C shows essentially no change in adjusted operating performance for firms that were modestly-profitable pre-LBO. Panel D shows a substantial increase in unadjusted and industry-adjusted performance for firms that were unprofitable pre-LBO when comparing post-LBO performance to year t-1 performance. However, the changes in performance level-adjusted operating performance are generally insignificant.

Finally, Table VI provides the results for statistical tests of changes in *PreInterestEVA*. Panel A shows minimal unadjusted change in *PreInterestEVA* for the overall sample across all time periods. In Panel B, the high profit LBO firms (splitting profit sample on median *PreInterestROA*) experience a decrease in *PreInterestEVA*, although the decreases are not consistently statistically significant when adjusting for industry and performance level. Panel C shows very little change in *PreInterestEVA* for the low profit LBO firms. Panel D shows that loss LBO firms report increases in *PreInterestEVA*, but again the magnitudes decrease and the statistical significance generally disappears after adjusting for the performance trends of firms with similar operating performance in the pre-LBO year that did not go private.

Insert Table VI here

The univariate results in Tables IV, V and VI collectively suggest that LBOs lead to minimal improvements at best. Even firms that were unprofitable pre-LBO, where the scope for improvement is likely the greatest, do not appear to experience significant improvements in operating performance post-LBO after accounting for the performance trends of similar firms that did not go private in LBOs.

C. *Multivariate tests of changes in operating performance*

To gain a deeper understanding of what explains changes in operating performance, we next conduct multivariate tests to explain the changes in *PreInterestROS*, *PreInterestROA* and *PreInterestEVA* from year t-1 to year t+2. We estimate the following multivariate model of changes in operating performance using OLS.

$$\begin{aligned} \Delta Performance_{i,(t-1,t+2)} = & \beta_0 + \beta_1 * PriorProfitIndicator_i + \beta_2 * PreLBOLeverage_i \\ & + \beta_3 * ScaledChDebt_i + \beta_4 * MngtTurnoverIndicator_i \\ & + \beta_5 * ClubDealIndicator_i + \beta_6 * \ln(TransValue)_i + \beta_7 * ManagementBuyout_i \\ & + \beta_8 * PensionFunding_i + \beta_9 * AcquirerAge_i + \varepsilon_i \end{aligned} \quad (1)$$

where $\Delta Performance$ is the performance level- adjusted change in operating performance from year t-1 to year t+2, for the performance measures *PreInterestROS*, *PreInterestROA* or *PreInterestEVA*. We include *PriorProfitIndicator* as an explanatory variable to test whether the scope for improvement in operating performance helps explain whether an LBO transaction results in improved operating performance. We include *DebtToAssets* in year t-1 (*PreLBOLeverage*) and the change in *IntBearingLiab* from year t-1 to t scaled by *PreInterestIncome* (*ScaledChDebt*) as proxies for the use of debt to discipline managers.

To examine whether changes in operating performance are explained by better corporate governance post-buyout, we include measures of management turnover and syndicate (or club) deals. *MngtTurnoverIndicator* equals 1 if the CEO, CFO and/or COO are replaced as a result of the buyout based on our hand-collected news stories. If management entrenchment contributes

to poor operating performance prior to an LBO, changes in management could improve operating performance. Private equity firms have experience with monitoring LBO firms and are considered ‘active investors’ (Kaplan (1991); Cotter and Peck (2001)). Club deals, where more than one private equity firm participates in the buyout transaction, could improve governance via board representation by multiple private equity firms. It can also worsen governance because each member of the club faces a free rider problem in supplying governance.²¹ *ClubDealIndicator* equals 1 if at least two private equity firms are involved in the buyout and 0 otherwise. *TransValue* equals the value of the LBO transaction as reported by SDC or Dealogic and controls for size.

ManagementBuyout equals 1 if the transaction is a management buyout and 0 otherwise. We identify management buyouts from news articles describing the leveraged buyouts in our sample. We include *ManagementBuyout* to test whether firms improve more after LBOs in which management acquires a large stake in the firm and therefore has strong incentives to improve performance. *PensionFunding* equals the amount by which the firm’s pension plan is over- or under-funded prior to the transaction. If some LBOs are primarily intended to transfer wealth from employees with claims to firm assets, LBOs with overfunded pensions may perform better post-LBO than other LBOs. *AcquirerAge* equals the number of years between the year in which the private equity sponsor was founded and the year of the LBO. We determine the founding year of each private equity firm using the 2009 Edition of Dow Jones Galante’s Venture Capital and Private Equity Directory, supplemented by Internet searches. We use this variable to test whether more experienced private equity firms generate better performance improvements.

Table VII presents the results from our multivariate tests of changes in operating

²¹ Officer, Ozbas and Sensoy (2010) find that target shareholders receive smaller takeover premia in club deals.

performance around LBOs. The first two columns show the results for the performance level-adjusted change in *PreInterestROS*. The first column excludes *AcquirerAge*, which is not available for all LBO firms in the sample, and the second column includes all of the variables. Both specifications include year and industry (defined by 3-digit NAICS code) fixed effects.

Insert Table VII here

The *PriorProfitIndicator* coefficient is negative and statistically significant in both columns of our *PreInterestROS* tests. While the results in Table IV do not support a statistically significant increase in *PreInterestROS* for loss firms relative to performance-matched firms, it does appear that loss firms do better post-buyout relative to performance-matched firms than profit firms do. Strikingly, no other coefficients in the model are statistically significant. The second two columns show the results for the performance level-adjusted change in *PreInterestROA*. The coefficient on *PriorProfitIndicator* is negative although not statistically significant. The final two columns present the regression results for performance level-adjusted change in *PreInterestEVA*. Similar to the case in which change in *PreInterestROS* is the dependent variable, the coefficient on *PriorProfitIndicator* is negative and statistically significant. Overall, Table VII suggests that loss LBO firms experience greater improvements in operating performance relative to performance-matched firms than profit LBO firms do.

D. *Reporting incentives*

Tax reporting incentives can change around an LBO because the new interest deduction provides a large tax shield. To the extent that an LBO firm decreases its use of non-debt tax shields such as depreciation, our tax return estimates of operating performance could increase for LBO firms, biasing us toward finding an increase in operating performance after LBOs. If

anything, this strengthens our conclusions that LBOs do not lead to significant improvements in operating performance. The bias is likely to be larger for profitable firms, since these firms would have been more likely to seek tax shields to reduce their tax burdens.

E. Growth

Our final set of tests examining performance look at the growth rate of LBO firms after LBO transactions. Table VIII shows the level of a firm's assets and sales in the years before and after an LBO. Panels A through C show the trend in *Sales*. The trend in *Sales* for the full sample (Panel A) around an LBO is unclear. *Sales* are lower in year t+1 than in the years before the LBO, but higher in year t+2. *Sales* appear to increase for the median profit LBO firm post-LBO (Panel B) and decrease substantially for the median loss firm (Panel C). The decline in *Sales* for the loss LBO firms suggests these firms could be curtailing unprofitable businesses.

Insert Table VIII here

Panels D through F of Table VIII show the trend in *TotalAssets*. On average, firms appear to have more assets post-LBO than they do pre-LBO. Panel D shows that *TotalAssets* of the median LBO firm grow more than 25% in year t and then by about 8% in year t+1. While book basis adjustments from the LBO transaction itself could partially explain the increase in *TotalAssets* in year t, they should not lead to a further increase in *TotalAssets* in year t+1. *TotalAssets* decline from year t+1 to year t+2. They continue to decline in year t+3, though the fact that we only observe year t+3 assets for 248 of the 317 LBOs in our sample makes this decline difficult to interpret. The decline after year t+1 might reflect LBO firms selling off unproductive assets. In spite of this decline, *TotalAssets* in year t+3 still exceed *TotalAssets* in either year t-2 or t-1. As Panels E and F show, the median profit and loss firms appear to grow

in year t+1.

III. CAPITAL STRUCTURE AND PAYOUT POLICY RESULTS

A. *Trends in financial leverage*

We next analyze the evolution of capital structure after LBOs. We begin by examining the trends in *DebtToAssets* around LBOs. Table IX shows these trends. Panels A and D show the short- and long-run trends in *DebtToAssets* for the full sample. As one would expect given the heavy reliance on debt to finance LBOs, both panels show a substantial increase in leverage in year t, the year the buyout takes place. Mean (median) debt-to-assets increases from 0.447 (0.432) in year t-1 to 0.748 (0.754) in year t. Somewhat surprisingly, leverage actually continues to increase slightly after year t both in the short- and long-run.

Insert Table IX here

One possible reason that LBO firms do not reduce leverage is that they do not generate sufficient cash flow to pay off debt. We therefore also analyze post-LBO leverage changes separately for firms with excess cash flow in the years after the LBO. To do so, we construct a *FreeCashFlow* measure equal to *NetIncome* in years t+1 and t+2 plus an estimate of depreciation minus an estimate of capital expenditures in these years. Because our tax return data exclude capital expenditures and include only the depreciation in operating expense but not the depreciation included in cost of goods sold, we use industry median capital expenditures and depreciation from Compustat to estimate these amounts.²² We refer to firms with positive

²² Specifically, we compute median depreciation and median capital expenditures in years t+1 and t+2 from Compustat for all firms in the same 3-digit NAICS industry in the same years. Both depreciation and capital expenditures are scaled by property, plant and equipment. We then calculate our firm-level estimate of depreciation and capital expenditures by multiplying the firm-level property, plant and equipment by scaled industry median depreciation and scaled industry median capital expenditures, respectively.

FreeCashFlow as 'excess cash flow LBO firms' and firms with negative *FreeCashFlow* as 'cash flow shortfall LBO firms'.

We examine the change in debt-to-assets around LBOs for both excess cash flow LBO firms and cash flow shortfall LBO firms. Panels B and E of Table IX show that even firms that appear to generate excess cash flow and therefore likely have the capacity to reduce leverage do not do so either in the short-run or the long-run after the LBO. Panels C and F shows that leverage also further increases in the years after an LBO for cash flow shortfall LBO firms. Figure 2 depicts the leverage trends graphically. Panels A and B of Figure 2 depict the trends in *DebtToAssets* for all sample LBO firms and excess cash flow LBO firms, respectively.

The fact that LBO firms do not reduce their leverage post-buyout does not necessarily imply that they do not reduce debt. If their asset levels shrink post-buyout, sustained debt-to-assets would imply decreasing debt. Therefore, we also examine debt in years after the buyout as a percentage of the debt in year t (*DebtAs%ofYearTDebt*) to verify that firms are not, in fact, reducing their debt. Panels C and D of Figure 2 depict the trends in debt as a percentage of year t debt, and show that LBO firms do not reduce their debt post-buyout, even if they generate excess cash flow.

Insert Figure 2 here

We next formally test the mean and median changes in *DebtToAssets* and *DebtAs%ofYearTDebt* over several intervals after year t and present the results in Table X. Panels A, B and C present the results for all LBO firms, excess cash flow LBO firms and cash flow shortfall LBO firms, respectively.

 Insert Table X here

Table X shows that the increase in leverage after buyouts shown in Table IX is only borderline statistically significant. It also shows that LBO firms' debt levels increase slightly after the year of the buyout, even among excess cash flow LBO firms.

Finally, we conduct multivariate analysis of the change in leverage from year t to year t+2 to identify the determinants of post-buyout changes in leverage. We estimate the following model of changes in leverage using common determinants of leverage, including those from Lemmon, Roberts and Zender (2008).^{23,24}

$$\begin{aligned} \Delta Leverage_{i(t,t+2)} = & \beta_0 + \beta_1 * ExcessCFIndicator_i + \beta_2 * PreLBO Leverage_i \\ & + \beta_3 * ChSales_i + \beta_4 * ChAssetTangibility_i + \beta_5 * ChIndMedianLeverage_i \\ & + \beta_6 * ChBondYieldSpread_i + \varepsilon_i \end{aligned} \quad (2)$$

where $\Delta Leverage$ is the change in leverage from year t to year t+2, for the leverage measures *DebtToAssets* or *DebtAs%ofYearTDebt*.²⁵ *ExcessCFIndicator* equals 1 if the LBO firm has positive *FreeCashFlow* in the two years after the buyout and 0 otherwise. A negative coefficient on *ExcessCFIndicator* would be consistent with firms reducing leverage more after the LBO if they have the means to do so.

We include *PreLBO Leverage* (*DebtToAssets* in year t-1) in our model. If high pre-LBO leverage represents a preference for higher target leverage overall, then LBO firms with high leverage in year t-1 should have smaller decreases in leverage after the LBO. We include the

²³ We omit the following common determinants of leverage: the market-to-book ratio, dividend payments, and cash flow volatility. The market-to-book is not available for LBO firms as they are not publicly-traded and the corporate tax return data do not capture dividend payments for most firm-years (see Section III.C) and may not provide sufficient panel data to compute cash flow volatility measures.

²⁴ Axelson, Jenkinson, Strömberg and Weisbach (2010) find that buyout firm leverage and public firm leverage are explained by different factors. However, their sample is limited to 153 large international buyouts (mean transaction value of \$1 billion), while our sample includes buyouts of U.S. firms with at least \$10 million in assets. We therefore use a general model of leverage.

²⁵ We examine the change in leverage starting in year t (that is, after the initial shock to leverage from year t-1 to year t) because we are primarily interested in whether LBO firms maintain higher leverage post-LBO.

natural logarithm of the change in gross receipts (*ChSales*) to control for firm size and have no sign expectation. To the extent that depreciation deductions generated by fixed assets are a substitute for the tax shield afforded by debt, increases in capital intensity would predict a greater decrease in leverage after the transaction. *ChAssetTangibility* equals the change in *AssetTang* from year *t* to year *t+2*, where *AssetTang* equals property, plant and equipment divided by *TotalAssets*. We include the change in industry median *DebtToAssets* from year *t* to year *t+2* to control for industry-wide changes in leverage, where industry is defined by 3-digit NAICS code.

Finally, we include the change in the yield spread between Aaa- and Baa-rated bonds from year *t* to year *t+2* (*ChBondYieldSpread*) to test whether firms are less likely to pay down debt when the interest rate on junk-rated debt increases. If LBO firms have some fixed debt and interest rates rise, then the cost of debt issued at the time of the buyout becomes artificially low. This could make firms less likely to pay down debt. On the other hand, firms may choose to pay down variable rate debt when interest rates rise.

Table XI reports our results from estimating model (2) for changes in leverage in the years after an LBO. The first column presents the results for the change in *DebtToAssets*. The insignificant coefficient on *ExcessCFIndicator* suggests that firms with excess cash flow do not reduce their leverage post-buyout any more than firms with cash flow shortfall. The coefficient on *ChIndMedianLeverage* is positive and statistically significant, suggesting that industry-wide changes in leverage at least partially explain changes in LBO firm leverage. The coefficient on *ChBondYieldSpread* is positive and statistically significant. This is consistent with firms refraining from paying down debt when interest rates on junk-rated debt rise.

Insert Table XI here

The second column presents the results for the change in *DebtAs%ofYearTDebt*. The results are similar to the *DebtToAssets* model, though the coefficient on *ChIndMedianLeverage* is no longer statistically significant.

B. Debt tax shields

One possible explanation for LBOs is that some publicly-traded firms are underlevered, so an LBO moves a firm towards its optimal capital structure. This would create value for investors by, for example, allowing the firm to generate more interest tax shields. Our results appear to support this argument. Figure 3 shows the percentage of LBO firms paying tax in years before and after the transaction both in the short-run (Panel A) and the long-run (Panel B).

Insert Figure 3 here

Consistent with the increased tax shields afforded by debt, the number of firms paying tax drops dramatically in the year of the LBO and remains low even up to five years after the LBO. Thus, to the extent the IRS uses decreases in net income as an indicator of compliance risk, it should also consider how dramatic increases in leverage would explain reductions in income. The change in debt levels and leverage ratios accompanying an LBO are long-lived, and, debt actually tends to continue increasing after a buyout. Moreover, even those firms that generate excess cash flow post-LBO, and therefore have the capacity to pay down debt, do not do so. Of course, this explanation leaves unanswered the question of why publicly-traded firms cannot or will not increase leverage on their own if doing so creates shareholder value.

C. Payout policy

Critics have argued that private equity firms distribute dividends to themselves after the LBO, leaving these firms with too little capital to operate effectively. This could explain why

firms do not experience improvements in operating performance after LBOs. Therefore, as a final step, we examine changes in payout policy after LBOs. The IRS data used in this paper only contains distributions starting in 2005, so by necessity we limit our analysis of dividends paid by LBO firms to firms acquired in LBOs in 2005 and later. We only include LBO firms that report distributions (possibly zero) in at least years t , $t+1$, and $t+2$ in this analysis so that we can compare distributions for the same set of firms across years relative to the time of the LBO.

Table XII presents the results of this analysis. Panels A, B and C show dividends in dollars in the years around an LBO for all LBO firms, excess cash flow LBO firms and cash flow shortfall LBO firms, respectively. Panels D, E and F present the same information, with dividends scaled by the value of the LBO transaction.

Insert Table XII here

The table shows that LBO firms do not pay large dividends to their owners. The 75th percentile of dividends/transaction value for years $t+1$ and $t+2$ for all LBO firms is zero, and it rises to only 0.02 in year $t+3$. Cash flow shortfall LBO firms pay out more dividends as a fraction of transaction value than excess cash flow LBO firms, which might be consistent with critics' arguments that private equity acquirers starve the firms that they acquire. However, the magnitude of these dividends appears too small to be important.

IV. DURATION ANALYSIS

Our final tests use hazard analysis to examine how firms exit LBO status. We consider exit via an IPO or acquisition a successful exit. While it would be interesting to consider these forms of successful exit separately, our sample only includes 17 IPOs for which we have all of the data necessary to run the tests that we describe in this section. The other way that a firm can

exit LBO status is via bankruptcy. We develop piecewise-constant duration dependence models to separately analyze the determinants of successful exits from LBO status and bankruptcy. The underlying rationale for using a hazard model is that it allows the probability an LBO firm will exit in a particular year to be conditional on how long the firm has remained private (Kaplan (1991)). We use a piecewise-constant model because we have annual data and assume that the hazard function is constant during each return period (Lancaster (1990)).²⁶

Kaplan (1991) tests for duration dependence of exits from LBOs in the 1980s.²⁷ We build upon Kaplan's model by adding covariates to study which factors drive success and/or bankruptcy: (1) lagged operating performance (*LagROS*); (2) change in operating performance from year $t-1$ to year $t+i$ (*ChangeROS*); and (3) leverage in year t (*DebtToAssets*). *SuccessIndicator* equals 1 if the LBO firm is sold or goes public in year $t+i$ and 0 otherwise. *BankruptIndicator* equals 1 if the LBO firm goes bankrupt in year $t+i$ and 0 otherwise. We expect that better operating performance (*LagROS* and *ChangeROS*) will increase the likelihood of success and decrease the likelihood of bankruptcy, while higher leverage (*DebtToAssets*) will increase the likelihood of bankruptcy.

A piecewise-constant duration dependence model requires maximizing the log-likelihood function

$$L(\theta) = \sum_i d_i \ln f(t_i) + \sum_i (1 - d_i) \ln S(t_i);$$

where $d_i = 1$ if the LBO firm is sold or goes public in the successful exit model or goes bankrupt in the bankruptcy model t_i years after the LBO transaction and $d_i = 0$ if the LBO firm is still

²⁶ In principle, the possibility that a firm exits via bankruptcy before it has a chance to exit via an IPO or acquisition, or vice versa, argues for estimating a competing risks model. We have estimated competing risks model for both successful exits and bankruptcies, but the results are almost identical to those from estimating a simple hazard model, ignoring the competing risks.

²⁷ Kaplan (1991) defines success as going public via an IPO, but we define success as either a sale or an IPO.

private t_i years after the LBO transaction and

$$f(t_i) = \theta_{m+1} S(t_i), c_m < t_i \leq c_{m+1},$$

$$\theta(t_i) = k_1(x(t_i))\theta_m \text{ if } c_m < t_i \leq c_{m+1},$$

$$S(t_i) = \exp \left[- \sum_{j=0}^y b_j \theta_j - (t_i - c_m) \theta_{m+1} \right], b_m = c_m - c_{m-1},$$

where $f(\cdot)$ is the discontinuous density function and $S(\cdot)$ is the survivor function. $\{\theta_m\}$ represents a set of unknown variables that are constant within each time period. The $k_1(x(t_i))$ term represents time-variant covariates. $Year\ t+i$ is an indicator variable equal to 1 if the observation year is i years after the LBO year, respectively, and 0 otherwise.²⁸ To test whether LBO firms are more likely to be sold or go public when capital markets are healthier, we also include the variable *IPOIntensity* in the model. *IPOIntensity* equals 1 for the four years in the sample period with the most IPOs and 0 otherwise. We do not anticipate an association between *IPOIntensity* and the rate at which firms go bankrupt.

Table XIII presents results from estimating the duration dependence models. The first two columns provide the results for predicting the likelihood of success and the second two columns present the results for predicting the likelihood of bankruptcy. The hazard ratios represent the estimated likelihood of success or bankruptcy conditional on being private at the beginning of the year. The reported t-statistics compare the coefficients to a baseline rate of 1. We include indicator variables for years $t+7$ through $t+12$ in the model, but we exclude them from the tabulated results.²⁹

²⁸ We include only firm-year observations in year $t+2$ and forward in our analysis because very few outcomes occur in year $t+1$.

²⁹ There are fewer successes and bankruptcies in our duration analysis than in Table I Panel C because we do not have IRS data up to the LBO outcome for all LBOs.

Insert Table XIII here

In the first *SuccessIndicator* model, the conditional likelihood of LBO firms being sold or going public in year t+2, t+3, t+4 and t+5 is 1.6%, 3.2%, 3.9% and 5.8%, respectively (results are similar for the second specification). To provide a benchmark, the conditional likelihood of the firms in Kaplan (1991)'s sample going public in year t+2, t+3, t+4 and t+5 is 14.4%, 13.4%, 15.4% and 11.2%, respectively. The coefficients on *LagROS* and *ChangeROS* are both positive and statistically significant in their respective specifications, consistent with higher operating performance being associated with a higher likelihood of success. This suggests that LBO acquirers are rewarded for improving operating performance. In addition, *IPOIntensity* is significantly positive, consistent with a higher likelihood of sale and/or IPO in hot IPO periods even after controlling for operating performance. The level of leverage in year t does not explain the likelihood of success.

Both *BankruptIndicator* models suggest that higher leverage in year t increases the likelihood of the LBO firm going bankrupt, while better operating performance decreases the likelihood of bankruptcy. Finally, LBO firms are more likely to go bankrupt in years t+3 and t+4 than in other years.

Overall, Table XIII suggests that better operating performance both increases the likelihood of success and decreases the likelihood of bankruptcy, and higher leverage at year t increases the likelihood of bankruptcy.

V. CONCLUSION

This study uses U.S. corporate tax return data to examine the evolution of firms' financial structure and performance after leveraged buyouts for a comprehensive sample of 317 LBOs

taking place between 1995 and 2007. Our empirical findings shed additional light on the motives for LBOs, their efficiency consequences and how LBO firms are managed.

Jensen (1989) argues that the LBO structure is superior to the structure of publicly-traded firm because the concentration of ownership enhances monitoring and the high level of debt disciplines managers. Specifically, the additional debt eliminates free cash flow that managers might otherwise waste on “empire-building” activities. However, our operating performance and growth results are not consistent with the free cash flow explanation for LBOs. Although our loss LBO firms do experience an improvement in operating performance after LBOs, they do not consistently improve relative to similar firms that were not acquired in LBOs. Nor do we find any evidence that more experienced private equity firms help LBO firms improve performance. Thus, it does not appear that solving the free cash flow problem is the likely rationale for these LBOs. Our capital structure results likewise fail to support the argument that acquirers lever LBO firms up beyond the long-run optimal level to motivate managers to generate cash flow so they can pay down debt. We find that, if anything, leverage and debt levels increase after LBOs and the frequency of positive tax payments declines. In short, our evidence indicates that Jensen’s argument is not an important motive for LBOs in the 2000s.

We also find no support for arguments that private equity firms use LBOs to opportunistically “strip” otherwise healthy firms. LBO firms make limited dividend payments following an LBO, and firms do not appear to shrink after LBOs. The healthiest firms – those that were operationally profitable pre-LBO – continue to grow post-LBO, even after the initial asset revaluation that likely occurs for financial reporting purposes. Further, even the loss firms tend to experience asset growth both during and after the LBO.

In sum, we find no compelling evidence that LBOs in the 1990s and 2000s generate

performance improvements, with or without the help of experienced private equity acquirers. On the other hand, acquirers do not appear to raid healthy firms to strip their assets. Instead, the continued high leverage and decrease in frequency of positive tax payments suggest that LBOs provide a beneficial shock toward a more tax-efficient capital structure.

REFERENCES

- Acharya, Viral, Oliver Gottschalg, Moritz Hahn, and Conor Kehoe, 2011, Corporate governance and value creation: Evidence from private equity, Working paper, New York University, HEC Paris (Groupe HEC), Ludwig Maximilians University of Munich and McKinsey & Company.
- Axelson, Ulf, Per Strömberg, and Michael S. Weisbach, 2009, Why are buyouts levered? The financial structure of private equity funds, *Journal of Finance* 64, 1549-1582.
- Axelson, Ulf, Tim Jenkinson, Per Strömberg, and Michael S. Weisbach, 2010, Borrow cheap, buy high? The determinants of leverage and pricing in buyouts, Working paper, London School of Economics, University of Oxford, Stockholm School of Economics and Ohio State University.
- Badertscher, Brad, Sharon P. Katz, and Sonja O. Rego, 2011, The impact of private equity ownership on portfolio firms' corporate tax avoidance, Working paper, University of Notre Dame, Columbia University and Indiana University.
- Bergström, Clas, Mikael Grubb, and Sara Jonsson, 2007, The operating impact of buyouts in Sweden: A study of value creation, *Journal of Private Equity* 11, 22-39.
- Boucly, Quentin, David Sraer, and David Thesmar, 2011, Growth LBOs, *Journal of Financial Economics* 102, 432-453.
- Cloyd, C. Bryan, 1995, The effects of financial accounting conformity on recommendations of tax preparers, *Journal of the American Taxation Association* 17, 50-70.
- Cloyd, C. Bryan, Jamie Pratt, and Toby Stock, 1996, The use of financial accounting choice to support aggressive tax positions: Public and private firms, *Journal of Accounting Research* 34, 23-43.
- Cloyd, C. Bryan, Stephen Limberg, and John Robinson, 1997, The impact of federal taxes on the use of debt by closely held corporations, *National Tax Journal* 50, 261-277.
- Cotter, James, and Sarah Peck, 2001, The structure of debt and active equity investors: The case of the buyout specialist, *Journal of Financial Economics* 59, 101-147.
- Dhaliwal, Dan, Robert Trezevant, and Shiing-Wu Wang, 1992, Taxes, investment-related tax shields and capital structure, *Journal of the American Taxation Association* 14, 1-21.
- Erickson, Merle, 1998, The effect of taxes on the structure of corporate acquisitions, *Journal of Accounting Research* 36, 279-298.
- Graham, John R., 1996, Debt and the marginal tax rate, *Journal of Financial Economics* 41, 41-73.
- Graham, John R., Mark H. Lang, and Douglas A. Shackelford, 2004, Employee stock options, corporate taxes, and debt policy, *Journal of Finance* 59, 1585-1618.
- Graham, John R., and Lillian Mills, 2008, Using tax return data to simulate corporate marginal tax rates, *Journal of Accounting and Economics* 46, 366-388.
- Guo, Shourun, Edith S. Hotchkiss, and Weihong Song, 2011, Do buyouts (still) create value? *Journal of Finance* 66, 479-517.
- Harris, Richard, Donald Siegel, and Mike Wright, 2005, Assessing the impact of management buyouts on economic efficiency: Plant-level evidence from the United Kingdom, *Review of Economics and Statistics* 87, 148-153.

- Jenkinson, Tim, and Rüdiger Stucke, 2011, Who benefits from the leverage in LBOs? Working paper, University of Oxford.
- Jensen, Michael C., 1989, Eclipse of the public corporation, *Harvard Business Review* 67, 61-74.
- Kaplan, Steven, 1989a, Management buyouts: Evidence on taxes as a source of value, *Journal of Finance* 44, 611-632.
- Kaplan, Steven, 1989b, The effects of management buyouts on operating performance and value, *Journal of Financial Economics* 24, 217-254.
- Kaplan, Steven, 1991, The staying power of leveraged buyouts, *Journal of Financial Economics* 29, 287-313.
- Kaplan, Steven, and Per Strömberg, 2009, Leveraged buyouts and private equity, *Journal of Economic Perspectives* 23, 121-146.
- Lancaster, Tony, 1990, *The econometric analysis of transition data* (Cambridge University Press, New York, NY).
- Lemmon, Michael L., Michael R. Roberts, and Jaime F. Zender, 2008, Back to the beginning: Persistence and the cross-section of corporate capital structure, *Journal of Finance* 63, 1575-1608.
- Leslie, Phillip, and Paul Oyer, 2009, Managerial incentives and value creation: Evidence from private equity, Working paper, Stanford University.
- Lichtenberg, Frank R., and Donald Siegel, 1990, The effects of leveraged buyouts on productivity and related aspects of firm behavior, *Journal of Financial Economics* 27, 165-194.
- Lisowsky, Petro, 2009, Inferring U.S. tax liability from financial statement information, *Journal of the American Taxation Association* 31, 29-63.
- MacKie-Mason, Jeffrey K., 1990, Do taxes affect corporate financing decisions? *Journal of Finance* 45, 1471-1493.
- Manzon, Gil and George Plesko, 2002, The relation between financial and tax reporting measures of income, *Tax Law Review* 55, 175-214.
- Mills, Lillian, 1998, Book-tax differences and Internal Revenue Service adjustments, *Journal of Accounting Research* 36, 343-356.
- Mills, Lillian, and Kaye Newberry, 2001, The influence of tax and nontax costs on book-tax reporting differences: Public and private firms, *Journal of the American Taxation Association* 23, 1-19.
- Officer, Micah, Oguzhan Ozbas, and Berk Sensoy, 2010, Club deals in leveraged buyouts, *Journal of Financial Economics* 98, 214-240.
- Scholes, Myron, Mark Wolfson, Merle Erickson, Edward Maydew, and Terry Shevlin, 2009, Taxes and Business Strategy: A Planning Approach, 4th ed. Upper Saddle River, NJ: Prentice-Hall.
- Smart, Scott, and Joel Waldfogel, 1994, Measuring the effect of restructuring on corporate performance: The case of management buyouts, *Review of Economics and Statistics* 76, 503-511.
- Smith, Abbie, 1990, Corporate ownership structure and performance: The case of management buyouts, *Journal of Financial Economics* 27, 143-164.
- Weir, Charlie, Pete Jones, and Mike Wright, 2008, Public to private transactions, private equity and performance in the UK: An empirical analysis of the impact of going private, Working paper, Robert Gordon University and Nottingham University.

FIGURE 1
Trends in Operating Performance

This figure presents trends in *PreInterestROS* and *PreInterestROA*. Panel A provides the trend in *PreInterestROS* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel B (Panel C) provides the trend in *PreInterestROS* for the profit (loss) LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel D provides the trend in *PreInterestROA* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel E (Panel F) provides the trend in *PreInterestROA* for the profit (loss) LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestROS* equals *PreInterestIncome* divided by *Sales*, where *Sales* equals gross receipts or sales reported on Page 1 of Form 1120. *PreInterestROA* equals *PreInterestIncome* divided by lagged *TotalAssets*, where *TotalAssets* equals total assets reported on Schedule L of Form 1120. Years t-1 and t-2 are divided by year t assets to mitigate the influence of basis adjustments.

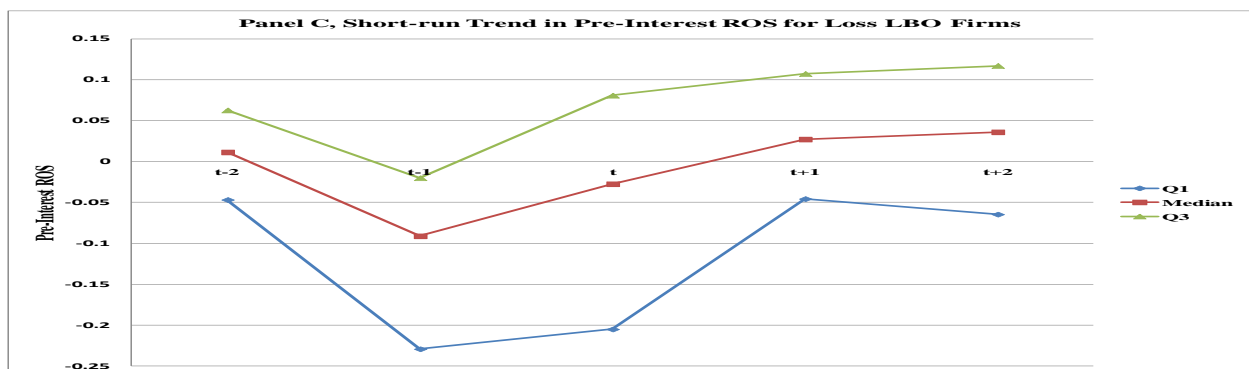
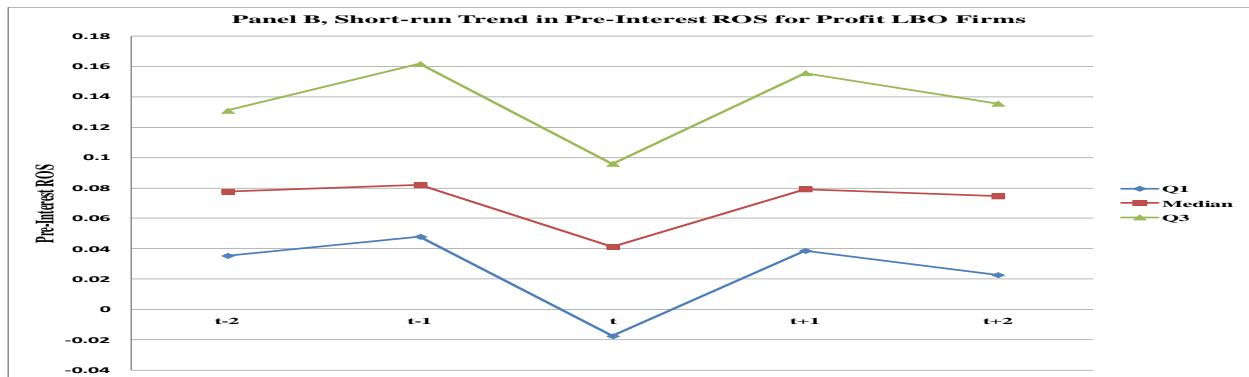


FIGURE 1 (continued)
Trends in Operating Performance

This figure presents trends in *PreInterestROS* and *PreInterestROA*. Panel A provides the trend in *PreInterestROS* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel B (Panel C) provides the trend in *PreInterestROS* for the profit (loss) LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel D provides the trend in *PreInterestROA* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel E (Panel F) provides the trend in *PreInterestROA* for the profit (loss) LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestROS* equals *PreInterestIncome* divided by *Sales*, where *Sales* equals gross receipts or sales reported on Page 1 of Form 1120. *PreInterestROA* equals *PreInterestIncome* divided by lagged *TotalAssets*, where *TotalAssets* equals total assets reported on Schedule L of Form 1120. Years t-1 and t-2 are divided by year t assets to mitigate the influence of basis adjustments.

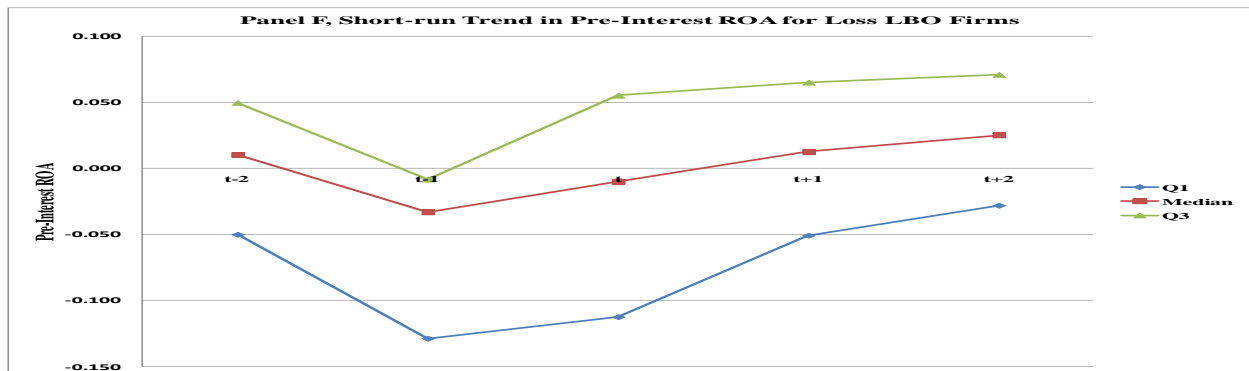
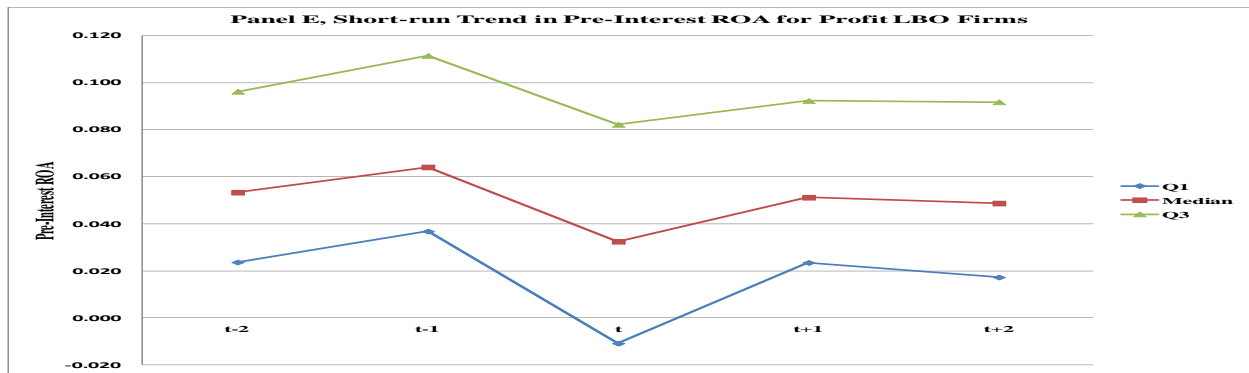
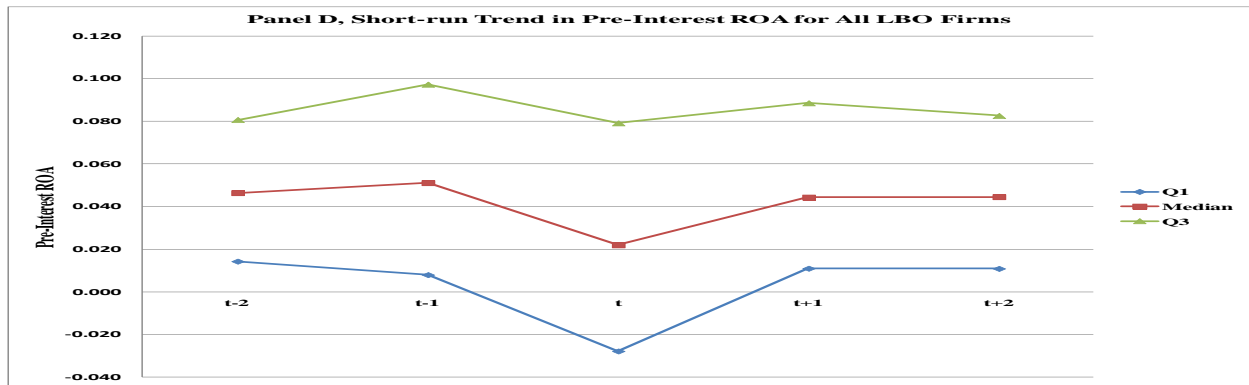


FIGURE 2
Trends in Leverage

This figure presents trends in *DebtToAssets* and *DebtAs%OfYearTDebt*. Panel A provides the trend in *DebtToAssets* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel B provides the trend in *DebtToAssets* for excess cash flow LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Excess cash flow LBO firms have positive *FreeCashFlow*, where *FreeCashFlow* equals *NetIncome* in years t+1 and t+2 plus estimated depreciation in years t+1 and t+2 minus estimated capital expenditures in years t+1 and t+2. Panel C provides the trend in *DebtAs%OfYearTDebt* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel D provides the trend in *DebtAs%OfYearTDebt* for excess cash flow LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Year t represents the LBO year. *DebtToAssets* equals *IntBearingLiab* divided by *TotalAssets*, where *TotalAssets* equals total assets reported on Schedule L of Form 1120 and *IntBearingLiab* equals mortgages, notes and bonds payable reported on Schedule L of Form 1120. *DebtAs%OfYearTDebt* equals *IntBearingLiab* in year t+k divided by *IntBearingLiab* in year t.

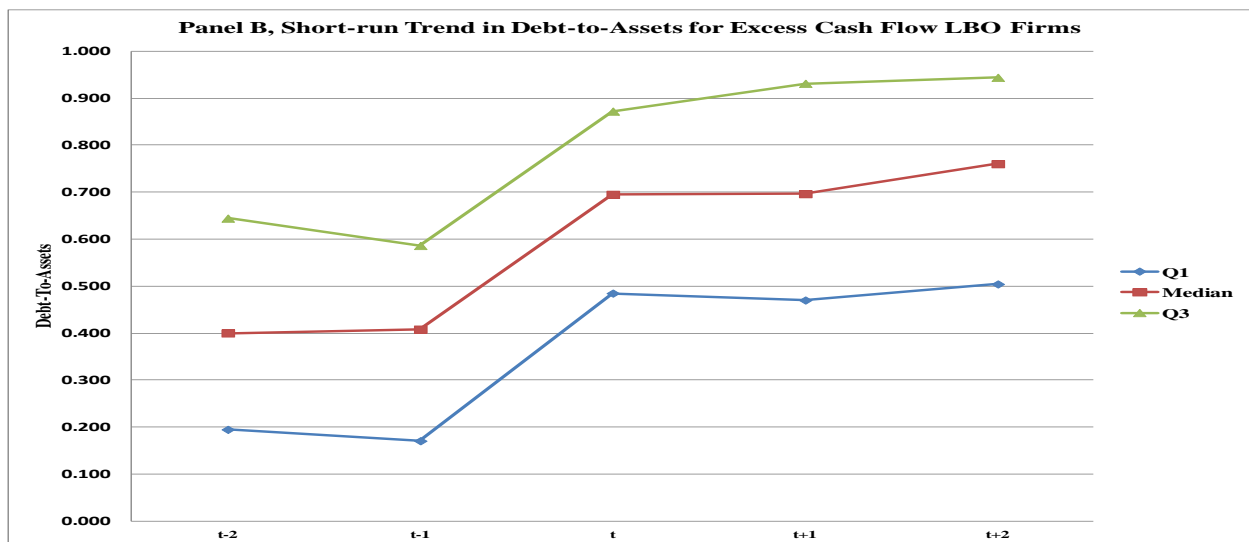
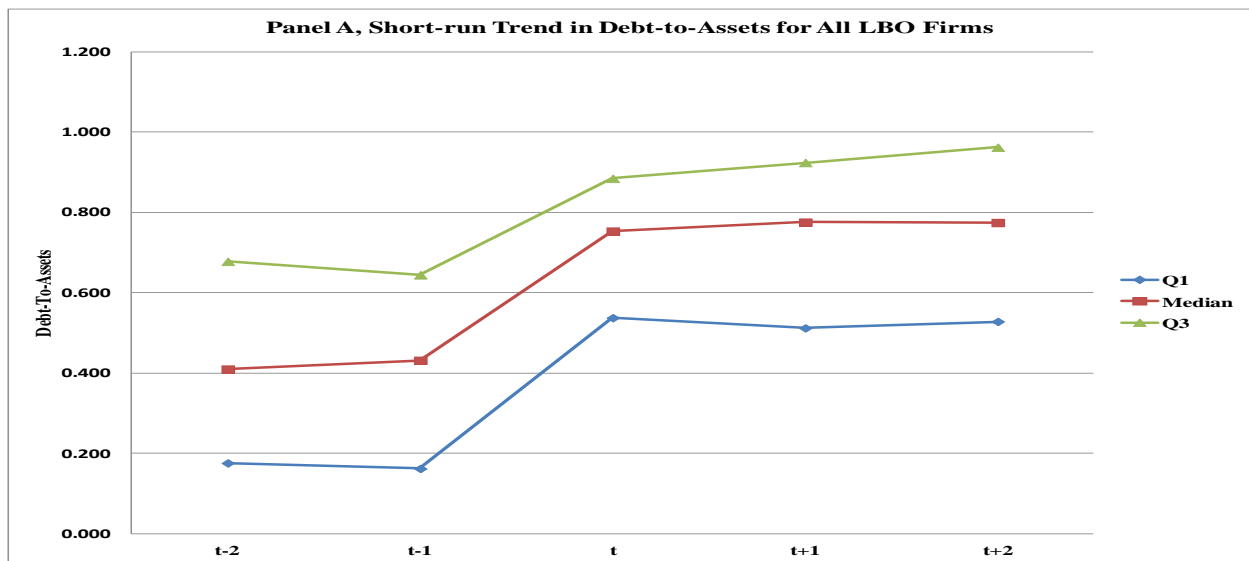


FIGURE 2 (continued)
Trends in Leverage

This figure presents trends in *DebtToAssets* and *DebtAs%OfYearTDebt*. Panel A provides the trend in *DebtToAssets* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel B provides the trend in *DebtToAssets* for excess cash flow LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Excess cash flow LBO firms have positive *FreeCashFlow*, where *FreeCashFlow* equals *NetIncome* in years t+1 and t+2 plus estimated depreciation in years t+1 and t+2 minus estimated capital expenditures in years t+1 and t+2. Panel C provides the trend in *DebtAs%ofYearTDebt* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel D provides the trend in *DebtAs%ofYearTDebt* for excess cash flow LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Year t represents the LBO year. *DebtToAssets* equals *IntBearingLiab* divided by *TotalAssets*, where *TotalAssets* equals total assets reported on Schedule L of Form 1120 and *IntBearingLiab* equals mortgages, notes and bonds payable reported on Schedule L of Form 1120. *DebtAs%ofYearTDebt* equals *IntBearingLiab* in year t+k divided by *IntBearingLiab* in year t.

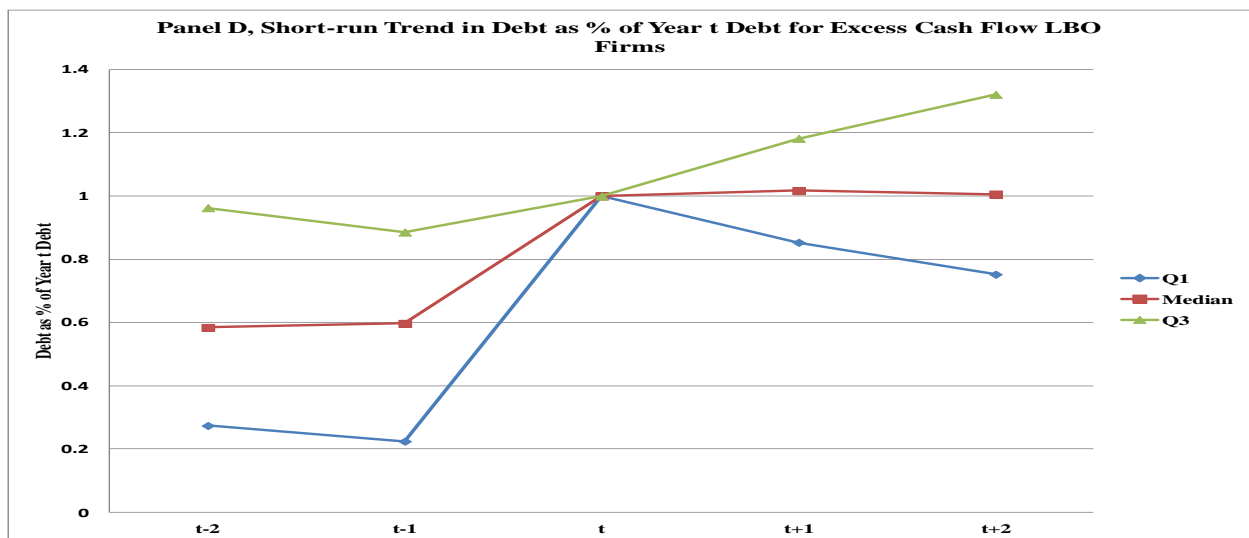
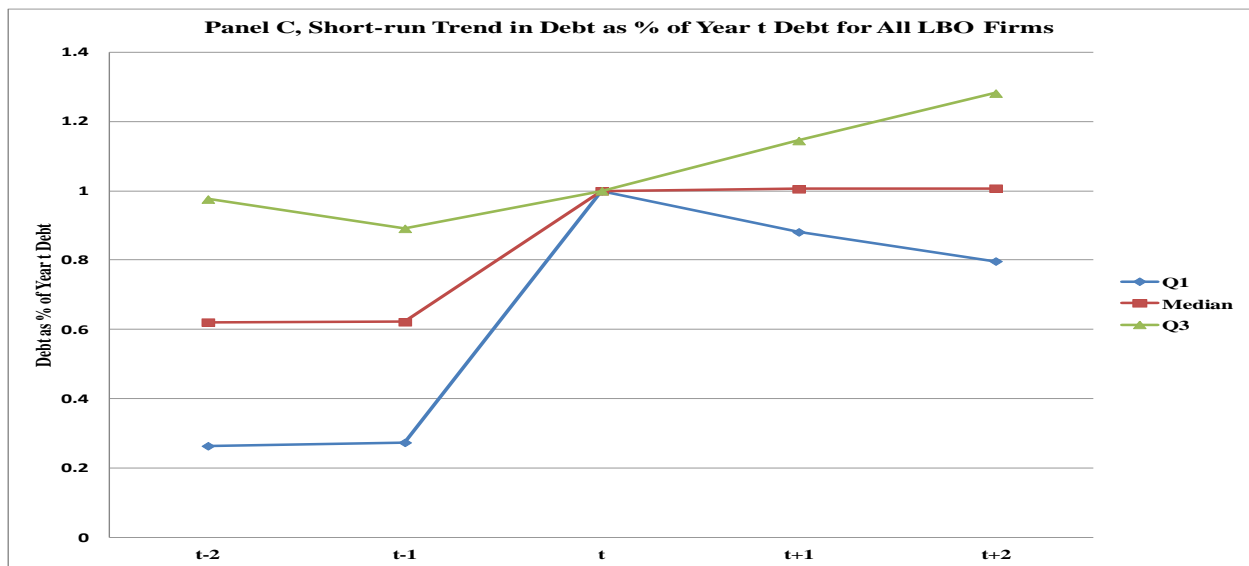


FIGURE 3
Trends in Tax Payments

This figure presents trends in the percentage of LBO firms paying tax before and after the LBO transaction. Panel A provides the short-run trend in *PosTaxPdInd* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel B provides the trend in *PosTaxPdInd* for all LBO firms with at least one year of pre-transaction data and at least five years of post-transaction data. Year *t* represents the LBO year. *PosTaxPdInd* equals 1 if total tax reported on Page 1 of Form 1120 is positive and 0 otherwise.

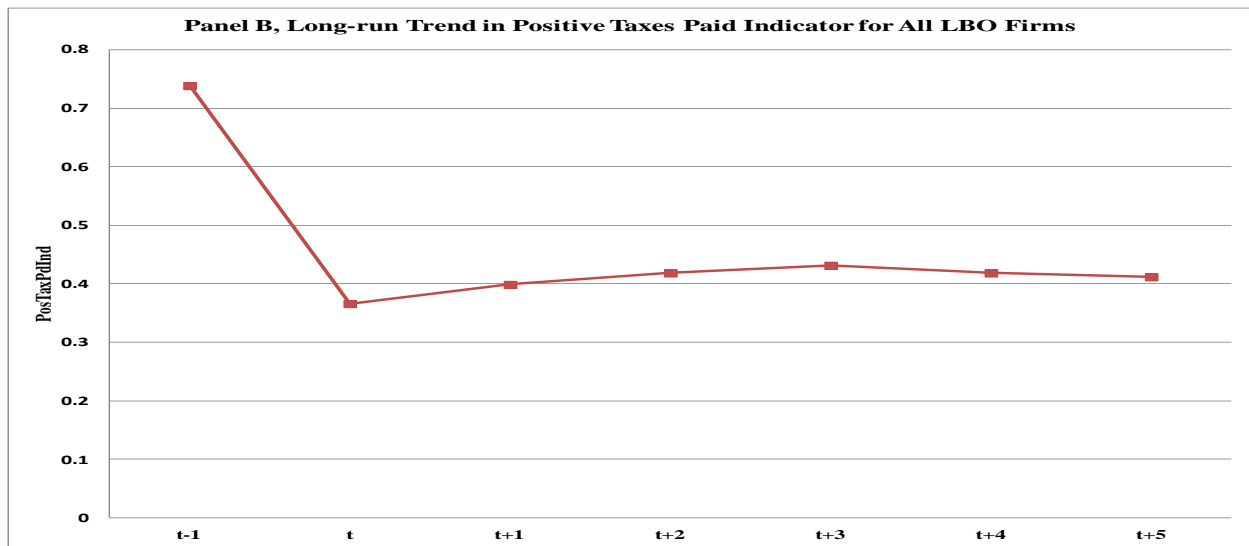
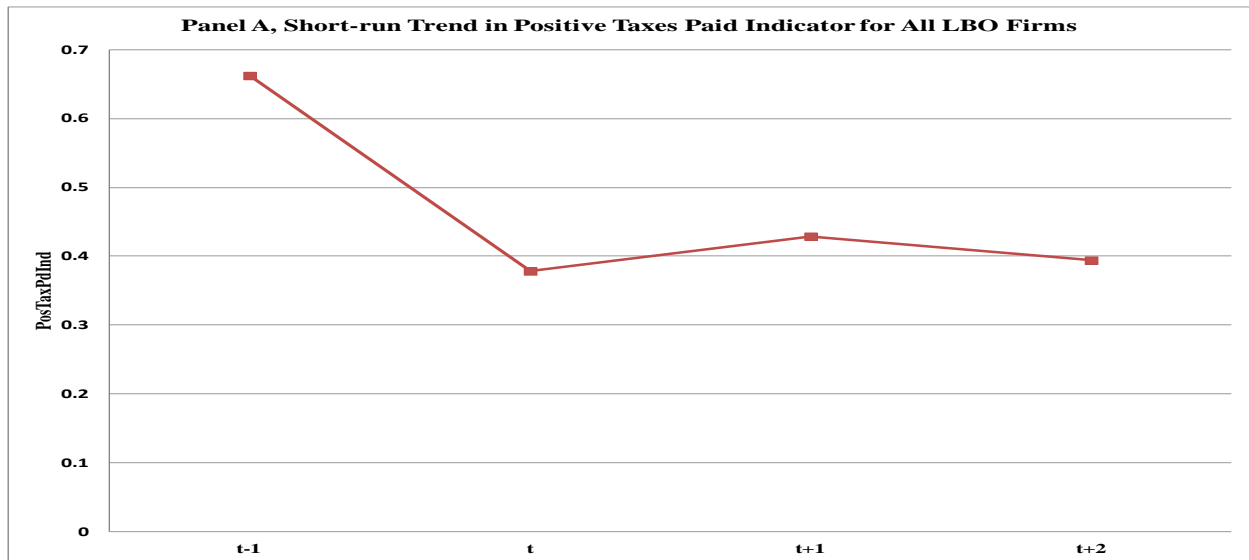


TABLE I
Sample Derivation

This table provides a summary of the sample selection process. Panel A shows the aggregate number of LBO firms, Panel B shows the number of LBO firms by year and Panel C shows the LBO outcomes.

Panel A, Aggregate number of LBO firms

Number of non-bankrupt LBO firms in Dealogic and SDC from 1995-2007 with \geq \$10M assets	479
Less: Misclassified LBOs, REIT and partnership LBOs, and LBO firms merged into other entities	(125)
Number of LBO firms to be matched with IRS data	354
Less: LBO firm not matched with IRS data	(1)
Initial sample	353
Less: LBO firms without at least two years of post-transaction data	(36)
Number of LBO firms with at least two years of post-transaction data	317

Panel B, Number of LBO firms by year

	Initial Sample	t-1 to t+2	t-1 to t+3	t-1 to t+4	t-1 to t+5
1995	5	5	4	4	4
1996	7	6	6	4	4
1997	19	18	16	14	14
1998	25	21	21	21	19
1999	40	34	33	30	26
2000	39	34	32	28	29
2001	21	18	16	15	14
2002	15	10	9	8	6
2003	29	27	24	21	17
2004	21	15	15	14	12
2005	24	24	23	17	7
2006	40	40	30	3	1
2007	68	65	19	1	0
	353	317	248	180	153

Panel C, LBO Outcomes

	Sold	IPO	Bankruptcy	Privately held	Total
1995	2	0	1	2	5
1996	1	1	3	1	6
1997	9	3	2	4	18
1998	6	2	10	3	21
1999	14	4	10	6	34
2000	14	7	6	7	34
2001	8	1	4	5	18
2002	7	1	0	2	10
2003	13	4	2	8	27
2004	9	1	2	3	15
2005	8	4	1	11	24
2006	8	3	3	26	40
2007	5	4	5	51	65
	104	35	49	129	317

TABLE II
Summary Statistics

This table presents summary statistics measured at years t-1 and t+2. Panel A includes the summary statistics for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel B (Panel C) includes the summary statistics for the profit (loss) LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *DebtToAssets* equals *IntBearingLiab* divided by *TotalAssets*, where *IntBearingLiab* equals mortgages, notes and bonds payable reported on Schedule L of Form 1120 and *TotalAssets* equals total assets reported on Schedule L of Form 1120. *Sales* equals gross receipts or sales reported on Page 1 of Form 1120. *PosTaxPdInd* equals 1 if total tax reported on Page 1 of Form 1120 is positive and 0 otherwise. *PreInterestROS* equals *PreInterestIncome* divided by *Sales*. *PreInterestROA* equals *PreInterestIncome* divided by lagged *TotalAssets*, although year t-1 *PreInterestIncome* is divided by year t *TotalAssets* to mitigate the influence of basis adjustments.

	Pre-LBO (Year t-1)						Post-LBO (Year t+2)				
	N	Mean	SD	Q1	Median	Q3	Mean	SD	Q1	Median	Q3
<i>Panel A, All LBO firms</i>											
<i>PreInterestIncome</i>	317	46.9	92.8	2.0	12.8	47.1	75.2	180.0	1.3	14.8	53.3
<i>IntDeduction</i>	317	22.0	43.6	0.5	3.9	22.9	61.4	106.8	4.1	20.3	56.7
<i>DebtToAssets</i>	317	0.447	0.329	0.162	0.432	0.645	0.827	0.573	0.529	0.775	0.962
<i>IntBearingLiab</i>	317	481.3	1,108.0	17.6	103.8	354.8	999.1	2,089.1	73.3	239.0	718.3
<i>TotalAssets</i>	317	920.8	1,903.2	92.7	253.4	729.8	1,256.7	2,333.3	114.6	302.3	1,087.0
<i>Sales</i>	317	604.2	1,101.7	89.0	220.7	472.9	641.3	1,041.8	80.0	245.6	586.9
<i>PosTaxPdInd</i>	317	0.66	0.47	0	1	1	0.39	0.49	0	0	1
<i>PreInterestROS</i>	311	0.089	0.237	0.014	0.063	0.117	0.093	0.157	0.015	0.068	0.129
<i>PreInterestROA</i>	317	0.044	0.126	0.008	0.051	0.097	0.045	0.092	0.011	0.045	0.083
<i>Panel B, Profit LBO firms</i>											
	N	Mean	SD	Q1	Median	Q3	Mean	SD	Q1	Median	Q3
<i>PreInterestIncome</i>	250	64.1	97.0	7.6	23.8	65.9	86.6	196.6	2.9	18.3	63.2
<i>IntDeduction</i>	250	24.9	46.5	0.8	4.9	25.7	68.3	113.2	6.0	23.8	60.6
<i>DebtToAssets</i>	250	0.422	0.299	0.162	0.416	0.607	0.808	0.508	0.529	0.773	0.948
<i>IntBearingLiab</i>	250	507.6	1,137.8	21.9	105.4	363.8	1,077.2	2,169.6	83.8	275.8	820.5
<i>TotalAssets</i>	250	1,042.8	2,078.8	120.0	264.3	872.3	1,381.9	2,461.3	133.8	375.8	1,304.7
<i>Sales</i>	250	692.1	1,171.0	110.0	238.3	590.6	710.9	1,099.9	105.4	277.9	683.6
<i>PosTaxPdInd</i>	250	0.83	0.37	1	1	1	0.42	0.50	0	0	1
<i>PreInterestROS</i>	246	0.153	0.213	0.048	0.082	0.162	0.105	0.157	0.023	0.075	0.136
<i>PreInterestROA</i>	250	0.085	0.071	0.037	0.064	0.111	0.057	0.083	0.017	0.049	0.092
<i>Panel C, Loss LBO firms</i>											
	N	Mean	SD	Q1	Median	Q3	Mean	SD	Q1	Median	Q3
<i>PreInterestIncome</i>	67	-17.4	19.0	-25.0	-8.7	-2.0	32.5	83.5	-2.8	4.6	28.8
<i>IntDeduction</i>	67	11.0	27.6	0.0	0.5	10.1	35.8	73.3	0.6	6.3	29.1
<i>DebtToAssets</i>	67	0.540	0.409	0.155	0.539	0.855	0.899	0.770	0.509	0.778	1.105
<i>IntBearingLiab</i>	67	382.9	990.4	6.3	81.4	290.2	707.7	1,740.1	35.2	143.7	342.6
<i>TotalAssets</i>	67	465.3	878.5	70.6	133.5	402.8	789.5	1,712.0	53.0	191.1	430.8
<i>Sales</i>	67	276.0	706.3	34.2	121.9	270.6	381.7	738.6	32.3	110.2	372.8
<i>PosTaxPdInd</i>	67	0.03	0.17	0	0	0	0.28	0.45	0	0	1
<i>PreInterestROS</i>	65	-0.153	0.148	-0.229	-0.091	-0.020	0.049	0.151	-0.065	0.036	0.117
<i>PreInterestROA</i>	67	-0.111	0.163	-0.129	-0.033	-0.008	0.000	0.109	-0.028	0.025	0.071

TABLE III
Trends in Pre-Interest ROS and Pre-Interest ROA

This table presents trends in *PreInterestROS* and *PreInterestROA*. Panel A provides the trend in *PreInterestROS* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel B (Panel C) provides the trend in *PreInterestROS* for the profit (loss) LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel D provides the trend in *PreInterestROA* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel E (Panel F) provides the trend in *PreInterestROA* for the profit (loss) LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestROS* equals *PreInterestIncome* divided by *Sales*, where *Sales* equals gross receipts or sales reported on Page 1 of Form 1120. *PreInterestROA* equals *PreInterestIncome* divided by lagged *TotalAssets*, where *TotalAssets* equals total assets reported on Schedule L of Form 1120. Years t-1 and t-2 are divided by year t assets to mitigate the influence of basis adjustments. The LBO year (year t) is shaded.

<i>Panel A, Trend in Pre-Interest ROS for All LBO firms</i>							<i>Panel D, Trend in Pre-Interest ROA for All LBO firms</i>						
	N	Mean	SD	Q1	Median	Q3		N	Mean	SD	Q1	Median	Q3
<i>PreInterestROS</i> _{t-2}	284	0.089	0.206	0.021	0.063	0.114	<i>PreInterestROA</i> _{t-2}	288	0.051	0.087	0.014	0.046	0.081
<i>PreInterestROS</i> _{t-1}	311	0.089	0.237	0.014	0.063	0.117	<i>PreInterestROA</i> _{t-1}	317	0.044	0.126	0.008	0.051	0.097
<i>PreInterestROS</i> _t	311	-0.035	0.425	-0.032	0.034	0.091	<i>PreInterestROA</i> _t	317	0.022	0.107	-0.028	0.022	0.079
<i>PreInterestROS</i> _{t+1}	307	0.107	0.211	0.023	0.069	0.146	<i>PreInterestROA</i> _{t+1}	317	0.051	0.087	0.011	0.044	0.089
<i>PreInterestROS</i> _{t+2}	302	0.093	0.157	0.015	0.068	0.129	<i>PreInterestROA</i> _{t+2}	317	0.045	0.092	0.011	0.045	0.083
<i>PreInterestROS</i> _{t+3}	238	0.080	0.142	0.015	0.064	0.126	<i>PreInterestROA</i> _{t+3}	249	0.048	0.110	0.010	0.052	0.099
<i>Panel B, Trend in Pre-Interest ROS for Profit LBO firms</i>							<i>Panel E, Trend in Pre-Interest ROA for Profit LBO firms</i>						
	N	Mean	SD	Q1	Median	Q3		N	Mean	SD	Q1	Median	Q3
<i>PreInterestROS</i> _{t-2}	223	0.120	0.203	0.035	0.078	0.131	<i>PreInterestROA</i> _{t-2}	226	0.068	0.073	0.024	0.053	0.096
<i>PreInterestROS</i> _{t-1}	246	0.153	0.213	0.048	0.082	0.162	<i>PreInterestROA</i> _{t-1}	250	0.085	0.071	0.037	0.064	0.111
<i>PreInterestROS</i> _t	246	-0.013	0.420	-0.017	0.041	0.096	<i>PreInterestROA</i> _t	250	0.035	0.093	-0.011	0.032	0.082
<i>PreInterestROS</i> _{t+1}	242	0.118	0.199	0.039	0.079	0.156	<i>PreInterestROA</i> _{t+1}	250	0.062	0.081	0.023	0.051	0.092
<i>PreInterestROS</i> _{t+2}	238	0.105	0.157	0.023	0.075	0.136	<i>PreInterestROA</i> _{t+2}	250	0.057	0.083	0.017	0.049	0.092
<i>PreInterestROS</i> _{t+3}	194	0.089	0.133	0.024	0.069	0.134	<i>PreInterestROA</i> _{t+3}	202	0.056	0.102	0.020	0.056	0.101
<i>Panel C, Trend in Pre-Interest ROS for Loss LBO firms</i>							<i>Panel F, Trend in Pre-Interest ROA for Loss LBO firms</i>						
	N	Mean	SD	Q1	Median	Q3		N	Mean	SD	Q1	Median	Q3
<i>PreInterestROS</i> _{t-2}	61	-0.026	0.173	-0.047	0.011	0.063	<i>PreInterestROA</i> _{t-2}	62	-0.009	0.107	-0.050	0.010	0.050
<i>PreInterestROS</i> _{t-1}	65	-0.153	0.148	-0.229	-0.091	-0.020	<i>PreInterestROA</i> _{t-1}	67	-0.111	0.163	-0.129	-0.033	-0.008
<i>PreInterestROS</i> _t	65	-0.117	0.436	-0.205	-0.027	0.081	<i>PreInterestROA</i> _t	67	-0.025	0.137	-0.112	-0.010	0.055
<i>PreInterestROS</i> _{t+1}	65	0.062	0.246	-0.046	0.027	0.107	<i>PreInterestROA</i> _{t+1}	67	0.011	0.099	-0.051	0.013	0.065
<i>PreInterestROS</i> _{t+2}	64	0.049	0.151	-0.065	0.036	0.117	<i>PreInterestROA</i> _{t+2}	67	0.000	0.109	-0.028	0.025	0.071
<i>PreInterestROS</i> _{t+3}	44	0.042	0.174	-0.029	0.027	0.101	<i>PreInterestROA</i> _{t+3}	47	0.011	0.134	-0.048	0.018	0.088

TABLE IV
Univariate Tests of Pre-Interest ROS

This table tests for changes in *PreInterestROS* using t-tests and Wilcoxon rank tests. Panel A presents the changes for all LBO firms. Panel B presents the changes for high profit LBO firms, Panel C presents the changes for low profit LBO firms and Panel D presents the changes for loss LBO firms. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. High (low) profit LBO firms have above (below) median positive *PreInterestROS*. The industry-adjusted analysis subtracts the change in median industry *PreInterestROS* from the change in firm-level *PreInterestROS*, where industry is defined by 3-digit NAICS code. The performance level-adjusted analysis subtracts the change in *PreInterestROS* of a performance match firm from the change in firm-level *PreInterestROS*. Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestROS* equals *PreInterestIncome* divided by *Sales*, where *Sales* equals gross receipts or sales reported on Page 1 of Form 1120. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5%, and 1%, respectively.

		Change in <i>PreInterestROS</i>										
		t-1 to t+1		t-1 to t+2		t-1 to t+3		t-2 to t+1		t-2 to t+2		t-2 to t+3
<i>Panel A, All LBO firms</i>												
<i>Unadjusted</i>	Mean	0.021		0.011		0.002		0.019		0.014		0.006
	Median	0.006		0.005		0.001		0.006		0.005		0.001
	N	304		299		236		278		273		215
<i>Industry-adjusted</i>	Mean	0.038	***	0.023	*	0.002		0.041	**	0.029	**	0.014
	Median	0.012	***	0.006	**	0.002		0.017	***	0.010	*	0.007
	N	304		299		236		278		273		215
<i>Performance level-adjusted</i>	Mean	0.000		0.036	***	0.017		-0.001		0.040	**	0.014
	Median	0.012	*	0.019	**	0.018	*	0.007	**	0.014	*	0.013
	N	286		282		208		266		262		191
<i>Panel B, High Profit LBO firms</i>												
<i>Unadjusted</i>	Mean	-0.080	***	-0.102	***	-0.099	***	-0.018		-0.029		-0.042
	Median	-0.039	***	-0.064	***	-0.060	***	-0.003		-0.027	**	-0.024
	N	121		118		89		109		106		79
<i>Industry-adjusted</i>	Mean	-0.040	*	-0.076	***	-0.089	***	0.026		0.003		-0.019
	Median	-0.046		-0.081	***	-0.070	***	0.026	**	-0.009		0.002
	N	121		118		89		109		106		79
<i>Performance level-adjusted</i>	Mean	-0.012		0.034		0.012		-0.017		0.051	*	0.012
	Median	0.017		0.009		0.000		0.016		0.007		-0.001
	N	116		113		79		106		103		70

TABLE IV (continued)
Univariate Tests of Pre-Interest ROS

This table tests for changes in *PreInterestROS* using t-tests and Wilcoxon rank tests. Panel A presents the changes for all LBO firms. Panel B presents the changes for high profit LBO firms, Panel C presents the changes for low profit LBO firms and Panel D presents the changes for loss LBO firms. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. High (low) profit LBO firms have above (below) median positive *PreInterestROS*. The industry-adjusted analysis subtracts the change in median industry *PreInterestROS* from the change in firm-level *PreInterestROS*, where industry is defined by 3-digit NAICS code. The performance level-adjusted analysis subtracts the change in *PreInterestROS* of a performance match firm from the change in firm-level *PreInterestROS*. Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestROS* equals *PreInterestIncome* divided by *Sales*, where *Sales* equals gross receipts or sales reported on Page 1 of Form 1120. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5%, and 1%, respectively.

		Change in <i>PreInterestROS</i>											
		t-1 to t+1		t-1 to t+2		t-1 to t+3		t-2 to t+1		t-2 to t+2		t-2 to t+3	
<i>Panel C, Low Profit LBO firms</i>													
<i>Unadjusted</i>	Mean	0.021	*	0.027	**	0.015		0.015		0.020		0.009	
	Median	0.003		0.007		0.001		0.006		0.009		0.004	
	N	120		119		104		110		109		95	
<i>Industry-adjusted</i>	Mean	0.026	**	0.034	***	0.018		0.026		0.031	*	0.018	
	Median	0.017	***	0.013	***	0.012		0.018		0.013	**	0.013	*
	N	120		119		104		110		109		95	
<i>Performance level-adjusted</i>	Mean	0.008		0.024		0.019		0.012		0.023		0.031	*
	Median	0.009		0.017	**	0.027	**	0.003		0.011		0.021	**
	N	117		116		94		110		109		88	
<i>Panel D, Loss LBO firms</i>													
<i>Unadjusted</i>	Mean	0.214	***	0.199	***	0.181	***	0.096	**	0.083	***	0.090	*
	Median	0.118	***	0.127	***	0.118	***	0.016		0.025	*	0.015	
	N	63		62		43		59		58		41	
<i>Industry-adjusted</i>	Mean	0.212	***	0.190	***	0.153	***	0.095	*	0.074	**	0.066	
	Median	0.127	***	0.132	***	0.129	***	0.015		0.020		0.017	
	N	63		62		43		59		58		41	
<i>Performance level-adjusted</i>	Mean	0.010		0.066	*	0.023		0.006		0.056		-0.030	
	Median	0.014		0.026	*	0.010		-0.012		0.000		-0.016	
	N	53		53		35		50		50		33	

TABLE V
Univariate Tests of Pre-Interest ROA

This table tests for changes in *PreInterestROA* using t-tests and Wilcoxon rank tests. Panel A presents the changes for all LBO firms. Panel B presents the changes for high profit LBO firms, Panel C presents the changes for low profit LBO firms and Panel D presents the changes for loss LBO firms. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. High (low) profit LBO firms have above (below) median positive *PreInterestROA*. The industry-adjusted analysis subtracts the change in median industry *PreInterestROA* from the change in firm-level *PreInterestROA*, where industry is defined by 3-digit NAICS code. The performance level-adjusted analysis subtracts the change in *PreInterestROA* of a performance match firm from the change in firm-level *PreInterestROA*. Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestROA* equals *PreInterestIncome* divided by lagged *TotalAssets*, where *TotalAssets* equals total assets reported on Schedule L of Form 1120. Years t-1 and t-2 are divided by year t assets to mitigate the influence of basis adjustments. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5%, and 1%, respectively.

		Change in <i>PreInterestROA</i>							
		t-1 to t+1	t-1 to t+2	t-1 to t+3	t-2 to t+1	t-2 to t+2	t-2 to t+3		
<i>Panel A, All LBO firms</i>									
<i>Unadjusted</i>	Mean	0.008	0.002	0.000	-0.001	-0.007	-0.001		
	Median	-0.007	-0.007	0.001	-0.002	-0.002	0.006	**	
	N	317	317	249	288	288	226		
<i>Industry-adjusted</i>	Mean	0.018	**	0.011	0.008	0.013	**	0.012	
	Median	0.006	***	0.006	**	0.011	0.012	***	0.012
	N	317	317	249	288	288	226		
<i>Performance level-adjusted</i>	Mean	0.003	0.006	-0.007	0.013	0.013	0.006		
	Median	-0.002	-0.002	0.003	0.006	*	0.006	0.011	
	N	302	302	213	277	277	194		
<i>Panel B, High Profit LBO firms</i>									
<i>Unadjusted</i>	Mean	-0.045	***	-0.055	***	-0.064	***	-0.010	**
	Median	-0.038	***	-0.045	***	-0.032	***	-0.002	-0.010
	N	125	125	96	110	110	84		
<i>Industry-adjusted</i>	Mean	-0.031	***	-0.037	***	-0.048	***	0.009	-0.002
	Median	-0.029	***	-0.034	***	-0.030	**	0.003	-0.002
	N	125	125	96	110	110	84		
<i>Performance level-adjusted</i>	Mean	-0.006	0.004	0.001	0.021	0.028	0.035		
	Median	-0.006	-0.006	0.007	0.013	*	0.013	*	
	N	124	124	88	109	109	76		

TABLE V (continued)
Univariate Tests of Pre-Interest ROA

This table tests for changes in *PreInterestROA* using t-tests and Wilcoxon rank tests. Panel A presents the changes for all LBO firms. Panel B presents the changes for high profit LBO firms, Panel C presents the changes for low profit LBO firms and Panel D presents the changes for loss LBO firms. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. High (low) profit LBO firms have above (below) median positive *PreInterestROA*. The industry-adjusted analysis subtracts the change in median industry *PreInterestROA* from the change in firm-level *PreInterestROA*, where industry is defined by 3-digit NAICS code. The performance level-adjusted analysis subtracts the change in *PreInterestROA* of a performance match firm from the change in firm-level *PreInterestROA*. Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestROA* equals *PreInterestIncome* divided by lagged *TotalAssets*, where *TotalAssets* equals total assets reported on Schedule L of Form 1120. Years t-1 and t-2 are divided by year t assets to mitigate the influence of basis adjustments. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5%, and 1%, respectively.

		Change in <i>PreInterestROA</i>											
		t-1 to t+1		t-1 to t+2		t-1 to t+3		t-2 to t+1		t-2 to t+2		t-2 to t+3	
<i>Panel C, Low Profit LBO firms</i>													
<i>Unadjusted</i>	Mean	-0.001		0.000		-0.002		-0.002		-0.001		0.000	
	Median	-0.001		-0.002		0.007		-0.003		-0.003		0.006	
	N	125		125		106		116		116		97	
<i>Industry-adjusted</i>	Mean	0.011		0.007		0.004		0.016	*	0.013		0.016	
	Median	0.015	***	0.011	***	0.011		0.026	***	0.023	**	0.023	**
	N	125		125		106		116		116		97	
<i>Performance level-adjusted</i>	Mean	-0.008		-0.003		-0.014		0.007		0.013		0.010	
	Median	-0.009		-0.003		-0.001		-0.003		0.003		0.005	
	N	122		122		91		116		116		86	
<i>Panel D, Loss LBO firms</i>													
<i>Unadjusted</i>	Mean	0.122	***	0.111	***	0.136	***	0.020		0.009		0.023	
	Median	0.046	***	0.058	***	0.051	***	0.002	*	0.015	**	0.008	**
	N	67		67		47		62		62		45	
<i>Industry-adjusted</i>	Mean	0.124	***	0.110	***	0.134	***	0.017		0.003		0.015	
	Median	0.067	***	0.067	***	0.066	***	0.009	*	0.008		0.008	**
	N	67		67		47		62		62		45	
<i>Performance level-adjusted</i>	Mean	0.046	*	0.027		-0.009		0.006		-0.018		-0.074	
	Median	0.022	*	0.002		-0.027		-0.019		-0.038		-0.068	
	N	56		56		34		52		52		32	

TABLE VI
Univariate Tests of Pre-Interest EVA

This table tests for changes in *PreInterestEVA* using t-tests and Wilcoxon rank tests. Panel A presents the results for all LBO firms. Panel B presents the results for high profit LBO firms, Panel C presents the results for low profit LBO firms and Panel D presents the results for loss LBO firms. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. High (low) profit LBO firms have above (below) median positive *PreInterestROA*. The industry-adjusted analysis subtracts the median industry *PreInterestEVA* from the firm-level *PreInterestEVA*, where industry is defined by 3-digit NAICS code. The performance level-adjusted analysis subtracts the *PreInterestEVA* of a performance match firm from the firm-level *PreInterestEVA*. Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestEVA* equals:

$$[(PreInterestIncome_{t+i} - PreInterestIncome_{t-k}) - ((TotalAssets_{t+i} - TotalAssets_t) * IndCostCap_{t-1})] / TotalAssets_t$$

where *TotalAssets* equals total assets reported on Schedule L of Form 1120. *IndCostCap* equals the industry median cost of capital in year t-1, where industry is defined by 3-digit NAICS code. Year t *TotalAssets* is used in place of years t-1 and t-2 *TotalAssets* to mitigate the influence of basis adjustments. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5%, and 1%, respectively.

		Change in <i>PreInterestEVA</i>											
		t-1 to t+1		t-1 to t+2		t-1 to t+3		t-2 to t+1		t-2 to t+2		t-2 to t+3	
<i>Panel A, All LBO firms</i>													
<i>Unadjusted</i>	Mean	-0.006		-0.001		-0.014		-0.013	*	-0.006		-0.016	
	Median	0.001		0.009		0.000		0.002		0.008		0.008	
	N	314		314		246		286		286		224	
<i>Industry-adjusted</i>	Mean	0.005		0.019	**	0.004		0.005		0.014		0.006	
	Median	0.011	**	0.023	***	0.011		0.015	**	0.023	***	0.025	***
	N	314		314		246		286		286		224	
<i>Performance level-adjusted</i>	Mean	-0.013		0.002		-0.019		-0.013		-0.001		-0.022	
	Median	-0.010		-0.001		-0.003		-0.004		0.000		0.003	
	N	300		300		211		276		276		193	
<i>Panel B, High Profit LBO firms</i>													
<i>Unadjusted</i>	Mean	-0.058	***	-0.061	***	-0.072	***	-0.026	**	-0.029	**	-0.034	**
	Median	-0.032	***	-0.039	***	-0.041	***	0.002		-0.006		-0.009	
	N	125		125		96		110		110		84	
<i>Industry-adjusted</i>	Mean	-0.041	***	-0.039	***	-0.046	***	-0.006		-0.007		-0.001	
	Median	-0.011	*	-0.012		-0.026	*	0.015		0.022	*	0.021	
	N	125		125		96		110		110		84	
<i>Performance level-adjusted</i>	Mean	-0.039	***	-0.022	***	-0.038	***	-0.028		-0.021		-0.024	
	Median	-0.027	*	-0.022		-0.013	*	0.002		-0.002	*	0.007	
	N	124		124		88		109		109		76	

TABLE VI (continued)
Univariate Tests of Pre-Interest EVA

This table tests for changes in *PreInterestEVA* using t-tests and Wilcoxon rank tests. Panel A presents the results for all LBO firms. Panel B presents the results for high profit LBO firms, Panel C presents the results for low profit LBO firms and Panel D presents the results for loss LBO firms. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. High (low) profit LBO firms have above (below) median positive *PreInterestROA*. The industry-adjusted analysis subtracts the median industry *PreInterestEVA* from the firm-level *PreInterestEVA*, where industry is defined by 3-digit NAICS code. The performance level-adjusted analysis subtracts the *PreInterestEVA* of a performance match firm from the firm-level *PreInterestEVA*. Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestEVA* equals:

$$[(PreInterestIncome_{t+i} - PreInterestIncome_{t-k}) - ((TotalAssets_{t+i} - TotalAssets_t) * IndCostCap_{t-1})] / TotalAssets_t$$

where *TotalAssets* equals total assets reported on Schedule L of Form 1120. *IndCostCap* equals the industry median cost of capital in year t-1, where industry is defined by 3-digit NAICS code. Year t *TotalAssets* is used in place of years t-1 and t-2 *TotalAssets* to mitigate the influence of basis adjustments. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5%, and 1%, respectively.

		Change in <i>PreInterestEVA</i>											
		t-1 to t+1		t-1 to t+2		t-1 to t+3		t-2 to t+1		t-2 to t+2		t-2 to t+3	
<i>Panel C, Low Profit LBO firms</i>													
<i>Unadjusted</i>	Mean	-0.014	*	0.003		-0.010		-0.015	*	0.001		-0.008	
	Median	0.000		0.012		0.008		-0.007		0.007		0.008	
	N	124		124		105		116		116		97	
<i>Industry-adjusted</i>	Mean	0.000		0.023	**	0.004		0.009		0.027	**	0.014	
	Median	0.016	*	0.023	***	0.011		0.014		0.027	***	0.024	
	N	124		124		105		116		116		97	
<i>Performance level-adjusted</i>	Mean	-0.022	**	0.001		-0.009		-0.013		0.008		0.004	
	Median	-0.012		0.003		0.000		-0.006		0.000		0.008	
	N	121		121		90		116		116		86	
<i>Panel D, Loss LBO firms</i>													
<i>Unadjusted</i>	Mean	0.108	***	0.105	***	0.102	***	0.018		0.020		0.000	
	Median	0.081	***	0.090	***	0.102	***	0.015	*	0.018	*	0.032	*
	N	65		65		45		60		60		43	
<i>Industry-adjusted</i>	Mean	0.104	***	0.125	***	0.112	***	0.020		0.026		0.001	
	Median	0.085	***	0.116	***	0.097	***	0.018		0.033		0.054	
	N	65		65		45		60		60		43	
<i>Performance level-adjusted</i>	Mean	0.068	***	0.057	**	0.004		0.016		0.021		-0.090	
	Median	0.022	**	0.019		0.000		0.000		0.000		-0.002	
	N	55		55		33		51		51		31	

TABLE VII

Multivariate Analysis of Pre-Interest ROS, Pre-Interest ROA and Pre-Interest EVA

This table presents multivariate regression results for *PreInterestROS*, *PreInterestROA* and *PreInterestEVA* for the time period year t-1 to year t+2 for all LBO firms. Year t represents the LBO year. *PreInterestROS* equals *PreInterestIncome* divided by *Sales*, where *PreInterestIncome* equals *NetIncome* plus *IntDeduction* and *Sales* equals gross receipts or sales reported on Page 1 of Form 1120. *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestROA* equals *PreInterestIncome* divided by lagged *TotalAssets*, where *TotalAssets* equals total assets reported 1 of Schedule L of Form 1120. Year t-1 *PreInterestIncome* is divided by year t assets to mitigate the influence of basis adjustments. *PreInterestEVA* equals:
$$\frac{[(PreInterestIncome_{t+2} - PreInterestIncome_{t-1}) - ((TotalAssets_{t+2} - TotalAssets_t) * IndCostCap_{t-1})]}{TotalAssets_t}$$
 IndCostCap equals the industry median cost of capital in year t-1, where industry is defined by 3-digit NAICS code. Year t *TotalAssets* is used in place of year t-1 *TotalAssets* to mitigate the influence of basis adjustments. All three performance measures are adjusted by the performance of a performance match firm. *PriorProfitIndicator* equals 1 if the LBO firm has positive *PreInterestIncome* in year t-1 and 0 otherwise. *PreLBOLeverage* equals *DebtToAssets* in year t-1. *ScaledChDebt* equals the difference between *IntBearingLiab* in year t and *IntBearingLiab* in year t-1 divided by *PreInterestIncome*. *MngtTurnoverIndicator* equals 1 if management changes in conjunction with the LBO transaction and 0 otherwise. *ClubDealIndicator* equals 1 if at least two private equity acquirers were involved in the buyout transaction and 0 otherwise. *TransValue* equals the value of the LBO transaction. *ManagementBuyout* equals 1 if the transaction is a management buyout and 0 otherwise. *PensionFunding* equals the funding status of pension liabilities from Compustat. *AcquirerAge* equals the age in years of the private equity acquirer at the time of the buyout. t-statistics are in parentheses.

Variable Name	Pre-Interest	Pre-Interest	Pre-Interest	Pre-Interest	Pre-Interest	Pre-Interest
	ROS	ROS	ROA	ROA	EVA	EVA
	t-1 to t+2	t-1 to t+2	t-1 to t+2	t-1 to t+2	t-1 to t+2	t-1 to t+2
<i>Intercept</i>	0.090 (0.26)	0.101 (0.28)	-0.126 (-0.27)	-0.079 (-0.16)	-0.143 (-0.62)	-0.133 (-0.60)
<i>PriorProfitIndicator</i>	-0.076 (-2.01)	-0.080 (-1.89)	-0.062 (-1.26)	-0.028 (-0.5)	-0.068 (-2.8)	-0.049 (-1.96)
<i>PreLBOLeverage</i>	0.069 (1.37)	0.066 (1.19)	0.065 (1.00)	0.135 (1.88)	0.051 (1.60)	0.079 (2.4)
<i>ScaledChDebt</i>	0.000 (0.19)	0.000 (0.42)	0.000 (-0.54)	0.000 (0.09)	0.000 (0.71)	0.000 (1.34)
<i>MngtTurnoverIndicator</i>	0.016 (0.36)	-0.026 (-0.55)	-0.004 (-0.07)	-0.028 (-0.44)	0.015 (0.52)	0.008 (0.28)
<i>ClubDealIndicator</i>	0.010 (0.29)	0.004 (0.10)	0.049 (1.05)	0.044 (0.90)	0.022 (0.94)	0.020 (0.89)
$\ln(TransValue)$	0.017 (1.43)	0.021 (1.62)	-0.001 (-0.05)	-0.005 (-0.27)	-0.011 (-1.47)	-0.011 (-1.38)
<i>ManagementBuyout</i>	-0.044 (-0.93)	-0.298 (-1.26)	0.054 (0.85)	0.000 (0.00)	-0.027 (-0.87)	-0.125 (-0.85)
<i>PensionFunding</i>	0.001 (0.75)	0.001 (0.99)	0.000 (-0.26)	0.000 (0.16)	-0.001 (-1.03)	0.000 (-0.63)
<i>AcquirerAge</i>		0.001 (0.39)		0.001 (0.43)		0.000 (-0.17)
Year Indicators	Yes	Yes	Yes	Yes	Yes	Yes
Industry Indicators	Yes	Yes	Yes	Yes	Yes	Yes
N	282	240	301	260	300	260
R-Squared	0.1294	0.1666	0.0543	0.0638	0.1211	0.1463

TABLE VIII
Trends in Sales and Assets

This table presents trends in *Sales* and *Assets*. Panel A provides the trend in *Sales* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel B (Panel C) provides the trend in *Sales* for the profit (loss) LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel D provides the trend in *TotalAssets* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel E (Panel F) provides the trend in *TotalAssets* for the profit (loss) LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. Year t represents the LBO year. *Sales* equals gross receipts or sales reported on Page 1 of Form 1120. *TotalAssets* equals total assets reported on Schedule L of Form 1120. The LBO year (year t) is shaded.

<i>Panel A, Trend in Sales for All LBO firms</i>							<i>Panel D, Trend in Assets for All LBO firms</i>						
	N	Mean	SD	Q1	Median	Q3		N	Mean	SD	Q1	Median	Q3
<i>Sales</i> _{t-2}	288	613.661	1058.498	106.229	228.152	520.770	<i>TotalAssets</i> _{t-2}	288	811.412	1549.669	109.121	247.348	672.908
<i>Sales</i> _{t-1}	317	604.174	1101.662	88.997	220.685	472.893	<i>TotalAssets</i> _{t-1}	317	920.759	1903.153	92.653	253.393	729.751
<i>Sales</i> _t	317	518.194	911.550	53.924	192.500	450.953	<i>TotalAssets</i> _t	317	1336.379	2964.517	107.637	317.536	942.383
<i>Sales</i> _{t+1}	317	563.339	918.003	69.697	210.989	512.101	<i>TotalAssets</i> _{t+1}	317	1407.670	2858.834	112.253	341.550	1160.977
<i>Sales</i> _{t+2}	317	641.292	1041.782	80.010	245.573	586.867	<i>TotalAssets</i> _{t+2}	317	1256.692	2333.328	114.637	302.339	1086.994
<i>Sales</i> _{t+3}	248	560.723	816.559	77.922	243.993	545.507	<i>TotalAssets</i> _{t+3}	248	1048.045	1984.108	99.987	256.352	823.849

<i>Panel B, Trend in Sales for Profit LBO firms</i>							<i>Panel E, Trend in Assets for Profit LBO firms</i>						
	N	Mean	SD	Q1	Median	Q3		N	Mean	SD	Q1	Median	Q3
<i>Sales</i> _{t-2}	226	669.713	1117.915	122.673	229.918	594.047	<i>TotalAssets</i> _{t-2}	226	895.187	1664.860	118.279	256.981	731.377
<i>Sales</i> _{t-1}	250	692.122	1171.011	109.991	238.313	590.633	<i>TotalAssets</i> _{t-1}	250	1042.820	2078.762	119.976	264.296	872.338
<i>Sales</i> _t	250	593.630	994.791	60.515	220.230	548.170	<i>TotalAssets</i> _t	250	1450.210	3092.253	126.594	358.843	1107.603
<i>Sales</i> _{t+1}	250	610.219	959.943	90.727	239.872	550.471	<i>TotalAssets</i> _{t+1}	250	1541.181	2980.674	138.258	404.165	1279.722
<i>Sales</i> _{t+2}	250	710.860	1099.879	105.443	277.877	683.603	<i>TotalAssets</i> _{t+2}	250	1381.894	2461.301	133.763	375.788	1304.727
<i>Sales</i> _{t+3}	201	614.388	849.699	112.032	293.093	672.098	<i>TotalAssets</i> _{t+3}	201	1128.725	2014.064	118.399	288.091	1112.456

<i>Panel C, Trend in Sales for Loss LBO firms</i>							<i>Panel F, Trend in Assets for Loss LBO firms</i>						
	N	Mean	SD	Q1	Median	Q3		N	Mean	SD	Q1	Median	Q3
<i>Sales</i> _{t-2}	62	409.343	779.569	69.171	184.603	379.703	<i>TotalAssets</i> _{t-2}	62	506.039	976.863	81.078	196.970	423.113
<i>Sales</i> _{t-1}	67	276.010	706.265	34.242	121.924	270.638	<i>TotalAssets</i> _{t-1}	67	465.307	878.484	70.578	133.518	402.778
<i>Sales</i> _t	67	236.719	377.958	32.035	117.485	223.943	<i>TotalAssets</i> _t	67	911.639	2402.180	66.675	169.894	482.765
<i>Sales</i> _{t+1}	67	388.413	720.395	36.472	105.637	361.349	<i>TotalAssets</i> _{t+1}	67	909.494	2300.667	63.186	208.532	494.242
<i>Sales</i> _{t+2}	67	381.712	738.650	32.336	110.199	372.823	<i>TotalAssets</i> _{t+2}	67	789.523	1712.047	52.968	191.065	430.782
<i>Sales</i> _{t+3}	47	331.221	612.192	28.780	120.475	339.321	<i>TotalAssets</i> _{t+3}	47	703.014	1830.696	42.544	87.451	365.903

TABLE IX
Trends in Debt-To-Assets

This table presents short-run and long-run trends in *DebtToAssets*. Panel A provides the short-run trend in *DebtToAssets* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel B (Panel C) provides the short-run trend in *DebtToAssets* for excess cash flow (cash flow shortfall) LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Excess cash flow LBO firms have positive *FreeCashFlow* and cash flow shortfall LBO firms have negative *FreeCashFlow*, where *FreeCashFlow* equals *NetIncome* in years t+1 and t+2 plus estimated depreciation in years t+1 and t+2 minus estimated capital expenditures in years t+1 and t+2. Panel D provides the long-run trend in *DebtToAssets* for all LBO firms with at least one year of pre-transaction data and at least five years of post-transaction data. Panel E (Panel F) provides the long-run trend in *DebtToAssets* for excess cash flow (cash flow shortfall) LBO firms with at least one year of pre-transaction data and at least five years of post-transaction data. Year t represents the LBO year. *DebtToAssets* equals *IntBearingLiab* divided by *TotalAssets*, where *TotalAssets* equals total assets reported on Schedule L of Form 1120 and *IntBearingLiab* equals mortgages, notes and bonds payable reported on Schedule L of Form 1120. The LBO year (year t) is shaded.

<i>Panel A, Short-run trend in Debt-To-Assets for All LBO firms</i>							<i>Panel D, Long-run trend in Debt-To-Assets for All LBO firms</i>						
	N	Mean	SD	Q1	Median	Q3		N	Mean	SD	Q1	Median	Q3
<i>DebtToAssets</i> _{t-2}	288	0.475	0.389	0.176	0.410	0.678	<i>DebtToAssets</i> _{t-2}	138	0.343	0.260	0.128	0.332	0.496
<i>DebtToAssets</i> _{t-1}	317	0.447	0.329	0.162	0.432	0.645	<i>DebtToAssets</i> _{t-1}	153	0.363	0.282	0.112	0.366	0.541
<i>DebtToAssets</i> _t	317	0.748	0.407	0.538	0.754	0.885	<i>DebtToAssets</i> _t	153	0.789	0.459	0.537	0.748	0.899
<i>DebtToAssets</i> _{t+1}	317	0.760	0.407	0.512	0.776	0.924	<i>DebtToAssets</i> _{t+1}	153	0.747	0.424	0.486	0.746	0.924
<i>DebtToAssets</i> _{t+2}	317	0.827	0.573	0.529	0.775	0.962	<i>DebtToAssets</i> _{t+2}	153	0.858	0.568	0.570	0.790	0.990
							<i>DebtToAssets</i> _{t+3}	153	0.841	0.583	0.502	0.749	1.023
							<i>DebtToAssets</i> _{t+4}	153	0.873	0.507	0.622	0.809	1.085
							<i>DebtToAssets</i> _{t+5}	153	0.839	0.571	0.562	0.827	1.116

<i>Panel B, Short-run trend in Debt-To-Assets for Excess Cash Flow LBO firms</i>							<i>Panel E, Long-run trend in Debt-to-Assets for Excess Cash Flow LBO firms</i>						
	N	Mean	SD	Q1	Median	Q3		N	Mean	SD	Q1	Median	Q3
<i>DebtToAssets</i> _{t-2}	111	0.453	0.363	0.195	0.400	0.644	<i>DebtToAssets</i> _{t-2}	65	0.348	0.244	0.131	0.362	0.522
<i>DebtToAssets</i> _{t-1}	123	0.413	0.301	0.170	0.408	0.586	<i>DebtToAssets</i> _{t-1}	71	0.335	0.242	0.094	0.362	0.516
<i>DebtToAssets</i> _t	123	0.731	0.431	0.485	0.695	0.872	<i>DebtToAssets</i> _t	71	0.785	0.480	0.527	0.695	0.895
<i>DebtToAssets</i> _{t+1}	123	0.748	0.427	0.470	0.696	0.931	<i>DebtToAssets</i> _{t+1}	71	0.755	0.437	0.488	0.673	0.924
<i>DebtToAssets</i> _{t+2}	123	0.800	0.564	0.504	0.760	0.944	<i>DebtToAssets</i> _{t+2}	71	0.824	0.560	0.518	0.788	0.973
							<i>DebtToAssets</i> _{t+3}	71	0.832	0.578	0.563	0.745	1.023
							<i>DebtToAssets</i> _{t+4}	71	0.852	0.525	0.564	0.822	1.085
							<i>DebtToAssets</i> _{t+5}	71	0.837	0.470	0.516	0.816	1.103

<i>Panel C, Short-run trend in Debt-To-Assets for Cash Flow Shortfall LBO firms</i>							<i>Panel F, Long-run trend in Debt-to-Assets for Cash Flow Shortfall LBO firms</i>						
	N	Mean	SD	Q1	Median	Q3		N	Mean	SD	Q1	Median	Q3
<i>DebtToAssets</i> _{t-2}	177	0.488	0.405	0.156	0.417	0.706	<i>DebtToAssets</i> _{t-2}	73	0.339	0.274	0.095	0.298	0.488
<i>DebtToAssets</i> _{t-1}	194	0.468	0.344	0.142	0.441	0.677	<i>DebtToAssets</i> _{t-1}	82	0.387	0.311	0.112	0.373	0.563
<i>DebtToAssets</i> _t	194	0.758	0.392	0.560	0.775	0.890	<i>DebtToAssets</i> _t	82	0.791	0.443	0.537	0.774	0.915
<i>DebtToAssets</i> _{t+1}	194	0.767	0.395	0.532	0.787	0.924	<i>DebtToAssets</i> _{t+1}	82	0.740	0.416	0.450	0.778	0.931
<i>DebtToAssets</i> _{t+2}	194	0.845	0.580	0.560	0.776	0.964	<i>DebtToAssets</i> _{t+2}	82	0.888	0.577	0.590	0.799	1.020
							<i>DebtToAssets</i> _{t+3}	82	0.849	0.591	0.469	0.767	1.068
							<i>DebtToAssets</i> _{t+4}	82	0.890	0.494	0.630	0.802	1.118
							<i>DebtToAssets</i> _{t+5}	82	0.841	0.648	0.562	0.852	1.137

TABLE X
Univariate Tests of Trends in Leverage

This table tests for changes in leverage using t-tests and Wilcoxon rank tests. Panel A presents the changes for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel B (Panel C) presents the changes for excess cash flow (cash flow shortfall) LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Excess cash flow LBO firms have positive *FreeCashFlow* and cash flow shortfall LBO firms have negative *FreeCashFlow*, where *FreeCashFlow* equals *NetIncome* in years t+1 and t+2 plus estimated depreciation in years t+1 and t+2 minus estimated capital expenditures in years t+1 and t+2. Year t represents the LBO year. *DebtToAssets* equals *IntBearingLiab* divided by *TotalAssets*, where *TotalAssets* equals total assets reported on Schedule L of Form 1120 and *IntBearingLiab* equals mortgages, notes and bonds payable reported on Schedule L of Form 1120. *DebtAs%ofYearTDebt* equals *IntBearingLiab* in year t+k divided by *IntBearingLiab* in year t. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5%, and 1%, respectively.

		Change in Leverage							
		t to t+2		t to t+3		t to t+4		t to t+5	
<i>Panel A, All LBO firms</i>									
<i>DebtToAssets</i>	Mean	0.080	**	0.032		0.068		0.051	
	Median	0.021		-0.004		0.055	*	0.074	
<i>DebtAs%ofYearTDebt</i>	Mean	0.292	***	0.372	***	0.648	***	0.756	***
	Median	0.007		0.005		0.074	*	0.088	
<i>Panel B, Excess Cash Flow LBO firms</i>									
<i>DebtToAssets</i>	Mean	0.068		0.036		0.062		0.052	
	Median	0.065		0.056		0.119		0.121	
<i>DebtAs%ofYearTDebt</i>	Mean	0.298	**	0.503	**	0.674	***	0.625	**
	Median	0.006		0.049		0.055		0.028	
<i>Panel C, Cash Flow Shortfall LBO firms</i>									
<i>DebtToAssets</i>	Mean	0.087	**	0.030		0.074		0.050	
	Median	0.001		-0.032		0.034		0.077	*
<i>DebtAs%ofYearTDebt</i>	Mean	0.288	***	0.285	**	0.625	***	0.869	**
	Median	0.009		-0.034		0.083		0.143	*

TABLE XI
Multivariate Analysis of Changes in Leverage

This table presents multivariate regression results for the changes in *DebtToAssets* and *DebtAs%ofYearTDebt* from year t to year t+2 for all LBO firms. Year t represents the LBO year. *DebtToAssets* equals *IntBearingLiab* divided by *TotalAssets*, where *TotalAssets* equals total assets reported on Schedule L of Form 1120 and *IntBearingLiab* equals mortgages, notes and bonds payable reported on Schedule L of Form 1120. *DebtAs%ofYearTDebt* equals *IntBearingLiab* in year t+k divided by *IntBearingLiab* in year t. *ExcessCFIndicator* equals 1 if *FreeCashFlow* is positive and 0 otherwise. *FreeCashFlow* equals *NetIncome* in years t+1 and t+2 plus estimated depreciation in years t+1 and t+2 minus estimated capital expenditures in years t+1 and t+2. *PreLBOLeverage* equals *DebtToAssets* in year t-1. *ChSales* equals gross receipts reported on Page 1 of Form 1120 in year t+2 minus gross receipts reported on Page 1 of Form 1120 in year t. *ChAssetTangibility* equals *AssetTang* in year t+2 minus *AssetTang* in year t, where *AssetTang* equals property, plant and equipment divided by *TotalAssets*. *ChIndMedianLeverage* is the industry median *DebtToAssets* in year t+2 minus the industry median *DebtToAssets* in year t, where industry is defined by 3-digit NAICS code. *ChBondYieldSpread* equals the yield premium of Baa- over Aaa-rated corporate bonds in year t+2 minus the yield premium of Baa- over Aaa-rated corporate bonds in year t. t-statistics are in parentheses.

Variable Name	<i>DebtToAssets</i> t to t+2	<i>DebtAs%ofYearTDebt</i> t to t+2
<i>Intercept</i>	0.106 (0.45)	0.085 (0.15)
<i>ExcessCFIndicator</i>	-0.083 (-1.30)	-0.184 (-1.21)
<i>PreLBOLeverage</i>	-0.007 (-0.06)	0.08 (0.32)
ln(<i>ChSales</i>)	0.000 (-0.36)	0.000 (-0.670)
<i>ChAssetTangibility</i>	0.641 (1.64)	0.973 (1.04)
<i>ChIndMedianLeverage</i>	0.539 (2.48)	0.683 (1.32)
<i>ChBondYieldSpread</i>	0.102 (2.38)	0.239 (2.33)
Year Indicators	Yes	Yes
Industry Indicators	Yes	Yes
N	317	314
Adjusted R-Squared	0.1297	0.1278

TABLE XII
Analysis of Distributions to Equityholders

This table presents the cash distributions made to equityholders from year t-1 to year t+3 for LBO firms with non-missing distributions from year t to year t+2. Panel A provides the cash distributions for all LBO firms. Panel B (Panel C) provides the cash distributions for excess cash flow (cash flow shortfall) LBO firms. Excess cash flow LBO firms have positive *FreeCashFlow* and cash flow shortfall LBO firms have negative *FreeCashFlow*, where *FreeCashFlow* equals *NetIncome* in years t+1 and t+2 plus estimated depreciation in years t+1 and t+2 minus estimated capital expenditures in years t+1 and t+2. Panel D provides the cash distributions scaled by *TransValue* for all LBO firms. Panel E (Panel F) provides the cash distributions scaled by *TransValue* for excess cash flow (cash flow shortfall) LBO firms. Year t represents the LBO year. Distributions equal cash distributions from Schedule M-2 on Form 1120. *TransValue* equals the value of the LBO transaction.

<i>Panel A, Distributions (in \$millions) for All LBO firms</i>								
	N	Mean	SD	P10	Q1	Median	Q3	P90
<i>Distributions_{t-1}</i>	49	65.39	288.71	0.00	0.00	0.00	15.71	65.40
<i>Distributions_t</i>	63	30.80	95.39	0.00	0.00	0.00	2.76	73.33
<i>Distributions_{t+1}</i>	63	37.70	233.42	0.00	0.00	0.00	0.00	6.50
<i>Distributions_{t+2}</i>	63	12.63	45.94	0.00	0.00	0.00	0.00	19.48
<i>Distributions_{t+3}</i>	28	54.24	136.30	0.00	0.00	0.79	40.90	253.24
<i>Panel B, Distributions (in \$millions) for Excess Cash Flow LBO firms</i>								
	N	Mean	SD	P10	Q1	Median	Q3	P90
<i>Distributions_{t-1}</i>	12	34.93	78.66	0.00	0.00	0.23	39.55	65.40
<i>Distributions_t</i>	21	9.57	34.67	0.00	0.00	0.00	0.00	0.00
<i>Distributions_{t+1}</i>	21	2.28	6.53	0.00	0.00	0.00	0.00	6.50
<i>Distributions_{t+2}</i>	21	6.70	20.00	0.00	0.00	0.00	0.00	19.42
<i>Distributions_{t+3}</i>	8	34.70	97.87	0.00	0.00	0.00	0.33	276.92
<i>Panel C, Distributions (in \$millions) for Cash Flow Shortfall LBO firms</i>								
	N	Mean	SD	P10	Q1	Median	Q3	P90
<i>Distributions_{t-1}</i>	37	75.26	329.91	0.00	0.00	0.00	15.71	56.75
<i>Distributions_t</i>	42	41.42	113.26	0.00	0.00	0.00	23.52	91.01
<i>Distributions_{t+1}</i>	42	55.41	285.31	0.00	0.00	0.00	0.00	2.07
<i>Distributions_{t+2}</i>	42	15.59	54.49	0.00	0.00	0.00	0.00	26.07
<i>Distributions_{t+3}</i>	20	62.05	150.48	0.00	0.00	2.62	52.28	170.93
<i>Panel D, Distributions for All LBO firms scaled by Transaction Value</i>								
	N	Mean	SD	P10	Q1	Median	Q3	P90
<i>Distributions_{t-1}</i>	49	0.0044	0.0093	0.0000	0.0000	0.0000	0.0056	0.0204
<i>Distributions_t</i>	63	0.0154	0.0554	0.0000	0.0000	0.0000	0.0018	0.0358
<i>Distributions_{t+1}</i>	63	0.0060	0.0368	0.0000	0.0000	0.0000	0.0000	0.0006
<i>Distributions_{t+2}</i>	63	0.0169	0.0832	0.0000	0.0000	0.0000	0.0000	0.0168
<i>Distributions_{t+3}</i>	28	0.0103	0.0159	0.0000	0.0000	0.0002	0.0204	0.0435
<i>Panel E, Distributions for Excess Cash Flow LBO firms scaled by Transaction Value</i>								
	N	Mean	SD	P10	Q1	Median	Q3	P90
<i>Distributions_{t-1}</i>	12	0.0021	0.0032	0.0000	0.0000	0.0002	0.0042	0.0074
<i>Distributions_t</i>	21	0.0003	0.0011	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Distributions_{t+1}</i>	21	0.0015	0.0047	0.0000	0.0000	0.0000	0.0000	0.0005
<i>Distributions_{t+2}</i>	21	0.0343	0.1384	0.0000	0.0000	0.0000	0.0000	0.0177
<i>Distributions_{t+3}</i>	8	0.0011	0.0030	0.0000	0.0000	0.0000	0.0001	0.0084
<i>Panel F, Distributions for Cash Flow Shortfall LBO firms scaled by Transaction Value</i>								
	N	Mean	SD	P10	Q1	Median	Q3	P90
<i>Distributions_{t-1}</i>	37	0.0052	0.0105	0.0000	0.0000	0.0000	0.0056	0.0213
<i>Distributions_t</i>	42	0.0229	0.0668	0.0000	0.0000	0.0000	0.0102	0.0700
<i>Distributions_{t+1}</i>	42	0.0082	0.0450	0.0000	0.0000	0.0000	0.0000	0.0006
<i>Distributions_{t+2}</i>	42	0.0082	0.0300	0.0000	0.0000	0.0000	0.0000	0.0113
<i>Distributions_{t+3}</i>	20	0.0140	0.0175	0.0000	0.0000	0.0022	0.0282	0.0436

TABLE XIII
Duration Analysis

This table presents the results from running a piecewise constant hazard model to estimate the conditional likelihood of a successful exit and the conditional likelihood of going bankrupt. *SuccessIndicator* equals 1 if the LBO firm is taken public or sold during the firm-year and 0 otherwise. *BankruptIndicator* equals 1 if the LBO firm goes bankrupt during the firm-year and 0 otherwise. *LagROS* equals *PreInterestROS* in the preceding firm-year. *PreInterestROS* equals *PreInterestIncome* divided by *Sales*, where *PreInterestIncome* equals *NetIncome* plus *IntDeduction* and *Sales* equals gross receipts or sales reported on Page 1 of Form 1120. *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *ChangeROS* equals the change in *PreInterestROS* from year t-1 to the year preceding the firm-year. Year t represents the LBO year. *DebtToAssets* equals *IntBearingLiab* in year t divided by *TotalAssets* in year t, where *TotalAssets* equals total assets reported on Schedule L of Form 1120 and *IntBearingLiab* equals mortgages, notes and bonds payable reported on Schedule L of Form 1120. *IPOIntensity* equals 1 for the four years in the sample with the most IPOs and 0 otherwise. *Year t+2*, *Year t+3*, *Year t+4*, *Year t+5*, and *Year t+6* are indicator variables equal to 1 if the observation year is 2, 3, 4, 5, and 6 years after year t, respectively, and 0 otherwise. *Years t+7* through *t+12* are also included in the model, but are not shown. Hazard ratios are presented. t-statistics are in parentheses.

Variable Name	<i>DV:</i> <i>SuccessIndicator</i>	<i>DV:</i> <i>SuccessIndicator</i>	<i>DV:</i> <i>BankruptIndicator</i>	<i>DV:</i> <i>BankruptIndicator</i>
<i>LagROS</i>	3.232 (1.67)		0.005 (-3.92)	
<i>ChangeROS</i>		2.601 (1.7)		0.078 (-3.77)
<i>DebtToAssets</i>	1.006 (0.02)	0.982 (-0.07)	2.461 (2.17)	2.258 (1.82)
<i>IPOIntensity</i>	2.514 (4.54)	2.475 (4.44)	0.500 (-1.66)	0.575 (-1.3)
<i>Year t+2</i>	0.016 (-11.16)	0.018 (-11.07)	0.008 (-9.05)	0.006 (-8.88)
<i>Year t+3</i>	0.032 (-8.79)	0.036 (-8.6)	0.026 (-6.84)	0.020 (-6.93)
<i>Year t+4</i>	0.039 (-7.97)	0.043 (-7.84)	0.022 (-5.81)	0.018 (-5.93)
<i>Year t+5</i>	0.058 (-7.28)	0.065 (-7.08)	0.009 (-4.31)	0.006 (-4.56)
<i>Year t+6</i>	0.042 (-6.76)	0.047 (-6.61)	0.026 (-4.45)	0.019 (-4.64)
Number of observations	951	951	951	951
Number of successes	77	77	27	27
Log Likelihood	-161.3	-161.2	-74.4	-76.1

APPENDIX A

Trends in Pre-Interest ROS and Pre-Interest ROA - No basis adjustments

This table presents trends in *PreInterestROS* and *PreInterestROA*. Panel A provides the trend in *PreInterestROS* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel B (Panel C) provides the trend in *PreInterestROS* for the profit (loss) LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel D provides the trend in *PreInterestROA* for all LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Panel E (Panel F) provides the trend in *PreInterestROA* for the profit (loss) LBO firms with at least one year of pre-transaction data and at least two years of post-transaction data. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestROS* equals *PreInterestIncome* divided by *Sales*, where *Sales* equals gross receipts or sales reported on Page 1 of Form 1120. *PreInterestROA* equals *PreInterestIncome* divided by lagged *TotalAssets*, where *TotalAssets* equals total assets reported on Schedule L of Form 1120. The LBO year (year t) is shaded.

<i>Panel A, Trend in Pre-Interest ROS for All LBO firms</i>							<i>Panel D, Trend in Pre-Interest ROA for All LBO firms</i>						
	N	Mean	SD	Q1	Median	Q3		N	Mean	SD	Q1	Median	Q3
<i>PreInterestROS</i> _{t-2}	284	0.089	0.206	0.021	0.063	0.114	<i>PreInterestROA</i> _{t-2}	288	0.080	0.100	0.021	0.067	0.138
<i>PreInterestROS</i> _{t-1}	311	0.089	0.237	0.014	0.063	0.117	<i>PreInterestROA</i> _{t-1}	317	0.069	0.108	0.010	0.067	0.121
<i>PreInterestROS</i> _t	311	-0.035	0.425	-0.032	0.034	0.091	<i>PreInterestROA</i> _t	317	0.022	0.107	-0.028	0.022	0.079
<i>PreInterestROS</i> _{t+1}	307	0.107	0.211	0.023	0.069	0.146	<i>PreInterestROA</i> _{t+1}	317	0.051	0.087	0.011	0.044	0.089
<i>PreInterestROS</i> _{t+2}	302	0.093	0.157	0.015	0.068	0.129	<i>PreInterestROA</i> _{t+2}	317	0.045	0.092	0.011	0.045	0.083
<i>PreInterestROS</i> _{t+3}	238	0.080	0.142	0.015	0.064	0.126	<i>PreInterestROA</i> _{t+3}	249	0.048	0.110	0.010	0.052	0.099
<i>Panel B, Trend in Pre-Interest ROS for Profit LBO firms</i>							<i>Panel E, Trend in Pre-Interest ROA for Profit LBO firms</i>						
	N	Mean	SD	Q1	Median	Q3		N	Mean	SD	Q1	Median	Q3
<i>PreInterestROS</i> _{t-2}	223	0.120	0.203	0.035	0.078	0.131	<i>PreInterestROA</i> _{t-2}	226	0.098	0.091	0.042	0.080	0.151
<i>PreInterestROS</i> _{t-1}	246	0.153	0.213	0.048	0.082	0.162	<i>PreInterestROA</i> _{t-1}	250	0.108	0.080	0.048	0.092	0.142
<i>PreInterestROS</i> _t	246	-0.013	0.420	-0.017	0.041	0.096	<i>PreInterestROA</i> _t	250	0.035	0.093	-0.011	0.032	0.082
<i>PreInterestROS</i> _{t+1}	242	0.118	0.199	0.039	0.079	0.156	<i>PreInterestROA</i> _{t+1}	250	0.062	0.081	0.023	0.051	0.092
<i>PreInterestROS</i> _{t+2}	238	0.105	0.157	0.023	0.075	0.136	<i>PreInterestROA</i> _{t+2}	250	0.057	0.083	0.017	0.049	0.092
<i>PreInterestROS</i> _{t+3}	194	0.089	0.133	0.024	0.069	0.134	<i>PreInterestROA</i> _{t+3}	202	0.056	0.102	0.020	0.056	0.101
<i>Panel C, Trend in Pre-Interest ROS for Loss LBO firms</i>							<i>Panel F, Trend in Pre-Interest ROA for Loss LBO firms</i>						
	N	Mean	SD	Q1	Median	Q3		N	Mean	SD	Q1	Median	Q3
<i>PreInterestROS</i> _{t-2}	61	-0.026	0.173	-0.047	0.011	0.063	<i>PreInterestROA</i> _{t-2}	62	0.015	0.104	-0.054	0.014	0.066
<i>PreInterestROS</i> _{t-1}	65	-0.153	0.148	-0.229	-0.091	-0.020	<i>PreInterestROA</i> _{t-1}	67	-0.074	0.074	-0.117	-0.039	-0.018
<i>PreInterestROS</i> _t	65	-0.117	0.436	-0.205	-0.027	0.081	<i>PreInterestROA</i> _t	67	-0.025	0.137	-0.112	-0.010	0.055
<i>PreInterestROS</i> _{t+1}	65	0.062	0.246	-0.046	0.027	0.107	<i>PreInterestROA</i> _{t+1}	67	0.011	0.099	-0.051	0.013	0.065
<i>PreInterestROS</i> _{t+2}	64	0.049	0.151	-0.065	0.036	0.117	<i>PreInterestROA</i> _{t+2}	67	0.000	0.109	-0.028	0.025	0.071
<i>PreInterestROS</i> _{t+3}	44	0.042	0.174	-0.029	0.027	0.101	<i>PreInterestROA</i> _{t+3}	47	0.011	0.134	-0.048	0.018	0.088

APPENDIX A (continued)

Univariate Tests of Pre-Interest ROA - No Basis Adjustments

This table tests for changes in *PreInterestROA* using t-tests and Wilcoxon rank tests. Panel A presents the changes for all LBO firms. Panel B presents the changes for high profit LBO firms, Panel C presents the changes for low profit LBO firms and Panel D presents the changes for loss LBO firms. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. High (low) profit LBO firms have above (below) median positive *PreInterestROA*. The industry-adjusted analysis subtracts the change in median industry *PreInterestROA* from the change in firm-level *PreInterestROA*, where industry is defined by 3-digit NAICS code. The performance level-adjusted analysis subtracts the change in *PreInterestROA* of a performance match firm from the change in firm-level *PreInterestROA*. Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestROA* equals *PreInterestIncome* divided by lagged *TotalAssets*, where *TotalAssets* equals total assets reported on Schedule L of Form 1120. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5%, and 1%, respectively.

		Change in <i>PreInterestROA</i>											
		t-1 to t+1		t-1 to t+2		t-1 to t+3		t-2 to t+1		t-2 to t+2		t-2 to t+3	
<i>Panel A, All LBO firms</i>													
<i>Unadjusted</i>	Mean	-0.018	***	-0.024	***	-0.023	***	-0.029	***	-0.036	***	-0.025	***
	Median	-0.022	***	-0.022	***	-0.015	***	-0.023	***	-0.023	***	-0.015	*
	N	317		317		249		288		288		226	
<i>Industry-adjusted</i>	Mean	-0.007		-0.014	**	-0.016	*	-0.015	**	-0.023	***	-0.011	
	Median	-0.010		-0.010		-0.005	*	-0.014	**	-0.015		-0.009	
	N	317		317		249		288		288		226	
<i>Performance level-adjusted</i>	Mean	-0.008		-0.008		-0.008		-0.021	*	-0.022	*	-0.011	
	Median	-0.006		-0.005		0.006		-0.005		-0.003		0.007	
	N	308		308		225		283		283		206	
<i>Panel B, High Profit LBO firms</i>													
<i>Unadjusted</i>	Mean	-0.088	***	-0.098	***	-0.101	***	-0.051	***	-0.064	***	-0.052	***
	Median	-0.073	***	-0.080	***	-0.067	***	-0.061	***	-0.068	***	-0.055	***
	N	125		125		96		110		110		84	
<i>Industry-adjusted</i>	Mean	-0.074	***	-0.081	***	-0.085	***	-0.032	***	-0.043	***	-0.031	**
	Median	-0.074	***	-0.079	***	-0.075	***	-0.044	***	-0.048	**	-0.044	
	N	125		125		96		110		110		84	
<i>Performance level-adjusted</i>	Mean	-0.030	**	-0.024	*	-0.019		-0.030	*	-0.028		0.008	
	Median	-0.027	**	-0.023	**	0.005		-0.033		-0.029		-0.001	
	N	125		125		90		110		110		78	

APPENDIX A (continued)
Univariate Tests of Pre-Interest ROA - No Basis Adjustments

This table tests for changes in *PreInterestROA* using t-tests and Wilcoxon rank tests. Panel A presents the changes for all LBO firms. Panel B presents the changes for high profit LBO firms, Panel C presents the changes for low profit LBO firms and Panel D presents the changes for loss LBO firms. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. High (low) profit LBO firms have above (below) median positive *PreInterestROA*. The industry-adjusted analysis subtracts the change in median industry *PreInterestROA* from the change in firm-level *PreInterestROA*, where industry is defined by 3-digit NAICS code. The performance level-adjusted analysis subtracts the change in *PreInterestROA* of a performance match firm from the change in firm-level *PreInterestROA*. Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestROA* equals *PreInterestIncome* divided by lagged *TotalAssets*, where *TotalAssets* equals total assets reported on Schedule L of Form 1120. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5%, and 1%, respectively.

		Change in <i>PreInterestROA</i>						
		t-1 to t+1	t-1 to t+2	t-1 to t+3	t-2 to t+1	t-2 to t+2	t-2 to t+3	
<i>Panel C, Low Profit LBO firms</i>								
<i>Unadjusted</i>	Mean	-0.003	-0.002	-0.003	-0.023 **	-0.021 **	-0.019	
	Median	-0.008	-0.009	0.000	-0.017	-0.018 *	-0.009	
	N	125	125	106	116	116	97	
<i>Industry-adjusted</i>	Mean	0.009	0.005	0.003	-0.004	-0.007	-0.003	
	Median	0.008	0.005	0.005	0.010	0.006	0.006	
	N	125	125	106	116	116	97	
<i>Performance level-adjusted</i>	Mean	-0.005	0.005	-0.002	-0.010	0.002	0.002	
	Median	-0.004	0.003	0.006	-0.002	0.005	0.009	
	N	122	122	94	116	116	89	
<i>Panel D, Loss LBO firms</i>								
<i>Unadjusted</i>	Mean	0.085 ***	0.074 ***	0.090 ***	-0.004	-0.015	0.012	
	Median	0.052 ***	0.064 ***	0.057 ***	-0.001	0.011	0.004 *	
	N	67	67	47	62	62	45	
<i>Industry-adjusted</i>	Mean	0.088 ***	0.074 ***	0.084 ***	-0.006	-0.019	0.006	
	Median	0.080 ***	0.080 ***	0.079 ***	0.007	0.007	0.007 *	
	N	67	67	47	62	62	45	
<i>Performance level-adjusted</i>	Mean	0.028	-0.004	0.000	-0.026	-0.058	-0.078	
	Median	0.017	0.007	0.008	0.028	0.018	0.019	
	N	61	61	41	57	57	39	

APPENDIX A (continued)
Univariate Tests of Pre-Interest EVA - No Basis Adjustments

This table tests for changes in *PreInterestEVA* using t-tests and Wilcoxon rank tests. Panel A presents the results for all LBO firms. Panel B presents the results for high profit LBO firms, Panel C presents the results for low profit LBO firms and Panel D presents the results for loss LBO firms. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. High (low) profit LBO firms have above (below) median positive *PreInterestROA*. The industry-adjusted analysis subtracts the median industry *PreInterestEVA* from the firm-level *PreInterestEVA*, where industry is defined by 3-digit NAICS code. The performance level-adjusted analysis subtracts the *PreInterestEVA* of a performance match firm from the firm-level *PreInterestEVA*.

Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestEVA* equals:

$$[(PreInterestIncome_{t+i} - PreInterestIncome_{t-k}) - ((TotalAssets_{t+i} - TotalAssets_t) * IndCostCap_{t-1})] / TotalAssets_t$$

where *TotalAssets* equals total assets reported on Schedule L of Form 1120. *IndCostCap* equals the industry median cost of capital in year t-1, where industry is defined by 3-digit NAICS code. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5%, and 1%, respectively.

		Change in <i>PreInterestEVA</i>											
		t-1 to t+1		t-1 to t+2		t-1 to t+3		t-2 to t+1		t-2 to t+2		t-2 to t+3	
<i>Panel A, All LBO firms</i>													
<i>Unadjusted</i>	Mean	-0.028	***	-0.023	***	-0.031	***	-0.047	***	-0.039	***	-0.038	***
	Median	-0.032	***	-0.018	**	-0.023	**	-0.032	***	-0.030	***	-0.016	
	N	314		314		246		286		286		224	
<i>Industry-adjusted</i>	Mean	-0.015	*	-0.001		-0.008		-0.036	***	-0.018	*	-0.016	
	Median	-0.016		-0.001		-0.001		-0.016	*	-0.008		0.007	
	N	314		314		246		286		286		224	
<i>Performance level-adjusted</i>	Mean	-0.020	**	-0.006		-0.008		-0.018		-0.005		-0.001	
	Median	-0.018	***	-0.003		0.019	*	-0.013		0.015		0.016	
	N	305		305		222		281		281		204	
<i>Panel B, High Profit LBO firms</i>													
<i>Unadjusted</i>	Mean	-0.091	***	-0.097	***	-0.101	***	-0.069	***	-0.080	***	-0.072	***
	Median	-0.082	***	-0.081	***	-0.079	***	-0.058	***	-0.062	***	-0.049	***
	N	125		125		96		110		110		84	
<i>Industry-adjusted</i>	Mean	-0.071	***	-0.074	***	-0.067	***	-0.054	***	-0.056	***	-0.040	*
	Median	-0.070	***	-0.053	***	-0.058	***	-0.044	***	-0.023	**	-0.008	
	N	125		125		96		110		110		84	
<i>Performance level-adjusted</i>	Mean	-0.061	***	-0.053	***	-0.043	*	-0.047	**	-0.041		-0.019	
	Median	-0.044	***	-0.041	**	-0.035		-0.056	*	-0.013		0.018	
	N	125		125		90		110		110		78	

APPENDIX A (continued)
Univariate Tests of Pre-Interest EVA - No Basis Adjustments

This table tests for changes in *PreInterestEVA* using t-tests and Wilcoxon rank tests. Panel A presents the results for all LBO firms. Panel B presents the results for high profit LBO firms, Panel C presents the results for low profit LBO firms and Panel D presents the results for loss LBO firms. Profit (loss) LBO firms record positive (negative) *PreInterestIncome* in year t-1. High (low) profit LBO firms have above (below) median positive *PreInterestROA*. The industry-adjusted analysis subtracts the median industry *PreInterestEVA* from the firm-level *PreInterestEVA*, where industry is defined by 3-digit NAICS code. The performance level-adjusted analysis subtracts the *PreInterestEVA* of a performance match firm from the firm-level *PreInterestEVA*.

Year t represents the LBO year. *PreInterestIncome* equals *NetIncome* plus *IntDeduction*, where *NetIncome* equals net income reported on Page 1 of Form 1120 and *IntDeduction* equals the interest deduction reported on Page 1 of Form 1120. *PreInterestEVA* equals:

$$[(PreInterestIncome_{t+i} - PreInterestIncome_{t-k}) - ((TotalAssets_{t+i} - TotalAssets_t) * IndCostCap_{t-1})] / TotalAssets_t$$

where *TotalAssets* equals total assets reported on Schedule L of Form 1120. *IndCostCap* equals the industry median cost of capital in year t-1, where industry is defined by 3-digit NAICS code. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5%, and 1%, respectively.

		Change in <i>PreInterestEVA</i>											
		t-1 to t+1		t-1 to t+2		t-1 to t+3		t-2 to t+1		t-2 to t+2		t-2 to t+3	
<i>Panel C, Low Profit LBOs</i>													
<i>Unadjusted</i>	Mean	-0.027	***	-0.011		-0.019	*	-0.046	***	-0.030	**	-0.031	**
	Median	-0.018	**	-0.009		-0.010		-0.024	**	-0.019		-0.008	
	N	124		124		105		116		116		97	
<i>Industry-adjusted</i>	Mean	-0.016	*	0.008		-0.004		-0.028	**	-0.004		-0.010	
	Median	-0.012		0.000		0.005		-0.001		-0.005		0.015	
	N	124		124		105		116		116		97	
<i>Performance level-adjusted</i>	Mean	-0.017		0.011		0.002		-0.016		0.012		0.014	
	Median	-0.016	**	0.012		0.025	**	-0.009		0.026		0.012	
	N	121		121		93		116		116		89	
<i>Panel D, Loss LBO firms</i>													
<i>Unadjusted</i>	Mean	0.089	***	0.098	***	0.094	***	-0.007		0.016		0.012	
	Median	0.080	***	0.097	***	0.101	***	-0.007		0.016		0.020	
	N	65		65		45		60		60		43	
<i>Industry-adjusted</i>	Mean	0.094	***	0.123	***	0.111	***	-0.018		0.025		0.015	
	Median	0.082	***	0.115	***	0.117	***	0.004		0.031		0.045	
	N	65		65		45		60		60		43	
<i>Performance level-adjusted</i>	Mean	0.063	**	0.061	**	0.047		0.036		0.028		-0.002	
	Median	0.059	**	0.053		0.069		0.050		0.024		0.020	
	N	59		59		39		55		55		37	