Growth Equity Investment Patterns and Performance[1]

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Abstract

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Keywords: Private equity; Growth equity; Venture Capital; Firm performance; Firm survival.
JEL Classification: F140, G01, G23, G28, G32, G34.

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Private markets have evolved over the past two decades to provide a wider variety of types of financing, and to a wider range of target firms. We present a large-sample analysis of growth equity (GE) investment using 1,512 UK private companies over 2000-2021 and compare the post-investment performance of investee firms to matched companies that don't receive GE investment. Target companies are younger, smaller, more intangible-asset intensive and more rapidly growing than the general pool of UK private companies and these target firms then dramatically outperform a matched sample of non-GE backed private companies after investment with respect to sales and asset growth, employment, and earnings growth. Much of this extra expansion is financed by significantly faster growth in leverage than for non- GE backed firms. We compare our findings to venture capital (VC)- and private equity (PE) buyout-backed firms.

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The years since 2000 have witnessed unprecedented worldwide growth in the scale and importance of private capital fundraising and investment. Quinio and Wigglesworth (2022) report that capital raised and invested in non-public markets grew from less than $500 billion in 2000 to over $7.2 trillion at year-end 2000, while Bain (MacArthur et at, 2024) reports that total private capital under management reached $14.5 trillion at year-end 2023. Private equity (PE) buyout, venture capital (VC), and growth equity (GE) account for about two-thirds of this pool of capital, while other funds specializing in providing credit to real estate, infrastructure, distressed debt, and natural resource projects account for the remaining one-third. The ability of private capital funds to now offer a wider variety of types of financing, and to all types of firms, reflects the overall growth in private markets. Within PE, the market has evolved from focusing on large take-private leveraged buyouts in the 1990s and early 2000s, to being more willing to cater for smaller firms and growth-orientated transactions (Morris and Phalippou, 2020). This paper studies the 'growth equity' market, which lies on the PE spectrum between leveraged buyouts of larger, established companies, and VC financing for start-up firms. The emergence of growth equity within the PE space underlines the changing dynamics of the private capital market, as private capital investors have evolved to target a wider range of companies, just as they also now offer a more diverse range of financing, underlined, for example, by the simultaneous growth in private credit funds over the past two decades (e.g., Chernenko et al., 2022; Block et al., 2024).

There is a vast academic literature examining the investment patterns and performance of both venture capital (e.g., Puri and Zarutskie, 2012; Gonzalez-Uribe and Leatherbee, 2018; Gompers et al., 2020; Gonzalez-Uribe, 2020; Ewens et al., 2022; Gornall and Strebulaev, 2020; Gornall and Strebulaev, 2023; Dimitrova and Eswar, 2023; Brander et al., 2015; Hochberg, 2012;

Tian, 2012) and buyout funds (Axelson et al., 2009; Boucly et al., 2011; Ivashina and Kovner, 2011; Metrick and Yasuda, 2011; Davis et al., 2014; Gompers et al., 2016; Bernstein et al., 2017; Hotchkiss et al., 2021; Fracassi et al., 2022). The general conclusion to be drawn from this corpus of research is that VC and buyout investors can create value both for investee firms and for limited partner investors in these funds. Perhaps surprisingly, however, very little scientific research has yet examined growth equity, in the same way VC and buyouts have been studied. To our knowledge, the only empirical analysis yet published examining growth equity is Lattanzio et al. (2023), who present a descriptive analysis of VC, GE, and buyout fund investment patterns using a global sample drawn from Preqin, and trace the evolution of commentary about growth equity in both the practitioner and academic literature.

We examine growth equity investment patterns and performance using data from the United Kingdom, and using a difference-in-differences design, we compare the performance of growth equity portfolio companies with matched control firms, and with buyouts and VC investments. While the British financial system does not map perfectly with that of the US and other developed economies, we believe the UK is the single best national market for this study, for three reasons. First, the UK is the second largest market for private capital and has long been the country with the largest penetration by private equity investors: Bernstein et al. (2019) state that, at the time of the global financial crisis (GFC), UK PE-owned assets represented about 11% of national GDP and up to 20% of private sector UK workers were employed at PE-backed firms. Second, both Capital IQ and Pitchbook rank the UK among the top three most active private equity markets globally, while Lattanzio et al. (2023) show that UK GE investments as a percent of GDP are the highest of all the leading countries.

The third reason why the United Kingdom is uniquely well suited for our study is also the most important. Uniquely among major economies, the Companies Act of 1967 requires all incorporated UK businesses, public or private, to file their financial statements with the Registrar of Companies House, where they become public information (Brav, 2009; Michaely and Roberts, 2012; Bernstein et al., 2019; Yi, 2024). The 1981 Companies Act modified this to allow medium-size companies to file abbreviated financial statements and small companies to file abbreviated balance sheets and no income statements, and a 2000 revision raised the sales and asset bars for full reporting, but it remains true that researchers can empirically study virtually the entire population of UK private limited companies. As we will discuss in Section 2 below, this amounts to over 5.3 million company-year observations over 2001-2021 and provides data on growth equity and other PE transactions that would not be available for the US or other countries.

We collect an initial sample of 1,512 growth equity investments in UK private companies using data over 2001-2022 from S&P Capital IQ and the Financial Analysis Made Easy (FAME) database of company records in Companies House. We examine the patterns of these investments over 2004-2018 (requiring data before and after investment for some analyses), with supplementary data from Capital IQ, and find that the private companies that GE funds target for investment are significantly smaller, younger, more rapidly growing and more intangible asset-intense than the overall population of UK private companies. We also directly compare GE targets to buyout and VC targets over the same period and show that they significantly differ across many observables, confirming that GE targets fall between buyout and VC targets on the private equity spectrum. After GE investment, target firms make significant corporate governance changes—such as naming new directors or top executives—in over 70% of all cases. They bring in a new CEO and new board chair 23% and 40% of the time, respectively, and generally take a board seat

in targets post-deal. The appear to be less acquisitive than buyout targets during their holding period tenure.

To perform a difference-in-difference analysis of the effect of GE investment on target firm performance, we create a sample of GE-backed companies closely matched regarding industry, size, profitability, leverage, and growth with other private companies that do not receive GE investment. The GE-backed companies dramatically outperform control firms with respect to growth in sales, assets, employment, and earnings. However, we find no evidence that firm productivity or profitability increases compared to control firms. This growth appears to come with a sting. Much of the "extra" expansion (above that achieved by matching firms) is financed by significantly faster growth in leverage, and this causes GE backed companies to encounter financial distress more frequently than matching firms. On the other hand, distressed GE-backed firms navigate distress—including bankruptcy—relatively more successfully than matching distressed companies that never receive GE funding. When we compare the outperformance of GE targets relative to matched peers with the outperformance of buyout and VC targets versus their matched industry peers, our findings suggest that GE outperformance in sales, asset growth, and employment is less than that of buyout and VC targets. Post-transaction exposure to credit and growth in leverage compared to control firms is of a similar magnitude to that of VC targets, but, unsurprisingly, considerably smaller compared to buyout firms. When we study the incidence of insolvency, we find that GE-backed companies encounter financial distress more frequently than matching firms do. On the other hand, distressed GE-backed firms navigate distress—including bankruptcy—relatively more successfully than matching distressed companies that do not receive GE funding.

Taken together, our findings suggest that companies targeted for GE investment differ significantly from those targeted for buyouts and VC funding. When we study the post-transaction performance of firms, we find that while GE can help firms to grow in size, the increased exposure to debt and leverage following the GE transaction may pose risks of distress, relative to non-GE-investment firms. Consistent with the PE buyout literature (Hotchkiss et al., 2021, Lavery and Wilson, 2024), however, GE-backed firms appear to manage distress better than other firms.

This study is organized as follows. Section 1 describes our data collection procedures and presents summary descriptive results, while Section 2 discusses which firms are likely to receive growth equity investment. Section 3 describes our matching process and presents DiD findings regarding the impact of GE investments on target firm performance. Section 4 assesses how GE backing affects firms' access to credit and its impact on the evolution of firm leverage, while Section 5 compares the outperformance of GE target firms with that of VC and buyout target firms. Section 6 examines the impact of GE investment on the likelihood of insolvency, and similarly compares to VC and buyouts. Section 7 concludes.

1. Data

1.1. Growth Equity Transactions

Our data on growth equity transactions comes from S&P Capital IQ, which defines a growth equity transaction as a private placement during which an investment is realized in a mature or middle-market stage company with the sole purpose of aiding its growth. This definition is highly similar to those of other well-established data providers such as Pitchbook which defines growth equity as an injection of capital in a mature company with the scope of expansion and restructuring in exchange for equity. The definition overlap is confirmed by the deal classification

overlap across the two databases, as of our sample of growth equity deals in Capital IQ, Pitchbook categorizes over 75% of these as growth equity.

We search for all transactions described as "Private Equity/Growth Equity" where the target firm is headquartered in the UK. We retain all transactions where there is a defined investor and where the round type is categorized as "growth", thereby removing any transactions which may be seed capital or early- stage venture capital, for example. We likewise remove all transactions if the deal is a follow-on financing of a private equity (buyout) funded target company.[2] Similarly, we remove all deals involving a minority investor acquiring a stake in a company which is already PE-owned and there is already a majority stake PE investor. Lastly, we only retain transactions occurring from 2004 to 2018 to ensure that we have at least three years of the target firms' financial accounts before and after the transaction occurs. This initial sample yields 2,358 UK growth equity transactions.

****** Insert Figure 1 about here ******

We take all relevant information from Capital IQ, such as the transaction date, the name(s) and location(s) of investors and the transaction value (if disclosed). To identify how and when the growth equity investor exits a deal in each case, we use a variety of resources. We use Capital IQ's Merger & Acquisition database to search for sales to trade buyers or to private equity investors. We also use manual searches of financial news and Companies House, the national UK registrar, for acquisitions, initial public offerings, and insolvency filings involving the target firms.

1.2. Company Financial Accounts

[2] For example, Kirona Solutions Limited underwent a private equity buyout backed by LDC (Managers) in November 2011. In July 2012, LDC (Managers) provided additional financing to the firm. While Capital IQ categorizes this second transaction as a growth equity investment, we do not include such deals where the investor has already previously acquired a majority stake in the company.

To source companies' financial accounts, we use the FAME database, published by Bureau Van Dijk Electronic Publishing (BvDEP). This database sources historical accounts of UK companies from Companies House, the national register. The reliability of this data source and its coverage of both public and private firms is a key strength of the data used. Accordingly, recent empirical studies in corporate finance have acknowledged that the UK is an excellent setting in which to study private firms (Brav, 2009; Saunders and Steffen, 2011; Michaely and Roberts, 2012; Bernstein et al., 2019). In the UK, every registered limited company is required to provide financial and income information annually to the public register, but the extent of the requirement to disclose financial information in the UK varies with company size. Smaller firms are allowed to file abridged accounts or micro-entity accounts.[3] Since the amount of information small firms disclose to Companies House (and hence in the FAME dataset) can be very limited, and given that we focus on growth equity deals where target firms are typically smaller than those involved in private equity buyouts, we are sometimes limited in the empirical analysis we can carry out. We download companies' financial accounts (balance sheets and income statements) and other firm information (such as industry codes, location, date of incorporation) for all companies from the FAME database for 2001 through 2021. This amounts to a dataset of over 5.3 million firm-year observations.

The next step is to match target firms from our list of growth equity targets in Capital IQ to the FAME database, which we do manually. An advantage of FAME in this case is that it tracks firms' prior names. If company names differ between our list of transactions from Capital IQ and FAME, we verify that we are tracking the correct company by crosschecking whether information such as reported sales, total assets, and company address or website is consistent between the two

[3] The thresholds for company size and the level of financial accounting disclosures in the UK are available at:https://www.gov.uk/government/publications/life-of-a-company-annual-requirements/life-of-a-company-part-1-accounts.

sources. We also use Companies House in this respect. In doing so, we can match 1,512 of the 2,358 target firms (64%) to the FAME data. It is worth noting that where the GE investor creates a 'newco' acquisition vehicle for the purpose of the transaction and financial accounts are consolidated at this level during the investment period, we track these accounts in the post-transaction period. However, we find that these vehicles are used less often than when compared to PE buyouts in the UK.

1.3. Ownership Data

We gather information on the equity stake acquired by the GE investor, and the share class of their acquired shares in the target firms from the Annual Returns (also known as Confirmation Statements) filed with Companies House. These annual filings outline information regarding UK companies' directors and provide detailed information on all individual shareholders' ownership. The filings are typically provided in a scanned format (often being handwritten in earlier years) on the Companies House registrar. As such, compilation of this data is a manual process. These filings have been used in the recent PE literature to study the division of ownership in PE buyout target firms (Cassel, 2021). Following this study's example, we manually compile the equity stake acquired by the GE investor, and the share class of the shares they acquire in the firm.[4]

1.4. Insolvency Filings

Finally, we also track all UK company insolvency filings at Companies House and formal notices in the London/Edinburgh Gazettes from 1998 to 2022. This includes company filings for administration, receivership, company voluntary arrangements (CVA), and liquidations. [5] We are then able to match this information to our FAME panel data set of annual company accounts. This

[4] We are extremely grateful to Johan Cassel for providing excellent guidance on gathering this data.

[5] We describe in detail the different kinds of insolvency options in the UK in section 7.

allows us to identify precisely when firms (growth equity-backed, or otherwise) file for insolvency in our sample, and we can observe the type of insolvency for which they file.[6]

1.5. Summary Statistics on Growth Equity Transactions

Summary statistics of our 1,512 growth equity transactions are displayed in Table 1. Panel A shows the annual distribution of transactions, which follow a natural increase over time as the investment strategy has increased in popularity. The notable exception is a drop of deal activity around the time of the Global Financial Crisis, as expected.

****** Insert Table 1 about here ******

We also identify how GE investors realize their investments. In Panel B we classify transaction exits into five categories (plus deals which are yet to be exited): trade sales, which are by far the most common; sales to management; sales to a PE investor; filing for insolvency (companies filing for receivership, a company voluntary arrangement (CVA), administration, or liquidation); and initial public offerings, which account for a small number of exits. Around 75% of target firms in our sample experienced some form of full or partial exit. It should be noted that when considering realized transactions only, almost 20% of GE-backed firms file for insolvency. This is considerably higher than in samples of PE buyouts (see, as examples, Strömberg, 2008, Stanfield, 2020, and Lavery et al., 2021).[7] The mean (median) transaction size is £9m (£3m) and target companies in our sample are typically held for around four years (Panel D).[8] Lastly, GE investors typically acquire a stake of around 30% in the target company.

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[6] We are extremely grateful to Nick Wilson for sharing this data.

[7] In a sample of approximately 4,000 exited UK PE deals in Capital IQ from 2004 to 2020, roughly 12% are exited via an insolvency.

[8] In our data sample of PE buyouts over the same time period, the average (median) deal size of buyouts is £125m (£22m). Holding periods are similar in length.

The industry breakdown of target firms is shown in Table A2 of the appendix. Almost half of the transactions occur in the information technology and industrials sectors. Other popular sectors include health care and consumer discretionary. This industry breakdown aligns with growth equity, as an asset class, being somewhere between venture capital and private equity. Venture capitalists predominantly target information technology and health care sectors, while private equity investors tend to prefer industrial and consumer discretionary market segments (Bernstein et al., 2019).

Table 2 describes some value-added activities in UK growth equity target companies. In panel A we categorize deals into organic growth deals and acquisitive growth deals, where the target firm acquires other firms during the investment period. These add-on growth deals (called "bolt-on deals" in the buyout literature) have become increasingly popular for private equity investors in recent years (Hammer et al., 2017, Bansraj et al., 2020, Hammer et al., 2022). In our sample of growth equity transactions, however, such deals account for less than one fifth of the sample.[9] Where bolt-on acquisitions are made, the mean (median) number of bolt-on acquisitions is three (two) companies, with the majority of these being domestic (UK- based) companies.

****** Insert Table 2 about here ******

Panel B of Table 2 describes key corporate governance and senior management changes make to target firms. It is well-known in the private equity buyout literature that PE investors typically make considerable changes to target firms' board structures, including the hiring of senior management personnel and taking several board seats themselves (Gompers et al., 2016, Gompers et al., 2023). We document similar findings in our sample of growth equity deals. In 70% of target

[9] In our data sample of PE buyouts over the same period, PE-backed firms engage in bolt-on acquisitions in around 35% of buyouts.

firms, a new director is introduced. This could be a new CEO, board chair, or other C-level executive (CFO, CTO, etc.). More specifically, in over 23% of growth equity deals, a new CEO is introduced and in almost 40% of all cases, a new board chair is introduced. Like PE investors, growth equity investors generally take board seats in target firms, though we find that they take, on average, fewer seats. The mean and median number of board seats taken is one.[10]

1.6. Descriptive Statistics of UK Growth Equity Target Firms

Table 3 offers the first insight into firm-level characteristics of our target firms. It shows the distribution of pre-investment characteristics of growth equity target firms across several areas including age, size, leverage, working capital, profitability, and productivity. The definitions of all variables are provided in Table A1 of the online appendix. Given that smaller firms are not required to disclose full financial accounts (see section 2.2), the availability of some variables are more limited relative to others.

****** Insert Table 3 about here ******

Target firms are, on average, 11 years old with median sales of £12m and 74 employees. The median debt-to-total assets ratio is 0.05, while the median profitability, as measured by return on assets (EBITDA margin), is 2% (6%).

We next compare GE targets to target firms of VC and PE transactions in the UK over the same time, which we collect similarly to GE targets, and document that GE target firms differ considerably regarding target firm observable characteristics to VC and PE buyout targets (naturally, VC and PE buyout targets likewise differ significantly from each other). Of course,

[10] In our data sample of PE buyouts over the same period, PE investors take board seats in over 90% of transactions and take on average (median) two (two) board seats in portfolio companies.

there are fewer observations for income statement items for VC and GE targets compared to PE buyout targets due to reporting requirements decreasing by size of firm.

****** Insert Table 4 about here ******

As expected, we find that GE target firms fit somewhere between VC and PE buyout target firms. That is, compared to VC target firms, GE targets are older and larger in terms of their total assets held, employee count, and sales. They have less of their assets tied up in cash and have a higher ratio of tangible assets. Lastly, they have higher leverage ratios, and are more likely to have prior borrowing activity. That is, the value for charge on assets is significantly higher. This is a dummy variable equal to one where there is a charge placed on the assets of a company, which is indicative of some form of lending. These differences are statistically significant at the 1% level.

When we compare GE targets to PE buyout targets, we find the opposite. Relative to PE buyout targets, GE targets are younger, smaller, and have higher cash ratios, fewer tangible assets, lower leverage ratios, and borrow less. These differences are highly statistically significant.[11]

Overall, these findings are consistent with the prediction that GE target firms fit between VC and PE buyout targets on the private financing spectrum. Prior research has typically documented venture capital targets to be younger and smaller (Bertoni et al., 2011, Chemmanur et al., 2011, Croce et al., 2013, Hellmann et al., 2021), while buyout targets are usually more mature, larger, and more profitable (Bernstein et al., 2019; Cohn et al., 2022; Wilson et al., 2022; Lattanzio et al., 2023). While a large body of research examines the impact and consequences of VC and PE ownership on firms, the literature is missing an analysis of the impact of GE investment on target firms.

[11] We also compare the industry distribution of venture capital, growth equity, and PE buyout targets. This is available in Table 2 of the appendix.

2. Which Companies Attract Growth Equity Investment?

We first seek to determine which firms growth equity investors target. It is widely accepted that PE and VC investors do not invest in companies at random but target specific types of companies with certain attributes. In the buyout literature, Cohn et al. (2022) conclude that, in the US, PE investors target firms which have higher leverage and are dependent on external financing, but where there is potential for strong growth. In the UK, Wilson et al. (2022) suggest that PE investors target larger and more established firms with a track record of profitability and higher cash generation than the general population of companies. PE targets have stronger debt servicing capacity and have more pre-deal borrowing activity.

We use simple probit analyses to determine the characteristics of UK growth equity target firms using our FAME data set of over 5.3 million firm-year observations, and compare against VC and buyout targets. The estimates are displayed in Table 5. In Columns 1, 3, and 5 we consider only balance sheet variables allowing us to study the whole sample of firms, given accounting disclosure requirements in the UK. In Columns 2, 4, and 6 we include firm variables from profit/loss accounts which reduces our sample size.

****** Insert Table 5 about here ******

The estimates in columns 1 and 2 of Table 5 suggest that growth equity target firms are slightly younger and smaller than the general pool of UK private companies and have a higher proportion of intangible assets. Growth equity investors target firms which are growing fast and have higher levels of investment. When we compare against the whole population of firms, GE targets' leverage is not found to significantly differ from the average firm in the population – but when we compare against firms which file a profit/loss account, and are therefore larger in size, GE targets are significantly less levered.

In columns 3 and 4 we run similar models for PE buyout targets, and in columns 5 and 6 we do likewise for VC targets. Consistent with Cohn et al. (2022) and Wilson et al. (2022), we find buyout targets to be older and larger in size, more profitable, and to have a higher debt-serving capacity. As expected, VC target firms are smaller and younger, and have lower leverage than other firms. Taken together, this analysis of the determinants of GE targets complements what we see in descriptive comparisons against buyout and VC targets in Table 4. In the next section, we study how firm performance and capital structure changes after firms receive GE investment.

3. The Impact of Growth Equity Investment on Target Firm Growth

3.1. Methodology

Following other recent studies of the impact of private capital ownership on firm behavior (Boucly et al., 2011; Bernstein et al., 2019; Cohn et al., 2021), we use a difference-in-differences (DiD) analysis for our formal empirical analysis. In doing so, we construct a matched sample of GE- backed and non-GE-backed firms which are similar based on their observable characteristics at the time of the transaction. Specifically, following Boucly et al. (2011) and Bernstein et al. (2019), we match firms in such a way that each control firm meets the following criteria: 1) it operates in the same two-digit SIC industry code as the treated GE-backed firm; 2) it has total assets in the pre-transaction year within a 50% bandwidth of the treated firm; 3) it has a leverage ratio (defined as total debt divided by total assets) within a 50% bandwidth in the pre-transaction year; and 4) it has a return on assets within a 50% bandwidth in the pre-transaction year. However, given that we are specifically studying growth equity transactions, and not PE buyouts, we add in a fifth and final matching parameter of the pre-transaction growth in firm assets being within a 50% bandwidth. We deem this to be necessary given that GE investors specifically target high growth firms; we find strong evidence of this in Table 6.

We match each GE-backed firm to up to five control firms. If a target firm matches to more than five control firms based on this matching, we select the closest five based on the quadratic distance computed based on the variables.[12] This matching technique allows us to match 306 GE-backed firms to a total of 789 control firms over the period 2004 to 2018.[13]

It is worth noting that, by construction, our matched GE firms are slightly older and larger in size than the average GE investment, given that reporting requirements in the UK are considerably less for smaller and younger firms, so the likelihood of these target firms being matched is less relative to targets which report a greater depth of financial information. Indeed, when we compare the matched GE sample in Panel A of Table 7 with summary statistics of all GE target firms (e.g, matched and unmatched) in Table 3, we can see that the mean age and size is greater for our matched sample versus our whole GE sample. For example, the mean age is 15 versus 11 years, while the average total assets at investment are £41m versus £29m, and number of employees is 214 versus 201. They also have higher pre-transaction leverage compared to the average GE investment (38% versus 22%) and are more profitable by way of their return on assets (2% versus -11%). Consequently, due to a lack of financial information for the smallest and youngest target firms, our matched GE-control sample used in our empirical analysis are more comparable to the buyout spectrum than the VC spectrum.

Panel A of Table 6 shows summary statistics of observable firm-level characteristics for the matched GE-control firms in the pre-transaction year. The table shows that the two groups of

[12] We make several adjustments to our matching technique in the robustness section.

[13] If we follow the exact matching methodology of Bernstein et al. (2019), we obtain a larger sample of 423 GE- backed firms and 1,269 control firms, but our findings remain intact. These results are reported in the appendix. However, when matching in this way, pre-transaction growth rates of firm assets, sales and employment are statistically significantly higher in the treated GE-backed sample relative to the control firms in that period. This could violate the parallel trends assumption required for plausible DiD estimates and could imply that any findings are being driven by nonparallel trends in the pre-transaction period.

firms are, in fact, generally similar in nature. The two sets of firms operate in the same industries, are of a similar age and size, and show no statistical differences across their profitability, leverage, cash holdings, and productivity in the pre-transaction year. In sum, the two sets of GE and control firms show similar observable characteristics across their profit/loss accounts and their balance sheets.

****** Insert Table 6 about here ******

Given that we use a difference-in-differences approach in our empirical analysis, and that the parallel trends assumption underpins this strategy, we then examine pre-transaction growth rates of firm-level observables. Panel B of Table 6 shows the pre-transaction growth rates of variables across both sets of firms. Pre-transaction growth in assets, sales, leverage, distress risk, profitability, productivity, cash holdings and working capital are very similar across both groups of firms and mean and median pre-transaction growth rate differences between the two sets of firms are not significantly different from zero across most variables.

Before estimating our difference-in-differences models, in Panels A to D of Figure 2 we first provide visual representations of the evolution of firm-level growth before and after GE transactions for the matched sample of GE-backed and control firms. This is important given that our empirical analysis follows a DiD approach, which relies on the parallel trends' assumption.

****** Insert Figure 2 about here ******

In particular, the graphs show the αt of the following equation:

$$y_{it} = \alpha_t + \alpha_i + \varepsilon_{it} \quad (1)$$

where y_{it} is firm sales, assets, employment and earnings for firm *i* at time *t*. αt denotes year fixed effects and αi captures firm fixed effects. We use the year before the transaction as the base period, and we normalize its corresponding coefficient to zero. We estimate the equation separately for

both the GE-backed and matched control samples, with standard errors clustered at the firm level.

We see similar patterns across panels A to D of Figure 2. Both the treated and control groups of firms follow similar paths in the years prior to the transaction occurring. Thereafter, we observe a divergence, wherein GE-backed firms' growth in sales, assets, employment and earnings appears to be considerably stronger relative to the control group of firms. Not only do these graphs suggest satisfaction of the parallel trends assumption for the pre-transaction period, which validates our empirical approach, but they imply that GE-backed firms may outperform in terms of their growth in the post-transaction period, relative to control firms.

In our baseline difference-in-differences empirical analysis, we run the following regression model:

$$y_{it} = \alpha_t + \alpha_i + \beta_1(GE_i * Post_{it}) + \beta_2 Post_{it} + \varepsilon_{it} \quad (2)$$

GE_i is a dummy variable that equals one for GE-backed companies (treatment group), and zero for the control group. $Post_{it}$ is a dummy variable that equals one after the transaction, and zero before. For control firms, $Post_{it}$ equals one when the matched target firm corresponding to the control has received GE investment, and zero before. Following the PE literature (see for example, Cohn et al. (2021), we include four years either side of the transaction occurring.[14] Moreover, the median holding period in our sample is four years. The model also includes year fixed effects, α_t, and firm fixed effects α_i. We cluster standard errors at the firm level.

While the estimates of the above model will capture the average change in firm growth from before to after the transaction occurring, they do not indicate the timing of these changes (Bernstein et al., 2019, Cohn et al., 2021). We therefore study the timing of the change in growth

[14] In unreported tests, we also use windows of two and six years. These results, which are available upon request, are very similar to those using a four-year window.

after the transaction by estimating the following model:

$$y_{it} = \alpha_t + \alpha_i + \Sigma_{\beta k}(YearRelDeal_{it}) + \Sigma_{\gamma k}(GE_i * YearRelDeal_{it}) + \varepsilon_{it} \quad (3)$$

where, K = −4,−3,−2, 1, 2, 3, 4 and represents the number of years an observation occurs relative to the year of the deal occurring. The coefficient on γk captures the difference between firm growth in year K relative to the transaction year and growth in the pre-transaction year. If our model is indeed accurately capturing the impact of GE investment on post-transaction growth, and not differential trends in the two sets of firms, then we would expect significant and positive coefficients on γk to appear only in the post-transaction period.

3.2. Results

Our baseline results from estimating equation 2 are presented in panel A of Table 7. We focus on the sign and significance of the interaction term $GE_i * Post_{it}$, which measures whether growth equity-backed firms are more likely to have a higher growth in the post-investment period relative to the pre-investment period, and relative to matched control firms. Across all measures of growth and performance, we find that GE-backed firms outperform control firms. The positive effect of growth equity investment on target firms is not only highly statistically significant, but large in terms of economic magnitude. For example, in column 1, the point estimate on the interaction term $GE_i * Post_{it}$ indicate an average increase in sales of over 20 percentage points in the post-investment period relative to the pre-investment period, compared to control firms. In columns 2 to 4, we observe similar results for firm assets, employment, and earnings. In particular, GE-backed firms assets increase by around 25 percentage points relative to controls, while employment and earnings increase by approximately 20 and 15 percentage points respectively.

****** Insert Table 7 about here ******

Overall, these estimates suggest that GE investment has a large, positive impact on target

firm growth. While the empirical literature to date has documented the positive effects of VC and PE investment on firm growth and performance (Bertoni et al., 2011; Chemmanur et al., 2011; Boucly et al., 2011; Fracassi et al., 2022), the growth equity segment of the market, which lies between VC and PE investment and accounts for a sizeable portion of private capital financing, has not yet been examined. Our findings suggest that GE investment, like its VC and PE counterparts, leads to positive firm growth relative to matched industry peers which do not receive investment.[15]

While the estimates in panel A of Table 7 show the average change in firm growth from before to after the growth equity investment occurring, they do not indicate the timing of these changes. Panel B of Table 7 presents the estimates from equation 3 which indicate the evolution of target firm growth relative to controls each year around the transaction.[16] The estimates are consistent with what we observe in panels A to D of Figure 2. Specifically, there are no significant differences between treated (GE-backed) and control firms in the pre-transaction years. The interaction terms for the post-transaction period, $YearRelDealK * GE_i$, suggest that firm growth in GE-backed firms increases compared to the control firms in the post-transaction period. This mirrors what we see in Figure 2.

3.3. Robustness

We perform several robustness checks of our findings in this section. To save space, these

[15] It is worth noting that we do not find evidence of GE targets outperforming in terms of their productivity in the post-transaction period. Specifically, we note no statistical significance on estimates of firm total factor productivity or labor productivity. Therefore, while we find that GE targets appear to grow faster than their matched counterparts, we do not find any evidence that they become significantly more (or less) productive compared to control firms. Along similar lines, we do not find any evidence that profitability ratios of GE targets improve relative to their matched counterparts. On the contrary, profitability ratios appear to decline relative to matched peers. These results are presented in Table A9 in the appendix.

[16] To save space, we only report the coefficients on *GE*YearRelDeal*.n

results are presented in the appendix. First, we include a vector of firm-level control variables in our model to control for any differences in observables in the pre-transaction period between treated and control firms. These firm controls include firm age, firm size, profitability, leverage, cash holdings, and firm growth. Following Boucly et al. (2011) and Bernstein et al. (2019), these controls are taken in the pre-transaction year and then interacted with the Post dummy variable.

For robustness, we also make adjustments to our matching algorithm. We first narrow the matching bracket for firm size, profitability, leverage, and growth from 50% to 30%. Naturally, this reduces our sample and we obtain a sample of 127 GE-backed firms and 232 control firms. Nevertheless, our results remain intact. Next, we follow the exact matching algorithm of that used by Bernstein et al. (2019). That is, we match on firm industry, and on firm assets, profitability and leverage within a 30% bracket in the pre-transaction year. This yields a sample of 423 GE-backed firms and 1,269 control firms. We continue to include a vector of firm-level controls, including the pre-transaction growth rate, and the results remain strongly statistically significant. We also loosen our matching algorithm to obtain a larger sample of firms. Specifically, we match on firm industry, and on total assets and growth in assets being within a 30% bracket in the pre-transaction year. Firm profitability and leverage are dropped from the matching criteria. This results in a much larger sample of 950 GE-backed firms and 4,151 control firms. Continuing to include firm-level controls, our main findings are unaffected.

We also rematch using three-digit SIC codes, rather than two-digit codes, given that two-digit SIC codes could be interpreted as being too broad. We therefore rematch our sample using three-digit SIC codes and rerun our main models. While our sample is naturally reduced in size given the more stringent matching criteria, importantly, our main findings are upheld.

Lastly, we control for add-on acquisitions made by the target firm during the GE holding

period. As mentioned earlier, so called 'buy-and-build' deals have become increasingly popular with PE/VC investors (Hammer et al., 2017; Bansraj et al., 2020; Hammer et al., 2022). In such transactions, there may be a mechanical increase in the target's sales and employment purely from acquiring other firms (Morris and Phalippou, 2020). This contrasts to deals where the underlying growth of the target firm is organic. To check our results are not being driven purely by acquisitive growth, we remove all deals where the GE target makes any acquisitions during the GE holding period and rerun our baseline models. We continue to find that GE target firms outperform closely matched industry peers.

4. The Impact of Growth Equity Investment on Access to Credit and Firm Indebtedness

We next study how firms' leverage, financial health, and distress risk are affected by GE transactions.[17] To do so, we use several variables. We calculate leverage as the ratio of total debt to total assets; debt issuance is the change in debt from one year to the next, scaled by total assets; interest coverage is the ratio of operating profit to interest expense, while the Z-score is taken from Altman (1968).[18] Table A1 of the appendix describes all variables used.

We also include a variable called "charge on assets". This comes from the FAME database and is a dummy variable equal to one where there is a charge placed against a firms' assets in a given year, and zero otherwise. We can observe in FAME when there is a charge placed on the assets of a company, which is indicative of some form of lending. The data contains the names of the bank(s) (chargeholders) that have secured loans (charges) against each firm at a given point in time. According to Companies House, a charge is defined as the security, such as land, property

[17] Naturally, the PE buyout literature has found target firm leverage increases post-buyout, given the associated debt injection which forms part of the buyout transaction (Haque, 2020; Brown, 2021).

[18] We substitute the market value of equity for the book value of equity.

or financial instruments a company provides as collateral for a loan. We observe the lender, and whether the charge has been settled, but not the loan amount or the interest rate paid on the loan. While technically the charge is the collateral for the loan, prior studies have used the term as a synonym for the loan itself and hence an indicator for the presence of a lending relationship or firm borrowing (see as examples Franklin et al., 2015 and Wilson et al., 2019).

To glimpse how firm leverage and distress risk change around the transaction period relative to matched control firms, we first rerun equation 1 on firm leverage, the ratio of debt-to-EBITDA, and firm bankruptcy risk. Panels A to C of Figure 3 graph the results. The figures paint a fairly bleak picture of the evolution of firm financial health after GE transactions. In each case, the GE targets and matched control firms are very similar in the pre-transaction period and follow similar pre-transaction trends. In the post- transaction period, there is an abrupt divergence: in Panel A, GE-backed firm leverage increases sharply, while that of control firms declines slightly. Likewise, in Panels B and C, the ratio of debt- to-EBITDA for target firms increases considerably, and the Z-score of targets plummets, both indicating an increased risk of bankruptcy.

****** Insert Figure 3 about here ******

We next run the models in equations 2 and 3 on firms' borrowing, leverage and distress risk variables. The results in panel A of Table 8 strongly imply that GE target firms have considerably enhanced access to credit relative to matched industry peers in the post-transaction period. The results suggest that GE targets' access to and use of debt financing rises considerably after GE transactions. The coefficient on the charge variable is positive and strongly statistically significant. Similarly, debt issuance rises by over 4 percentage points compared to control firms and target firms likewise show far greater increases in leverage and distress risk. That is, the ratio of debt to assets increases by around 8 percentage points compared to controls, while the ratio of

debt to EBITDA rises by around 35 percentage points. Interest coverage, which proxies the firm's ability to make interest payments on debt, declines in the post-transaction period relative to matched control firms. The result is an increased distress risk: the coefficient on the Altman Z-score indicates that target firms' bankruptcy risk increases by around 15 percentage points in the post-transaction period relative to the pre-transaction period, compared to matched controls. All these findings remain robust to the inclusion of firm-level control variables, and to alternate matching algorithms, as described in section 4.3.

****** Insert Table 8 about here ******

Panel B of Table 8 shows the estimates from equation 3. Across the variables, estimates suggest there are no statistically significant differences between the treated and control firms' access to credit, leverage, indebtedness, and financial health in the pre-transaction period, whereas the two sets of firms differ significantly in the post-transaction period, mimicking what we see in Figure 3. There are no discernible patterns prior to the GE transaction occurring, but the impact on access to credit, leverage and indebtedness, and distress risk occurs post-transaction.

5. Comparing GE Firm Performance to VC and Buyout Target Companies

Having investigated the post-transaction performance of GE target firms, we then study VC and buyout targets in a similar manner in order to compare the outperformance versus matched industry peers across the different types of financing on the PE spectrum. While it is true that our sample of matched GE target firms is more comparable to buyout targets than VC targets given the nature of accounting reporting disclosure in the UK (see panel A of Table 6, and Table 4), we nevertheless compare to both buyout and VC firms.

To do so, we gather data on UK VC and buyout transactions in a similar manner as described in sections 1.1 and 1.2, and construct matched treated-control samples of VC/PE and

control firms. We follow a similar matching procedure as we use when matching GE targets to control firms. However, given that GE targets differ considerably from VC and PE buyout targets across various dimensions, we adjust the matching parameters we use. Following VC literature (Lerner, 1999; Manigart et al., 2002), we match VC target firms such that each control firm meets the following criteria: 1) it operates in the same two-digit SIC industry code as the treated VC-backed firm; 2) it has total assets in the transaction year within a 50% bandwidth of the treated firm; 3) its age is within a 50% bandwidth in the transaction year. This yields a sample of 3,244 VC-backed firms and 11,989 control firms. Note that we do not include return on assets as a matching factor, as this would require all matches to have observable income statement items, which would reduce our sample and number of observations by over 50%. Nevertheless, this, alongside other adjustments to the matching, are carried out as part of robustness checks detailed later. Moreover, when studying VC performance, we match on the observables in the transaction year, and not the pre-transaction year as we do for GE and PE buyout targets. This is due to VC targets being considerably younger and some targets lacking any pre-transaction information, hence looking to maximize the number of treated-control matches we are able to make. In robustness checks, we re-match the sample on pre-transaction year observables, and while the sample size is reduced, our main findings are unaffected.

When matching PE buyout firms to controls, we follow Bernstein et al., 2019 and Boucly et al., 2011 and match firms such that each control firm meets the following criteria: 1) it operates in the same two-digit SIC industry code as the treated PE-backed firm; 2) it has total assets in the pre-buyout year within a 50% bandwidth of the treated firm; 3) it has leverage (total debt divided by total assets) within a 50% bandwidth in the transaction year; and 4) it has a return on assets within a 50% bandwidth in the pre-buyout year. This yields a sample of 1,044 PE-backed firms

and 4,865 control firms. Table A10 in the appendix provides summary statistics on our matched VC and buyout samples. Naturally, VC firms have fewer observations for profit/loss account items due to reporting requirements of smaller firms.[19]

****** Insert Table 9 about here ******

Table 9 shows the DiD estimates for matched samples of GE (panel A), buyout (panel B), and VC (panel B) firms. Columns 1 to 4 capture variables related to firm growth and performance, while columns 5 to 10 capture firm leverage and distress risk.[20] The coefficients in columns 1 to 4 suggest that VC and buyout targets, like GE target firms, appear to significantly outperform matched industry peers. For example, in column 2 the coefficients suggest that PE (VC)-backed firms' assets grow by around 80% (95%) from pre- to post-transaction relative to matched control firms. The outperformance is considerably greater than that experienced by GE targets in panel A which is around 26%. The results in columns 1 and 3 are similar: VC and buyout firms significantly outperform matched controls in terms of their pre- to post-transaction growth in sales and employment.

In columns 5 to 10 we study firm leverage and distress risk. As we have seen with GE targets, post-transaction firm leverage rises in both buyout and VC firms compared to matched industry peers. However, the rise in firm leverage is found to be of a similar magnitude for VC and GE targets: the ratio of total debt to total assets rises by around 8% (6%) in GE (VC) targets

[19] As before when matching GE targets to controls, we conduct various robustness tests of our matching of VC and buyout samples. These tests, which are unreported but available upon request, include the tightening of the matching bandwidths used, and including further matching parameters, such as leverage, profitability, and growth, and matching VC targets on pre-transaction year observables instead of the transaction year itself.

[20] Naturally, there are fewer observations for the VC sample where profit/loss accounting items are concerned due to reporting requirements for smaller firms. However, note that if we reduce our sample to only firms who report the required variables in each year, our findings are similar.

relative to control firms. This is substantially less than in buyout firms, where the coefficient implies that the ratio of debt to assets rises by over 40%. We find similar results when we measure leverage as the ratio of debt to EBITDA, and when we study other variables such as access to credit and debt issuance. The post-transaction rise in leverage is stronger for buyout target firms than for GE and VC targets, when compared to matched control firms. Consistent with this, when we study distress risk in column 10, we find that while distress risk rises in all three groups of firms, it increases considerably more in buyout firms compared to their matched controls, than in GE and VC targets.

6. The Impact of Growth Equity Investment on the Likelihood of Insolvency

While the Altman z-score is often used as a bankruptcy predictor, we also use actual insolvency filings to study whether GE target firms have a higher likelihood of filing for bankruptcy after GE investment relative to other firms. We use data on all UK company insolvency filings at Companies House and formal notices in the London/Edinburgh *Gazettes* from 1998 to 2022. This includes company filings for administration, receivership, company voluntary arrangements (CVA), and liquidations. Administration involves handing over the control of the firm to an Insolvency Practitioner who will attempt to restructure a business, with the aim of either turning it into a profitable company or effecting a sale of the business to preserve some value and employment. A CVA sets out a plan for the repayment of the company's outstanding debts and occurs where creditors take action to recover their loans. It typically involves minimal court involvement and allows directors to retain control of the business. A company has the option to continue trading whilst under a CVA or cease trading; the decision depends on the company's situation and its creditors. In this case, the firm's managers negotiate with creditors to pay some or all outstanding debts over a specified period. The firm may recover from the insolvency and

continue to trade. Lastly, liquidation is the end stage of a company whereby the assets are sold and proceeds distributed to creditors.

To formally test whether GE target firms are more susceptible to filing for insolvency relative to matched control firms, we estimate the following DiD equation:

$$Prob(Insolvency_{it} > 0) = \alpha_t + \alpha_f + \beta_1(GE_i * Post_{it}) + \beta_2(Post_{it}) + \varepsilon_{it} \quad (5)$$

The dependent variable, $Insolvency_{it}$, is a dummy variable equaling one if a company files for insolvency in a given year, and zero otherwise. As before, GE_i is a dummy variable that equals one for PE-backed companies, and zero for the control group. $Post_{it}$ is a dummy variable that equals one for observations during the post-transaction period, and 0 before. We estimate both linear probability and probit models based on the above specification. As a robustness check in Table A11, we also use a Cox model of duration to control for any censoring of observations within the time window of the sample. We include both industry and year fixed effects, denoted by α_f and α_t. We also control for firm characteristics which may affect the likelihood of falling into distress and filing for insolvency, including firm size, age, profitability, leverage, cash holdings, and firm growth. These controls are taken in the pre- transaction year and are interacted with the $Post_{it}$ variable (Bernstein et al., 2019).

Table 10 presents the estimates of equation 5. The coefficient on the $GE_i * Post_{it}$ variable will indicate whether GE-backed firms have a higher or lower probability of entering insolvency in the post-transaction period, relative to matched controls. The coefficient is positive and strongly statistically significant in each model, implying that GE-backed firms have a higher probability of filing for insolvency in the post-transaction period relative to the pre-transaction period, and relative to matched control firms. Controlling for common indicators of bankruptcy risk such as firm size, age, profitability, leverage, and cash held on the balance sheet does not affect the

significance or magnitude of the results. The control variables suggest that smaller, younger, and less profitable firms which hold less cash are more likely to enter some form of insolvency, as expected.

****** Insert Table 10 about here ******

We then compare the relative insolvency risk of GE target firms versus their matched controls, to that of VC and buyout target firms, using the same matched samples as in section 5. The estimation models and control variables are the same as in Table 10. As a robustness check, we also use a Cox proportional hazard model in Table A11, and the results are consistent. Relative to matched controls, the estimates suggest that the probability of insolvency for buyout targets is not statistically significantly different from that of non-buyout firms. This finding holds when controlling for firm leverage, as well as other firm-level observables, and is consistent with earlier studies of buyouts and distress risk (Tykvova and Borell., 2012; Wilson and Wright., 2013). On the other hand, the coefficients for VC target firms relative to matched controls imply that VC portfolio companies have a far higher likelihood of filing for some form of insolvency compared to other, similar firms. The coefficients are considerably larger in magnitude than those of our GE models. That VC-backed companies are more prone to insolvency than matched industry peers, reflects earlier VC literature (Manigart et al., 2002).

****** Insert Table 11 about here ******

Finally, Table 12 shows the breakdown of insolvency types across GE-backed and control firms, as well as our samples of matched PE buyout and VC firms. Whilst GE-backed firms have a higher probability of filing for some form of insolvency, non-GE- backed firms more often file for liquidation (in over 50% of cases) whilst GE-backed firms only file for liquidation in 30% of cases. This suggests that GE investors are perhaps better able to negotiate with creditors and settle

out-of-court. There is evidence of this being the case for PE- backed firms in the US and in the UK (Hotchkiss et al., 2021; Lavery and Wilson, 2023). Our statistics for PE buyouts in panel B are consistent with this: only 8% of buyout insolvencies are liquidations, compared to almost 60% for matched non-PE-owned firms. When we study VC firms in panel C, we see a similar pattern: while VC-backed firms have a higher incidence of insolvency compared to matched non-VC-backed firms, they are less often liquidated, albeit the difference is of a lower magnitude compared to GE and buyout firms, and their respective controls.

****** Insert Table 12 about here ******

7. Conclusion

Growth equity has emerged as a newer form of private capital financing over the past two decades, reflecting the evolution of private markets to provide a wider range of forms of financing, and to cater to a wider distribution of types of firms. Nevertheless, unlike venture capital and buyout financing, it has remained under-researched in academic literature. This study is the first to provide a detailed examination of these transactions, to investigate their impact on investee firms, and to compare the findings to VC and buyout targets. We exploit the UK market to study GE investment, as it is the second largest private capital market globally, and as all UK limited companies file publicly available financial accounts, allowing us to study target firms from pre- to post-GE investment.

In a difference-in-differences setting, we document strong and robust evidence of considerable growth in GE target firms in the post-investment period. Relative to a matched sample of non-GE- backed firms, we observe strong outperformance in GE target firms in terms of their growth in sales, assets, employment, and earnings. We do, however, unveil a darker side of GE financing. This firm growth is coupled with increased access to credit, and a substantial rise in

firm leverage. Target firms' post-investment growth in leverage greatly exceeds that of matched control firms, as does their consequent risk of financial distress. Mitigating this somewhat, we also find that treated firms can navigate distress better than their matched peers and that they are liquidated less often. When we compare against VC and buyout firms, the outperformance of GE target firms versus matched controls is of a lower magnitude than that of buyout and VC targets, while the rise in leverage and distress risk is similar to VC firms, but lower than that of buyout firms. Incidence of insolvency is likewise comparable to that of VC-backed firms, relative to matched controls.

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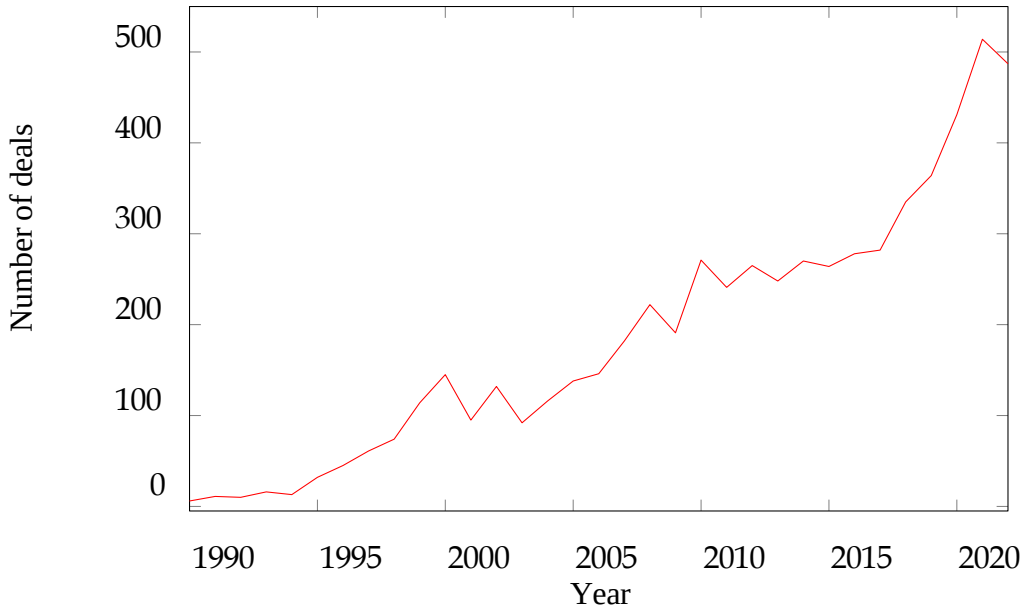
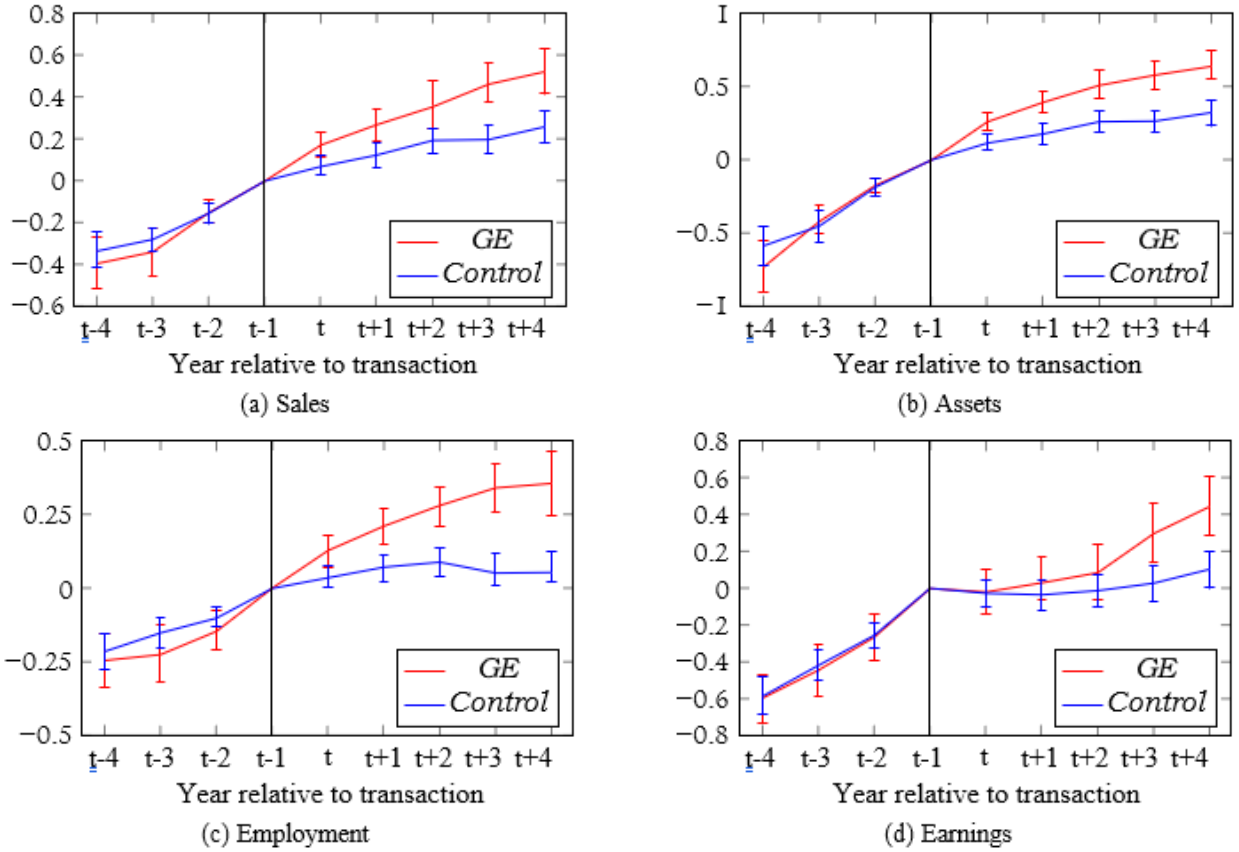
Figure 1: UK Growth Equity Transactions by Year



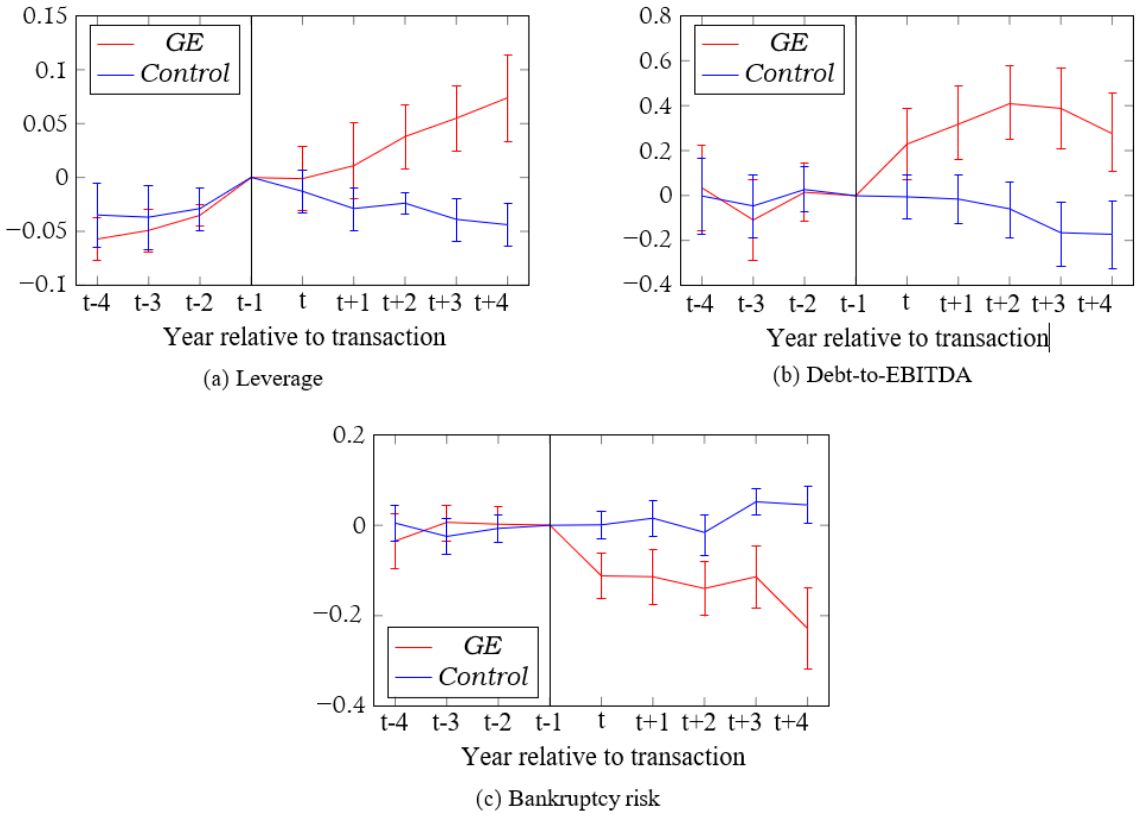
This figure shows the number of growth equity transactions involving UK-based target firms from 1990 to 2022. Data comes from S&P Capital IQ.

Figure 2: The effect of growth equity on firm growth



This figure shows the evolution of firm sales, assets, employment, and earnings for the sample of matched GE-backed and control firms from before to after the GE-backed sample undergoing the transaction. Specifically, the graphs shows the α_t of the following equation: $y_{it} = \alpha_t + \alpha_i + \varepsilon_{it}$. α_t captures year fixed effects, and α_i captures firm fixed effects. y_{it} is firm sales, total assets, employment, and earnings. The year prior to the transaction is the reference period and its corresponding coefficient is normalized to zero. Estimates are plotted with 95% confidence intervals above and below the point estimates. Standard errors are clustered at the firm-level.

Figure 3: The effect of growth equity on firm leverage and distress risk



This figure shows the evolution of leverage, as measured by total debt divided by total assets, the ratio of debt-to-EBITDA, and bankruptcy risk, as measured by Altman's z-score, for the sample of matched GE-backed and control firms from before to after the GE-backed sample undergoing the transaction. Specifically, the graphs shows the αt of the following equation: $y_{it} = \alpha_t + \alpha_i + \varepsilon_{it}$. α_t captures year fixed effects, and α_i captures firm fixed effects. y_{it} is firm leverage (total debt divided by total assets), the ratio of debt-to-EBITDA, and Altman's z-score. The year prior to the transaction is the reference period and its corresponding coefficient is normalized to zero. Estimates are plotted with 95% confidence intervals above and below the point estimates. Standard errors are clustered at the firm-level.

Table 1: Sample statistics

Panel A: Deal Year	Number	Percentage
2004	60	4.1
2005	62	4.0
2006	58	3.9
2007	80	5.3
2008	98	6.5
2009	57	3.8
2010	107	7.1
2011	92	6.1
2012	99	6.5
2013	116	7.7
2014	118	7.9
2015	143	9.4
2016	138	9.1
2017	146	9.6
2018	138	9.1
Panel B: Exits		
Trade sale	582	40.0
Sale to management	53	3.6
Sale to PE buyer	183	12.4
Insolvency	206	13.9
IPO	16	1.0
Not yet exited	434	29.4
Panel C; Deal size and holding period	Mean	Median
Deal size (£m)	9.0	3.0
Stake acquired (%)	35	30
Holding period (years)	5	4
Deal year	2013	2013
Exit year	2016	2016

This table provides sample statistics on the 1,512 growth equity transactions used in our empirical analysis.

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Table 2: Value-added activities

Panel A: Bolt-on acquisitions		
Bolt-on acquisition made	Yes 20.1%	No 79.9%
	Mean	Median
Number of bolt-on acquisitions made (all deals)	0.7	0.0
Number of bolt-on acquisitions made (deals with at least one bolt-on)	3.4	2.0
	Domestic only	International/both
Location of bolt-ons (deals with at least one bolt-on)	77.8%	22.2%
Panel B: Corporate governance		
CEO changed	Yes 23.2%	No 76.8%
Board chair introduced	Yes 39.2%	No 60.8%
Any new (non-investor) director hired	Yes 70.0%	No 30.0%
Investor board seats taken	Yes 70.7%	No 29.3%
	Mean	Median
Number of investor board seats taken (all deals)	1.0	1.0
Number of investor board seats taken (deals where at least one board seat is taken)	1.4	1.0

This table documents value-added activities of growth equity investors. Panel A describes acquisitive activity of GE target firms during the GE investment period, and panel B displays corporate governance changes.

Table 3: Pre-investment target firm characteristics

Variable	N	Mean	Median	25%	75%	SD
Operational characteristics						
Age	1,478	11	8	5	14	10.89
Total assets	1,409	28,712	2,996	827	8,923	330,512
Fixed assets	1,365	17,692	443	83	2,081	287,291
Number of employees	940	201	74	31	171	519
Sales	824	38,112	12,055	4,886	27,560	139,131
Export sales	249	17,191	2,505	600	10,980	68,038
Export/total sales	249	0.40	0.35	0.07	0.71	0.34
Wage per employee	629	41	38	26	51	21
Debt & leverage						
Total debt	1,511	11,156	4	0	1,252	206,185
Total equity	1,407	7,672	682	27	2,737	98,465
Total debt/total assets	1,403	0.22	0.05	0.00	0.26	0.47
Short term debt/total debt	775	0.67	0.86	0.34	1.00	0.37
Debt/EBITDA	752	1.06	0.22	0.00	1.99	8.52
Interest coverage	701	53.82	1.98	-5.72	23.83	180.63
Z-score	727	2.30	2.27	1.11	3.85	12.65
Working capital						
Cash/total assets	1,337	0.23	0.13	0.04	0.37	0.25
Debtors/total assets	765	0.25	0.22	0.08	0.37	0.19
Creditors/total liabilities	823	0.24	0.19	0.08	0.36	0.20
Net working capital	993	-2,870	683	-141	2,570	209,731
Working capital/sales	643	0.20	0.09	-0.04	0.28	0.98
Current ratio	1,392	2.10	1.29	0.85	2.12	2.66
Cash conversion cycle	386	40	30	-5	73	97.85
Debtor days	662	62	55	29	84	47.13
Inventory days	413	68	34	10	89	94.80
Creditor days	629	116	61	35	99	196.45
Profitability						
EBIT	851	1,580	348	-839	1,854	19,518
EBITDA	851	2,922	684	-487	2,561	27,011
Net income	850	633	189	-862	1,343	14,811
Return on assets	849	-0.11	0.02	-0.14	0.12	0.49
EBITDA Margin	812	-0.24	0.06	-0.07	0.14	1.17
Gross margin	750	0.41	0.39	0.24	0.57	0.26
Productivity						
Sales per employee	622	197	121	68	224	249
EBITDA per employee	484	29	15	7	31	44
Total factor productivity	376	5.06	5.12	4.71	5.50	0.73

This table provides summary statistics for the 1,512 GE target firms in the year prior to the growth equity transaction occurring. All variable definitions are provided in the appendix. Ratios are winsorized at the 2% level.

Table 4: Comparison of venture capital, growth equity, and private equity buyout target firms

Variable	VC N	VC Mean	VC Median	GE N	GE Mean	GE Median	PE N	PE Mean	PE Median	VC vs GE	VC vs PE	GE vs PE
Age	5,913	3	2	1,478	11	8	2,355	19	15	0.000	0.000	0.000
Total assets	5,018	8,093	670	1,409	28,712	2,996	2,164	114,095	16,881	0.022	0.000	0.000
Tangible assets/total assets	5,010	0.09	0.02	1,414	0.15	0.06	2,046	0.19	0.09	0.000	0.000	0.000
Total debt	5,985	3,151	0	1,511	11,156	4	2,403	29,526	1,305	0.039	0.000	0.006
Total debt/total assets	5,018	0.14	0.00	1,403	0.22	0.05	2,164	0.27	0.16	0.000	0.000	0.000
Charge on assets	5,973	0.00	0.20	1,487	0.00	0.36	2,403	0.74	1.00	0.000	0.000	0.000
Cash/total assets	5,018	0.46	0.49	1,337	0.23	0.13	2,149	0.14	0.08	0.000	0.000	0.000
Number of employees	1,989	45	13	940	201	74	1,878	578	165	0.000	0.000	0.000
Sales	1,005	15,928	1,051	824	38,112	12,055	1,855	68,195	25,908	0.006	0.000	0.000
EBITDA	1,322	-799	-479	851	2,922	684	1,921	6,863	2,525	0.000	0.000	0.000
EBITDA/sales	1,002	-0.87	-0.64	812	-0.24	0.06	1,851	0.08	0.11	0.000	0.000	0.000

This table shows descriptive statistics for target firms of venture capital investment, growth equity investment, and private equity buyouts in the UK from 2004 to 2018. Transaction data comes from S&P Capital IQ and accounting data comes from Companies House. Charge is a dummy variable equal to one if there is a charge placed against the firm's assets in that year, and zero otherwise. Columns 10 to 12 show the p-values for testing the equality of mean values between venture capital, growth equity, and PE buyout target firms.

Table 5: Determinants of growth equity targets

	Growth Equity		PE Buyouts		Venture Capital	
	(1)	(2)	(3)	(4)	(5)	(6)
Age	-0.037**	-0.042**	0.075***	0.024*	-0.521***	-0.254***
	(0.016)	(0.019)	(0.007)	(0.014)	(0.007)	(0.065)
Total assets	-0.002	-0.011*	0.072***	0.076***	-0.024***	-0.038*
	(0.004)	(0.007)	(0.004)	(0.006)	(0.002)	(0.029)
Asset intangibility	2.941***	1.732***	3.443***	2.154***	4.166***	2.224***
	(0.149)	(0.318)	(0.147)	(0.233)	(0.158)	(0.679)
Leverage	-0.016	-0.296***	0.033	-0.035	-0.476***	-0.650**
	(0.028)	(0.097)	(0.023)	(0.061)	(0.036)	(0.200)
Cash holdings	0.402***	0.101	0.457***	0.040	1.463***	0.488*
	(0.037)	(0.113)	(0.035)	(0.078)	(0.034)	(0.248)
Charge on assets	0.246***	0.195***	0.202***	0.139***	0.445***	0.586***
	(0.022)	(0.041)	(0.020)	(0.031)	(0.020)	(0.101)
ROA		0.081		0.451***		0.774*
		(0.183)		(0.140)		(0.396)
Altman z-score		-0.030		-0.006		-0.014
		(0.025)		(0.017)		(0.061)
Sales growth		0.136***		0.132***		0.153**
		(0.030)		(0.120)		(0.070)
Retained earnings		0.717**		0.298		-0.526
		(0.288)		(0.204)		(0.613)
Interest coverage		-0.016		0.032***		-0.022
		(0.011)		(0.007)		(0.025)
Debt issuance		0.130		-0.072		1.239**
		(0.143)		(0.103)		(0.765)
Equity issuance		-0.372*		-0.171		1.615**
		(0.207)		(0.164)		(0.716)
Investment rate		0.358***		0.185***		0.139
		(0.057)		(0.031)		(0.137)
Observations	2,713,162	369,399	3,298,691	487,780	2,414,236	379,412

This table examines the determinants of growth equity target firms. We use a probit model where the dependent variable is a dummy variable which equals one when a firm receives GE/PE buyout/VC investment in that year, and zero otherwise. Specifically, we run the following model: Prob($GE/PE/VC_{it} > 0$) = $\alpha_t + \alpha_f + \theta X_{it} + \varepsilon_{it}$. α_t captures year fixed effects, α_f captures industry fixed effects, and X_{it} denotes the explanatory variables in the model. Standard errors are clustered at the firm-level. Asset intangibility is the ratio of intangible assets to total assets, charge on assets is a dummy variable equal to one if a charge is placed against the firm's assets in a given year, and zero otherwise, and return on assets is net income divided by total assets. Altman z-score is the bankruptcy predictor following Altman (1968), and sales growth is the one-year growth in firm sales. Interest coverage is operating profit divided by interest expense, debt issuance is the overall change in debt, scaled by assets, equity issuance is the difference in total equity (shareholder value) over the past year, minus profit, scaled by assets, and lastly, investment rate is the change in fixed assets over the past year, plus depreciation, scaled by fixed assets. Ratios and growth rates are winsorized at the 2% level. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table 6: Pre-transaction descriptive statistics and growth rates for matched GE sample

	GE				Control				Difference	
Panel A. Pre-transaction descriptive statistics	N	Mean	Median	SD	N	Mean	Median	SD	Mean	Median
Age	306	15	12	12.90	788	17	13	16.31	-2*	-1
Total assets	306	41,309	9,363	379,417	789	32,414	7,700	286,579	8,895	1,663
Sales	297	33,072	13,915	107,283	720	24,635	11,084	71,890	8,437	2,831
Employees	279	214	102	429.99	658	170	75	391.02	44	27*
Earnings	306	2,426	1,372	4,402	779	1,697	1,061	3,302	729	311*
Return on assets	306	0.02	0.05	0.25	789	0.02	0.06	0.25	0.00	-0.01
Debt/assets	306	0.38	0.26	0.36	789	0.40	0.28	0.36	-0.02	-0.02
Debt/EBITDA	306	1.72	0.98	4.89	777	2.11	1.10	5.59	-0.39	-0.12
Interest coverage	274	45.30	7.71	67.01	591	48.42	9.27	75.55	-3.12*	-1.56
Debt issuance	306	0.09	0.03	0.24	789	0.08	0.03	0.26	0.01	0.00
Z-score	279	1.86	2.46	10.42	715	2.41	2.74	9.14	-0.55	-0.28
Cash/assets	296	0.14	0.07	0.17	711	0.16	0.08	0.20	-0.02	-0.01
Working capital/sales	280	0.10	0.07	0.76	720	0.10	0.09	0.98	0.00	-0.02
Total factor productivity	185	5.09	5.13	0.68	373	5.06	5.10	0.65	0.03	0.03
Panel B: Pre-transaction growth rates	N	Mean	Median	SD	N	Mean	Median	SD	Mean	Median
Total assets	306	0.23	0.17	0.36	789	0.25	0.19	0.36	-0.02	-0.02
Sales	270	0.20	0.13	0.33	653	0.17	0.12	0.31	0.03	0.01
Employees	256	0.11	0.08	0.15	611	0.09	0.06	0.18	0.02	0.02*
Earnings	281	0.23	0.14	1.11	730	0.17	0.12	1.17	0.06	0.02
Return on assets	281	-0.10	-0.07	1.28	745	-0.03	-0.06	1.49	-0.07	-0.01
Debt/assets	277	0.30	0.00	0.95	725	0.23	-0.02	0.87	0.07	0.02
Debt/EBITDA	269	0.28	-0.10	1.79	697	0.19	-0.13	1.58	0.09	0.03
Interest coverage	235	-0.03	0.00	1.54	505	0.05	0.00	1.81	-0.08**	0.00
Debt issuance	280	-0.93	-0.78	3.26	727	-0.64	-0.88	3.12	-0.29	0.10
Z-score	253	0.04	-0.01	0.49	645	0.02	-0.02	0.51	0.02	0.01
Cash/assets	295	1.12	-0.02	3.26	688	0.93	0.00	2.84	0.19	-0.02
Working capital/sales	254	0.07	0.01	1.04	653	0.05	0.02	0.92	0.02	-0.01
Total factor productivity	156	0.01	0.00	0.05	311	0.01	0.01	0.05	0.00	-0.01

This table reports pre-deal year statistics for GE-backed firms and control firms. GE refers to all GE-backed companies; Control refers to non-GE-backed firms, matched on their SIC code, assets, ROA (net income/assets), leverage (debt/assets), and asset growth within a 50% bracket in the pre-deal year. Return on assets is net income divided by assets and interest coverage is EBIT divided by interest expense. Debt issuance is the change in debt from one year to the next, scaled by assets. Z-score is Altman's z-score, with the market value of equity substituted for the book value of equity. TFP is estimated following the Levinsohn and Petrin (2003) methodology. Ratios and growth rates are winsorized at the 2% level. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table 7: The impact of growth equity investment on firm growth

	Sales	Total Assets	Employment	Earnings
	(1)	(2)	(3)	(4)
	Panel A: Baseline difference-in-differences			
GE*Post	0.209***	0.256***	0.211***	0.142**
	(0.051)	(0.062)	(0.045)	(0.066)
Post	-0.011	-0.001	0.004	-0.161***
	(0.028)	(0.037)	(0.025)	(0.039)
	Panel B: Year-by-year effects			
GE*YearRelDeal-4	0.107	-0.141	-0.033	-0.050
	(0.077)	(0.121)	(0.064)	(0.087)
GE*YearRelDeal-3	-0.102	0.033	-0.074	-0.030
	(0.062)	(0.078)	(0.050)	(0.087)
GE*YearRelDeal-2	0.002	0.014	-0.047	-0.011
	(0.039)	(0.042)	(0.038)	(0.073)
GE*YearRelDeal0	0.083*	0.106**	0.071*	0.008
	(0.049)	(0.040)	(0.038)	(0.072)
GE*YearRelDeal1	0.029**	0.216***	0.139***	0.066
	(0.052)	(0.055)	(0.037)	(0.090)
GE*YearRelDeal2	0.163***	0.247***	0.191***	0.100
	(0.067)	(0.057)	(0.043)	(0.094)
GE*YearRelDeal3	0.268**	0.313***	0.289***	0.272***
	(0.060)	(0.067)	(0.053)	(0.098)
GE*YearRelDeal4	0.266***	0.315***	0.301***	0.343***
	(0.069)	(0.076)	(0.068)	(0.101)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	7,417	8,630	7,040	6,487

We estimate all specifications using a difference-in-differences estimator. In panel A, we present the results from our baseline difference-in-differences model, equation 2. GE is a dummy variable equal to 1 for GE-backed firms and 0 for control firms. Post is a dummy variable equal to 1 for post-transaction years, and 0 otherwise. In panel B, we show the estimates from regression equation 3. YearRelDeal is the year relative to the transaction occurring. The year prior to the deal year is excluded. Standard errors are clustered at the firm-level. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table 8: The impact of growth equity investment on access to credit and firm indebtedness

	Leverage	Charge	Debt/EBITDA	Debt Issuance	Interest Coverage	Z-Score
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Baseline difference-in-differences						
GE*Post	0.085***	0.056***	0.368***	0.045***	-0.206**	-0.146***
	(0.018)	(0.020)	(0.110)	(0.012)	(0.107)	(0.048)
Post	-0.049***	-0.057***	0.023	-0.067***	-0.140**	-0.001
	(0.010)	(0.019)	(0.064)	(0.011)	(0.067)	(0.032)
Panel B: Year-by-year effects						
GE*YearRelDeal-4	-0.028	-0.005	0.136	-0.028	0.094	-0.040
	(0.024)	(0.039)	(0.151)	(0.024)	(0.159)	(0.061)
GE*YearRelDeal-3	-0.030	0.015	-0.083	0.020	0.193	0.032
	(0.021)	(0.024)	(0.144)	(0.021)	(0.134)	(0.052)
GE*YearRelDeal-2	-0.017	-0.003	-0.013	0.007	0.252	-0.001
	(0.015)	(0.023)	(0.100)	(0.022)	(0.103)	(0.044)
GE*YearRelDeal0	0.027	0.037	0.236*	0.034	0.016	-0.114**
	(0.020)	(0.023)	(0.111)	(0.024)	(0.098)	(0.048)
GE*YearRelDeal1	0.071***	0.062*	0.335**	0.061***	0.058	-0.130**
	(0.020)	(0.036)	(0.136)	(0.022)	(0.135)	(0.064)
GE*YearRelDeal2	0.072***	0.039*	0.471***	0.025**	-0.087	-0.121**
	(0.024)	(0.025)	(0.151)	(0.011)	(0.140)	(0.062)
GE*YearRelDeal3	0.071***	0.020	0.558***	0.010*	-0.134**	-0.167***
	(0.026)	(0.017)	(0.171)	(0.006)	(0.094)	(0.066)
GE*YearRelDeal4	0.101***	0.051**	0.478***	0.015	-0.057**	-0.174***
	(0.028)	(0.022)	(0.170)	(0.026)	(0.023)	(0.085)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,630	9,235	6,106	8,555	4,838	6,583

We estimate all specifications using a difference-in-differences estimator. In panel A, we present the results from our baseline difference-in-differences model, equation 2. GE is a dummy variable equal to 1 for GE-backed firms and 0 for control firms. Post is a dummy variable equal to 1 for post-transaction years, and 0 otherwise. In panel B, we show the estimates from regression equation 3. YearRelDeal is the year relative to the transaction occurring. The year prior to the deal year is excluded. Leverage is total firm debt divided by total assets. Charge is a dummy variable equal to one if there is a charge placed against the firm's assets in that year, and zero otherwise. Debt issuance is the change in total firm debt and is scaled by assets. Interest coverage is operating profit divided by interest expense. Z-score is Altman's z-score from Altman (1968). Standard errors are clustered at the firm-level. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table 9: Comparing performance versus matched controls with VC and PE buyouts

	Firm growth				Debt & leverage					
	Sales	Total assets	Employment	Earnings	Leverage	Charge	Debt/EBITDA	Debt Issuance	Interest Coverage	Z-Score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Growth Equity										
GE*Post	0.209***	0.256***	0.211***	0.142**	0.085***	0.056***	0.368***	0.045***	-0.206**	-0.146***
	(0.051)	(0.062)	(0.045)	(0.066)	(0.018)	(0.020)	(0.110)	(0.012)	(0.107)	(0.048)
Post	-0.011	-0.001	0.004	-0.161***	-0.049***	-0.057***	0.023	-0.067***	-0.140**	-0.001
	(0.028)	(0.037)	(0.025)	(0.039)	(0.010)	(0.019)	(0.064)	(0.011)	(0.067)	(0.032)
Observations	7,417	8,630	7,040	6,487	8,630	9,235	6,106	8,555	4,838	6,583
Panel B: PE Buyouts										
PE*Post	0.414***	0.814***	0.447***	0.291***	0.411***	0.100***	1.897***	0.135***	-3.080***	-0.970***
	(0.038)	(0.045)	(0.040)	(0.047)	(0.016)	(0.012)	(0.086)	(0.008)	(0.112)	(0.042)
Post	-0.088***	-0.138***	-0.012	-0.201***	-0.017***	-0.031***	0.218***	0.037***	-0.159***	-0.021
	(0.023)	(0.029)	(0.019)	(0.030)	(0.005)	(0.007)	(0.045)	(0.006)	(0.051)	(0.019)
Observations	26,496	31,733	25,170	24,129	31,733	33,991	22,855	31,090	17,290	24,476
Panel C: Venture Capital										
VC*Post	0.665***	0.963***	0.615***	0.086	0.064***	0.064***	0.491***	0.067***	-0.568***	-0.171***
	(0.087)	(0.062)	(0.040)	(0.120)	(0.007)	(0.004)	(0.209)	(0.005)	(0.203)	(0.069)
Post	-0.049**	0.274***	-0.134***	0.021	-0.018***	0.005	-0.111**	-0.026***	0.035	0.069***
	(0.022)	(0.028)	(0.016)	(0.029)	(0.003)	(0.003)	(0.053)	(0.003)	(0.058)	(0.021)
Observations	38,842	99,213	41,520	29,139	99,123	134,348	20,396	98,622	13,362	31,041
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

We estimate all specifications using a difference-in-differences estimator. GE (PE, VC) is a dummy variable equal to 1 for GE- (PE-, VC-) backed firms and 0 for control firms. In panel A, GE firms are matched following based on the following criteria: the same two-digit SIC code, total assets within a 50% bracket, return on assets within a 50% bracket, leverage within a 50% bracket, and growth in total assets within a 50% bracket in the pre-transaction year. In panel B, PE buyout firms are matched on the following criteria: the same two-digit SIC code, total assets within a 50% bracket, return on assets within a 50% bracket, and leverage within a 50% bracket. In panel C, VC firms are matched based on the following criteria: the same two-digit SIC code, total assets within a 50% bracket, and firm age within a 50% bracket. Post is a dummy variable equal to 1 for post-transaction years, and 0 otherwise. Leverage is total firm debt divided by total assets. Charge is a dummy variable equal to one if there is a charge placed against the firm's assets in that year, and zero otherwise. Debt issuance is the change in total firm debt, and is scaled by assets. Interest coverage is operating profit divided by interest expense. Z-score is Altman's z-score from Altman (1968). Standard errors are clustered at the firm-level. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table 10: The impact of growth equity investment on the likelihood of filing for insolvency

	Linear Probability	Linear Probability	Probit	Probit
	(1)	(2)	(3)	(4)
GE*Post	0.010**	0.009**	0.231**	0.194**
	(0.004)	(0.004)	(0.070)	(0.077)
Post	0.004*	0.069***	1.266***	3.244***
	(0.002)	(0.106)	(0.201)	(0.452)
Age*Post		-0.002***		-0.015**
		(0.001)		(0.006)
Size*Post		-0.006***		-0.153***
		(0.001)		(0.037)
ROA*Post		-0.049***		-2.806***
		(0.015)		(0.923)
Cash*Post		-0.026***		-1.293***
		(0.007)		(0.377)
Leverage*Post		0.005*		0.349**
		(0.002)		(0.156)
SalesGrowth*Post		-0.002		-0.094
		(0.004)		(0.131)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm controls	No	Yes	No	Yes
Observations	9,235	9,235	8,558	8,558

We estimate all specifications using a difference-in-differences estimator. GE is a dummy variable equal to 1 for GE- backed firms and 0 for control firms. Post is a dummy variable equal to 1 for post-transaction years, and 0 otherwise. The dependent variable is a dummy variable equal to one if the firm files for insolvency in that year, and zero otherwise. Firm controls include firm age, total assets, leverage (total debt divided by total assets), return on assets, cash holdings scaled by total assets, and sales growth. These controls are taken in the pre-transaction year and are interacted with the Post variable. Standard errors are clustered at the firm-level. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table 11: Comparing insolvency versus matched controls with VC and PE buyouts

	Linear Probability	Linear Probability	Probit	Probit
	(1)	(2)	(3)	(4)
Panel A: Growth Equity				
GE*Post	0.010**	0.009**	0.231**	0.194**
	(0.004)	(0.004)	(0.070)	(0.077)
Post	0.004*	0.069***	1.266***	3.244***
	(0.002)	(0.106)	(0.201)	(0.452)
Observations	9,235	9,235	8,558	8,558
Panel B: PE Buyouts				
PE*Post	0.003	0.003	0.104	0.115
	(0.002)	(0.002)	(0.083)	(0.082)
Post	0.009***	0.036***	1.569***	2.707***
	(0.001)	(0.007)	(0.188)	(0.330)
Observations	45,139	45,139	44,047	44,047
Panel C: Venture Capital				
VC*Post	0.014***	0.015***	0.557***	0.601**
	(0.001)	(0.001)	(0.037)	(0.038)
Post	-0.003***	-0.004***	1.644***	1.617***
	(0.001)	(0.001)	(0.169)	(0.170)
Observations	136,394	136,594	130,843	130,843
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm controls	No	Yes	No	Yes

We estimate all specifications using a difference-in-differences estimator. GE (PE, VC) is a dummy variable equal to 1 for GE- (PE-, VC-) backed firms and 0 for control firms. In panel A, GE firms are matched following based on the following criteria: the same two-digit SIC code, total assets within a 50% bracket, return on assets within a 50% bracket, leverage within a 50% bracket, and growth in total assets within a 50% bracket in the pre-transaction year. In panel B, PE buyout firms are matched on the following criteria: the same two-digit SIC code, total assets within a 50% bracket, return on assets within a 50% bracket, and leverage within a 50% bracket. In panel C, VC firms are matched based on the following criteria: the same two-digit SIC code, total assets within a 50% bracket, and firm age within a 50% bracket. Post is a dummy variable equal to 1 for post-transaction years, and 0 otherwise. The dependent variable is a dummy variable equal to one if the firm files for insolvency in that year, and zero otherwise. Firm controls include firm age, total assets, leverage (total debt divided by total assets), return on assets, cash holdings scaled by total assets, and sales growth. These controls are taken in the pre-transaction year and are interacted with the Post variable. Standard errors are clustered at the firm-level. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table 12: Insolvencies during the post-transaction period

Panel A: Growth Equity	GE	Control
Total insolvencies		
Total firms	306	789
Insolvencies during the post-transaction period	23	38
Insolvency %	7.5%	4.8%
Insolvency type		
Administration	57%	48%
Company Voluntary Arrangement	13%	0%
Liquidation	30%	53%
Panel B: PE Buyouts	PE	Control
Total insolvencies		
Total firms	1,044	4,865
Insolvencies during the post-transaction period	37	151
Insolvency %	4%	3%
Insolvency type		
Administration	84%	40%
Company Voluntary Arrangement	8%	1%
Liquidation	8%	59%
Panel C: Venture Capital	VC	Control
Total insolvencies		
Total firms	3,244	11,989
Insolvencies during the post-transaction period	324	368
Insolvency %	10%	3%
Insolvency type		
Administration	45%	31%
Company Voluntary Arrangement	4%	2%
Liquidation	51%	67%

The below table shows the number and types of insolvencies in our sample of GE-backed and matched non-GE-backed firms (panel A), as well as the samples of matched PE and non-PE-backed firms (panel B), and VC and non-VC-backed firms (panel C).

Appendix

Table A1: Variable definitions

Variable	Definition
Return on assets	Net income divided by total assets
EBITDA margin	EBITDA divided by sales
Gross margin	Gross profit divided by sales
Leverage	Total debt divided by total assets
Interest coverage	Operating profit divided by interest expense
Wage per employee	Total wage bill divided by the number of employees
Current ratio	Current assets divided by current liabilities
Debtor days	Trade debtors divided by turnover, multiplied by 365
Inventory days	Inventory divided by the cost of sales, multiplied by 365
Creditor days	Trade creditors divided by the cost of sales, multiplied by 365
Charge on assets	Dummy variable equal to one if a charge is placed against the firm's assets in a given year
Cash conversion cycle	Debtor days plus inventory days minus creditor days
Investment	The change in fixed assets over the past year, plus depreciation, scaled by fixed assets
Debt issuance.	The overall change in debt, scaled by assets
Equity issuance	The difference in total equity (shareholder value) over the past year, minus profit, scaled by assets
Total factor productivity	Following the Levinsohn & Petrin (2003) methodology
Sales per employee	Total sales divided by the number of employees
EBITDA per employee	EBITDA divided by the number of employees
Z-score Altman z-score	Bankruptcy predictor following Altman (1968). We substitute market value of equity for book value of equity

Table A2: Industry distribution of VC, GE and PE buyout target firms

	Venture Capital	Growth Equity	PE Buyout
Communication services	15.1	9.7	7.0
Consumer discretionary	10.0	14.3	22.3
Consumer staples	2.5	2.9	4.4
Energy	1.6	2.0	1.5
Financials	5.2	5.7	8.6
Health care	15.4	14.5	7.1
Industrials	9.3	16.4	23.9
Information technology	34.9	28.9	10.8
Materials	1.9	3.6	3.9
Real estate	1.1	0.8	5.1
Utilities	1.6	1.0	4.3

This table shows the industry distribution (%) of target firms of venture capital, growth equity and private equity Buyout transactions. Data comes from S&P Capital IQ.

Table A3: Robustness: Including firm-level controls

	Firm growth				Debt & leverage					
	Sales	Total assets	Employment	Earnings	Leverage	Charge	Debt/EBITDA	Debt issuance	Interest coverage	Z-score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
GE*Post	0.195***	0.216***	0.195***	0.146**	0.082***	0.056***	0.335***	0.047***	-0.176**	-0.119***
	(0.046)	(0.060)	(0.045)	(0.066)	(0.018)	(0.020)	(0.108)	(0.011)	(0.068)	(0.045)
Post	0.308*	0.172	-0.026	-0.034	0.099	-0.110*	-0.426	0.170***	0.002	0.175
	(0.194)	(0.377)	(0.178)	(0.290)	(0.071)	(0.062)	(0.389)	(0.051)	(0.385)	(0.196)
Age*Post	-0.005**	-0.008***	-0.004***	-0.002	-0.001	-0.001	0.001	0.001**	0.007*	0.001
	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.003)	(0.001)	(0.003)	(0.001)
Size*Post	-0.057***	-0.026	-0.004	-0.035	-0.006	0.003	0.074*	-0.013**	-0.034	-0.043**
	(0.021)	(0.041)	(0.002)	(0.032)	(0.007)	(0.006)	(0.040)	(0.005)	(0.039)	(0.020)
ROA*Post	0.113	1.370***	0.584***	0.100	-0.115	0.026	-0.275	-0.026	-0.214	-0.306
	(0.240)	(0.479)	(0.209)	(0.302)	(0.080)	(0.077)	(0.603)	(0.052)	(0.583)	(0.231)
Cash*Post	0.365***	0.310	0.022	0.237*	-0.071	0.119***	0.149	-0.052*	0.118	0.368***
	(0.126)	(0.313)	(0.111)	(0.125)	(0.048)	(0.035)	(0.288)	(0.030)	(0.340)	(0.131)
Leverage*Post	0.199**	0.090	0.020	0.366**	-0.133***	0.007	-0.736***	-0.256***	0.075	0.466***
	(0.090)	(0.135)	(0.077)	(0.147)	(0.034)	(0.026)	(0.205)	(0.054)	(0.215)	(0.261)
SalesGrowth*Post	0.594***	0.404***	0.340***	0.381***	-0.027	0.016	0.011	-0.064***	0.167	0.149
	(0.097)	(0.144)	(0.084)	(0.092)	(0.024)	(0.021)	(0.163)	(0.015)	(0.168)	(0.095)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,417	8,630	7,040	6,487	8,630	9,235	6,106	8,555	4,838	6,583

We estimate all specifications using a difference-in-differences estimator. GE is a dummy variable equal to 1 for GE-backed firms and 0 for control firms. Post is a dummy variable equal to 1 for post-transaction years, and 0 otherwise. Leverage is total firm debt divided by total assets. Charge is a dummy variable equal to one if there is a charge placed against the firm's assets in that year, and zero otherwise. Debt issuance is the change in total firm debt, and is scaled by assets. Interest coverage is operating profit divided by interest expense. Z-score is Altman's z-score from Altman (1968). Standard errors are clustered at the firm- level. We include firm-level controls which are taken in the pre-transaction year and are interacted with the *Post* variable. These controls are firm age, size (total assets), profitability (return on assets), cash holdings (cash scaled by total assets), leverage (total debt divided by total assets), and one year sales growth. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table A4: Robustness: Tighter matching bandwidths

	Firm growth				Debt & leverage					
	Sales	Total assets	Employment	Earnings	Leverage	Charge	Debt/EBITDA	Debt issuance	Interest coverage	Z-score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
GE*Post	0.116**	0.240***	0.159**	0.142*	0.099***	0.041***	0.247**	0.058***	-0.079	-0.200***
	(0.052)	(0.085)	(0.071)	(0.091)	(0.028)	(0.013)	(0.090)	(0.022)	(0.188)	(0.071)
Post	0.659*	-0.052	0.096	-0.606	0.216	0.055	1.355*	0.484***	-1.376*	-0.096
	(0.369)	(0.524)	(0.445)	(0.572)	(0.137)	(0.122)	(0.737)	(0.121)	(0.802)	(0.376)
Age*Post	-0.005**	-0.007***	-0.004**	-0.001	-0.003**	0.001	-0.003	0.002	0.023**	0.002
	(0.002)	(0.002)	(0.001)	(0.003)	(0.001)	(0.009)	(0.005)	(0.002)	(0.008)	(0.002)
Size*Post	-0.086**	-0.011	-0.012	0.017	-0.015	-0.005	-0.080	-0.045***	0.060	-0.003
	(0.039)	(0.053)	(0.047)	(0.058)	(0.013)	(0.011)	(0.071)	(0.012)	(0.077)	(0.039)
ROA*Post	0.279	2.397***	0.543*	0.104	-0.290**	0.058	-1.238	-0.047	0.503	-0.593*
	(0.408)	(0.572)	(0.315)	(0.552)	(0.135)	(0.149)	(0.971)	(0.108)	(1.037)	(0.361)
Cash*Post	0.126	-0.263	-0.254	0.374	-0.053	0.157**	-0.092	-0.085	0.670	0.281
	(0.210)	(0.297)	(0.245)	(0.358)	(0.098)	(0.074)	(0.635)	(0.076)	(0.786)	(0.207)
Leverage*Post	0.058	0.110	-0.031	0.391	-0.175***	-0.021	-0.791**	-0.298***	0.355	0.268
	(0.131)	(0.183)	(0.235)	(0.282)	(0.051)	(0.044)	(0.344)	(0.049)	(0.455)	(0.227)
SalesGrowth*Post	0.582***	0.265*	0.324***	0.419***	-0.008	0.004	-0.312*	-0.063**	-0.024	0.081
	(0.131)	(0.141)	(0.096)	(0.125)	(0.037)	(0.033)	(0.185)	(0.028)	(0.181)	(0.092)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,448	2,826	2,316	2,086	2,826	3,020	1,989	2,798	1,579	2,084

We estimate all specifications using a difference-in-differences estimator. GE is a dummy variable equal to 1 for GE-backed firms and 0 for control firms. Firms are matched following based on the following criteria: same two-digit SIC, total assets within a 30% bracket, return on assets within a 30% bracket, leverage within a 30% bracket, and growth in total assets within a 30% bracket in the pre-transaction year. This yields a sample of 127 treated GE-backed firms, and 232 matched control firms. Post is a dummy variable equal to 1 for post-transaction years, and 0 otherwise. Leverage is total firm debt divided by total assets. Charge is a dummy variable equal to one if there is a charge placed against the firm's assets in that year, and zero otherwise. Debt issuance is the change in total firm debt, and is scaled by assets. Interest coverage is operating profit divided by interest expense. Z-score is Altman's z-score from Altman (1968). Standard errors are clustered at the firm-level. We include firm-level controls which are taken in the pre-transaction year and are interacted with the *Post* variable. These controls are firm age, size (total assets), profitability (return on assets), cash holdings (cash scaled by total assets), leverage (total debt divided by total assets), and one year sales growth. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table A5: Robustness: Matching following Bernstein et al., (2019)

	Firm growth				Debt & leverage					
	Sales	Total assets	Employment	Earnings	Leverage	Charge	Debt/EBITDA	Debt issuance	Interest coverage	Z-score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
GE*Post	0.282***	0.273***	0.292***	0.222***	0.070***	0.071***	0.292***	0.030***	-0.115*	-0.151***
	(0.043)	(0.050)	(0.037)	(0.058)	(0.016)	(0.018)	(0.093)	(0.009)	(0.064)	(0.039)
Post	0.369**	0.513**	0.056	0.383*	0.139**	-0.065	0.037	0.075	0.469	0.146
	(0.174)	(0.213)	(0.143)	(0.198)	(0.059)	(0.051)	(0.324)	(0.046)	(0.319)	(0.138)
Age*Post	-0.004***	-0.009***	-0.003***	-0.001	-0.002**	0.001	-0.003	0.002***	0.005*	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.003)	(0.002)
Size*Post	-0.062***	-0.053**	-0.009	-0.066***	-0.010	0.001	0.016	-0.003	-0.084**	-0.022
	(0.018)	(0.021)	(0.015)	(0.021)	(0.006)	(0.004)	(0.033)	(0.005)	(0.032)	(0.014)
ROA*Post	-0.060	0.810***	0.270*	-0.305	-0.116*	0.139**	0.915**	0.032	-0.035	-0.342**
	(0.162)	(0.239)	(0.156)	(0.195)	(0.062)	(0.060)	(0.413)	(0.038)	(0.416)	(0.143)
Cash*Post	0.220*	0.133	0.098	0.276*	-0.045	0.082**	-0.605*	-0.033	0.074	-0.007
	(0.119)	(0.512)	(0.095)	(0.141)	(0.044)	(0.031)	(0.360)	(0.028)	(0.339)	(0.097)
Leverage*Post	0.145*	-0.096	-0.076	0.159	-0.123***	0.003	-0.636***	-0.252***	0.523**	0.187**
	(0.093)	(0.103)	(0.056)	(0.117)	(0.027)	(0.021)	(0.164)	(0.019)	(0.273)	(0.085)
SalesGrowth*Post	0.613***	0.232***	0.246***	0.381***	-0.033*	-0.010	-0.053	-0.076***	-0.099	0.143**
	(0.067)	(0.062)	(0.058)	(0.084)	(0.019)	(0.016)	(0.097)	(0.014)	(0.122)	(0.056)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,483	13,212	10,691	9,863	13,212	14,279	9,386	13,116	7,417	10,131

We estimate all specifications using a difference-in-differences estimator. GE is a dummy variable equal to 1 for GE-backed firms and 0 for control firms. Firms are matched following the matching used in Bernstein et al. (2019): same two-digit SIC, total assets within a 30% bracket, return on assets within a 30% bracket, and leverage within a 30% bracket in the pre-transaction year. This yields a sample of 423 treated GE-backed firms, and 1,269 matched control firms. Post is a dummy variable equal to 1 for post-transaction years, and 0 otherwise. Leverage is total firm debt divided by total assets. Charge is a dummy variable equal to one if there is a charge placed against the firm's assets in that year, and zero otherwise. Debt issuance is the change in total firm debt, and is scaled by assets. Interest coverage is operating profit divided by interest expense. Z-score is Altman's z-score from Altman (1968). Standard errors are clustered at the firm-level. We include firm-level controls which are taken in the pre-transaction year and are interacted with the *Post* variable. These controls are firm age, size (total assets), profitability (return on assets), cash holdings (cash scaled by total assets), leverage (total debt divided by total assets), and one year sales growth. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table A6: Robustness: Looser matching

		Firm growth			Debt & leverage					
	Sales	Total assets	Employment	Earnings	Leverage	Charge	Debt/EBITDA	Debt issuance	Interest coverage	Z-score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
GE*Post	0.301***	0.399***	0.300***	0.153***	0.081***	0.072***	0.337***	0.036***	-0.182**	-0.202***
	(0.033)	(0.038)	(0.028)	(0.048)	(0.009)	(0.011)	(0.083)	(0.005)	(0.083)	(0.035)
Post	0.349***	0.899***	0.315***	0.709***	0.037*	-0.001	-0.441*	0.066***	0.386	0.022
	(0.111)	(0.143)	(0.114)	(0.159)	(0.021)	(0.022)	(0.247)	(0.014)	(0.272)	(0.104)
Age*Post	-0.005***	-0.011***	-0.003***	-0.004***	-0.002***	-0.001	-0.003	0.001	0.003	-0.001
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Size*Post	-0.048***	-0.093**	-0.038***	-0.083***	0.001	-0.003	-0.075***	-0.004**	-0.058**	-0.008
	(0.011)	(0.017)	(0.013)	(0.016)	(0.002)	(0.002)	(0.025)	(0.002)	(0.027)	(0.011)
ROA*Post	-0.320***	-0.078	0.086	-0.545***	-0.146**	-0.004	0.339	0.049**	-0.240	-0.008
	(0.111)	(0.135)	(0.127)	(0.145)	(0.047)	(0.020)	(0.266)	(0.017)	(0.299)	(0.098)
Cash*Post	0.015	0.073	0.031	0.070	-0.039**	0.056***	-0.263	-0.033*	-0.127	-0.025
	(0.075)	(0.085)	(0.056)	(0.099)	(0.016)	(0.013)	(0.208)	(0.018)	(0.205)	(0.067)
Leverage*Post	0.097*	-0.115*	-0.055	0.184**	-0.120***	-0.044***	-0.662***	-0.230***	0.183	0.239***
	(0.051)	(0.059)	(0.040)	(0.080)	(0.016)	(0.011)	(0.110)	(0.011)	(0.187)	(0.056)
SalesGrowth*Post	0.648***	0.343***	0.281***	0.448***	-0.019*	-0.003	-0.087	-0.034***	0.117	0.097**
	(0.047)	(0.065)	(0.039)	(0.058)	(0.010)	(0.008)	(0.076)	(0.006)	(0.084)	(0.042)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	27,988	40,552	27,254	23,847	40,552	43,140	19,649	40,255	14,841	25,208

We estimate all specifications using a difference-in-differences estimator. GE is a dummy variable equal to 1 for GE-backed firms and 0 for control firms. Firms are matched following based on the following criteria: same two-digit SIC, total assets within a 30% bracket, and growth in total assets within a 30% bracket in the pre-transaction year. We drop leverage and return on assets from the matching algorithm. This yields a sample of 950 treated GE-backed firms, and 4,151 matched control firms. Post is a dummy variable equal to 1 for post-transaction years, and 0 otherwise. Leverage is total firm debt divided by total assets. Charge is a dummy variable equal to one if there is a charge placed against the firm's assets in that year, and zero otherwise. Debt issuance is the change in total firm debt and is scaled by assets. Interest coverage is operating profit divided by interest expense. Z-score is Altman's z-score from Altman (1968). Standard errors are clustered at the firm-level. We include firm-level controls which are taken in the pre-transaction year and are interacted with the *Post* variable. These controls are firm age, size (total assets), profitability (return on assets), cash holdings (cash scaled by total assets), leverage (total debt divided by total assets), and one year sales growth. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table A7: Robustness: Matching on three-digit SIC codes

	Firm growth				Debt & leverage					
	Sales	Total assets	Employment	Earnings	Leverage	Charge	Debt/EBITDA	Debt issuance	Interest coverage	Z-score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
GE*Post	0.253***	0.344***	0.291***	0.096**	0.074***	0.051**	0.431***	0.045***	-0.371**	-0.196***
	(0.067)	(0.076)	(0.061)	(0.043)	(0.023)	(0.025)	(0.134)	(0.015)	(0.152)	(0.064)
Post	0.714**	0.261	0.046	0.766*	0.169*	-0.124	-0.382	0.160**	0.109	0.348
	(0.321)	(0.411)	(0.236)	(0.423)	(0.094)	(0.079)	(0.513)	(0.070)	(0.533)	(0.295)
Age*Post	-0.007***	-0.007***	-0.004*	-0.003	-0.001	0.001	0.005	0.001	-0.001	-0.001
	(0.002)	(0.002)	(0.002)	(0.003)	(0.001)	(0.001)	(0.004)	(0.001)	(0.004)	(0.002)
Size*Post	-0.091***	-0.047	-0.018	-0.112**	-0.018*	0.002	0.026	-0.015**	-0.010	-0.046
	(0.033)	(0.046)	(0.027)	(0.048)	(0.010)	(0.008)	(0.056)	(0.007)	(0.054)	(0.031)
ROA*Post	0.137	2.397***	0.752***	0.458	-0.093	0.053	0.001	-0.049	0.554	-0.240
	(0.385)	(0.572)	(0.251)	(0.470)	(0.090)	(0.087)	(0.613)	(0.073)	(0.820)	(0.320)
Cash*Post	0.235	-0.226	-0.053	0.016	-0.042	0.083**	0.527	-0.027	-0.732	0.219
	(0.253)	(0.402)	(0.137)	(0.251)	(0.098067)	(0.042)	(0.390)	(0.048)	(0.508)	(0.205)
Leverage*Post	0.133	-0.080	-0.025	0.248	-0.104**	-0.019	-0.262	-0.245***	-0.004	0.414**
	(0.120)	(0.143)	(0.101)	(0.208)	(0.043)	(0.033)	(0.233)	(0.031)	(0.294)	(0.171)
SalesGrowth*Post	0.324**	0.231**	0.268***	0.282***	-0.035	0.012	-0.097	-0.077***	0.276	0.084
	(0.152)	(0.093)	(0.078)	(0.097)	(0.030)	(0.025)	(0.173)	(0.021)	(0.249)	(0.127)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,531	5,340	4,246	3,894	5,340	4,967	3,653	5,298	2,845	3,916

We estimate all specifications using a difference-in-differences estimator. GE is a dummy variable equal to 1 for GE-backed firms and 0 for control firms. Firms are matched following based on the following criteria: same three-digit SIC, total assets within a 50% bracket, return on assets within a 50% bracket, leverage within a 50% bracket, and growth in total assets within a 50% bracket in the pre-transaction year. This yields a sample of 211 treated GE-backed firms, and 455 matched control firms. Post is a dummy variable equal to 1 for post-transaction years, and 0 otherwise. Leverage is total firm debt divided by total assets. Charge is a dummy variable equal to one if there is a charge placed against the firm's assets in that year, and zero otherwise. Debt issuance is the change in total firm debt, and is scaled by assets. Interest coverage is operating profit divided by interest expense. Z-score is Altman's z-score from Altman (1968). Standard errors are clustered at the firm-level. We include firm-level controls which are taken in the pre-transaction year and are interacted with the *Post* variable. These controls are firm age, size (total assets), profitability (return on assets), cash holdings (cash scaled by total assets), leverage (total debt divided by total assets), and one year sales growth. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table A8: Robustness: Controlling for add-on acquisitions

	Firm growth				Debt & leverage					
	Sales	Total assets	Employment	Earnings	Leverage	Charge	Debt/EBITDA	Debt issuance	Interest coverage	Z-score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
GE*Post	0.114**	0.171**	0.122**	0.073*	0.073***	0.051**	0.348***	0.045***	-0.121*	-0.110**
	(0.036)	(0.082)	(0.052)	(0.044)	(0.023)	(0.024)	(0.133)	(0.014)	(0.070)	(0.032)
Post	0.019	0.021	0.021	0.048	0.034	-0.085	-0.514	0.195***	-0.033	0.235
	(0.036)	(0.052)	(0.020)	(0.313)	(0.083)	(0.069)	(0.419)	(0.063)	(0.406)	(0.227)
Age*Post	-0.007***	-0.011***	-0.005***	-0.005**	-0.001	-0.001	0.003	0.001	0.003	0.003*
	(0.002)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.004)	(0.001)	(0.004)	(0.001)
Size*Post	-0.060**	-0.031	-0.001	-0.036	-0.002	-0.002	0.062	-0.016**	-0.014	-0.050**
	(0.026)	(0.051)	(0.021)	(0.034)	(0.009)	(0.007)	(0.043)	(0.007)	(0.041)	(0.024)
ROA*Post	0.110	1.735**	0.543*	-0.121	-0.049	0.068	0.566	-0.061	-0.686	-0.406*
	(0.275)	(0.787)	(0.270)	(0.366)	(0.084)	(0.083)	(0.661)	(0.067)	(0.712)	(0.235)
Cash*Post	0.464**	0.634*	-0.032	0.379*	-0.085	0.148***	0.277	-0.029	-0.033	-0.025
	(0.265)	(0.382)	(0.149)	(0.127)	(0.066)	(0.043)	(0.384)	(0.040)	(0.449)	(0.067)
Leverage*Post	0.124	0.035	-0.006	0.312*	-0.115***	-0.015	-0.321*	-0.249***	0.064	0.407***
	(0.107)	(0.162)	(0.086)	(0.190)	(0.040)	(0.030)	(0.192)	(0.030)	(0.264)	(0.133)
SalesGrowth*Post	0.602***	0.481**	0.264**	0.382***	-0.032	0.015	0.056	-0.058***	0.199	0.054
	(0.124)	(0.284)	(0.115)	(0.124)	(0.031)	(0.027)	(0.205)	(0.020)	(0.225)	(0.099)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,938	5,784	4,654	4,213	5,784	6,226	3,959	5,756	3,100	4,325

We estimate all specifications using a difference-in-differences estimator. GE is a dummy variable equal to 1 for GE-backed firms and 0 for control firms. We drop all deals where the GE target firm makes any add-on acquisitions during the GE holding period. Post is a dummy variable equal to 1 for post-transaction years, and 0 otherwise. Leverage is total firm debt divided by total assets. Charge is a dummy variable equal to one if there is a charge placed against the firm's assets in that year, and zero otherwise. Debt issuance is the change in total firm debt, and is scaled by assets. Interest coverage is operating profit divided by interest expense. Z-score is Altman's z-score from Altman (1968). Standard errors are clustered at the firm-level. We include firm-level controls which are taken in the pre-transaction year and are interacted with the *Post* variable. These controls are firm age, size (total assets), profitability (return on assets), cash holdings (cash scaled by total assets), leverage (total debt divided by total assets), and one year sales growth. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table A9: Firm productivity and profitability

	TFP	Labor productivity	Return on assets	EBITDA margin	Gross margin
	(1)	(2)	(3)	(4)	(5)
GE*Post	-0.045	-0.004	-0.057 ***	-0.023*	-0.016*
	(0.042)	(0.037)	(0.015)	(0.013)	(0.009)
Post	-0.032	0.009	0.050***	0.007	-0.001
	(0.028)	(0.027)	(0.012)	(0.008)	(0.004)
GE*YearRelDeal-4	0.509	0.231	-0.122	-0.349	-0.109
	(0.390)	(0.158)	(0.082)	(0.246)	(0.104)
GE*YearRelDeal-3	0.401	0.109	-0.047	-0.234	-0.062
	(0.386)	(0.237)	(0.073)	(0.209)	(0.073)
GE*YearRelDeal-2	0.582	0.014	-0.047	-0.167	0.006
	(0.388)	(0.212)	(0.056)	(0.141)	(0.077)
GE*YearRelDeal0	0.439	0.154	-0.060**	-0.091**	-0.065
	(0.377)	(0.156)	(0.026)	(0.043)	(0.067)
GE*YearRelDeal1	0.364	-0.016	-0.021	-0.072*	-0.039
	(0.380)	(0.172)	(0.031)	(0.053)	(0.075)
GE*YearRelDeal2	-0.102	0.096	-0.140***	-0.106*	-0.107
	(0.713)	(0.183)	(0.059)	(0.057)	(0.070)
GE*YearRelDeal3	0.746*	0.120	-0.251***	-0.171**	-0.101
	(0.442)	(0.163)	(0.132)	(0.078)	(0.073)
GE*YearRelDeal4	0.573	0.209	-0.037*	-0.021	-0.038
	(0.453)	(0.174)	(0.019)	(0.051)	(0.071)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	4,184	6,596	8,026	7,407	6,361

We estimate all specifications using a difference-in-differences estimator. In panel A, we present the results from our baseline difference-in-differences model, equation 2. GE is a dummy variable equal to 1 for GE-backed firms and 0 for control firms. Post is a dummy variable equal to 1 for post-transaction years, and 0 otherwise. In panel B, we show the estimates from regression equation 3. YearRelDeal is the year relative to the transaction occurring. The year prior to the deal year is excluded. TFP is total factor productivity estimated following Levinsohn & Petrin (2003). Labor productivity is sales per employee. Return on assets is net income divided by total assets, EBITDA margin is EBITDA divided by sales, and Gross margin is gross profit divided by sales. All ratios are winsorized at the 2% level. Standard errors are clustered at the firm-level. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table A10: Descriptive statistics for matched VC and buyout samples

	VC				Control				Difference	
Panel A: VC Sample	N	Mean	Median	SD	N	Mean	Median	SD	Mean	Median
Age	3,244	4	3	4.45	11,989	4	3	5.10	0	0
Total assets	3,244	9,085	505	229,768	11,981	10,137	761	264,305	-2,896	-256
Sales	608	9,531	1,610	20,871	4,037	9,375	2,021	25,911	-156	411
Employees	1,174	52	11	217.70	4,292	64	13	243.12	-12*	-2
Earnings	868	302	-26	16,912	4,691	484	9	316,346	-182	-35
Return on assets	773	-0.19	-0.12	0.34	5,730	-0.16	-0.13	0.37	-0.03*	0.01
Debt/assets	3,244	0.11	0.00	0.27	11,989	0.14	0.00	0.36	-0.03	0.00
Debt/EBITDA	868	0.11	0.00	4.89	4,691	0.37	0.00	5.59	-0.26	0.00
Interest coverage	472	-2.91	-4.10	74.99	2,458	3.08	0.20	87.79	-5.99*	-4.30
Debt issuance	3,244	0.05	0.03	0.05	11,989	0.06	0.00	0.29	-0.01	0.00
Z-score	610	2.29	1.51	4.19	3,761	3.02	2.44	9.14	-0.73	-0.93
Cash/assets	3,244	0.34	0.29	0.35	11,987	0.30	0.27	0.31	0.04*	0.02
Working capital/assets	1,606	0.20	0.14	1.14	5,034	0.17	0.12	0.80	0.03	0.02
Total factor productivity	286	4.90	5.02	1.19	1,343	4.92	5.01	0.98	-0.02	0.01
	PE				Control				Difference	
Panel B: Buyout Sample	N	Mean	Median	SD	N	Mean	Median	SD	Mean	Median
Total assets	1,021	70,467	18,733	329,647	4,675	71,856	17,549	315,111	-1,389	1,184
Sales	973	66,563	24,206	200,760	3,970	59,303	21,736	179,251	7,260*	2,470
Employees	966	523	173	1,991	3,681	479	156	1,934	44	17
Earnings	1,007	6,547	2,519	27,976	4,450	5,432	2,337	29,143	1,115	182
Return on assets	1,007	0.08	0.07	0.17	4,577	0.07	0.07	0.15	0.01	0.00
Debt/assets	1,021	0.29	0.20	0.31	4,674	0.30	0.20	0.87	-0.01	0.00
Debt/EBITDA	1,007	1.29	0.62	7.25	4,445	1.52	0.80	9.33	-0.23	-0.18
Interest coverage	853	95.70	9.11	209.76	3,325	89.48	7.56	213.92	6.22	1.55
Debt issuance	1,021	-0.01	0.00	0.22	4,674	-0.01	0.00	0.20	0.00	0.00
Z-score	938	2.89	2.76	2.01	3,930	3.08	2.75	2.59	-0.19	0.01
Cash/assets	1,019	0.13	0.07	0.15	4,674	0.13	0.05	0.18	0.00	-0.02
Working capital/assets	972	0.24	0.13	1.15	3,965	0.27	0.15	1.49	-0.03	-0.02* *
Total factor productivity	641	5.07	5.04	0.89	2,852	5.08	5.06	1.11	-0.01	-0.02

This table reports pre-deal year statistics for VC-/PE-backed firms and control firms. In panel A, VC refers to all VC-backed companies; Control refers to non-VC-backed firms, matched on their SIC code, total assets, and age within a 50% bracket in the pre-deal year. In panel B, PE refers to all PE-backed companies; Control refers to non-PE-backed firms, matched on their SIC code, total assets, return on assets and leverage (total debt/total assets) within a 50% bracket in the pre-buyout year. Return on assets is net income divided by assets and interest coverage is EBIT divided by interest expense. Debt issuance is the change in debt from one year to the next, scaled by assets. Z-score is Altman's z-score, with the market value of equity substituted for the book value of equity. TFP is estimated following the Levinsohn and Petrin (2003) methodology. Ratios and growth rates are winsorized at the 2% level. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.

Table A11: Cox model of the probability of insolvency

	Growth equity	PE buyout	VC
	(1)	(2)	(3)
GE*Post	0.601***		
	(0.276)		
PE*Post		0.095	
		(0.167)	
VC*Post			1.332***
			(0.080)
Observations	3,818	21,483	60,932
LR Chi^2	77.62***	183.19***	483.42***
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes

This table reports estimated coefficients of a Cox proportional hazard model. GE (PE, VC) is a dummy variable equal to 1 for GE- (PE-, VC-) backed firms and 0 for control firms. In column 1, GE firms are matched following based on the following criteria: the same two-digit SIC code, total assets within a 50% bracket, return on assets within a 50% bracket, leverage within a 50% bracket, and growth in total assets within a 50% bracket in the pre-transaction year. In column 2, PE buyout firms are matched on the following criteria: the same two-digit SIC code, total assets within a 50% bracket, return on assets within a 50% bracket, and leverage within a 50% bracket. In column 3, VC firms are matched based on the following criteria: the same two-digit SIC code, total assets within a 50% bracket, and firm age within a 50% bracket. Post is a dummy variable equal to 1 for post-transaction years, and 0 otherwise. The dependent variable is a dummy variable equal to one if the firm files for insolvency in that year, and zero otherwise. errors are clustered at the firm-level. *** denotes statistical significance at the 1% level, ** denotes the 5% level, and * denotes the 10% level.